

Emergency Medical Response

INSTRUCTOR'S MANUAL

American Red Cross



Emergency Medical Response

Instructor's Manual



This *Emergency Medical Response Instructor's Manual* is part of the American Red Cross Emergency Medical Response program. Visit redcross.org to learn more about this program.

The emergency care procedures outlined in this book reflect the standard of knowledge and accepted emergency practices in the United States at the time this manual was published. It is the reader's responsibility to stay informed of changes in emergency care procedures.

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Acknowledgments

This instructor's manual is dedicated to the thousands of employees and volunteers of the American Red Cross who contribute their time and talent to supporting and teaching lifesaving skills worldwide and to the thousands of course participants and other readers who have decided to be prepared to take action when an emergency strikes.

American Red Cross Scientific Advisory Council

Guidance for the Emergency Medical Response program was provided by members of the American Red Cross Scientific Advisory Council.

The Council is a panel of nationally recognized experts drawn from a wide variety of scientific, medical and academic disciplines. The Council provides authoritative guidance on first aid, CPR, emergency treatments, rescue practices, emergency preparedness, aquatics, disaster health, nursing, education and training.

For more information on the Scientific Advisory Council, visit redcross.org/science.

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PROGRAM OVERVIEW

Program Purpose

The primary purpose of the American Red Cross Emergency Medical Response course is to provide the participant with the knowledge and skills necessary to work as an emergency medical responder (EMR) to help sustain life, reduce pain and minimize the consequences of injury or sudden illness until more advanced medical personnel take over.

The care steps outlined within this manual are consistent with the following:

- 2015 International Consensus on CPR and Emergency Cardiovascular Care (ECC) Science with Treatment Recommendations
- 2015 American Heart Association Guidelines Update for CPR and ECC
- 2015 American Heart Association and American Red Cross Guidelines Update for First Aid

This course meets or exceeds National Emergency Medical Services Education Standards Emergency Medical Responder Instructional Guidelines.

Program Objectives

It is your responsibility as an instructor to see that participants meet the learning objectives listed at the beginning of each lesson in this instructor's manual.

Program Participants

The intended audience for the Emergency Medical Response (EMR) courses include individuals who will be in, or are preparing for, a job or role that requires an emergency medical response certification. Participants will include traditional EMS and public safety personnel, such as law enforcement and fire rescue personnel, but also business/industry/industrial response team members, athletic trainers and others with a duty to respond. Successful instructors understand participants' background and motivation and may modify their teaching style (not the course) accordingly.

- Participants could represent a broad range of backgrounds.
- They may differ in age or levels of maturity.
- They may differ in levels of education or experience.
- They may be taking these courses to fulfill employment requirements.
- They may be taking these courses to provide for the safety and well-being of their friends, family and community or for personal satisfaction.

Program Prerequisites

There are no prerequisites for this program.

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Program Courses and Modules

The Emergency Medical Response program includes the following courses:

- Emergency Medical Response
- Emergency Medical Response Review
- Emergency Medical Response Challenge

There are also optional modules that can be added to these three EMR courses.

Program Delivery Method

The courses in the American Red Cross Emergency Medical Response program are designed for in-person classroom delivery.

Program Instructional Design

The lesson plans employ a variety of methods to meet participants' needs for consistent, highquality instruction and accurate information. To help participants acquire new information, build correct psychomotor skills and develop decision-making and problem-solving skills, a variety of interactive activities are integrated into the lessons along with videos and skill demonstrations, skill sessions, traditional lectures and guided discussions.

The key points included in the lesson plan lectures represent the fundamental concepts and specific content that instructors must communicate for participants to meet the associated learning objectives and successfully complete the skill sessions. The key points are written so they can be read aloud. The instructor can also rephrase the key points to fit their natural speaking style. The optional course presentation (similar to a PowerPoint presentation) includes the key points and visual aids to support participants' acquisition of the material.

Guided discussions and activities are designed to correspond with the lesson objectives and reinforce essential information that participants need to know. Guided discussions and activities allow the instructor the opportunity to assess participants' understanding of the material. The activities are to be conducted as designed and may not be changed or omitted. Modifications may be made to accommodate participants with disabilities. (For additional information, see the *Americans with Disabilities Act [ADA] Resource Guide for Conducting and Administering Health and Safety Courses*, available on Instructor's Corner.)

Video segments are essential to the program because they convey key concepts and provide uniformly consistent explanations and demonstrations of skills. During the skill sessions, participants may use skill sheets (available in the participant's textbook) as a guide. Skill charts for the instructor's use during the skill sessions are located in the instructor's manual in the lessons that include skill sessions.

Participants demonstrate competency throughout the courses in the Emergency Medical Response course by actively participating in activities, guided discussions, skill sessions, skill reviews, Putting It All Together scenarios and Final Practical Evaluation that concludes the Emergency Medical Response course. Participants must also pass two final written exams— EMR and Basic Life Support for Healthcare Providers—with a score of 80 percent or better.



Instructor's Note: For reasons of educational quality and participant safety, the following skills taught in many American Red Cross courses are practiced only on a manikin and never on a real person: rescue breaths, chest compressions and AED pad placement.

Course Materials

Participant Resources

Participant resources are available for purchase from the Red Cross Store and on Instructor's Corner.

American Red Cross *Emergency Medical Response* Textbook

The *Emergency Medical Response* textbook has been designed to simplify participant learning and understanding of the material. It serves as the required in-class text and is used as a reference tool after the course is complete. Participants must have access to their own textbook throughout the course in either digital or print format. When using a digital textbook, participants should use a tablet or laptop to ensure proper viewing (the textbook should not be displayed on a mobile phone).

Instructor Resources

American Red Cross Emergency Medical Response Instructor's Manual

This *Emergency Medical Response Instructor's Manual* is required to conduct the Emergency Medical Response course. The manual is divided into three parts:

- Section A: Program Administration contains the information needed to conduct the Emergency Medical Response course. This section includes a program overview, instructor requirements and responsibilities, information about setting up and running courses, requirements for successful course completion and teaching strategies.
- Section B: Teaching Tools contains the full course outline and lesson plans. The lesson plans
 provide the primary points to be covered in each lesson, as well as guidelines for activities and
 skill sessions.
- Section C: Appendices includes supplemental materials to support conducting the Emergency Medical Response course as well as information about the review and challenge courses. Many of these materials can also be accessed on Instructor's Corner.

The American Red Cross Learning Center

The American Red Cross Learning Center (LMS) provides functionality for managing and executing training and learning programming for American Red Cross Health and Safety Services programs. The Learning Center manages and tracks all Red Cross training for participants and instructors and maintains certification data.

Red Cross instructors are required to access the Learning Center to ensure that their Instructor Profile information is current and up-to-date. Instructors are strongly encouraged to enter their *Course Record* information directly into the Learning Center. For information on how to access and use the Learning Center, please visit Instructor's Corner.

American Red Cross Instructor's Corner

Instructor's Corner is an instructor's resource containing program information, policies, resources and teaching tools. Instructor's Corner also contains information related to other American Red Cross programs, as well as the latest news about the Red Cross. Instructors are required to

regularly use and visit Instructor's Corner. The Emergency Medical Response program materials on Instructor's Corner include the following:

- The Instructor Bulletin
- Course fact sheets
- Recertification assessment information
- Information about reporting teaching activity
- Occupational Safety and Health Administration (OSHA) information
- Equipment information
- Documents supporting course delivery and classroom activities
- Information related to obtaining written exams and answer sheets
- Digital versions of instructor and participant course materials
- Course presentation
- Streaming video segments to support course delivery
- Administrative policies and procedures
- How-to guides and resources to support administrative processes
- Information about other Red Cross training and education programs
- Frequently asked questions about the Emergency Medical Response program
- About the Science sections, including expert answers to technical questions, reviews and advisories from the American Red Cross Scientific Advisory Council

Course Presentation

Similar to a PowerPoint presentation, the Emergency Medical Response course presentation is an in-class visual aid that is projected onto a screen or viewing area. Instructors click through the presentation slides as they progress through the lessons.

The course presentation includes lecture points and skill scenarios. Slide references are included in the lesson plan to assist in teaching along with the course presentation. The course presentation:

- Provides visual reinforcement of key points made during lectures and guided discussions.
- Provides visual aids that support activities and scenarios.
- Helps you deliver information in a more dynamic way by reducing dependence on the instructor's manual and allowing you the freedom to stand up and move around during the lesson.

Before conducting the course, become familiar with the presentation software and test the display of the system to be used. It is recommended that you have backup copies of the presentation in case technical difficulties occur.

The course presentation is available to download from Instructor's Corner. The presentation is saved in a PDF format. To view the presentation, save the file to your computer and double click on the PDF icon to open it. Additional directions for using the course presentation are available on Instructor's Corner.

Video Segments

The video segments are an integral part of the course. Instructors are required to use the video segments because they contain important information about key concepts and skills to help ensure the course objectives are met. The Emergency Medical Response course cannot be conducted if the video segments are not available. They are included on the *Emergency Medical Response* DVD, which is available for purchase from the Red Cross Store and on Instructor's Corner. The video segments are also available on Instructor's Corner for streaming.

BEING AN AMERICAN RED CROSS INSTRUCTOR

Instructor Requirements Eligibility to Teach Other Courses

Emergency Medical Response instructors are eligible to teach the following American Red Cross courses:

- Emergency Medical Response
- Emergency Medical Response Review
- Emergency Medical Response Challenge
- Basic Life Support for Healthcare Providers
- Administering Emergency Oxygen
- Asthma Inhaler Training
- Epinephrine Auto-Injector Training
- Tourniquet Application Training
- Bloodborne Pathogens Training

Maintaining Your Instructor Certification

Your certification as an instructor is valid for 2 years. To maintain certification as an instructor, you must:

- Teach or co-teach at least one Emergency Medical Response course of record during your 2-year certification period.
- Successfully complete the recertification assessment (an online knowledge assessment) with a score of 80 percent or higher within 90 days of your expiration date.
- Complete all applicable course updates prior to the update deadline.
- Maintain basic-level Basic Life Support for Healthcare Providers certification.

The American Red Cross Learning Center will automatically track the expiration date of your instructor certification. Monitoring your profile and certifications within the system allows you to take appropriate actions to stay current in your certification.



Instructor's Note: As an instructor, you have a responsibility to monitor and maintain your American Red Cross Learning Center profile. You must periodically verify that your contact information is accurate in the American Red Cross Learning Center, including a current email address, phone number and mailing address.

Eligibility to Teach Other American Red Cross Programs

American Red Cross Emergency Medical Response instructors may qualify to teach additional Red Cross basic-level courses after successful completion of an instructor bridge course.

Available instructor bridge course options (depending on the program) include:

- Online bridge course.
- In-person or blended-learning bridge course.

Other basic-level certifications may be necessary in addition to completing an instructor bridge course. The Instructor Bulletin for the specific program area lists the bridging option available as well as qualification requirements needed to complete an instructor bridge.

Instructor Responsibilities

Your responsibilities as a certified Red Cross instructor include:

- Providing for the health and safety of participants by always ensuring:
 - Manikins have been properly cleaned according to the "Manikin Decontamination and Use" document, which is available on Instructor's Corner.
 - Other course equipment (such as medical and first aid supplies) is clean and in good working order.
 - Participants are aware of health precautions and guidelines concerning the transmission of infectious diseases.
 - All participants have the physical ability to perform the skills and know to consult you if they have concerns about their physical ability to do so.
 - The classroom and all practice areas are free of hazards.
- Being familiar with, and knowing how to effectively use, program materials and training equipment.
- Informing participants about knowledge and skill evaluation procedures and course completion requirements.
- Creating a nonthreatening environment that is conducive to achieving the learning objectives.
- Preparing participants to meet the course objectives.
- Conducting the precourse session, if applicable, to determine if participants have the prerequisite knowledge and skills to take the course.
- Providing participants with an opportunity to evaluate the course.
- Adapting your teaching approach to match the experience and abilities of the participants, identifying participants who are having difficulty and developing effective strategies to help them meet course objectives.
- Supervising participants while they are practicing course skills and providing timely, positive and corrective feedback as they learn.
- Evaluating participants as they perform skills, focusing on critical performance steps as described in the skill charts.
- Being prepared to answer participants' questions or knowing where to find the answers.
- Administering and scoring the final written exams, if applicable.
- Conducting courses in a manner consistent with course design.
- Teaching courses as designed—following the course outline and all policies and procedures as noted in the instructor documents for the course.
- Maintaining a current personal profile in the American Red Cross Learning Center.
- Effectively using the American Red Cross Learning Center to set up, manage and close out courses.

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- Submitting completed *Course Records* and reports to the American Red Cross Learning Center within 10 working days of course completion.
- Being familiar with and informing participants of other Red Cross courses and programs.
- Representing the Red Cross in a positive manner and providing a positive example by being neat in appearance and not practicing unhealthy behaviors while conducting American Red Cross courses.
- Identifying potential instructor candidates and referring them to the appropriate Red Cross representatives.
- Abiding by the obligations in the *Emergency Medical Response Instructor's Manual*, Instructor Agreement and Instructor Code of Conduct and, if applicable, the Authorized Provider or Licensed Training Provider Agreement.
- Promoting volunteer opportunities available through the Red Cross.

Maintaining Consistent Training Standards

Quality, consistency and standardized delivery of courses are priorities of the American Red Cross and help save lives. Red Cross courses are designed with standardized instructor outlines and lesson plans based on well-defined objectives to provide an optimal learning experience for the variety of participants who participate in the programs. To meet the objectives of the course and ensure standardized course delivery, the course outline and lesson plans must be followed.

Facility availability or constraints, specific instructor-to-participant ratios, equipment-to-participant ratios or participant needs may necessitate adapting the course outline while still maintaining the educational progression of the course. Adapting the training does not mean that you can add to, delete or change the content. The course is laid out in a progressive way to allow the participants to learn in a predictable order as well as have sufficient time to practice.

Emergency Medical Responder courses are designed to meet the training requirements of various occupational, office or industrial settings. When offering the program to meet certification requirements, adapting the training does not mean that you can add to, delete or change the content.

SETTING UP AND RUNNING COURSES

Course Lengths and Schedules

The Emergency Medical Response course is designed to be taught in approximately 56 hours, 10 minutes, based on a class size of 6 to 10 participants and the recommended amount of equipment available for each lesson. Time will have to be added if any of the Enrichment modules are taught. The course outline includes estimated course lengths. The time allotted in the course outline includes the minimum time required for covering the content and class activities and does not include breaks. Course lengths are based on:

- A ratio of 6 to 10 participants to 1 instructor.
- A minimum of one manikin and one AED training device for every two participants.

Increasing one or both of these ratios may increase the pace of the skill sessions in the course but will not significantly reduce overall course time. Therefore, courses are to be scheduled and expected to run for the designated course length, at a minimum.

The lesson plans in this manual must be followed as closely as possible, but facility constraints, specific instructor-to-participant ratios, equipment-to-participant ratios and participant needs (e.g., breaks) may increase course length. Other factors that may influence lesson planning include the following:

- Classroom availability and layout
- Equipment availability
- Number of participants
- Skill level of participants
- Number of instructors

Class Size and Instructor-to-Participant Ratios

The Emergency Medical Response course is designed for a ratio of 6 to 10 participants to 1 instructor. If your class is larger, you may not be able to properly supervise the course activities and skill sessions in the allotted time. Likewise, if there are fewer than the minimum number of participants, you may not be able to conduct course activities and skill sessions properly to meet course objectives.

If there are fewer than five participants, additional people who are already certified in the program or similiarly trained must be used during the course skill sessions, scenarios, testing and other activities to achieve the course objectives. The instructor cannot act in the role of the assisting responder or patient in the skill sessions and scenarios. At no time should a single instructor teach a course with fewer than five qualified participants.

If the course has more than 10 participants, another instructor should co-teach or the course should be extended. At no time should a single instructor attempt to manage a course with more than 10 participants.

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Classroom Space

The Emergency Medical Response course requires a classroom space suitable for lecture, smallgroup activities, role-playing activities, video presentations and skill sessions. The classroom should provide a safe, comfortable and appropriate learning environment. The room should be well lit, well ventilated and have a comfortable temperature.

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Instructor's Note: If the area where skill sessions will be conducted is not carpeted, provide knee protection (such as folded blankets or mats) for use by participants or request that they bring their own padding materials.

Materials, Equipment and Supplies

The specific materials, equipment and supplies needed for each lesson are included at the beginning of the lesson. Instructors should have these specific items ready prior to the start of the lesson. For a checklist of the items necessary to teach the Emergency Medical Response course, see Appendix A.

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Instructor's Note: Some equipment used during the course (such as disposable latex-free gloves) and a wide range of Red Cross retail products are available through the Red Cross Store (redcrossstore.org).

Class Safety and Supervision

As a Red Cross instructor, it is important for you to make the teaching environment as safe as possible and to protect participants from health risks. The materials and procedures for teaching American Red Cross courses are designed to:

- Limit the risk of disease transmission.
- Limit the risk of one participant injuring another when practicing skills with a partner.
- Limit the risk that the activity involved in skill practice could cause injury or illness.

Participants who feel they are at risk for injury or illness may become distracted. These same feelings may also affect your ability to teach. It is important to talk with participants who feel they are at risk and inform them of the precautions that are taken to limit and reduce the risk for injury or illness. There are several steps you can take to help increase class safety:

- Prepare. Consider possible hazards and manage safety concerns before a course starts. Often, you can foresee hazards and take steps to eliminate or control them long before participants arrive.
- Arrange for assisting instructors, co-instructors or both. Assisting instructors and co-instructors can help decrease risks by giving more supervision and reducing the instructor-to-participant ratio. They also increase participation and learning by providing more one-on-one attention to participants. When using assisting instructors or co-instructors, clearly define their roles and responsibilities. Doing so will help eliminate confusion and lapses in supervision.

Remember that you are ultimately responsible for your participants' safety. To determine your staffing needs, consider the different ages and the individual abilities of participants. If your course has a large number of participants, you will need additional help.

Health Precautions for Course Participants and Considerations for Participants with Disabilities

Provide participants and, if necessary, their parents or legal guardians, with information about health requirements and safety before the course begins.

People with physical disabilities or certain health conditions may hesitate to take part in skill sessions. You should suggest that these participants (or, if the participant is a minor, the participant's parent or legal guardian) discuss their participation with a healthcare provider. Ask participants to tell you in advance if they are concerned about their ability to perform a specific skill.

Inform participants who cannot demonstrate the skills taught in the course that they cannot receive a Red Cross course completion certificate. Encourage them to participate to whatever extent possible. The Red Cross advocates that instructors adjust activity levels to facilitate learning and to help meet course objectives whenever possible.

As a Red Cross instructor, you must attempt to protect participants against health risks, and you must do your best to safeguard participants against any risk of injury while they are engaged in skill practice. Guidance for course modification for a participant with a disability is provided in the *Americans with Disabilities Act (ADA) Resource Guide for Conducting and Administering Health and Safety Courses*, located on Instructor's Corner.

Additional Adult Supervision—Teaching Youth

The safety of all Red Cross course participants is paramount. For courses with participants younger than 18 years, ensuring participant safety includes providing adequate adult supervision. (Some states may define an adult as a person older or younger than 18 years. Follow local regulations.)

It is recommended that whenever a Red Cross course, activity or event is conducted involving youth participants, two adults should always be present at the facility to ensure participant safety. For Red Cross courses, the first adult would be the course instructor. The second adult might be a co-instructor, another participant or—in the event that the course audience is entirely composed of youth—an instructor teaching another course in the facility or other responsible facility staff. Facilities should consider safety plans for youth participants that include the time before and after class.



TEACHING SO THAT EVERY PARTICIPANT CAN LEARN

Preparing to Teach

Before you teach a lesson, you should read the lesson plan; review appropriate reference materials (such as the participant's textbook); and gather necessary materials, equipment and supplies. The lesson plan contains the following:

- Lesson name
- Lesson length (the minimum amount of time needed to conduct the lesson)
- Lesson objectives (statements describing what participants will know or be able to do after successfully completing the lesson)
- Materials, equipment and supplies (a list of the materials, equipment and supplies needed to teach the lesson)
- Topics (the major concepts to be covered in the lesson)
- Instructor's notes (instructions and information related to conducting the lesson effectively)
- Lesson wrap-up (an assessment or other activity that provides participants with the opportunity to review what they have learned)

Working with Your Audience

Understanding your audience will help you engage your participants. If you can relate to your audience, you will be better able to provide a positive learning environment and maintain participants' self-esteem. In addition, understanding your audience allows you to help participants associate classroom information with personal experiences, which in turn can make guided discussions and activities more meaningful. Being aware that participants may come to the class with different levels of understanding and skill can help you better meet each participant's needs.

Using Facilitation Techniques

As an instructor, you will use facilitation techniques to help participants acquire necessary information. Facilitation is based on the concept of pushing, pulling and balancing the flow of information. Push skills have to do with information flowing mostly from instructor to participants.

Pull skills are used when the instructor engages participants using approaches that actively involve the participants in their own learning, such as by asking questions or facilitating interactive activities and guided discussions. Balance skills involve managing the push and pull of information to keep the learning process moving and to maximize learning.

When using facilitation techniques, keep the following points in mind:

- Maximize class interaction.
- Use pull skills to engage participants in classroom discussions and to keep discussions on topic or to provide necessary information. Pull skills are also useful for soliciting responses from different participants to prevent one participant from dominating the discussion.

- Promote an open exchange of information and ideas by asking open-ended questions (i.e., questions that begin with who, what, when, where, why or how), waiting for responses, listening, managing silence, and referring participants' questions back to the group for discussion and resolution.
- Ensure effective discussion sessions by giving and receiving feedback, maintaining an open perspective, creating a positive environment conducive to learning, staying on topic and managing time effectively.

Facilitation techniques allow you to evaluate participants' knowledge and understanding throughout the course. In addition, facilitation:

- Gives you the opportunity to evaluate participants' needs and focus the activities on those needs.
- Allows you to build on participants' previous knowledge and skills.
- Allows participants to associate previous knowledge and skills with new information.
- Allows participants to learn from one another.
- Keeps participants engaged and interested throughout the course.

Teaching Participants with Disabilities

You may have participants in your course who have disabilities or other health conditions. You must be prepared to provide participants with disabilities every opportunity to succeed, including making appropriate modifications to the way the course is conducted, if necessary. For example, you may need to increase the amount of time that you spend with the participant or allow frequent rest periods. When a participant with a disability can successfully meet course objectives, they should receive a course completion certificate. If a participant cannot meet the course objectives because of a disability, this should be communicated to the participant as early as possible.

Physical Disabilities

When helping a participant with physical disabilities to acquire the skills necessary for successful course completion, focus on the critical components of the skill that are needed to successfully meet the objective. Always teach to the standards set forth, but be aware that participants may modify how a skill is accomplished and still meet the objective, which allows them to successfully complete the course. See the *Americans with Disabilities Act (ADA) Resource Guide for Conducting and Administering Health and Safety Courses* on Instructor's Corner for more information.

Learning Disabilities

A participant who has a learning disability may tell you that they have not done well in educational settings or testing situations in the past. Any discussions related to a participant having a learning disability or difficulty understanding the course materials should be handled privately without attracting the attention of the rest of the class.

Many learning disabilities affect a person's ability to acquire information through reading. Participants with limited English proficiency may also struggle with reading. You may also observe behaviors that suggest that a participant has difficulty with reading. For example, you may notice that a participant is not able to follow along with written material. The participant may offer an excuse, such as saying that they forgot their glasses. Modifications (such as reading material aloud to participants, rather than having participants read the material to themselves) will allow the participant to participate fully in class. Should the course contain a written exam, or if a written exam has been requested or is required by an employer, course provider, or state or local regulations, you may administer an oral exam instead. Please see Instructor's Corner for guidance on giving oral exams.

Strategies for Helping Participants to Acquire Information

Delivering Information Through Lecture

Instructor presentation, or lecture, is sometimes the most effective way to deliver information. However, because lecturing is a passive way for participants to learn, it should be used sparingly. Too much lecturing causes participants to become disengaged, resulting in less effective learning. In this instructor's manual, content that is to be delivered through lecture is designated with the lecture icon (). Key points contain information that must be communicated to participants and are written so that they can be read aloud from the instructor's manual. You may rephrase key points to fit your own natural speaking style; however, if you choose to rephrase key points in your own words, it is important that you fully understand the course content so that you can rephrase without changing the meaning of the key point.

Participants who are visual learners often benefit from seeing the key points in written form. If you are using the course presentation, the key points for the lecture are included on the accompanying slides. If you are not using the course presentation, it is often helpful to write bullet points on a whiteboard or easel pad before the class to facilitate the learning process.

When delivering a lecture, it is important to be dynamic and engaging. One way to accomplish this is to prepare for interactive lectures. An interactive lecture will have opportunities for twoway communication between participants and the instructor as well as among the participants themselves. To prepare an interactive lecture, keep the following suggestions in mind:

- Ensure that you understand the purpose of the lecture and plan accordingly.
- Feel free to rephrase the key points to fit your natural speaking style.
- Prepare lecture notes so that you can avoid reading from the instructor's manual while lecturing.
- Maintain a learner-centered focus.
- Use analogies to help create a bridge between lecture material and participants' experiences.
- Strive for interaction with participants during lectures.
- Encourage participants to add to the lecture.
- Keep the lecture moving—avoid long stories of personal experiences.

Using Guided Discussion

Guided discussions are another way of conveying and reinforcing course content. In this instructor's manual, content that is to be delivered through guided discussion is designated with the guided discussion icon (2). Guided discussions serve to:

- Monitor and evaluate participants' level of understanding.
- Increase comprehension (i.e., when one or more participants do not understand something, the discussion may offer an alternative explanation that clarifies the information).
- Allow participants to use existing knowledge and experience as a springboard for acquiring new information.
- Focus participants' attention on the topic.
- Ensure that all required content for the topic is covered.

The ability to introduce questions that prompt discussion is an important aspect of facilitating good discussions. As you lead question-and-answer sessions during the lesson, ask for volunteers to provide answers. Waiting up to 10 seconds for an answer can help encourage hesitant participants to answer. Call on participants by name if you are having a hard time finding volunteers. However, do not insist that all participants provide answers. Participants can still benefit from this approach to learning, even if they appear reluctant to answer questions themselves.

Ideal responses are provided for each question. Answers labeled "Responses could include" are examples of one or more possible correct answers. For these questions, an example of a correct answer is provided in case participants are unable to come up with the correct answer(s) on their own. Answers labeled "Responses should include" are the correct answer(s) that must be covered. In this case, the instructor must provide any or all of the answers if participants are unable to come up with the correct answer(s) on their own.

Using Video Segments

Video presentations, designated with the () icon in this instructor's manual, are used to demonstrate skills, convey key concepts or support activities.

Conducting Activities

Activities are included throughout the course to give participants the opportunity to apply knowledge and solve problems. Many activities allow participants to associate course concepts with their own personal experience. In this instructor's manual, activities are designated with the activity icon (...).

Activities done as a group promote interaction among participants. Small-group activities require two to four participants to work together to solve a problem or complete an activity. Small-group activities allow participants to use one another's knowledge to solve problems and learn from others' experiences. Large-group activities involve a larger group or the entire class. Large-group activities provide the opportunity to exchange ideas, discuss problems and think about the many ways to solve a problem.

When conducting group activities, you should specify both the size and makeup of the groups. Form groups using the fewest number of participants necessary to conduct the activity. Form new groups for each activity. Changing group members for each activity promotes class cohesion, avoids situations in which one or more participants feel left out and keeps friendships from taking precedence over learning. Using an arbitrary selection criterion each time you form groups will help you vary group makeup and give participants the chance to interact with many different classmates. For example, you could form groups by asking participants to:

- Find the person whose birthday is closest to their own and form a pair.
- Find the person who lives the farthest from them and form a pair.
- Find the other people in class whose birthdays are in the same season (winter, spring, summer or fall) as their own and form a group.

Conducting Scenarios

Many activities in American Red Cross courses are scenario based. Scenario-based activities focus on developing critical thinking, problem solving and communication skills, and give participants an opportunity to apply recently acquired knowledge and skills. The scenario typically begins with a description of the situation and scene, and prompting is used to facilitate participants' progression through the scenario.

To conduct scenario-based activities, have participants form groups and then communicate the setup for the scenario used. The groups complete the scenario at the same time. During the scenarios, your focus should be on prompting and assessing participant performance. Step in and provide guidance only if absolutely necessary.

Although participants are expected to act on the basis of their training, they should be encouraged to use reference materials (such as skill sheets) as needed. Because the purpose of the scenario is to simulate responding to a real emergency situation, provide only the information necessary for the responders to make a decision and give care. If a responder has difficulty determining

the correct next step, provide basic feedback, such as, "That is not quite right" or "Remember to check for life-threatening conditions." Because the skills may still be relatively new, it is OK if participants hesitate, start and stop, self-correct or otherwise momentarily interrupt the skill during scenarios.

To achieve course certification, participants must successfully demonstrate competency in all required skills and scenarios throughout the course. Successful participation in scenarios means that a participant went through the entire scenario with minimal guidance from the instructor.

CONDUCTING EFFECTIVE SKILL SESSIONS

Instructor Responsibilities During Skill Sessions

Skill sessions, designated with the icon , are a critical component of most American Red Cross courses. During the skill sessions, participants are learning and practicing skills. For maximum efficiency and the best learning outcomes, skill sessions should be well organized and well managed. For a successful skill session, instructors must provide direction and instruction, ample practice time, encouragement and positive reinforcement, and corrective feedback.

During skill sessions, instructors are responsible for:

- Demonstrating the skill or skill components, guiding participants through the skill or both.
- Keeping the session running smoothly.
- Providing sufficient time for all participants to practice the skill.
- Ensuring that participants can see the video monitor when appropriate.
- Helping participants form pairs, if necessary, and making sure that participants have the necessary equipment for skill practice.
- Closely supervising participants as they practice and providing coaching or prompting as appropriate.
- Identifying errors promptly and providing appropriate feedback to help participants improve.
- Checking each participant for skill competency.
- Maintaining a safe, positive learning environment.
- Encouraging participants to improve and maintain their skills.

During every skill session, circulate to monitor participants' progress, and provide assistance and corrective feedback as necessary.

How Participants Learn Skills

When teaching skills, keep the following points in mind:

- Course skills are complex. Participants often have some difficulties when they first begin.
- Some of the skills taught will likely be new to most participants; therefore, participants may require frequent one-on-one attention.
- Skills are learned by hands-on practice. Immediate success in demonstrating the skill is unlikely. Refinements in technique take time and practice. Allow participants multiple opportunities to practice skills.
- Skills require a defined sequence of movements. Participants should consistently follow this sequence when learning skills.
- Learning times for each skill differ, because some skills are easier than others.
- Participants have different learning rates. Take individual differences into account.
- Skills, especially the individual components, are quickly forgotten. Frequent practice improves skill retention.

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Instructor's Note: Allow participants sufficient time to practice the skill until they are able to meet performance criteria. The length of the skill session will vary based on the complexity of the skill, the instructor-to-participant ratio and whether or not participants need to take turns using equipment (e.g., manikins).

Approaches to Practicing Skills

Orienting participants to the skill session will help them get started quickly and practice more efficiently.

Instructor-Led Practice

In the instructor-led practice approach, the instructor guides participants through each step of the skill while checking on participants to ensure that all in the group complete the steps properly as the instructor calls them out. Instructor-led practice can be used to focus on a skill or part of a skill. This approach is particularly useful for introducing new skills that build on previously learned skills, or when participant safety is a concern.

When you lead the practice, position yourself so that you can see everyone. It may help to have participants' heads pointing in the same direction and their partners in the same relative position next to them. Being able to see everyone allows you to monitor skill performance as well as ensure participant safety.

Partner-Based Practice

A partner-based practice approach is useful for providing participants with experience in giving care to a real patient. One participant acts as the injured or ill patient while the other gives care. When using a partner-based practice approach:

- Allow participants to choose their partners. Some participants may be reluctant to practice with participants of the opposite gender. Instructors should accommodate participants' preferences.
- Ensure that participants exchange roles so that each participant has a chance to practice the skill.
- Do not allow participants to engage in horseplay, which can lead to injury.

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Instructor's Note: For reasons of educational quality and participant safety, the following skills taught in many American Red Cross courses are practiced only on a manikin and never on a real person: rescue breaths, chest compressions and automated external defibrillator (AED) pad placement.

Reciprocal Practice

In a reciprocal practice approach, participants working in pairs or groups observe each other's performance and provide guidance and feedback. The goal is for the participant doing the skill to demonstrate the skill correctly without any assistance from their partner. For this approach to be effective, the instructor must clearly identify the performance criteria. During reciprocal practice, move among participants and observe them to ensure that they are practicing the skills correctly and are receiving appropriate feedback from their partners. Provide feedback as appropriate and assistance as needed.



Instructor's Note: When using the reciprocal practice approach to practice a skill, if you observe that a participant correctly demonstrates the skill from start to finish without any assistance, you may check off that person's skill on the Participant Progress Log and let the participant know that no further demonstration of that skill is required.

Video-Based Practice

In American Red Cross courses, video may be used in different ways to support the skill sessions.

Watch-Then-Practice

In the watch-then-practice approach to skill practice, participants watch a video segment demonstrating the skill, and then they practice the skill. After showing the video, guide participants through the steps of the skill (referring participants to the skill sheet as needed) and then encourage them to practice independently without assistance. Intervene and provide positive and corrective feedback as needed.

Practice-While-You-Watch

In the practice-while-you-watch approach to skill practice, participants practice the skill along with a video, which provides audiovisual cues. The practice-while-you-watch approach has the following benefits:

- It provides a consistent model demonstration of the skill using a methodical instructional approach.
- It allows the instructor to focus on evaluating skill performance as the participant learns, which in turn allows the instructor to identify and correct errors in technique earlier in the learning process.
- It maximizes the effectiveness of training and increases the time allotted for skill practice.

Setting Up Skill Sessions

When arranging the classroom for skills practice, ensure that there is an adequate amount of equipment and supplies for the number of participants in the class. Arrange the skill practice area so that each participant has ample room to view the demonstration (video or instructor), move about, practice the skill, ask questions and receive feedback on their performance. Also ensure that you and your fellow instructors can see the participants, move from person to person, and provide feedback and oversight at all times. If you are using a skill sheet, distribute copies to each participant to use as a guide. When participants are working in pairs, encourage communication among the group and peer-to-peer learning using the skill sheet.

Running Skill Sessions Helping Participants to Practice Correctly

Practicing a skill aids learning only when the skill is performed correctly. One of your most difficult challenges as an instructor is to ensure that participants practice correctly. Continually monitor all participants, watching for errors participants make while practicing. Correct any problems you notice as soon as possible to prevent participants from continuing to practice incorrectly. While you are working closely with one participant, check others with an occasional glance. Encourage participants to ask questions if they are unsure how to perform any part of a skill.

A positive learning environment is important. Participants perform best when you keep them informed of their progress. When participants are practicing correctly, provide positive feedback that identifies what they are doing correctly. If participants are practicing incorrectly, provide specific corrective feedback. Before saying what they are doing wrong, tell them what they are doing correctly. Then, tactfully help them improve their performance.

When giving feedback, keep the following strategies in mind:

- Be specific when providing feedback.
- If the error is simple, explain directly and positively how to correct the skill performance. For example, if the participant is having trouble finding the proper hand placement for CPR, you might say, "The steps leading up to beginning CPR are good; now try finding the center of the chest for compressions. That will be the spot you want to aim for."
- Show the participant what they should be doing. For example, in addition to telling the participant that the hands should be placed in the center of the chest for compressions, demonstrate the proper hand placement.
- Explaining why the skill should be performed in a certain way may help participants remember how to perform the skill correctly. For example, if a participant continually forgets to check the scene for safety as part of the scene size-up, you might remind the participant that failing to check for safety before going to another's aid can put the responder at risk for injury or illness as well.
- If a participant has an ongoing problem with a skill, carefully observe what they are doing. Give specific instructions for performing the skill the correct way and lead the participant through the skill. It may help to have the participant state the steps back to you for reinforcement.
- Emphasize the critical performance steps, focusing on those steps that make a difference in the successful completion of a skill.
- During skill sessions, resist telling participants anecdotes, which can distract or confuse them.
- Remind participants what they are doing right and what they need to improve. Use phrases such as, "Your arms are lined up well, but try to keep them as straight as possible while giving compressions to help ensure that they are effective." Help participants focus on the critical components of each skill.

Coaching Versus Prompting Participants

The desired outcome of each skill session is for participants to demonstrate a skill correctly from beginning to end without receiving any assistance from you or a partner or referring to the skill sheet. Because participants learn at different rates, bring different levels of knowledge to the course and learn in different ways, you will most likely need to coach or guide participants as they first learn skill elements. Coaching occurs in the initial phases of skill practice and allows you to give participants information that they need to establish the sequence, timing, duration and technique for a particular skill. When coaching, also known as guided practice, provide information such as the sequence of steps in a skill. Statements such as "Size up the scene" or "Check the patient for responsiveness" are examples of coaching.

Once guided practice ends and independent demonstration of a skill begins, you should change tactics and shift to prompting. Prompting allows you to assess the participant's ability to make the right decision at the right time and give the appropriate care. Because participants are expected to demonstrate the skill without any assistance, when you prompt someone, provide only the information necessary for the participant to make a decision and give care. In other words, you should give information only about the conditions found. For example say, "The patient is unresponsive and not breathing" instead of "Call 9-1-1."

Evaluating Skill Performance

Skill charts are provided in the instructor's manual to assist you in evaluating participants' mastery of the skill. Before conducting a course, become familiar with the skill charts found in each lesson in which the skill is practiced. Skill charts provide step-by-step descriptions of the

skills participants must master to pass the course. In addition to performing the steps listed in the skill chart in the correct order, participants must meet the objectives of a skill before they can be checked off for that skill. Objectives that are general for the category of skills, as well as specific to the skill, must be met. It is your responsibility as the instructor to observe participants' skill performance to determine whether they are performing the skill correctly with respect to sequence, timing and duration, and whether they are meeting the established skill proficiency criteria.

Instructors must focus on the successful completion of an objective as opposed to perfecting every individual skill. For example, a participant who has arthritis in their hands can still perform effective chest compressions by grasping the wrist of the hand positioned on the chest with their other hand, instead of placing one hand on top of the other and interlacing the fingers. In this example, the participant may continue the course and still receive certification, since the skills needed to prevent injury or save a life may need modification, but the result is the same. Additional information on adjustments to training can be found in the *Americans with Disabilities Act (ADA) Resource Guide for Conducting and Administering Health and Safety Courses*, located on Instructor's Corner.

Many American Red Cross courses provide Participant Progress Logs to track each participant's completion of the requirements for certification. During the skill session, check off each skill and Putting It All Together scenario as completed on the Participant Progress Log once the participant has demonstrated proficiency in it. To complete the course requirements and receive a completion certificate, a participant must be able to complete the required skills and Putting It All Together scenarios proficiently without any coaching or assistance.

COURSE COMPLETION

Criteria for Course Completion and Certification

Many agencies, organizations and individuals look to the American Red Cross for formal training that results in certification. Red Cross certification means that on a particular date an instructor verified that a course participant could demonstrate proficiency in all required skills taught in the course. Proficiency is defined as being able to perform each skill to meet the objective without guidance and apply those skills in a simulated emergency. Achieving certification does not imply any future demonstration of the knowledge or skill at the level achieved on the particular date of course completion.

On successful completion of an Emergency Medical Responder course, participants receive American Red Cross certification specific to the course they completed. Participants can access and print their digital certifications by logging into their account on redcross.org.

To successfully complete an Emergency Medical Responder course, the participant must:

- Attend the entire course and participate in all class sessions.
- Actively participate in all course activities and skill sessions.
- Successfully complete the Putting It All Together scenarios.
- Demonstrate competency in all required skills and scenarios.
- Pass the final practical evaluation.
- Pass two final written exams with a score of 80 percent or better.

Participants must be told of the requirements when they enroll for the course and again during the course introduction. Remember to provide ongoing feedback to participants about their performance throughout the course. Feedback should be ongoing so there are no surprises if a participant's performance is evaluated as unacceptable.

Skill Competency

To complete the course requirements and receive a completion certificate, a participant must be able to complete all required skills proficiently without any coaching or assistance. A participant's performance is proficient or not proficient based on the performance of the critical skill components that are necessary to meet the objective.

Final Written Exams

The final written exams are a required component of the course. Instructors can find copies of the exams on Instructor's Corner. Participants must successfully pass both the Emergency Medical Response exam and the Basic Life Support for Healthcare Providers exam. When administering

a written exam, you must use the exams provided and not substitute exam questions. Use either Exam A or Exam B. To pass the written exams, participants must score 80 percent or better on each exam. If a participant does not achieve a score of 80 percent, they have the opportunity to take the alternative exam. Instructors may allow participants who passed the exams to review questions they missed. Graded answer sheets and written exams must be returned to the instructor.



Instructor's Note: It is acceptable for an instructor/proctor to read the exam to a participant as long as the participant determines the appropriate response.

Maintaining Exam Security

Exam security is the instructor's responsibility. It is not recommended that participants be allowed to see the written exams before they are distributed. Instruct participants to put away all course materials and mobile devices. As participants hand in their answer sheets, you may quickly grade the exams (using the answer keys located in Section C of this instructor's manual) and return them to the participants. This way, the participants can review any incorrect answers. Be sure to collect all answer sheets and exams before participants leave the class. Exams may be updated periodically and it is the responsibility of the instructor to ensure that they are using the most current exams.

Criteria for Grading Participants

Course participants are assigned one of the following grades:

- Successful is entered for a participant who has successfully attended and participated in all class sessions, including activities and skill sessions, and demonstrated proficient competency in all required skills.
- Unsuccessful is entered for a participant who has not met course objectives and/or has not successfully attended and participated in all class sessions, including activities and skill sessions, or demonstrated proficient competency in all required skills.
- Not Evaluated is entered as the final grade for a participant who is not attending the course with the intention of receiving a completion certificate. This grade should not be substituted for Unsuccessful for a participant who attempts certification but is unable to pass the completion requirements. A participant who chooses to audit must make their intent known to the instructor at the beginning of the class.

Handling Unsuccessful Course Completion

If a participant does not meet the criteria for course completion and certification, provide the participant with information about course topics and skills where remediation is needed. Advise the participant that they can repeat the course if they so choose.

Reporting Procedures

You must submit a completed *Course Record* and *Course Record Addendum* to the American Red Cross within the specified time frame (10 days). Instructions for using and submitting *Course Records* are available on Instructor's Corner.

Acknowledging Course Completion Awarding Certification

On successful completion of the course and after the data have been entered into the American Red Cross Learning Center, each participant will receive a course completion certificate from the American Red Cross Learning Center that indicates the details of course completion and certification. The course completion certificate can be downloaded, printed or shared, as needed. Each American Red Cross certification contains a QR Code that can be used by participants, instructors, employers or the American Red Cross to validate certificate authenticity.

State Certification/Licensure

It is important that American Red Cross instructors notify participants in the courses they teach that state certification/licensure as an EMR will not be granted upon completion of this program unless otherwise approved by the state EMS office. As an instructor, you should know the status of training in your state and convey this information to participants. State certification/licensure requirements may vary by jurisdiction. Instructors should contact their respective state EMS offices to determine state certification/licensure requirements before starting a class and notify course participants in the first class session.

Obtaining Participant Feedback

Gaining feedback from participants is an important step in any evaluation process. Participants should have an opportunity to tell you what they thought about the course. A copy of the Participant Course Evaluation Form is available on the American Red Cross Learning Center. Have participants complete evaluations each time you teach the course. This information will provide you with feedback concerning the course and its instruction and help the Red Cross maintain the high quality of the course.

Additional Training Opportunities

A wide range of additional training opportunities in safety and preparedness are offered through the American Red Cross. Examples include the following:

- First Aid for High School Coaches
- Anaphylaxis and Epinephrine Auto-Injector Training
- Basic Life Support for Healthcare Providers
- Wilderness and Remote First Aid
- Babysitter's Training and Advanced Child-Care Training
- Swimming and Water Safety
- Lifeguarding

Refer participants to redcross.org for more information about scheduled courses in their community.



LESSON PLANS

Unit 1:	Preparatory
Unit 2:	Assessment
Unit 3:	Airway
Unit 4:	Circulation
Unit 5:	Medical Emergencies
Unit 6:	Trauma Emergencies
Unit 7:	Special Populations
Unit 8:	EMS Operations

Course Outline: American Red Cross Emergency Medical Response

The *Emergency Medical Response Instructor's Manual* contains the following lessons. Each lesson is designed for a class of 6 to 10 participants, resulting in a total course time of 56 hours, 10 minutes. Time will have to be added if any of the optional Enrichment modules are taught. A complete checklist of the materials, equipment and supplies needed for each lesson is included in Appendix A of this manual.

Lesson	Title	Textbook Chapter	Workbook Chapter	Time
UNIT 1: F	PREPARATORY			
1	The Emergency Medical Responder	1	1	60 minutes
2	Bloodborne Pathogens: Preventing Disease Transmission	2	2	120 minutes
3	The Well-Being of the Emergency Medical Responder	2	2	30 minutes (35 minutes with Enrichment)
4	Medical, Legal and Ethical Issues	3	3	75 minutes
5	The Human Body	4	4	60 minutes
6	Lifting and Moving Patients	5	5	60 minutes
7	Putting It All Together	1–5	1–5	60 minutes
UNIT 2: A	SSESSMENT			
8	Scene Size-Up	6	6	60 minutes (70 minutes with Enrichment)
9	Primary Assessment	7	7	110 minutes (120 minutes with Enrichment)
10	History Taking and Secondary Assessment	8	8	120 minutes (130 minutes with Enrichment)
11	Communication and Documentation	9	9	60 minutes
12	Skills Review	6-9	6-9	60 minutes
13	Putting It All Together	1–9	1–9	60 minutes
UNIT 3: A	NIRWAY			
14	Airway and Ventilation	10	10	130 minutes (175 minutes with Enrichments)
15	Airway Management	11	11	60 minutes (70 minutes with Enrichment)
16	Supplemental Oxygen	12	12	60 minutes
17	Skills Review	10-12	10-12	60 minutes
18	Putting It All Together	1-12	1–12	60 minutes

Lesson	Title	Textbook Chapter	Workbook Chapter	Time
UNIT 4: C			<u> </u>	,
19	The Circulatory System and Cardiac Emergencies	13	13	60 minutes (65 minutes with Enrichment)
20	CPR and Automated External Defibrillation	13	13	145 minutes
21	Skills Review	13	13	60 minutes
22	Putting It All Together	1–13	1–13	60 minutes
UNIT 5: N	IEDICAL EMERGENCIES			·
23	Medical Emergencies	14	14	70 minutes (95 minutes with Enrichments)
24	Poisoning	15	15	30 minutes (50 minutes with Enrichments)
25	Substance Abuse and Misuse	15	15	30 minutes (45 minutes with Enrichment)
26	Environmental Emergencies	16	16	110 minutes (130 minutes with Enrichments)
27	Behavioral Emergencies	17	17	60 minutes
28	Putting It All Together	1-17	1-17	60 minutes
UNIT 6: T	RAUMA EMERGENCIES			
29	Shock	18	18	30 minutes
30	Bleeding and Trauma	19	19	75 minutes (90 minutes with Enrichment)
31	Soft Tissue Injuries	20	20	60 minutes
32	Injuries to the Chest, Abdomen and Genitalia	21	21	60 minutes
33	Injuries to Muscles, Bones and Joints	22	22	60 minutes (75 minutes with Enrichment)
34	Injuries to the Head, Neck and Spine	23	23	90 minutes (120 minutes with Enrichments)
35	Skills Review	18-23	18–23	60 minutes
36	Putting It All Together	1-23	1-23	60 minutes

(Continued)

Lesson	Title	Textbook Chapter	Workbook Chapter	Time
UNIT 7: SPECIAL POPULATIONS				
37	Childbirth	24	24	60 minutes (70 minutes with Enrichment)
38	Pediatrics	25	25	60 minutes
39	Older Adults	26	26	30 minutes
40	Patients with Special Healthcare or Functional Needs	26	26	30 minutes
41	Putting It All Together	1-26	1-26	60 minutes
UNIT 8: E	MS OPERATIONS		·	·
42	EMS Support and Operations	27	27	60 minutes (70 minutes with Enrichment)
43	Access and Extrication	28	28	30 minutes
44	Hazardous Materials Emergencies	29	29	30 minutes
45	Incident Command and Multiple- Casualty Incidents	30	30	60 minutes
46	Response to Disasters and Terrorism	31	31	90 minutes (100 minutes with Enrichments)
47	Special Operations	32	32	75 minutes
48	Putting It All Together	1–32	1–32	60 minutes
49	Final Practical Evaluation	1–32	1–32	120 minutes
50	Final Written Exams	1–32	1–32	120 minutes
Total Time (not including Enrichment modules): 56 Hours, 10 Minutes				





Lecture

Skill Practice

Video

UNIT 1 | PREPARATORY

Lesson 1:	The Emergency Medical Responder
Lesson 2:	Bloodborne Pathogens: Preventing Disease Transmission
Lesson 3:	The Well-Being of the Emergency Medical Responder51
Lesson 4:	Medical, Legal and Ethical Issues57
Lesson 5:	The Human Body
Lesson 6:	Lifting and Moving Patients
Lesson 7:	Putting It All Together



THE EMERGENCY MEDICAL RESPONDER

Lesson Length: 60 minutes

MATERIALS, EQUIPMENT AND SUPPLIES

- *Emergency Medical Response* textbook
- Course Presentation Slides 1–13
- LCD projector, screen and computer
- Emergency Medical Response DVD
- DVD player and monitor

LESSON OBJECTIVES

Knowledge

After completing this lesson, participants will be able to:

- Summarize the history and origins of the emergency medical services (EMS) system.
- Describe the components of an EMS system and discuss factors related to "right to practice."
- Explain the different levels of EMS training.
- Discuss the continuity of care and the importance of working with other responders.
- Define who an emergency medical responder (EMR) is.
- List the roles and responsibilities of an EMR.
- Describe the personal characteristics and professional behavior expected of an EMR.
- Discuss medical oversight.
- Discuss factors related to the "right to practice."

TOPIC: INTRODUCTION

Time: 5 minutes



Show the video segment, "Emergency Medical Responders" (0:49).

Answer participants' questions about the video segment.

ACTIVITY Course Presentation Slide 2	 Review the opening scenario: A terrified mother pulls her child from the bottom of a pool while a neighbor calls 9-1-1 for help. You are the first to arrive at the scene and see the neighbor trying to breathe air into the boy's limp body. The mother looks to you helplessly. Ask participants: "How would you respond?"
	 Instructor's Note: Let participants provide responses, guiding them to the key roles and responsibilities of an emergency medical responder (EMR). Responses could include: Provide appropriate care when you are called upon to help a person who has sustained an injury or sudden illness. Assess a patient's condition and recognize and care for life-threatening emergencies. Minimize a patient's discomfort and prevent further complications until more advanced medical personnel take over.
	 Tell participants: "As the first trained professional on the scene, your actions are critical and they may determine whether a seriously injured or ill person survives." Describe how the emergency medical services (EMS) system and EMRs play a vital role in the health and safety of the population. Explain that the role of an EMR varies based on state and location of practice. Reinforce that EMRs provide a vital link between the first actions of bystanders and more advanced care. Re-emphasize that EMRs save many lives and minimize many injuries.

TOPIC: THE EMS SYSTEM

Time: 15 minutes

ACTIVITY	 Ask participants to describe what they know about the EMS system. Then ask participants to describe the types of EMS systems that they have seen in their communities.
Course Presentation Slides 3–5	 Instructor's Note: Responses could include: Fire-based services (fire-rescue departments). Private services (private companies). Hospital-based services. Third services. Other systems, such as police and private systems.
THE EMS SYS	STEM HISTORY AND TODAY
KEY POINTS	 In the early 1960s in the United States, firefighters were some of the first responders trained in CPR and basic first aid. However, there was no directed, formal EMS network and education requirements differed by location. In 1966 the National Academy of Sciences/National Research Council (NAS/NRC) documented the problems with emergency care at the time in a white paper called "Accidental Death and Disability: The Neglected Disease of Modern Society."

	 In 1973 in response to the white paper, Congress enacted the Emergency Medical Services Act, which created a multi-tiered, nationwide system of emergency healthcare and called for standardized training within the EMS system. Today, several types of systems exist. Delivery of care may be different, but all have the same goal: provide care according to community needs and resources. The National Highway Traffic Safety Administration (NHTSA) oversees the national EMS system. Each state and territory has a lead EMS office of its own. State EMS agencies are responsible for overall planning, coordination and regulation of the EMS system within the state and for licensing or certifying EMS providers. 	
COMPONENT	S OF AN EMS SYSTEM	
KEY POINTS	 Ten components make up an effective EMS system. These are also known as the NHTSA Technical Assistance Program Assessment Standards. 	
ACTIVITY	 Have the participants break up into small groups. Assign each group a few components of the standards, being sure to assign all topics. Using the textbook, ask them to describe what is addressed by each of the standards. 	
	 Instructor's Note: Refer to Chapter 1, The Emergency Medical Responder, page 6 in the textbook for a description of the following standards: 1. Regulation and policy 2. Resource management 3. Human resources and training 4. Transportation 5. Facilities 6. Communications 7. Public information and education 8. Medical direction 9. Trauma systems 10. Evaluation 	
LEVELS OF E	MS TRAINING	
KEY POINTS	 The National Standard Curricula (NSC) were developed in response to a congressional mandate to standardize education, such as course planning and structure, objectives, lessons, content and hours of instruction. The National EMS Education Standards replaced the NSC and set minimum learning objectives for each level of practice. National EMS certification is available for all levels of providers and includes a standardized examination process to ensure entry-level competence of EMS providers. 	
NATIONAL SC	NATIONAL SCOPE OF PRACTICE	
KEY POINTS	 Scope of practice refers to the range of duties and skills that an EMR is allowed and expected to perform when necessary, using reasonable care and skill based on level of training. It provides guidance to states but does not have regulatory authority. EMRs are governed by legal, ethical and medical standards. Responders must be aware of the variations that exist for their level of training, certification and/or licensure in their region. 	

ACTIVITY	 Tell participants that there are four nationally recognized levels of training for prehospital emergency care and write each level on newsprint: emergency medical responder (EMR), emergency medical technician (EMT), advanced emergency medical technician (AEMT) and paramedic. Assign participants to small groups. Assign each group one or more levels of training, being sure to assign all topics, and ask them to use the textbook to create a list of key elements for the levels. Then have the groups present their information to the rest of the class.
	 Instructor's Note: Information presented should include: Emergency medical responder (EMR): Basic knowledge and skills needed to provide emergency care; certification to provide care until a more highly trained professional arrives. Emergency medical technician (EMT): Assumption of responsibility of care from EMR; tasks of stabilizing and preparing patient for transport; gives basic emergency medical care and transportation for critical and emergent patients who access the EMS system; formerly called EMT-Basic. Advanced emergency medical technician (AEMT): Additional training over that of an EMT; ability to insert IVs, administer medications, perform advanced airway procedures; formerly called EMT-Intermediate. Paramedic: More in-depth training than AEMTs; additional knowledge about performing physical exams; ability to perform more invasive procedures; formerly called EMT-Paramedic.
WORKING W	TH OTHER RESPONDERS AND CONTINUITY OF CARE
KEY POINTS	 As an EMR, you will often be the first on the scene and begin the course of action, collecting information that will need to be passed on to the next level of personnel when they arrive or to the receiving facility if you are providing transport. A smooth transition of care depends on the proper and thorough relay of information. As an EMR, you will be working and communicating with other medical personnel including EMTs, AEMTs and paramedics as well as law enforcement personnel, emergency management, home healthcare providers and others.

TOPIC: THE EMERGENCY MEDICAL RESPONDER

DVD Course Presentation Slides 6-12	 Show the video segment, "The Role of the Emergency Medical Responder" (1:02). Answer participants' questions about the video segment.
ACTIVITY OPTION A Time: 5 minutes	 Ask participants to describe what they think is involved in being an EMR. Instructor's Note: Responses could include: Providing emergency care. Talking with patients and bystanders. Maintaining safety of the patients and bystanders.

PERSONAL CHARACTERISTICS AND PROFESSIONAL BEHAVIOR	
KEY POINTS	Responsibilities of an EMR require that they demonstrate certain characteristics. These include:
	 Maintaining a caring and professional attitude.
	 Controlling your fears.
	• Presenting a professional appearance.
	 Keeping your knowledge and skills up-to-date. Maintaining a cofe and healthy lifestyle.
	 Maintaining a safe and healthy lifestyle.
ACTIVITY	Using the following scenario, ask participants what personal characteristics would be most important to display as an EMR and how would they demonstrate them: You are called to the scene of a traffic collision in which a vehicle struck an older woman crossing the street. The driver of the vehicle is sitting on the sidewalk. The older woman is sitting in the middle of the road, crying and trembling. Her leg is bleeding and a section of bone can be seen protruding out of the skin. She has multiple bleeding wounds on the other leg and upper arms. Several lay responders have been providing care to the woman. One of the bystanders begins to scream at the driver about driving too fast and not paying attention.
	Instructor's Note: Responses could include:
	 Attempting to calm the woman and address her immediate needs, thanking the lay responders for their help, ensuring the safety of both patients (the older woman and the driver) and attempting to calm the screaming bystander or diverting him away from the driver are helpful in presenting a caring and professional attitude. Taking a deep breath, maintaining focus on the patients and not the unpleasant site of blood or the protruding bone and asking bystanders to assist as necessary are helpful in controlling personal fears.
MEDICAL DIR	ECTION
KEY POINTS	 Medical direction refers to the process by which a physician directs the care provided by out-of-hospital providers to individuals who are injured or ill. Typically a medical director assumes responsibility for the care provided, indirectly or directly. Indirect or "offline" medical direction is care that is directed through standing orders, which allows EMS personnel to provide certain types of care without speaking to a physician. Direct or "online" medical direction is care that is directed by speaking directly with the physician via mobile phone, radio or to be been diversed was not accounted by standing or deside the physician of the phys
telephone for other procedures not covered by standing orders. RIGHT TO PRACTICE	
KEY POINTS	EMRs must follow state regulations that determine what they can and
	cannot do.
	EMRs must be licensed through the state EMS office and licensing agency of the state.
	EMR credentialing involves three aspects: certification, licensure and local credentialing.
	EMR certification is achieved by obtaining and maintaining the National EMS Certification. It does not grant the right to practice.

	 Licensure acknowledges that the bearer has permission to practice in the licensing state. It is the highest level of public protection. The state is the final authority and can revoke state licensure if appropriate. EMS providers must meet local credentialing requirements to maintain employment or obtain certain protocols to continue to practice. Most employers have additional requirements as part of
	 an orientation program that are similar to local credentialing. EMRs must follow any policies and procedures based on national, state, local or employer requirements.
RESEARCH	
KEY POINTS	 The fields of emergency care and emergency medicine are constantly evolving. Quality improvement (QI) or continuous quality improvement (CQI) allows for continuing assessment and reassessment of all aspects of the EMS system. The goal of an EMS system is to provide the highest quality of care possible throughout the country, equally accessible to all citizens. QI programs, through research, can assess if this goal is being met.

WRAP-UP

ACTIVITY Course Presentation Slide 13	 Revisit the opening scenario: A terrified mother pulls her child from the bottom of a pool while a neighbor calls 9-1-1 for help. You are the first to arrive at the scene and see the neighbor trying to breathe air into the boy's limp body. The mother looks to you helplessly. Ask participants: "How would you respond?"
	 Instructor's Note: Responses should include: Ensuring your safety and the safety of any bystanders. Gaining safe access to the patient. Determining any threats to the patient's life. Asking the neighbor to call for more advanced medical personnel. Providing needed care for the patient. Assisting more advanced medical personnel when they arrive. Recording what you saw, heard and did at the scene. Reassuring the patient's mother and the neighbor by maintaining a caring and professional attitude, controlling your fears and presenting a professional appearance.

KEY POINTS	 An EMR's primary role is to provide emergency care at the scene while working with other services and healthcare personnel. EMRs must continue to grow and learn along with the field, remaining certified and retaining licensure to practice in the chosen state. Effective EMRs must be able to keep up with the professional and personal side of work. EMRs have a responsibility to remain fit and healthy, maintaining a healthy lifestyle and being aware of choices and how they can affect job performance in order to perform their duties accordingly. The size and scope of the EMS system varies based on population size, needs and resources. All systems share commonalities: need for certification and licensure and a goal of providing equal access to prehospital care for all citizens.
ASSIGNMENT FOR THE NEXT LESSON	 Read Chapter 2, The Well-Being of the Emergency Medical Responder, pages 15–32 and 38–39.
INSTRUCTOR PREPARATION	 Review Chapter 2, The Well-Being of the Emergency Medical Responder, pages 15–32. Review the video segment, "Bloodborne Pathogens Training: Preventing Disease Transmission" (15:00). Review the skills and obtain any necessary equipment and supplies for Lesson 2.



BLOODBORNE PATHOGENS: PREVENTING DISEASE TRANSMISSION

Lesson Length: 120 minutes

MATERIALS, EQUIPMENT AND SUPPLIES

- *Emergency Medical Response* textbook
- Course Presentation Slides 14–32
- LCD projector, screen and computer
- Emergency Medical Response DVD
- DVD player and monitor
- Disposable latex-free gloves (multiple sizes)
- Examples of masks (including high-efficiency particulate air [HEPA] and N95), gowns, eye
 protection, CPR breathing barriers and biohazard bags

LESSON OBJECTIVES

Knowledge

After completing this lesson, participants will be able to:

- Describe how the immune system works.
- Identify ways in which diseases are transmitted and give an example of how each transmission can occur.
- Describe diseases that cause concern and how they are transmitted.
- Describe conditions that must be present for disease transmission.
- Explain the importance of standard precautions.
- Identify standard precautions to protect yourself against disease transmission.
- Describe the steps an emergency medical responder (EMR) should take for personal protection from bloodborne pathogens.
- Describe the procedure an EMR would use to disinfect equipment, work surfaces, clothing and leather items.
- Explain the importance of documenting an exposure incident and post-exposure follow-up care.
- Explain how the OSHA standard for bloodborne pathogens influences your actions as an EMR.
- Acknowledge the importance of knowing how various diseases are transmitted.
- Demonstrate the proper techniques for placing and removing personal protective equipment (PPE).
- Use appropriate PPE and properly remove and discard the protective garments, given a scenario in which potential exposure takes place.

Skill

After completing this lesson, participants will be able to:

Demonstrate the proper technique for removing disposable latex-free gloves.

TOPIC: INTRODUCTION

ACTIVITY Course Presentation Slide 15	 Review the opening scenario: Your police unit responds to a call for a medical emergency involving a man who has collapsed in front of a school building. When you and your partner arrive, you see that the man is bleeding from the mouth and face. Vomit and blood are on the ground around him. "His face hit the ground when he fell," a bystander says. The man does not appear to be breathing. Ask participants: "How would you respond?" "What can you do to protect yourself from possible disease transmission?"
	Instructor's Note: Let participants provide responses, guiding them to the key areas of disease transmission, such as exposure to pathogens in blood or OPIM.
	 Tell participants: "One way that EMRs can look after themselves is by preventing disease transmission." Introduce the term "bloodborne pathogens," which may be present in the blood and OPIM and can cause disease when certain conditions are present. Emphasize that being aware of disease-causing agents, how they are spread and their signs and symptoms will help prevent exposure to these pathogens.

TOPIC: PREVENTING DISEASE TRANSMISSION

Time: 20 minutes

KEY POINTS Course Presentation Slides 16-17	 Preventing disease transmission requires understanding how infections occur, how diseases spread from one person to another and what you can do to protect yourself and others. Infectious diseases can be spread from infected people and from animals, insects or objects that have been in contact with them. Ask participants: "What does the term pathogen mean?"
	 Instructor's Note: Responses should include: Any disease-causing agent, such as germs, bacteria, viruses, fungi, protozoa, yeasts, rickettsia, parasitic worms and prions.
DVD	 Show the video segment, "Bloodborne Pathogens Training: Preventing Disease Transmission" (15:00). If preferred, show this video in the next lesson. Answer participants' questions about the video segment.
DISEASE-CA	JSING AGENTS
KEY POINTS	 Disease-causing agents are called pathogens or germs. Pathogens enter the body, sometimes overpowering the body's natural defenses, causing illness. Bacteria and viruses cause most infectious diseases. Bacteria do not depend on other organisms to live and can live outside of the body.

	 Unlike bacteria, viruses depend on other organisms to live and reproduce. Once in the body, viruses may be difficult to eliminate because very few medications are effective against them. The body's immune system is the main defense against bacteria and viruses. Some infections (e.g., HIV, yellow fever) affect the entire body; others affect only one organ or body system.
ACTIVITY	Divide participants into small groups. Assign each group one or more of the body's natural defenses (e.g., intact skin and mucous membranes, immune system and immunity), being sure to assign all topics. Using the textbook, have them discuss how the defense(s) prevents infection. Then have each group present their information to the rest of the class.
	 Instructor's Note: Responses should include: Intact skin and mucous membranes in the mouth, nose and eyes keep infectious microorganisms out; damaged skin can allow germs to enter through openings, such as cuts or sores; and mucous membranes trap germs and force them out through a cough or sneeze. If skin and mucous membranes fail, the body's immune system begins to fight the disease through antibodies and white blood cells. If the body cannot fight off the infection, the invading pathogen becomes established, causing an infection ranging from mild to serious. Fever and exhaustion are often a sign and symptom that the body is fighting off an infection; other common signs and symptoms are headache, nausea and vomiting. Three types of immunity include innate, adaptive and passive: Innate immunity is the type of protection present at birth. It also refers to the body's natural barriers that prevent most diseases from entering the body. Adaptive immunity develops on exposure to diseases or through immunizations. Passive immunity results from external sources, such as from a mother's breast milk to an infant.

TOPIC: HOW DISEASES SPREAD

KEY POINTS	 Exposure to blood and OPIM can occur through injuries from needles and other sharps devices and from direct and indirect contact with skin and mucous membranes. For any disease to spread, four conditions must be met:
Course Presentation Slides 18–19	 Presence of a pathogen Sufficient quantity of the pathogen to cause the disease A person must be susceptible to the pathogen Pathogen must pass through the correct entry site Occupational exposure to bloodborne pathogens (primarily
	 hepatitis B, hepatitis C and HIV) occurs primarily through direct or indirect contact with infected blood or OPIM. Hepatitis B, hepatitis C and HIV are not spread by food or water or by casual contact. The highest risk of occupational transmission is unprotected direct or indirect contact with infected blood.

DIRECT CONT	ΓΑCΤ
KEY POINTS	 Direct contact transmission occurs when infected blood or OPIM from one person enters another person's body at a correct entry site. Examples of direct contact include infected blood splashing in the eye or directly touching the blood or OPIM of an infected person.
INDIRECT CO	NTACT
KEY POINTS	 Indirect contact transmission occurs when a person touches an object that contains the blood or OPIM of an infected person and the infected blood or OPIM enters the body through a correct entry site. Examples of indirect contact include touching soiled dressings or equipment and work surfaces contaminated with an infected person's blood or OPIM.
RESPIRATOR	Y DROPLET AND VECTOR-BORNE TRANSMISSION
KEY POINTS	 Droplet transmission occurs when a person inhales droplets propelled from an infected person's cough or sneeze from within a few feet. A person can also become infected <i>indirectly</i> by touching a surface recently contaminated by infected respiratory droplets and then touch the mouth, nose or eyes with contaminated hands. Vector-borne transmission occurs when an infectious source, such as an animal or insect bite or sting, penetrates the body's skin.
RISK OF TRA	NSMISSION
KEY POINTS	 Infectious diseases have widely varying levels of risk of transmission. For example, hepatitis B, hepatitis C and HIV share a common mode of transmission but differ in the risk of transmission.
ACTIVITY OPTION A	 Ask participants to give examples of diseases that they think might be spread by direct or indirect contact, respiratory droplets and vector-borne transmission.
Time: 5 minutes	 Instructor's Note: Responses could include: Hepatitis B or HIV for direct contact (e.g., sustaining a needlestick injury from a person infected with hepatitis B or HIV). Skin infections for indirect contact (e.g., touching a soiled dressing with a hand that has a cut). Colds or other respiratory illnesses for respiratory droplet transmission (e.g., being sneezed or coughed on by a person who has a cold or respiratory infection). Rabies for vector-borne transmission (e.g., being bitten by a dog with rabies).
ACTIVITY OPTION B Time: 5 minutes	 Using the following scenario, ask participants to identify ways that an infection might be transmitted: You arrive at the home of an older man who has fallen. The man's son called to report the fall. While evaluating the patient, you notice the son coughing, sneezing and blowing his nose quite a bit. He tells you that he has the "flu." Instructor's Note: Responses could include: Infection might be transmitted directly through respiratory droplets from sneezing or coughing or indirectly through respiratory droplets that have come into contact with items the son has touched recently, especially after blowing his nose, such as a table or chair.

TOPIC: DISEASES THAT CAUSE CONCERN

HEPAIIIIS A,	B, C, D AND E
KEY POINTS	 Hepatitis is a type of liver disease.
Course	Hepatitis A, caused by the hepatitis A virus (HAV), is spread primarily through food or water that has been contaminated by stool from an infected person.
Presentation	 Transmission can occur by the following:
Slides 20-21	 Eating food prepared by someone infected with HAV who did not wash hands after using the bathroom
	 Engaging in certain sexual activities, such as oral-anal contact with someone infected with HAV
	 Changing a diaper and then not washing hands
	 Drinking water that has been contaminated
	 HAV infection can be prevented with the hepatitis A vaccine.
	 The most effective prevention is healthy habits, such as washing hands thoroughly before preparing food, after using the toilet and after changing a diaper.
	Hepatitis B is a liver infection caused by the hepatitis B virus (HBV).
	\circ The most effective means of prevention is the hepatitis B vaccine.
	 Transmission can occur through contact with infectious blood, semen and other OPIM, primarily through the following:
	 Engaging in certain sexual activities with someone infected with HBV
	 Sharing of contaminated needles, syringes or other injection equipment
	 Needlestick or other sharp instrument injuries
	 The hepatitis B vaccination series must be made available within 10 days of initial assignment to all employees who have a potential for occupational exposure after completing appropriate training.
	 Hepatitis C is a liver disease caused by the hepatitis C virus (HCV).
	 It is the most common chronic bloodborne infection in the United States.
	 Transmission can occur through contact with infectious blood, primarily through the following:
	 Sharing of contaminated needles, syringes or other injection equipment
	 Less commonly through engaging in certain sexual activities with someone infected with HCV, childbirth if the mother is infected and needlestick or other sharp instrument injuries
	 There is no vaccine against HCV and no treatment available to prevent infection after exposure.
	Hepatitis D is a serious liver disease caused by the hepatitis D virus (HDV).
	 It relies on HBV to replicate and is uncommon in the United States.
	• It is transmitted through contact with infectious blood (similar to HBV).
	 There is no vaccine for hepatitis D.
	Hepatitis E is caused by the hepatitis E virus (HEV).
	 It is commonly transmitted by the fecal-oral route and is associated with ingesting drinking water contaminated with fecal material in countries with poor sanitation.
	 There is currently no FDA-approved vaccine for hepatitis E.

HIV/AIDS	
KEY POINTS	 HIV is the virus that causes AIDS. It attacks white blood cells and destroys the body's ability to fight infection and weakens the immune system. Opportunistic infections are infections that strike people with weakened immune systems, such as those with AIDS. These infections may include severe pneumonia, tuberculosis, Kaposi's sarcoma and other unusual cancers. When an infected person has a significant drop in a certain type of white blood cell or shows signs of having certain infections or cancers, the patient may be diagnosed with AIDS.
ACTIVITY OPTION A	 Ask participants if they have ever had influenza; then ask them if anyone that they had lived with at the time, such as family members or roommates, went on to develop influenza. Ask participants how they think they contracted influenza.
	 Getting it from someone else who had been sick. Being near someone while coughing, sneezing, blowing the nose or by touching something the infected person had touched or come in contact with. Not washing the hands after touching the item or failing to wash the hands after blowing the nose.
ACTIVITY OPTION B	 Have participants split up into small groups. Using the textbook, assign each group one or more of the other diseases of concern (tuberculosis, meningitis, methicillin-resistant <i>Staphylococcus aureus</i> [MRSA], and influenza), being sure to assign all topics. Ask each group to identify the cause of the infection and how it is transmitted.
Time: 10 minutes	 Instructor's Note: Responses should include: For tuberculosis: It is caused by a bacterium called Mycobacterium tuberculosis that usually attacks the lungs but can also damage other organs. It is spread through the air when an infected person coughs, sneezes or talks. For meningitis: It can be caused by bacteria (causing a serious infection that is potentially fatal) or a virus (less severe and usually resolves itself without specific treatment); it is a contagious meningococcal infection that attacks the meninges (the protective covering surrounding the brain and spinal cord). It is transmitted from person to person through droplets. It is spread easily via close and prolonged contact and living in close quarters or dormitories. For MRSA: It is a type of bacterium that frequently lives on the skin and in the nose without causing any health problems. It can be spread from one person to another through casual contact or contaminated objects. It is more difficult to treat because this infection is resistant to many types of antibiotics. For influenza: It is a respiratory illness caused by both human influenza A and human influenza B viruses. It is transmitted from person to person to person via respiratory droplets from coughing or sneezing, and through direct or indirect contact with respiratory secretions.

TOPIC: PROTECTING YOURSELF FROM DISEASE TRANSMISSION

KEY POINTS	EMRs may be exposed to many illnesses and infections. The Context for Disease Control and Drevention (CDC) is a valuable.
	The Centers for Disease Control and Prevention (CDC) is a valuable resource for information on infectious diseases.

TOPIC: OSHA REGULATIONS

KEY POINTS Course Presentation Slides 22–30	 The Occupational Safety and Health Administration (OSHA) has issued regulations about on-the-job exposure to bloodborne pathogens and determined that employees are at risk when exposed to blood or OPIM. Employers are required to reduce or remove hazards from the workplace that may place employees in contact with infectious materials. OSHA regulations have placed specific responsibilities on employers for employee protection. These include: Identifying positions or tasks covered by the standard. Creating an exposure control plan to minimize the possibility of exposure and making the plan easily accessible to employees. Developing and putting into action a written schedule for workplace cleaning an decontamination. Creating a system for easy identification of soiled material and its proper disposal. Developing a system of annual training for all covered employees. Offering the opportunity for employees to get the hepatitis B vaccination at no cost. Establishing clear procedures to follow for reporting an exposure. Creating a system of recordkeeping. In workplaces where there is potential risk of injury from contaminated sharps, soliciting input from nonmanagerial employees with potential risk regarding the identification, evaluation and selection of effective engineering and work practice controls. If a needlestick injury occurs, recording the appropriate information in the sharps injury log. Maintaining a sharps injury log in such a way that protects the privacy of employees.
NEEDLESTIC	K SAFETY AND PREVENTION ACT
KEY POINTS	 Revision of OSHA standards in 2001 clarified the need for employers to select safer needle devices and to involve employees in identifying and choosing these devices. Needleless systems are one option. The revised standards also required employers to maintain a log of injuries from contaminated sharps.
	Instructor's Note: If preferred and depending on class size, time and availability of samples of personal protective equipment (PPE), first review the information about PPE, engineering and work practice controls and vehicle and equipment cleaning and disinfecting and then have participants practice the skill for removing gloves.

ACTIVITY OPTION A Time: 10 minutes	 Have participants break into small groups. Using the textbook, ask them to develop a list of how EMRs can protect themselves from disease transmission, generally and specifically. Then have the groups share their lists with the rest of the class. Instructor's Note: Responses should include: Keeping immunizations current. Having regular physical checkups. Being knowledgeable about pathogens. Always following standard precautions when providing care, including the use of disposable latex-free gloves. Practicing proper hand hygiene. Following engineering and work practice controls. Keeping all equipment clean and disinfected. Properly disposing of contaminated equipment.
ACTIVITY OPTION B Time: 15 minutes	 Divide participants into small groups. Assign each group one or more of the following topics, being sure to assign all topics: general measures for protecting themselves, exposure control plan, immunizations, standard precautions, PPE and hand hygiene. Using the information in the textbook, have each group describe the topic and the ways in which it helps prevent disease transmission. Instructor's Note: Responses should address the following: General measures: Keeping immunizations current, having regular physical checkups and being knowledgeable about potential pathogens Exposure control plan: Following the OSHA regulations, which require employers to have an exposure control plan (a written program outlining the protective measures the employer will take to minimize or eliminate employee exposure incidents) and include an exposure determination, methods for implementing other parts of the OSHA standard and procedures for evaluating details of an exposure incidents), chicken pox (varicella); influenza; meningococcal (meningitis) and screening for theoreulosis along with an annual tuberculin test Standard precautions: Using a combination of body substance isolation (BSI) and universal precautions to prevent occupational-risk exposure to blood and OPIM through the use of PPE, proper hand hygiene, engineering controls, work practice controls, proper equipment cleaning and spill cleanup procedures; assumes that all body fluids may be infective PPE: Using disposable late-free gloves, eye protection (such as safety glasses, cluding high-efficiency particulate air (HEPA) or N95 masks and disposable gowns Hand hygiene: Properly washing the hands is the most effective measure to prevent the spread of infection by physically removing disease-causing germs picked up from contact with others or contaminated surfaces and using alcohol-based hand sanitizers when soap and running water are not available and the hands are not visibly so

SKILL SESSION

REMOVING D	REMOVING DISPOSABLE LATEX-FREE GLOVES	
ACTIVITY	 Tell participants that disposable latex-free gloves should be worn for all patient contact when providing care. Give each participant a pair of disposable latex-free gloves. Guide participants through the steps listed on the skill chart. Observe each participant performing the technique and evaluate completion of the skill using the Skill Checklist. Intervene and provide positive and corrective feedback as needed to each participant individually when possible. Be sure to point out any common errors, such as touching a portion of the glove that is likely to be contaminated with a bare hand. Check off participant's progress on the Participant Progress Log. 	
SKILL	 After providing care and making sure to never to touch the bare skin with the outside of either glove: 1. Pinch the palm side of one glove on the outside near your wrist. 2. Pull the glove toward your fingertips, turning it inside out as you pull it off your hand. 3. Hold the glove in the palm of your other (still gloved) hand. 4. Carefully slip two fingers under the wrist of the other glove. Avoid touching the outside of the glove. 5. Pull the glove toward your fingertips, turning it inside out as you pull it off your hand. The other glove is now contained inside. 6. Dispose of the gloves (and any other PPE) properly in a biohazard container. Wash your hands thoroughly with soap and running water, if available. Otherwise, rub your hands thoroughly with an alcohol-based hand sanitizer if they are not visibly soiled and then wash your hands as soon as it is practical. Instructor's Note: After all participants practice the technique, engage them in a discussion related to any issues or problems that they may have had with removing the gloves. 	
PERSONAL P	ROTECTIVE EQUIPMENT	
ACTIVITY	 Using the following scenario, ask participants what PPE would be appropriate to use: The foreman of a furniture manufacturing plant has called for the medical emergency team to respond to a man who has cut himself while cutting a piece of wood. When you and your partner arrive, you see that the man is bleeding from a deep cut on his forearm. Blood has pooled on the ground around him. The man does not appear to be conscious. Instructor's Note: Responses should include: Using gloves due to the bleeding. Using gowns only if there is a risk for splashing, depending on the severity of the forearm bleeding. Using face shields only if splashing is a possibility. Using a resuscitation mask or BVM as the man appears to be unconscious and may not be breathing. 	

ENGINEERIN	IG AND WORK PRACTICE CONTROLS
KEY POINTS	 Engineering controls are measures that isolate or remove a hazard from the workplace. Examples include: Sharps disposal containers. Self-sheathing needles. Safer medical devices, such as sharps with engineered sharps injury protections or needleless systems. Use of biohazard containers and labels, and posting of signs at entrances to areas where infectious materials may be present. PPE. Biohazard containers are marked with a biohazard symbol that warns of potential infection hazards. Biohazard labels are required on any container holding contaminated materials. Signs should be posted at entrances to work areas where infectious materials are present.
	Instructor's Note: Show participants examples of biohazard bags or containers, if available.
	 Work practice controls reduce the likelihood of exposure by changing the way a task is carried out. Examples of work practice controls include:
	 Placing sharps items (e.g., needles, scalpel blades) in puncture-resistant, leak-proof and labeled containers, and having the containers at the point of use. Avoiding splashing, spraying and splattering droplets of blood or
	 OPIM when performing all procedures. Removing and disposing of soiled protective clothing as soon as possible.
	 Cleaning and disinfecting all equipment and work surfaces possibly soiled by blood or OPIM.
	 Washing hands thoroughly with soap and water immediately after providing care, and using a utility or restroom sink (not one in a food preparation area).
	 Not eating, drinking, smoking, applying cosmetics or lip balm, handling contact lenses, or touching the mouth, nose or eyes when in an area where exposure to infectious materials is possible.
	• Using alcohol-based hand sanitizers where hand-washing facilities are not available.

VEHICLE AND	EQUIPMENT CLEANING AND DISINFECTING
KEY POINTS	 Equipment and surfaces used must always be cleaned and disinfected or properly disposed of.
	 All used disposable or single-use items are placed in labeled biohazard containers.
	 All soiled clothing is placed in marked plastic bags for disposal or washing.
	 Spills must be cleaned up immediately or as soon as possible after the spill occurs.
	 Wear disposable latex-free gloves and other PPE when cleaning spills.
	 If sharp objects are mixed in the spill, never use the hands to pick these up.
	 The area should be flooded with fresh disinfectant solution (e.g., 1½ cups of liquid chlorine bleach to 1 gallon of water), which should stand for at least 10 minutes.
	 Use appropriate material to absorb the spill and the solution, and dispose of it in a labeled biohazard container.
	 Soiled boots, leather shoes or other leather goods are scrubbed with soap, a brush and hot water.
	 Vehicles are cleaned and disinfected according to standard procedures; all surfaces that may have come in contact with the patient or materials that may have become contaminated must be cleaned and disinfected.
	 Environmental Protection Agency (EPA)-registered hospital disinfectant is used according to the manufacturer's recommendations.

TOPIC: IF AN EXPOSURE OCCURS

KEY POINTS	Exposure incidents involve contact with blood or OPIM.
Course Presentation Slide 31	Immediate steps after an exposure include the following:
	 Clean the contaminated area thoroughly with soap and water. Wash needlestick injuries, cuts and exposed skin with soap and water.
	 For blood and OPIM that splashes to the mouth and nose, flush with water.
	 If the eyes are involved, irrigate with clean water, saline or sterile irrigants for 20 minutes.
	 Seek immediate follow-up care as identified in the employer's exposure control plan.
	Any exposure incident must be reported to the person identified in the employer's exposure control plan (often the infection control officer) and to the EMS providers taking over the patient's care.
	The events, including the time and date of the exposure, circumstances of the exposure, any actions taken after exposure and other information required by the employer are recorded.

WRAP-UP	Time: 10 minutes
Course Presentation Slide 32	 Emphasize the need for EMRs to prevent disease transmission. Review the various methods for disease transmission. Emphasize the need to use all possible measures to reduce the risk of disease transmission. Stress the need for using gloves when providing any care.
ACTIVITY	 Review the closing scenario: <i>After EMS personnel assumed the care of your patient, you note that, in</i> <i>addition to the blood and vomit on the ground, there is some blood on your</i> <i>disposable gloves and the mask of your BVM.</i> Ask participants: "What steps would you follow to avoid coming in contact with blood and OPIM?" "How should the area be decontaminated?"
	 Instructor's Note: Responses should include: To avoid contact with blood and OPIM, follow the appropriate protocols for glove removal and equipment cleaning, disinfecting or disposal. Also, wash hands after removing gloves and after disinfecting equipment. To decontaminate the area, wear disposable gloves and other PPE and immediately clean the area. Flood the area with a fresh disinfectant solution. Use a commonly accepted disinfectant of approximately 1½ cups of liquid chlorine bleach to 1 gallon of water (1 part bleach per 10 parts water, or about a 10 percent solution), and allow it to stand for at least 10 minutes. Other commercial disinfectant/antimicrobial solutions are available and may have different set times. Follow local protocols and manufacturer's instructions. Use appropriate material to absorb the solution and dispose of it in a labeled biohazard container.
KEY POINTS	 Bloodborne pathogens, most commonly bacteria and viruses, are present in blood and OPIM and can cause disease in humans. For any disease to spread, pathogens must be present in sufficient quantity and pass through broken skin or mucous membranes of a susceptible person. Disease transmission can occur through direct contact, indirect contact, respiratory droplets and vector-borne transmission. The bloodborne pathogens of primary concern to EMRs are hepatitis B, hepatitis C and HIV, which spread primarily through direct or indirect contact with infected blood or OPIM. Standard precautions require that all blood and OPIM are to be treated as if known to be infectious. EMRs should follow standard precautions to prevent the spread of bloodborne pathogens and other diseases by employing the following precautions: Using PPE Washing hands frequently Properly cleaning and disinfecting equipment Cleaning up after spills Properly disposing of used disposable or single-use equipment Following other specific engineering and work practice controls as outlined in your exposure control plan If exposure occurs, immediately wash, flush or irrigate the exposed body area and report the incident to the appropriate person.

ASSIGNMENT FOR THE NEXT LESSON	 Read Chapter 2, The Well-Being of the Emergency Medical Responder, pages 32–37. Read Enrichment: Health of the Emergency Medical Responder (<i>optional</i>), pages 40–43.
INSTRUCTOR PREPARATION	 Review Chapter 2, The Well-Being of the Emergency Medical Responder, pages 32–37. Review Enrichment: Health of the Emergency Medical Responder (<i>optional</i>), pages 40–43. Obtain any necessary equipment and supplies for Lesson 3.

SKILL CHECKLIST	
Removing	Participant completes the following:
Disposable Latex-Free Gloves	 Pinches the palm side of one glove on the outside near the wrist Carefully pulls the glove off towards the fingertips, turning it inside out as it is pulled off the hand Holds the glove in the palm of the other still-gloved hand Slips two fingers under the glove at the wrist of the remaining gloved hand; avoids touching the outside of the glove Pulls the glove towards the fingertips, turning it inside out as it is pulled off the hand The first glove should now be contained inside the glove that was just removed Disposes of the gloves (and any other PPE) properly in a biohazard container Washes hands thoroughly with soap and running water after removing the gloves Alternatively, rubs hands thoroughly with an alcohol-based hand sanitizer to clean the hands if they are not visibly soiled and then washes hands as soon as it is practical



THE WELL-BEING OF THE EMERGENCY MEDICAL RESPONDER

Lesson Length: 30 minutes (35 minutes with Enrichment)

MATERIALS, EQUIPMENT AND SUPPLIES

- Emergency Medical Response textbook
- Course Presentation Slides 33–44
- LCD projector, screen and computer

LESSON OBJECTIVES

Knowledge

After completing this lesson, participants will be able to:

- Identify the signs and symptoms of critical incident stress.
- Describe actions an emergency medical responder (EMR) could take to reduce or alleviate stress.
- Describe reactions a person might have when confronted with the dying process or actual death of another individual.
- List possible emotional reactions an EMR may experience when faced with trauma, illness, death and dying.
- Explain the importance of understanding the response to death and dying and communicating effectively with the patient's family.
- Describe the steps an EMR might take when approaching the family of a dead or dying patient.
- Recognize possible reactions of the EMR's family to the responsibilities of an EMR.
- Communicate with empathy to patients and their family members and friends.

TOPIC: INTRODUCTION

Time: 5 minutes

ACTIVITY	Review the following scenario:
Course Presentation Slide 34	 Your fire-rescue unit responds to a call for a medical emergency involving a man who has cut himself while doing yard work. When you and your partner arrive, you see that the lawn mower is turned upside down and there are tools lying near it. The man is bleeding from a large cut on his arm. "The lawn mower started on its own," a bystander says. The man is pale and clammy. Ask participants:
	 "How would you feel, physically and emotionally?"
	 "How stressful would a situation like this be for you?"
	 "What might be contributing to your feelings?"

Instructor's Note: Let participants provide responses, guiding them to the emotional aspects of care including possible dangers, physiologic demands, overwhelming sights and smells and the patient's condition.
 Tell participants: "EMRs experience an extraordinary number of stressful situations beyond what others encounter." Give examples of such situations, such as critical injury, death and dying. Tell participants: "To provide emergency care to others, it is important first to look after yourself. This includes physical, emotional and mental health concerns."

TOPIC: STRESSFUL SITUATIONS

ACTIVITY	 Ask participants for examples of stressful situations.
Course Presentation Slides 35–38	 Instructor's Note: Responses could include: Dangerous situations, such as fires, violent crimes or agricultural incidents. Physical and psychological demands, such as rescuing an abused child or extrication. Critically injured or ill people. Death and dying patients. Overpowering sights, smells and sounds. Multiple-patient situations. Angry or upset patients, family and bystanders.
KEY POINTS	 Dealing with death and the dying process is difficult for most people. Measures to help the patient and family deal with the dying process include: Recognizing that the patient's and the family's needs include dignity, respect, sharing, communication, privacy and control. Allowing the patient and the family to express rage, anger and despair. Listening empathetically and remaining calm and nonjudgmental. Not offering false reassurance. Using a gentle tone of voice. Letting the patient and the family know that everything that can be done to help will be done. Using a reassuring touch, if it is appropriate. Comforting the patient and the family. Resuscitation is <i>always</i> attempted for a patient without a pulse or breathing except in the following situations: A valid do not resuscitate (DNR) order or a Physician Orders for Life-Sustaining Treatment (POLST) form that meets local guidelines is present at the scene. These items will be discussed in future lessons. Obvious signs of death are present: Tissue decay (putrefaction) Rigor mortis Obvious mortal wounds Dependent lividity The situation is so dangerous that resuscitation attempts would endanger the EMR's life.

Everyone's reaction to death and dying is unique, but there are five predictable stages (responses) to grief:
• Denial
○ Anger
• Bargaining
• Depression
• Acceptance
The EMR must use good listening skills and support the patient and families through the emotions that they may experience.

TOPIC: STRESS MANAGEMENT

ACTIVITY	Ask participants to identify issues that cause them stress.
Course Presentation Slide 39	 Instructor's Note: Responses could include: Work. Friends and family members. Personal issues. Health concerns.
	Ask participants to describe some of the ways people manage stress.
	 Instructor's Note: Responses could include: Exercise. Deep breathing and relaxation techniques. Music. Unhealthy habits such as drug abuse, alcohol abuse, overeating and overworking.
KEY POINTS	 Stress is the body's normal response to any situation that changes a person's existing mental, physical or emotional balance. The response is highly individualized. Small amounts of stress can be positive, motivating people to be productive while too much stress or a strong response to stress can be harmful. Warning signs and symptoms of stress include: Difficulty sleeping and nightmares. Irritability with co-workers, family and friends. Feelings of sadness, anxiety or guilt. Indecisiveness. Loss of appetite. Loss of interest in sexual activity. Isolation. Loss of interest in work. Feelings of hopelessness. Alcohol or drug misuse or abuse. Inability to concentrate. An EMR must watch carefully for signs of stress when interacting with patients and their families.

TOPIC: INCIDENT STRESS MANAGEMENT

KEY POINTS Course Presentation Slides 40-42	 Critical incidents are those involving serious injury or death. Critical incident stress is the stress associated with an emergency that causes distress or disruption in a person's mental or emotional balance. Some effects may appear right away, and others appear only after days, weeks or months. Critical incident stress can interfere with job performance. Signs of critical incident stress reactions include the following: Confusion Shortened attention span Poor concentration Denial Guilt Depression Anger Change in interactions with others Increased or decreased eating Uncharacteristic, excessive humor or silence Any other unusual behavior Events that trigger critical incident stress are often powerful and traumatic and are usually outside the range of what is considered normal human experiences on the job. Participating in stress management classes and crisis mitigation training, creating a self-care plan and making advanced arrangements for coping with personal responsibilities may help an EMR cope with stress before it occurs.
ACTIVITY	 Using the following scenario, ask participants to identify issues that might cause stress and ways that an EMR can handle them: You are the first to arrive on the scene of a multi-vehicle collision involving a tractor trailer and several cars. The driver of the tractor trailer is severely injured with a portion of his hand partially severed. A person in one of the cars, a young teenager, has been thrown through the windshield and is lying in a contorted position on the side of the road. Another person is trapped in the car and unable to move her leg.
	 Instructor's Note: Responses could include: Stress-causing issues may include the collision scene itself and the amount of damage, the amount of blood, the partially severed hand and the age of one of the victims. Ways to manage the stress include taking a deep breath, gathering your thoughts, summoning more advanced medical personnel and drawing on any pre-incident education.

POST-INCIDENT STRESS MANAGEMENT	
KEY POINTS	 Steps to relieve stress include: Using quick relaxation techniques, such as deep, slow breathing. Eating a good meal and avoiding beverages with caffeine. Avoiding alcohol and drugs.
	 Reviewing the event and clearing up any uncertainties. Getting enough rest. Getting involved in some type of physical exercise or activity, either alone or in a group.
	 Manifestations of signs and symptoms of critical incident stress should be an indication to work with the employer to arrange for professional counseling by a licensed mental health professional. The most important thing EMRs can do to minimize the effects of any emergency is to express their feelings and thoughts after the incident.

WRAP-UP

ACTIVITY Course Presentation Slide 43	 Review the following scenario: After emergency medical services (EMS) personnel assumed the care of your patient with the injuries from the lawn mower, you note the large amount of blood left at the scene. Ask participants: "How might you respond physically and emotionally to such a stressful situation?" "What effects might this stressful situation have on you?"
KEY POINTS	 Attending to mental and emotional health concerns, both personal and those of the patients and families being helped, is essential. An emotional crisis often results from an unexpected, shocking and undesired event. Everyone experiences some or all the stages of grief. EMRs are subject to critical incident stress, which can occur immediately or later, possibly months after the incident. Professional counseling by a licensed mental health professional is important if signs of critical incident stress develop.
ASSIGNMENT FOR THE NEXT LESSON	 Read Chapter 3, Medical, Legal and Ethical Issues.
INSTRUCTOR PREPARATION	 Review Chapter 3, Medical, Legal and Ethical Issues. Obtain samples of advance directives. Review the legal guidelines specific to the area (state and local community) for the course related to scope of practice, standards of care, competency and Good Samaritan laws. Obtain any necessary equipment and supplies for Lesson 4.

ENRICHMENT: HEALTH OF THE EMERGENCY MEDICAL RESPONDER

INTRODUCTION	
ACTIVITY	 Ask participants what they do to stay healthy, physically and emotionally.
Course Presentation Slide 44	 Instructor's Note: Responses could include: Exercising, playing sports, swimming or riding a bicycle. Eating proper foods. Getting enough sleep. Taking time to have fun.
	Tell participants: "Being an EMR is a rewarding experience but it can also be physically, emotionally and mentally challenging. Making healthy lifestyle choices benefits EMRs and their patients."
PHYSICAL W	ELL-BEING
KEY POINTS	 Maintain physical fitness through regular cardiovascular training, strength training and stretching. Adhere to basic nutrition strategies including avoiding foods high in sugar, saturated fat and sodium. Obtain adequate amounts of sleep to promote clear thinking and hand-eye coordination. Take the necessary precautions against disease transmission, such as standard precautions and hand washing. Ensure safety by being aware of your surroundings, using proper lifting techniques and following proper procedures and protocols. Protect yourself from the effects of the sun.
MENTAL WELL-BEING	
KEY POINTS	 Recognize the warning signs of stress and use stress management techniques. Balance work and life demands properly. Avoid reliance on alcohol and drug use or abuse.



MEDICAL, LEGAL AND ETHICAL ISSUES

Lesson Length: 75 minutes

MATERIALS, EQUIPMENT AND SUPPLIES

- Emergency Medical Response textbook
- Course Presentation Slides 45–58
- LCD projector, screen and computer
- Samples of advance directives, if available

LESSON OBJECTIVES

Knowledge

After completing this lesson, participants will be able to:

- Define the legal duties of an emergency medical responder (EMR), including scope of practice and the standard of care.
- Define and discuss the ethical responsibilities of an EMR.
- Describe the various forms of consent and explain the methods of obtaining consent.
- Explain the difference between expressed consent and implied consent.
- Have a basic understanding of Good Samaritan laws.
- Discuss the implications of and steps to follow if a patient refuses care.
- Discuss advance directives, do not resuscitate (DNR) orders and Physician Orders for Life-Sustaining Treatment (POLST) forms, and explain their implications on emergency medical care.
- Explain other legal issues including assault and battery, abandonment and negligence.
- Explain the importance, necessity and legality of maintaining confidentiality about the condition, circumstances and care of the patient.
- Discuss the Health Insurance Portability and Accountability Act (HIPAA) Privacy Rule, including instances where disclosure of information is permitted.
- Describe the signs of obvious death.
- Understand the importance of and need for crime scene/evidence preservation.
- Understand the circumstances and general requirements of mandated reporting.

TOPIC: INTRODUCTION

Time: 5 minutes

ACTIVITY Course Presentation Slide 46	 Review the opening scenario: A 20-year-old cyclist on a mountain bike team was temporarily unconscious after falling off his bike during practice. As the athletic trainer for the team, you respond to the incident. The injured cyclist is awake but complaining of dizziness and nausea. After assessing and taking a history and baseline vital signs, you tell the cyclist to go home and rest. Ask participants: "Was this an appropriate response?" "Why or why not?"
	Instructor's Note: Let participants provide responses, guiding them to the key legal and ethical issues that might arise, such as standard of care, duty to act, patient consent, abandonment and negligence.
	Tell participants: "An EMR is guided by certain legal parameters, including the duty to act and adherence to professional standards of care."

TOPIC: LEGAL DUTIES

Time: 10 minutes

ACTIVITY	 Divide participants into small groups. Using the textbook, ask each group to examine the responsibilities associated with one or more of the following: scope of practice, standard of care, duty to act, competence, Good Samaritan laws, ethical obligations and decision-making models. Be sure to assign all topics. Have groups share their information with the rest of the class.
	 Instructor's Note: Responses should include: Scope of practice as the range of duties and skills an EMR is allowed and expected to perform as appropriate; also the authority to practice given by the state to individuals licensed to practice in that state. Standard of care as the criteria established for the extent and quality of EMR care and expectation of EMR to perform to at least the minimum standard set forth by their training and protocols. Duty to act as the obligation to respond to an emergency and provide care at the scene and, once care is initiated, to continue until the patient is turned over to someone with equal or higher training. Competence refers to the patient's ability to understand an EMR's questions and the implications of decisions made. EMRs need to obtain permission from competent patients before beginning any care and need to understand that a patient who is intoxicated or who has a drug abuse problem or cognitive impairment is not considered competent and requires notification of advanced medical care and law enforcement personnel. Good Samaritan laws as protection against claims of negligence when persons willingly provide emergency care in good faith without accepting anything in return. These laws, which differ from state to state, may apply to an off-duty EMR who volunteers to assist in an emergency in good faith. When a responder's actions are willful or reckless, however, these liability protections most likely will not apply. The laws do not protect individuals from a claim that an act was grossly negligent.

	 professional manner, striving to develop professional skills that surpass the minimum training standards; also responsibilities based on concepts of morals, ethics and applied ethics. Decision-making models as tools or techniques to assist in making decision that includes a set of principles, which, when applied, lead to the desired decision; also principles such as doing no harm, acting in good faith and acting in the patient's best interest.
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TOPIC: PATIENT CONSENT AND REFUSAL OF CARE

Cour	POINTS rse entation es 47–51	 Individuals have a basic right to refuse or accept care. To obtain consent, you must do the following: Identify yourself to the patient. State your level of training. Ask if you may help. Explain observations. Explain what is planned. Consent may be directly expressed or implied. If the patient is a minor, consent must be obtained from a parent or legal guardian, if available. Expressed consent is obtained verbally or through a gesture. Implied consent is given when the patient may be unconscious, confused or mentally impaired. The law assumes that the patient would give informed consent for care if able to do so. Consent is implied for a minor if the conditions are life threatening and a parent or legal guardian is not present. Emancipated minors are those who have been granted the legal rights to make their own decisions, such as one who is married, pregnant, a parent, a member of the armed forces or financially independent and living away from home.
RE	FUSAL OF	CARE
1	IVITY ION A	 Ask participants how they might feel if someone refuses care and how they would respond.
Time	: 5 minutes	 Instructor's Note: Responses for how they will feel will vary. Responses for how they would respond should include: Making attempts to explain why the person needs care and enlisting the help of others in talking with the person. Notifying advanced personnel or law enforcement.
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ACTIVITY OPTION B Time: 10 minutes	 Have each participant choose a partner and role-play a situation in which one participant is a patient who is refusing care and the other is an EMR who is responding to the patient. Have each pair share with the class the different responses used by the participant playing the EMR. Instructor's Note: Responses should include: Assessing the patient's competency for decision making. Adhering to the duty to act while upholding the patient's right to accept or refuse care. Determining if there are any advance directives in place for the patient. Explaining the reasons for needing care and trying to convince the patient that care is needed or that the patient. Adhering to local policies related to refusal of care. Notifying the appropriate persons about the situation. Documenting the patient's refusal if he does not agree to care.
	Trying one last time to persuade the patient to receive care before leaving.
KEY POINTS	 EMRs must honor the patient's refusal of care. Refusal of care does not have to be all or nothing. Patients can agree to receive part of the care that an EMR has suggested, but refuse another part. If a patient refuses care, an EMR should do the following: Follow local policies related to refusal of care. Tell the patient what treatment is needed and why and the benefits of receiving treatment as well as the risks of refusing treatment; mention any reasonable alternative treatments that fall within the parameters of care. Try again to convince the patient that the care is needed or that the patient should consider going to the hospital instead, but do not argue. Remind the injured or ill person that they can call EMS personnel again if the situation changes or if they change their mind and decide to accept care before the EMR leaves the scene. Notify more advanced EMS personnel about the situation. Notify medical direction, if required by local protocols. Document the patient's refusal, according to local policy. If the patient refuses to sign the form, have a family member, police officer or bystander sign the form, verifying that the patient refused to sign. Have a family member, police officer or bystander sign the form as a witness, to make it clear that you did not abandon the patient. A law enforcement officer is preferable, if available. In some jurisdictions, EMS personnel are required to transport a patient to the hospital if they have certain symptoms. If the patient refuses to be treated or taken to a hospital before leaving the scene.

ADVANCE DIRECTIVES		
KEY POINTS	An advance directive is a set of written instructions describing a person's wishes about medical care.	
	 A do not resuscitate (DNR) order (also called a do not attempt resuscitation [DNAR] order) protects a patient's right to refuse efforts for resuscitation; usually it is written for people who have a terminal illness and differs from state to state. 	
	 Written proof of a DNR order is necessary in most cases (unless the state is one that accepts verbal verification). 	
	 If there is no proof of a DNR order, care must be provided except in the case of medical futility (situations where emergency medical interventions such as CPR would not provide any likely benefit to the patient). If there is any doubt as to whether medical futility exists, care should be provided. 	
	A living will, another type of advance directive, is a legal document that outlines a patient's wishes about certain kinds of medical treatment and procedures that prolong life.	
	 This document takes effect if the patient cannot communicate healthcare decisions. 	
	 EMRs must assess the living will's validity before agreeing to its terms. 	
	 Living wills are more general than a DNR order. 	
	A Physician Orders for Life-Sustaining Treatment (POLST) form, while not currently available in all states, is a tool that complements an advance directive. Its primary purpose is to document the types of treatments a patient wants or does not want in the case of a medical emergency.	
	 POLST forms are signed by the patient's physician or other approved healthcare provider such as a physician's assistant or nurse practitioner, based on state rules or protocols. 	
	Assessment of an advance directive includes the following:	
	 Checking for written physician's instructions and ensuring that they are phrased clearly and understandably without room for interpretation 	
	\circ Ensuring that the state and local laws permit such a document	
	 Clarifying if the laws require more than one healthcare provider to verify the patient's condition 	
	A durable power of attorney gives the legal right to make decisions regarding medical and health issues on another person's behalf to a third party or surrogate decision maker.	
	 A healthcare proxy is the person named in a durable power of attorney for healthcare to make medical decisions on the patient's behalf; the person also may be known as an attorney-in-fact, an agent or a patient advocate. 	
	 Next of kin refers to the closest relative, as defined by state law, of a patient or deceased person. 	

ACTIVITY	 Using the following scenario, ask participants to describe what they would do to ensure that the care provided is legally and ethically appropriate: You are called to the home of a patient with cancer. The patient's daughter called because her father was experiencing severe nausea and vomiting over the past few days after receiving chemotherapy. The daughter tells you that her father has not been able to keep anything down, including liquids. The patient is lying on the couch, moaning quietly. He tells you, "Just let me die."
	 Instructor's Note: Responses should include: Assessing the patient's competency for decision making. Adhering to the duty to act while upholding the patient's right to accept or refuse care. Determining if there are any advance directives in place for the patient. Explaining the reasons for needing care and trying to convince the patient that care is needed or that the patient should consider going to the hospital instead, without arguing with the patient or the daughter. Adhering to local policies related to refusal of care. Notifying the appropriate persons about the situation. Documenting the patient's refusal if he does not agree to care. Trying one last time to persuade the patient to receive care before leaving.

TOPIC: OTHER LEGAL ISSUES

ACTIVITY Course Presentation Slides 52–53	 Have participants divide into small groups and using the textbook, review the topics of assault, battery and abandonment. Be sure to assign all topics. Ask each group to identify one or two examples of situations in which each of these issues may occur. Have the groups share their examples with the rest of the class. Instructor's Note: Responses may vary but should address these underlying issues: Assault as a threat of harm Battery as touching without patient's consent Abandonment as failing to continue to provide care once started 	
NEGLIGENCE		
KEY POINTS	 Negligence refers to a failure to follow a reasonable standard of care thereby causing or contributing to injury or damage to another. All four of the following must be proven for a lawsuit charging negligence: The EMR had a duty to act. The EMR breached that duty. (Breach of duty refers to deviation from the standards of care expected for the responder's level of knowledge and skill.) The patient was injured because the EMR breached their duty; in legal terms, this is known as proximate cause. Harm or injury occurred. 	

TOPIC: CONFIDENTIALITY AND PRIVACY

ACTIVITY	Ask participants what information they think must be kept confidential and private?
Course Presentation Slides 54–55	Instructor's Note: Responses should include information such as the patient's name, age, address, medical conditions, medications and medical insurance.
KEY POINTS	 Personal information such as the patient's medical issues, physical and mental conditions, and medications used are considered confidential and are protected by law. Exceptions to the rule include providing information to emergency medical personnel who will take over care or for mandatory reporting requirements, public health issues or legal requirements.
HEALTH INSU	RANCE PORTABILITY AND ACCOUNTABILITY ACT
KEY POINTS	 The Health Insurance Portability and Accountability Act (HIPAA) is the first comprehensive federal protection for the privacy of protected health information (PHI). PHI cannot be relayed to anyone (except other medical personnel when needed for care) without the patient's specific consent, including media, employers, colleagues, friends and even other family members. Information may be released if the patient or patient's parent or legal guardian has supplied written consent.
	 Some circumstances where disclosures of PHI without written patient consent are permitted include: Information disclosure for payment of services when the patient receives emergency care and is transported to a facility. Mandatory reporting situations involving public health issues and some law enforcement situations. Other situations where disclosure without permission is possible include the following:
	 Purposes of research without authorization, under certain conditions Reporting of abuse, neglect or domestic violence under specified circumstances In the course of a judicial or an administrative proceeding under specified circumstances Organ-procurement agencies for the purposes of facilitating a transplant Health oversight agency for oversight activities authorized by law Disclosure of work-related health information as authorized by, and to the extent necessary to comply with, workers' compensation programs

TOPIC: SPECIAL SITUATIONS

KEY POINTS	Medical identification tags are designed to provide pertinent health information about a patient who may be unable to communicate in an emergency.
Course Presentation Slides 56–57	 Located on a bracelet, necklace, sports band or wallet card, it indicates specific medical situations pertinent to a medical emergency, such as allergies, diabetes mellitus and epilepsy. More and more people are carrying their medical identification information on mobile phone apps that responders can access even when the phone is locked by a password.
	 EMRs must look for medical ID tags whenever they examine a patient.
	 Obvious death, such as decapitation, rigor mortis, decomposition of the body and dependent lividity, may be a situation faced by EMRs; resuscitation efforts may not be required.
	Organs may only be donated when there is a signed legal document that gives permission for the patient's organs to be harvested in the case of death.
	• This may be on an organ donor card or driver's license.
	 Organ donors require the same lifesaving emergency care as any other patient.
	 Evidence preservation is essential when faced with a crime scene. Maintain the integrity of the scene by doing the following:
	 Do not disturb any item at the scene unless emergency medical care requires it.
	 Observe and document anything unusual at the scene.
	 Do not cut through bullet or knife holes in clothing; these are part of the evidence collected during the investigation.
	 Work closely with law enforcement authorities.
	 Obtain permission to do anything that may interfere with the investigation.
SPECIAL REP	PORTING REQUIREMENTS
	 Mandated reporting usually refers to the practice of reporting situations in which a patient's injuries have been caused through battery, abuse or other forms of violence or because of certain illnesses.
	Requirements vary from state to state.
	EMRs are responsible for learning and following specific state requirements for reporting incidents involving suspected abuse.
	Situations involving mandatory reporting may include the following:
	 Abuse or neglect of any kind
	 Injuries resulting from a crime, such as gunshot or stab wounds, poisoning or drug-related injuries
	 Suspected sexual assaults (in some states)
	 Some infectious diseases, such as tuberculosis (TB), hepatitis B, HIV and AIDS
	EMRs must know the details of mandatory reporting to ensure that they do not incur legal liability for failure to report or unauthorized disclosure.
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WRAP-UP	Time: 10 minutes
Course Presentation Slide 58	 Emphasize the need for adhering to the scope of practice and standards of care.
ACTIVITY	 Review the closing scenario: You advised the cyclist to go home and rest. At home, the cyclist loses consciousness and his roommate calls for an ambulance. Later, at the hospital, he is diagnosed as having a severe head injury that could have been minimized if medical care had been provided earlier. Ask participants: "Do you believe there are any grounds for legal action against you? Why or why not?"
	 Instructor's Note: Responses should include: There could be grounds for legal action against you. Since you sent the cyclist home while he was still feeling dizzy and nauseous, without ensuring someone of equal or greater training would continue care, the cyclist could claim abandonment or negligence. With the issue of negligence, you had a duty to act, but sent the cyclist home. This action could be seen as a breach of that duty. He later lost consciousness and was taken to the hospital where he was diagnosed with a severe head injury. The injury may have been minimized had more advanced medical care been provided earlier.
KEY POINTS	 EMRs are guided by certain legal parameters, such as the duty to act and professional standards of care. While on duty, an EMR has an obligation to respond to an emergency and provide care at the scene. For EMRs who act in a reasonable and prudent way consistent with the standard of care, a negligence claim against the responder will likely be unsuccessful. Individuals have the right to accept or refuse care. Expressed consent requires that a patient be competent. Advance directives provide written instructions about a patient's wishes for care. Maintaining privacy and confidentiality are essential except in specific situations. Mandatory reporting typically includes abuse or neglect, injuries resulting from crimes and some infectious diseases.
ASSIGNMENT FOR THE NEXT LESSON	 Read Chapter 4, The Human Body.
INSTRUCTOR PREPARATION	 Review Chapter 4, The Human Body. Review the video segment, "The Human Body" (15:15). Obtain any necessary equipment and supplies for Lesson 5.



THE HUMAN BODY

Lesson Length: 60 minutes

MATERIALS, EQUIPMENT AND SUPPLIES

- *Emergency Medical Response* textbook
- Course Presentation Slides 59–80
- LCD projector, screen and computer
- Emergency Medical Response DVD
- DVD player and monitor
- Illustrations, posters or anatomical models of the various body systems, if available
- Newsprint and markers

LESSON OBJECTIVES

Knowledge

After completing this lesson, participants will be able to:

- Identify various anatomical terms commonly used to refer to the body.
- Describe various body positions.
- Describe the major body cavities.
- Understand the basics of medical terminology and their application to emergency medical care.
- Identify and describe the fundamental anatomy and physiology of the major body systems.
- Give examples of how body systems interrelate.
- Describe the anatomical and physiological differences of children and infants and the resulting considerations for emergency care.

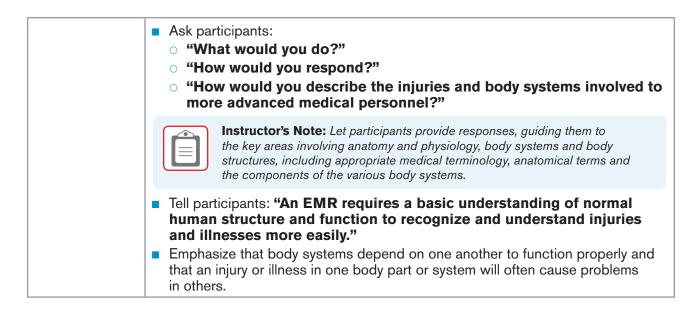
TOPIC: INTRODUCTION

Time: 5 minutes



Review the opening scenario:

Your fire rescue unit responds to the scene of a motor-vehicle collision involving a car with two people and a minivan driven by a woman who has two small children in car seats. As you size up the scene, three of the five people appear to be injured. The first person, a woman who was driving the car, is going in and out of consciousness. You suspect her injuries may include possible fractured ribs. The second person, a passenger in the same vehicle, has injuries on the right side of the body. The third person, the driver of the minivan, appears to have chest and abdominal injuries, but she is awake and alert and able to speak with you. She is distraught because her children are in the back of the minivan and she is concerned about them.



TOPIC: MEDICAL TERMINOLOGY

Time: 5 minutes

KEY POINTS Course Presentation Slide 61	 Medical terminology gives healthcare providers a common language to communicate accurately about their patients. Medical terms are often constructed from a root word and combining vowel that contains the meaning, plus a suffix and/or prefix. The easiest way to learn these medical combining forms, suffixes and prefixes is to memorize them.
ACTIVITY	 Have participants break up into small groups. Give each group two or three common combining forms, prefixes and/or suffixes, being sure to assign all topics. Ask each group to come up with examples and report them to the class. Write each group's responses on newsprint.
	 Instructor's Note: Responses may vary but could include: Examples of combining forms, such as cardiovascular, neuralgia, neuropathy, orofacial, oropharynx, arteriosclerosis, arteriole, hemoglobin, hematoma, thermometer, thermostat, vasodilator or vascular. Examples of common prefixes, such as hypertension, hyperglycemia, hyperthermia, hypotension, hypoglycemia, hypothermia, tachycardia or bradycardia. Examples of common suffixes, such as anemic, anemia, carcinoma.

TOPIC: ANATOMICAL TERMS

Time: 10 minutes

DIRECTIONS AND LOCATIONS	
KEY POINTS	By knowing a few key locations of structures and how to describe
Course	them, you can more accurately recognize a serious injury or illness
Presentation	and communicate with other emergency medical services (EMS)
Slides 62–66	personnel about a patient's condition.

ACTIVITY	 Have participants break up into small groups and review the terms for directions and locations including anterior/posterior, superior/inferior, frontal or coronal plane, sagittal or lateral plane, transverse or axial plane, medial/lateral, proximal/ distal, superficial/deep, internal/external and right/left. Alternatively, ask participants to select a body part and describe its location using the appropriate anatomical term.
	 Instructor's Note: Responses will vary based on the body part selected but examples could include: Shoulders are superior to the hips. Spine is posterior to the sternum. Head is proximal to the chest. Knees are distal to the abdomen. Nose is external but lungs are internal.
MOVEMENTS	5
KEY POINTS	 Flexion is used to describe a flexing or bending movement, such as bending at the knees or making a fist. Extension is the opposite of flexion; it is a straightening movement.
POSITIONS	
KEY POINTS	 Anatomical position is the basis for all medical terms that refer to the body. The patient stands with the body erect and arms down at the sides, palms facing forward. Supine position refers to the patient lying face-up on their back. Prone position refers to the patient lying face-down on their stomach. Right and left lateral recumbent position refers to the patient lying on their right or left side. Fowler's position refers to the patient lying on their back with the upper body elevated at a 45- to 60-degree angle.
BODY CAVITI	ES
KEY POINTS	 The organs of the body are located within hollow spaces in the body referred to as body cavities. The five major cavities include the: Cranial cavity containing the brain. It is protected by the skull. Spinal cavity containing the brain stem and spinal cord. It is protected by the vertebral column. The racis cavity containing the beart and lungs. It is protected by the
	• Thoracic cavity containing the heart and lungs. It is protected by the rib cage, sternum and the upper portion of the spine.
	 Abdominal cavity located in the trunk below the ribs, between the diaphragm and pelvis. It is described using four quadrants and contains the organs of digestion and excretion, including the liver, gallbladder, spleen, pancreas, kidneys, stomach and intestines. Pelvic cavity located in the pelvis. It contains the bladder, rectum and internal reproductive organs. It is protected by the pelvic bones and lower portion of the spine.

TOPIC: BODY SYSTEMS

DVD	 Show the video segment, "The Human Body" (15:15). Answer participants' questions about the video segment.
KEY POINTS Course Presentation Slides 67–79	 The human body performs many complex functions, each of which helps us live. The human body is made up of billions of different types of cells that contribute in special ways to keep the body functioning normally. Similar cells form together into tissues which in turn form together into organs. Vital organs, such as the brain, heart and lungs, are organs whose functions are essential for life. All body systems must work well together for the body to work properly.
ACTIVITY OPTION A Time: 5 minutes	 Ask participants to name the various body systems. Instructor's Note: Common responses could include the respiratory, cardiovascular, musculoskeletal, digestive, urinary and nervous systems. Less common responses could include the integumentary system, endocrine system and the male and female reproductive systems.
ACTIVITY OPTION B Time: 5 minutes	 Ask participants to inhale slowly and note the changes that occur in the structures of the thoracic cavity. Then ask them to exhale slowly and note the changes. Have participants describe their observations. Instructor's Note: Common descriptions could include expansion of the chest and movement of the ribs outward during inhalation and the chest returning to normal and ribs moving inward during exhalation.
ACTIVITY OPTION C Time: 5 minutes	 Ask participants to feel various parts of their bodies for possible pulse points. Have the participants share where they found them. Instructor's Note: Commonly identified pulse points would include the carotid, brachial, radial and apical pulses.
ACTIVITY OPTION D Time: 10–15 minutes	 Using the following scenario, ask participants to identify the body cavities, organs and body systems that may be involved or affected: You are called to a local shopping mall because an older woman has fallen after attempting to get off an escalator. Bystanders report that she fell approximately three steps from the bottom of the escalator. She is lying in the left lateral recumbent position. The right side of her face is bruised, and there is a small laceration over her right cheek that is oozing blood. She is complaining that her right hip and right side hurt and that she bumped her head when she fell to the ground.

	 Instructor's Note: Responses could include: Cranial cavity due to bruising of the face and the report that the woman bumped her head on falling; thoracic and/or abdominal cavity based on the patient's complaint that her right side hurts. Involvement of several body organs and systems, such as the brain and nervous system (due to bumping the head); lungs and respiratory system or abdominal organs, such as the liver, gallbladder and the digestive system (due to pain on the right side); possibly the kidneys and the urinary system (due to pain on the right side which might include the lumbar area); blood vessels and circulatory system (due to bruising); facial bones and the skeletal system (due to facial bruising and injury, reported bump to the head and right hip pain); and the skin and integumentary system (due to the laceration on the cheek).
ACTIVITY OPTION E Time: 15 minutes	 Divide participants into small groups. If anatomic models are available, set up stations around the room for each of the eight body systems. Assign each group one or more body systems, being sure to assign all topics and ask them to identify the key structures and functions for their body system. Have each group present their information to the rest of the class.
	 Instructor's Note: Responses should include: The musculoskeletal system in the adult body is comprised of 206 bones. Bones are hard, dense tissue that form the skeleton to provide the framework to support the body. The functions of the musculoskeletal system include supporting the body, protecting internal organs, allowing movement, storing minerals, producing blood cells and producing heat. The muscular system is comprised of three basic types of muscle: skeletal (voluntary), smooth (involuntary) and cardiac. There are over 600 muscles. The muscular system allows the body to move. The skeletal system is comprised of six sections: the skull (cranium and face), spinal column (protection of spinal cord), thorax (chest with 12 pairs of ribs, sternum and thoracic spine), pelvis (hip bones consisting of the ilium, pubis and ischium), and upper and lower extremities. Joints are the places where bones connect to each other. Ball-and-socket joints, such as the hip and shoulder, and hinged joints such as the elbow; knee and finger joints, are the most common types of moveable joints. Other joint types include pivot joints (some vertebrae), gliding joints (some bones in the hands and feet), saddle joints (ankle) and condyloid joints (wrist). The respiratory system is comprised of the upper airway, such as the nose and mouth, pharynx, larynx and epiglotits; structures of the lower airway, such as trachea, bronchi, bronchioles, alveoli (site of carbon dioxide and oxygen exchange in the blood) and lungs (which are the principal organs of respiration). Functions of the respiratory system include inhalation and exhalation to supply normal oxygen needs, delivering of oxygen to the body and removing carbon dioxide between body tissues and the environment, which is primarily influenced by changes in pressure inside the chest that cause are to flow into or out of the lungs. Internal respiration or cellular respiration is the mechanical process of moving air in and out of the lungs to exchang

	The nervous system is divided into two anatomical systems: the central nervous system (brain and spinal cord) and the peripheral nervous system (nerves carrying sensory information from the body to the spinal cord, and brain and motor information from the spinal cord and brain to the body). It is also divided functionally between the voluntary system (which controls movement of the muscles and sensations from the sensory organs back to the brain and spinal cord) and the autonomic systems (which controls involuntary muscles of the organs and glands and is further divided into the sympathetic and parasympathetic systems). The integumentary system consists of the skin (the body's largest organ), hair, nails, sweat glands and oil glands. It serves to protect the body from injury and invasion by bacteria and other disease producing pathogens, helps regulate fluid balance and body temperature, produces vitamin D and stores minerals. The endocrine system is a regulatory system that is made up of ductless glands that secrete hormones. It controls blood glucose levels via the production and secretion of insulin by the lslet of Langerhans in the pancreas and regulates the sympathetic nervous system. It also regulates water, sodium chloride and potassium balance. The digestive (gastrointestinal) system includes the alimentary tract structures, such as the mouth, esophagus, stomach, small intestine, the hepatic portal system, large intestine, and the accessory organs, such as the liver, gallbladder and pancreas. The organs work together to break down food, absorb nutrients and eliminate waste. The genitourinary system consists of the urinary system and the reproductive system. The urinary system consists of the urinary system and the reproductive system. The urinary system consists of the urinary system and the reproductive system. The urinary system consists of organs such as the kidneys, ureters, bladder and urethra. The urinary system eliminates waste products that are filtered and excreted from the blood and maintains
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WRAP-UP

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Time: 5 minutes

Course Presentation Slide 80	 Emphasize that each body system plays a vital role in survival and that all body systems work together.
ACTIVITY	 Review the closing scenario: As you get closer to the woman in the car, you see that she is clutching one side of her abdomen, just below the rib cage. Her passenger is holding his right hip and looks dazed. The woman in the minivan now exhibits shallow breathing and her pulse is weak. Ask participants: "What do you suspect is happening to the woman in the car?"
	 Instructor's Note: Responses should include: You should suspect that her injuries have to do with the musculoskeletal system (possible fractured ribs), nervous system (altered mental status) and possibly the digestive system (pain in the upper quadrant of her abdomen).

KEY POINTS	 The impact of an injury or disease is rarely restricted to one body system. Any significant injury or illness may seriously affect body systems, resulting in progressive failure of the body systems called shock. Shock results from the inability of the circulatory system to provide oxygenated blood to all parts of the body. The more body systems involved in an emergency, the more serious the emergency. A fundamental understanding of body systems and how they function and interact, along with knowledge of basic medical terminology, helps in accurately identifying and describing injuries and illnesses.
ASSIGNMENT FOR THE NEXT LESSON	 Read Chapter 5, Lifting and Moving Patients.
INSTRUCTOR PREPARATION	 Review Chapter 5, Lifting and Moving Patients. Review the skills and obtain any necessary equipment and supplies for Lesson 6.

LIFTING AND MOVING PATIENTS

Lesson Length: 60 minutes

MATERIALS, EQUIPMENT AND SUPPLIES

- Emergency Medical Response textbook
- Course Presentation Slides 81–97
- LCD projector, screen and computer
- Full-body adult manikins (optional)
- Additional clothing, blanket, tarp, drape, bedspread or sheet
- Disposable latex-free gloves

LESSON OBJECTIVES

Knowledge

After completing this lesson, participants will be able to:

- Define body mechanics.
- Explain the safety precautions to follow when lifting and moving a patient.
- Describe the conditions that require an emergency move.
- Describe the indications for assisting in nonemergency moves.
- Describe the various devices associated with moving a patient in the out-of-hospital setting.
- Explain the guidelines for patient positioning and packaging for transport.
- Explain the indications for when to use restraints.
- Describe the types of restraints.
- Make appropriate decisions regarding the use of equipment for moving a patient in the out-of-hospital setting.

Skill

After completing this lesson, participants will be able to:

- Demonstrate an emergency move.
- Demonstrate a nonemergency move.

TOPIC: INTRODUCTION

Time: 5 minutes

ACTIVITY Course Presentation Slide 82	 Review the opening scenario: Your fire rescue unit is summoned to a recently remodeled building in response to a 9-1-1 call for a reported fire. You arrive to find smoke filling the area. Two people carry a man through a doorway. Three others stagger through and collapse to the ground. Smoke is blowing over them. Flames flicker inside the structure. You quickly size up the scene and determine that the structure should be secure for the next few minutes. There is a large grassy area that extends at least 200 feet in front of the building. Ask participants: "Should you move victims away from the vicinity of the burning building? "Why or why not?"
	Instructor's Note: Let participants provide responses, guiding them to reasons for moving and lifting patients, such as ease of access, safety and transport.
	Tell participants: "There are some situations in which moving a patient would be appropriate but only when you can do so safely. These situations include when you need to provide easier access to administer first aid, to move the patient to a safer location and to transport the patient to the hospital."

TOPIC: SAFETY AND MOVING PATIENTS

Time: 10 minutes

SAFETY PRECAUTIONS		
KEY POINTS Course Presentation Slides 83–85	 Always size up the scene before acting and consider factors that may affect the situation, including: Any dangerous conditions at the scene. Distance the patient must be moved. Patient's size. The emergency medical responder's (EMR's) physical ability. Availability of assistance from others. Mechanism of injury (MOI) and the patient's possible condition. Aids or equipment available to facilitate patient transport at the scene. Know your own physical limitations and only move a patient by yourself if you can do so safely and comfortably; if in doubt, ask for assistance from other responders. 	
BODY MECHANICS		
KEY POINTS	 Use proper body mechanics. Body mechanics involve using the body in the safest and most efficient way to achieve a desired outcome. Principles of body mechanics include: Keeping the back straight and lifting with the legs, using the muscles in the legs, hips and buttocks, and contracting abdominal muscles. 	

	 Maintaining a firm grip on the stretcher or patient and any other equipment being used to move the patient, keeping the patient's weight as close to the EMR's body as possible and maintaining a low center of gravity. Avoiding any twisting with lifting. Maintaining a firm footing and walking in small measured steps. Moving forward rather than backward when possible. Using good posture. There are numerous ways to move a patient to safety and no one way is best. Instructor's Note: Emphasize the need for proper training and practice of techniques by all members, clear and frequent communication about next moves with other personnel and the patient, and explanations to the patient, if conscious, about what is being done and what the patient should or should not do.
ACTIVITY OPTION A Time: 5 minutes	 Using the following scenario, ask participants to identify possible factors that may have contributed to the EMR's back injury: An EMR is the first to arrive at the scene of a motor-vehicle crash involving two cars and a utility pole. The EMR moves one of the patients because of his proximity to several downed electrical lines. Upon moving the patient, the EMR experiences some pain in his back. Over the course of the next several days, the EMR's pain increases and he decides to see his family healthcare provider.
	 Instructor's Note: Responses could include: Failure to consider factors such as patient size, distance to be moved, EMR's own physical ability and limitations, or availability of assistance from others or equipment and aids. Improper use of body mechanics, such as not keeping the back straight and not lifting with the legs, not keeping the patient's weight as close to the EMR's body as possible, moving backward rather than forward or twisting while moving the patient. Legs too close together, feet not on a flat surface, shoulders not square or arms not locked.
ACTIVITY OPTION B Time: 15 minutes	 Divide the participants into small groups. Using the textbook, have the groups identify the techniques associated with safely moving patients, such as back in a locked-in position, power grip, power lift, squat lift, reaching and log rolling, pushing and pulling, and carrying. Have one member of each group show how the technique is done with guidance from the other group members. Alternatively, split up the participants into small groups. Assign each group one or more of the following topics: the back in a locked-in position, power grip, power lift, squat lift, reaching, log rolling, pushing and pulling, and carrying, being sure to assign all topics. Ask the groups to describe the topics and the key steps associated with it. Have the groups present their information to the rest of the class.
	 Back in locked-in position: Legs shoulder-width apart, head up, back straight and shoulders square; weight of the patient or object as close to the body as possible; muscles in the back and abdomen tight with the back remaining straight while lifting and the arms locked without twisting Power grip: Grabbing of object so that both palms and fingers come in complete contact with the object; all fingers bent at the same angle

 Power lift: Back locked without bending at waist; feet on a flat surface at a comfortable distance apart and turned slightly outward; knees bent; back and abdominal muscles tight with back as straight as possible; power grip with hands approximately 10 inches apart; lifting with back locked, ensuring that upper body lifts before the hips do Squat lift: Alternative to power lift; standing with weaker leg slightly forward with the foot of this leg remaining flat; squatting down until the object can be grasped using the power grip; pushing up with the stronger leg, keeping the back locked; leading with the head and lifting the upper body before the hips Reaching: Repositioning of the object; if reaching is unavoidable, reaching no more than 20 inches in front of the body; back locked without twisting; upper body support with the free arm Log roll: Four people working in tandem with one at the head and the other two or three people performing the actual move; patient's arms at their sides with legs straight and together; responder at the patient's head directing movement and maintaining spinal motion restriction (SMR) until the patient is on the backboard; other responders rolling patient onto the side and onto the backboard Pushing and pulling: Pushing rather than pulling; if pulling is necessary, keeping back in locked-in position, bending knees slightly, keeping load between shoulders and hips close to the body: when pushing an object
 Reeping back in locked in position, bending knees signify, keeping load between shoulders and hips close to the body; when pushing an object, pushing from the area between the waist and shoulders; pushing from a kneeling position with elbows bent and arms close to the body if the weight is below waist level Carrying: Estimating total weight and knowing own physical abilities and limitations; asking for assistance; keeping weight as close to the body as possible with back in locked-in position; bending and flexing at the hips and knees

TOPIC: EMERGENCY MOVES

Time: 5 minutes

Course Presentation Slides 86-90	 Tell participants: "In any emergency move, take care to protect the patient's head, neck and spine." Emphasize to participants that if a patient is suspected of having a head, neck or spinal injury, only the clothes drag or blanket drag are safe ways to move the patient.
KEY POINTS	 As an EMR, you use assists, carries and drags to move patients. Although patients generally are treated at the scene rather than moved for care, certain situations require emergency moves including: Avoiding immediate danger. Gaining access to other patients. Providing proper care. The greatest danger in moving a patient quickly is the possibility of aggravating a spinal injury. Every effort is made to pull the patient in the direction of the long axis of the body to provide as much protection to the head, neck and spine as possible. The clothes drag or blanket drag is used to move a patient with a suspected head, neck or spinal injury. The shoulder drag, ankle drag, firefighter's drag, firefighter's carry and pack-strap carry are used to move a patient who does not have a suspected head, neck or spinal injury.

TOPIC: NONEMERGENCY MOVES

KEY POINTS Course Presentation Slides 91–92	 A nonemergency move, which requires no special equipment, is used to move a patient from one location to another. It is generally performed with other responders. Nonemergency moves are not used if there is a possibility of a spinal injury. They are commonly used for patients with altered mental status, inadequate breathing or shock, or in other situations that are potentially dangerous.
	Nonemergency moves include the walking assist, two-person seat carry, direct ground lift and extremity lift.
	The direct carry and draw sheet are two techniques used to move a patient from a bed to a stretcher.

TOPIC: EQUIPMENT

Time: 20 minutes

KEY POINTS	 Different types of equipment are available; EMRs must match the equipment for the size and condition of each patient.
	Several types of stretchers are available and may include:
Course	• Wheeled stretchers.
Presentation	• Portable stretchers.
Slides 93–94	• Bariatric stretchers.
	 Basket stretchers (Stokes baskets).
	• Flexible stretchers.
	 Scoop or orthopedic stretchers.
	A stair chair is used when a wheeled stretcher is too long for the rescue or extrication; three responders should be present when using this equipment.
	 Backboards are used to immobilize a patient's head, neck and spine during transport, and it is considered a standard piece of emergency medical services (EMS) equipment.

SKILL SESSION

EMERGENCY	AND NONEMERGENCY MOVES
ACTIVITY	 Ask participants to take their textbooks as well as disposable latex-free gloves with them to the practice area. Divide participants into small groups and guide groups through the steps listed on the skill charts.
	 Have participants demonstrate one emergency and one nonemergency move using another participant or full-body adult manikin, if available, while the other participants use their textbooks to give feedback.
	 Observe participants performing the technique and evaluate completion of both skills using the corresponding Skill Checklists. Intervene and provide positive and corrective feedback as needed to each participant individually when possible.

	 Be sure to point out any common errors, such as failing to identify if the patient has a head, neck or spinal injury, improper positioning of the patient, not having enough responders or not using proper body mechanics. Check off participant's progress on the Participant Progress Log.
	Instructor's Note: It is important that you do not require anyone to perform a skill that they are unable to physically do. If in doubt, choose an easier skill from those listed below so the participants can perform it properly and safely.
SKILL	After determining that the patient has a suspected head, neck or spinal injury:
	1. Position the patient on their back.
	2. Kneel behind the patient's head.
Clothes Drag	3. Gather the patient's clothing behind the neck.
	4. Use the clothing to pull the patient to safety.
	 Cradle the patient's head with the clothing and your hands.
	 Move carefully since you will be moving backward.
	 Keep your back as straight as possible and bend your legs.
SKILL	After determining that the patient has a suspected head, neck or spinal injury:
	 Obtain a blanket or tarp, drape, bedspread or sheet and position it next to the patient.
Blanket Drag	2. Keep the patient between you and the blanket.
	3. Gather half the blanket, placing it against the patient's side.
	 Keep about 2 feet of blanket above the patient's head.
	Roll the patient toward your knees, reach across and position the blanket directly next to the patient.
	5. Gently roll the patient as a unit onto the blanket, being careful not to twist the patient's spinal column.
	6. Smooth out the blanket and then wrap it around the patient.
	7. Gather up the excess blanket at the patient's head and drag the blanket.
	 Keep the patient's head as low as possible.
	 Move carefully backward. Keen year back as straight as passible.
	 Keep your back as straight as possible.
SKILL	After determining that the patient does <i>not</i> have a suspected head, neck or spinal injury:
	 Reach under the patient's armpits (from the back).
Shoulder Drag	 Grasp the patient's forearms.
	 Drag the patient.
	 Keep your back as straight as possible and do not twist.
	2. Carefully move backward.

SKILL	After determining that the patient does <i>not</i> have a suspected head, neck or spinal injury:
	1. Firmly grasp the patient's ankles and move backward.
Ankle Drag	 Pull on the long axis of the body.
	 Do not bump the patient's head.
	2. Carefully move backward.
	 Keep your back as straight as possible.
	○ Do not twist.
SKILL	After determining that the patient does <i>not</i> have a suspected head, neck or spinal injury:
	1. Position the patient on the back.
Firefighter's Drag	 Bind the patient's hands together gently at the wrists.
	 Alternatively, strap a belt or other device behind the patient's scapulae, looping it through the straps on your air pack and fastening it.
	2. Straddle the patient on your hands and knees, and slip your head through the patient's arms.
	3. Place the patient's bound wrists behind your head.
	4. Slowly crawl forward, carrying the patient with you.
	 Keep your back as straight as possible.
	 Keep the patient centered under you.
	 Do not bump the patient's head.
SKILL	After determining that the patient does <i>not</i> have a suspected head, neck, spinal or abdominal injury:
	1. With the patient lying face-up, grasp the patient's wrists.
Firefighter's Carry	2. Stand on the patient's toes and pull the patient over a shoulder.
	3. Pass an arm between the legs and grasp the arm nearest you.
	 Alternatively, kneel in front of a seated patient, place one shoulder against the patient's abdomen and hoist the patient across your shoulders.
	4. Pull the patient over a shoulder.
	5. Ensure that the patient's feet are on one side and their head is on the other side.
	6. Lift with your legs and stand up, keeping your back as straight as possible.
SKILL	After determining that the patient does <i>not</i> have a suspected head, neck or spinal injury:
	1. Have the patient stand.
Pack-Strap Carry	 Alternatively, have a second responder support the patient.
	2. Position yourself with your back to the patient.
	 Keep your back straight and knees bent.
	 Ensure that your shoulders fit into the patient's armpits.
	3. Cross the patient's arms in front of you and grasp the patient's wrists.
	4. Lean forward slightly and pull the patient up onto your back.
	5. Stand and walk to safety.

SKILL	After determining that the patient is conscious:
	1. Place the patient's arm across your shoulders and hold it in place with one hand.
	2. Support the patient with your other hand around the patient's waist.
Walking Assist	 If a second responder is present, they support the patient in the same way from the other side.
SKILL	After determining that the patient does <i>not</i> have a head, neck or spinal injury and a second responder is available:
	1. Put one arm under the patient's thighs and the other across the patient's back.
Two-Person Seat Carry	2. Interlock your arms with those of a second responder, under the patient's legs and across the patient's back.
	 Have the patient place their arms over the responders' shoulders.
	3. Lift the patient in the "seat" formed by the responders' arms.
	 Keep your back straight.
	○ Lift with your legs.
SKILL	After ensuring that at least three responders are available:
	1. All responders line up on one side of and kneel close to the patient.
Direct Ground	 The patient should cross arms over the chest.
Lift	2. The responder kneeling at the patient's head places one arm under the patient's shoulders, cradling the head, and places the other arm under the patient's upper back.
	3. The next responder places one arm under the patient's waist and the other under the buttocks.
	4. The third responder cradles the patient's hips and legs.
	5. On a signal from the responder at the patient's head, all three responders lift the patient to their knees.
	 Listen for the signal to lift the patient.
	• Provide support by rolling the patient against the responders' chests.
	6. On the next signal, all carefully rise to a standing position and then move the patient to the stretcher.
	 Keep backs straight and lift with the legs. Deverse the store to lever the notient.
	 Reverse the steps to lower the patient.
SKILL Extremity Lift	After determining that the patient needs to be moved and ensuring that two responders are available:
	1. One responder kneels behind the patient, keeping the back straight, reaches under the patient's arms and grasps the patient's opposite wrist.
	2. The second responder kneels between the patient's legs and firmly grasps around the patient's knees and thighs.
	3. On a signal from the responder at the patient's head, both responders move from a crouching position to a standing position.
	 Listen for the signal to move from the crouching position.
	4. The responders then move the patient to the stretcher.
	Instructor's Note: After participants practice the moves, bring them back together for a discussion of any issues or problems that they may have had with any of the techniques.

TOPIC: PATIENT POSITIONING AND PACKAGING FOR TRANSPORT

	Instructor's Note: When describing the positions, encourage participants to review information in Chapter 5, Lifting and Moving Patients, to visualize each position.
KEY POINTS Course Presentation Slide 95	 An injured patient is not moved unless a life-threatening emergency dictates the necessity to do so. You usually move a patient once the patient has been examined, evaluated and stabilized. There are times when a patient's condition will dictate the position in which the patient is placed. Make the patient as comfortable as possible while awaiting transport. The three common positions include the position of comfort, the supine position and the side-lying recovery position. The position of comfort is the position that is most comfortable for the patient, unless the injury or illness prevents it. For example: Patients with abdominal pain may be more comfortable on the side with their knees drawn up. Patients with difficulty breathing may be more comfortable sitting up. Patients who are nauseated or vomiting should be allowed to remain in whatever position is most comfortable. If you are alone and have to leave the patient (e.g., to call for additional resources), if the patient is unresponsive or you cannot maintain an open and clear airway because of fluids or vomit, transport the patient on the side, in a side-lying recovery position. In some cases, the patient may be unresponsive but breathing normally. Generally, that patient should not be moved from a face-up position if there is a suspected, hee patient who is unresponsive but breathing normally should be placed in the side-lying recovery position. The patient is lying face-up in the supine position. The patient is used for assessing an unconscious patient, performing CPR or assisted ventilation, or when a patient has a suspected head, neck or spinal injury. A patient experiencing shock is transported in the supine position.

TOPIC: MEDICAL RESTRAINT

Time: 5 minutes

	 A patient may need to be restrained if they are aggressive or violent and in need of emergency care. You must avoid restraining a patient unless they present a danger to
Course Presentation Slide 96	 themselves or to others. Some laws require EMRs to have police authorization before using restraints.
	If you are not authorized to use restraints, you must wait for someone with proper authority to arrive at the scene.

 presen Seel Kno Restra state o When (the mi or othe A force greate A patie 	MR is authorized to use restraints, it is still best to have police t if possible. In addition, the EMR should: k approval from medical direction. w and follow local protocols involving the use of restraints. ints may be needed if patients experience an altered mental or become aggressive or violent as a result of illness or trauma. restraining a patient, you should always use reasonable force inimum force needed to keep a patient from injuring themselves ers). e is considered reasonable if it is as great as or minimally r than the force the patient is exerting to resist. ent is never secured in restraints in the prone position; access to way at all times is essential.
Ê	Instructor's Note: Remind participants that restraining a patient without justification can lead to a claim of assault and battery. Encourage participants to review information about the use of restraints in Chapter 3, Medical, Legal and Ethical Issues.

WRAP-UP

lime: 5 minutes

Course Presentation Slide 97	 Reinforce the need to size up the scene and determine the need to move a patient.
ACTIVITY	 Review the closing scenario: You and two other firefighters get to the collapsed people. Two of them are unconscious. One man indicates his lower left leg may have been fractured. You recognize the immediate danger to the two unconscious patients and to the others who have escaped from the building. Time is critical. You need to get everyone to a safer place. Additional fire rescue units and EMS personnel have been called but have not arrived yet and the fire continues to build. Ask participants: "How would you move the unconscious patients?" "How would you move the man with the lower leg injury?" Instructor's Note: Responses should include: To move the unconscious patients, you could use the clothes drag, blanket drag, shoulder drag, ankle drag, firefighter's drag, firefighter's carry, pack- strap carry, direct ground lift or extremity lift.
KEY POINTS	 To move the man with the lower leg injury, you could use the pack-strap carry, walking assist with two responders or two-person seat carry. Your safety and that of your team always comes first. Avoid the common mistake of moving an injured or ill person unnecessarily. Use the safest and easiest method to rapidly move a patient without causing injury to yourself or the patient. If a patient requires restraint, follow the prescribed protocols carefully and ensure you have law enforcement and medical authorization before restraining a patient.

ASSIGNMENT FOR THE NEXT LESSON	 Review Chapters 1–5.
INSTRUCTOR PREPARATION	 Review Chapters 1–5. Review the skills for removing gloves, clothes drag and blanket drag. Obtain any necessary equipment and supplies for Lesson 7.

SKILL CHECK	KLIST
Clothes Drag	Instructor's Note: The participant must always identify the need to move the patient.
	Participant completes the following:
	 Performs initial actions Sizes up the scene Identifies the reason for moving the patient Determines that the patient has a suspected head, neck or spinal injury Positions the patient on their back Kneels behind the patient's head Gathers the patient's clothing behind the neck Uses the clothing to pull the patient to safety Cradles the patient's head with the clothing and their hands Moves backward carefully
	Keeps their back as straight as possible and bends the legs
Blanket Drag	Instructor's Note: The participant must always identify the need to move the patient.
	Participant completes the following:
	 Performs initial actions Sizes up the scene Identifies the reason for moving the patient Determines that the patient has a suspected head, neck or spinal injury Obtains a blanket or tarp, drape, bedspread or sheet and positions it next to the patient Keeps the patient between themselves and the blanket Gathers half the blanket, placing it against the patient's side Keeps about 2 feet of blanket above the patient's head Rolls the patient toward their knees Reaches across the patient Positions the blanket directly next to the patient Gently rolls the patient as a unit onto the blanket, being careful not to twist the patient's spinal column Smooths out the blanket then wraps it around the patient Geathers up the excess blanket at the patient's head and drags the blanket Keeps the patient's head as low as possible Moves carefully backward Keeps back as straight as possible

Shoulder Drag	Instructor's Note: The participant must always identify the need to move the patient.
	 Participant completes the following: Performs initial actions Sizes up the scene Identifies the reason for moving the patient Determines that the patient does <i>not</i> have a suspected head, neck or spinal injury Reaches under the patient's armpits (from the back) Grasps the patient's forearms Drags the patient Keeps back as straight as possible without twisting Carefully moves backward
Ankle Drag	Instructor's Note: The participant must always identify the need to move the patient.
	 Participant completes the following: Performs initial actions Sizes up the scene Identifies the reason for moving the patient Determines that the patient does <i>not</i> have a suspected head, neck or spinal injury Firmly grasps the patient's ankles and moves backward Pulls on the long axis of the body Does not bump the patient's head Carefully moves backward Keeps back as straight as possible Does not twist
Firefighter's Drag	Instructor's Note: The participant must always identify the need to move the patient.
	 Participant completes the following: Performs initial actions Sizes up the scene Identifies the reason for moving the patient Determines that the patient does not have a suspected head, neck or spinal injury Positions the patient on the back Binds the patient's hands together gently at the wrists Alternatively, straps a belt or other device behind the patient's scapulae, looping it through the straps on air pack and fastening it

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	Straddles the patient on their hands and knees, and slips their head through the patient's arms
	 patient's arms Places the patient's bound wrists behind their head
	 Slowly crawls forward, carrying the patient with them
	 Keeps back as straight as possible
	Keeps patient centered under their body
	Does not bump the patient's head
Firefighter's Carry	Instructor's Note: The participant must always identify the need to move the patient.
	Participant completes the following:
	Performs initial actions
	Sizes up the scene
	Identifies the reason for moving the patient
	Determines that the patient does not have a suspected head, neck, spinal or abdominal injury
	With the patient lying face-up, grasps the patient's wrists
	Stands on the patient's toes and pulls the patient over a shoulder
	Passes an arm between the legs and grasps the arm nearest to them
	Alternatively, kneels in front of a seated patient, places one shoulder against the patient's abdomen and hoists the patient across their shoulders
	 Pulls the patient over a shoulder
	 Ensures that the patient's feet are on one side and head is on the other side
	□ Lifts with their legs and stands up, keeping their back as straight as possible
Pack-Strap Carry	Instructor's Note: The participant must always identify the need to move the patient.
	Participant completes the following:
	Performs initial actions
	Sizes up the scene
	Identifies the reason for moving the patient
	Determines that the patient does not have a suspected head, neck or
	spinal injury
	Enlists the aid of a second responder if needed
	 Has the patient stand Alternatively, has a second responder support the patient
	 Positions themselves with their back to the patient
	Keeps their back straight and knees bent
	Ensures that their shoulders fit into the patient's armpits
	Crosses the patient's arms in front of themselves and grasps the patient's wrists
	Leans forward slightly and pulls the patient up onto their back
	Stands and walks to safety

Walking Assist	Instructor's Note: The participant must always identify the need to move the patient.
	 Performs initial actions Sizes up the scene Identifies the reason for moving the patient Determines that the patient does <i>not</i> have a suspected head, neck or spinal injury Determines that the patient is conscious Enlists the aid of a second responder if needed Places the patient's arm across their shoulders and holds it in place with one hand Supports the patient with their other hand around the patient's waist If a second responder is present, they support the patient in the same manner from the other side Walks the patient to safety
Two-Person Seat Carry	Instructor's Note: The participant must always identify the need to move the patient.
	 Participant completes the following: Performs initial actions Sizes up the scene Identifies the reason for moving the patient Determines that the patient does <i>not</i> have a suspected head, neck or spinal injury Ensures that a second responder is available Puts one arm under the patient's thighs and the other across the patient's back Interlocks their arms with those of a second responder, under the patient's legs and across the patient's back Has the patient place their arms over the responder and the second responder's shoulders Lifts the patient in the "seat" formed by the responders' arms Keeps back straight Lifts with their legs

Direct Ground Lift	Instructor's Note: The participant must always identify the need to move the patient.
	Participant completes the following:
	Performs initial actions
	Sizes up the scene
	Identifies the reason for moving the patient
	Ensures that at least two additional responders are available
	Positions themselves as one of the three responders at the correct position, lining up on one side of the patient and kneeling close to the patient
	If they are the responder at the patient's head, places one arm under the patient's shoulders, cradling the head, and places the other arm under the patient's upper back
	If they are the second responder, places one arm under the patient's waist and the other under the buttocks
	If they are the third responder, cradles the patient's hips and legs
	Ensures that the patient's arms are crossed over their chest
	 If they are the responder at the patient's head, gives a signal to lift the patient If they are the second or third responder, listens for the signal to lift the patient
	 Lifts the patient to their knees
	Provides support by rolling the patient against the chest
	On the next signal, rises in unison with other two responders to a standing
	position and then moves the patient to the stretcher
	 Keeps back straight Lifts with the legs
	 Reverses the steps to lower the patient
Extremity Lift	Instructor's Note: The participant must always identify the need to move the patient.
	Participant completes the following:
	Performs initial actions
	Sizes up the scene
	Identifies the reason for moving the patient
	 Ensures that at least one additional responder is available Positions themselves as one of the responders, kneeling behind the patient or
	kneeling between the patient's legs while keeping the back straight If kneeling behind the patient, reaches under the patient's arms and grasps
	 the patient's opposite wrist If kneeling between the patient's legs, firmly grasps around the patient's
	knees and thighs If acting as the responder behind the patient, gives signal to move from the
	crouching position If acting as the responder at the patient's knees, listens for the signal to
	move from the crouching position
	 On the signal, moves from a crouching position to a standing position Moves the patient to the stretcher

LESSON 7

PUTTING IT ALL TOGETHER

Lesson Length: 60 minutes

MATERIALS, EQUIPMENT AND SUPPLIES

- Emergency Medical Response textbook
- Course Presentation Slides 98–102
- LCD projector, screen and computer
- Disposable latex-free gloves (multiple sizes) and other personal protective equipment (PPE), such as gowns, masks, eye protection and face shields
- Alcohol-based hand sanitizer
- Adult full-body manikins (optional)
- Additional clothing, blanket, tarp, drape, bedspread or sheet
- Skill Checklists from Lessons 2 and 6

LESSON OBJECTIVES

After completing this lesson, participants will be able to:

Demonstrate the knowledge and skills learned in Lessons 1–6.

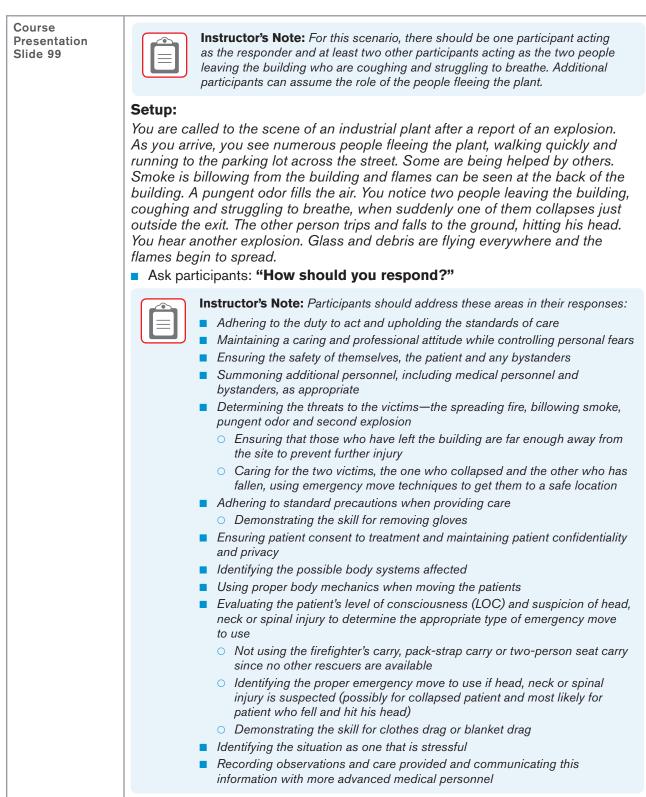
TOPIC: INTRODUCTION

Time: 5 minutes

ACTIVITY	 Tell participants that they: Will split into several small groups with each group receiving a scenario to role-play, using either a manikin or another participant as the patient. Will have approximately 5 minutes to prepare for the role-playing activity and that part of this preparation will include designating the roles for each of the group members based on the actual scenario assigned and gathering any necessary equipment and supplies. Are to formulate a response to the scenario integrating the key points from Chapters 1–5 of the EMR textbook. Should demonstrate any previously learned skills that would be required as part of the response, explaining their actions while providing care. Should be able to answer questions asked by the instructor or other participants. Can explain their actions rather than demonstrate a skill if they feel it necessary to use a skill that they have not yet learned. Will spend approximately 5 to 10 minutes after role-playing the scenario.
	necessary to use a skill that they have not yet learned.
	 Are to formulate a response to the scenario integrating the key points from Chapters 1–5 of the EMR textbook. Should demonstrate any previously learned skills that would be required a part of the response, explaining their actions while providing care. Should be able to answer questions asked by the instructor or other participants. Can explain their actions rather than demonstrate a skill if they feel it necessary to use a skill that they have not yet learned. Will spend approximately 5 to 10 minutes after role-playing the scenario, critiquing their actions and discussing any problems, errors or difficulties to the scenario.

SCENARIO 1: YOU ARE THE EMERGENCY MEDICAL RESPONDER

Time: 15 minutes



SCENARIO 2: YOU ARE THE EMERGENCY MEDICAL RESPONDER

Time: 15 minutes

Course Presentation Slide 100

Instructor's Note: For this scenario, there should be one participant acting as the responder and one participant acting as the patient. Additional participants can assume the role of the bystanders and law enforcement.

Setup:

You arrive at the scene of a convenience store robbery. The clerk in the store has been shot in the abdomen and is bleeding profusely. He responds to his name but is extremely lethargic and sleepy. The perpetrator has fled. Several people who were in the store at the time of the robbery are sitting outside talking to the police.

Ask participants: "How should you respond?"



Instructor's Note: Participants should address these areas in their responses:

- Identifying the need to check the scene for safety (most likely safe since law enforcement is on the scene and the perpetrator has fled)
 - Identifying the possible body systems involved with the patient's injury and how this information will guide their actions
- Adhering to standard precautions and using appropriate PPE, such as gloves, gown and face shield (if splashing is possible)
 - Demonstrating the skill for removing gloves
- Identifying the need to initiate care and continue to provide care until more advanced medical personnel arrive on the scene
- Recording and communicating information to more advanced medical personnel when they arrive on the scene
- Assisting with moving and packaging the patient for transport

SCENARIO 3: YOU ARE THE EMERGENCY MEDICAL RESPONDER

Time: 15 minutes

Course Presentation Slide 101



Instructor's Note: For this scenario, there should be one participant acting as the responder, one acting as the driver of the car, one acting as the driver of the pickup truck, one acting as the person talking to the driver of the car and one acting as the person directing traffic.

Setup:

You are called to the scene of a motor-vehicle crash at a four-way intersection that involves a pickup truck and a car. The car has rolled over onto its side. The pickup truck has crashed head-on into a light pole. Two people have stopped to help. One person is talking to the driver of the car, who is pinned in his seat and is unable to move his leg. The other person is directing traffic slowly around the scene. As you approach the scene, you see the driver of the pickup truck coming out of the vehicle. You also notice an empty bottle falling to the ground as he leaves the truck. The driver has scratches on his face and arms. He starts yelling at you, screaming, "Get away, I don't need your help. I'm fine." The man's speech is slurred and his breath smells of alcohol.

nts: "How should you respond?"
uctor's Note: Participants should address these areas in their responses:
entifying the need to size up the scene for possible hazards, such as wwned power lines or traffic lights and oncoming traffic, ensuring the safety the scene
dhering to the duty to act and upholding the standards of care
aintaining a caring and professional attitude when dealing with the patients
nsuring the safety of themselves, the patient and any bystanders
entifying the need to summon additional personnel including medical ersonnel and law enforcement, as appropriate
valuating each patient's condition
btaining consent for care from the patient pinned in the car, attempting to in consent from the driver of the pickup truck so that they can perform an itial evaluation and honoring the pickup truck driver's refusal of care if he ontinues to refuse
otifying local EMS personnel and medical direction if required by local otocols; notifying appropriate authorities about a possible alcohol- lated crash
ocumenting the patient's refusal according to local protocols
erforming a quick assessment of the patient pinned in the car, identifying ossible body systems involved in the injury and identifying initial care to be ovided based on the patient's condition within the limits of being pinned in e car
dhering to standard precautions
plaining ways to assist the patient who is pinned in the car to remain calm til further help arrives
ecording all events and care provided and communicating this information more advanced medical personnel when they arrive

WRAP-UP

Time: 10 minutes

ବି	 Answer participants' questions, ensuring that each participant has an opportunity to resolve any confusion. Review the scenarios and the important elements of care.
KEY POINTS Course Presentation Slide 102	 To adhere to the roles and responsibilities of the emergency medical responder (EMR): Provide emergency care at the scene while working with other services and healthcare personnel. Continue learning. Maintain certification (and licensure if required). Maintain personal health. To prevent disease transmission: Follow standard precautions. Use the proper PPE, hand-washing, engineering and work practice controls, equipment cleaning and disinfection, and proper disposal of contaminated or single-use equipment. To maintain well-being: Attend to mental and emotional health concerns. Provide accurate and appropriate communication. Seek counseling for signs of critical incident stress.

	 To promote medical, legal and ethical practice: Adhere to duty to act, scope of practice and standards of care. Respect the patient's rights for consent and refusal of care following advance directives, if present. Maintain patient confidentiality and privacy. Follow rules for mandatory reporting. To move and lift patients safely: Size up the scene before acting. Use proper body mechanics with the back in locked-in position and pushing rather than pulling. Perform emergency and nonemergency moves appropriately and correctly with the assistance of others and appropriate equipment. Avoid restraint unless the patient is a danger to themselves or others and only with proper authorization.
ASSIGNMENT FOR THE NEXT LESSON	 Read Chapter 6, Scene Size-Up. Read Enrichment: Dealing with Hazards at the Scene (<i>optional</i>), pages 138–143.
INSTRUCTOR PREPARATION	 Review Chapter 6, Scene Size-Up. Review Enrichment: Dealing with Hazards at the Scene (<i>optional</i>), pages 138–143. Obtain any necessary equipment and supplies for Lesson 8.

UNIT 2 | ASSESSMENT

Lesson 8:	Scene Size-Up
Lesson 9:	Primary Assessment
Lesson 10:	History Taking and Secondary Assessment
Lesson 11:	Communication and Documentation142
Lesson 12:	Skills Review
Lesson 13:	Putting It All Together152

SCENE SIZE-UP

Lesson Length: 60 minutes (70 minutes with Enrichment)

MATERIALS, EQUIPMENT AND SUPPLIES

- *Emergency Medical Response* textbook
- Course Presentation Slides 103–113
- LCD projector, screen and computer

LESSON OBJECTIVES

Knowledge

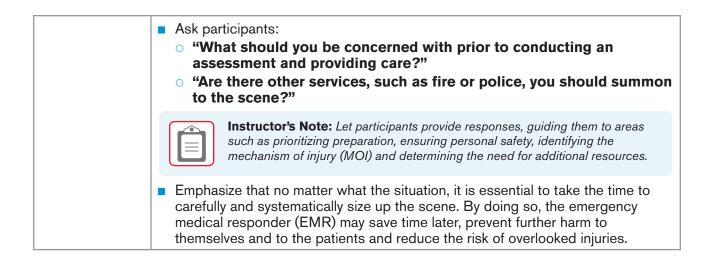
After completing this lesson, participants will be able to:

- Explain the rationale for sizing up a scene.
- Identify the elements of a scene size-up.
- Determine when a scene is safe to enter.
- Describe common hazards found at the scene of a trauma or medical emergency.
- Have a basic understanding of scene and traffic control and related safety issues.
- Describe the principles of personal safety at an emergency scene.
- Identify standard and specialized personal protective equipment (PPE).
- Describe common mechanisms of injury (MOIs) and natures of illness.
- Recognize an unstable vehicle.
- Explain the safety fundamentals of vehicle stabilization.
- Know when to request and what types of additional resources may be necessary at the scene.
- Describe other dangerous situations and hazardous materials (HAZMATs).

TOPIC: INTRODUCTION

Time: 7 minutes

ACTIVITY Review the opening scenario: You are summoned to a home where a 43-year-old mother and her two children were apparently overcome by carbon monoxide from a gas oven. The power went out earlier and has not been restored. The family members were Course found by a concerned neighbor. When you arrive, you see the mother and Presentation one of the children who are conscious and complaining of nausea and severe Slide 104 headaches. You also see a 6-year-old boy who appears to be unresponsive and not breathing.



TOPIC: **DISPATCH INFORMATION**

Time: 3 minutes

KEY POINTS	Information provided by the dispatcher is essential because it
Course Presentation Slide 105	gives the first clues about what you may encounter, including potential hazards.
	 This information also will affect the personal protective equipment (PPE) and other equipment that may be needed.
	It may be incomplete or not entirely accurate, but you must never undervalue the information dispatch provides as a foundation for preparation.

TOPIC: **SAFETY**

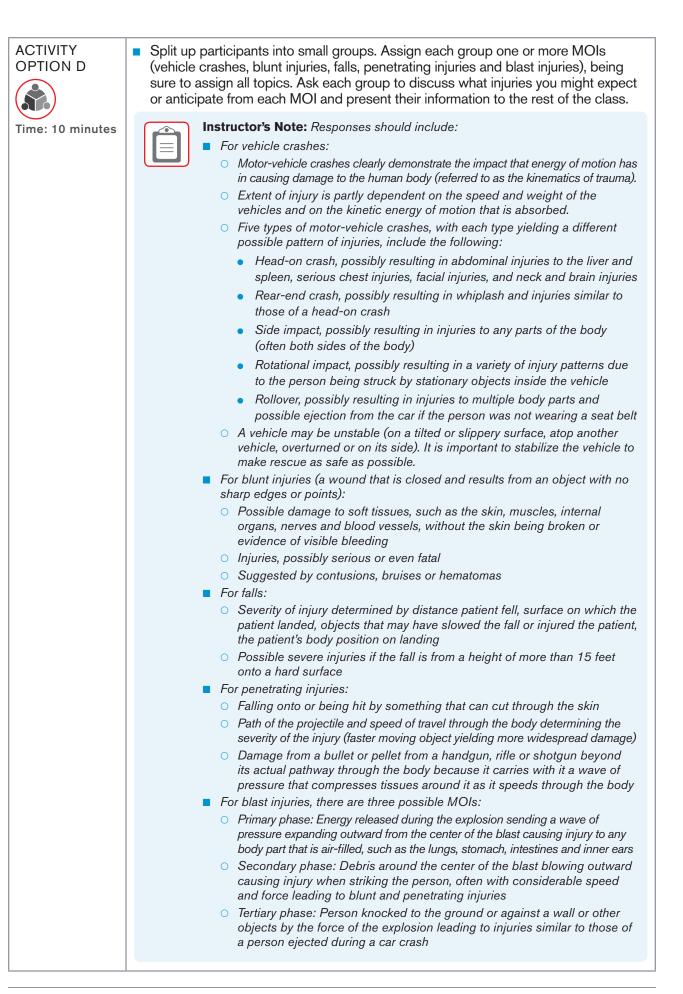
Time: 10 minutes

SCENE SAFETY	
KEY POINTS Course Presentation Slides 106–108	 Safety includes both personal safety and the safety of others, including patients and bystanders. Use each of your senses to size up the scene: Look and feel for hazards. Listen for unusual sounds or alarms. Smell to detect any unusual or unexpected odors. Always observe the scene for dangers, such as traffic, unstable structures, downed electrical lines, leaking fuels or fluids, smoke or fire, broken glass, swift-moving water, violence, explosions or toxic gas exposure. Take safety measures that are appropriate to the scene, including traffic and crowd control. Continually reassess the situation for new dangers that may arise. You may need to change how you respond to the emergency depending on how the scene changes. True scene safety and control is a continuous, not an initial, process.

PERSONAL SAFETY		
KEY POINTS	 Personal safety always is foremost when arriving on the scene. Pay particular attention to the: Location of the emergency. Extent of the emergency. Apparent scene dangers. Apparent number of injured or ill people. Behavior of the patient(s) and any bystanders. Follow the four guidelines to ensure personal safety and that of the bystanders: Take time to evaluate the scene. Wear appropriate PPE (including standard and specialized PPE and gear). Do not attempt to do anything that you are not trained to do. Get the help needed by notifying additional personnel. Frequently wash your hands or use hand sanitizers to reduce the spread of germs. Be sure to change gloves if caring for multiple patients. 	
SAFETY OF C	Instructor's Note: Encourage participants to review Chapter 2, The Well-Being of the Emergency Medical Responder, for information about standard precautions and PPE.	
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KEY POINTS	 Never move a patient unless there is an immediate danger. Ideally, a patient should be moved only after you have assessed and properly cared for them. Continue to scan the area for possible dangers as you approach the patient. Use appropriate emergency moves if the patient is in immediate danger. Look for bystanders who may be in potential danger and have them move to safety. If the scene is safe, enlist the aid of bystanders. 	
	Instructor's Note: Encourage participants to review Chapter 5, Lifting and Moving Patients, for information on emergency and nonemergency moves.	
NUMBER OF PATIENTS		
KEY POINTS	 Identifying the number of patients at the scene can be easy but also challenging in certain situations. You should call for additional help immediately if it appears that there are more patients than initial responders. 	

TOPIC: MECHANISM OF INJURY

ACTIVITY OPTION A Time: 5 minutes Course Presentation Slide 109	 Ask participants to define the term "mechanism of injury" (MOI) and to identify possible examples.
	 Instructor's Note: Responses could include: MOI is the physical event that caused the injury. Examples include: Crashes, such as with a motor vehicle, where a part of the body hits the steering wheel, dashboard or some other part of the car or the person is thrown from a car or through the car's windshield. Falls, such as falling down steps, off a bicycle or on ice. Penetrating trauma, such as gunshot or stab wounds. Blunt trauma, such as objects striking a person (e.g., when a person is hit with a baseball bat or other heavy object).
	Tell participants: "Common MOIs can include vehicle crashes, falls, and blunt or penetrating trauma."
ACTIVITY OPTION B Time: 5 minutes	 Ask participants to think about movies or television shows that they have watched that have involved various MOIs. Have them describe what they saw. Instructor's Note: Responses will vary but could include injuries related to vehicle crashes, gunshots and explosions.
ACTIVITY OPTION C Time: 5 minutes	 Using the following scenario, ask participants to identify safety issues and possible MOIs that may be involved: You are called to the scene of a motor-vehicle crash in which a driver lost control of his car. The car hit a utility pole sideways and then another parked car, eventually causing the car to land on its roof. The car was not equipped with air bags, and neither the driver nor the passenger was wearing a seat belt. The windshield on the driver's side is shattered. The passenger in the car was thrown approximately 30 feet from the car. The front hood of the car is beginning to smoke, and there is glass and liquid all over the roadway.
	 Instructor's Note: Responses could include: Safety issues, such as broken glass, spilled liquids, gasoline possibly leaking from the car, the smoke coming from the car's hood area, the car's instability and possible downed wires from the utility pole. MOIs, such as the motor-vehicle crash impact: side impact with the utility pole, impact with the parked car and rollover of the car; driver impact with the windshield; passenger impact and acceleration through the windshield; passenger's impact with the ground after being thrown (similar to a fall); blunt trauma to the driver due to impact with steering wheel, dashboard or windshield; and possible penetrating injury to the driver or passenger related to glass from the windshield.



TOPIC: NATURE OF ILLNESS

KEY POINTS	In some situations, you may be called to a scene because a person is ill and has no evidence of trauma.
	Recognizing the nature of illness helps to plan the steps to provide immediate care.
Course Presentation Slide 110	A conscious person may be able to describe the symptoms, or there may be obvious signs.
	 Bystanders or family may provide information about their observations or any pre-existing conditions if the patient is unable to speak. However, sometimes the patient or others do not tell the truth.
	The EMR needs to scan the scene for items that may provide clues to the problem and consider the patient's location and environment.
	Any observations should be recorded.

TOPIC: ADDITIONAL RESOURCES

Time: 10 minutes

KEY POINTS Course Presentation Slide 111	 After sizing up the scene and gathering information about the MOI or nature of illness, you then decide what additional resources are needed to keep yourself and the patient safe or to provide care. The number of resources depends on any hazards at the scene, the number of injured or ill persons and the MOI or nature of illness and may include: Advanced life support (ALS). Air medical transport. Utility department. Fire department. Law enforcement.
HAZARDOUS	MATERIALS
KEY POINTS	 Hazardous materials (HAZMATs) are any chemical substances or materials that can pose a threat to the health, safety and property of an individual. Clues that indicate the presence of hazardous materials when approaching an emergency scene may include: Signs (placards) on vehicles, storage facilities or railroad cars identifying the presence of hazardous materials. Clouds of vapor. Spilled liquids or solids. Unusual odors. Leaking containers, bottles or gas cylinders. Chemical transport tanks or containers. Do not approach a HAZMAT scene unless you are trained to do so and have the appropriate PPE, such as a self-contained breathing apparatus (SCBA) and chemical protective suit. If clues suggest the presence of hazardous materials, do the following: Notify dispatch. Do not approach the scene. Remain uphill and upwind at a safe distance from the scene. Await specialized resources.

VIOLENCE	
KEY POINTS	 Violence can occur in a wide variety of settings but most commonly includes scenes of domestic violence, fights in bars, gang fights, street fights, potential suicide or any situation where angry bystanders or family members are present. Clues to violence or potential violence include broken glass, overturned furniture, weapons, alcohol or drug use, yelling, swearing, threatening, pacing, clenched fists, objects being thrown or other signs of tension. Restraining a patient is a last resort but may be necessary to ensure the safety of the patient, yourself and others.
	Instructor's Note: Encourage participants to review Chapter 2, The Well-Being of the Emergency Medical Responder, and Chapter 5, Lifting and Moving Patients, for information about using restraints.

WRAP-UP	Time: 5 minutes
Course Presentation Slide 112	 Reinforce the need for using the information from dispatch to begin planning, emphasizing that the first priority is personal safety. A second priority is keeping patients and bystanders safe.
ACTIVITY	 Review the closing scenario: You have taken the proper precautions to make it safe for you to enter the scene and begin assessing and providing care for carbon monoxide poisoning. Ask participants: "What if the mother and children lived in a place other than a single-family home?" "What additional considerations or actions might there be?"
	 Instructor's Note: Responses should include: Size up the scene. Determine the need for additional resources (e.g., fire department or utility company) and summon more advanced medical personnel. If it is not a single-family residence, call for the fire department. The fire department will have the proper equipment to enter the building to look for and locate other possible patients because of the hazardous situation.
ASSIGNMENT FOR THE NEXT LESSON	 Read Chapter 7, Primary Assessment. Read Enrichment: Glasgow Coma Scale (<i>optional</i>), pages 170–171. Review Chapter 6, Scene Size-Up.
INSTRUCTOR PREPARATION	 Read Chapter 7, Primary Assessment. Review Enrichment: Glasgow Coma Scale (<i>optional</i>), pages 170–171. Review Chapter 6, Scene Size-Up. Review the video segments, "Performing a Primary Assessment" (2:36) and "Using a Resuscitation Mask" (3:31). Review the skills and obtain any necessary equipment and supplies for Lesson 9.

ENRICHMENT: DEALING WITH HAZARDS AT THE SCENE

INTRODUCTIO	N
ACTIVITY Course Presentation Slide 113	 Ask participants for examples of other emergency situations (other than vehicle collisions, falls and blunt or penetrating trauma) that might cause hazards at the scene. Tell participants: "Remember to always expect the unexpected and make sure the scene is safe before entering."
HAZARDS	
KEY POINTS	 Traffic often is the most common danger for EMRs and other emergency workers; the roadway is the number one cause of death among emergency medical services (EMS) personnel. Only firefighters should approach a fire; do not approach a burning vehicle and never enter a burning or smoke-filled building. Never use an elevator in a building that may be burning. If downed power lines are present, move the crowd back from the danger zone (the safe area established at a point twice the length of the span of the wire) and never attempt to move downed wires or touch anything that may be in contact with the power line. If a person is in the water, use the basic rule of "reach, throw, row then go." Never enter a body of water to rescue someone unless you have been trained in water rescue and then only as a last resort. An unsafe building or structure is one in which the air may contain debris or hazardous gases and/or there is a possibility of being trapped or injured by collapsed walls, weakened floors and other debris. Natural disasters include tornadoes, hurricanes, earthquakes, forest fires and floods. Rescue efforts usually are coordinated by local resources until they become overwhelmed, and then the efforts are coordinated by a government agency, (FEMA). Scenes involving more than one patient are referred to as multiplecasualty incidents (MCIs). Determine who needs immediate care and who can wait for help to arrive. If a patient needing care is hostile, calmly explain who you are and that you are there to help; obtain the patient's consent to provide care; withdraw from the scene if the patient refuses care or threatens you and wait for more advanced medical care to arrive. Never approach a hostile crowd unless you are trained in crowd management and are supported by other trained personnel. Never enter a suicidal person unless police have made it secure. Never approach an armed suicidal person alone. In a hostage situation, the

PRIMARY ASSESSMENT

Lesson Length: 110 minutes (120 minutes with Enrichment)

MATERIALS, EQUIPMENT AND SUPPLIES

- Emergency Medical Response textbook
- Course Presentation Slides 114–133
- LCD projector, screen and computer
- Emergency Medical Response DVD
- DVD player and monitor
- Adult and infant manikins (one for every two participants; child manikins optional)
- Disposable latex-free gloves (multiple sizes) and other personal protective equipment (PPE), as indicated
- Decontamination supplies
- Resuscitation masks (adult and pediatric; one for each participant)

LESSON OBJECTIVES

Knowledge

After completing this lesson, participants will be able to:

- Summarize the reasons for forming a general impression of the patient.
- Explain the purpose of the primary (initial) assessment.
- Describe methods for assessing a patient's level of consciousness (LOC).
- Explain the differences in assessing the LOC of an adult, a child and an infant.
- Describe methods of assessing whether a patient is breathing.
- Distinguish a patient with adequate breathing from a patient with inadequate breathing.
- Describe the methods used to assess circulatory status.
- Explain the differences in obtaining a pulse in an adult, a child and an infant.
- Explain the need to assess a patient for external bleeding.
- Describe how to assess a patient for severe bleeding.
- Describe how to assess breathing rate and quality, pulse rate and quality, and skin appearance.
- Describe how to establish priorities for care including recognition and management of shock.

Skill

After completing this lesson, participants will be able to:

- Perform a primary assessment.
- Demonstrate how to assess LOC.
- Demonstrate how to open the airway using the head-tilt/chin-lift maneuver and the jaw-thrust (without head extension) maneuver.
- Demonstrate how to use a resuscitation mask.

TOPIC: INTRODUCTION

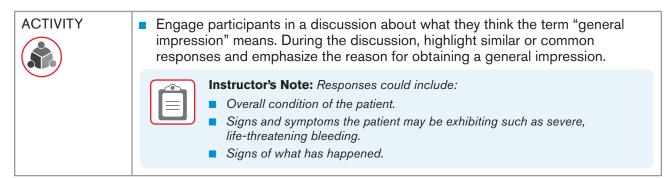
ACTIVITY Course Presentation Slides 115–116	 Review the opening scenario: Your rescue unit arrives at a scene to find a distraught mother who says, "I can't wake my baby up." The infant appears to be unconscious and is turning blue. Ask participants: "How would you respond?" "What are your immediate priorities?" "What should you do first?"
	Instructor's Note: Let participants provide responses, guiding them to the key areas of a primary assessment.
	 Tell participants: "Primary assessment is a check for conditions that are an immediate threat to a patient's life." Describe the key components of a primary assessment.
	Instructor's Note: An effective primary assessment includes creating a general impression of the patient, checking the patient's level of consciousness (LOC; responsiveness), and checking breathing and circulation (pulse and severe bleeding).

TOPIC: THE IMPORTANCE OF THE SCENE SIZE-UP

KEY POINTS Course Presentation Slides 117–120	 Scene size-up must always be done before any care can be provided. Make sure the scene is safe for you, other responders, the patient and any bystanders. If you lack the training and equipment, summon appropriate personnel. Nothing is gained by risking your own safety. It is critical to evaluate safety, mechanism of injury (MOI) or nature of illness, number of patients and resources needed.
	Instructor's Note: Encourage participants to review information about scene size-up in Chapter 6, Scene Size-Up.
ACTIVITY	 Using the following scenario, ask participants to identify possible clues that would indicate the MOI: You are called to the home of an older woman. Her daughter arrived at the home and found her mother lying on the kitchen floor moaning in pain and unable to move. The older woman is lying face-down on the floor, pointing to her right leg and mumbling that it hurts terribly. She is wearing a bathrobe and socks. There are numerous bottles of pills on the kitchen counter near the woman. There is also a small kitchen throw rug that is crumpled up near the doorway. The woman's slippers are under the kitchen table.
	 Instructor's Note: Responses could include: Wearing socks that may have caused her to slip and fall. Tripping on the kitchen throw rug. Falling, possibly due to side effects of the medications.

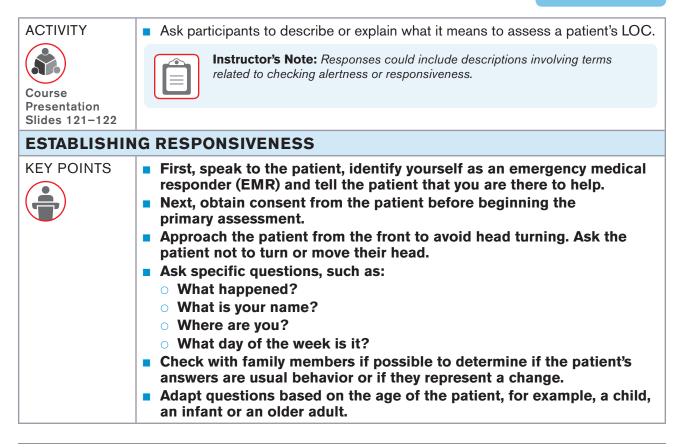
RECOGNIZING PATIENTS	
KEY POINTS	 Look carefully for more than one patient. It is easy to overlook small children or infants if they are not crying. Look for "walking wounded" at traffic collisions—those who have gotten out of vehicles involved in the collision but who still may be injured.
SUMMONING	MORE ADVANCED MEDICAL PERSONNEL
KEY POINTS	 Summon more advanced medical personnel for any of the following conditions: Unconsciousness or altered LOC Breathing problems Chest pain, discomfort or pressure lasting more than a few minutes that goes away and comes back, or that radiates to the shoulder, arm, neck, jaw, stomach or back Persistent abdominal pain or pressure No pulse Severe, life-threatening bleeding Vomiting blood or passing blood Severe (critical) burns Suspected poisoning Seizures Stroke Painful, swollen, deformed areas or an open fracture There are always exceptions with other injuries and illnesses.
THE ROLE OF BYSTANDERS	
KEY POINTS	 Look for bystanders who are in potential danger and instruct them to move to safety. Ask anyone present how many people are involved. Ask bystanders if they can tell you what happened or if they can help in other ways, such as indicating whether the patient has any medical problems or allergies.

TOPIC: GENERAL IMPRESSION OF THE PATIENT



KEY POINTS	 The general impression alerts responders to serious problems, such as severe, life-threatening bleeding that requires additional resources or to a minor problem that can be treated easily. If you see severe, life-threatening bleeding as you are forming your general impression, immediately control the bleeding with any available resources if it is safe to do so, or delegate the responsibility to another responder so you can begin your primary assessment. You may even ask the patient, if they are conscious and alert, to apply pressure to their wound while you prepare to provide care. Many conditions warrant summoning advanced medical personnel. These include severe, life-threatening bleeding, breathing problems, prolonged chest pain, seizures and suspected head, neck or spinal injuries. Look and listen for signs and symptoms:
	 Signs are evidence of injury or illness that are observed (e.g., bleeding, unusual skin appearance). Symptoms are what the patient reports experiencing (e.g., pain, nausea, headache, shortness of breath). As you perform the primary assessment, check for immediate life-threatening conditions. This means assessing whether the patient: Is conscious. Has an open and clear airway. Is breathing. Has a pulse. The need to determine if spinal precautions are necessary is based on
	the general impression and likely MOI.

TOPIC: LEVEL OF CONSCIOUSNESS



PATIENT RESPONSE—AVPU		
KEY POINTS	 AVPU is a method to describe a patient's LOC: <u>A</u>lert: Aware of surroundings, able to acknowledge responder's presence and able to respond to questions <u>Verbal</u>: Responds to sound or voice (opens eyes when hearing a voice or when told to open them) <u>Painful</u>: Responds only to pain, such as pinching the earlobe or skin above the collarbone; alternatively, if neck trauma is suspected, pinch or squeeze the fleshy skin between the thumb and forefinger instead of the earlobe <u>Unresponsive</u>: Does not respond to any stimuli (unconscious) Once the LOC is determined, then you must check the patient's airway, breathing and circulation (pulse and skin characteristics). 	
ACTIVITY OPTION A Time: 5 minutes	 Using the following scenario, ask participants how they would go about determining the person's LOC using the AVPU scale: Upon entering the office restroom, you find a fellow co-worker lying on the floor. You notice a small gash on the back of the head that is oozing bright red blood. Instructor's Note: Responses should include: Approach the person from the front and ask the person their name, where they are and what happened. Ask the person not to move their head. If the answers to the initial questions are uncertain, then check the person's response to verbal stimuli; for example, ask the person to open their eyes. If the person does not respond, then check the person's response to painful stimuli. 	
ACTIVITY OPTION B Time: 10 minutes	 Divide participants into small groups and have the groups identify ways that they may establish the LOC for an infant. Using these same small groups, have participants describe how they would establish LOC for a 2- or 3-year-old child. Bring the groups together to discuss the similarities and differences for establishing LOC in these age groups. Instructor's Note: Reponses for establishing the LOC for an infant could include: Touching the infant to see how they respond. Having the parent/caregiver hold the infant and asking the parent/caregiver if this behavior is different from the infant's usual behavior. Calling the infant by their name and seeing if they respond. Having the parent/caregiver hold the child and asking the parent/caregiver if this behavior is different from the child's usual behavior. Calling the child by their name and seeing if they respond. Asking the child about their favorite toy and then checking with the parent/caregiver to verify that the information is correct. 	

TOPIC: AIRWAY STATUS

KEY POINTS Course Presentation Slides 123–124	 The airway is the passageway for air between the mouth and nose to the lungs. An open airway is necessary to breathe. A person who can speak or cry is conscious, has an open airway, is breathing and has a pulse; however, the patient still may be at risk for a compromised airway. Establishing or maintaining an open airway in an unconscious patient may include suctioning, using a finger sweep or using an oral airway. Dentures are left in place if present, unless they become loose and block the airway.
OPENING THI	E AIRWAY
KEY POINTS	 If the patient is unresponsive, assess the airway with the patient face-up.
OPENING TH	E AIRWAY—HEAD-TILT/CHIN-LIFT MANEUVER
KEY POINTS	 Use the head-tilt/chin-lift maneuver to open and maintain the airway of an unresponsive patient who does not have a suspected head, neck or spinal injury. A resuscitation mask may or may not be present.

HEAD-TILT/CHIN-LIFT MANEUVER	
ACTIVITY	 Tell participants that they should use the head-tilt/chin-lift maneuver to open and maintain the airway of an unresponsive patient who does not have a suspected head, neck or spinal injury. Ask participants to take their textbooks and disposable latex-free gloves with them to the practice area. Divide participants into small groups and guide groups through the steps listed on the skill chart. Have each participant demonstrate the head-tilt/chin-lift maneuver on the manikins while the other participants use their textbooks to give feedback. Observe each participant performing the technique and evaluate completion of the skill using the Skill Checklist. Intervene and provide positive and corrective feedback as needed to each participant individually when possible. Be sure to point out any common errors, such as allowing the patient's head to move or not ensuring proper mask position. Check off participant's progress on the Participant Progress Log.

KEY POINTS	 Use of the jaw-thrust (without head extension) maneuver opens the airway for a person with a suspected head, neck or spinal injury, keeping the head and neck in a neutral position. A resuscitation mask may or may not be present.
OPENING THE AIRWAY—Jaw-Thrust (Without Head Extension) Maneuver	
	 4. Use firm backward pressure from the palm of your hand to tilt the head back while lifting the jaw up with the fingertips to extend the chin forward. If the patient is a child, tilt the head only slightly past neutral. For an infant, tilt the head only to a neutral position. 5. Keep pressure on the patient's forehead to help maintain the airway in an open position.
SKILL	 After sizing up the scene and establishing that the patient is unresponsive and there is no suspected head, neck or spinal injury: 1. Kneel beside the patient's head and neck. 2. Place one hand on the patient's forehead. 3. Place the fingertips of two or three fingers of your other hand under the bony part of the patient's lower jaw near the chin. If the patient is a child or an infant, use only one or two fingers.

JAW-THRUST (WITHOUT HEAD EXTENSION) MANEUVER	
ACTIVITY	 Tell participants that they should use the jaw-thrust (without head extension) maneuver to open and maintain the airway of an unresponsive patient who is suspected of having a head, neck or spinal injury. Ask participants to take their textbooks and disposable, latex-free gloves with them to the practice area. Divide participants into small groups and guide groups through the steps listed on the skill chart. Have each participant demonstrate the jaw-thrust (without head extension) maneuver on the manikins while the other participants use their textbooks to give feedback. Observe each participant performing the technique and evaluate completion of the skill using the Skill Checklist. Intervene and provide positive and corrective feedback as needed to each participant individually when possible. Be sure to point out any common errors, such as allowing the patient's head to move or not ensuring proper mask position. Check off participant's progress on the Participant Progress Log.
SKILL	 After sizing up the scene and establishing that the patient is unresponsive, lying face-up and has a head, neck or spinal injury: 1. Kneel above the patient's head. 2. Put one hand on each side of the patient's head, with thumbs near the corners of the mouth pointed toward the chin. 3. Use the elbows for support. 4. Slide the fingers into position under the angles of the patient's jawbone. o For a child or an infant, use only two or three fingers of each hand. 5. Without moving the patient's head, apply downward pressure with thumbs and lift the jaw. Note: If the patient's lips close, pull back the lower lip with the thumbs.

TOPIC: BREATHING STATUS

 If a patient is breathing, the chest will rise and fall. Look, listen and feel for effective breathing with the ear positioned over the patient's mouth and nose while checking for a pulse for at least 5 seconds, but no more than 10 seconds.
 Isolated or infrequent gasping in the absence of other breathing in an unconscious person may be agonal breaths that can occur after the heart has stopped beating. Agonal breaths are not breathing. Care for the patient as if they are not breathing at all. To assess breathing rate, count the number of times the patient breathes (inhales and exhales) for either 15 seconds and multiply the number by 4 or for 30 seconds and multiply that number by 2. Adults normally breathe 12 to 20 breaths per minute. Children typically breathe 15 to 30 breaths per minute. Infants have a respiratory rate of 25 to 50 breaths per minute. Adult rates less than 8 or greater than 20 breaths per minute. Child rates less than 20 or greater than 30 breaths per minute. Infant rates less than 20 or greater than 60 breaths per minute. Depth of breathing may be abnormal, such as shallow, or sounds may be heard, such as gurgling, whistling, crowing or snoring. Increased effort with breathing may be seen as using accessory muscles (muscles in the neck, between the ribs and/or abdomen), flaring of the nostrils and using the tripod position (patient is leaning forward while sitting, bracing both arms on knees or an adjacent surface). Supplemental oxygen or ventilations are provided if local protocols allow and the patient is: Unresponsive. Hypoxic (pale, cool, clammy, moist skin is an early sign of inadequate oxygenation). Cyanotic (the mouth, lips and nail beds appear blue). Breathing very shallow respirations. Breathing increasingly slow. Tolerant of assisted ventilation.
 Engage participants in a discussion about how they would determine if a patient was breathing. Instructor's Note: Responses should include: Looking for chest movement. Listening for the sound of air movement. Feeling for air coming out of the nose or mouth.

TOPIC: CIRCULATORY STATUS

KEY POINTS	 If the heart has stopped, blood will not circulate, possibly resulting in severe brain damage or death due to lack of oxygen. Always check for a pulse at the same time that you check for breathing.
ACTIVITY OPTION A Time: 5 minutes	 Have participants split into pairs and have each pair locate their own and their partner's radial, brachial and carotid pulses and determine the rate for each. Working in the same pairs, have each participant assess capillary refill in their partner.
ACTIVITY OPTION B	 Divide the participants into two groups. Assign each group one of the following topics: pulse and perfusion. Tell each group to use their textbooks to explain the topic and how it is assessed. Have each group present its information to the rest of the class.
Time: 10 minutes	 Instructor's Note: Responses should include: Pulse: Reflective of the wave of blood that moves through the blood vessels with every heartbeat; normal pulse considered "relative"; rate ranges for adult (60 to 100 beats per minute [bpm]), adolescent (ages 11 to 14 years from 60 to 105 bpm), school-age (ages 6 to 10 years from 70 to 110 bpm), preschool-age (ages 3 to 5 years from 80 to 120 bpm), toddler (ages 1 to 3 years from 80 to 130 bpm), infant (ages 1 month to 1 year from 80 to 140 bpm) and newborn (less than 1 month from 60 to 105 bpm); signs of abnormal pulse (irregular pulse, weak or hard-to-find pulse, excessively fast or slow pulse); most important change is a pulse being present to no pulse at all; how to check a pulse (two fingers on top of a major artery located close to the skin's surface and over a bone structure; counting number of beats for 15 seconds and multiplying by 4 or counting for 30 seconds and multiplying by 2); pulse sites (carotid arteries [unconscious adults and children], radial arteries [conscious adults and children] and brachial arteries [infants]); immediate resuscitation if no pulse after 10 seconds Perfusion: Circulation of blood through the body or through a particular body part; skin characteristics (color, temperature, moisture, capillary refill) as indicative of perfusion; how to check capillary refill (squeezing body part [usually capillaries in the fingertips; fingernails or toenails in children; forearm or over kneecap for infants] for about 2 seconds, releasing and watching for area to return to pink; if greater than 2 seconds, circulation considered insufficient)
DVD	 Show the video segment, "Performing a Primary Assessment" (2:36). Answer participants' questions about the video segment.

PRIMARY AS	SESSMENT
ACTIVITY	 Assign partners or ask participants to find partners.
	 Ask participants to take their textbooks and disposable latex-free gloves with them to the practice area.
	Explain that each participant will demonstrate the primary assessment for an adult and child on another participant. Tell them that they will demonstrate primary assessment for an infant using an infant manikin and infant mask.
	Tell participants that they will practice giving ventilations using a resuscitation mask on infant manikins and will continue to practice giving ventilations using a resuscitation mask on manikins in a later lesson.
	 Observe each participant performing the skill and evaluate completion of the skill using the Skill Checklist. Intervene and provide positive and corrective feedback as needed to each participant individually when possible.
	After practicing on a partner, observe participants practicing the primary assessment using pediatric resuscitation masks and infant manikins, ensuring they practice the techniques for LOC/responsiveness, opening the airway, giving ventilations and checking for a pulse that are unique to an infant.
	Be sure to point out any common errors, such as failing to size up the scene, failing to determine LOC, failing to follow standard precautions, improperly opening the airway, checking an inappropriate pulse site or pressing the pulse site too hard.
	 Check off participant's progress on the Participant Progress Log.
SKILL	After sizing up the scene and following standard precautions:
	 Check responsiveness. Shout, "Are you OK?" and then tap the shoulder and shout again, "Are you OK?" For an infant, tap the underside of the foot.
	2. If no response, summon more advanced medical personnel.
	Note: If patient is face-down, roll the patient onto their back while supporting the head, neck and back.
	3. Open the patient's airway and simultaneously check for breathing and a pulse for at least 5 seconds, but no more than 10 seconds.
	 To open the airway from the side, use the head-tilt/chin-lift maneuver. To open the airway from above the patient's head, use the jaw-thrust (with head extension) maneuver. If a head, neck or spinal injury is suspected, use the jaw-thrust (without head extension) maneuver.
	 For an adult or a child, feel for a carotid pulse by placing two fingers in the middle of the patient's throat and then slide them into the groove at the side of the neck closest to you. Press in lightly; pressing too hard can compress the artery. For an infant, feel for the brachial pulse on the inside of the upper arm between the infant's elbow and shoulder. Press in lightly; pressing too hard
	can compress the artery. Note: For a drowning victim, give 2 ventilations prior to Step 4 if local
	protocols allow.
	4. Provide care based on the conditions found.
	Note: If a patient is unresponsive but breathing normally with no suspected head, neck, spinal, hip or pelvic injury, move the patient into a side-lying recovery position. Patients with a suspected head, neck, spinal, hip or pelvic injury should not be placed in a recovery position unless you are unable to manage the airway effectively or you are alone and need to leave the patient to call for additional resources.

RECOVERY POSITION	
SKILL	To place a supine adult or child in a recovery position:
	1. Kneel at the patient's side.
	2. Lift the patient's arm that is closest to you up next to their head.
	3. Take the patient's arm that is farthest from you and place it next to their side.
	4. Grasp the leg that is closest to you and bend it up.
	5. Place one of your hands on the patient's shoulder and your other hand on their hip that is farthest from you.
	6. Using a smooth motion, roll the patient toward you by pulling their shoulder and hip with your hands. Make sure the patient's head remains in contact with their extended arm.
	7. Stop all movement when the patient is on their side.
	 Place the patient's knee on top of the other knee so that both knees are in a bent position.
	 Place the patient's free hand under their chin to help support their head and airway.
	To place an infant in a recovery position:
	Place the infant in a recovery position as would be done for an older child.
	You also can hold an infant in a recovery position by:
	• Carefully positioning the infant face-down along your forearm.
	 Supporting the infant's head and neck with your other hand while keeping the infant's mouth and nose clear.

TOPIC: RESUSCITATION MASK

KEY POINTS	 Provide ventilations using a resuscitation mask or bag-valve-mask (BVM) resuscitator, which helps to prevent disease transmission. Select the proper size of resuscitation mask for the patient (adult, child or infant). If breathing is too slow for the age of the patient, speak to the patient. If the patient is unresponsive, try using painful stimuli to increase breathing. If the patient is not breathing or the breaths are not effective, assist breathing with ventilations or administer supplemental oxygen, based on local protocols. If giving assisted ventilations, continue until the patient begins to breathe spontaneously and adequately or until more advanced medical personnel take over.
DVD	 Show the video segment, "Using a Resuscitation Mask" (3:31). Answer participants' questions about the video segment.

USING A RES	SUSCITATION MASK—ADULT, CHILD AND INFANT
ACTIVITY	 Ask participants to take their textbooks, disposable latex-free gloves and resuscitation masks with them to the practice area. Assign partners or ask participants to find partners. Have each participant demonstrate using a resuscitation mask on the manikins (adult and/or child and infant) while their partner uses the skill sheet to give feedback. Observe each participant performing the technique and evaluate completion of the skill using the Skill Checklist. Intervene and provide positive and corrective feedback as needed to each participant individually when possible. Be sure to point out any common errors, such as improper size selection or improper assembly of the mask, inadequate seal, inadequate or improper opening of the airway or excessive time spent blowing into the mask. Check off participant's progress on the Participant Progress Log.
SKILL	 Always follow standard precautions when providing care. Size up the scene for safety. Always select a properly sized mask for the patient. 1. Assemble the mask and valve, attaching the one-way valve to the resuscitation mask, if necessary. 2. Using the head-tilt/chin-lift maneuver, open the airway so it is: Past a neutral position for an adult. Slightly past a neutral position for a child. In a neutral position for an infant. 3. Position the mask. Kneel to the side of or above the patient's head and place the mask over the patient's mouth and nose, starting from the bridge of the nose. Place the bottom of the mask below the mouth but not past the chin. 4. Seal the mask. If positioned to the side of the patient's head: With the top hand, place the thumb and fingers around the top of the resuscitation mask, creating a "C". With the other hand, slide the first two fingers into position on the bony part of the patient's chin. Apply even, downward pressure with the top hand and the thumb of the lower hand to seal the top and bottom of the mask. If positioned above the patient's need: Place the thumbs and index fingers along each side of the resuscitation mask, creating a "C". Slide the other fingers into position behind the angles of the patient's jawbone, creating a "C". Slide the other fingers into position behind the angles of the patient's jawbone, creating an "E" on both sides. Apply even, downward pressure with the fingers and lift the jaw into the mask. 5. Blow into the mask. Give 2 ventilations to the patient. Each ventilation should last about 1 second and make the chest begin to rise. Pause briefly between ventilations to let the exhaled air escape.

	USCITATION MASK—HEAD, NECK OR SPINAL INJURY SUSPECTED: (WITHOUT HEAD EXTENSION) MANEUVER—ADULT OR CHILD
SKILL	Always follow standard precautions when providing care. Size up the scene for safety. Always select a properly sized mask for the patient. If a head, neck or spinal injury is suspected:
	1. Assemble the resuscitation mask, attaching the one-way valve to the resuscitation mask, if necessary.
	2. Position the mask.
	 Kneel above the patient's head.
	 Place the mask over the patient's mouth and nose, starting from the bridge of the nose.
	 Place the bottom of the mask below the mouth but not past the chin.
	3. Seal the mask.
	• Slide the fingers into position under the angles of the patient's jawbone.
	 Without moving the patient's head, apply even, downward pressure to seal the mask.
	4. Open the airway.
	 Without tilting the head back, open the airway by pushing or thrusting the lower jaw up with the fingers along the jawbone.
	5. Blow into the mask.
	 Give 2 ventilations to the patient.
	 Each ventilation should last about 1 second and make the chest begin to rise. Pause briefly between ventilations to let the exhaled air escape.

TOPIC: LIFE THREATS AND SHOCK

KEY POINTS Course Presentation Slides 128–131	 Consciousness, breathing and circulation, including pulse and skin characteristics, are called vital signs and are checked often as you monitor a patient while waiting for more advanced medical personnel to arrive. Patients who are unstable (vital signs in abnormal ranges) are reassessed at least every 5 minutes or more often, if indicated; patients who are stable (vital signs within normal ranges) are reassessed every 15 minutes or as appropriate based on their condition. Shock requires immediate treatment when these signs and symptoms occur:
	 Decreased responsiveness, altered LOC or unresponsiveness to verbal commands Too fast or too slow heart rate Pale, ashen, cool, moist skin (shock) Weak or no radial pulse (brachial in infants)
	 Other signs that a patient is going into shock include:
	 Restlessness or irritability.
	 Nausea or vomiting.
	 Rapid breathing and pulse.
	 Excessive thirst.
	Measures to treat shock include:
	 Controlling any external bleeding.
	 Administering supplemental oxygen based on local protocols.
	 Laying the patient flat (supine).
	• Keeping the patient from getting chilled or overheated.

ACTIVITY	 Using the following scenario, ask participants to identify indicators that might suggest that the patient is developing shock: You arrive at the home of an older woman. She is sitting at the kitchen table with her left hand wrapped in a kitchen towel. She said that she was chopping vegetables for dinner when the knife slipped and she cut her hand. "I just had my knives sharpened, and I guess I didn't realize my hand was so close to the food." The woman is pale and there is a large amount of blood seeping through the towel. You also notice a small amount of blood on the cutting board. While speaking with the woman, you notice that she is beginning to become irritable and is having trouble answering your questions.
	 Instructor's Note: Responses could include: Evidence of blood seeping through the towel and on the cutting board. Woman's skin color is pale. Changes in the level of the woman's responsiveness and her increasing irritability.

WRAP-UP

Course Presentation Slide 132	 Emphasize the need to always check for life-threatening conditions, such as lack of consciousness, no breathing, blocked airway, no pulse or severe bleeding. Remind participants: "By following the proper steps when conducting the primary assessment, you will give the patient with a serious injury or illness the best chance for survival."
ACTIVITY	 Review the closing scenario: As you begin a primary assessment, you verify that the infant is unconscious. Ask participants: "What are your next steps in the primary assessment?" "Should you call for more advanced medical personnel?" "Why or why not?"
	 Instructor's Note: Responses should include: The next steps in the primary assessment are to summon more advanced medical personnel, open the infant's airway, check for breathing and a pulse. Yes. You should call for more advanced medical personnel as the infant is unconscious, which is a life-threatening condition.
KEY POINTS	 To assess LOC, ask simple questions, such as "What is your name?" Always approach a patient from the front to avoid head turning. Use the mnemonic AVPU to describe a patient's LOC. A patient who can speak or cry is conscious, has an open airway, is breathing and has a pulse. Use the head-tilt/chin-lift maneuver to open the airway if a patient is unresponsive and does not have a suspected head, neck or spinal injury. Use the jaw-thrust (without head extension) maneuver to open the airway if the patient is unresponsive; has a head, neck or spinal injury; or if you suspect a head, neck or spinal injury. The essential aspects to the primary assessment include: Making a general impression. Checking responsiveness. Opening the airway and checking breathing and circulation. Determining any immediate threats to life. Each emergency and each patient is unique.

ASSIGNMENT FOR THE NEXT LESSON	 Read Chapter 8, History Taking and Secondary Assessment. Read Enrichment: Pulse Oximetry (<i>optional</i>), pages 209–210.
INSTRUCTOR PREPARATION	 Review Chapter 8, History Taking and Secondary Assessment. Review Enrichment: Pulse Oximetry (<i>optional</i>), pages 209–210. Review the video segments, "History Taking and Secondary Assessment" (9:41) and "Secondary Assessment for an Unresponsive Patient" (2:11). Review the skills and obtain any necessary equipment and supplies for Lesson 10.

ENRICHMENT: GLASGOW COMA SCALE

lime: 10 minutes

	 The Glasgow Coma Scale (GCS) is a tool used to assess a patient's LOC. It is considered valuable for primary and ongoing assessments of any medical or trauma patient.
Course Presentation Slide 133	It uses three parameters, each of which are assigned points based on the finding:
	 Eye opening (E): Scored from 1 point for no response to 4 points for spontaneous eye opening
	 Verbal response (V): Scored from 1 point for no response to 5 points for oriented and speaking
	 Motor response (M): Scored from 1 point for no response to 6 points for obeys verbal commands
	A GCS score of 3 represents coma or death and a score of 15 represents a fully awake patient.
	A GCS score of 8 or less indicates severe brain injury, a score of 9 to 12 indicates moderate brain injury and a score of 13 to 14 indicates mild brain injury.
	• A pediatric GCS is available for use with children younger than 5 years.

SKILL CHECKLIST	
Jaw-Thrust (Without Head Extension) Maneuver	Instructor's Note: The participant must always follow standard precautions when providing care.
	Participant completes the following:
	Performs initial actions
	Sizes up the scene
	Forms a general impression
	 Establishes that the patient is unresponsive and summons more advanced medical personnel
	Establishes that the patient may have a head, neck or spinal injury
	Positions the patient face-up by rolling the patient onto their back, while supporting the head, neck and back
	Kneels above the patient's head

	 Puts one hand on each side of the patient's head Positions thumbs near the corners of the mouth Points thumbs toward the chin Uses the elbows for support Slides the fingers into position under the angles of the patient's jawbone If the patient is a child or an infant, uses only two or three fingers of each hand Without moving the patient's head, applies downward pressure with thumbs and lifts the jaw If the patient's lips close, pulls back the lower lip with the thumbs
Primary Assessment	Instructor's Note: The participant must always follow standard precautions when providing care.
	Participant completes the following:
	Performs initial actions Sizes up the second
	Sizes up the scene
	Forms a general impression
	 Checks for responsiveness Shouts "Are you OK?" and then taps the shoulder and shouts again, "Are
	you OK?"
	Taps the underside of the foot for an infant
	 Summons more advanced medical personnel if there is no response
	 Positions the patient face-up by rolling the patient onto their back while
	supporting the head, neck and back
	Opens the patient's airway and simultaneously checks for breathing and a pulse for at least 5 seconds, but no more than 10 seconds
	Opens the airway from the side using the head-tilt/chin-lift maneuver
	Opens the airway from above the patient's head using the jaw-thrust (with head extension) maneuver
	If a head, neck or spinal injury is suspected, uses the jaw-thrust (without head extension) maneuver
	For an adult or a child, feels for a carotid pulse by placing two fingers in the middle of the patient's throat and then slides them into the groove at the side of the neck closest to them; presses in lightly as pressing too hard can compress the artery
	For an infant, feels for the brachial pulse on the inside of the upper arm between the infant's elbow and shoulder; presses in lightly as pressing too hard can compress the artery
	For a drowning emergency gives 2 ventilations
	Provides care based on the conditions found
	Note: If a patient is unresponsive, but breathing normally with no suspected
	head, neck, spinal, hip or pelvic injury, move the patient into a side-lying recovery position. Patients with a suspected head, neck, spinal, hip or pelvic injury should not be placed in a recovery position unless you are unable to manage the airway effectively or you are alone and need to leave the patient to call for
	additional resources.

Recovery Position	Instructor's Note: The participant must always follow standard precautions when providing care.
	 Participant completes the following: Performs initial actions Sizes up the scene Forms a general impression Identifies the reason for putting the patient in a recovery position Determines that the patient does <i>not</i> have a suspected head, neck or spinal injury Kneels at the patient's side Lifts the patient's arm closest to them up next to the patient's head Takes the patient's arm farthest from them and places it next to the patient's side Grasps the patient's leg that is closest to them and bends it up Places one of their hands on the patient toward themselves by pulling the shoulder and hip with their hands; makes sure the patient's head remains in contact with the extended arm Stops all movement when the patient is on their side Places the patient's knee on top of the other knee so that both knees are in a bent position
Using a Resuscitation Mask-Adult, Child and Infant	and airway Instructor's Note: The participant must always follow standard precautions when providing care. Participant completes the following: Performs initial actions Sizes up the scene Forms a general impression Selects a properly sized mask for the patient Assembles the mask and valve by attaching the one-way valve to the resuscitation mask, if necessary Opens the airway using the head tilt/chin-lift maneuver Opens the airway past a neutral position for an adult Opens the airway slightly past a neutral position for a child For an infant, tilts the head so the airway is in a neutral position Positions the mask Kneels to the side of or above the patient's head Places the mask over the patient's mouth and nose, starting from the bridge of the nose Places the bottom of the mask below the mouth but not past the chin

	 Seals the mask If positioned to the side of the patient's head: Places thumb and fingers of the top hand around the top of the resuscitation mask, creating a "C" Slides the first two fingers of the other hand into position on the bony part of the patient's chin Applies even, downward pressure with the top hand and the thumb of the lower hand to seal the top and bottom of the mask If positioned above the patient's head: Places the thumbs and index fingers along each side of the mask, creating a "C" on both sides Slides the other fingers into position behind the angles of the patient's jawbone, creating an "E" on both sides Applies even, upward pressure with fingers to "lift" the jaw into the mask Blows into the mask Gives 2 ventilations to the patient Each ventilation lasts about 1 second and makes the chest begin to rise Pauses briefly between ventilations to let the exhaled air escape
Using a Resuscitation Mask—Head, Neck or Spinal Injury Suspected:	Instructor's Note: The participant must always follow standard precautions when providing care.
Jaw Thrust (Without Head Extension) Maneuver—Adult or Child	 Participant completes the following: Performs initial actions Sizes up the scene Forms a general impression Selects a properly sized mask for the patient Assembles the resuscitation mask by attaching the one-way valve to the resuscitation mask, if necessary Positions the mask Kneels above the patient's head Places the mask over the patient's mouth and nose, starting from the bridge of the nose Places the bottom of the mask below the mouth but not past the chin Seals the mask Slides the fingers into position under the angles of the patient's jawbone Without moving the patient's head, applies even, downward pressure to seal the mask Opens the airway Without tilting the head back, opens the airway by pushing or <i>thrusting</i> the lower jaw up with fingers along the jawbone Blows into the mask Gives 2 ventilations to the patient
	 Each ventilation lasts about 1 second and makes the chest begin to rise Pauses briefly between ventilations to let the exhaled air escape



HISTORY TAKING AND SECONDARY ASSESSMENT

Lesson Length: 120 minutes (130 minutes with Enrichment)

MATERIALS, EQUIPMENT AND SUPPLIES

- *Emergency Medical Response* textbook
- Course Presentation Slides 134–152
- LCD projector, screen and computer
- Emergency Medical Response DVD
- DVD player and monitor
- Disposable latex-free gloves (multiple sizes) and other personal protective equipment (PPE), as indicated
- Stethoscopes (one for every two participants)
- Sphygmomanometers (blood pressure cuffs; one for every two participants)

LESSON OBJECTIVES

Knowledge

After completing this lesson, participants will be able to:

- Explain the purpose of the patient history.
- Explain the components of the SAMPLE history.
- Explain the purpose of the secondary assessment.
- Explain the importance of properly assessing a patient's vital signs.
- Explain the components of a physical exam.
- State the areas of the body that are evaluated during the physical exam.
- Identify further questions that may be asked during the physical exam.
- Identify the components of the ongoing assessment.
- Explain the importance of properly assessing a patient's blood pressure (BP).
- Describe the techniques used to measure BP.

Skill

After completing this lesson, participants will be able to:

- Demonstrate how to obtain a SAMPLE history.
- Demonstrate how to obtain baseline vital signs.
- Demonstrate how to obtain BP by auscultation and palpation.
- Demonstrate how to perform a secondary assessment.

TOPIC: INTRODUCTION

ACTIVITY Course Presentation Slide 135	 Review the opening scenario: You arrive at the scene of a motor-vehicle collision, a fender bender, in which a woman who was driving her husband to the hospital because he was complaining of chest pain struck the car in front of her. A police unit is on the scene assisting the husband, who collapsed and apparently is unconscious. Your partner proceeds to help the police officer with the unconscious patient. You notice that the woman is clutching one of her arms. Ask participants: "As a responding firefighter how would you respond to and assess the injured woman?"
	Instructor's Note: Let participants provide responses, guiding them to the key areas related to patient history, such as information about the incident, existing medical conditions, chief complaint, the mechanism of injury (MOI) or nature of illness, and areas related to the physical exam, such as evidence of deformities, tenderness and swelling.
	 Tell participants: "The primary assessment helps determine if the patient has any life-threatening conditions. History taking and the secondary assessment provide more information about the patient through interviewing the patient and bystanders, monitoring vital signs and conducting a physical exam." Tell participants: "An effective primary assessment followed by a thorough history and secondary assessment can increase the patient's chances of survival." Remind participants that an EMR should never enter a scene unless they have determined that it is safe to do so.

TOPIC: OBTAINING THE FOCUSED/ MEDICAL HISTORY

Time: 5 minutes

KEY POINTS	 Finding out as much information as possible about the emergency situation is crucial so that this information can be communicated to more advanced medical personnel, especially if the patient's condition worsens before more advanced medical personnel arrive. Obtaining a history involves asking a patient about the incident and any existing medical conditions. It should not take much time. It may be done before or during the physical exam. For a patient who is responsive, a history usually is obtained first. For a critical patient with trauma or one who is unresponsive, it will likely be performed after the physical exam. Necessary information cannot always be obtained from the patient, who may be unconscious, disoriented, agitated or otherwise uncooperative. The patient may not understand and/or speak English. Interviews with family, friends, caregivers, bystanders or other public safety personnel may be helpful.

 Other sources of information may include: Medical identification tag (or bracelet or sports band), wallet card or kits for treating anaphylaxis or diabetes mellitus.
 Pill containers or a service animal.
 A Vial of Life label on the outside of a refrigerator door (when in a patient's home).
All information learned during the focused/medical history should be written down.

TOPIC: COMPONENTS OF A PATIENT HISTORY

KEY POINTS Course Presentation Slide 136	 The components of a patient history include: The chief complaint. MOI or nature of illness. Pain. Other relevant medical information.
ACTIVITY OPTION A Time: 5 minutes	 Using the following scenario, ask participants to identify the patient's chief complaint and MOI: You arrive at the home of a patient who is lying on the ground. A 6-foot ladder is nearby and hedge trimmers are on the ground next to the patient. The patient's leg is twisted and he is moaning in pain. The patient is alert and responsive. He tells you that he was on the ladder trimming the hedges and his foot slipped. "I fell to the ground and I think I may have broken my leg. It hurts really badly and I can't move it." His wife confirms the events. Instructor's Note: Responses should include: Chief complaint reflected by the patient's statement about possibly breaking his leg because of the severity of the pain and inability to move it. MOI reflected by the patient's statement about being on the ladder to trim the hedges, slipping and then falling to the ground.
ACTIVITY OPTION B Time: 10 minutes	 Divide participants into small groups. Using the textbook, have each group identify why the chief complaint and MOI or nature of illness is important and discuss pertinent information to be obtained for these components of the patient history. Instructor's Note: Responses should include: The chief complaint (the reason why emergency medical services [EMS] personnel were called to the scene) is the most important component of a patient history, providing clues about whether the patient is a trauma or medical patient, or combination, and guiding how the patient will be managed. The best way to determine chief complaint is by asking the patient "Why did you call for EMS personnel?" and recording it in the patient's own words. The most obvious problem is not always the chief complaint. MOI determines how the injury occurred and what the forces were that caused the injury, helping to predict the specific type of injuries the patient may have. Examples of significant MOI include ejection from a vehicle; being thrown from a motorcycle; fall from a height greater than 15 feet or three times the patient's height; vehicle rollover; vehicle collision; pedestrian struck by vehicle; blunt or penetrating trauma causing a change in mental status; penetrating injury to head, neck, chest or abdomen; and blast injury. Nature of illness for a medical patient includes asking the patient, family, friends or bystanders why EMS personnel were called. If no one is available, observe the scene for clues.

TOPIC: SAMPLE HISTORY

KEY POINTS Course Presentation Slide 137	 SAMPLE is a mnemonic that refers to six essential items for the history: Signs and symptoms Allergies Medications Pertinent medical history Last oral intake Events leading up to the incident In addition to the SAMPLE history, you also ask the patient to explain what happened by asking questions such as: What happened? Are you having any pain? How would you describe the pain? Is the pain spreading or radiating? On a scale of 1 to 10, with 1 being the lowest and 10 being the highest, how bad is the pain? When did the pain start? If the patient is unable to give the information, you should ask family members, friends or bystanders what happened. Always obtain consent before approaching or touching a patient (if the patient is a child, ask the parent or legal guardian for consent). Remain calm and patient, use open-ended questions, encourage the patient to talk, demonstrate listening, maintain eye contact and speak slowly, deliberately and in simple terms.
ACTIVITY	 Ask participants for examples of information that would be important to obtain for a history. Instructor's Note: Responses may vary but should include information about the patient's current status (injury or illness) and chief complaint, pre-existing conditions, medications, past history and allergies.
DVD	 Show the video segment, "History Taking and Secondary Assessment" (9:41). Answer participants' questions about the video segment.

SKILL SESSION

HOW TO OBTAIN A SAMPLE HISTORY	
ACTIVITY	 Ask participants to take their textbooks, pen or pencil and additional notepaper with them to the practice area. Divide participants into pairs or ask participants to find a partner and instruct them to conduct a SAMPLE history following the steps listed on the form. One participant assumes the role of the patient while the other acts as the responder. When they have completed the steps, have them change "roles" and conduct the SAMPLE history again.

	 Observe each participant performing the technique and evaluate completion of the skill using the Skill Checklist. Intervene and provide positive and corrective feedback as needed to each participant individually when possible. Be sure to point out any common errors, such as failing to address important signs and symptoms, medications, allergies, pertinent medical history, last oral intake or events leading up to the incident. Check off participant's progress on the Participant Progress Log.
SKILL	 After sizing up the scene, forming a general impression, performing a primary assessment and following standard precautions: 1. Use the mnemonic SAMPLE to determine the following: Signs and symptoms Signs include seeing bleeding, hearing breathing distress and feeling cool, moist skin Symptoms include pain, nausea, headache and difficulty breathing Allergies Medications Food Environmental elements, such as pollen or bees Medications, prescription or nonprescription Pertinent medical history Currently under a physician's care for any condition Experience with a similar problem in the past Recent hospitalization Last oral intake, including solids or liquids, and medication Events leading up to the incident (what the patient was doing before and at the time of the incident)

TOPIC: THE SECONDARY ASSESSMENT

	Tell participants: "The purpose of a secondary assessment is to locate and further assess the signs and symptoms of an injury or illness."
Course Presentation Slides 138–140	Explain that a secondary assessment consists of a head-to-toe physical exam that may only involve a rapid assessment (rapid trauma assessment or rapid medical assessment) or it may also include a detailed physical exam at a later stage.
	Emphasize "looking, listening and feeling" for signs of injury or illness.
	 Introduce the term "vital signs" as respiratory rate, pulse and blood pressure (BP). Tell participants that they will learn more about these in the next lesson.
	Tell participants: "If life-threatening injuries or medical conditions are identified during the primary assessment, do not waste time with the physical exam. Instead, focus your attention on providing care for these life-threatening conditions."

KEY POINTS	 When performing the physical exam: Maintain professionalism throughout the physical exam and display compassion toward the patient because many patients view a physical exam with apprehension and anxiety. Explain what areas are going to be assessed. Maintain the patient's privacy. Cut away clothing rather than manipulating the patient to remove it and cover each area after examining it. Try to keep the patient calm and keep them from moving the head, neck and spine and any body part that hurts to move. Expect the assessment to take longer with an older adult patient. Use distracting measures with children to gain their trust, such as the use of stuffed animals. If a child becomes agitated while performing a secondary assessment from head to toe, begin the assessment at the toes and move up to the head. For a rapid assessment, examine the patient systematically, with special emphasis on areas suggested by the chief complaint. While performing the physical exam, compare each body part on one side of the body to the corresponding body part on the other side. Gain information by inspecting visually as well as palpating (feeling).
ACTIVITY OPTION A Time: 5 minutes	 Briefly explain the mnemonics, DOTS (deformities, open injuries, tenderness and swelling), OPQRST (onset, provoke, quality, region/radiate, severity and time) and DCAP-BTLS (deformities, contusions, abrasions, punctures/penetrations, burns, tenderness, lacerations and swelling). Ask each participant to select a partner and practice using the OPQRST mnemonic to assess pain.
ACTIVITY OPTION B	 Break participants into small groups. Using their textbooks, have the groups identify the important steps for a secondary assessment for a patient who has a significant MOI, for a trauma patient who does not have a significant medical injury and for a medical patient who is responsive.
Time: 10 minutes	 Instructor's Note: Responses should include: For a patient who has a significant MOI: Continue to maintain spinal stabilization and an open airway, consider the need for advanced life support backup and the need for transport, reassess the patient's mental status, perform a rapid trauma assessment, assess baseline vital signs, obtain a SAMPLE history, prepare the patient for transport, provide emergency care and obtain a trauma score. For a trauma patient who does not have a significant medical injury: Perform a focused trauma assessment, obtain a SAMPLE history and baseline vital signs, perform components of a detailed physical exam and provide emergency care. For a trauma patient who is responsive: Obtain the SAMPLE history, assess the patient's complaints, perform a focused trauma assessment unless signs and symptoms make the focus unclear, assess baseline vital signs, perform components of the detailed physical exam, provide emergency care, and consider the need for advanced life support backup and the need for transport.
DVD	 Show the video segment, "Secondary Assessment for an Unresponsive Patient" (2:11). Answer participants' questions about the video segment.

TOPIC: DETAILED PHYSICAL EXAM

KEY POINTS Course Presentation Slides 141–142	 A detailed physical exam may be conducted once the focused history and physical exam have been completed. However, it is not carried out on every patient. The detailed physical exam is a systematic head-to-toe exam that helps gather additional information about injuries or conditions that may need care. It involves looking (inspection), listening (auscultation) and feeling (palpation). Avoid touching any painful areas or having the patient move an area that causes discomfort.
ACTIVITY	 Ask participants to break up into small groups. Using the textbook, tell each group to list the key body areas to address in the detailed physical exam and identify specific assessments for each of the body areas.
	Instructor's Note: Responses should include the head, neck, chest, abdomen, pelvis, extremities and back.

HOW TO PERFORM A SECONDARY ASSESSMENT FOR A RESPONSIVE TRAUMA PATIENT		
ACTIVITY	 Ask participants to take their textbooks and disposable latex-free gloves with them to the practice area. Divide participants into pairs or ask participants to find a partner and instruct them to conduct a secondary assessment. One participant assumes the role of the patient while the other acts as the responder. When they have completed the steps, have them change "roles" and conduct a secondary assessment again. Observe each participant performing the technique and evaluate completion of the skill using the Skill Checklist. Intervene and provide positive and corrective feedback as needed to each participant individually when possible. Be sure to point out any common errors, such as failing to address the patient's complaints, omitting a portion of the SAMPLE history or failing to provide needed emergency care. Check off participant's progress on the Participant Progress Log. 	
SKILL	 After sizing up the scene, forming a general impression, performing a primary assessment and following standard precautions: 1. Obtain a SAMPLE history. 2. Assess the patient's complaints. Use the mnemonic OPQRST—onset, provoke, quality, region/radiate, severity and time. 3. Perform a focused trauma assessment. If signs and symptoms make the focus of the assessment unclear, perform a rapid trauma assessment (head to toe). 	

- 4. Assess baseline vital signs.
- 5. Perform components of the detailed physical exam as needed.
- 6. Provide emergency care.

Note: Consider the need for additional resources, including basic life support or advanced life support, and the need for transport (e.g., for life-threatening conditions, such as anaphylaxis).

If the trauma patient is unresponsive, consider the patient as critical, requiring that you begin with a rapid trauma assessment, to gain as much information as possible on the nature of illness.



Instructor's Note: If preferred, review the techniques for conducting a secondary assessment for a responsive and unresponsive medical patient and the steps for conducting a physical exam and patient history first, then break the class into groups to practice these three techniques.

	FORM A SECONDARY ASSESSMENT FOR AN UNRESPONSIVE O IS BREATHING NORMALLY (<i>OPTIONAL</i>)
ACTIVITY	Instructor's Note: If time permits, allow participants to practice performing a secondary assessment for an unresponsive patient.
	 Ask participants to take their textbooks and disposable latex-free gloves with them to the practice area. Divide participants into pairs or ask participants to find a partner and instruct them to conduct a secondary assessment. One participant assumes the role of the patient while the other acts as the responder. When they have completed the steps, have them change "roles" and conduct a secondary assessment again. Observe each participant performing the technique and evaluate completion of the skill using the Skill Checklist. Intervene and provide positive and corrective feedback as needed to each participant individually when possible. Be sure to point out any common errors, such as failing to address the patient's immediate needs for advanced life support, completing a detailed physical exam rather than a rapid medical assessment, omitting a portion of the SAMPLE history from family or bystanders or failing to provide needed emergency care. Check off participant's progress on the Participant Progress Log.
SKILL	 After sizing up the scene, forming a general impression, performing a primary assessment and following standard precautions: 1. Consider the need for additional resources and the need for transport. 2. Perform a rapid medical or trauma assessment (head to toe). 3. Assess baseline vital signs. 4. Position a patient who is unresponsive, but breathing normally, with no suspected head, neck, spinal or hip injury, in a side-lying recovery position and ensure protection of their airway. 5. Obtain a SAMPLE history from the family or any bystanders, if available. 6. Provide emergency care.

SKILL SESSION

PHYSICAL EX	(AM
ACTIVITY	Ask participants to take textbooks and disposable latex-free gloves with them to the practice area.
	 Divide participants into pairs or ask participants to find a partner and instruct them to conduct a physical exam. One participant assumes the role of the patient while the other acts as the responder.
	When they have completed the steps, have them change "roles" and conduct a physical exam again.
	 Observe each participant performing the technique and evaluate completion of the skill using the Skill Checklist. Intervene and provide positive and corrective feedback as needed to each participant individually when possible.
	 Be sure to point out any common errors, such as failing to begin at the head and neck, omitting a body area or palpating a painful area before a non-painful area. Check off participant's progress on the Participant Progress Log.
SKILL	After sizing up the scene, forming a general impression, performing a primary assessment and following standard precautions:
	1. Begin with examining the head and neck.
	 Look for blood or clear fluid in or around the ears, nose and mouth.
	 Reassess LOC and note any changes.
	 Look at facial symmetry.
	 Check pupil response and shape of eyes.
	 Look for facial bruising.
	2. Check the shoulders and chest.
	 Look and feel for abnormalities.
	• Press down on the shoulders, then press inward toward the midline of the body.
	• Note whether the patient is breathing through a stoma.
	 Look for open wounds. Observe for use of economy muscles for breathing
	 Observe for use of accessory muscles for breathing. Look for distended jugular vein.
	 Minimize movement to the patient's head, neck and spine if a possible head or spinal injury is suspected and provide care first.
	 Feel for deformities of the collarbones and shoulders.
	 Ask the patient to take a deep breath and blow air out, asking if there is any pain.
	 Auscultate lung sounds if trained to do so.
	 Look and listen for subtle signs of breathing difficulty.
	 Feel the ribs for deformity.
	 Examine the chest for rising and falling without effort.
	 Check for open wounds.
	3. Check the abdomen.
	 Ask if the patient has any pain in the abdomen.
	 Look for discoloration, open wounds, distention, scars or protruding organs.
	 Evaluate whether a female patient is pregnant.
	 Look for any pulsations.
	 Apply slight pressure (if no pulsating) to each abdominal quadrant, avoiding areas where the patient indicated pain.

4. Check the pelvis.
 Ask the patient if there is any pain.
 Place hands on both sides of the pelvis, push in on the sides and down on the hips and check for instability and any reaction to pain.
5. Check the legs and feet.
 Look and feel for any deformity.
 Have the patient move toes, feet and legs if no apparent sign of injury.
 Ask the patient to press legs inward against your hands, then ask the patient to press legs outward against your hands.
 Ask the patient to push downward against your hands with the toes. Ask the patient to flex feet toward head.
 Check one extremity at a time and then compare findings.
6. Check the arms and hands.
 Feel the arms for deformity.
 Determine if the patient has pain in the arms or hands.
 Check the limbs for symmetry, including pulse and color.
• Have the patient move the fingers, hands and arms if no apparent sign of injury.
 Ask the patient to press arms inward against your hands, then ask the patient to press arms outward against your hands.
 Ask the patient to grasp both your hands at once, checking for equal grip.
 Check capillary refill.
 Check one extremity at a time and then compare findings.
7. Check the patient's back.
 Using equal pressure, palpate with the fingertips along the spine from the neck downward for any injuries.
 Check for any reaction to pain.
 Look for discoloration or open wounds.
Instructor's Note: If preferred, review the techniques for conducting a
secondary assessment for a responsive medical patient and the steps for conducting a physical exam and patient history first, then break the class into groups to practice these techniques.

TOPIC: OBTAINING BASELINE VITAL SIGNS

Time: 45 minutes

KEY POINTS Course Presentation Slides 143–147	 Vital signs provide a starting point for judging the effectiveness of prehospital care.
	 They are taken after managing life-threatening problems found during the primary assessment, normally after the rapid assessment is complete. Note that absolute values are not as important as trends. The three major vital sign measures to be taken include: Respiratory rate. Pulse.
	• BP.

RESPIRATOR	RATE
KEY POINTS	A healthy person breathes regularly, quietly and effortlessly, usually between 12 and 20 breaths per minute for an adult.
	Instructor's Note: Refer participants to Chapter 7, Primary Assessment, for normal respiratory rate ranges in children and infants.
	 Signs and symptoms of abnormal breathing include: Gasping for air. Noisy breathing, including whistling sounds, crowing, gurgling and snoring. Excessively fast or slow breathing. Painful breathing. Check the rate, rhythm and quality of breathing, trying to do so without the patient's knowledge (which may cause a change in the patient's breathing pattern). Also listen for lung sounds or breath sounds, which are noises produced by the lungs during breathing. This is most effectively done using a stethoscope. The most common abnormal breath sounds are: Crackles (or rales), which are small popping, rattling or bubbly sounds produced when closed spaces open. Rhonchi, which are low-pitched snoring sounds due to the narrowing of airways and presence of secretions. Stridor, which is a high-pitched, whistling sound created by air flowing through narrow airways that can be heard on exhalation and inhalation. Absent or decreased breath sounds on one or both sides of the chest also can be an indication of a problem.
PULSE	
KEY POINTS	 A healthy heart beats with a steady rhythm, creating a regular pulse that normally ranges between 60 to 100 beats per minute for an adult. Instructor's Note: Refer participants to Chapter 7, Primary Assessment, for normal pulse rate ranges in children and infants.
	 A well-conditioned athlete may have a pulse of 50 beats per minute or lower. An abnormal pulse may be a sign of a potential problem. These abnormalities include: An irregular pulse. A weak and hard-to-find pulse. An excessively fast or slow pulse. To check a pulse: Place two fingers on top of a major artery located close to the skin's surface over a bony structure, usually the radial artery in adults and the brachial artery in infants. Count the number of beats in 30 seconds and multiply that number by 2 (or in 15 seconds, multiplying that number by 4).

SKILL SESSION: HOW TO OBTAIN BASELINE VITAL SIGNS			
ACTIVITY	 Ask participants to take their textbooks and disposable latex-free gloves (as appropriate) with them to the practice area. 		
	 Divide participants into small groups and guide groups through the steps listed on the skill chart. 		
	 Have each participant demonstrate obtaining vital signs on another participant while the other participants use their skill sheets to give feedback. Observe each participant performing the technique and evaluate completion of the skill using the Skill Checklist. Intervene and provide positive and corrective feedback as needed to each participant individually when possible. 		
	 Be sure to point out any common errors, such as alerting patient to assessing respiratory rate, difficulty finding the radial pulse, using the thumb to palpate the pulse or failing to count for a long enough time to determine the rate. Check off participant's progress on the Participant Progress Log. 		
SKILL	After sizing up the scene, forming a general impression, performing a primary assessment and following standard precautions:		
	1. Check respirations for rate, rhythm and quality of breathing.		
	 Look, listen and feel for breathing. 		
	 Look for the rise and fall of the patient's chest or abdomen. 		
	 Listen for sounds as the patient inhales and exhales. 		
	• Check for the rate and quality of breathing without the patient's knowledge. (If the patient realizes you are checking breathing, this may cause a change in breathing pattern without the patient being aware of it.) Maintain the same position as for checking the pulse.		
	 Count the number of times a patient breathes in 30 seconds and multiply that number by 2 (or in 15 seconds by 4); this is the number of breaths per minute. 		
	 Record your findings. 		
	2. Check for a pulse.		
	 Place two fingers on top of a major artery near the skin's surface and over a bony structure. 		
	• Select the carotid arteries in the neck or the radial artery in the wrist for an adult and a child.		
	 Select the brachial artery in the inside of the upper arm for an infant. Count the number of beats in 30 seconds and multiply that number by 2 (or in 15 seconds by 4). 		
	Record findings.		
	3. Check skin characteristics and pupils.		
	 Look at and feel the skin for: Calar is it raise and acher, an fluched and sink? 		
	Color. Is it pale and ashen, or flushed and pink? Temperature is it het or cold?		
	Temperature. Is it hot or cold?Moisture. Is it moist or dry?		
	 Capillary refill. Is it normal or slow? 		
	 Partially remove a disposable glove to determine skin moisture and temperature if necessary, being careful not to come into contact with blood or open wounds. Record findings. 		
	Instructor's Note: If preferred, review this skill and the two techniques for measuring BP together and then divide the class into groups to practice all three techniques.		

BLOOD PRES	SURE
KEY POINTS	 BP measures the force of blood against the walls of the artery as it travels through the body. It is a good indicator of how the circulatory system is functioning. Stress, excitement, injury and illness can affect BP. With injury or illness, a single BP measurement often is of little value; a more accurate picture is whether BP changes over time while providing care. The two pieces of equipment used to measure BP are: A sphygmomanometer, which is made up of an inflatable cuff (housing a rubber bladder connected at the end to a hose with a valved bulb) that wraps around the patient's arm and a manometer (mercury, aneroid or electronic gauge that measures the pressure in millimeters of mercury [mmHg]). A stethoscope, which consists of earpieces attached to two pieces of tubing connected at one end to a flat disk called a diaphragm. BP is measured in millimeters of mercury and is reported using two numbers: systolic BP over diastolic BP: Systolic BP is the force exerted against the arteries when the heart is contracting. Diastolic BP is the force exerted against the arteries when the heart is between contractions.
SKILL SESSI (BY AUSCULT	ON: TAKING AND RECORDING A PATIENT'S BLOOD PRESSURE ATION)
ACTIVITY	 Ask participants to take their textbooks and disposable latex-free gloves with them to the practice area. Divide participants into small groups and guide groups through the steps listed on the skill chart. Have each participant demonstrate auscultating a BP on another participant while the other participants use their skill sheets to give feedback. Tell participants that alcohol is used to clean the diaphragm after each patient contact; if a stethoscope is used by other caregivers, the earpieces are cleaned with alcohol before each use. Observe each participant performing the technique and evaluate completion of the skill using the Skill Checklist. Intervene and provide positive and corrective feedback as needed to each participant individually when possible. Be sure to point out any common errors, such as not locating the brachial pulse, improperly positioning the stethoscope, inflating or deflating the cuff too slowly or too rapidly, or stopping and restarting inflation before completely inflating the cuff. Check off participant's progress on the Participant Progress Log.

SKILL	Note: Ensure that the patient is sitting or lying in a comfortable position with the forearm on a supported surface in front or to the side of the patient. Select an appropriately sized cuff for the patient's arm.
	After sizing up the scene, forming a general impression, performing a primary assessment, following standard precautions and ensuring that the stethoscope is clean:
	1. Approximate the systolic BP.
	 The presence of a pulse in the radial artery, located at the wrist, indicates a systolic pressure of at least 80 mmHg. The presence of a pulse in the femoral artery in the leg indicates a systolic
	pressure of at least 70 mmHg.
	 The presence of a pulse in the carotid artery in the neck indicates a systolic pressure of at least 60 mmHg.
	• Either ask the patient what their BP is or use 160 mmHg as an alternative.
	2. Select an appropriately sized cuff for the patient.
	3. Position the cuff.
	4. Locate the brachial pulse.
	5. Position the diaphragm of the stethoscope over the pulse point.
	 Center the diaphragm over where the brachial pulse was located (which will be about 1 inch above the elbow crease).
	6. Inflate cuff. Stop inflating when you can no longer hear the pulse.
	Note: Since this skill is practiced on partners and not on actual patients, participants should inflate the cuff until the needle on the gauge reads at least 180 mmHg or until it is 10 mmHg above where they last heard the pulse as the cuff was inflated.
	7. Deflate the cuff slowly until the pulse is heard.
	 Release air at approximately 2 to 4 mmHg per second.
	 The number on the pressure gauge is noted when the pulse is first heard (systolic pressure).
	8. Continue deflating the cuff until the pulse is no longer heard.
	 The number on the pressure gauge is noted when the last sound is heard (diastolic pressure).
	9. Quickly deflate the cuff by opening the valve.
	10. Record the findings.
	Instructor's Note: If preferred, review both techniques first and then divide the class into groups to practice both techniques.
SKILL SESSIO (BY PALPATIO	ON: TAKING AND RECORDING A PATIENT'S BLOOD PRESSURE
ACTIVITY	 Ask participants to take their textbooks and disposable latex-free gloves with them to the practice area. Each practice area should be set up with a BP cuff and stethoscope.
	 Divide participants into small groups and guide groups through the steps listed on the skill chart.
	Have each participant demonstrate palpating a BP on another participant while

 Have each participant demonstrate palpating a BP on another participant while the other participants use their skill sheets to give feedback.

	 Observe each participant performing the skill and evaluate completion of the skill using the Skill Checklist. Intervene and provide positive and corrective feedback as needed to each participant individually when possible. Be sure to point out any common errors, such as failing to locate the radial pulse properly, inflating or deflating the cuff too slowly or too rapidly, stopping and restarting inflation before completely inflating the cuff, or closing the bulb too tightly and then opening quickly and losing too much air quickly. Check off participant's progress on the Participant Progress Log.
SKILL	After sizing up the scene, forming a general impression, performing a primary assessment and following standard precautions:
	1. Select an appropriately sized cuff for the patient's arm and position the cuff.
	2. Locate the radial pulse.
	3. Inflate the cuff, beyond where pulse disappears. Note the reading on the manometer.
	4. Deflate the cuff slowly until pulse returns.
	 Note the number on the pressure gauge when the pulse is first felt to reappear (approximate systolic pressure).
	5. Quickly deflate the cuff by opening the valve.
	6. Record the approximate systolic BP and note with a "P" for palpation method (e.g., 130/P).
	Instructor's Note: If preferred, review both techniques first and then divide the class into groups to practice both techniques.

TOPIC: ONGOING ASSESSMENT

KEY POINTS Course Presentation Slide 148	 Ongoing assessment occurs after completing the secondary assessment and providing care for any injuries or illnesses. Record all results and observations on the patient care report. The purpose of the ongoing assessment is to identify and treat any
	changes in the patient's condition in a timely manner and to monitor the effectiveness of interventions or care already provided.
	You must never assume that a patient is out of danger just because there were no serious problems at first.
	A patient is reassessed at regular intervals:
	• At least every 5 minutes or more often for patients who are unstable
	 Every 15 minutes or as deemed appropriate for patients who are stable
	Reassessment includes the:
	 Primary assessment.
	○ Vital signs.
	 Chief complaint.
	 Interventions, or care provided.
	While waiting for advanced medical care, help the injured or ill patient to stay calm and as comfortable as possible.

WRAP-UP		Time: 5 minutes
Course Presentation Slide 149	 Emphasize the need for a primary assessment before obtaining a history and performing a secondary assessment. Emphasize the need to perform ongoing assessments until more advanced medical personnel arrive and take over. 	
ACTIVITY	 Review the closing scenario: The injured woman accompanies you to a separate area so for injuries. She is still clutching her arm. Ask participants: "What steps would you take to identif conditions that may need medical care?" 	
	 Instructor's Note: Responses should include: The steps you would take to identify any injuries or cond performing a SAMPLE history, obtaining baseline vital signa head-to-toe assessment. 	
	 Continue with the scenario: After assessing this patient, you find no life-threatening cond Ask participants: "How often would you reassess her and 	
	 Instructor's Note: Responses should include: You would reassess the patient every 15 minutes or as a as she does not appear to have any life-threatening conditions signs appear to be stable. 	
KEY POINTS	 A secondary assessment involves obtaining a history a physical exam to find and care for any other problem an immediate threat to life but may become serious in recognized and care is not provided. The mnemonic SAMPLE is helpful to gather all the net information about a patient's history. The mnemonic OPQRST is helpful in assessing pain. The mnemonic DOTS is helpful when performing the depending on the MOI or nature of illness and whether responsive or unresponsive. Each emergency and each patient is unique, and the change from moment to moment. Care is always provided for life-threatening emergence Primary and secondary assessments are guidelines to patient's condition. Three important vital signs are respiratory rate, pulse BP can be measured by auscultation or estimated by The findings of the assessments form the basis for pr in any emergency. 	ms that are not f they are not ecessary physical exam, ohysical exam, er the patient is care needed may cies first. o help assess a and BP. palpation.
ASSIGNMENT FOR THE NEXT LESSON	 Read Chapter 9, Communication and Documentation. 	
INSTRUCTOR PREPARATION		

ENRICHMENT: PULSE OXIMETRY

INTRODUCTION		
KEY POINTS Course Presentation Slides 150–152	 Pulse oximetry is used to measure the percentage of oxygen saturation in the blood; normal saturation is approximately 95 to 99 percent, recorded as 95 to 99 percent SpO₂. A reading below 94 percent may indicate hypoxia. Pulse oximetry is applied whenever a patient's oxygenation is a concern, including all patients with neurologic, respiratory or cardiovascular complaints or abnormal vital signs, those receiving respiratory depressants and critical trauma patients. Pulse oximetry is taken and recorded with vital signs every 15 minutes for patients who are stable and at least every 5 minutes or more often for patients who are unstable. 	
PROCEDURE		
KEY POINTS	 Turn on the machine and allow for self-tests. Remove any nail polish on the patient's fingernail with an acetone wipe if present. Apply the probe to the patient's finger; if necessary, use alternative sites such as the earlobe for an adult and the foot for an infant. Allow the machine to register the oxygen saturation level. Record the time and initial saturation percent in room air. Verify the patient's pulse rate on the oximeter with the patient's actual pulse rate. 	
LIMITATIONS		
KEY POINTS	The reliability of the readings may be affected by hypoperfusion (poor perfusion), cardiac arrest, excessive patient motion, fingernail polish, carbon monoxide poisoning, hypothermia or other cold-related illness, sickle cell disease or anemia, cigarette smoking, edema and time lag in detecting respiratory insufficiency.	

SKILL CHECKLIST	
How to Obtain a SAMPLE History	Instructor's Note: The participant must always follow standard precautions when providing care.
	Participant completes the following:
	Performs initial actions
	Sizes up the scene
	Forms a general impression
	Performs a primary assessment
	Determines that the patient is responsive
	(Continued)

	Uses the mnemonic SAMPLE to determine the following:
	 Signs and symptoms Identifies signs such as seeing bleeding, hearing breathing distress and
	feeling cool, moist skin
	Identifies symptoms such as pain, nausea, headache and difficulty breathing
	Identifies allergies to medications
	Identifies food allergies
	 Identifies allergies to environmental elements, such as pollen or bees Mediantiana, preservintion or perpreservintion
	 Medications, prescription or nonprescription Pertinent medical history
	 Identifies if the patient is currently under a physician's care for a condition
	Confirms or denies patient's experience with a similar problem in the past
	Identifies if the patient was recently hospitalized
	Last oral intake including solids, liquids and medication
	Events leading up to the incident (what the patient was doing before and at the time of the incident)
How to Perform a Secondary Assessment for a Responsive Trauma Patient	Instructor's Note: The participant must always follow standard precautions when providing care.
	Participant completes the following:
	Performs initial actions
	Sizes up the scene
	Forms a general impression
	Performs a primary assessment
	 Determines that the patient is responsive Obtains a SAMPLE history
	 Assesses the patient's complaints using the mnemonic OPQRST
	□ Onset
	Quality
	 Region/radiate Severity
	Performs a focused trauma assessment
	If signs and symptoms make the focus of the assessment unclear, performs a rapid trauma assessment (head to toe)
	Assesses baseline vital signs
	Performs components of the detailed physical exam, as needed
	Provides emergency care

How to Perform a Secondary Assessment for an Unresponsive Patient Who	Instructor's Note: The participant must always follow standard precautions when providing care.
Is Breathing	Participant completes the following:
Normally (Optional)	
	Performs initial actions
	Sizes up the scene
	Forms a general impression
	Performs a primary assessment
	Determines that the patient is unresponsive
	Considers the need for additional resources and the need for transport
	Performs a rapid medical or trauma assessment (head to toe)
	Assesses baseline vital signs
	Positions a patient who is unresponsive, but breathing normally, with no
	suspected head, neck, spinal or hip injury, in a side-lying recovery position
	and ensures protection of their airway
	Obtains a SAMPLE history from the family or any bystanders, if available
	Provides emergency care
Physical Exam	
	Instructor's Note: The participant must always follow standard precautions
	when providing care.
	Participant completes the following:
	Performs initial actions
	Sizes up the scene
	 Forms a general impression
	 Performs a primary assessment
	Determines that the patient is responsive
	Begins with examining the head and neck
	Looks for blood or clear fluid in or around the ears, nose and mouth
	Reassesses LOC and notes any changes
	Looks at facial symmetry
	Checks pupil response and shape of the eyes
	Looks for facial bruising
	Checks the shoulders and chest
	Looks and feels for abnormalities
	Presses down on the shoulders, then presses inward toward the midline of
	the body
	Notes whether patient is breathing through a stoma
	Looks for open wounds
	Observes for use of accessory muscles for breathing
	Looks for distended jugular vein
	Minimizes movement to the patient's head and spine if a possible head or
	spinal injury is suspected and provides care first
	Continued

Feels for deformities of the collarbones and shoulders
Asks the patient to take a deep breath and blow air out, asking if there is any pain
 Auscultates lung sounds if trained to do so
Looks and listens for subtle signs of breathing difficulty
Feels the ribs for deformity
Examines the chest for rising and falling without effort
Checks for open wounds
Checks the abdomen
Asks if the patient has any pain in the abdomen
Looks for discoloration, open wounds, distention, scars or protruding organs
Evaluates whether a female patient is pregnant
Looks for any pulsations
Applies slight pressure (if no pulsating) to each abdominal quadrant, avoiding areas where the patient indicated pain
 Checks the pelvis
 Asks the patient if there is any pain
Places hands on both sides of the pelvis, pushes in on the sides and down on the hips and checks for instability and any reaction to pain
Check the legs and feet
Looks and feels for any deformity
Has the patient move the toes, feet and legs if there is no apparent sign of injury
Asks the patient to press legs inward against their hands, then asks the patient to press legs outward against their hands
Asks the patient to push downward against their hands with the toes
 Asks the patient to flex feet toward head
 Checks one extremity at a time and then compares findings
Check the arms and hands
Feels arms for deformity
Determines if patient has pain in the arms or hands
Checks limbs for symmetry, including pulse and color
Has the patient move fingers, hands and arms if no apparent sign of injury
Asks the patient to press arms inward against their hands, then asks the patient to press arms outward against their hands.
patient to press arms outward against their hands
Asks the patient to grasp both of their hands at once, checking for equal grip
Checks capillary refill
Checks one extremity at a time and then compares findings
Checks the patient's back
Using equal pressure, palpates with the fingertips along the spine from the neck downward for any injuries
 Checks for any reaction to pain
 Looks for discoloration or open wounds

How to Obtain Baseline Vital Signs	Instructor's Note: The participant must always follow standard precautions when providing care. When assessing breathing, look for a stoma or other signs of a neck breather.
	 Participant completes the following: Checks respirations for rate, rhythm and quality of breathing Looks, listens and feels for breathing Looks for the rise and fall of the patient's chest or abdomen Listens for sounds as the patient inhales and exhales Checks for the rate and quality of breathing without the patient's knowledge Maintains the same position as for checking the pulse Counts the number of times a patient breathes in 30 seconds and multiplies that number by 2 (or in 15 seconds, by 4) Records findings as the number of breaths per minute Checks for a pulse Places two fingers on top of a major artery near the skin's surface and over a bony structure Selects the carotid arteries in the neck or the radial artery in the wrist for an adult and a child Selects the brachial artery in the inside of the upper arm for an infant Counts the number of beats in 30 seconds and multiplies that number by 2 (or in 15 seconds, by 4) Records findings Checks skin characteristics and pupils Looks at and feels the skin for: Color, such as pale and ashen, or flushed and pink Temperature, such as hot or cold Partially removes a disposable glove to determine skin temperature if necessary, being careful not to come into contact with blood or open wounds Moisture, such as moist or dry Partially refly careful not to come into contact with blood or open wounds Capillary refil, such as normal or slow
Taking and Recording a Patient's Blood Pressure (by Auscultation)	 Records findings Instructor's Note: The participant must always follow standard precautions when providing care.
	 Participant completes the following: Ensures that stethoscope is clean Positions patient sitting or lying in a comfortable position with forearm on a supported surface in front or to the side of the patient Approximates systolic BP Either asks the patient what their BP is or uses 160 mmHg as an alternative Selects an appropriately sized cuff for the patient's arm Cuff covers two-thirds of the patient's upper arm Cuff is placed so the bladder is centered over the brachial artery Bottom edge of the cuff is about 1 inch above the elbow crease Valve on the bulb is closed

	Positions the cuff
	Locates the brachial pulse
	Positions the diaphragm of the stethoscope over the pulse point
	Diaphragm is centered over the brachial artery
	Diaphragm about 1 inch above the elbow crease
	Note: Since this skill is practiced on partners and not on actual patients, participants should inflate the cuff until the needle on the gauge reads at least 180 mmHg or until it is 10 mmHg above where they last heard the pulse as the cuff was inflated.
	Inflates the cuff; stops inflating when pulse is no longer heard
	Deflates the cuff slowly until the pulse is heard
	Air is released at approximately 2 to 4 mmHg per second
	 Number on pressure gauge is noted when the pulse is first heard (systolic pressure)
	Continues deflating the cuff until the pulse disappears or is no longer heard
	Number on pressure gauge is noted when the last sound is heard (diastolic pressure)
	Quickly deflates the cuff by opening the valve
	Records systolic over diastolic pressure
Taking and	
Recording a Patient's Blood Pressure (by Palpation)	Instructor's Note: The participant must always follow standard precautions when providing care.
	Participant completes the following:
	 Positions patient sitting or lying in a comfortable position with forearm on a supported surface in front or to the side of the patient
	 Selects an appropriately sized cuff for the patient's arm and positions the cuff Cuff covers two-thirds of the patient's upper arm
	 Cuff is placed so the bladder is centered over the brachial artery
	 Bottom edge of the cuff is about 1 inch above the elbow crease
	 Valve on the bulb is closed
	 Locates the radial pulse
	Inflates the cuff, momentarily stopping when you can no longer feel the radial pulse
	Notes the reading on the manometer
1	Deflates the cuff slowly until the radial pulse returns
	Air is released at approximately 2 to 4 mmHg per second
	 Air is released at approximately 2 to 4 mmHg per second Number on the pressure gauge is noted when the pulse is first felt
	 Air is released at approximately 2 to 4 mmHg per second Number on the pressure gauge is noted when the pulse is first felt (approximate systolic pressure)



COMMUNICATION AND DOCUMENTATION

Lesson Length: 60 minutes

MATERIALS, EQUIPMENT AND SUPPLIES

- Emergency Medical Response textbook
- Course Presentation Slides 153–162
- LCD projector, screen and computer
- Examples of documentation forms

LESSON OBJECTIVES

Knowledge

After completing this lesson, participants will be able to:

- Recognize the importance of effective communication within the emergency medical services (EMS) system.
- Recognize the need for compassion and empathy when caring for a patient's physical and mental needs.
- Communicate willingly and with sensitivity in the care of all patients.
- Identify the components of the prehospital care report (PCR).
- Describe the fundamental components of documentation and related issues.
- Explain the importance of maintaining confidentiality about the condition, circumstances and care of the patient.
- Describe the elements of a verbal report given during the transfer of care.

TOPIC: INTRODUCTION

Time: 5 minutes

ACTIVITY Course Presentation Slide 154

Review the opening scenario:

- As the closest responders in the area, your police unit is called to the scene where an older woman has collapsed in front of her home. When you arrive, a neighbor tells you that the woman suddenly collapsed and tripped on the concrete step in the walkway in front of her home. She is now conscious but a little dazed, and you find that she is also very frightened and apprehensive.
- Ask participants: "What can you do to try to ease the woman's fears and reduce her anxiety as you assess her for injuries?"



Instructor's Note: Let participants provide responses, guiding them to the key areas of communication with patients, such as empathy, cultural sensitivity, careful listening and respect.

Emphasize that effective communication with the patient and bystanders is crucial to determining what has happened and that communication among response team members also is important to ensure that quality care is provided to the patient.
Tell participants: "Documentation, the final element of emergency care, must be properly and thoroughly done to assist more advanced medical personnel in continuing care. It can also help in any associated legal proceedings."

TOPIC: COMMUNICATING WITHIN THE EMERGENCY COMMUNICATIONS SYSTEM

Time: 10 minutes

KEY POINTS	The key components of an emergency medical services (EMS) system include the:
	 Communications center (dispatch).
	• Medical director.
Course Presentation	 Receiving facility (often a hospital).
Slides 155–156	 EMS personnel in the field.
	 Constant communication among these key components is a priority for an EMS system to run properly.
	Radio communication for an EMS system consists of four key components:
	 Base station, the hub of communication
	 Mobile radios and data terminals, which are mounted in emergency vehicles
	 Portable radios, which are handheld
	 Repeaters, which boost the range of portable radios, increasing the amount of territory that can be accessed through radio communication
	The Federal Communications Commission (FCC) regulates the use of radio communication systems, establishing ground rules to help ensure that information is communicated completely and accurately throughout the EMS system.
COMMUNICA	TING WITH DISPATCH
KEY POINTS	The communications center (dispatch) also is known as a public safety answering point (PSAP).
	It receives emergency calls and sends the appropriate team to respond.
	Dispatch is the point of contact between the public and responders.
	Emergency medical dispatchers (EMDs) decide which emergency service resources are required.
	Most EMS dispatch centers use a validated system to determine the appropriate response based on information received from the caller.
	 EMDs gather as much information as possible about the emergency, may advise callers what they may be able to do while awaiting arrival, and note the time the call was received and the time they dispatched emergency services.
	 All conversations and radio dispatches usually are recorded to have an indisputable record of events.

COMMUNICATING WITH MEDICAL CONTROL		
KEY POINTS	 Medical control may or may not be located at the receiving facility, depending on the EMS system. Communication protocols may vary depending on your specific role. When working for an EMS system, you should provide the following information when communicating with medical control: Who you are (unit, level of service and your role) Patient characteristics (age, gender and chief complaint) The patient's mental status SAMPLE (signs and symptoms, allergies, medications, pertinent medical history, last oral intake, events leading up to the incident) history Relevant information about past illnesses Vital signs and results of the physical assessment Any care provided and the patient's response to the care Any questions In addition, ask about the need to perform any further actions and the estimated time of arrival (ETA) at the receiving facility. Whenever medical direction is received, repeat the order word for word. This is called closed-loop communication. Write down important or lengthy medical instructions. 	
COMMUNICA	TING WITH MEDICAL PERSONNEL	
KEY POINTS	 Identify yourself to any other EMS personnel arriving at the scene and give a verbal report. Interact within the team structure. 	
COMMUNICATING WITH THE RECEIVING FACILITY		
KEY POINTS	 The following information is communicated to the receiving facility by the transport crew: Who you are (unit and role) How many patients will be arriving Patient characteristics (age, gender and chief complaint) Immediate history (events leading to the injury or illness) Any care provided and the patient's response to the care Any vital information such as the need for isolation or specialized services such as a trauma team ETA At the facility, crew members provide additional information about the scene and the patient(s) and complete whatever documentation is required to meet local or state standards and their organization's protocols. 	
MOBILE PHO	NE COMMUNICATION	
KEY POINTS	 Mobile phones are becoming popular in some EMS districts. Advantages include ability to cover longer distances than radio communication, superior sound quality, fairly maintenance-free and improved ability for direct communication between parties. Mobile or cellular phones often are used as backup sources of communication should the radio system fail. Drawbacks to mobile phone use include possible compromise due to system overload, impracticality for multi-unit coordination and loss of signal in some areas, especially buildings and elevators. 	

TOPIC: INTERPERSONAL COMMUNICATION

ACTIVITY	 Ask participants to describe what it means to be empathetic.
Course Presentation Slide 157	 Instructor's Note: Responses could include: Understanding the patient's point of view. Placing yourself in the patient's situation. Showing respect for the patient's individual differences. Listening to what the patient is saying.
KEY POINTS	 Being empathetic means understanding and being culturally sensitive to the thoughts, feelings and experiences of another person. Empathy is necessary for successful interpersonal communication with patients and their families. You should communicate with patients in a way that achieves a positive relationship. This involves: Introducing yourself to the patient and family members if present. Explaining your role to the patient and what you will be doing. Introducing other members of the team.
ACTIVITY OPTION A	From the discussion of appropriate actions to use when speaking with an injured or ill person or family member described in Chapter 9, Communication and Documentation, have participants select a partner and role-play both appropriate and inappropriate techniques.
Time: 5 minutes	Instructor's Note: Refer to Chapter 9, Communication and Documentation, for appropriate actions and behaviors. When role-playing inappropriate techniques, look for actions or behaviors, such as using medical terminology, talking down to the person, not listening, treating the patient like a child and offering false reassurance, such as "everything will be okay."
ACTIVITY OPTION B Time: 5 minutes	 Using the following scenario, ask participants how they would facilitate effective communication: You arrive at the home of an older couple in response to a 9-1-1 call for assistance. The couple's daughter called because her father, who is bedridden due to a stroke, was having difficulty breathing. The daughter is providing the information because the older couple speaks very little English.
	 Instructor's Note: Responses should include: Introducing yourself to the patient, his wife and daughter and explaining your role and what you will be doing. Addressing the patient respectfully and appropriately, such as "Mr. Smith." Maintaining eye contact with the patient, speaking slowly and clearly, using simple terms and allowing time for the patient to answer, even if he speaks little English. Obtaining additional information and clarifying information with the patient's daughter, making sure to include the patient and his wife in the conversations and discussions. Minimizing any distractions. Showing respect for the patient's preferences and maintaining his dignity and privacy. Actively listening to the patient, his wife and daughter.

ACTIVITY OPTION C	 Divide participants into small groups. Using the textbook, have groups create a list of appropriate behaviors to use when communicating with an injured or ill person and family. Have each group present their information to the rest of the class.
Time: 10 minutes	 Instructor's Note: Responses should include: Speaking slowly and clearly. Avoiding medical terms and abbreviations. Using words that are clearly understandable. Adapting the physical environment to facilitate communication, such as ensuring adequate lighting and minimizing distractions. Approaching the person at eye level, making eye contact and using body language that shows openness and interest. Addressing persons by name, based on how they introduced themselves. Having the patient state their name and what problems they are having. Listening carefully to what the injured or ill person is saying or trying to say. Observing the patient while listening and providing reassurance and privacy, including that information will remain confidential. Asking one question at a time and avoiding interruptions. Using closed or direct and open-ended questions as appropriate, depending on the type of information to be gathered. Avoiding false reassurance, giving advice or asking leading or biased questions. Demonstrating dignity and respect for the patient regardless of age, language, culture or socioeconomic status. Asking for assistance for translation if the patient speaks a language that you do not understand. Observing the patient's body language.

TOPIC: THE IMPORTANCE OF DOCUMENTATION

	1
KEY POINTS Course Presentation Slides 158–161	 Documentation procedures are established by state regulations or local policy and may vary from state to state and from one EMS system to another. Documenting care is as important as providing care. The record is a legal document and is vitally important if legal action occurs. If you are called to court for any reason, the record will support what you saw, heard or did at the emergency scene. Documentation also is useful when analyzing current response practices and protocols and planning preventative action for
	the future.
	 Records also are used for quality assurance practices.
	1

PREHOSPITAL CARE REPORT

KEY POINTS	 A prehospital care report (PCR), also called a run report or trip sheet, is the essential documentation for each emergency call. Its primary function is to ensure high-quality patient care. Other functions include serving as a:
	 Legal document.
	 Valuable educational and research tool.
	 Administrative tool—an important part of the patient's medical record for billing, insurance reimbursement or maintaining statistics on hospital emergency services.
	The PCR must be filled out accurately, completely and correctly either with pen and paper or electronically (called an E-PCR).
	The PCR consists of four sections:
	 Run data, which contain administrative information
	 Patient data, which include all of the background information on the patient
	 Check boxes, which contain a series of boxes reflecting the patient's condition
	 Patient narrative, which is an open-ended portion for a description of the assessment and care provided
	The minimum data set refers to all of the information that must be included in the PCR. It consists of patient information gathered by an EMR and administrative information.
	 Control of the contents of a PCR falls within the Health Insurance Portability and Accountability Act (HIPAA).
	 The contents of the PCR must be kept confidential.
	 Violation of HIPAA rules can have severe penalties.
	Any competent adult has the right to refuse treatment; refusal of treatment must be documented in the PCR.
	Falsification of a PCR is a serious offense.
	 The PCR must be a thorough and accurate record of what occurred during a call; only facts are documented with nothing added that was not done.
	 Any error of omission (an error that occurs as a result of an action not taken) or commission (an error that occurs as a result of an action taken) in care must be highlighted along with any steps taken to correct the situation.
	When transferring care, a verbal report is given to more advanced medical personnel when they arrive on the scene. If a multipart PCR is available, a copy should be transferred with the patient.
	 Documentation also may prove essential for local authorities when legal matters are involved, especially in situations involving abuse,
	 exposure to dangerous situations or injuries. The documents must be objectively written, with only facts and observations; only the subjective comments or opinions of the patient should be recorded.
	 The document should be signed and dated; you should always keep a copy for your own records while making copies to distribute to the proper authorities based on local protocols.
	Instructor's Note: Encourage participants to review information in Chapter 3, Medical, Legal and Ethical Issues, about HIPAA, confidentiality and refusal of treatment.

ACTIVITY OPTION A	 Using the information from the opening scenario, ask participants to identify where the information would be documented on the PCR.
Time: 5 minutes	 Instructor's Note: Responses should include: Run data, such as time the incident was reported, when unit was notified and when the unit arrived and left the scene. Patient data, such as the patient's legal name, age, gender, time of the incident and any care the patient received before EMS personnel arrived. Check boxes for vital signs, chief complaint, level of consciousness (LOC) and appearance. Patient narrative, including patient's own words describing the chief complaint (in this instance, the neighbor's description), SAMPLE history, mechanism of injury (MOI) (fall) and any relevant details of the patient's medical history.
ACTIVITY OPTION B	 Divide participants into small groups. Ask each group to select a section of the PCR and provide examples of information that would be documented in that section. Be sure to assign all sections of the PCR. Have the groups share their examples for each section.
Time: 10 minutes	 Instructor's Note: Responses should include: Run data: Contains administrative information, including the time the incident was reported, when the unit was notified, when the unit arrived and left the scene, when the unit arrived at its destination and when the transfer of care was made. It also includes such information as the EMS unit number, names of the EMS crew members and their levels of certification and the address to which the unit was dispatched. Patient data: Contains all the background information on the patient, including legal name, age, gender, birth date, home address, Social Security number (where required) and billing and insurance information. It also contains the time the incident occurred, address where the patient was picked up and any care the patient received before EMS personnel arrived. Check boxes: Contains a series of boxes that are checked in accordance with the patient's condition. The check boxes refer to information about the patient, including vital signs (often more than one set must be taken), chief complaint, level of consciousness, appearance and respiration rate. These may appear as drop down menus in E-PCRs. Patient narrative: An open-ended portion of the PCR in which a description of the assessment and care is provided. The goal is to provide a complete and thorough picture of what went on and what the patient's chief complaint (in the patient's own words, if possible), how the chief complaint began and how it progressed and the MOI or nature of illness. It should also include relevant details of the patient's medical history. It is important to remain objective in this section; that is, describe what happened but do not draw any conclusions about the situation.

TOPIC: WRAP-UP

Time: 5 minutes

Course Presentation Slide 162 Emphasize that good communication with patients, bystanders and colleagues is crucial so that all team members understand what is going on and what happened before they arrived on the scene.

	- Deview the electing economics
ACTIVITY	 Review the closing scenario: As you assess the older patient, you learn that her chief complaint is that she "blacked out" momentarily and fell. The patient is afraid that she has broken her hip. She has pain in her pelvis and is unable to move her left leg. You give a verbal update to the EMS personnel who have just arrived to take over medical care and transport the patient. Ask participants: "Why is it important for communications to be brief and concise?" "What are some examples of effective interpersonal communication?" "Why is it important to thoroughly document your call, observations and actions?"
	Instructor's Note: Responses should include:
	 Communication should be kept clear, concise and to the point. Keeping communication clear, concise and to the point keeps the focus on the patient and the care provided while not overloading the person on the receiving end of the communication.
	Examples of effective interpersonal communication include having empathy for the people involved, introducing yourself to the patient, telling the patient what you will be doing, introducing other members of your team, speaking slowly and clearly, avoiding using medical terms and abbreviations, speaking in words that are easily understandable, adapting the physical environment to facilitate communication, getting down to the patient's eye level, making eye contact and using appropriate body language, using the patient's name when possible, letting the patient tell you in their own words what is wrong, asking one question at a time and listening carefully to the patient, and showing the patient respect.
	Your documentation is a legal record of what you saw, heard and did at the scene. Documentation also helps more advanced medical personnel when they take over care. Documentation of injuries and illnesses also is useful when analyzing current response practices and protocols and planning preventative action for the future. Records also are used for quality assurance (QA) practices within a department.
KEY POINTS	The EMS team, by showing confidence and encouragement, can
	successfully elicit the required information.
	 Effective communication is based on understanding the modes of communication, factors for effective communication and speed of communication. Following local and state rules and protocols helps keep
	miscommunication to a minimum.
	Documentation is the final step in providing emergency care; it must be accurate complete and objective
	 be accurate, complete and objective. You should keep a copy of all records for yourself so that you have access to information should it be needed.
ASSIGNMENT FOR THE NEXT LESSON	 Review Chapters 6–9, including skills.
INSTRUCTOR	 Review Chapters 6–9.
PREPARATION	 Review the skills from Lessons 9–10.
	 Obtain any necessary equipment and supplies for Lesson 12.



SKILLS REVIEW

Lesson Length: 60 minutes

MATERIALS, EQUIPMENT AND SUPPLIES

- Emergency Medical Response textbook
- Skill Checklists for Lessons 9–10
- Disposable latex-free gloves (multiple sizes) and other personal protective equipment (PPE), as indicated
- Adult and infant manikins (one for every two participants; child manikins optional)
- Decontamination supplies
- Resuscitation masks (adult and pediatric; one for each participant)
- Stethoscopes (one for every two participants)
- Sphygmomanometers (one for every two participants)

LESSON OBJECTIVES

Skill

After completing this lesson, participants will be able to:

Demonstrate the knowledge and skills covered in Lessons 8–11.

TOPIC: INTRODUCTION

Time: 5 minutes

ACTIVITY	 Explain that participants will be divided into pairs or small groups to practice the skills at various stations around the room. Emphasize that the partners or groups should work together and rotate through the stations.
	 Tell participants that they may need to assume the role of the patient, bystander or family member(s) if requested, especially in situations that require verbal interaction between the emergency medical responder (EMR) and the patient or others. Encourage participants to bring their textbooks to the various practice stations and to practice the designated skills at each station. Tell participants that you will be walking around to the various stations, observing their skills, asking them questions and answering any questions that they may have.

 Instructor's Note: At each of the stations, observe participants performing the skills. Provide feedback and guidance as necessary. During observation, use the skill checklists to help evaluate the participant's competency in performing the skill. Emphasize the need to always follow standard precautions when performing these skills.

TOPIC: SKILL PRACTICE

Time: 50 minutes

ACTIVITY	 Set up practice stations for the following skills: Head-Tilt/Chin-Lift Maneuver Jaw-Thrust (Without Head Extension) Maneuver Using a Resuscitation Mask—Adult, Child and Infant Using a Resuscitation Mask—Head, Neck or Spinal Injury Suspected (Jaw-Thrust Without Head Extension Maneuver)—Adult or Child Primary Assessment Recovery Position How to Obtain a SAMPLE History How to Perform a Secondary Assessment for a Responsive Trauma Patient How to Perform a Secondary Assessment for an Unresponsive Patient Who Is Breathing Normally (<i>optional</i>) Physical Exam How to Obtain Baseline Vital Signs Taking and Recording a Patient's Blood Pressure (by Auscultation) Taking and Recording a Patient's Blood Pressure (by Palpation)
	Instructor's Note: Depending on equipment availability, number of participants, classroom size and time, it may be necessary to combine several skills for practice at one station.

TOPIC: WRAP-UP

Time: 5 minutes

	 Provide feedback to participants about their performance. Encourage continued practice with the skills to gain confidence and competency.
ASSIGNMENT FOR THE NEXT LESSON	 Review Chapters 6–9.
INSTRUCTOR PREPARATION	 Review Chapters 6–9 and Lessons 8–11. Review the skills from Lessons 1–11. Obtain any necessary equipment and supplies for Lesson 13.

LESSON 13

PUTTING IT ALL TOGETHER

Lesson Length: 60 minutes

MATERIALS, EQUIPMENT AND SUPPLIES

- Emergency Medical Response textbook
- Course Presentation Slides 163–167
- LCD projector, screen and computer
- Disposable latex-free gloves (multiple sizes) and other personal protective equipment (PPE), as indicated
- Decontamination supplies
- Adult and infant manikins (one for every two participants; child manikins optional)
- Resuscitation masks (adult and pediatric; one for each participant)
- Stethoscopes (one for every two participants)
- Sphygmomanometers (one for every two participants)
- Blank documentation forms
- Skill Checklists for Lessons 9–10

LESSON OBJECTIVES

After completing this lesson, participants will be able to:

Demonstrate the knowledge, skills and attitudes learned in Lessons 8–11.

TOPIC: INTRODUCTION

Time: 5 minutes

ACTIVITY	Tell participants that they:
	 Will split into several small groups with each group receiving a scenario to role-play, using either a manikin or another participant as the patient. Will have approximately 5 minutes to prepare for the role-playing activity and that part of this preparation will include designating the roles for each of the group members based on the actual scenario assigned and gathering any necessary equipment and supplies.
	 Are to formulate a response to the scenario integrating the key points from Chapters 6–9.
	 Should demonstrate any previously learned skills that would be required as part of the response, explaining their actions while providing care.
	 Should be able to answer questions asked by the instructor or other class members.
	 Will spend approximately 5 to 10 minutes after role-playing the scenario critiquing their actions and discussing any problems, errors or difficulties they may have had.

SCENARIO 1: YOU ARE THE EMERGENCY MEDICAL RESPONDER

Time: 15 minutes

Course Presentation Slide 164

Instructor's Note: For this scenario, there should be one participant acting as the responder, one acting as the patient and one acting as the wife.

Setup:

You are called to the home of a couple in their 40s after the wife called 9-1-1 because her husband had just collapsed in the bathroom. When you arrive, the woman tells you that her husband was "complaining of indigestion and pressure in his chest and then all of a sudden, he passed out." You accompany the woman to the upstairs bathroom and find the husband face-down on the floor with a small amount of what looks like vomit on the floor near his mouth. He appears to be unconscious.

Ask participants: "How should you respond?"



- **Instructor's Note:** Participants should address these areas in their responses:
- Adhering to the standards of care and professional responsibilities
- Maintaining a caring and professional attitude while controlling personal fears
- Adhering to standard precautions and use of personal protective equipment (PPE)
- Sizing up the scene, including looking for possible clues related to the mechanism of injury (MOI) or nature of illness, such as the patient possibly having tripped on a loose rug or slipped on a wet floor
- Forming a general impression and looking for any severe, lifethreatening bleeding
- Identifying the MOI or nature of illness based on clues from the scene, if any, and the wife's statement of "indigestion and chest pressure"
- Obtaining a primary assessment, including checking responsiveness using the mnemonic AVPU (alert, verbal, painful, unresponsive); summoning more advanced medical personnel; opening the airway and checking for breathing and a pulse
 - Demonstrating the skills for primary assessment, head-tilt/chin-lift or jaw-thrust (without head extension) maneuver
- Using SAMPLE to obtain the patient's history, asking the wife about the patient's signs and symptoms, allergies, medications, pertinent medical history, last oral intake and events leading up to the incident
 - Demonstrating the skill for obtaining a SAMPLE history
- Performing a secondary assessment, including the patient's chief complaint, baseline vital signs and a detailed physical exam, as appropriate
 - Demonstrating the skills for performing a secondary assessment, obtaining baseline vital signs, and taking and recording a patient's blood pressure (by auscultation and/or palpation)
 - Since the patient is nonresponsive and not breathing, performing a secondary assessment would be postponed until the patient is stabilized or becomes responsive
- Conducting a detailed physical exam
 - Demonstrating the skill for performing a physical exam and patient history, as appropriate
 - Since the patient is nonresponsive and not breathing, performing a detailed physical exam would be postponed until the patient is stabilized or becomes responsive
- Effectively communicating with the wife and more advanced medical personnel, including accurate, complete and objective documentation of observations and care

SCENARIO 2: YOU ARE THE EMERGENCY MEDICAL RESPONDER

Time: 15 minutes

Course Presentation Slide 165



Instructor's Note: For this scenario, there should be one participant acting as the responder, one acting as the patient and at least one other participant acting as the bystander.

Setup:

You receive a call from dispatch to go to the local high school to evaluate a student athlete who has collapsed during soccer practice. When you arrive on the scene, you find the patient lying on the side of the field with her legs slightly elevated and several fellow players kneeling around her. She is talking to the players and sipping on some water. She tells you that she got overheated, started to feel dizzy and then just fainted. "I should have had something to eat after school today before practice, but I was running late."

Ask participants: "What should you do?"



Instructor's Note: Participants should address these areas in their responses:

- Adhering to the standards of care and professional responsibilities and maintaining a caring and professional attitude
- Obtaining the patient's consent to provide care
- Determining the need for summoning more advanced medical personnel as appropriate
- Adhering to standard precautions and use of PPE, most likely disposable latex-free gloves
- Sizing up the scene including looking for possible clues related to the MOI or nature of illness such as signs and symptoms that the patient may be exhibiting (e.g., changes in the skin color or temperature or increased respiratory rate)
- Forming a general impression and looking for any severe, life-threatening bleeding
- Identifying the MOI or nature of illness based on the patient's signs and symptoms, including the statement about not eating, being overheated and becoming dizzy
- Checking responsiveness (using the mnemonic AVPU)
 - Determining that the patient is conscious and responsive and has an open airway since she is talking and alert and answering questions appropriately
 Obtaining her respiratory and pulse rates
- Using SAMPLE to obtain the patient's history and asking about the patient's signs and symptoms, allergies, medications, pertinent medical history, last oral intake and events leading up to the incident
 - Demonstrating the skill for obtaining a SAMPLE history
- Performing a secondary assessment, including the patient's chief complaint and baseline vital signs, as appropriate
 - Demonstrating the skills for performing a secondary assessment, obtaining vital signs, and taking and recording a patient's blood pressure (auscultation and/or palpation)
- Conducting a detailed physical exam, as appropriate
 - Demonstrating the skill for performing a physical exam and patient history
- Performing an ongoing assessment until additional emergency medical services (EMS) personnel arrive, if appropriate, based on the emergency medical responder's (EMR's) evaluation of the patient
- Effectively communicating with the patient, bystanders and other response team members, including accurate, complete, objective documentation of observations and care

SCENARIO 3: YOU ARE THE EMERGENCY MEDICAL RESPONDER

Time: 15 minutes

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Course

Presentation Slide 166 **Instructor's Note:** For this scenario, there should be one participant acting as the responder, one acting as the patient and at least two other participants acting as bystanders.

Setup:

You are called to the scene of a bicycle crash. Several bystanders report that a young woman was riding her bicycle down a hill and lost control of the bicycle. She then hit the curb and was thrown from the bicycle sideways, landing on her left shoulder and side. The bicycle flipped, causing the handlebars to strike the side of her right chest and abdomen. A crowd is beginning to gather around the scene, and the young woman appears to be unconscious.

Ask participants: "What should you do?"



- Instructor's Note: Participants should address these areas in their responses:
- Adhering to the standards of care and professional responsibilities and maintaining a caring and professional attitude
- Obtaining consent from the patient to provide care (if responsive)
- Determining the need for summoning more advanced medical personnel as appropriate
- Adhering to standard precautions and use of PPE, most likely disposable latex-free gloves and possibly a resuscitation mask
- Initially sizing up the scene for possible hazards
 - Evaluating for possible traffic and the increasing size of the crowd
 - Looking for possible clues related to the MOI, such as signs and symptoms that the patient may be exhibiting, reports from the bystanders as to what happened and appearance of the bicycle
- Forming a general impression and looking for any severe, life-threatening bleeding
- Obtaining a primary assessment, including checking responsiveness (using the mnemonic AVPU), opening the airway and checking for breathing and a pulse, then quickly scanning for severe bleeding
 - Maintaining the patient's position due to the possibility of a head, neck or spinal injury and checking responsiveness
 - Demonstrating the skill for primary assessment
 - Checking the airway and using the jaw-thrust (without head extension) maneuver since there is a possibility of a head, neck or spinal injury; if responsive, maintaining the patient in the side-lying (recovery) position; if unresponsive and bystanders are available to assist, turning the patient as a unit onto her back while supporting the head, neck and back
- If the patient is responsive, using SAMPLE to obtain the patient's history and asking about the patient's signs and symptoms, allergies, medications, pertinent medical history, last oral intake and events leading up to the incident
 - Demonstrating the skill for obtaining a SAMPLE history
- Performing a secondary assessment based on whether the patient is responsive or unresponsive
 - Demonstrating the skills for secondary assessment, obtaining baseline vital signs, taking and recording a patient's blood pressure (by auscultation and/or palpation) and performing a physical exam and patient history, as appropriate
 - If patient is unresponsive and not breathing, performing a secondary assessment and detailed physical exam would be postponed until the patient is stabilized or becomes responsive

 If the patient is unresponsive but breathing, performing a secondary assessment would include a rapid trauma assessment and physical exam that would focus on areas related to the MOI, such as the patient's left side (extremities), right chest and right abdomen as well as head, neck and back, and reports by bystanders If patient is responsive, performing a secondary assessment including a focused trauma assessment and physical exam on areas related to the MOI, such as the patient's left side (extremities), right chest and right abdomen as well as head, neck and back, and reports by bystanders If patient is responsive, performing a secondary assessment including a focused trauma assessment and physical exam on areas related to the MOI, such as the patient's left side (extremities), right chest and right abdomen as well as head, neck and back, and reports by bystanders Effectively communicating with the patient, bystanders and other response team members, including accurate, complete, objective documentation of observations and care

TOPIC: WRAP-UP

Time: 10 minutes

Course Presentation Slide 167	 Answer participants' questions, ensuring that each participant has an opportunity to resolve any confusion. Review the scenarios and the important elements of care.
KEY POINTS	 When sizing up the scene: Ensure the safety of the scene, including personal safety and the safety of others (patients and bystanders). Determine the MOI or the nature of illness. Decide the need for additional services based on the hazards at the scene, the number of injured or ill and the nature of the injuries or illnesses. Do not touch anything at the scene of violence or a crime until law enforcement has deemed it secure, unless it is necessary to reach a patient. When performing a primary assessment: Obtain a general impression. Check responsiveness and determine a patient's response using the mnemonic AVPU. Open the airway and check for breathing and circulation. Determine any immediate threats to life such as shock. When performing the history taking and secondary assessment: Obtain a focused history, addressing the chief complaint, MOI or nature of illness, and other relevant information. Use the mnemonic SAMPLE to obtain a patient's history. Perform a secondary assessment: Assess the patient's complaints using the mnemonic OPQRST (onset, provoke, quality, region or radiate, severity, time). Obtain the SAMPLE history. Perform a focused trauma assessment. Assess baseline vital signs: respiratory rate (rhythm and quality of breathing), pulse and blood pressure (auscultation or palpation). Perform components of the detailed physical exam using the mnemonic DOTS (deformities, open injuries, tenderness, and swelling) or DCAP-BTLS (deformities, contusions, abrasions, punctures/penetrations, burns, tenderness, lacera

	 Provide emergency care. Perform an ongoing assessment to identify and treat any changes in the patient's condition, including the primary assessment, vital signs, chief complaint and interventions or care provided. When communicating and documenting: Ensure constant communication among EMS systems, including the dispatch, medical director, receiving facility and EMS personnel in the field. Use empathy with patients and their families. Ensure that all information is properly and thoroughly documented in the prehospital care report (PCR) and provide a verbal report to more advanced medical personnel when they arrive on the scene.
ASSIGNMENT FOR THE NEXT LESSON	 Read Chapter 10, Airway and Ventilation. Read Enrichment: Assessing Breath Sounds (<i>optional</i>), page 252; and Enrichment: Assisting the Patient with Asthma (<i>optional</i>), pages 253–257.
INSTRUCTOR PREPARATION	 Review Chapter 10, Airway and Ventilation. Review Enrichment: Assessing Breath Sounds (<i>optional</i>), page 252; and Enrichment: Assisting the Patient with Asthma (<i>optional</i>), pages 253–257. Review the video segments, "Giving Ventilations—Adult, Child and Infant" (3:33), "Using a Bag-Valve-Mask Resuscitator" (2:27) and "Asthma" (2:57) (<i>Enrichment</i>). Review the skills and obtain any necessary equipment and supplies for Lesson 14.

UNIT 3 | AIRWAY

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AIRWAY AND VENTILATION

Lesson Length: 130 minutes (175 minutes with Enrichments)

MATERIALS, EQUIPMENT AND SUPPLIES

- Emergency Medical Response textbook
- Course Presentation Slides 168–192
- LCD projector, screen and computer
- Emergency Medical Response DVD
- DVD player and monitor
- Disposable latex-free gloves (multiple sizes) and other personal protective equipment (PPE), as indicated
- Adult and infant manikins (one for every two participants; child manikins optional)
- Decontamination supplies
- Resuscitation masks (adult and pediatric; one for each participant)
- Bag-valve-mask (BVM) resuscitators (adult and pediatric; one for every two participants)
- Examples of delivery systems for asthma medications and peak flowmeters, such as asthma training inhalers (*Enrichment skill*)

LESSON OBJECTIVES

Knowledge

After completing this lesson, participants will be able to:

- Describe the structure and function of the respiratory system.
- List the signs of inadequate breathing.
- Describe how to care for a patient experiencing respiratory distress.
- Relate the maneuver used to open the airway to the mechanism of injury.
- Explain why basic airway management and ventilation skills take priority over many other basic life-support skills.
- Describe how to perform mouth-to-mouth, mouth-to-nose and mouth-to-stoma ventilations.

Skill

After completing this lesson, participants will be able to:

- Demonstrate how to give ventilations using a resuscitation mask.
- Demonstrate how to give ventilations using a bag-valve-mask (BVM) resuscitator.
- Demonstrate how to give ventilations if a head, neck or spinal injury is suspected.

TOPIC: INTRODUCTION

Time: 5 minutes

ACTIVITY Course Presentation Slides 169–170	 Review the opening scenario: Your medical emergency response team has been called to the fitness center by building security on a report of an employee who complained of having difficulty breathing. You and your partner arrive and find the employee conscious with a chief complaint of difficulty breathing. The patient says he just "overdid it" on the treadmill. He appears to be out of breath and is having trouble speaking in full sentences. You begin a primary assessment and determine that the patient is in respiratory distress. Ask participants: "What should you do?" "What can you do to assist the patient with his breathing?"
	Instructor's Note: Let participants provide responses, guiding them to important areas related to respiratory emergencies, such as assessing for an open airway and respiratory function, underlying causes and signs and symptoms of respiratory distress and respiratory arrest.
	Tell participants: "Ensuring an open airway is one of the most important steps you can take in caring for a patient because a person cannot breathe without an open airway. A patient who can speak or cry is conscious, has an open airway, is breathing and has a pulse."

TOPIC: THE RESPIRATORY SYSTEM

Time: 10 minutes

	Instructor's Note: Urge participants to review Chapter 4, The Human Body.
Course Presentation Slides 171–172	 The respiratory system is divided into the upper and lower airway tracts. The upper airway tract begins at the mouth and nose and includes the nose, pharynx and larynx. The lower airway tract begins below the level of the vocal cords and includes the trachea, bronchi, bronchioles and alveoli. Breathing requires that the respiratory, circulatory, nervous and musculoskeletal systems work together. Injuries or illnesses that affect any of these systems may cause breathing emergencies.
PATHOPHYSIOLOGY	
KEY POINTS	 Breathing difficulties may occur for various reasons including: Inadequate amount of oxygen breathed in during respiration. Breathing in a low-oxygen environment or when poisonous gases are in the air. Infection of the lungs. Illness, such as asthma. Excess fluid in the lungs or excess fluid between the lungs and blood vessels. Traumatic injuries to the lungs that cause bruising (lung contusion).
	(Continued,

• Poor circulation.
\circ Upper airway problems due to swelling, obstruction or trauma.
 Ineffective circulation, such as from shock or cardiac arrest.
 Choking, caused by airway obstruction, is one of the most common causes of breathing emergencies and can occur due to anatomical or mechanical obstruction.
An inadequate rate or depth of breathing leads to insufficient air volume moving in and out of the lungs.
 Respirations may be ineffective due to unconsciousness, altered level of consciousness, chest injury, poisoning, overdose or diseases, such as chronic obstructive pulmonary disease (COPD) or emphysema.
 Oxygenation refers to the amount of oxygen in the bloodstream. An insufficient amount of oxygen delivered to the cells is referred to as hypoxia, which may result from:
 Obstructed airway.
• Shock.
 Inadequate breathing.
• Drowning.
 Strangulation.
 Choking.
• Suffocation.
 Cardiac arrest.
 Chest or head trauma.
 Carbon monoxide poisoning.
 Complications of general anesthesia.

TOPIC: RESPIRATORY EMERGENCIES

Time: 20 minutes

KEY POINTS	Instructor's Note: Refer participants to Chapter 4, The Human Body, for information about the physiology of respiration and Chapter 8, History Taking and Secondary Assessment, for a review of information about respiratory rate and normal rate ranges.
Presentation Slides 173–176	 A respiratory emergency occurs when air cannot travel freely and easily into the lungs; it can be life threatening because it greatly cuts down on the oxygen the body receives or because it cuts off oxygen entirely. Unless the brain receives oxygen within 4 to 6 minutes, brain damage is possible. Within 6 to 10 minutes, brain damage is likely, and after 10 minutes, brain damage is certain. There are two types of respiratory emergencies: Respiratory distress, which involves difficulty breathing. Respiratory distress is a condition in which breathing becomes difficult; it can be caused by: A partially obstructed airway. Illness. Chronic conditions, such as asthma. Electrocution, including lightning strikes.

	 Heart attack. Injury to the head, chest, lungs or abdomen. Allergic reactions. Drugs. Poisoning. Emotional distress. Trouble breathing can be the first sign of a more serious emergency, such as anaphylaxis or a heart problem; therefore, recognizing the signs of breathing problems and providing care often are the keys to preventing these problems from becoming more serious emergencies. Patients with breathing problems will most likely be conscious. Breathing problems can be identified by watching and listening to the patient's breathing and by asking how the patient feels. Signs and symptoms of respiratory emergencies include: Slow or rapid breathing. Unusually deep or shallow breathing.
ACTIVITY OPTION A	 Gasping for breath. Wheezing, gurgling or high-pitched noises. Unusually moist or cool skin. Flushed, pale, ashen or bluish skin color. Shortness of breath. Dizziness or light-headedness. Pain in the chest or tingling in the hands, feet or lips. Apprehensive or fearful feelings. Ask participants if they have ever experienced a respiratory infection. Ask those who responded positively to share with the class what signs and symptoms
Time: 5 minutes	 Instructor's Note: Responses could include: Signs and symptoms such as coughing with or without mucus, difficulty breathing, fever, chills, shortness of breath or chest pain.
ACTIVITY OPTION B	 Using the following scenario, ask participants to identify possible causes for the patient's condition and to suggest additional questions that would be appropriate to ask when determining what the patient is experiencing: You and your partner are summoned to a local conference center in response to an emergency call. A person who was scheduled to speak at a conference began complaining of difficulty breathing about 10 minutes before he was scheduled to speak. On arrival at the scene, you find the patient sitting on the floor, breathing rapidly. The patient states that all of sudden he began to feel dizzy and his lips started tingling.
	 Instructor's Note: Responses could include: Causes such as stress or anxiety related to speaking before a group of people or an underlying infection, heart failure or lung disease. Additional questions to ask may include: "Have you had an infection recently?" "Do you have a history of heart or lung problems?" "Do you have a history of asthma?" "Have you ever experienced this type of feeling before?"

ACTIVITY OPTION C Time: 10 minutes	 Divide the participants into small groups and ask them to compare and contrast the signs and symptoms of COPD with an asthma attack. Then bring the groups back together to discuss their conclusions. Instructor's Note: Responses should include: Comparison of similarities include elevated shoulders and pursed lip breathing, wheezing, shortness of breath, coughing and confusion. Contrasting differences include increased mucus, loss of appetite, tiring easily and age (middle aged or older patient) for COPD, and rapid, shallow breathing, sweating, chest tightness and age (typically child or young adult) for an asthma attack.
ACTIVITY OPTION D Time: 10 minutes	 Divide the participants into small groups. Assign each group one or more of the following conditions, being sure to assign all topics: COPD, asthma, pneumonia, acute pulmonary edema, hyperventilation, pulmonary embolism and emphysema. Have participants use their textbooks to describe the condition and explore its signs and symptoms and care, then have each group present its information to the rest of the class.
	 Instructor's Note: Responses should include: For COPD: COPD is a progressive lung disease characterized by difficulty breathing due to partial obstruction of the airways and loss of the alveoli's ability to fill with air. Cigarette smoking is the most common cause. Other possible causes are inhalation of other lung irritants, pollution, dust or chemicals over a long period of time. Signs and symptoms include coughing with copious mucus; tendency to tire easily; loss of appetite; bent posture with elevated shoulders and pursed lips; fast pulse; round, barrel-shaped chest; and confusion (due to lack of oxygen to the brain). Care includes helping the patient focus on their breathing, as deep breaths help to fill the lungs with air and maintain flexibility in the chest wall. For asthma: Asthma is an ongoing illness involving airway swelling and inflammation that is more common in children and young adults. Exposure to a trigger, such as exercise, cold air, allergens or other irritants affects the airways, causing them to swell and narrow. Signs and symptoms include coughing or wheezing noises, difficulty breathing, ishortness of breath, sweating, tightness in the chest, rapid and shallow breathing, inability to speak in complete sentences, bent posture with elevated shoulders) and other forms of treatment. For pneumonia is an infection caused by a virus, bacterium, fungus or other organism that causes inflammation of the lungs that leads to the air sacs filling with fluid, thus interfering with oxygen exchange. Signs and symptoms include high fever and chills, congestion (in older adults) and altered mental status (in older adults). Care includes use of supplemental oxygen administration based on local protocols.

 lying flat, awakening at night with a feeling of breathlessness, unusual shortness of breath during activity and significant weight gain. Acute signs and symptoms include shortness of breath; difficulty breathing, such as wheezing or gasping; cyanosis; frothy (foamy) pink sputum; pale skin; excessive sweating; restlessness; anxiety and a feeling of apprehension; feeling of suffocating or drowning; and chest pain (when condition is caused by coronary artery disease). Care includes supplemental oxygen administration as the first step based on local protocols. For hyperventilation: Hyperventilation is breathing that is faster and shallower or deeper than normal, leading to a decrease in blood carbon dioxide levels, reducing blood flow to the brain and leading to fear, anxiety, confusion, dizziness, and numbness and tingling in the fingers and toes. Care focuses on calming the patient (if symptoms are not life threatening), listening to the patient's concerns and trying to reassure and encourage the patient to breather slower or breather through pursed lips, and administering supplemental oxygen if local protocols allow and the patient does not respond. For pulmonary embolism: Pulmonary embolism is a blockage in the arteries of the lungs that interferes with oxygen and carbon dioxide exchange leading to respiratory distress (degree depends on size of clot). Signs and symptoms include sudden onset of dyspnea; chest pain that is localized and does not radiate; coughing, including coughing up blood; and fainting. 	
 Acute pulmonary edema is an abnormal buildup of fluid in the lungs causing severe respiratory distress, altered mental status and coughing, with some bloody sputum. Signs and symptoms develop gradually, such as difficulty breathing when lying flat, awakening at night with a feeling of breath lesness, unusual shortness of breath during activity and significant weight gain. Acute signs and symptoms include shortness of breath, difficulty breathing, such as wheezing or gasping; cyanosis; frothy (loamy) pink sputum; pale skin; excessive sweating; restlessness; anviety and a feeling of apprehension; feeling of suffocating or drowning; and chest pain (where condition is caused by coronary artery disease). Care includes supplemental oxygen administration as the first step based on local protocols. For hyperventilation: Hyperventilation is breathing that is faster and shallower or deeper than normal, leading to a decrease in blood carbon dioxide levels, reducing blood flow to the brain and leading to faa, naviety, confusion, dizziness, and numbness and tingling in the fingers and toes. Care focuses on calming the patient (if symptoms are not life threatening) listening to the patient to breath solver or breath through pursed lips, and administering supplemental oxygen if local protocols allow and the patient does not respond. For pulmonary embolismi: Pulmonary embolismi is a blockage in the arteries of the lungs that interferes with oxygen and carbon dioxide exchange leading to respiratory distress (degree depends on size of clo). Signs and symptoms include suded on set of dyspnea; chest pain that is localized and does not raciate; coughing, including coughing up blood; and fainting. Larger clots can cause death very quickly. Rapid care and transport of the patient to a hospital is crucial. For emphysema is a chronic disease caused by damage to the air sacs in the l	For acute pulmonary edema:
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and weakness.	cyanosis, barrel-shaped chest, fatigue, loss of appetite, weight loss, mild cough, breathing through pursed lips, restlessness, confusion

TOPIC: AIRWAY

Time: 20 minutes

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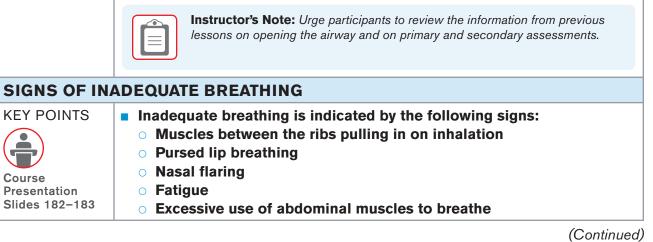
Instructor's Note: Briefly review the two methods for opening the airway: the head-tilt/chin-lift maneuver and the jaw-thrust (without head extension) maneuver found in Lesson 9. Refer participants to Chapter 7, Primary Assessment. Have participants review the skill sheets for both maneuvers.

SIGNS OF AN OPEN AIRWAY		
KEY POINTS Course Presentation Slides 177–181	 An airway is open and clear when the following occur: The patient's chest rises and falls. Air is heard and felt coming out of the patient's mouth and nose as the patient exhales. The conscious patient is able to speak in full sentences without distress. The conscious patient is speaking in normal tones. 	
SIGNS OF AN		
KEY POINTS	 A patient with an inadequate airway needs close attention and monitoring. Any unusual sounds may be signs of an airway obstruction. The patient may be visibly unable to catch their breath or they may gasp for air and make grunting sounds. Stridor (a harsh, high-pitched sound on inhalation) may be due to a swollen larynx blocking the upper airway. Snoring may indicate that the tongue or other tissues in the mouth may be relaxed and blocking the upper airway. A patient who is awake and alert but unable to speak or can only speak a few words or has a hoarse-sounding voice may be having severe difficulty breathing. Inadequate breathing also may be due to trauma, infection or an allergic reaction. No air movement indicates apnea (the complete absence of breathing); the patient needs artificial ventilation. Sometimes, no detectable air movement may be due to an airway obstruction. If efforts to open the airway are unsuccessful and ventilations do not make the chest rise and fall, you must check for an airway obstruction, such as liquid, food, teeth, dentures, blood, vomit or other foreign objects. For any unconscious patient who is experiencing apnea or has a suspected airway obstruction and has no pulse, it is critical to provide 	
	CPR starting with chest compressions as soon as possible.	
	AIRWAY OBSTRUCTION	
KEY POINTS	 The two types of airway obstruction include mechanical and anatomical. Mechanical obstruction involves any foreign body lodged in the airway. It is an emergency situation that needs immediate attention. The most common cause of foreign body airway obstruction (FBAO) in adults is a solid object, such as food. In children younger than 4 years, large chunks of food and small objects, such as toy parts or balloons, commonly cause airway obstruction. An anatomical obstruction is most commonly due to the tongue. It occurs in an unconscious patient, as muscle tone is lost allowing the tongue to fall back and block the airway. Other conditions that may cause an anatomical obstruction include swelling due to trauma, infection, asthma, emphysema or anaphylaxis. Trauma to the neck also may cause an obstruction. 	
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TECHNIQUES	TECHNIQUES TO CLEAR AN AIRWAY OBSTRUCTION	
KEY POINTS	 Protocols vary related to the methods used to clear an airway obstruction. Abdominal thrusts, back blows and chest thrusts have been proven to effectively clear an obstructed airway in conscious patients. Unconscious patients with FBAO should receive CPR beginning with compressions. CPR will be covered in future lessons. 	
TECHNIQUES	TO REMOVE FOREIGN MATTER FROM THE UPPER AIRWAY	
KEY POINTS	 Two techniques can be used to remove visible foreign matter and fluids from the upper airway of an unconscious patient: finger sweeps and suctioning. Finger sweeps involve removing an object or other foreign matter from a patient's mouth with a finger. It is performed only on an unconscious patient and only when foreign matter is seen in the patient's mouth. Be sure to always wear disposable latex-free gloves when performing a finger sweep. Be sure to use the index finger for an adult and little finger for a child or an infant. Suctioning removes blood, fluids or food particles from the airway. Some suctioning devices cannot remove solid objects, such as teeth, foreign bodies or food. 	
RECOVERY POSITION		
KEY POINTS	 In some cases, the person may be unresponsive but breathing normally. Move the patient into a side-lying recovery position after completing your assessment and gathering a patient history, based on local protocols, if there is no suspected head, neck, spinal, hip or pelvic injury. Patients with a suspected head, neck, spinal, hip or pelvic injury should not be placed in a recovery position unless you are unable to manage the airway effectively or you are alone and need to leave the patient to call for additional resources. 	

TOPIC: ASSESSING BREATHING

Time: 10 minutes



	 Sweating Sitting upright and leaning forward (tripod position) Deviated trachea, a late sign of a life-threatening situation Inadequate depth of breathing Too slow or too rapid breathing rate Unusual/irregular chest wall movement Irregular respiratory patterns Abnormal breath sounds also are a sign of inadequate breathing; these may include: Stridor.
	 Wheezing. Crackles/rales.
INADEQUATE	OXYGENATION
KEY POINTS	 Problems with inadequate oxygenation may occur for a variety of reasons. A reduction in oxygen in the body causes cyanosis; pale, cool, clammy skin; mottling; and altered mental state, such as restlessness, agitation, confusion or anxiety.

TOPIC: ARTIFICIAL VENTILATION

Time: 45 minutes

 Artificial ventilation refers to the various mechanical ways that can be used to help a patient breathe.
When assisting a patient with artificial ventilations, the force of air must be consistent and just strong enough to cause the chest to begin to rise in about 1 second; gastric distention can occur if too much force is used.
A resuscitation mask allows you to breathe expired air into a patient without making mouth-to-mouth contact, reducing the risk of disease transmission.
Approximately 16 percent oxygen is provided in an exhaled breath, enough to sustain life. However, this amount is considerably less than that which is delivered using a bag-valve-mask (BVM) resuscitator or supplemental oxygen.
If the patient vomits when providing ventilations, quickly turn the patient onto the side, supporting the head and neck and turning the body as a unit. After vomiting has stopped, clear the patient's airway using a finger sweep and suction if necessary and then turn the patient onto the back and continue with ventilations.
Dentures help to support the patient's mouth and cheeks, making it easier to seal the resuscitation mask; they should be removed only if they become loose or block the airway.
Ventilations may need to be provided through the nose if the patient's mouth is injured. The mask is placed over the patient's mouth and nose.
 On rare occasions, a patient may have an opening (stoma) in their neck for breathing.

SKILL SESSION

GIVING VENTILATIONS—ADULT AND CHILD

ACTIVITY

Instructor's Note:

- You may choose either method below depending on the experience of the participants and whether your training facility can accommodate the Practice-While-You-Watch method, which works best when there is adequate practice space and a monitor large enough for everyone to see clearly.
- Inform participants that they only need to demonstrate giving ventilations to an adult and can point out the differences for giving ventilations to a child, such as using a properly sized resuscitation mask for the patient, tilting the head slightly past neutral and only giving 1 ventilation about every 3 seconds.

Practice-While-You-Watch

- Ask participants to take their textbooks, disposable latex-free gloves and resuscitation masks with them to the practice area.
- Explain to the participants that for this skill, they will follow along with and practice the steps for giving ventilations as they are guided by the video, using a manikin, disposable latex-free gloves and resuscitation mask.
- Show the video segment, "Giving Ventilations—Adult, Child and Infant" (3:33).
- Do not interrupt this skill practice to lecture or communicate anything other than guidance related to skill practice. In general, answering questions should occur after the video segment (and skill practice) has ended.
- Observe participants performing the technique and evaluate completion of the skill using the Skill Checklist.
- Be sure to point out any common errors, such as tilting a child's head too far back, failing to reassess for breathing and a pulse, not leaving the patient in a face-up position with return of breathing, not obtaining a seal with the resuscitation mask or using an improperly sized mask for the patient.
- Check off participant's progress on the Participant Progress Log.

Watch-Then-Practice

- Tell participants to watch the video segment without practicing until you pause the video, even though the narration may say to follow along.
- After the video segment, tell them to practice the skill using a manikin, disposable latex-free gloves and resuscitation mask.
- If there is a 2-to-1 ratio of participants-to-manikins, partners should be instructed to follow along with the skill sheet and observe the other person practicing the skill.
- Show the video segment, "Giving Ventilations—Adult, Child and Infant" (3:33).
- Initially guide participants through the steps listed on the skill chart, then encourage them to practice independently, without assistance.
- Observe participants performing the technique and evaluate completion of the skill using the Skill Checklist. Intervene and provide positive and corrective feedback as needed to each participant individually when possible.
- Be sure to point out any common errors, such as tilting a child's head too far back, failing to reassess for breathing and a pulse, not leaving the patient in a face-up position with return of breathing, not obtaining a seal with the resuscitation mask or using an improperly sized mask for the patient.
- Check off participant's progress on the Participant Progress Log.

SKILL	After sizing up the scene, performing a primary assessment and following standard precautions, select a properly sized mask for the patient. Determine that there is a pulse but no breathing.
	1. Assemble the resuscitation mask as necessary and position the mask.
	2. Seal the mask.
	3. Open the airway by tilting the head back and lifting the chin.
	• For a child, tilt the head slightly past neutral.
	 Use the jaw-thrust (without head extension) maneuver to open the airway if a head, neck or spinal injury is suspected.
	4. Blow into the mask for approximately 1 second and watch for the chest to begin to rise.
	 Give 1 ventilation about every 5 to 6 seconds for an adult.
	 Give 1 ventilation about every 3 seconds for a child.
	 Give ventilations for about 2 minutes.
	5. Recheck for breathing and a pulse.
	 Remove mask and look, listen and feel for breathing and a pulse for at least 5 seconds, but no more than 10 seconds.
	 If the chest does not begin to rise:
	 Retilt the head and try another ventilation.
	Provide care based on the conditions found.

SKILL SESSION

GIVING VENTILATIONS-INFANT		
ACTIVITY	 Ask participants to take their textbooks, disposable latex-free gloves and resuscitation mask with them to the practice area. Divide participants into small groups and guide groups through the steps listed on the skill chart. Have each participant demonstrate giving ventilations on the infant manikins while the other participants use their textbooks to give feedback. Observe each participant performing the technique and evaluate completion of the skill using the Skill Checklist. Intervene and provide positive and corrective feedback as needed to each participant individually when possible. Be sure to point out any common errors, such as tilting an infant's head too far back, failing to reassess for breathing and a pulse, not obtaining a seal with the resuscitation mask or using an improperly sized mask for an infant. Check off participant's progress on the Participant Progress Log. 	
SKILL	 After sizing up the scene, performing a primary assessment and following standard precautions, select a properly sized mask for the patient. Determine that there is a pulse but no breathing: 1. Assemble the resuscitation mask as necessary, and position the mask. 2. Seal the mask. 3. Open the airway by tilting the infant's head to a neutral position and lifting the chin. 	

	4. Blow into the mask.
	 Give 1 ventilation about every 3 seconds.
	 Each ventilation should last about 1 second and make the chest begin to rise. The chest should fall before the next ventilation is given.
	5. Recheck for breathing and a pulse about every 2 minutes.
	 Remove mask and simultaneously check for breathing and a pulse for
	at least 5 seconds, but no more than 10 seconds.
	 If the chest does not begin to rise:
	 Retilt the head and give another ventilation. Provide care based on the conditions found.
	Instructor's Note: If preferred, review giving ventilations (adult, child and infant) first and then divide the class into groups to practice the two techniques.
JAW-THRUST	ILATIONS—HEAD, NECK OR SPINAL INJURY SUSPECTED: (WITHOUT HEAD EXTENSION) MANEUVER—ADULT AND CHILD
ACTIVITY	 Ask participants to take their textbooks, disposable latex-free gloves and resuscitation mask with them to the practice area.
	 Divide participants into small groups and guide groups through the steps listed on the skill chart.
	 Have each participant demonstrate giving ventilations on the manikins while the other participants use their textbooks to give feedback.
	 Observe each participant performing the technique and evaluate completion of the skill using the Skill Checklist. Intervene and provide positive and corrective feedback as needed to each participant individually when possible.
	Be sure to point out any common errors, such as tilting a child's head too far back, failing to reassess for breathing and a pulse, not leaving the patient in a face-up position with return of breathing, not obtaining a seal with the resuscitation mask or using an improperly sized mask for the patient.
	 Check off participant's progress on the Participant Progress Log.
SKILL	<i>Always</i> follow standard precautions when providing care. Size up the scene for safety and then perform a primary assessment. <i>Always</i> select the properly sized mask for the patient.
	If there is a pulse, but <i>no</i> breathing and a head, neck or spinal injury <i>is suspected</i> :
	1. Assemble the resuscitation mask.
	2. Position the mask.
	 Kneel above the patient's head.
	 Place the mask over their mouth and nose, starting from the bridge of the nose.
	 Place the bottom of the mask below the mouth but not past the chin.
	3. Seal the mask.
	 Slide the fingers into position under the angles of the patient's jawbone without moving the head or neck.

4. Open the airway.
 Thrust the jaw upward without moving the head or neck to lift the jaw and open the airway.
5. Blow into the mask.
 For an adult, give 1 ventilation about every 5 to 6 seconds.
 For a child, give 1 ventilation about every 3 seconds.
 Each ventilation should last about 1 second and make the chest begin to rise. The chest should fall before the next ventilation is given.
6. Reassess for breathing and a pulse about every 2 minutes.
 Remove the mask and simultaneously check for breathing and a pulse for at least 5 seconds, but no more than 10 seconds.

TOPIC: BAG-VALVE-MASK RESUSCITATOR VENTILATIONS

Time: 15 minutes

DVD	 Show the video segment, "Using a Bag-Valve-Mask Resuscitator" (2:27). Answer participants' questions about the video segment.
	Answer participants questions about the video segment.
KEY POINTS Course Presentation Slides 185–186	 A BVM resuscitator is a handheld device used to ventilate patients and administer higher concentrations of oxygen than a pocket mask. BVMs are used by either one responder responsible for managing the airway and delivering ventilations or two responders in a multiple responder situation. A BVM has three parts: a bag, a valve and a mask.
	 BVMs help to increase oxygen levels in the blood by using air in the surrounding environment instead of the air exhaled by the responder. They can be connected to supplemental oxygen and protect against disease transmission and inhalation hazards.
	 BVMs can deliver up to 21 percent oxygen when not used in conjunction with supplemental oxygen.
	 Effectiveness for delivering ventilations is increased when used correctly by two responders; they can be used with advanced airway adjuncts.
	 BVMs are more effective for delivering ventilations than using a resuscitation mask when they are used correctly.
	While a BVM is often used by a single responder, evidence shows that two responders are needed to most effectively operate a BVM.
	 One responder opens and maintains the airway and seals the BVM. A second responder delivers ventilations by squeezing the bag at the correct intervals.
	BVMs may not always be available, and they may interfere with the timing of chest compressions during CPR. They also require you to monitor the patient to ensure full exhalation.

SKILL SESSION

GIVING VENTILATIONS USING A BAG-VALVE-MASK RESUSCITATOR— ONE RESPONDER		
ACTIVITY	 Ask participants to take their textbooks, disposable latex-free gloves and BVMs with them to the practice area. 	
	 Divide participants into small groups and guide groups through the steps listed on the skill chart. 	
	 Have each participant demonstrate using a BVM on the manikins while the other participants use their textbooks to give feedback. 	
	 Observe each participant performing the technique and evaluate completion of the skill using the Skill Checklist. Intervene and provide positive and corrective feedback as needed to each participant individually when possible. 	
	Be sure to point out any common errors, such as selecting an incorrect size, positioning the mask improperly, failing to ensure a seal or failing to keep the airway open.	
	 Check off participant's progress on the Participant Progress Log. 	
SKILL	Always follow standard precautions when providing care. Size up the scene for safety and then perform a primary assessment. Always select the properly sized mask for the patient.	
	If there is a pulse but <i>no</i> breathing:	
	1. Assemble the BVM as needed.	
	2. Open the airway past a neutral position while positioned at the top of the patient's head (cephalic position).	
	3. Use an E-C hand position.	
	 Place one hand around the mask, forming an E with the last three fingers and a C with the thumb and index finger around the mask. 	
	 Seal the mask completely around the patient's mouth and nose by lifting the jaw into the mask while maintaining an open airway. 	
	4. Provide ventilations.	
	 With the other hand, depress the bag about halfway to deliver between 400 to 700 milliliters of volume to make the chest begin to rise. 	
	• Give smooth and effortless ventilations that last about 1 second.	
	Note: For a child, tilt the head slightly past a neutral position. Do not tilt the head as far back as for an adult. For an infant, position head in a neutral position.	
	Instructor's Note: If preferred, review giving ventilations and using a BVM first and then divide the class into groups to practice the three skills.	
GIVING VENTILATIONS USING A BAG-VALVE-MASK RESUSCITATOR— TWO RESPONDERS		
ACTIVITY	 Ask participants to take their textbooks, disposable latex-free gloves and BVMs with them to the practice area. 	
	 Divide participants into small groups and guide groups through the steps listed on the skill chart. 	
	 Have each participant demonstrate using a BVM on the manikins while the other participants use their textbooks to give feedback. 	

 Observe each participant performing the technique and evaluate completion of the skill using the Skill Checklist. Intervene and provide positive and corrective feedback as needed to each participant individually when possible. Be sure to point out any common errors, such as selecting an incorrect size, positioning the mask improperly, failing to ensure a seal or failing to keep the airway open. Check off participant's progress on the Participant Progress Log.
Check on participant's progress on the Participant Progress Log.
<i>Always</i> follow standard precautions when providing care. Size up the scene for safety and then perform a primary assessment. <i>Always</i> select the properly sized mask for the patient. Assemble the BVM if necessary.
If there is a pulse but <i>no</i> breathing:
1. Assemble the BVM as needed.
2. Open the airway past a neutral position while positioned at the top of the patient's head (cephalic position).
3. Use an E-C hand position (first responder).
 Place one hand around the mask, forming an E with the last three fingers and a C with the thumb and index finger around the mask. Seal the mask completely around the patient's mouth and nose by lifting the jaw into the mask while maintaining an open airway.
 4. Provide ventilations (second responder). Depress the bag about halfway to deliver between 400 to 700 milliliters of volume to make the chest rise. Give smooth and effortless ventilations that last about 1 second. Note: For a child, tilt the head slightly past a neutral position. Do not tilt the head as far back as for an adult. For an infant, position head in a neutral position.
Instructor's Note: If preferred, review giving ventilations and using a BVM first and then divide the class into groups to practice the three skills.
 BVMs can hold more than 1000 milliliters of volume and should never be completely deflated when providing ventilations. Doing so could lead to overventilation and hyperventilation. Increasing difficulty when providing BVM ventilation may indicate an increase in intrathoracic pressure, inadequate airway opening or other complications. Be sure to share this information with the team for corrective actions. Knowing the recommended ventilation rates for use with a BVM will ensure that you provide patients with adequate oxygen without causing harm. Too many breaths (hyperventilation) or too much volume of air (overventilation) can result in air going into the stomach, which can cause vomiting. Overventilation and hyperventilation can also increase the intrathoracic pressure, which in turn further decreases the filling of the heart with blood and further reduces coronary blood flow. The reduction of blood flowing back into the heart significantly limits effective circulation to the brain and other vital organs.

 Ventilation rates vary with the age of the patient. Adequate ventilation rates are: 30-60 ventilations per minute at about 1 second each for a newborn (0 to 1 month).
 20 ventilations per minute at 1 second each for a child or an infant.
 10–12 ventilations per minute at 1 second each for an adult.
 You can determine whether ventilation is adequate by watching the chest rise and fall.
Ventilating a patient at rates that are too fast or with too much volume can be dangerous.

WRAP-UP

Time: 5 minutes

Course Presentation Slide 187	 Emphasize the need for assessing and maintaining an open airway as a priority, reminding participants that a patient who can speak or cry is conscious, has an open airway, is breathing and has a pulse. Emphasize the need for assessing and maintaining an open airway as a priority, followed by ensuring adequate breathing.
ACTIVITY	 Review the closing scenario: While waiting for emergency medical services (EMS) personnel to arrive, you complete a SAMPLE history and secondary assessment. You have helped the patient into a position of comfort for breathing when he loses consciousness and stops breathing. He has a pulse. Ask participants: "What care should you provide now?"
	 Instructor's Note: Responses should include: To ensure the patient has an open airway and give ventilations. Give 1 ventilation about every 5 seconds.
KEY POINTS	 The two types of respiratory emergencies are respiratory distress and respiratory arrest. Breathing difficulties may occur for various reasons including inadequate inhalation of oxygen, low oxygen environment, illness, upper airway problems or ineffective circulation. Choking caused by airway obstruction is one of the most common causes of breathing emergencies. Primary and secondary assessments are guidelines to help assess a patient's condition. The two most common methods for opening the airway are the head-tilt/chin-lift maneuver and the jaw-thrust (without head extension) maneuver. Abdominal thrusts, back blows and chest thrusts are effective methods to clear an obstructed airway in conscious patients. Finger sweep and suctioning may be used to remove visible foreign matter and fluids from the upper airway of an unconscious patient. Breathing abnormalities can be assessed by observing physical signs and breath sounds and by measuring the rate and depth of breathing. For a patient who is not breathing, artificial ventilation is provided by using a resuscitation mask or BVM.

ASSIGNMENT FOR THE NEXT LESSON	 Read Chapter 11, Airway Management. Read Enrichment: Nasopharyngeal Airway (<i>optional</i>), pages 278–280.
INSTRUCTOR PREPARATION	 Review Chapter 11, Airway Management. Review Enrichment: Nasopharyngeal Airway (<i>optional</i>), pages 278–280. Review the video segments, "Using a Mechanical Suctioning Device" (1:18), "Using a Manual Suctioning Device" (1:02), "Choking—Adult and Child" (2:49) and "Choking—Infant" (1:41) Review the skills and obtain any necessary equipment and supplies for Lesson 15.

ENRICHMENT: ASSESSING BREATH SOUNDS

Time: 5 minutes

Course Presentation Slide 188	Instructor's Note: For a sample of breath sounds, go to: easyauscultation.com/ lung-sounds-audio.
KEY POINTS	 Using a stethoscope to listen to lungs is an easy way to assess an unobstructed airway. Hearing air moving on inspiration and expiration indicates unobstructed airways. No sounds or reduced sound compared with other areas indicate decreased lung sounds. To listen to the lungs in the front: Identify the midclavicular lines and move down the chest. Place the stethoscope at the second intercostal space, usually just above the sternum line. Listen on both sides and compare the sounds. To listen to the lungs from the side: Identify the midaxillary lines. Place the stethoscope between the fourth and fifth intercostal spaces, approximately in line with the nipple. Listen on both sides and compare the sounds. To listen to the lungs on the back: Identify the midscapular lines and move down the back. Listen on both sides and compare the sounds. To listen to the lungs on the back: Identify the midscapular lines and move down the back. Listen on both sides and compare the sounds. To listen to the lungs on the back: Identify the midscapular lines and move down the back. Listen on both sides and compare the sounds. Abnormal sounds that suggest obstruction due to fluid accumulation or airway blockage include: Wheezing, a high-pitched whistling sound heard during inspiration but most loudly on expiration. Rales, a popping, clicking, bubbling or rattling sound. Stridor, a wheeze-like sound heard on inhalation and exhalation.

ENRICHMENT: ASSISTING THE PATIENT WITH ASTHMA

KEY POINTS Course Presentation Slides 189–192	 There are three types of medication used in the management of asthma: Long-term control medications to control chronic symptoms and prevent attacks Quick-relief medications (rescue medications) to relieve symptoms during an asthma attack Medications for allergy-induced asthma that decrease sensitivity to a particular allergen and prevent the immune system from reacting to allergens Indications for asthma medication include recurrent wheezing, coughing, difficulty breathing and chest tightness; contraindications include increased risk for thinning of the skin and bruising.
DELIVERY SY	STEMS FOR ASTHMA MEDICATION
	Instructor's Note: If available, show participants different types of delivery systems available for asthma medications.
KEY POINTS	 Asthma medications are supplied in different delivery systems: Metered-dose inhaler is a small, handheld aerosol canister with a mouthpiece; some are equipped with a spacer (a tube attached to the inhaler) that serves as a reservoir for the medication. Dry powder inhaler (DPI), similar to a metered-dose inhaler, is a small, handheld device that delivers a dry powder form of the medication within a small capsule, disc or compartment inside the inhaler. Small-volume nebulizer delivers aerosolized medications (mist) over a few minutes. Pill or liquid form is available for some medications. Injection just under the skin is a recently developed method for giving asthma medications.
PEAK FLOWMETER	
KEY POINTS	 A peak flowmeter measures a person's ability to push air out of the lungs in one quick breath. It is a handheld asthma management tool that tracks a person's breathing. It helps to warn the person if their asthma is worsening and shows their response to treatment.
DVD	 Show the video segment, "Asthma" (2:57). Answer participants' questions about the video segment.

ASSISTING THE PATIENT IN THE USE OF AN INHALER

KEY POINTS	An EMR may be involved in assisting a patient in the use of an inhaler.
	 It is necessary to obtain an order from medical direction via radio or phone contact with the medical director or through protocols and standing orders.
	 The order is always verified by restating the name of the medication.
	 You are responsible for knowing and following local protocols for assisting a patient with an asthma inhaler.
	After obtaining consent and ensuring that local protocols allow such action, follow these general guidelines:
	• If the patient has prescribed asthma medication, help them take it.
	 Ensure that the prescription is in the patient's name and is prescribed for "quick relief" or "acute" attacks.
	 Ensure that the expiration date of the medication has not passed and read and follow all instructions printed on the inhaler prior to administering the medication.
	 Shake the inhaler and then remove the cover from the mouthpiece. Position the spacer if you are using one.
	 Have the patient breathe out fully through the mouth and then place the lips tightly around the inhaler mouthpiece.
	 Have the patient inhale deeply and slowly as you or the patient depresses the inhaler canister to release the medication, which then is inhaled into the lungs.
	 Ensure that the patient holds their breath for a count of 10. If using a spacer, the patient takes 5 to 6 deep breaths with the spacer still in their mouth, without holding the breath.
	 Once the inhalation is complete, have the patient rinse their mouth out with water to reduce side effects.
	 Reassess the patient's breathing.
	 Always wash your hands immediately after providing care.
	After administration, be alert for possible common side effects including:
	 Increased heart rate.
	• Palpitations.
	○ Nausea.
	○ Vomiting.
	• Nervousness.
	○ Sleeplessness.
	• Dry mouth.
	• Cough.
	• Hoarseness.
	○ Headache.

• Throat irritation.

SKILL SESSION: ENRICHMENT

ASSISTING W	VITH AN ASTHMA INHALER
ACTIVITY	 Ask participants to take their textbooks, disposable latex-free gloves and sample inhaler with them to the practice area. Divide participants into small groups and guide groups through the stand listed
	 Divide participants into small groups and guide groups through the steps listed on the skill chart.
	 Have each participant demonstrate assisting with an asthma inhaler on another participant while other participants use their textbooks to give feedback.
	 Observe each participant performing the technique and evaluate completion of the skill using the Skill Checklist. Intervene and provide positive and corrective feedback as needed to each participant individually when possible. Be sure to point out any common errors, such as not checking the prescription for the inhaler, not shaking the inhaler before administration, failing to have the
	patient place their lips tightly around the mouthpiece or pressing the canister too soon or too late.
	 Check off participant's progress on the Participant Progress Log.
	Instructor's Note: Ensure that adequate decontamination supplies are available to wipe the sample inhalers after demonstration by each of the participants. Participants should only simulate making mouth contact on the mouthpiece and pressing down on the training inhaler. Be aware that some individuals may react to the aerosol propellants in the training devices.
SKILL	Always obtain consent and wash your hands immediately after providing care. Read and follow all instructions printed on the inhaler prior to administering the medication to the patient. Always follow standard precautions when providing care.
	If the person has medication for asthma, help them take it:
	1. Help the patient sit up and rest in a position comfortable for breathing.
	2. Ensure that the prescription is in the patient's name and is prescribed for "quick relief" or "acute" attacks.
	Ensure that the expiration date of the medication has not passed.3. Shake the inhaler.
	4. Remove the cover from the inhaler mouthpiece. If an extension tube (spacer) is available, attach and use it.
	5. Tell the patient to breathe out as much as possible through the mouth.
	6. Have the patient place their lips tightly around the mouthpiece and take a long, slow breath.
	 Alternatively, have the patient hold the inhaler two finger lengths way from their mouth.
	 As the patient breathes in slowly, administer the medication by quickly pressing down on the inhaler canister, or the patient may self-administer the medication.
	• The patient should continue a full, deep breath.
	 Tell the patient to try to hold their breath for a count of 10. When using an extension tube (spacer) have the patient take 5 to 6 deep
	breaths through the tube <i>without</i> holding their breath.
	7. Note the time of administration and any change in the patient's condition.
	• The medication may be repeated once after 1 to 2 minutes.
	8. Call for more advanced medical care if difficulty breathing does not improve quickly.
	Note: These medications might take 5 to 15 minutes to reach full effectiveness.

SKILL CHECKLIST		
Giving Ventilations— Adult and Child	Instructor's Note: The participant must always follow standard precautions when providing care.	
	Participant completes the following:	
	Performs initial actions	
	 Sizes up the scene Forms a general impression 	
	 Performs a primary assessment 	
	Selects a properly sized mask for the patient	
	Determines that there is a pulse but no breathing Accomplex the requesitation mark as proceeding and positions the mark.	
	 Assembles the resuscitation mask as necessary and positions the mask Seals the mask 	
	Opens the airway by tilting the head back and lifting the chin	
	For a child, tilts the head slightly past neutral I have the iowy thrust (without head automaion) monouver to open the airway if	
	Uses the jaw-thrust (without head extension) maneuver to open the airway if a head, neck or spinal injury is suspected	
	Blows into mask for approximately 1 second and watches for the chest to begin to rise	
	Continues to give 1 ventilation about every 5 to 6 seconds for an adult	
	 Gives 1 ventilation about every 3 seconds for a child Gives ventilations for about 2 minutes 	
	 Rechecks for breathing and a pulse 	
	Removes the mask and looks, listens and feels for breathing and a pulse for at least 5 seconds, but no more than 10 seconds	
Giving Ventilations— Infant	Instructor's Note: The participant must always follow standard precautions when providing care.	
	Participant completes the following:	
	Performs initial actions	
	□ Sizes up the scene	
	 Forms a general impression Performs a primary assessment 	
	 Selects a properly sized mask for the patient 	
	Determines that there is a pulse but no breathing	
	 Assembles the resuscitation mask as necessary Positions the mask 	
	 Seals the mask 	
	Opens the airway by tilting the infant's head to a neutral position	
	Blows into mask for approximately 1 second and watches for the chest to begin to rise	
	Continues to give 1 ventilation about every 3 seconds	
	 Watches for the chest to begin to rise with each ventilation Gives ventilations for about 2 minutes 	
	 Gives ventilations for about 2 minutes Rechecks for breathing and a pulse 	
	 Removes the mask and simultaneously check for breathing and a pulse for at least 5 seconds, but no more than 10 seconds 	

Giving Ventilations— Head, Neck or Spinal Injury Suspected: Jaw-	Instructor's Note: The participant must always follow standard precautions when providing care.
Thrust (Without Head Extension)	Participant completes the following:
Maneuver—	Performs initial actions
Adult and Child	□ Sizes up the scene
	Forms a general impression
	Performs a primary assessment
	Selects a properly sized mask for the patient
	Determines that there is a pulse but no breathing and a head, neck or spinal injury is suspected
	Assembles the resuscitation mask as necessary
	Positions the mask
	Kneels above the patient's head
	Places the mask over the patient's mouth and nose, starting from the bridge of the nose
	Places the bottom of the mask below the mouth but not past the chin
	□ Seals the mask
	Slides the fingers into position under the angles of the patient's jawbone without moving the head or neck
	Opens the airway without tilting the head back and lifting the chin
	Uses the jaw-thrust (without head extension) maneuver to open the airway if a head, neck or spinal injury is suspected
	Blows into mask for about 1 second and watches for the chest to begin to rise
	Continues to give 1 ventilation about every 5 to 6 seconds for an adult
	Gives 1 ventilation about every 3 seconds for a child
	Watches for the chest to begin to rise with each ventilation
	Gives ventilations for about 2 minutes
	Reassesses for breathing and a pulse
	Removes the mask and simultaneously check for breathing and a pulse for at least 5 seconds, but no more than 10 seconds
Giving Ventilations Using a Bag- Valve-Mouth Resuscitator—	Instructor's Note: The participant must always follow standard precautions when providing care.
One Responder	Participant completes the following:
	Performs initial actions
	Sizes up the scene
	Forms a general impression
	Performs a primary assessment
	Selects the correct mask size for the patient (adult, child or infant)
	Determines that the patient is experiencing respiratory distress or respiratory arrest
	Assembles the BVM, if necessary
	 Opens the airway past a neutral position (for an adult) while positioned at the
	top of the patient's head (cephalic position)

	 Uses an E-C hand position Places one hand around the mask, forming an E with the last three fingers and a C with the thumb and index finger around the mask Seals the mask completely around the patient's mouth and nose by lifting the jaw into the mask while maintaining an open airway Provides ventilations With the other hand, depress the bag about halfway to deliver between 400 to 700 milliliters of volume to make the chest begin to rise Gives smooth and effortless ventilations that last about 1 second
Giving Ventilations Using a Bag- Valve-Mouth Resuscitator—	Instructor's Note: The participant must always follow standard precautions when providing care.
Two Responders	 Participant completes the following: Performs initial actions Sizes up the scene Performs a primary assessment Selects the correct mask size for the patient (adult, child or infant) Determines that the patient is experiencing respiratory distress or respiratory arrest Assembles the BVM, if necessary Opens the airway past a neutral position (for an adult) while positioned at the top of the patient's head (cephalic position) Uses an E-C hand position (first responder) Places one hand around the mask, forming an E with the last three fingers and a C with the thumb and index finger around the mask Seals the mask completely around the patient's mouth and nose by lifting the jaw into the mask while maintaining an open airway Provides ventilations (second responder) Depresses the bag about halfway to deliver between 400 to 700 milliliters of volume to make the chest begin to rise Gives smooth and effortless ventilations that last about 1 second
Assisting With an Asthma Inhaler	Instructor's Note: The participant must always follow standard precautions when providing care.
	 Participant completes the following: Performs initial actions Sizes up the scene Forms a general impression Obtains consent from the patient Performs a primary assessment Obtains order from medical direction Adheres to local protocols Reads and follows <i>all</i> instructions printed on the inhaler prior to administering the medication to the patient If the patient has medication for asthma, helps them take it

 Helps the patient sit up and rest in a position comfortable for breathing Ensures that the prescription is in the patient's name and is prescribed for
"quick relief" or "acute" attacks
Ensures that the expiration date of the medication has not passed
Shakes the inhaler
Removes the cover from the inhaler mouthpiece
Attaches extension tube (spacer), if present
Uses extension tube (spacer) as appropriate
Tells the patient to breathe out as much as possible through the mouth
Has the patient place their lips tightly around the mouthpiece and take a long, slow breath
Alternatively, has the patient hold the inhaler two finger lengths away from the mouth
As the patient breathes in slowly, administers the medication by quickly pressing down on the inhaler canister or has the patient self administer the medication
Watches to see that patient continues a full, deep breath
Tells the patient to try to hold their breath for a count of 10
When using an extension tube (spacer), has the patient take 5 to 6 deep breaths through the tube <i>without</i> holding their breath
Notes the time of administration and any change in the patient's condition
Calls for more advanced medical care if difficulty with breathing does not improve

AIRWAY MANAGEMENT

Lesson Length: 60 minutes (70 minutes with Enrichment)

MATERIALS, EQUIPMENT AND SUPPLIES

- Emergency Medical Response textbook
- Course Presentation Slides 193–202
- LCD projector, screen and computer
- Emergency Medical Response DVD
- DVD player and monitor
- Disposable latex-free gloves (multiple sizes) and other personal protective equipment (PPE), as indicated
- Resuscitation masks (adult and pediatric; one for each participant)
- Adult and infant manikins (one for every two participants; child manikins optional)
- Airway manikin (if available; one for every two participants)
- Decontamination supplies
- Oral airways (one for every two participants)
- Tongue blades or tongue depressors (*optional* for child or infant oral airway insertion; one for every two participants)
- Manual and/or mechanical suction devices (one for every three participants)
- Nasopharyngeal airways (Enrichment skill)

LESSON OBJECTIVES

Knowledge

After completing this lesson, participants will be able to:

- Explain the purposes and use of airway adjuncts.
- Describe the two types of suctioning devices and their use.
- List the circumstances when airway adjuncts should *not* be used.
- List some common causes of airway obstruction and describe appropriate care.
- Describe how to provide care for a choking adult, child and infant who becomes unconscious.

Skill

After completing this lesson, participants will be able to:

- Demonstrate how to insert an oral airway.
- Demonstrate the techniques of suctioning.
- Demonstrate how to provide care for a choking adult, child and infant.

TOPIC: INTRODUCTION

Time: 5 minutes

ACTIVITY Course Presentation Slide 194	 Review the opening scenario: As an emergency medical responder (EMR), you respond to a call at one of the docks for an unconscious adult who collapsed for no apparent reason. You size up the scene and notice that a middle-age male is lying face-up on the floor and not moving. The patient is unresponsive with no severe bleeding. He is not breathing but has a pulse. You discover that the patient's chest does not rise when you attempt ventilations. Ask participants: "What would you do next?"
	 "What do you think the problem is?" Instructor's Note: Let participants provide responses, guiding them to important areas related to methods for clearing the airway such as finger sweeps and suctioning and clearing a foreign body airway obstruction such as by giving chest compressions.
	 Explain to participants that airway adjuncts are mechanical devices used to help keep the tongue from obstructing the airway. Tell participants: "Airway adjuncts and breathing devices can assist with helping to maintain an open airway, ventilating a patient and administering supplemental oxygen."

TOPIC: SUCTIONING

Time: 15 minutes

KEY POINTS	Instructor's Note: Urge participants to review information about the measures used to open a patient's airway.
Course Presentation Slide 195	 Foreign matter, such as mucus, fluids or blood can collect in a patient's airway. A finger sweep (with a gloved finger) should be used only on an unconscious patient and only when material is visible in the mouth. Suctioning is a process of removing foreign matter from a patient's upper airway. It can be done by means of a mechanical or manual device. Mechanical suctioning devices are electrically powered, producing a vacuum that is powerful enough to remove substances from the throat. These devices normally are found on ambulances and other transport vehicles. Manual suction units are operated by hand. They are lightweight, compact and relatively inexpensive. They do not require an energy source.

	 Either type requires the use of sterile suction catheters that come in different sizes; several sizes should be kept on hand for use. An installed suction unit should provide an airflow of > 40 liters per minute (LPM) at the end of the delivery tube and a vacuum of > 300 mmHg when clamped.
	Instructor's Note: Show participants examples of mechanical and manual suction devices and different sized suction catheters, if available.
DVD	 Show the video segments, "Using a Mechanical Suctioning Device" (1:18) and "Using a Manual Suctioning Device" (1:02). Answer participants' questions about the video segments.

SKILL SESSION

USING MECH	IANICAL AND MANUAL SUCTIONING DEVICES
ACTIVITY	 Ask participants to take their textbooks, disposable latex-free gloves and suction device with them to the practice area. Divide participants into small groups and guide groups through the steps listed on the skill charts. Have each participant demonstrate using a suction device on the manikins while the other participants use their textbooks to give feedback. Observe each participant performing the technique and evaluate completion of the skill using the Skill Checklist. Intervene and provide positive and corrective feedback as needed to each participant individually when possible. Be sure to point out any common errors, such as measuring incorrectly, inserting the suction tip too far, not checking that the suction is working properly or choosing the wrong size of suction catheter. Check off participant's progress on the Participant Progress Log.
SKILL Using a Mechanical Suctioning Device	 After sizing up the scene, performing a primary assessment, assembling the device if necessary according to the manufacturer's instructions and following standard precautions: 1. Position the patient. If the patient has an obvious sign of injury, suction them in the position found, as appropriate. If there is no obvious sign of injury: Roll the body as a unit onto one side. Open the mouth. 2. Remove any visible large debris from the mouth with a gloved finger if the patient is unconscious. 3. Measure and check the suction tip. Measure from the angle of the patient's jaw to the corner of the mouth. Note the distance to prevent inserting the suction tip too deeply.

	4. Turn on the machine and check that the suction is working according to the manufacturer's instructions.
	5. Suction the mouth.
	 Insert the suction tip into the back of the mouth. Apply suction while withdrawing the catheter using a sweeping motion, if possible.
	 Suction for the appropriate length of time: no more than 15 seconds at a time for an adult, 10 seconds at a time for a child and 5 seconds at at time for an infant.
SKILL	After sizing up the scene, performing a primary assessment, assembling the device if necessary according to the manufacturer's instructions and following standard precautions:
Using a Manual Suctioning	1. Position the patient. If the patient has an obvious sign of injury, suction them in the position found, as appropriate. If there is no obvious sign of injury:
Device	 Roll the body as a unit onto one side.
	 Open the mouth.
	2. Remove any visible large debris from the mouth with a gloved finger if the patient is unconscious.
	3. Measure and check the suction tip.
	 Measure from the angle of the patient's jaw to the corner of the mouth.
	 Note the distance to prevent inserting the suction tip too deeply.
	• Check that the suction is working by placing your gloved finger over the end of the suction tip as you squeeze the handle of the device.
	4. Suction the mouth.
	 Insert the suction tip into the back of the mouth.
	• Squeeze the handle of the suction device repeatedly to provide suction.
	 Apply suction while withdrawing the catheter using a sweeping motion, if possible.
	 Suction for the appropriate length of time: no more than 15 seconds at a time for an adult, 10 seconds at a time for a child and 5 seconds at a time for an infant.

TOPIC: AIRWAY ADJUNCTS

Time: 10 minutes

KEY POINTS	The tongue is the most common cause of airway obstruction in an unconscious person.
	Keeping the tongue from blocking the air passage is a high priority.
Course Presentation Slide 196	 Mechanical airway adjuncts known as oral (oropharyngeal) airways (OPAs) and nasal (nasopharyngeal) airways (NPAs) can help accomplish this task.
	OPAs and NPAs come in a variety of sizes and have a curved design to fit the natural contour of the mouth and throat. Follow manufacturer's instructions and local protocols for use of oral and nasal airways.
	An OPA is inserted into the mouth and when properly positioned keeps the tongue away from the back of the throat.
	If placed improperly, it can depress the tongue into the back of the throat further blocking the airway.
	OPAs are used only on unconscious patients with no gag reflex.

SKILL SESSION

INSERTING AN ORAL AIRWAY	
ACTIVITY	 Ask participants to take their textbooks, disposable latex-free gloves and oral airway with them to the practice area.
	 Divide participants into small groups and guide groups through the steps listed on the skill chart.
	 Have each participant demonstrate inserting an oral airway on the manikins while the other participants use their textbooks to give feedback.
	 Observe each participant performing the technique and evaluate completion of the skill using the Skill Checklist. Intervene and provide positive and corrective feedback as needed to each participant individually when possible.
	 Be sure to point out any common errors, such as choosing an inappropriate sized airway, failing to use the cross-finger technique, inserting the airway upside down or failing to rotate it as the tip approaches the back of the mouth. Check off participant's progress on the Participant Progress Log.
SKILL	Note: Size up the scene for safety, follow standard precautions and then perform a primary assessment. Before inserting an OPA, be sure the patient is unconscious, has no oral trauma such as broken teeth and has not had recent oral surgery. If the patient gags, remove the airway immediately.
	1. Select the proper size by measuring the airway from the angle of the patient's jaw to the corner of the mouth.
	2. Open the patient's mouth, using the cross-finger technique.
	3. Insert the OPA.
	• Grasp the patient's lower jaw and tongue and lift upward.
	 Insert the OPA with the curved end along the roof of the mouth. As the tip approaches the back of the mouth, rotate it one-half turn (180 degrees).
	 Slide the OPA into the back of the throat.
	 For a child or an infant, insert the OPA using a tongue blade or a tongue depressor, then insert with the tip of the device pointing toward the back of the tongue and throat in the position it will rest in after insertion.
	 Alternatively, for a child or an infant, insert the OPA sideways and then rotate it 90 degrees.
	4. Ensure correct placement.
	 Check that the flange rests on the patient's lips. Immediately remove the OPA if patient begins to gog
	 Immediately remove the OPA if patient begins to gag. If the patient vomits, remove and suction the airway, ensuring all debris is removed from the airway. Thereughly also the device and removed into the second removed from the airway.
	removed from the airway. Thoroughly clean the device and reinsert into the airway <i>only</i> if the patient is still unconscious and does <i>not</i> have a gag reflex.

TOPIC: AIRWAY OBSTRUCTION

ACTIVITY	Ask participants if they have ever experienced choking and how they felt.
	Instructor's Note: Responses may vary but could include feelings related to inability to breathe or catch their breath and anxiety and fear.
KEY POINTS Course Presentation Slides 197–200	 The two types of airway obstruction are anatomical and mechanical. Anatomical obstruction occurs when the airway is blocked by anatomical structures, such as the tongue or swollen tissues of the mouth or throat. Mechanical obstruction, also known as foreign body airway obstruction (FBAO), occurs when foreign objects, such as food or toys, or fluids, such as vomit, block the airway. FBAOs cause choking. A conscious person who is clutching the throat is showing what is commonly called the "universal sign" of choking. A person with a mild FBAO, or partial airway obstruction, can still move some air to and from the lungs. As long as a person can cough forcefully, encourage continued coughing. Severe airway obstruction is apparent when the person cannot cough, speak, cry or breathe; it requires <i>immediate</i> action. If a patient who is choking becomes unconscious, carefully lower the patient to a firm, flat surface while protecting their head, send someone to get an AED, and summon additional resources if appropriate and you have not already done so: Immediately begin CPR with chest compressions. As you open the airway to give ventilations, look in the patient's mouth for any visible object. If you do not see the object, do <i>not</i> perform a blind finger sweep, but continue CPR. Remember to never try more than 2 ventilations during one cycle of CPR, even if the chest doesn't rise. Continuing cycles of 30 compressions and 2 ventilations is the most effective way to provide care. Even if ventilations for the airway by moving the blockage into the upper airway where it can be seen and removed.
DVD	 Show the video segments, "Choking—Adult and Child" (2:49) and "Choking—Infant" (1:41). Answer participants' questions about the video segments.
	 Instructor's Note: If preferred, show all video segments on conscious patients together and then have participants break into groups to practice both skills at one time. You must supervise and lead participants through the hand and body position only. Do not allow participants to give back blows or abdominal thrusts to their partner for the adult/child practice; they will perform the skill on the infant manikin.

SKILL SESSION

CHOKING—ADULT, CHILD AND INFANT	
ACTIVITY	 Ask participants to take their textbooks and disposable latex-free gloves as appropriate with them to the practice area.
	 Divide participants into small groups and guide groups through the steps listed on the skill charts.
	Instruct participants not to give actual abdominal thrusts to their partner for the adult/child skill, but they will practice this skill on the infant manikin.
	Have each participant demonstrate how to clear the airway of a conscious adult, child and infant on each other or the manikins while the other participants use their textbooks to give feedback.
	Observe each participant performing the technique and evaluate completion of the skill using the Skill Checklist. Intervene and provide positive and corrective feedback as needed to each participant individually when possible.
	Be sure to point out any common errors.
	• For adults/children: failing to obtain the patient's consent, failing to obtain the consent of the child's parent or legal guardian, using chest thrusts instead of abdominal thrusts, positioning the hands too high or too low or not using the thumb side of the fist
	 For infants: using a fist instead of the heel of the hand for back blows, using abdominal instead of chest thrusts, performing chest thrusts before back blows or using too much force with thrusts
	 Check off participant's progress on the Participant Progress Log.
SKILL Choking—Adult	Note: Obtain consent from a choking adult. If a child is choking, obtain consent from the parent or legal guardian if present. Tell the child's parent or legal guardian your level of training and the care you are going to provide. If the parent or legal guardian is not available, consent is implied. Always follow standard precautions when providing care.
and Child	1. Ask the patient, "Are you choking?"
	 Identify yourself and ask if you can help.
	 If the patient is coughing forcefully, encourage continued coughing.
	2. If the patient cannot cough, speak, cry or breathe, have someone else summon more advanced medical personnel.
	3. Give abdominal thrusts.
	 Stand behind the patient.
	• For a child, stand or kneel behind the child, depending on the child's size.
	 Use less force on a child than you would on an adult.
	 Use one or two fingers of one hand to find the navel.
	 Make a fist with your other hand and place the thumb side of your fist against the middle of the patient's abdomen, just above the navel.
	 Grab the fist with your other hand.
	 Give quick inward and upward thrusts, making each thrust a distinct attempt to dislodge the object.
	-
	Grab the fist with your other hand.Give quick inward and upward thrusts, making each thrust a distinct attempt

	4. Continue providing abdominal thrusts (or chest thrusts if appropriate) until:
	 The object is forced out.
	 The patient begins to cough forcefully or breathe on their own.
	• The patient becomes unconscious; then carefully lower the patient to a firm,
	flat surface while protecting their head.
	 Immediately begin CPR, starting with compressions.
	 After 30 compressions open the mouth and look for an object. If seen, remove it with a finger sweep.
	Attempt ventilations.
	Continue CPR.
	Note: If local protocols allow, back blows can be performed in combination with abdominal thrusts. Provide a combination of 5 back blows followed by 5 abdominal thrusts. To provide back blows:
	Stand to the side and slightly behind the patient.
	 Place one arm diagonally across the patient's chest (to provide support) and
	bend the patient forward at the waist so the upper body is as close to parallel to the ground as possible.
	Firmly strike the patient between the scapulae with the heel of the other hand.
	 Continue providing back blows until the patient begins to cough forcefully,
	speak or breathe; or until the patient becomes unconscious.
SKILL	Note: If an infant is choking, obtain consent from the parent or legal guardian if
	present. Tell the infant's parent or legal guardian your level of training and the care
	you are going to provide. If the parent or legal guardian is not available, consent
Choking—Infant	is implied. Always follow standard precautions when providing care.
	1. If the infant cannot cough, cry or breathe, carefully position the infant face-down along your forearm.
	 Support the infant's head and neck with your hand.
	• Lower the infant onto your thigh, keeping the infant's head lower than their chest.
	2. Give 5 firm back blows.
	 Use the heel of your hand.
	 Give back blows between the infant's scapulae, making each back blow a distinct attempt to dislodge the object.
	3. Position the infant face-up along your forearm.
	 Position the infant between both of your forearms, supporting the infant's head and neck.
	 Turn the infant face-up.
	• Lower the infant onto your thigh with the infant's head lower than their chest.
	4. Give 5 chest thrusts.
	 Put 2 fingers on the center of the chest, just below the nipple line.
	 Compress the chest 5 times about 1½ inches, with each chest thrust a
	distinct attempt to dislodge the object.
	5. Continue giving 5 back blows and 5 chest thrusts until:
	 The object is forced out.
	 The infant begins to cough or breathe on their own.
	 The infant becomes unconscious. Start CPR with compressions.
	 After 30 compressions open the mouth and look for an object. If seen, remove it with a finger sweep.
	Attempt ventilations.
	Continue CPR.

ACTIVITY	Using the following scenario, ask participants to identify what the EMR must do first and which skills would be appropriate to use for the patient: While attending a picnic, you notice that a 4-year-old boy begins coughing very forcibly while eating a hot dog. His mother appears frantic and begins shouting for help. As a trained EMR, you respond to the mother's call for help.
	 Instructor's Note: Responses should include: Identifying yourself as an EMR and obtaining consent from the mother. Asking the child if he is choking and then telling him you are going to help. Encouraging continued coughing to dislodge the object. Having someone else summon more advanced medical personnel if the child stops coughing or cannot speak, cry or breathe. If the child cannot cough, speak, cry or breathe, giving back blows and abdominal thrusts in an attempt to dislodge the object.

WRAP-UP

Time: 5 minutes

Course Presentation Slide 201	 Emphasize the need for assessing and maintaining an open airway as a priority that may require the use of breathing devices and airway adjuncts.
ACTIVITY	 Review the closing scenario: You reposition the patient's airway and attempt another ventilation, but the chest still does not rise. Ask participants: "How would you respond?"
	 Instructor's Note: Responses should include: Providing care for an unconscious choking adult by providing CPR starting with chest compressions; looking in the patient's mouth for an object; if one is seen, removing the object; providing 2 ventilations; and repeating as necessary until the ventilations make the patient's chest begin to rise.
	 Continue to review the closing scenario with the additional information: <i>After a few minutes of care, the patient's chest begins to rise and fall with the</i> <i>ventilations, but he is not breathing on his own.</i> Ask participants: "How would you continue to provide care for this patient?"
	 Instructor's Note: Responses should include: Providing care by giving ventilations (1 ventilation about every 5 to 6 seconds).
KEY POINTS	 OPAs, which can help maintain an open airway by keeping the tongue away from the back of the throat, are used on unconscious patients who do not have a gag reflex and require an airway adjunct. Suction devices help clear the upper airway of substances, such as fluids, blood, saliva or vomit.

	 Airway obstructions can be anatomical, due to the tongue or swollen tissues of the mouth, tongue or throat, or mechanical, due to foreign objects, such as food or toys, or fluids, such as vomit. A child's or infant's chest does not need to be compressed as deeply as an adult's chest. If finger sweep is needed, the little finger is used for an infant. Use the index finger for an adult or a child.
ASSIGNMENT FOR THE NEXT LESSON	 Read Chapter 12, Supplemental Oxygen.
INSTRUCTOR PREPARATION	 Review Chapter 12, Supplemental Oxygen. Review the video segment, "Oxygen Delivery" (3:02). Review the skills and obtain any necessary equipment and supplies for Lesson 16.

ENRICHMENT: NASOPHARYNGEAL AIRWAY

Time: 10 minutes

KEY POINTS Course Presentation Slide 202	 The NPA keeps the tongue out of the back of the throat, thereby keeping the airway open. NPAs can be used on a conscious, responsive patient or an unconscious patient. NPAs <i>must not be used</i> on patients with suspected head trauma or suspected skull fracture.
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SKILL SESSION: ENRICHMENT

INSERTING A	NASAL AIRWAY
ACTIVITY	 Ask participants to take their textbooks, disposable latex-free gloves and NPAs with them to the practice area. Divide participants into small groups and guide groups through the steps listed on the skill chart. Have each participant demonstrate inserting a nasal airway on the manikins while the other participants use their textbooks to give feedback. Observe each participant performing the technique and evaluate completion of the skill using the Skill Checklist. Intervene and provide positive and corrective feedback as needed to each participant individually when possible. Be sure to point out any common errors, such as failing to lubricate the airway, not measuring correctly or inserting with the bevel toward the side of the nose. Check off participant's progress on the Participant Progress Log.
SKILL	After sizing up the scene, performing a primary assessment, determining that the patient does not have suspected head trauma or suspected skull fracture and following standard precautions:
	1. Select the proper size.
	 Measure the airway from the angle of the patient's jaw to the tip of the nostril. Ensure that the diameter of the NPA is not larger than the internal diameter of the nostril.
	(Continued)

2. Lubricate the NPA and the opening of the nostril with a water-soluble lubricant prior to insertion.
3. Insert the NPA.
 Insert the NPA into the right nostril, with the bevel toward the septum (center of the nose).
 Advance the NPA gently, straight in, following the floor of the nose.
• Do <i>not</i> force if resistance is felt.
 Try other nostril if experiencing problems.
 If you use the left nostril, you need to ensure that the bevel is inserted toward the septum and the NPA is rotated as you advance it in similar to the OPA.
4. Ensure correct placement, with flange resting on nostril.

SKILL CHECKLIST	
Using a Mechanical Suctioning Device	Instructor's Note: The participant must always follow standard precautions when providing care.
	Participant completes the following:
	Performs initial actions
	 Sizes up the scene Performs a primary assessment
	Assembles device, if necessary, according to manufacturer's instructions
	 Positions the patient Rolls the body as a unit onto one side
	 Opens the mouth
	Removes any visible large debris from the mouth with a gloved finger if the patient is unconscious
	Measures and checks the suction tip
	 Measures from the angle of the patient's jaw to the corner of the mouth Notes the distance to prevent inserting the suction tip too deeply Turns on the machine and checks that the suction is working according to the manufacturer's instructions
	Suctions the mouth
	Inserts the suction tip into the back of the mouth
	Applies suction while withdrawing the catheter using a sweeping motion, if possible
	Suctions for the appropriate length of time: no more than 15 seconds at a time for an adult, 10 seconds at a time for a child and 5 seconds at a time for an infant
Using a Manual Suctioning Device	Instructor's Note: The participant must always follow standard precautions when providing care.
	Participant completes the following:
	Performs initial actions
	Sizes up the scene
	Performs a primary assessment
	Assembles device, if necessary, according to manufacturer's instructions

	 Positions the patient Rolls the body as a unit onto one side Opens the mouth Removes any visible large debris from the mouth with a gloved finger if the patient is unconcious Measures and checks the suction tip Measures from the angle of the patient's jaw to the corner of the mouth Notes the distance to prevent inserting the suction tip too deeply Checks that the suction is working by placing finger over the end of the suction tip while squeezing the handle of the device
	 Suctions the mouth Inserts the suction tip into the back of the mouth Squeezes the handle of the suction device repeatedly to provide suction Applies suction while withdrawing the catheter using a sweeping motion, if possible
	Suctions for the appropriate length of time: no more than 15 seconds at a time for an adult, 10 seconds at a time for a child and 5 seconds at a time for an infant
Inserting an Oral Airway	Instructor's Note: The participant must always follow standard precautions when providing care.
	Participant completes the following:
	 Performs initial actions
	□ Sizes up the scene
	 Performs a primary assessment
	Checks that the patient:
	□ Is unconscious
	Has no oral trauma, such as broken teeth
	Has not had recent oral surgery
	Selects the proper size by measuring the OPA from the angle of the patient's jaw to the corner of the mouth
	Opens the patient's mouth using the cross-finger technique
	□ Inserts the OPA
	 Grasps the patient's lower jaw and tongue and lifts upward Inserts the OPA with the curved end along the roof of the mouth
	 As the tip approaches the back of the mouth, rotates it one-half turn (180 degrees)
	Slides the OPA into the back of the throat
	 For a child or infant, inserts the OPA using a tongue blade or a tongue depressor, then inserts with the tip of the device pointing toward the back of the tongue and throat in the position it will rest in after insertion Alternatively, for a child or an infant, inserts the OPA sideways and then
	rotates it 90 degrees
	Ensures correct placement
	Checks that the flange rests on the patient's lips
	Immediately removes the OPA if patient begins to gag
	If the patient vomits, removes and suctions the airway, ensuring all debris is removed from the airway; thoroughly cleans the device and reinserts into the airway only if the patient is still unconscious and does not have a gag reflex

Choking—Adult and Child	Instructor's Note: The participant must always follow standard precautions when providing care.
	Participant completes the following:
	Performs initial actions
	Sizes up the scene
	Performs a primary assessment
	Obtains consent
	If the patient is a child, obtains consent from the parent or legal guardian, if present; if the parent or legal guardian is not available, consent is implied
	Tells the child's parent or legal guardian their level of training and the care
	they are going to provideAsks the patient, "Are you choking?"
	 Identifies themselves and asks if they can help; if the patient is a child, tells the child they are going to help
	 If the patient is coughing forcefully, encourages continued coughing
	If the patient cannot cough, speak or breathe, has someone else summon more advanced medical personnel
	Gives abdominal thrusts
	Stands behind the patient
	For a child, stands or kneels behind the child, depending on the child's size
	Uses less force on a child than if the patient was an adult
	 Uses one or two fingers of one hand to find the navel Makes a fist with other hand and places the thumb side of the fist against
	the middle of the patient's abdomen, just above the navel
	Grabs the fist with the other hand
	 Gives quick, upward thrusts, making each thrust a distinct attempt to dislodge the object
	Alternatively uses chest thrusts if:
	 They cannot reach far enough around the patient to give abdominal thrusts The patient is obviously pregnant or known to be pregnant
	Continues giving abdominal thrusts (or chest thrusts if appropriate) until:
	The object is forced out
	The patient begins to cough forcefully or breathe on their own
	The patient becomes unconscious; then provides care for an unconscious choking patient
Choking—Infant	Instructor's Note: The participant must always follow standard precautions
	when providing care.
	Participant completes the following:
	Performs initial actions
	Sizes up the scene
	Performs a primary assessment
	Obtains consent from the parent or legal guardian, if present
	Tells the infant's parent or legal guardian their level of training and the care they are going to provide
	 If the parent or legal guardian is not available, knows that consent is implied

	If the infant cannot cough, cry or breathe, carefully positions the infant face- down along the forearm
	Supports the infant's head and neck with the hand
	Lowers the infant onto the thigh, keeping the infant's head lower than the infant's chest
	Gives 5 back blows
	Uses the heel of their hand
	 Gives back blows between the infant's scapulae, making each back blow a distinct attempt to dislodge the object
	Positions the infant face-up along the forearm
	Positions the infant between both forearms, supporting the infant's head and neck
	Turns the infant face-up
	Lowers the infant onto the thigh with the infant's head lower than the infant's chest
	Gives 5 chest thrusts
	Puts 2 or 3 fingers on the center of the chest just below the nipple line
	Compresses the chest 5 times about 1½ inches, with each chest thrust a distinct attempt to dislodge the object
	Continues giving 5 back blows and 5 chest thrusts until:
	The object is forced out
	The infant begins to cough or breathe on their own
	The infant becomes unconscious; then provides care for an unconscious choking infant
Inserting a Nasal Airway	Instructor's Note: The participant must always follow standard precautions when providing care.
	Participant completes the following:
	 Participant completes the following: Performs initial actions Sizes up the scene
	 Participant completes the following: Performs initial actions Sizes up the scene Performs a primary assessment
	 Participant completes the following: Performs initial actions Sizes up the scene Performs a primary assessment Determines that the patient does not have suspected head trauma or suspected skull fracture
	 Participant completes the following: Performs initial actions Sizes up the scene Performs a primary assessment Determines that the patient does not have suspected head trauma or suspected skull fracture Selects the proper size
	 Participant completes the following: Performs initial actions Sizes up the scene Performs a primary assessment Determines that the patient does not have suspected head trauma or suspected skull fracture Selects the proper size Measures the NPA from the angle of the patient's jaw to the tip of the nostril
	 Participant completes the following: Performs initial actions Sizes up the scene Performs a primary assessment Determines that the patient does not have suspected head trauma or suspected skull fracture Selects the proper size Measures the NPA from the angle of the patient's jaw to the tip of the nostril Ensures that the diameter of the NPA is not larger than the internal diameter of the nostril
	 Participant completes the following: Performs initial actions Sizes up the scene Performs a primary assessment Determines that the patient does not have suspected head trauma or suspected skull fracture Selects the proper size Measures the NPA from the angle of the patient's jaw to the tip of the nostril Ensures that the diameter of the NPA is not larger than the internal diameter of the nostril Lubricates the NPA and opening of the nostril with a water-soluble lubricant prior to insertion
	 Participant completes the following: Performs initial actions Sizes up the scene Performs a primary assessment Determines that the patient does not have suspected head trauma or suspected skull fracture Selects the proper size Measures the NPA from the angle of the patient's jaw to the tip of the nostril Ensures that the diameter of the NPA is not larger than the internal diameter of the nostril Lubricates the NPA and opening of the nostril with a water-soluble lubricant prior to insertion Inserts the NPA
	 Participant completes the following: Performs initial actions Sizes up the scene Performs a primary assessment Determines that the patient does not have suspected head trauma or suspected skull fracture Selects the proper size Measures the NPA from the angle of the patient's jaw to the tip of the nostril Ensures that the diameter of the NPA is not larger than the internal diameter of the nostril Lubricates the NPA and opening of the nostril with a water-soluble lubricant prior to insertion Inserts the NPA Inserts the NPA into the nostril, with the bevel toward the septum (center of the nose)
	 Participant completes the following: Performs initial actions Sizes up the scene Performs a primary assessment Determines that the patient does not have suspected head trauma or suspected skull fracture Selects the proper size Measures the NPA from the angle of the patient's jaw to the tip of the nostril Ensures that the diameter of the NPA is not larger than the internal diameter of the nostril Lubricates the NPA and opening of the nostril with a water-soluble lubricant prior to insertion Inserts the NPA Inserts the NPA into the nostril, with the bevel toward the septum (center of the nose) Advances the airway gently, straight in, following the floor of the nose
	 Participant completes the following: Performs initial actions Sizes up the scene Performs a primary assessment Determines that the patient does not have suspected head trauma or suspected skull fracture Selects the proper size Measures the NPA from the angle of the patient's jaw to the tip of the nostril Ensures that the diameter of the NPA is not larger than the internal diameter of the nostril Lubricates the NPA and opening of the nostril with a water-soluble lubricant prior to insertion Inserts the NPA Inserts the NPA into the nostril, with the bevel toward the septum (center of the nose) Advances the airway gently, straight in, following the floor of the nose Does not force if resistance is felt
	 Participant completes the following: Performs initial actions Sizes up the scene Performs a primary assessment Determines that the patient does not have suspected head trauma or suspected skull fracture Selects the proper size Measures the NPA from the angle of the patient's jaw to the tip of the nostril Ensures that the diameter of the NPA is not larger than the internal diameter of the nostril Lubricates the NPA and opening of the nostril with a water-soluble lubricant prior to insertion Inserts the NPA Inserts the NPA into the nostril, with the bevel toward the septum (center of the nose) Advances the airway gently, straight in, following the floor of the nose

LESSON 16

SUPPLEMENTAL OXYGEN

Lesson Length: 60 minutes

MATERIALS, EQUIPMENT AND SUPPLIES

- Emergency Medical Response textbook
- Course Presentation Slides 203–216
- LCD projector, screen and computer
- Emergency Medical Response DVD
- DVD player and monitor
- Disposable latex-free gloves (multiple sizes) and other personal protective equipment (PPE), as indicated
- Adult and infant manikins (one for every two participants; child manikins optional)
- Decontamination supplies
- Oxygen cylinders (one for every four participants)
- Pressure regulator and flowmeter (one for every two participants)
- Oxygen delivery devices, such as nasal cannula, resuscitation masks, non-rebreather masks and bag-valve-mask (BVM) resuscitators (adult and pediatric; one for every two participants)

LESSON OBJECTIVES

Knowledge

After completing this lesson, participants will be able to:

- Identify when it is appropriate to administer supplemental oxygen.
- List the delivery devices for use in administering supplemental oxygen.
- Describe the steps required to administer supplemental oxygen.
- List precautions to take when using supplemental oxygen.

Skill

After completing this lesson, participants will be able to:

 Demonstrate how to prepare the equipment and administer supplemental oxygen to breathing and nonbreathing patients using a nasal cannula, non-rebreather mask, resuscitation mask and bag-valve-mask (BVM) resuscitator.

TOPIC: INTRODUCTION

Time: 10 minutes

ACTIVITY	Review the opening scenario:
Course Presentation Slides 204–205	 A 45-year-old man is experiencing chest pain. When he finally calls for assistance, he states that the pain started about 30 minutes ago as a mild, squeezing sensation. Now the pain is severe and he is gasping for breath. You, as the responding member of your company's emergency response team, recognize that these signs and symptoms suggest a serious cardiac condition. You complete a primary assessment, physical exam and SAMPLE history. The patient has no known history of hypertension or heart disease. While waiting for an ambulance or other transport vehicle to arrive, you help the patient get into the most comfortable position for breathing, keep him from getting chilled or overheated, and ask him to remain still. You open a nearby window to circulate fresh air into the stuffy room. Ask participants: "What else can you do to help?"
	Instructor's Note: Let participants provide responses, guiding them to important areas related to ensuring that the patient has adequate oxygen and assessing respiratory rate and depth and skin color, including a rate less than 12 or greater than 20 breaths per minute.
	Tell participants: "Supplemental oxygen is oxygen delivered to a patient from an oxygen cylinder through a delivery device to a nonbreathing or breathing patient who is not receiving adequate oxygen from the environment. Administering supplemental oxygen based on local protocols can be beneficial when someone has a breathing or cardiac emergency."
	 Review oxygen concentrations of environmental air and that provided by resuscitation masks and BVMs:
	 Normal air contains about 21 percent oxygen. Nortilations via a DVM available about 21 percent oxygen.
	 Ventilations via a BVM supply about 21 percent oxygen to a patient. Expired air in an exhalation, which is delivered by a resuscitation mask, delivers about 16 percent oxygen.
	 Emphasize that neither of these percentages of oxygen alone may be adequate for the patient.
KEY POINTS	 Supplemental oxygen may be needed for nonbreathing patients in many breathing and cardiac emergencies.
	The use of oxygen in breathing adults, children and infants depends on the number of breaths per minute:
	 An adult breathing less than 12 breaths per minute or more than
	 20 breaths per minute. A child breathing less than 15 breaths per minute or more than
	30 breaths per minute.
	 An infant breathing less than 25 breaths per minute or more than 50 breaths per minute.
	Oxygen is delivered with properly sized equipment for the patient and appropriate flow rates for delivery devices.
	 Administer supplemental oxygen to all patients, based on local protocols, for respiratory distress or respiratory failure with low oxygen saturation or signs and symptoms of hypoxia, as these conditions are usually caused by abnormal oxygen levels to the tissues. Always administer supplemental oxygen for suspected CO poisoning and all smoke inhalation cases.

TOPIC: ADMINISTERING SUPPLEMENTAL OXYGEN

KEY POINTS Course Presentation Slides 206–207	 The following is crucial to delivering supplemental oxygen: Oxygen cylinder Pressure regulator with flowmeter Delivery device According to the U.S. Food and Drug Administration (FDA), oxygen units may be marketed without a prescription when used for emergency resuscitation and when administered by an individual who is authorized, certified or licensed by state authorities. Such units must deliver a minimum flow rate of 6 liters of oxygen per minute for a minimum of 15 minutes (90 liters). Flow rates of oxygen systems can be variable or fixed. Variable-flow-rate oxygen systems allow the responder to change the flow of oxygen but require equipment assembly. Fixed-flow-rate oxygen systems have a regulator set at a fixed-flow rate, most commonly 15 LPM, and usually come with the delivery device, regulator and cylinder already connected. You should monitor the effectiveness of the oxygen delivery, such as by using a pulse oximeter.
ACTIVITY	 Divide the participants into groups. Have them use their textbook to describe oxygen cylinders, pressure regulators and flowmeters. After, engage them in a discussion of what they learned. Instructor's Note: Responses should include: Oxygen cylinders are labeled "U.S.P." (United States Pharmacopeia), indicating that the oxygen is medical grade, and they are marked with a yellow diamond that says "Oxygen." Oxygen cylinders in the United States typically have green markings around the top of the cylinder. The pressure regulator reduces the pressure inside the cylinder (approximately 2000 pounds per square inch [psi]) to a safe pressure range of 30 to 70 psi. Check the gauge to determine how much oxygen is in the cylinder. An oxygen cylinder is replaced or recharged when it reaches 200 psi. A pressure regulator typically has two metal prongs that fit into the valve at the top of the oxygen cylinder, called the pin index safety system. An O-ring or gasket is used to ensure a tight seal between the regulator and tank. No part of an oxygen system is ever lubricated.

TOPIC: OXYGEN DELIVERY DEVICES

Time: 25 minutes





Instructor's Note: Show participants examples of the different types of oxygen delivery devices, if available.

KEY POINTS Course Presentation Slides 208–213	 An oxygen delivery device is a piece of equipment a patient breathes through when receiving supplemental oxygen. These include: Nasal cannulas. Resuscitation masks. Non-rebreather masks. BVMs.
NASAL CANN	ULA
KEY POINTS	 A nasal cannula is used only on breathing patients, delivering supplemental oxygen through the patient's nostrils. A plastic tube is held in place over the patient's ears and oxygen is delivered through two small prongs inserted into the nostrils. A nasal cannula delivers supplemental oxygen at a flow rate of 1 to 6 LPM. It provides a peak oxygen concentration of approximately 44 percent. A nasal cannula is commonly used for patients with only minor breathing difficulty or for those who have a history of respiratory medical conditions. It is useful for patients who cannot tolerate a media of the patients for the patients.
DEGLIGCITATI	mask over their face. ON MASK WITH OXYGEN INLET
KEY POINTS	 A resuscitation mask with an oxygen inlet can be used with supplemental oxygen to deliver oxygen to a nonbreathing patient or someone who is breathing but still requires oxygen. The oxygen flow rate is set at 6 to 15 LPM. It can deliver up to 55 percent oxygen to a breathing person when set at 6 LPM or more. It will deliver an oxygen concentration of approximately 35 percent when used on a nonbreathing patient while performing ventilations.
NON-REBRE	
KEY POINTS	 A non-rebreather mask is used to deliver high concentrations of oxygen to breathing patients. It consists of a face mask with an attached oxygen reservoir bag and a one-way valve between the mask and bag to prevent the patient's exhaled air from mixing with the oxygen in the reservoir bag. The patient inhales oxygen from the bag and exhaled air escapes through flutter valves on the side of the mask. The oxygen reservoir bag must be sufficiently inflated (about two-thirds full) so it does not deflate when the patient inhales. The flow rate is usually set at 10 to 15 LPM. Use of a non-rebreather mask with a high flow rate of oxygen can
	deliver up to 90 percent oxygen concentration to the patient.
BVM	
KEY POINTS	 A BVM can be used on a breathing or nonbreathing patient. The oxygen flow rate should be set at 15 LPM or more. The BVM with an oxygen reservoir bag is capable of supplying 90 percent or more oxygen concentration when used at 15 LPM or more.

	 The conscious patient can hold the BVM to inhale the oxygen or you can squeeze the bag as the patient inhales more oxygen. For patients breathing less than 10 times per minute, the bag is squeezed between each breath. For patients breathing more than 30 times per minute, the bag is squeezed on every second breath.
ACTIVITY	 Using the following scenario, ask participants to identify the most appropriate type of oxygen delivery device to use: While providing care to a patient in a motor-vehicle crash, your assessment reveals that the patient's respiratory rate is 30 breaths per minute. The patient also has a history of pneumonia. You determine that the patient would benefit from supplemental oxygen.
	 Instructor's Note: Responses could include: A nasal cannula because the patient is conscious and breathing on his own but has a history of respiratory problems. A resuscitation mask with an oxygen inlet because the patient is breathing but requires supplemental oxygen. A non-rebreathing mask or BVM, but only if the patient was experiencing significant respiratory problems necessitating a high concentration of oxygen to be delivered.

TOPIC: SAFETY PRECAUTIONS

Time: 10 minutes

KEY POINTS	Never attempt to refill an oxygen cylinder.
	When a high-pressure oxygen cylinder has been emptied, close the cylinder valve, replace the valve protection cap or outlet plug where provided and mark or tag the cylinder as empty.
Course Presentation Slides 214–215	 Use supplemental oxygen based on local protocols, according to the manufacturer's instructions and in a manner consistent with federal and local regulations.
	Follow these recommended guidelines:
	 Be sure that oxygen is flowing before putting the delivery device over the patient's face.
	 Do not use oxygen around flames or sparks including smoking materials, such as cigarettes, cigars and pipes. Oxygen causes fire to burn more rapidly and intensely.
	 Do not use grease, oil or petroleum products to lubricate or clean the regulator. This could cause an explosion.
	 Do not stand oxygen cylinders upright unless they are well secured. If a cylinder falls, the regulator or valve could become damaged or cause injury due to the intense pressure in the tank.
	 Do not drag or roll cylinders.
	\circ Do not carry a cylinder by the valve or regulator.
	 Do not hold onto protective valve caps or guards when moving or lifting cylinders.
	 Do not deface, alter or remove any labeling or markings on the oxygen cylinder.
	 Do not attempt to mix gases in an oxygen cylinder or transfer oxygen from one cylinder to another.
	 Do not defibrillate someone when around flammable materials, such as free-flowing oxygen or gasoline.



Show the video segment, "Oxygen Delivery" (3:02).

Answer participants' questions about the video segment.

SKILL SESSION

OXYGEN DELIVERY		
ACTIVITY Ask participants to take their textbook delivery equipment with them to the p	s, disposable latex-free gloves and oxygen ractice area.	
	and guide groups through the steps listed	
 Have each participant demonstrate ad manikins while the other participants 		
	not administer supplemental oxygen to a he flow but not place a mask with flowing	
	the technique and evaluate completion of vene and provide positive and corrective nt individually when possible.	
 Be sure to point out any common error gauge, improperly connecting the plan flowmeter or setting an incorrect flow 		
Check off participant's progress on the	 Check off participant's progress on the Participant Progress Log. 	
SKILL After sizing up the scene, performing a p standard precautions:	rimary assessment and following	
1. Ensure that the oxygen cylinder is lab diamond that says "Oxygen."	eled "U.S.P." and marked with a yellow	
2. Clear the valve.		
 Remove the protective covering. 		
 Remove and save the O-ring gask 	-	
• Turn the cylinder away from you ar		
 Open the cylinder valve for 1 second to clear the valve of any de Attack the conduction of the cylinder valve for 1 second to clear the valve of any de 		
3. Attach the regulator.	a on ton of the outinder if necessary	
 Put the O-ring gasket into the valv Make sure that it is designed for d O-ring gasket is secure. 	elivering supplemental oxygen and that the	
• Check to see that the pin index co	rresponds to an oxygen tank.	
 Secure the regulator on the cylind the valve. 	er by placing the two metal prongs into	
 Hand-tighten the screw until the reserved 	egulator is snug.	
4. Open the cylinder counterclockwise	one full turn.	
• Check the pressure gauge.		
 Determine that the cylinder has en Do not use if the pressure is lower 	ough pressure (more than 200 psi). than 200 psi.	

5. Attach the delivery device.
 Attach the plastic tubing between the flowmeter and the delivery device.
6. Adjust the flowmeter, turning it to the desired flow rate.
\circ With a nasal cannula, set the rate at 1 to 6 LPM.
 With a resuscitation mask, set the rate at 6 to 15 LPM.
 With a non-rebreather mask, set the rate at 10 to 15 LPM.
• Ensure that the oxygen reservoir bag is two-thirds inflated by placing your thumb over the one-way valve at the bottom of the mask until the bag is sufficiently inflated.
\circ With a BVM, set the rate at 15 LPM or more.
7. Verify the oxygen flow.
 Listen for a hissing sound.
 Feel for oxygen flow through the delivery device.
8. Place the delivery device on the patient and continue care until more advanced medical personnel take over.
9. Break down the oxygen equipment.
 Reverse the steps from above.
 Make sure to bleed the pressure regulator by turning on the flowmeter after the tank has been turned off.

WRAP-UP **Time: 5 minutes** Emphasize that administering supplemental oxygen based on local protocols can help improve hypoxia and also help reduce pain and breathing discomfort. Course Presentation Slide 216 ACTIVITY Review the closing scenario: The 45-year-old man who was experiencing chest pain and difficulty breathing is now slightly cyanotic (skin has a bluish color), is gasping for air and is breathing 26 times per minute. Ask participants: "What breathing devices could you use to help this patient?" Instructor's Note: Responses should include: Using a nasal cannula, resuscitation mask, non-rebreather mask or BVM connected to supplemental oxygen to help this patient. Continue with the closing scenario: After a couple of minutes, the man complains of having a mask on his face but is still gasping for air. Ask participants: "How would you change your care for this patient?" Instructor's Note: Responses should include: Using a nasal cannula or allowing the patient to hold the resuscitation mask, non-rebreather mask or BVM in front of his face.

KEY POINTS	 Following safety precautions is crucial when using supplemental oxygen. Oxygen delivery systems include variable-flow-rate and fixed-flow rate systems. Oxygen delivery devices include nasal cannulas, resuscitation masks, non-rebreather masks and BVMs.
ASSIGNMENT FOR THE NEXT LESSON	 Review Chapters 10–12.
INSTRUCTOR PREPARATION	 Review Chapters 10–12. Review the skills from Lessons 14–16. Obtain any necessary equipment and supplies for Lesson 17.

	(LIST
kygen Delivery	Instructor's Note: The participant must always follow standard precautions when providing care.
	Participant completes the following:
	 Performs initial actions Sizes up the scene
	Performs a primary assessment
	Ensures that the oxygen cylinder is labeled "U.S.P." and marked with a yellow diamond that says "Oxygen"
	Clears the valve
	Removes the protective covering
	Removes and saves the O-ring gasket, if necessary
	Turns the cylinder away from themselves and others before opening
	 Opens the cylinder valve for 1 second to clear the valve of any debris Attaches the regulator
	 Puts the O-ring gasket into the valve on top of the cylinder, if necessary Makes sure that it is designed for delivering supplemental oxygen and that the O-ring gasket is secure
	Checks to see that the pin index corresponds to an oxygen tank
	 Secures the regulator on the cylinder by placing the two metal prongs into the valve
	Hand-tightens the screw until the regulator is snug
	Opens the cylinder counterclockwise one full turn
	Checks the pressure gauge
	Determines that the cylinder has enough pressure (more than 200 psi)
	Does not use if the pressure is lower than 200 psi
	Attaches the delivery device
	Attaches the plastic tubing between the flowmeter and the delivery device
	(Continued
	(continued

Adjusts the flowmeter, turning it to the desired flow rate
With a nasal cannula, sets the rate at 1 to 6 LPM
With a resuscitation mask, sets the rate at 6 to 15 LPM
With a non-rebreather mask, sets the rate at 10 to 15 LPM
Ensures that the oxygen reservoir bag is two-thirds inflated by placing thumb over the one-way valve at the bottom of the mask until the bag is sufficiently inflated
With a BVM, sets the rate at 15 LPM or more
Verifies the oxygen flow
Listens for a hissing sound
Feels for oxygen flow through the delivery device
Places the delivery device on the patient and continues care until more advanced medical personnel take over
Break downs the oxygen equipment
Reverses the steps from above
Makes sure to bleed the pressure regulator by turning on the flowmeter after the tank has been turned off



SKILLS REVIEW

Lesson Length: 60 minutes

MATERIALS, EQUIPMENT AND SUPPLIES

- Emergency Medical Response textbook
- Skill Checklists for Lessons 14–16
- Disposable latex-free gloves (multiple sizes) and other personal protective equipment (PPE), as indicated
- Adult and infant manikins (one for every two participants; child manikins optional)
- Decontamination supplies
- Resuscitation masks (adult and pediatric; one for each participant)
- Bag-valve-mask (BVM) resuscitators (adult and pediatric; one for every two participants)
- Oral airways (one for every two participants)
- Tongue blades or tongue depressors (*optional* for child or infant oral airway insertion; one for every two participants)
- Nasopharyngeal airways (one for every two participants; optional)
- Oxygen cylinders with pressure regulators and flowmeters (one for every two participants)
- Oxygen delivery devices, such as nasal cannulas, resuscitation masks with oxygen inlet and non-rebreather masks (one for every two participants)
- Airway manikins (one for every two participants; *optional*)
- Asthma inhaler trainers (optional)

LESSON OBJECTIVES

Skill

After completing this lesson, participants will be able to:

Demonstrate the skills covered in Lessons 14–16.

TOPIC: INTRODUCTION

ACTIVITY	 Explain that participants will be divided into pairs or small groups to practice the skills at various stations around the room. Emphasize that partners or groups should work together and rotate through the stations. Tell participants that they may need to assume the role of the patient, bystander or family member(s) if requested, especially in situations that require verbal interaction between the emergency medical responder (EMR) and the patient or others. Encourage participants to bring their textbooks to the various practice stations and to practice all of the skills at each station. Remind participants that they should include scene size-up and primary assessment as part of their skill practice. Tell participants that you will be walking around to the various stations, observing their skills, asking them questions and answering any questions that they may have.
	 Instructor's Note: Be sure to instruct participants that they should not administer supplemental oxygen to a fellow participant. They should verify the flow but not place a mask with flowing oxygen on a partner. At each of the stations, observe the participants performing the skills. Provide feedback and assistance as necessary. During observation, use the skill checklists to assist in evaluating the participant's competency in performing the skill. Emphasize the need for participants to perform the complete sequence of activities from beginning to end when performing the skills, including scene size-up and primary assessment.

SKILL PRACTICE

Time: 50 minutes

ACTIVITY	 Set up practice stations for the following skills: Giving Ventilations—Adult and Child Giving Ventilations—Infant Giving Ventilations—Head, Neck or Spinal Injury Suspected: Jaw-Thrust (Without Head Extension) Maneuver—Adult and Child Giving Ventilations Using a Bag-Valve-Mask Resuscitator Assisting with an Asthma Inhaler (<i>Enrichment</i>) Using a Mechanical Suctioning Device Using a Manual Suctioning Device Inserting an Oral Airway Choking—Infant Inserting a Nasal Airway (<i>Enrichment</i>) Oxygen Delivery
	Instructor's Note: Depending on equipment availability, number of participants, classroom size and time, it may be necessary to combine several skills for practice at one station.

WRAP-UP		Time: 5 minutes
	 Provide feedback to participants about their performance. Encourage continued practice with the skills to gain confider and competency. Emphasize the need to always size up the scene, perform a p and adhere to standard precautions when performing any skills 	primary assessment
ASSIGNMENT FOR THE NEXT LESSON	 Review Chapters 1–12. 	
INSTRUCTOR PREPARATION		

LESSON 18

PUTTING IT ALL TOGETHER

Lesson Length: 60 minutes

MATERIALS, EQUIPMENT AND SUPPLIES

- Emergency Medical Response textbook
- Course Presentation Slides 217–221
- LCD projector, screen and computer
- Disposable latex-free gloves (multiple sizes) and other personal protective equipment (PPE), as indicated
- Decontamination supplies
- Adult and infant manikins (one for every two participants; child manikins optional)
- Resuscitation masks (adult and pediatric; one for each participant)
- Stethoscopes (one for every two participants)
- Sphygmomanometers (one for every two participants)
- Oral airways (one for every two participants)
- Tongue blades or tongue depressors (*optional* for child or infant oral airway insertion; one for every two participants)
- Manual and mechanical suctioning devices (one for every two participants)
- Supplemental oxygen cylinders with pressure regulators and flowmeters (one for every two participants)
- Oxygen delivery devices, such as nasal cannula, non-rebreather masks, resuscitation masks (with oxygen inlet), and bag-valve-mask (BVM) resuscitators (adult and pediatric; one for every two participants)
- Airway manikins (if available; one for every two participants)
- Blank documentation forms (if available)
- Skill Checklists for Lessons 14–16

LESSON OBJECTIVES

After completing this lesson, participants will be able to:

Demonstrate the knowledge, skills and attitudes learned in Lessons 1–16.

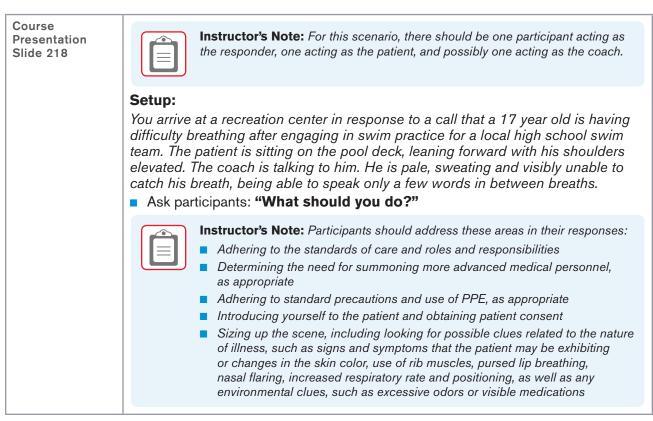
TOPIC: INTRODUCTION

Time: 10 minutes

ACTIVITY	Tell participants that they:
	 Will split into several small groups with each group receiving a scenario to role-play, using either a manikin or other member of the class as the patient. Will have approximately 5 minutes to prepare for the role-playing activity and that part of this preparation will include designating the roles for each group member based on the actual scenario assigned and gathering any necessary equipment and supplies.
	 Are to formulate a response to the scenario integrating the key points and skills learned up to this point in the course, explaining their actions while providing care.
	 Can explain their actions rather than demonstrate a skill if they feel it necessary to use a skill that they have not yet learned.
	 Should demonstrate any previously learned skills that would be required as part of the response, explaining their actions while providing care.
	 Should be able to answer questions asked by the instructor or other class members.
	 Will spend approximately 5 to 10 minutes after role-playing the scenario critiquing their actions and discussing any problems, errors or difficulties they may have had.

SCENARIO 1: YOU ARE THE EMERGENCY MEDICAL RESPONDER

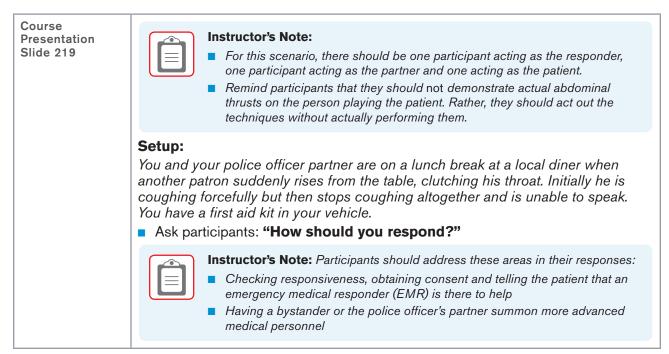
Time: 15 minutes



 Demonstrating the skill for obtaining a primary assessment, including checking responsiveness, opening the airway and checking for breathing and a pulse Determining that the patient is conscious and responsive, but airway may be inadequate due to difficulty breathing and limited ability to speak Obtaining respiratory and pulse rates Demonstrating use of SAMPLE to obtain the patient's history, asking about the patient's signs and symptoms, allergies, medications, pertinent medical history, last oral intake and events leading up to the incident Determining if the patient has a history of respiratory allergies or asthma and what medications he uses for treatment Assisting the patient with his medication such as an asthma inhaler, if
 Nisisting the patient within the incurrent of derived at a datument, in available (Enrichment) Demonstrating the skill on a manikin for providing supplemental oxygen via nasal cannula or non-rebreather mask, as appropriate Allowing the patient to assume a position of comfort that allows for effective breathing Demonstrating the skill for performing a secondary assessment, including the patient's complaint, baseline vital signs and detailed physical exam, as appropriate Performing an ongoing assessment until more advanced medical personnel take over Effectively communicating with the patient and other response team members, including accurate, complete, objective documentation of observations and care

SCENARIO 2: YOU ARE THE EMERGENCY MEDICAL RESPONDER

Time: 15 minutes



Acting out the skill for conscious choking (adult) by pretending to give the patient abdominal thrusts, stating the need to continue until the object is forced out, the patient begins to cough forcefully or breathe on his own, or the patient becomes unconscious
Performing an ongoing assessment until more advanced medical personnel take over, if appropriate, based on the EMR's evaluation of the patient
 Effectively communicating with the patient, bystanders and other response team members, including accurate, complete and objective documentation of observations and care

SCENARIO 3: YOU ARE THE EMERGENCY MEDICAL RESPONDER

Time: 15 minutes

Course Presentation Slide 220

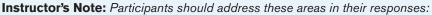


Instructor's Note: For this scenario, there should be one participant acting as the responder, one acting as the partner and one acting as the patient.

Setup:

You and your partner arrive at the scene of a motor-vehicle crash that occurred on a country road outside of town. The car came to rest on its roof in a small ravine. The driver of the car was thrown through the windshield and is lying on the ground about 10 feet from the vehicle. The driver was the only person in the vehicle at the time of the crash. There is a faint odor of gasoline and the hood of the car is smoking.

Ask participants: "How should you respond?"





- Adhering to the standards of care and professional roles and responsibilities Determining the threats to the patient and EMRs; forming a general
- impression, initially sizing up the scene for possible hazards such as the odor of gasoline and smoke from the car, broken glass from the windshield, the driver in close proximity to the car
- Moving the patient to a safe location, taking care to protect the head, neck and spine during movement
- Summoning additional personnel including more advanced medical personnel, firefighters and law enforcement, as appropriate
- Adhering to standard precautions and use of PPE
- Identifying the mechanism of injury (MOI) based on clues from the scene, such as the shattered windshield and vehicle rollover
- Performing a primary assessment including checking responsiveness; opening the airway and checking for breathing and a pulse, implementing techniques to open the airway if necessary (most likely the jaw-thrust [without head extension] maneuver due to possible head, neck or spinal injury)
 - Providing ventilations via resuscitation mask or BVM, if no breathing noted
 - If breathing, leaving the patient in a face-up position and maintaining airway
- If no pulse, beginning CPR
 - Acting out or describing the skill for delivering supplemental oxygen via resuscitation mask or BVM, as appropriate

 Using SAMPLE to obtain a patient's history and performing a secondary assessment and detailed physical exam if patient is responsive If patient is nonresponsive and not breathing, performing a secondary assessment would be postponed until the patient is stabilized or becomes responsive.
 If patient is nonresponsive and not breathing, performing a detailed physical exam would be postponed until the patient is stabilized or becomes responsive.
 Effectively communicating with the patient and other response team members, including accurate, complete, objective documentation of observations and care
observations and care

WRAP-UP

Time: 5 minutes

ß	 Answer participants' questions, ensuring that each participant has an opportunity to resolve any confusion. Review the scenarios and the important elements of care.
KEY POINTS Course Presentation Slide 221	 Ensuring an open airway is one of the most important steps you can take for any patient. A person who can speak or cry is conscious, has an open airway, is breathing and has a pulse. The head-tilt/chin-lift maneuver or jaw-thrust (without head extension) maneuver is used to open the airway. Airway obstruction can be mechanical (usually due to a foreign body) or anatomical (commonly due to the tongue). Airway management involves using mechanical or manual suctioning (to remove foreign matter) and appropriate breathing devices, such as breathing barriers, BVMs and supplemental oxygen equipment. If a patient is unconscious without a gag reflex, an oral (oropharyngeal) airway can be used to maintain the airway. For a choking adult or child, a combination of back blows and abdominal thrusts can be used; for a choking infant, back blows and chest thrusts are used. For an unconscious choking adult, child or infant, chest compressions, foreign body check and ventilation attempts are used. Supplemental oxygen is used, based on local protocols, if the patient is not breathing or if the patient is breathing fewer than 12 or more than 20 breaths per minute (adult), fewer than 15 or more than 30 breaths per minute (child) and fewer than 25 or more than 50 breaths per minute (child) and fewer than 25 or more than 50 breaths per minute (child) and fewer than 25 or more than 50 breaths per minute (adult), fewer than 15 or more than 30 breaths per minute (adult) and treat any changes in the patient's condition, including primary assessment; Obtain a focused history, addressing the chief complaint, MOI or nature of illness, pain and other relevant information. Use the mnemonic SAMPLE to obtain a patient's history. Perform a secondary assessment. Perform an ongoing assessment to identify and treat any changes

ASSIGNMENT FOR THE NEXT LESSON	 Read Chapter 13, Circulation and Cardiac Emergencies, pages 294–304. Read Enrichment: Preventing Coronary Heart Disease (<i>optional</i>), page 336.
INSTRUCTOR PREPARATION	 Review Chapter 13, Circulation and Cardiac Emergencies, pages 294–304. Read Enrichment: Preventing Coronary Heart Disease (<i>optional</i>), page 336. Review Chapter 4, The Human Body, pages 74–77. Obtain any necessary equipment and supplies for Lesson 19.

UNIT 4 | CIRCULATION

Lesson 19:	The Circulatory System and Cardiac Emergencies	216
Lesson 20:	CPR and Automated External Defibrillation	223
Lesson 21:	Skills Review	244
Lesson 22:	Putting It All Together	246



THE CIRCULATORY SYSTEM AND CARDIAC EMERGENCIES

Lesson Length: 60 minutes (65 minutes with Enrichment)

MATERIALS, EQUIPMENT AND SUPPLIES

- Emergency Medical Response textbook
- Course Presentation Slides 222–235
- LCD projector, screen and computer

LESSON OBJECTIVES

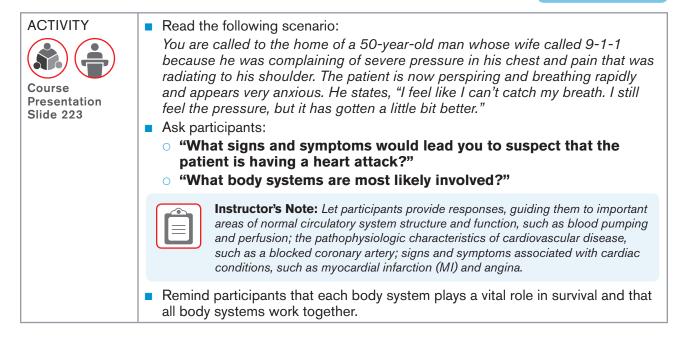
Knowledge

After completing this lesson, participants will be able to:

- Describe how to recognize and care for a patient who may be experiencing a heart attack.
- Describe how to care for a patient who may be experiencing cardiac arrest.
- List the reasons for the heart to stop beating.

TOPIC: INTRODUCTION

Time: 5 minutes



TOPIC: ANATOMY AND PHYSIOLOGY OF THE CIRCULATORY SYSTEM

	 Instructor's Note: Review the various components of the circulatory system. Urge participants to review Chapter 4, The Human Body, pages 74–77.
ACTIVITY Course Presentation Slide 224	 Divide participants into small groups. Assign each group to identify and/or briefly describe one or more of the following, being sure to assign all topics: Structures of the heart and their function Blood flow through the heart Electrical impulse conduction through the heart Perfusion throughout the body Have each group present its information to the class.
	 Instructor's Note: Responses should include: Heart structures include the right and left atria, right and left ventricles, and one-way valves between the chambers to direct blood flow. Flow pattern includes oxygen-depleted blood from the body traveling via veins to the right atrium, to the right ventricle, to the lungs (for oxygenation and removal of waste products), back to the left atrium, then to the left ventricle where it is pumped to the rest of the body. Electrical conduction involves an impulse starting at the sinoatrial (SA) node, traveling through the atria to the atrioventricular (AV) node, then dividing into right and left branches into the right and left ventricles, becoming the Purkinje fibers that spread the impulse across the heart, causing the ventricular muscular walls to contract. This can be seen graphically via an electrocardiogram (ECG or EKG). Perfusion involves the blood flowing through the arteries with oxygen and nutrients, such as glucose, being delivered to the cells and carbon dioxide and wastes moving from the cells to the blood and being carried away by the veins.

TOPIC: PATHOPHYSIOLOGY OF THE CIRCULATORY SYSTEM

Time: 10 minutes

 Ask participants for examples of problems they think involve the circulatory system.
 Instructor's Note: Responses should include: Heart attack. Chest pain (angina). High cholesterol levels (atherosclerosis). High blood pressure (hypertension). Blood loss (shock).

KEY POINTS	 Cardiovascular disease, which affects the heart and blood vessels, affects an estimated 90 million Americans.
	It is the number-one killer in the United States and a major cause of disability.
Course Presentation Slides 225–227	The two most common conditions caused by cardiovascular disease are coronary heart disease (CHD), also known as coronary artery disease, and stroke.
	 CHD results from atherosclerosis (hardening and narrowing of the arteries supplying blood to the heart muscle) due to plaque buildup (cholesterol and fatty deposits) on the inner artery walls.
	 Acute myocardial ischemia (reduced blood flow to the heart muscle) causes chest pain and usually results from CHD, referred to as acute coronary syndrome (ACS).
	 Reduction in blood and oxygen supply to the heart muscle can cause symptoms of angina pectoris or a heart attack.
	 Myocardial infarction (MI), or heart attack, occurs when coronary blood vessels become blocked by plaque buildup or a blood clot causing the affected heart muscle tissue to die. Cardiac arrest may occur when the heart ceases to function as a pump.
	Other cardiac problems include the following:
	 Angina pectoris is normally a transient condition that develops when the heart needs more oxygen than it gets because of narrowed arteries. It is manifested by chest discomfort or pain.
	 Arrhythmias are electrical disturbances in the regular rhythmic beating of the heart, such as ventricular fibrillation (V-fib) and ventricular tachycardia (V-tach). Some arrhythmias are life threatening.
	 Atrial fibrillation is one of the most common types of abnormal cardiac rhythm but usually is not life threatening.
	 Congestive heart failure is a chronic condition in which the heart no longer pumps blood effectively throughout the body.
	 Hypertension (high blood pressure) is a main risk factor for heart attack and stroke in which blood pressure is higher than 140/90 mmHg.
	 Diabetes mellitus can affect the nerves, and people with diabetes may not experience chest pain. leading to a "silent heart attack."

TOPIC: CARDIAC EMERGENCIES

Time: 25 minutes

ASSESSMENT OF CARDIAC EMERGENCIES	
KEY POINTS Course Presentation Slides 228–232	 Early recognition of the signs and symptoms of a heart attack and early action increase the chance of survival. Signs and symptoms that require summoning more advanced medical personnel include: Discomfort, pressure or pain (primarily persistent discomfort, pressure or pain in the chest that does not go away). Signs and symptoms may include:
	•

	 Chest discomfort or pain that is severe, lasts longer than a few minutes, goes away and comes back or persists with rest. Pain that comes and goes, such as angina pectoris. Difficulty breathing, including noisy breathing and shortness of breath. Other signs and symptoms, such as pale or ashen skin; facial sweating; dizziness or light-headedness; nausea or vomiting; or sudden, sharp but short-lived pain outside the breastbone. Although women may experience chest pain or discomfort during a heart attack, they are more likely to experience some of the other warning signs and symptoms, particularly shortness of breath; nausea or vomiting; stomach, back or jaw pain; or unexplained fatigue or malaise. When they do experience chest pain. sudden, sharp but short-lived pain outside the breastbone. Cardiac arrest occurs when the heart stops beating or beats too ineffectively to circulate blood to the brain and other vital organs. The primary cause is cardiovascular disease. A person in cardiac arrest is not breathing and has no pulse. It can happen suddenly without any warning signs commonly seen with a heart attack. This condition is called sudden cardiac arrest (SCA) or sudden cardiac death and is caused by abnormal heart rhythms (arrhythmias).
CARE FOR CA	RDIAC EMERGENCIES
KEY POINTS	 Act immediately and summon more advanced medical personnel. Have the patient stop any activity and rest. Loosen any tight or uncomfortable clothing. Closely monitor the patient until more advanced medical personnel take over. Comfort the patient. If the patient answers no to <i>all</i> of the following questions, administration of two to four 81-mg low-dose (162 mg to 324 mg) aspirins or one 5-grain (325-mg) adult aspirin tablet should be considered based on local protocols. Have the patient chew the aspirin completely, which speeds up the absorption of the aspirin into the bloodstream: Are you allergic to aspirin? Do you have a stomach ulcer or stomach disease? Are you taking any blood thinners, such as warfarin (Coumadin[®])? Have you been told by a physician to <i>not</i> take aspirin? Be sure that <i>only</i> aspirin is given and not acetaminophen (e.g., Tylenol[®]) or nonsteroidal anti-inflammatory drugs (NSAIDs) such as ibuprofen (e.g., Motrin[®] or Advil[®]) and naproxen (e.g., Aleve[®]). Coated aspirin may be administered as long as the patient completely chews the aspirin. Assist the patient with their prescribed medication and administer supplemental oxygen if the patient is hypoxic and it is available, according to local protocols.

ACTIVITY	 Using the following scenario, ask participants to identify actions that would be appropriate for this patient: Upon arriving at the home of a patient who is sitting on the ground near her vegetable garden, you are approached by the patient's husband, who says that he called 9-1-1 because she started complaining of shortness of breath. "We were working out here in the garden for a couple of hours, trying to get it ready for planting, when all of a sudden she got really nauseated and started to feel really tired. Then she said she felt this sudden, sharp pain in her chest and had trouble catching her breath." 	
	 Instructor's Note: Responses should include: Asking open-ended questions to obtain information about the patient's pain in her own words and to help determine if the pain is suggestive of a heart attack. Gathering a brief history for possible underlying cardiovascular disease. Taking immediate action, including summoning more advanced medical personnel. Positioning the patient for comfort and ease of breathing. Assisting with prescribed medications, if any, and giving aspirin if the patient can swallow, has no known contraindications or has not been told by a healthcare provider to not take aspirin. Closely monitoring the patient until more advanced medical personnel take over. 	
CARDIAC CH/	AIN OF SURVIVAL	
KEY POINTS	 The five links in the Adult Cardiac Chain of Survival are: 1. Recognition of a cardiac emergency and activation of the emergency response system. The sooner more advanced medical personnel are called, the sooner EMS personnel will respond and provide care to the patient. 2. Early CPR. CPR helps supply blood containing oxygen to the brain and other vital organs to help prevent brain damage and death. 3. Early defibrillation. An electrical shock called defibrillation may help restore an effective heart rhythm and significantly increase the patient's chance for survival. 4. Advanced life support. Advanced medical personnel can provide the proper tools and medication needed to continue the lifesaving care. 5. Integrated post-cardiac arrest care. Integrated care to optimize ventilation and oxygenation and treat hypotension immediately after the return of spontaneous circulation (ROSC). Each link depends on and is connected to the other links. The bystander is the first link in the chain. For each minute CPR and defibrillation are delayed, the patient's chance of survival is reduced between 7 and 10 percent. The five links in the Pediatric Cardiac Chain of Survival are: Prevention of arrest. Early high-quality CPR. Rapid activation of the EMS system or response team to get help on the way quickly—no matter the patient's age. Pediatric advanced life support. Integrated post-cardiac arrest care. 	

WRAP-UP	Time: 10 minutes	
ACTIVITY Course Presentation Slide 233	 Review the opening scenario with the following additional information: You suspect that the 50-year-old man with severe chest pressure is having a heart attack and you call for more advanced medical personnel. Ask participants: "What signs and symptoms would lead you to suspect that the patient is having a heart attack?" "What body systems are most likely involved?" 	
	 Instructor's Note: Responses should include: Signs and symptoms, such as severe chest pressure radiating to the shoulder that does not go away, sweating, difficulty breathing and anxiety. Body systems involved include the circulatory system (due to the patient's chest pain), respiratory system (due to the patient's rapid breathing), integumentary system (due to the patient's sweating) and the autonomic nervous system (sympathetic nervous system due to the patient's anxiety level and sweating). 	
KEY POINTS	 Cardiovascular disease is the number-one killer in the United States. It is a common cause of CHD and stroke. CHD is a major health problem in the United States. The key to saving the life of a patient having a heart attack is early recognition of the signs and symptoms of a heart attack, including chest discomfort, pressure or pain that does not go away or comes and goes and difficulty breathing. Cardiac arrest occurs when the heart stops beating or beats too ineffectively to circulate blood to the brain and other vital organs. Brain damage can begin in about 4 to 6 minutes, and the damage can become irreversible after about 10 minutes from lack of oxygen. The Cardiac Chain of Survival requires recognition of a cardiac emergency and activation of the emergency response system, early CPR, early defibrillation, advanced life support and integrated post-cardiac arrest care. 	
ASSIGNMENT FOR THE NEXT LESSON	 Read Chapter 13, Circulation and Cardiac Emergencies, pages 304–335. 	
INSTRUCTOR PREPARATION	 Review Chapter 13, Circulation and Cardiac Emergencies, pages 304–335. Review the video segments, "CPR—Adult and Child" (6:17), "CPR—Infant" (2:48), "Two-Responder CPR—Adult and Child" (3:15), "Two-Responder CPR—Infant" (2:15) and "Using an AED—Adult, Child and Infant" (3:23). Review the skills and obtain any necessary equipment and supplies for Lesson 20. 	

ENRICHMENT: PREVENTING CORONARY HEART DISEASE

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	CHD develops slowly with a buildup of cholesterol on the inner walls of the arteries, causing them to become narrower and reducing the amount of oxygen-rich blood flowing to the heart.
Course Presentation	It is possible to slow the progress of cardiovascular disease by making lifestyle changes.
Slides 234–235	 Risk factors increase a person's chance of developing cardiovascular disease.
	Some cannot be changed, such as age, gender, ethnicity and family history.
	 African American and Native American/American Indian populations statistically have higher rates of heart disease than do other U.S. populations.
	 A family history of heart disease also increases the risk.
	Risk factors that can be changed include:
	• Smoking.
	 Uncontrolled high blood cholesterol.
	 Uncontrolled high blood pressure.
	 Uncontrolled diabetes.
	 Lack of regular exercise.

CPR AND AUTOMATED EXTERNAL DEFIBRILLATION

Lesson Length: 145 minutes

MATERIALS, EQUIPMENT AND SUPPLIES

- Emergency Medical Response textbook
- Course Presentation Slides 236–253
- LCD projector, screen and computer
- Emergency Medical Response DVD
- DVD player and monitor
- Disposable latex-free gloves (multiple sizes) and other personal protective equipment (PPE), as indicated
- Adult and infant manikins (one for every two participants; child manikins *optional* but must accommodate anterior/posterior pad placement)
- Decontamination supplies
- Resuscitation masks (adult and pediatric; one for each participant)
- Newsprint and markers
- Automated external defibrillator (AED) training devices (one for every two participants)
- Adult AED training pads (one for every two participants)
- Pediatric AED training pads (one for every two participants)

LESSON OBJECTIVES

Knowledge

After completing this lesson, participants will be able to:

- Describe the skill components of CPR.
- List the steps of one-responder CPR for an adult, a child and an infant.
- Explain when it is appropriate to stop performing CPR.
- Describe how to perform two-responder CPR for an adult, a child and an infant.
- Define defibrillation and describe how it works.
- Identify the abnormal heart rhythms commonly present during cardiac arrest.
- Describe the role and importance of early defibrillation in cardiac arrest.
- List the general steps for using an automated external defibrillator (AED).
- Identify precautions for using an AED.
- Identify special situations that may arise when using an AED.

Skill

After completing this lesson, participants will be able to:

- Demonstrate one-responder CPR for an adult, a child and an infant.
- Demonstrate two-responder CPR for an adult, a child and an infant.
- Demonstrate how to use an AED for adult and pediatric patients in cardiac arrest.

TOPIC: INTRODUCTION

Time: 5 minutes

ACTIVITY Course Presentation Slides 237–238	 Review the opening scenario: A man suddenly collapses. He is lying on the floor and does not appear to be moving. You, as a police officer trained in emergency medical response, recogniz the emergency, activate the emergency response plan and perform a primary assessment. The emergency medical services (EMS) system has been activated You determine that the man is unresponsive; has no severe, life-threatening bleeding; is not breathing normally and does not have a pulse. You have an automated external defibrillator (AED) in your patrol car. Ask participants: "How would you respond?" 	
	Instructor's Note: Let participants provide responses, guiding them to important areas related to initiating CPR and using an AED, including ensuring the patient is on a firm, flat surface and providing artificial ventilations and external chest compressions.	
	 Tell participants: "CPR circulates blood that contains oxygen to the vital organs of a patient in cardiac arrest when the heart and normal breathing have stopped. CPR includes chest compressions and ventilations as well as the use of an AED." Stress the need for immediately summoning more advanced medical personnel and getting an AED as critical for the patient's survival. 	

TOPIC: HIGH-QUALITY CPR

Time: 10 minutes

KEY POINTS	 To ensure optimal patient outcomes, high-quality CPR must be performed. You can ensure high-quality CPR by providing high-quality chest compressions, making sure that the: Patient is on a firm, flat surface.
Course Presentation Slides 239–240	 Chest is exposed to ensure proper hand placement and the ability to visualize chest recoil.
011003 200 240	• Hands are correctly positioned, with the heel of one hand in the center of the chest on the lower half of the sternum with the other hand on top.
	 Arms are as straight as possible, with the shoulders directly over the hands. Locking elbows will help maintain straight arms.
	 Compressions are given at the correct rate of at least 100 per minute to a maximum of 120 per minute, and at the proper depth of at least 2 inches, but no more than 2.4 inches for an adult to
	 promote adequate circulation. For smaller children, you may need to compress the chest with only one hand. Ensure you are able to compress the chest about 2 inches.
	 Chest must be allowed to fully recoil between each compression. Chest compressions increase the level of pressure in the chest cavity, squeezing the heart and simulating a contraction that causes oxygenated blood to circulate through the arteries to the brain and other vital organs.
	 Artificial ventilation is a way of forcing air into the lungs of a patient who is not breathing. There are several different mechanisms: Mouth-to-mask ventilations
	 Bag-valve-mask (BVM) resuscitator
	 Mouth-to-mouth ventilations if a BVM or a pocket mask are not available

When giving ventilations during CPR, if the chest does not rise after the first breath, reopen the airway, make a seal and try a second breath.
 If the breath is not successful, move directly back to compressions and check the airway for an obstruction before attempting subsequent ventilations.
 If an obstruction is found, remove it and attempt ventilations.
• NEVER perform a blind finger sweep.
CPR is delivered in cycles of 30 chest compressions and 2 ventilations.
 Minimize interruptions of chest compressions. If CPR must be interrupted, it should only be for no more than 10 seconds to deliver ventilations or allow an AED to analyze.
 CPR may be one-responder CPR or two-responder CPR. Certain components are the same regardless of the number of responders present.
If a patient has an advanced airway in place such as an endotracheal tube, two responders are needed and should no longer use the 30:2 ratio.
\circ The first responder gives one ventilation about every 6 seconds.
 The second responder provides continuous compressions at a rate of 100 to 120 compressions per minute.
For a suspected drowning patient of any age, prior to starting CPR, responders should deliver 2 initial ventilations if there is no normal breathing or only gasping and no pulse.
Once you have started providing CPR to an adult, continue with 30 compressions followed by 2 ventilations (1 cycle = 30:2) until:
 You see signs of return of spontaneous circulation (ROSC) such as patient movement or normal breathing.
• An AED is ready to analyze the patient's heart rhythm.
 Other trained responders take over and relieve you from compression or ventilation responsibilities.
 You are presented with a valid do not resuscitate (DNR) order.
 You are alone and too exhausted to continue.
 The scene becomes unsafe.
When a child or infant has no normal breathing and a pulse less than
or equal to 60 beats per minute, compressions should be added when there are signs of poor perfusion.

TOPIC: ONE-RESPONDER CPR

Time: 30 minutes

KEY POINTS
 When performing one-responder CPR on an adult patient, the lone responder is responsible for conducting the scene size-up and the primary assessment and for performing all the steps of CPR including the use of the AED, if available.
 CPR can be exhausting, and attempts should be made to find additional resources as early as possible during the scene size-up.

SKILL SESSION

CPR—ADULT AND CHILD

ACTIVITY

Instructor's Note:

- You may choose either method below, depending on the experience of the participants and whether your training facility can accommodate the Practice-While-You-Watch method, which requires adequate practice space and a monitor large enough for everyone to see clearly.
- Inform participants that they need only to demonstrate adult CPR and be able to point out the differences for performing CPR on a child, such as compressing the chest to a depth less than that for an adult.
- Inform participants that the skill sheets from the Basic Life Support for Healthcare Providers program have been incorporated into their textbook for this lesson.

Practice-While-You-Watch

- Ask participants to take their textbooks, disposable latex-free gloves and resuscitation masks with them to the practice area.
- Explain to participants that for this skill, they will follow along with and practice the steps for performing CPR as they are guided by the video using a manikin, disposable latex-free gloves and a resuscitation mask.
- Show the video segment, "CPR—Adult and Child" (6:17).
- Do not interrupt this skill practice to lecture or communicate anything other than guidance related to skill practice. In general, answering questions should occur after the video segment (and skill practice) has ended.
- Observe participants performing the technique and evaluate completion of the skill using the Skill Checklist.
- Be sure to point out any common errors, such as compressions that are too shallow or too deep, interrupting compressions for too long or too frequently, incorrect hand position, failure to allow full recoil after each compression or inappropriate rate of compressions.
- Ensure that participants disinfect the manikins for any skill that requires use of a resuscitation mask.
- Check off participant's progress on the Participant Progress Log.

Watch-Then-Practice

- Tell participants to watch the video segment until you pause the video, even though the narration may say to follow along.
- After the video segment, tell them to practice the skill using a manikin, disposable latex-free gloves and resuscitation mask.
- If there is a 2:1 ratio of participants to manikins, partners should be instructed to follow along with the skill sheet and observe the other person practicing the skill.
- Show the video segment, "CPR—Adult and Child" (6:17).
- Initially guide participants through the steps listed on the skill chart and then encourage them to practice independently without assistance.
- Observe participants performing the technique and evaluate completion of the skill using the Skill Checklist. Intervene and provide positive and corrective feedback as needed to each participant individually when possible.
- Be sure to point out any common errors, such as compressions that are too shallow or too deep, interrupting compressions for too long or too frequently, incorrect hand position, failure to allow full recoil after each compression or inappropriate rate of compressions.
- Ensure that participants disinfect the manikins for any skill that requires use of a resuscitation mask.
- Check off participant's progress on the Participant Progress Log.

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SKILL	Note: Ensure that the patient is on a firm, flat surface.
	After sizing up the scene, forming a general impression, following standard precautions, performing a primary assessment and determining that the patient is not breathing and does not have a pulse:
	1. Find the correct hand position to give chest compressions.
	 Place the heel of one hand on the center of the exposed chest on the lower half of the sternum.
	 Place the other hand on top interlacing the fingers to keep them off the chest.
	2. Give 30 chest compressions.
	 Keep fingers off the chest when compressing.
	 Use body weight, not arms, to compress the chest.
	 Arms are as straight as possible, with the shoulders directly over the hands. Push hard, push fast.
	 Compress the chest at the depth of at least 2 inches for an adult and about 2 inches for a child.
	 Compressions are given at the rate of at least 100 per minute to a maximum of 120 per minute.
	 Let the chest completely recoil before pushing down again.
	 Counting out loud helps keep an even pace.
	3. Place the resuscitation mask and give 2 ventilations.
	 Allow each ventilation to last about 1 second.
	 Each ventilation should make the chest begin to rise.
	4. Perform cycles of 30 chest compressions and 2 ventilations.
	5. Do not stop CPR except in one of these situations:
	 You see signs of return of spontaneous circulation (ROSC).
	 An AED is ready to analyze the patient's heart rhythm.
	 Other trained responders take over and relieve you from compression or ventilation responsibilities.
	 You are presented with a valid do not resuscitate (DNR) order.
	 You are alone and too exhausted to continue.
	 The scene becomes unsafe.

SKILL SESSION

CPR-INFANT	
ACTIVITY	Instructor's Note: You may choose either method below, depending on the experience of the participants and whether your training facility can accommodate the Practice-While-You-Watch method, which requires adequate practice space and a monitor large enough for everyone to see clearly.
	 Practice-While-You-Watch Ask participants to take their textbooks, disposable latex-free gloves and resuscitation masks with them to the practice area. Explain to participants that for this skill, they will follow along with and practice the steps for performing CPR as they are guided by the video using a manikin, disposable latex-free gloves and a resuscitation mask. Show the video segment, "CPR—Infant" (2:48).

	 Do not interrupt this skill practice to lecture or communicate anything other than guidance related to skill practice. In general, answering questions should occur after the video segment (and skill practice) has ended. Observe participants performing the technique and evaluate completion of the skill using the Skill Checklist. Be sure to point out any common errors, such as compressions that are too shallow or too deep, interrupting compressions for too long or too frequently, incorrect hand and finger position, failure to allow full recoil after each compression or inappropriate rate of compressions. Ensure that participants disinfect the manikins for any skill that requires use of a resuscitation mask. Check off participant's progress on the Participant Progress Log.
	Watch-Then-Practice
	 Tell participants to watch the video segment until you pause the video, even though the narration may say to follow along. After the video segment, tell them to practice the skill using a manikin,
	disposable latex-free gloves and a resuscitation mask.
	 If there is a 2:1 ratio of participants to manikins, partners should be instructed to follow along with the skill sheet and observe the other person practicing the skill. Show the video segment, "CPR—Infant" (2:48).
	 Initially guide participants through the steps listed on the skill chart and then encourage them to practice independently without assistance.
	 Observe participants performing the technique and evaluate completion of the skill using the Skill Checklist. Intervene and provide positive and corrective feedback as needed to each participant individually when possible.
	 Be sure to point out any common errors, such as compressions that are too shallow or too deep, interrupting compressions for too long or too frequently, incorrect hand and finger position, failure to allow full recoil after each compression or inappropriate rate of compressions. Ensure that participants disinfect the manikins for any skill that requires use of a
	 resuscitation mask. Check off participant's progress on the Participant Progress Log.
SKILL	
	Note: Place the infant on their back on a firm, flat surface, such as the floor or a table. After sizing up the scene, forming a general impression, following standard precautions, performing a primary assessment and determining the patient is not breathing and does not have a pulse:
	1. Find the correct hand position to give chest compressions.
	 Place two fingers on the center of the chest, parallel to the sternum just below the nipple line.
	Keep one hand on the infant's forehead to maintain an open airway.Give 30 chest compressions.
	 Push hard, push fast.
	 Compress the chest about 1½ inches for an infant.
	 Compressions are given at the rate of at least 100 per minute to a maximum of 120 per minute.
	Let the chest completely recoil before pushing down again.
	 Counting out loud helps keep an even pace. Place the requesitation mark and give 2 ventilations
	 Place the resuscitation mask and give 2 ventilations. Allow each ventilation to last about 1 second.
	 Provide ventilations that make the chest begin to rise.

4. Perform cycles of 30 chest compressions and 2 ventilations.
5. Do not stop CPR except in one of these situations:
 You see signs of return of spontaneous circulation (ROSC).
 An AED is ready to analyze the patient's heart rhythm.
 Other trained responders take over and relieve you from compression or ventilation responsibilities.
 You are presented with a valid do not resuscitate (DNR) order.
 You are alone and too exhausted to continue.
• The scene becomes unsafe.

TWO-RESPONDER CPR

Time: 40 minutes

KE	Y POINTS	 Two-responder CPR is used when an additional responder is available. Use two-responder CPR when:
6		 Two responders arrive on the scene at the same time and begin CPR together.
Pre	urse esentation	 One responder is performing CPR and a second responder becomes available.
SI	des 242–244	A second responder, when arriving on the scene where CPR already is in progress, does the following:
		 Confirms whether more advanced medical personnel have been summoned. If not, the second responder does so before assisting with care
		 Obtains and prepares the AED, if available Assists with CPR
		The ratio of chest compressions to ventilations for two-responder CPR for an adult is 30 chest compressions to 2 ventilations; for a child and an infant, the ratio is 15 chest compressions to 2 ventilations.
		Responders should change position by using an agreed-upon term at the beginning of the last compression cycle. The change in position should occur:
		 About every 2 minutes. When the AFD is ready to enclure
		 When the AED is ready to analyze. Changing positions can reduce responder fatigue, which can improve the quality of CPR.
		 When two responders are caring for an infant in cardiac arrest, the positioning of the responders and the method of performing chest compressions differ from that of an adult or child.
		 The responder performing chest compressions will be positioned at the infant's feet while the responder providing ventilations will be at the infant's head.
		 Compressions are delivered using the encircling thumbs technique. To provide compressions using this technique:
		 Place both thumbs on the center of the infant's chest side-by- side, just below the nipple line.
		 Have the other fingers encircling the infant's chest toward the back, providing support.
		 While positioned at the infant's head, the responder providing ventilations will open the airway using two hands and seal the mask using the E-C technique.
		 With two responders, the ratio of compressions to ventilations changes

DVD	
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- Show the video segments, "Two-Responder CPR—Adult and Child" (3:15) and "Two-Responder CPR—Infant" (2:15).
- Answer participants' questions about the video segments.

SKILL SESSION

TWO-RESPONDER CPR—ADULT AND CHILD	
ACTIVITY	 Ask participants to take their textbooks, disposable latex-free gloves and resuscitation masks with them to the practice area.
	 Divide participants into pairs and guide participants through the steps listed on the skill chart.
	 Have the pairs demonstrate how to perform two-responder CPR on the manikins.
	 Tell participants that they need to demonstrate adult CPR but can point out the differences for performing two-responder CPR on a child.
	 Observe each pair performing the technique and evaluate completion of the skill using the Skill Checklist.
	Be sure to point out any common errors, such as compressions that are too shallow or too deep, interrupting compressions for too long or too frequently, incorrect hand position, failure to allow full recoil after each compression or inappropriate rate of compressions.
	Ensure that participants disinfect the manikins for any skill that requires use of a resuscitation mask.
	Check off participant's progress on the Participant Progress Log.
SKILL	Note: Ensure that the patient is on a firm, flat surface.
	After Responder 1 sizes up the scene, forms a general impression, follows standard precautions, performs a primary assessment and determines the patient is not breathing and does not have a pulse:
	1. Responder 2 finds the correct hand position to give chest compressions.
	 Place the heel of one hand on the center of the exposed chest on the lower half of the sternum.
	 Place the other hand on top interlacing the fingers to keep them off the chest.
	2. When Responder 1 determines that there is no normal breathing and no pulse and says, "Patient has no pulse. Begin CPR," Responder 2 provides 30 chest compressions at the correct depth and rate.
	 Keep fingers off the chest when compressing.
	 Use body weight, not arms, to compress the chest.
	 Arms are as straight as possible, with the shoulders directly over the hands. Push hard, push fast.
	 Compress the chest at the depth of at least 2 inches for an adult and about 2 inches for a child.
	 Compressions are given at the rate of at least 100 per minute to a maximum of 120 per minute.
	Let the chest completely recoil before pushing down again.Counting out loud helps keep an even pace.

:	3. Responder 1 places the resuscitation mask and gives 2 ventilations.
	 Allow each ventilation to last about 1 second.
	 Each ventilation should make the chest begin to rise.
.	4. Responders 1 and 2 perform about 2 minutes of compressions and ventilations.
	 Use cycles of 30 chest compressions and 2 ventilations for an adult.
	 Use cycles of 15 chest compressions and 2 ventilations for a child.
-	5. Responders 1 and 2 change positions.
	 Responder 2 calls for position change using an agreed-upon term at the beginning of the last compression cycle such as "change and 2 and 3 and 4"
	 Responder 1 gives 2 ventilations.
	 Responder 2 quickly moves to patient's head with their own mask.
	 Responder 1 quickly moves into position at patient's chest, locating the correct hand position.
	 The position change is completed in less than 10 seconds.
	6. Responder 1 gives chest compressions.
	• Responders 1 and 2 continue cycles of chest compressions and ventilations.
	7. Do not stop CPR except in one of these situations:
	 You see signs of return of spontaneous circulation (ROSC).
	 An AED is ready to analyze the patient's heart rhythm.
	 Other trained responders take over and relieve you from compression or ventilation responsibilities.
	 You are presented with a valid do not resuscitate (DNR) order.
	• The scene becomes unsafe.

SKILL SESSION

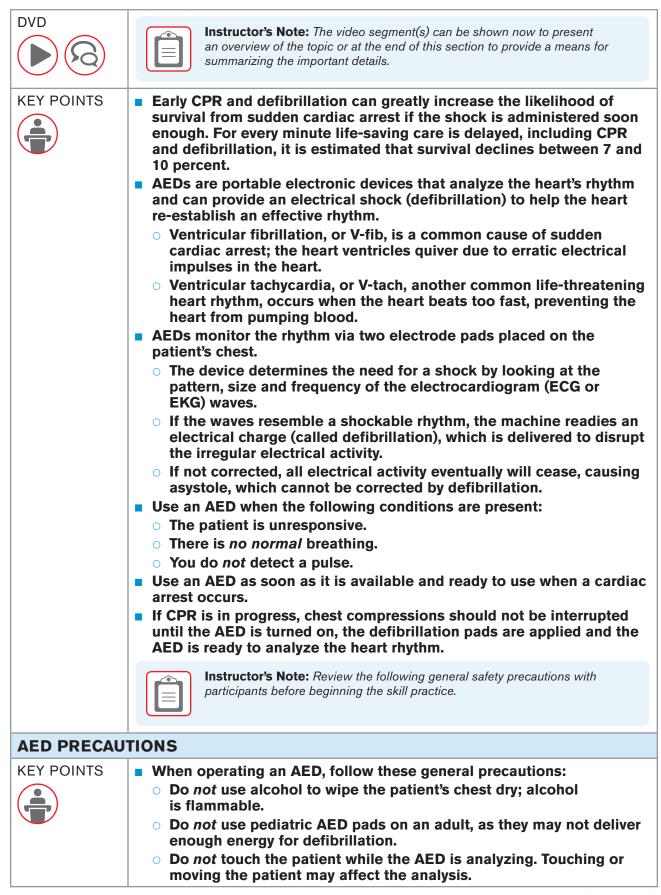
TWO-RESPOR	TWO-RESPONDER CPR—INFANT	
ACTIVITY	 Ask participants to take their textbooks, disposable latex-free gloves and pediatric resuscitation masks with them to the practice area. Divide participants into pairs and guide pairs through the steps listed on the skill chart. Have the pairs demonstrate how to perform two-responder CPR on the manikins. Observe each participant performing the technique and evaluate completion of the skill using the Skill Checklist. Be sure to point out any common errors, such as compressions that are too shallow or too deep, interrupting compressions for too long or too frequently, incorrect hand position, failure to allow full recoil after each compression or inappropriate rate of compressions. 	
	 Ensure that participants disinfect the manikins for any skill that requires use of a resuscitation mask. 	
	Check off participant's progress on the Participant Progress Log.	

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SKILL	Note: Place the infant manikin on its back on a firm, flat surface, such as the floor or a table.
	After Responder 1 sizes up the scene, forms a general impression, follows standard precautions, performs a primary assessment and determines the patient is not breathing normally and does not have a pulse:
	1. Responder 2 finds the correct hand position to give compressions.
	 Place both thumbs on the center of the infant's chest side by side, just below the nipple line.
	 Have the other fingers encircling the infant's chest toward the back, providing support.
	 When Responder 1 determines that there is no normal breathing and no pulse and says, "Infant has no pulse. Begin CPR," Responder 2 gives 15 chest compressions.
	 Push hard, push fast.
	 Compress the chest about 1½ inches for an infant.
	 Compressions are given at the rate of at least 100 per minute to a maximum of 120 per minute.
	 Let the chest completely recoil before pushing down again.
	 Counting out loud helps keep an even pace.
	3. Responder 1 places the resuscitation mask and gives 2 ventilations.
	 Allow each ventilation to last about 1 second.
	 Provide ventilations that make the chest begin to rise.
	4. Responders 1 and 2 perform cycles of 15 compressions and 2 ventilations.
	5. Responders 1 and 2 change positions.
	 Responder 2 calls for position change using an agreed-upon term at the beginning of the last compression cycle.
	 Responder 1 gives 2 ventilations.
	 Responder 2 quickly moves to patient's head with their own mask.
	 Responder 1 quickly moves into position at patient's chest, locating the correct hand position.
	 The position change is completed in less than 10 seconds.
	6. Responder 1 gives chest compressions.
	 Responder 1 and Responder 2 continue cycles of 15 chest compressions and 2 ventilations.
	7. Do not stop CPR except in one of these situations:
	 You see signs of return of spontaneous circulation (ROSC).
	 An AED is ready to analyze the patient's heart rhythm.
	 Other trained responders take over and relieve you from compression or ventilation responsibilities.
	 You are presented with a valid do not resuscitate (DNR) order.
	 The scene becomes unsafe.

TOPIC: AUTOMATED EXTERNAL DEFIBRILLATION

Time: 20 minutes

Course Presentation Slides 245–249	Show the video segment, "Using an AED—Adult, Child and Infant" (3:23).
	Answer participants' questions about the video segment.



 Before shocking a patient with an AED, make sure that no one is touching or is in contact with the patient or the resuscitation equipment.
 Do not touch the patient while defibrillating. You or someone else could be shocked.
 Do not defibrillate someone when around flammable or combustible materials such as gasoline or free-flowing oxygen.
 Do not use an AED in a moving vehicle. Movement may affect the analysis.
 Do not use an AED on a patient who is in contact with freestanding water. Move the patient away from puddles of water or swimming pools, or out of the rain, before defibrillating.
 Do not use an AED on a patient wearing a nitroglycerin patch or other medication patch on the chest. With a gloved hand, remove any patches from the chest before attaching the defibrillation pads.

SKILL SESSION

AED—ADULT,	CHILD AND INFANT
ACTIVITY	 Ask participants to take their textbooks, disposable latex-free gloves and resuscitation masks with them to the practice area. Divide participants into pairs and guide pairs through the steps listed on the skill chart. Have each participant demonstrate how to use an AED on the manikins while the partner uses the workbook or textbook to give feedback. Tell participants that they need to demonstrate how to use an AED either on an adult, a child or an infant. They do not need to demonstrate on all three. Instead, they can point out the differences for using an AED on the other patients. Observe each participant performing the technique and evaluate completion of the skill using the Skill Checklist.
	 Be sure to point out any common errors, such as not wiping the patient's chest, using pediatric pads on an adult or failing to resume CPR after a shock is delivered. Ensure that participants disinfect the manikins for any skill that requires use of a resuscitation mask. Check off participant's progress on the Participant Progress Log.
SKILL	 Note: Always follow standard precautions when providing care. Size up the scene for safety, form a general impression and then perform a primary assessment. If the patient is not breathing and has no pulse: 1. Turn on the AED and follow the voice and/or visual prompts. 2. Wipe the patient's chest dry if necessary. Remove any medication patches with a gloved hand. 3. Attach the AED pads to the patient's bare chest. Place one pad on the patient's upper right chest and other pad on the left side of the chest. For a child or an infant: Use pediatric AED pads if available. If the pads risk touching each other, use anterior/posterior pad placement. Place one pad in the middle of the chest and the other pad on the back, between the scapulae.

4. Plug in the connector, if necessary.
5. Make sure <i>no one</i> , including you, is touching the patient.
 Say, "Stand clear."
6. Push the "analyze" button, if necessary.
 Let the AED analyze the heart rhythm.
7. Deliver a shock or perform CPR based on the AED recommendation.
 If a shock is advised:
 Make sure no one, including you, is touching the patient.
 Say, "Stand clear."
 Deliver the shock by pushing the "shock" button, if necessary.
 After delivering the shock, perform about 2 minutes of CPR.
 If no shock is advised:
Perform about 2 minutes of CPR.
Note: Stop performing CPR and monitor the victim's condition if at any time you notice signs of return of spontaneous circulation (ROSC), such as normal breathing or movement.

TOPIC: SPECIAL AED SITUATIONS

Time: 5 minutes

KEY POINTS	 Certain situations require special attention when using an AED. These include:
	 Patients with pacemakers and implantable cardioverter- defibrillators (ICDs).
Course Presentation	 Do not place defibrillation pads directly over the devices.
Slide 250	 Be aware of possible mild shock to the responder if an implantable ICD delivers a shock to a patient while CPR is being performed.
	 Never delay in delivering CPR and defibrillation shocks from an AED if a patient has an ICD.
	 Patients in water or a wet environment, such as those with wet clothing or who are wet from rain.
	 Remove the patient from freestanding water and ensure that no puddles of water are surrounding the patient or yourself.
	• Remove any wet clothing and dry the patient's chest.
	• Shelter the patient from rain.
	• Patients using transdermal (skin) medication patches.
	 Remove medication from the patient's chest using a gloved hand to reduce risk of drug absorption.
	 Never place AED pads directly on top of medication patches.
	 Patients with hypothermia.
	 Follow local protocols as to whether an AED should be used.
	 Do not withhold CPR or defibrillation to rewarm the patient.
	• Patients with trauma.
	 Administer defibrillation shocks according to local protocols.
	 Use an AED if a patient is in cardiac arrest resulting from traumatic injuries.

 Patients with chest hair.
 Use firm pressure to apply the pads.
 If "check pads" message appears, remove pads. If "check pads" message continues, remove pads, shave the patient's chest and attach new pads.
 Use care not to cut the patient while shaving because cuts and scrapes can interfere with rhythm analysis.
 Patients with jewelry and body piercings.
 Do not delay use of an AED to remove jewelry or body piercings.
• Do not place pads directly over metallic jewelry or body piercings.

TOPIC: HIGH PERFORMANCE CPR

Time: 10 minutes

KEY POINTS Course Presentation Slide 251	 High-performance CPR refers to providing high-quality chest compressions as part of a well-organized team response to a cardiac arrest. Coordinated, efficient, effective teamwork is essential to minimize the time spent not in contact with the chest to improve patient outcomes.
ACTIVITY	 Ask participants: "Which activities could affect your ability to maintain contact with the patient's chest?" Instructor's Note: Responses should include: AED pads are applied. AED must charge. Pocket mask or BVM may need to be repositioned. Airway may need to be reopened. Other personnel arrive on scene. Responders switch positions.
	 Advanced airway may need to be inserted. Pulse checks may be done, but unnecessarily.

TOPIC: CHEST COMPRESSION FRACTION

Time: 5 minutes

KEY POINTS	 Chest compression fraction, or CCF, is the term used to denote the proportion of time that chest compressions are performed. Expert consensus identifies a CCF of at least 60 percent to promote optimal outcomes, with a goal of 80 percent.
Course Presentation Slides 252	To achieve the best CCF percentage, a coordinated team approach is needed, with each member assuming pre-assigned roles, anticipating the next action steps for themselves and other team members.
	 This coordinated team approach also includes integrating and assimilating additional personnel, such as paramedics or a code team, who arrive on scene.
	• Based on available resources, potential roles include the following:
	• Team leader
	Compressor
	Responder managing the airway

Responder providing ventilations

- Responder managing the AED
- Recorder

Keep in mind that there are no national protocols in place for highperformance CPR. How you function within a team setting, including how additional personnel assimilate into the team, may vary depending on your local protocols or practice.

TOPIC: INTEGRATION OF MORE ADVANCED PERSONNEL

Time: 5 minutes

	1
KEY POINTS	 During resuscitation, numerous people may be involved in providing care to the patient. Responders must work together as a team in a coordinated effort to achieve the best outcomes for the patient. Characteristics of effective teamwork include: Well-defined roles and responsibilities. Clear closed-loop communication. Respectful treatment of others.
	-
	Coordination becomes even more important when more advanced medical personnel, such as an advanced life support team or code team, arrive on the scene. This coordination of all involved is necessary to:
	• Ensure that all individuals involved work as a team to help promote the best outcome for the patient.
	 Promote effective perfusion to the vital organs.
	 Minimize interruptions of chest compressions, which have been shown to improve survival.
	Ultimately, it is the team leader who is responsible for this coordination. When more advanced medical personnel arrive on scene, it is the team leader who communicates with advanced medical personnel, providing them with a report of the patient's status and events.
	The team leader also sets clear expectations, prioritizes, directs, acts decisively, encourages team input and interaction and focuses on the big picture.

TOPIC: CREW RESOURCE MANAGEMENT

Time: 5 minutes

KEY POINTS	 During resuscitation, crew resource management helps to promote effective and efficient teamwork.
	The team leader directs and coordinates all the working elements, including team members, activities and actions, as well as equipment, to focus on providing high-quality CPR, the goal of any resuscitation effort.
	Crew resource management also guides team members to directly and effectively communicate to a team leader about dangerous or time- critical decisions.
	Crew resource management has been shown to help avoid medical errors in healthcare.
	To effectively communicate via crew resource management, team members should get the attention of the team leader to:
	 State their concern, the problem as they see it and a solution.
	 Obtain direction from the team leader.

WRAP-UP

ACTIVITY Course Presentation Slide 253	 Review the closing scenario: The man who collapsed is unconscious, is not breathing normally and does not have a pulse. He has no severe, life-threatening bleeding. You send another responder to summon more advanced medical personnel and to bring the AED. You begin CPR. Once the AED arrives, the other responder prepares the AED for use. Ask participants: "How would you respond?" "When can you stop performing CPR?"
	 Instructor's Note: Responses should include: Continue performing CPR until the other responder is ready to use the AED, then continue with cycles of AED use and CPR. Continue performing CPR unless another trained responder or more advanced medical personnel take over care; the scene becomes unsafe; you see signs of life, such as breathing; a valid DNR order is presented or you become too exhausted to continue.
	Instructor's Note: <i>Emphasize the need for starting CPR immediately for a patient who is unconscious, not breathing and has no pulse.</i>
KEY POINTS	 Chest compressions should be given fast, smooth and deep. The chest should fully recoil or return to its normal position after each compression. Any interruptions of chest compressions must be minimized. Once CPR has been started, do not stop except in one of these situations: you see an obvious sign of life, such as breathing; an AED is ready to use; another trained responder takes over; more advanced medical personnel take over; you are presented with a valid DNR order; you are too exhausted to continue or the scene becomes unsafe. Use two-responder CPR when two responders are available. With two-responder CPR, change positions approximately every 2 minutes to minimize responder fatigue. The two most common treatable abnormal rhythms initially seen in patients suffering sudden cardiac arrest are V-fib and V-tach. AEDs are portable electronic devices that analyze the heart's rhythm and provide an electrical shock to the heart to disrupt the electrical activity of V-fib and V-tach long enough to allow the heart to re-establish an effective rhythm on its own. An AED is used as soon as one becomes available because the sooner the shock is administered, the greater the likelihood of the patient's survival. CPR should be resumed immediately after a shock is delivered or when no shock is advised.

ASSIGNMENT FOR THE NEXT LESSON	 Review Chapter 13, Circulation and Cardiac Emergencies. Begin reading Chapter 14, Medical Emergencies.
INSTRUCTOR PREPARATION	 Review Chapter 13, Circulation and Cardiac Emergencies. Review the skills from Lesson 20. Obtain any necessary equipment and supplies for Lesson 21.

SKILL CHECK	(LIST
CPR—Adult and Child	Instructor's Note: The participant must always follow standard precautions when providing care.
	 Participant completes the following: Performs initial actions Sizes up the scene Forms a general impression Ensures that patient is on a firm, flat surface Checks for responsiveness If unresponsive, has someone else summon more advanced medical personnel Determines that the patient is not breathing and does not have a pulse Finds the correct hand position to give chest compressions Places the heel of one hand on the center of the exposed chest on the lower half of the sternum Places the other hand on top Gives 30 chest compressions at the correct depth and rate Keeps fingers off the chest when compressing Uses body weight, not arms to compress the chest Arms are as straight as possible, with the shoulders directly over the hands For an adult, compresses the chest at least 2 inches, but no more than 2.4 inches For a child, compresses the chest about 2 inches Lets the chest completely recoil before pushing down again Compresses at the rate of at least 100 per minute to a maximum of 120 per minute counting out loud to help keep an even pace Replaces the resuscitation mask and provides 2 ventilations Allows each ventilations that make the chest begin to rise Performs cycles of 30 compressions and 2 ventilations Do not stop CPR except in one of these situations: You see signs of return of spontaneous circulation (ROSC). An AED is ready to analyze the patient's heart rhythm. Other trained responders take over and relieve you from compression or ventilation responsibilities. You are presented with a valid do not resuscitate (DNR) order. You are becomes unsafe.

CPR—Infant	Instructor's Note: The participant must always follow standard precautions when providing care.
	 Participant completes the following: Performs initial actions Sizes up the scene Forms a general impression Places the infant on their back on a firm, flat surface, such as the floor or a table Checks for responsiveness If unresponsive, has someone else summon more advanced medical personnel Determines that the infant is not breathing and does not have a pulse Finds the correct hand position to give compressions Places two fingers on the center of the chest, parallel to the sternum just below the nipple line Keeps one hand on the infant's forehead to maintain an open airway Gives 30 chest compressions Compresses the chest about 1½ inches Lets the chest completely recoil before pushing down again Compressions are given at the rate of at least 100 per minute to a maximum of 120, counting out loud to help keep an even pace Replaces the resuscitation mask and gives 2 ventilations Allows each ventilation to last about 1 second Provides ventilations that make the chest begin to rise Performs cycles of 30 compressions and 2 ventilations
Two-Responder	 Do not stop CPR except in one of these situations: You see signs of return of spontaneous circulation (ROSC). An AED is ready to analyze the patient's heart rhythm. Other trained responders take over and relieve you from compression or ventilation responsibilities. You are presented with a valid do not resuscitate (DNR) order. You are alone and too exhausted to continue. The scene becomes unsafe.
Two-Responder CPR—Adult and Child	 Instructor's Note: The participant must always follow standard precautions when providing care. Participant completes the following: Responder 1 performs initial actions Sizes up the scene Forms a general impression Ensures that patient is on a firm, flat surface Responder 1 checks for responsiveness If unresponsive, has someone else summon more advanced medical personnel Responder 1 determines that the patient is not breathing and does not have a pulse

 Responder 2 finds the correct hand position to give compressions Places the heel of one hand on the center of the exposed chest on the lower half of the sternum
Places the other hand on top
When Responder 1 determines that there is no pulse and says, "Patient has no pulse. Begin CPR," Responder 2 gives chest compressions at the correct depth and rate
Keeps fingers off the chest when compressing
Uses body weight, not arms to compress the chest
Arms are as straight as possible, with the shoulders directly over the hands
For an adult, gives 30 compressions, compressing the chest at least 2 inches, but no more than 2.4 inches
For a child, gives 15 compressions, compressing the chest about 2 inches
Lets the chest completely recoil before pushing down again
Compresses at the rate of at least 100 per minute to a maximum of 120 per minute counting out loud to help keep an even pace
Responder 1 replaces the resuscitation mask and gives 2 ventilations
Allows each ventilation to last about 1 second
Gives ventilations that make the chest begin to rise
Responders 1 and 2 perform about 2 minutes of compressions and ventilations
Use cycles of 30 compression and 2 ventilations for an adult
Use cycles of 15 compressions and 2 ventilations for a child
Responders 1 and 2 change positions
Responder 2 calls for position change using an agreed-upon term at the start of the last compression cycle
Responder 1 gives 2 ventilations
 Responder 2 quickly moves to the patient's head with their own mask Responder 1 quickly moves into position at the patient's chest, locating the correct hand position
Responders 1 and 2 complete the position change in less than 10 seconds
Responder 1 gives chest compressions
Responders 1 and 2 continue cycles of compressions and ventilations
Do not stop CPR except in one of these situations:
You see signs of return of spontaneous circulation (ROSC).
An AED is ready to analyze the patient's heart rhythm.
 Other trained responders take over and relieve you from compression or ventilation responsibilities.
You are presented with a valid do not resuscitate (DNR) order.
The scene becomes unsafe.

Two-Responde
CPR-Infant

	Instructor's Note: The participant must always follow standard precautions when providing care.
Pa	rticipant completes the following:
	Responder 1 performs initial actions
	Sizes up the scene
	Forms a general impression
	Places the infant on their back on a firm, flat surface, such as the floor or a table
	Responder 1 checks for responsiveness
	If unresponsive, has someone else summon more advanced medical personnel
	 Responder 1 determines that the infant is not breathing and does not have a pulse
	Responder 2 finds the correct hand position to give compressions
	 Places two thumbs centered on sternum just below the nipple line with fingers encircling chest
	 Places both hands underneath the infant's back and supports the infant's back with fingers
	When Responder 1 determines that there is no pulse and says, "Infant has no pulse, begin CPR," Responder 2 gives 15 chest compressions
	Uses both thumbs to compress the chest about 1½ inches
	Lets the chest completely recoil before pushing down again
	Compressions are given at the rate of at least 100 per minute to a maximu of 120 counting out loud to help keep an even pace
	Responder 1 places the resuscitation mask and gives 2 ventilations
	Allows each ventilation to last about 1 second
	Gives ventilations that make the chest begin to rise
	Responders 1 and 2 perform cycles of 15 compressions and 2 ventilations
	Responders 1 and 2 change positions
	 Responder 2 calls for position change by using an agreed-upon term at th start of the last compression cycle
	Responder 1 gives 2 ventilations
	 Responder 2 moves to the infant's head with own pediatric mask Responder 1 moves into a solition and based on the second statement to be a second statement of the second st
	 Responder 1 moves into position and locates the correct thumb placemen on the infant's chest
	 Responder 1 and Responder 2 complete the position change in less than 10 seconds
	Responder 1 gives chest compressions
	Responder 1 and Responder 2 continue cycles of 15 compressions and 2 ventilations
	Do not stop CPR except in one of these situations:
	 You see signs of return of spontaneous circulation (ROSC).
	An AED is ready to analyze the patient's heart rhythm.
	 Other trained responders take over and relieve you from compression or ventilation responsibilities.
	 You are presented with a valid do not resuscitate (DNR) order.
	The scene becomes unsafe.

AED—Adult, Child and Infant	Instructor's Note: The participant must always follow standard precautions when providing care.
	Participant completes the following:
	Performs initial actions
	Sizes up the scene
	Forms a general impression
	Ensures that the patient is on a firm, flat surface
	Checks for responsiveness
	If unresponsive, has someone else summon more advanced medical personnel
	Determines that the patient is not breathing and does not have a pulse
	Turns on the AED and follows the voice and/or visual prompts
	Wipes the patient's chest dry if necessary
	Removes any medication patches with a gloved hand
	Attaches the AED pads to the patient's bare chest
	Places one pad on the patient's upper right chest and other pad on the left side of the chest
	For a child or an infant, uses pediatric AED pads if available; if the pads risk touching each other, uses anterior/posterior pad placement with one pad in the middle of the chest and the other pad on the back, between the scapulae
	Plugs in the connector, if necessary
	Makes sure no one is touching the patient
	□ Says, "Stand clear."
	Pushes the "analyze" button, if necessary
	Lets the AED analyze the heart rhythm
	Delivers a shock or performs CPR based on the AED recommendation
	□ If a shock is advised:
	Makes sure no one is touching the patient
	Says, "Stand clear."
	Delivers the shock by pushing the "shock" button
	Performs about 2 minutes of CPR
	If no shock is advised:
	Performs about 2 minutes of CPR
	Stops performing CPR and monitors the victim's condition if at any time signs of return of spontaneous circulation (ROSC) are noted



SKILLS REVIEW

Lesson Length: 60 minutes

MATERIALS, EQUIPMENT AND SUPPLIES

- *Emergency Medical Response* textbook
- Skill Checklists for Lesson 20
- Disposable latex-free gloves (multiple sizes) and other personal protective equipment (PPE), as indicated
- Adult and/or child and infant manikins (one for every two participants)
- Decontamination supplies
- Resuscitation masks (adult and pediatric; one for each participant)
- Automated external defibrillator (AED) training devices (one for every two participants)
- Adult AED training pads (one for every two participants)
- Pediatric AED training pads (one for every two participants)

LESSON OBJECTIVES

Skill

After completing this lesson, participants will be able to:

Demonstrate the skills covered in Lessons 19–20.

TOPIC: INTRODUCTION

Time: 5 minutes

ACTIVITY	 Explain that the participants will be divided into pairs or small groups to practice the skills at various stations around the room. Emphasize that the partners or groups should work together and rotate through the stations. Tell participants that they may need to assume the role of a second responder, bystander or family member(s), as necessary. Encourage participants to bring their textbooks to the various practice stations and to practice all of the skills at each station. Tell participants that you will be walking around to the various stations, observing their skills, asking them questions and answering any questions that they may have.
	 Instructor's Note: At each of the stations, observe the participants performing the skills. Provide feedback and guidance as necessary. During observation, use the skill checklists to assist in evaluating the participant's competency in performing the skill.

SKILL PRACTICE

ACTIVITY Time: 50 minutes	 Set up practice stations for the following skills: CPR—Adult and a Child CPR—Infant Two-Responder CPR—Adult and a Child Two-Responder CPR—Infant AED—Adult, Child and Infant
	Instructor's Note: Depending on equipment availability, number of participants, classroom size and time, it may be necessary to combine several skills for practice at one station. For example, one station may be used for one- and two-responder CPR for an infant.

WRAP-UP

Time: 5 minutes

	 Provide feedback to participants about their performance. Encourage continued practice with the skills to gain confidence and competency. Emphasize the need to always adhere to standard precautions when performing any skill.
ASSIGNMENT FOR THE NEXT LESSON	 Review Chapter 13, Circulation and Cardiac Emergencies.
INSTRUCTOR PREPARATION	 Review Chapter 13 and Lessons 19–20. Review the skills from Lesson 20. Obtain any necessary equipment and supplies for Lesson 22.



PUTTING IT ALL TOGETHER

Lesson Length: 60 minutes

MATERIALS, EQUIPMENT AND SUPPLIES

- Emergency Medical Response textbook
- Course Presentation Slides 254–260
- LCD projector, screen and computer
- Disposable latex-free gloves (multiple sizes) and other personal protective equipment (PPE), as indicated
- Adult and infant manikins (one for every two participants; child manikins optional)
- Decontamination supplies
- Resuscitation masks (adult and pediatric; one for each participant)
- BVM resuscitators (adult and pediatric; one for every two participants)
- Automated external defibrillator (AED) training devices (one for every two participants)
- Adult AED training pads (one for every two participants)
- Pediatric AED training pads (one for every two participants)
- Skill sheets 13-1, 13-2 and 13-3 from Chapter 13 of the Emergency Medical Response textbook

LESSON OBJECTIVES

After completing this lesson, participants will be able to:

 Demonstrate the knowledge and skills learned in Lessons 19 and 20, in addition to previously learned skills.

TOPIC: INTRODUCTION

Time: 5 minutes

ACTIVITY	 Instructor's Note: Remind participants that they must successfully complete two scenarios to receive their certification. Each participant must participate in two resuscitation scenarios (one adult and one infant) including being the first responder for at least one of those scenarios. Each participant must assume the role of first responder in either an adult or infant emergency response scenario, and successfully perform both compression and ventilation skills. Participants will need to identify critical decision points and act appropriately, safely and effectively. If the class is made up of teams that work and respond to emergencies together, you may include a third participant in each scenario to make these scenarios all multiple-responder scenarios allowing for an emphasis on the team-based learning.
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	 If you are performing an assessment for a single participant, you may serve as the additional responder to facilitate the scenario and allow for two-responder skills evaluation. Use the Instructor Skill Sheets below to evaluate each scenario.
	 Tell participants that they: Will be participating in scenarios to demonstrate the skills they have learned, with each participant acting as the first responder to arrive on scene for at least one scenario. As the first responder, they will be assessed on whether they have completed all the critical actions and whether they have acted upon decisions in a timely, sequential, safe and effective manner. They will also participate as a second responder in a scenario where they will be assessed on their ability to effectively perform compressions and ventilations, including opening the airway, for both adult and infant patient scenarios. You will not be providing any coaching or guidance during the scenarios.
	 Instructor's Note: For these scenarios, choose the setting that best applies to the participants' background. For adult scenarios, use the Instructor Skill Sheet: CPR/AED—Adult. For infant scenarios, use the Instructor Skill Sheet: CPR/AED—Infant. Evaluate the first participant in their ability to complete the scene size-up, primary assessment and initial patient care as well as the participant's ability to integrate the additional participants into the scenario as indicated in the skill sheet.
FIRST RESPO	ONDER/HEALTHCARE SETTING
Course Presentation Slides 255–256	Adult CPR You work the night shift at a factory. You arrive early and as you approach the time clock, you notice a crowd of people gathering. You find a 54-year-old male on the ground in the middle of the crowd. You are the only one that is trained in CPR or first aid. Trained security officers with AEDs are available in the building, and everyone in the office is trained on how to access help within the building.
	Infant CPR You are at a gas station when someone pulls in honking the horn. A distressed young woman gets out of the car shouting, "My baby is not moving." You see an infant in a car seat in the back of the car. The infant is not moving and is blue around the face.
EMS SETTING	3
Course Presentation Slides 257–258	Adult CPR You are called to the gym in response to a situation in which an individual has collapsed on the outdoor racquetball court. You and your partner arrive on the scene, and you notice the individual is lying on the ground with the racket still clenched in his hand. You go to the patient with your medical kit while your partner gets the rest of the equipment and a stretcher.
	Infant CPR
	You and your partner are called to the home of a child for poor feeding, irritability and a change in behavior. On arrival, you find a 6-month-old infant in his dad's arms. He is limp and cyanotic. The dad states that the child was crying until about a minute ago. Your partner goes back to the vehicle to retrieve equipment for an infant.

Instructor Skill Sheets: CPR/AED—Adult

Time: 25 minutes

Responder 1 (Team Leader): _____ Responder 2: _____

Responder 3: _____

	ACTION		RES	PONI	DER
STEP	*Denotes a Critical Action	COMPETENCIES	1	2	3
1	 Scene size-up: Scene safety* Standard precautions* Number of patients Nature of illness/mechanism of injury General impression, including severe, life-threatening bleeding* Additional resources needed? 	 Sequence is not critical if all goals are accomplished and verbalized. (PPE may be worn instead of verbalized.) Resources may include 9-1-1 or designated emergency number, Advanced Life Support, Rapid Response Team, Code Team or additional personnel as needed or appropriate. 			
2	 Primary assessment: Assesses level of consciousness (LOC)* Opens the airway Checks breathing and carotid pulse simultaneously for at least 5 seconds, but no more than 10 seconds* 	 LOC: Shouts, "Are you OK?" (or a reasonable facsimile) to elicit a verbal stimuli LOC: Taps the patient's shoulder to elicit painful stimuli and shouts again (shout-tap-shout) Airway: Opens using head-tilt/ chin-lift maneuver past a neutral position or a modified jaw thrust Breathing/pulse check: Checks for breathing and carotid pulse simultaneously for at least 5 seconds, but no more than 10 seconds 			
3	 Chest compressions: Exposes chest Initiates 30 chest compressions using correct hand placement at the proper rate and depth, allowing for full chest recoil* 	 Hand position: Centered on the lower half of the sternum Depth: At least 2 inches Number: 30 compressions Rate: Between 100 and 120 compressions per minute (15–18 seconds) Full chest recoil: 26 of 30 compressions 			
4	 Ventilations: Opens the airway* Gives 2 ventilations using a pocket mask* 	 Airway: Head-tilt/chin-lift maneuver past a neutral position Ventilations (2): 1 second in duration Ventilations (2): Visible chest rise Ventilations (2): Minimizes interruptions to less than 10 seconds 			

	ACTION		RES	PON	DER
STEP	*Denotes a Critical Action	COMPETENCIES	1	2	3
5	 Continues CPR: Gives 30 chest compressions using correct hand placement at the proper rate and depth, allowing for full chest recoil* Opens the airway Gives 2 ventilations with pocket mask 	 Hand position: Centered on the lower half of the sternum Depth: At least 2 inches Number: 30 compressions Rate: Between 100 and 120 compressions per minute (15–18 seconds) Full chest recoil: 26 of 30 compressions 			
6	 Arrival of the AED and additional responder(s) (arrive at 20th compression in Step 5): Initial responder continues care* Communicates with additional responder(s) Prepares for rotation upon AED analysis 	 Continues care: Maintains uninterrupted CPR Communicates relevant patient information including patient age if known Verbalizes compression count to coordinate ventilations with additional responder(s) Verbalizes coordination plan to switch compressors upon AED analysis 			
The ini		oant, an untrained responder del ectly to Step 7 and apply the AE ers present.			
7	 AED applied: Turns on machine Attaches AED pads* Plugs in connector, if necessary Continues compressions 	 AED on: Activates within 15 seconds of arrival Pads: Pad 1—right upper chest below right clavicle and right of sternum; Pad 2—left side of chest several inches below left armpit on midaxillary line 			
8	 AED analysis and rotation: Ensures all responders are clear while AED analyzes and prepares for shock* Says, "Stand clear." Rotates responders during analysis to prevent fatigue Prepares BVM 	 Clear: Ensures no one is touching the patient during analysis Rotation: Switches compressor during analysis Hover: Hovers hands (new compressor) a few inches above chest during analysis to prepare for CPR 			
9	 Shock advised: Says, "Stand clear."* Presses shock button to deliver shock* 	 Clear: Ensures no one is touching the patient while shock is being delivered Delivers shock: Depresses shock button within 10 seconds 			
STOP I	nere when assessing an indivi	dual responder and move to St	ep 17.		

	ACTION		RESPOND			
STEP	*Denotes a Critical Action	COMPETENCIES	1	2	3	
10	 Resumes CPR: Continues with 5 cycles of CPR (30 compressions/2 ventilations)* Performs compressions (Responder 2) Manages airway and mask seal (Responder 1) Provides ventilations using BVM (Responder 1) Continues until AED prompts 	 Resumes CPR: Immediately following shock, resumes CPR, starting with compressions, until prompted by the AED for analysis Hand position: Centered on the lower half of the sternum Depth: At least 2 inches Number: 30 compressions Rate: Between 100 and 120 compressions per minute (15–18 seconds) Full chest recoil: 26 of 30 compressions 				
11	 Ventilations with BVM: Opens the airway from top of the head Maintains mask seal Compresses BVM to give 2 ventilations 	 Seal: Using the E-C technique Airway: Head-tilt/chin-lift maneuver past a neutral position Ventilations (2): 1 second in duration Ventilations (2): Visible chest rise Ventilations (2): Minimizes interruptions to less than 10 seconds Ventilations (2): Bag squeezed enough to make chest rise; does not fully squeeze bag (approximately 400–700 ml of volume, avoiding overinflation) 				
12	 Anticipates compressor change: Communicates with additional responders Prepares for rotation upon AED analysis 	 Verbalizes coordination plan to switch compressors prior to AED analysis 				
13	 AED analyzes: Says, "Stand clear." No shock advised 	 Clear: Ensures no one is touching the patient during analysis Rotation: Switches compressor during analysis Hover: Hovers hands (new compressor) a few inches above chest during analysis to prepare for CPR 				
STOP I	nere when assessing two resp	oonders and move to Step 17.				

	ACTION		RESPONDER			
STEP	*Denotes a Critical Action	COMPETENCIES	1	2	3	
14	 Resumes CPR: Continues with 5 cycles of CPR (30 compressions/2 ventilations)* Performs compressions (Responder 3) Manages airway and mask seal (Responder 1) Provides ventilations using BVM (Responder 2) Continues until AED prompts 	 Resumes CPR: Immediately following shock, resumes CPR, starting with compressions, until prompted by the AED for analysis Hand position: Centered on the lower half of the sternum Depth: At least 2 inches Number: 30 compressions Rate: Between 100 and 120 compressions per minute (15–18 seconds) Full chest recoil: 26 of 30 compressions 				
15	 Anticipates compressor change: Communicates with additional responders Prepares for rotation upon AED analysis 	 Verbalizes coordination plan to switch compressors prior to AED analysis 				
16	 AED analyzes and rotation: Says, "Stand clear."* No shock advised 	 Clear: Ensures no one is touching the patient during analysis Rotation: Switches compressor during analysis Hover: Hovers hands (new compressor) a few inches above chest during analysis to prepare for CPR 				
17	 Spontaneous patient movement: Checks for breathing and pulse 	 Pulse check: Opens the airway and checks for breathing and pulse simultaneously for at least 5 seconds, but no more than 10 seconds 				
E: Excelle	nt, P: Pass, F: Fail					

Overall Scenario

		RESPONDER		
COMPETENCIES	1	2	3	
 Communication: Accurately and effectively communicated with fellow responders Coordination: Clearly and decisively directed responders through rotations of roles on AED analysis Feedback: Provided coaching and feedback to ensure effective for ensure of a set of the back. 				
	 Communication: Accurately and effectively communicated with fellow responders Coordination: Clearly and decisively directed responders through rotations of roles on AED analysis 	COMPETENCIES1Communication: Accurately and effectively communicated with fellow respondersImage: Coordination: Clearly and decisively directed responders through rotations of roles on AED analysisFeedback: Provided coaching and feedback to ensure	COMPETENCIES12Communication: Accurately and effectively communicated with fellow respondersImage: Coordination: Clearly and decisively directed responders through rotations of roles on AED analysisImage: Coordination: Clearly and feedback to ensureFeedback: Provided coaching and feedback to ensureImage: Coordination: Clearly and feedback to ensureImage: Coordination: Clearly and feedback to ensure	

		RES	PON	DER
	COMPETENCIES	1	2	3
Chest Compressions	 Location: Hands centered on the lower half of the sternum Depth: At least 2 inches Recoil: Allow full chest recoil between compressions Rate: 30 compressions at a rate of between 100 and 120 compressions per minute (15–18 seconds for a set of 30) 			
Ventilations	 Length: Each ventilation should be 1 second in duration. Visual: Chest should rise. Time: 2 ventilations: minimizes interruptions to less than 10 seconds 			
E: Excellent, P: Pass, F:	Fail			

Instructor Skill Sheets: CPR/AED—Infant

Time: 20 minutes

Responder 1 (Team Leader): _____ Responder 2: _____

Responder 3: _____

	ACTION		RES	RESPONDER		
STEP	*Denotes a Critical Action	COMPETENCIES	1	2	3	
1	 Scene size-up: Scene safety* Standard precautions* Number of patients Nature of illness/mechanism of injury General impression, including severe, life-threatening bleeding* Additional resources needed? Consent 	 Sequence is not critical if all goals are accomplished and verbalized. (PPE may be worn instead of verbalized.) Resources may include 9-1-1 or designated emergency number, Advanced Life Support, Rapid Response Team, Code Team or additional personnel as needed or appropriate. Consent: States name, background, what they plan to do and permission to treat 				
2	 Primary assessment: Positions infant on a firm, flat surface Assesses level of consciousness (LOC)* Opens the airway Checks breathing and brachial pulse simultaneously for at least 5 seconds, but no more than 10 seconds* 	 Position: Places infant on a firm, flat surface LOC: Shouts, "Are you OK?" (or a reasonable facsimile) to elicit a verbal stimuli; uses infant's name if available LOC: Taps the infant's foot to elicit stimuli and shouts again (shout-tap-shout) Airway: Opens using head-tilt/chinlift maneuver to a neutral position Breathing/pulse check: Checks for breathing and brachial pulse simultaneously for at least 5 seconds, but no more than 10 seconds 				

	ACTION		RES	DER	
STEP	*Denotes a Critical Action	COMPETENCIES	1	2	3
3	 Chest compressions: Exposes chest Initiates 30 chest compressions using correct finger placement at the proper rate and depth, allowing for full chest recoil* 	 Finger position: Centered on the chest just below the nipple line Depth: About 1½ inches or 1/3 the anterior-posterior diameter of the chest Number: 30 compressions Rate: Between 100 and 120 compressions per minute (15–18 seconds) Full chest recoil: 26 of 30 compressions 			
4	 Ventilations: Opens the airway* Gives 2 ventilations using an infant pocket mask* 	 Airway: Head-tilt/chin-lift maneuver to a neutral position Ventilations (2): 1 second in duration Ventilations (2): Visible chest rise Ventilations (2): Minimizes interruptions to less than 10 seconds 			
5	 Continues CPR: Gives 30 chest compressions using correct finger placement at the proper rate and depth, allowing for full chest recoil* Opens the airway Gives 2 ventilations with an infant pocket mask 	 Finger position: 2 fingers centered on the lower half of the sternum, just below the nipple line Depth: About 1½ inches or 1/3 the anterior-posterior diameter of the chest Number: 30 compressions Rate: Between 100 and 120 compressions per minute (15–18 seconds) Full chest recoil: 26 of 30 compressions 			
6	 Arrival of the AED and additional responder(s) (arrive at 20th compression in Step 5): Initial responder continues care* Communicates with additional responders Prepares for rotation upon AED analysis 	 Continues care: Maintains uninterrupted CPR Communicates relevant patient information including patient age if known Verbalizes compression count to coordinate ventilations with additional responder(s) Verbalizes coordination plan to switch compressors upon AED analysis 			

provide care based on no additional responders present.

	ACTION		RES	PON	DER
STEP	*Denotes a Critical Action	COMPETENCIES	1	2	3
7	 AED applied: Turns on machine Attaches AED pads* Plugs in connector, if necessary Continues compressions 	 AED on: Activates within 15 seconds of arrival Pads: Applies correct pads for an infant: Pad 1—in the center of the anterior chest; Pad 2—on the infant's back between the scapulae 			
8	 AED analysis and rotation: Ensures all responders are clear while AED analyzes and prepares for shock* Says, "Stand clear." Rotates responders during analysis to prevent fatigue Prepares infant BVM 	 Clear: Ensures no one is touching the patient during analysis Rotation: Switches compressor during analysis, and moves to a head and foot position for encircling thumbs technique Hover: Hovers hands (new compressor) a few inches above the chest during analysis to prepare for CPR 			
9	 Shock advised: Says, "Stand clear."* Presses shock button to deliver shock* 	 Clear: Ensures no one is touching the patient while shock is being delivered Delivers shock: Depresses shock button within 10 seconds 			
STOP I	nere when assessing an indivi	dual responder and move to S	tep 17	•	
10	 Resumes CPR: Continues with 10 cycles of CPR (15 compressions/2 ventilations)* Performs compressions—encircling thumbs technique (Responder 2) Manages airway and mask seal (Responder 1) Provides ventilations using the infant BVM (Responder 1) Continues until AED prompts 	 Resumes CPR: Immediately following shock, resumes CPR, starting with compressions, until prompted by the AED for analysis Thumb position: Thumbs centered on the chest side by side just below the nipple line Depth: About 1½ inches or 1/3 the anterior-posterior diameter of the chest Number: 15 compressions Rate: Between 100 and 120 compressions per minute (7–9 seconds) Full chest recoil: 12 of 			
		15 compressions			

	ACTION		RES	PON	DER
STEP	*Denotes a Critical Action	COMPETENCIES	1	2	3
11	 Ventilations with BVM: Opens airway from top of the head Maintains mask seal Compresses infant BVM to give 2 ventilations 	 Seal: Using the E-C technique Airway: Head-tilt/chin-lift maneuver to a neutral position Ventilations (2): 1 second in duration Ventilations (2): Visible chest rise Ventilations (2): Minimizes interruptions to less than 10 seconds Ventilations (2): Bag squeezed enough to make chest rise; does not fully squeeze bag (avoiding overinflation) 			
12	 Anticipates compressor change: Communicates with additional responders Prepares for rotation upon AED analysis 	 Verbalizes coordination plan to switch compressors prior to AED analysis 			
13	 AED analyzes: Says, "Stand clear." No shock advised 	 Clear: Ensures no one is touching the patient during analysis Rotation: Switches compressor during analysis Hover: Hovers hands (new compressor) a few inches above the chest during analysis to prepare for CPR 			
STOP	here when assessing two res	oonders and move to Step 17.			
14	 Resumes CPR: Continues with 10 cycles of CPR (15 compressions/2 ventilations)* Performs compressions (Responder 3) Manages airway and mask seal (Responder 1) Provides ventilations using the infant BVM (Responder 2) Continues until AED prompts 	 Resumes CPR: Immediately following shock, resumes CPR, starting with compressions, until prompted by the AED for analysis Thumb position: Thumbs centered on the chest side by side, just below the nipple line Depth: About 1½ inches or 1/3 the anterior-posterior diameter of the chest Number: 15 compressions Rate: Between 100 and 120 compressions per minute (7–9 seconds) Full chest recoil: 12 of 15 compressions 			

	ACTION		RES	PON	DER
STEP	*Denotes a Critical Action	COMPETENCIES	1	2	3
15	 Anticipates compressor change: Communicates with additional responders Prepares for rotation upon AED analysis 	 Verbalizes coordination plan to switch compressors prior to AED analysis 			
16	 AED analyzes and rotation Says, "Stand clear."* No shock advised 	 Clear: Ensures no one is touching the patient during analysis Rotation: Switches compressor during analysis Hover: Hovers hands (new compressor) a few inches above the chest during analysis to prepare for CPR 			
17	 Spontaneous patient movement: Checks for breathing and pulse 	Pulse check: Responder performing ventilations opens the airway and checks for breathing and brachial pulse simultaneously for at least 5 seconds, but no more than 10 seconds			
E: Excelle	nt, P: Pass, F: Fail				

Overall Scenario

		RES	PON	DER
	COMPETENCIES	1	2	3
Leadership and Communication	 Communication: Accurately and effectively communicated with fellow responders Coordination: Clearly and decisively directed responders through rotations of roles on AED analysis Feedback: Provided coaching and feedback to ensure effective performance of responders' skills 			
Chest Compressions	 Location: Thumbs centered on the infant's chest side- by-side, just below the nipple line Depth: About 1½ inches Recoil: Allow full chest recoil between compressions Rate: 30 compressions at a rate of between 100 and 120 compressions per minute (15–18 seconds for a set of 30) or 15 compressions at a rate of between 100 and 120 compressions per minute (7–9 seconds) with encircling thumbs technique 			
Ventilations	 Length: Each ventilation should be 1 second in duration. Visual: Chest should rise. Time: 2 ventilations: minimizes interruptions to less than 10 seconds 			
E: Excellent, P: Pass, F	: Fail			

WRAP-UP

	 Answer participants' questions, ensuring that each participant has an opportunity to resolve any confusion. Review the scenarios and the important elements of care.
KEY POINTS	 Cardiovascular disease is the number-one killer in the United States.
Course Presentation Slides 259–260	 The two most common conditions caused by cardiovascular disease are coronary heart disease and stroke. Myocardial infarction (MI), or heart attack, occurs when coronary blood vessels become blocked by plaque buildup or a clot. It can lead to cardiac arrest when the heart ceases to function as a pump. More advanced medical personnel should be called if the patient exhibits: Persistent discomfort, pressure or pain in the chest, which may spread to the shoulder, arm, neck, jaw, stomach or back. Chest discomfort or pain that is severe and lasts longer than a few
	 minutes, goes away and comes back or persists with rest. Difficulty breathing (noisy breathing and shortness of breath). Other signs such as pale or ashen skin, facial sweating, dizziness or light-headedness, or nausea.
	The five links in the Adult Cardiac Chain of Survival are:
	 Recognition of a cardiac emergency and activation of the emergency response system. Early CPR.
	3. Early defibrillation.
	4. Advanced life support
	5. Integrated post-cardiac arrest care
	The five links in the Pediatric Cardiac Chain of Survival are:
	 Prevention of arrest. Early high-quality CPR.
	 Carry ingli-quality CFR. Rapid activation of the EMS system or response team to get help on the way quickly—no matter the patient's age.
	4. Pediatric advanced life support.
	5. Integrated post-cardiac arrest care.
	 CPR is a combination of chest compressions and ventilations. Chest compressions increase the level of pressure in the chest cavity, squeezing the heart and stimulating a contraction that causes blood containing oxygen to circulate through the arteries to the brain and other vital organs.
	• The ratio of chest compressions to ventilations for one-responder CPR is 30 to 2 for an adult, a child and an infant.
	• The ratio of chest compressions to ventilations for two-responder CPR is 30 to 2 for an adult and 15 to 2 for a child and an infant.
	 Once CPR is started, do not stop except in one of these situations: You see signs of return of spontaneous circulation (ROSC). An AED is ready to analyze the patient's heart rhythm.
	 Other trained responders take over and relieve you from compression or ventilation responsibilities.
	 You are presented with a valid do not resuscitate (DNR) order. You are alone and too exhausted to continue.
	 The scene becomes unsafe.

	 AEDs are portable electronic devices that analyze the heart's rhythm and provide an electrical shock via pads applied to the patient's chest to help the heart re-establish an effective rhythm. Before using an AED, verify that the patient is unresponsive, is not breathing normally and does not have a detectable pulse. Use an AED as soon as it is available and ready to use when a cardiac arrest occurs. Provide 1 shock followed by about 2 minutes of CPR when the AED indicates that a shock is needed.
ASSIGNMENT FOR THE NEXT LESSON	 Read Chapter 14, Medical Emergencies. Read Enrichment: Basic Pharmacology (<i>optional</i>), pages 356–362, and Enrichment: Blood Glucose Monitoring (<i>optional</i>), page 363.
INSTRUCTOR PREPARATION	 Review Chapter 14, Medical Emergencies. Review Enrichment: Basic Pharmacology (<i>optional</i>), pages 356–362, and Enrichment: Blood Glucose Monitoring (<i>optional</i>), page 363. Review the video segments, "Altered Mental Status" (1:39), "Seizures" (2:49), "Diabetic Emergencies" (2:00) and "Stroke" (4:11). Obtain any necessary equipment and supplies for Lesson 23.

UNIT 5 | MEDICAL EMERGENCIES

Lesson 23:	Medical Emergencies
Lesson 24:	Poisoning
Lesson 25:	Substance Abuse and Misuse
Lesson 26:	Environmental Emergencies
Lesson 27:	Behavioral Emergencies
Lesson 28:	Putting It All Together



MEDICAL EMERGENCIES

Lesson Length: 70 minutes (95 minutes with Enrichments)

MATERIALS, EQUIPMENT AND SUPPLIES

- *Emergency Medical Response* textbook
- Course Presentation Slides 261–287
- LCD projector, screen and computer
- Emergency Medical Response DVD
- DVD player and monitor
- Samples of glucometers, sterile lancets and glucometer test strips

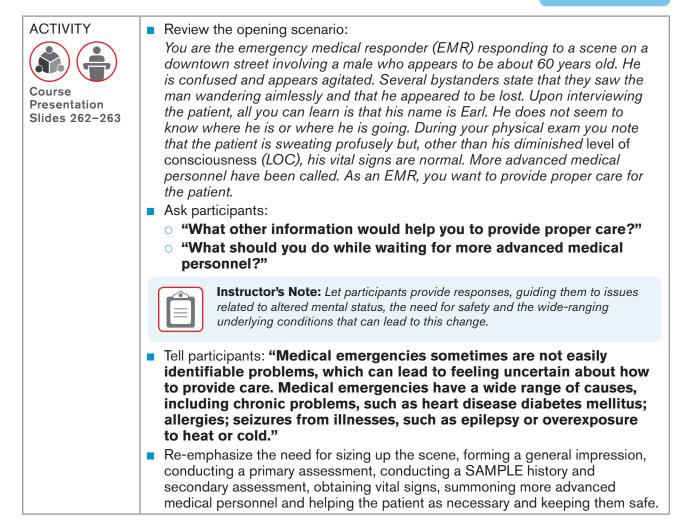
LESSON OBJECTIVES

Knowledge

After completing this lesson, participants will be able to:

- Identify a patient who has a general medical complaint.
- Describe the general care for a patient with a general medical complaint.
- Identify the signs and symptoms of an altered mental status.
- Describe the care for a patient who has an altered mental status.
- Describe the different types of seizures.
- Identify the signs and symptoms of seizures.
- Describe the care for a patient who has a seizure.
- Identify the signs and symptoms of a diabetic emergency.
- Describe the care for a patient who has a diabetic emergency.
- Identify the different causes of a stroke.
- Identify the signs and symptoms of a stroke.
- Describe the care for a patient who has a stroke.
- Identify the signs and symptoms of abdominal pain.
- Describe the care for a patient who has abdominal pain.
- Describe the special considerations for a patient on hemodialysis.

TOPIC: INTRODUCTION



TOPIC: ALTERED MENTAL STATUS

Time: 10 minutes



Instructor's Note: This video segment can be shown now to provide an overview of the topic, or it can be shown at the end of this section to provide a mechanism for summarizing the important details.

SIGNS AND SYMPTOMS OF ALTERED MENTAL STATUS

KEY POINTS	 Altered mental status, which can result from many causes, is one of the most common medical emergencies.
	It is often characterized by a sudden or gradual change in a person's LOC.
	 Altered mental status includes drowsiness, confusion and partial or complete loss of consciousness.

Show the video segment, "Altered Mental Status" (1:39). Answer participants' questions about the video segment.

ACTIVITY	Divide the class into two groups. Using their textbooks, ask one group to develop a list of possible causes for altered mental status for adults and children. Have the second group create care steps for a patient with altered mental status. Bring the groups back together to share their information with the rest of the class.
	 Instructor's Note: Responses should include: Causes for altered mental status in adults include fever, infection, poisoning or overdose, blood sugar/endocrine problems, head injury, inadequate oxygen or ventilation, any condition resulting in decreased blood flow or oxygen to the brain, cardiac or diabetic emergencies, shock, stroke, behavioral illness and seizures. Causes for altered mental status in children include respiratory failure, hypoxemia, shock, hypoglycemia, brain injury, seizures, poisoning, intentional overdose, sepsis, meningitis, hyperthermia and hypothermia. Care includes: Completing primary and secondary assessments and SAMPLE history. Performing ongoing assessment. Ensuring an open airway. Placing the unresponsive patient in a recovery position, if necessary. Not giving the patient anything to eat or drink. Taking spinal precautions if trauma is suspected.

TOPIC: SYNCOPE

Time: 10 minutes

KEY POINTS	Sometimes altered mental status is caused by a temporary reduction of blood flow to the brain.
	Syncope or fainting is when the brain is suddenly deprived of its normal blood flow and momentarily shuts down.
Course Presentation Slide 268	Fainting can be triggered by emotional shock, pain, specific medical conditions like heart disease, standing for a long period of time or overexertion.
	 Some people, such as pregnant women or older adults, are more likely to faint when suddenly changing position.
	A person may faint with or without warning. Before fainting, a person may first:
	 Feel light headed or dizzy (presyncope).
	 Show signs of shock.
	 Have blurry vision, feel nauseated and complain of numbness or tingling in the fingers and toes.
	• Have faster breathing and pulse.

 To prevent a syncopal episode, help the patient lie down and have them perform a physical counter-pressure maneuver (PCM): Grip one hand at the fingers with the other and try to pull them apart without letting go. They should hold the grip for as long as they can or until their symptoms disappear. Hold a rubber ball or similar object in their writing hand and then squeeze the object for as long as they can or until their symptoms disappear.
 Cross one leg over the other and squeeze them together tightly. Hold this position for as long as they can or until their symptoms disappear.
A syncopal episode will often resolve itself when the patient is moved from a standing or sitting position to a lying-down position.
 Syncope alone does not usually harm the patient, but an injury may occur from falling.
Although a fainting patient usually recovers quickly, you may not be able to determine if the fainting is associated with a more serious medical condition and more advanced medical care is indicated.

TOPIC: **SEIZURES**

Time: 10 minutes

DVD	 Show the video segment, "Seizures" (2:49). Answer participants' questions about the video segment.
	Instructor's Note: This video segment can be shown now to provide an overview of the topic, or it can be shown at the end of this section to provide a mechanism for summarizing important details.
KEY POINTS	A seizure is a disorder in the brain's electrical activity, sometimes marked by loss of consciousness and often by uncontrollable muscle movement. It is also called a convulsion.
Course Presentation	 Types of seizures include generalized, partial, absence (petit mal) and febrile seizures.
Slides 269–271	Generalized tonic-clonic seizures, also called grand mal seizures, are the most well-known type. They involve both hemispheres (halves) of the brain and usually result in loss of consciousness. They rarely last for more than a few minutes.
	Partial seizures can be simple or complex. In simple partial seizures, the patient usually remains aware. Complex partial seizures usually last for 1 to 2 minutes, and awareness is either impaired or lost while the patient remains conscious.
	Absence seizures, also called petit mal seizures, involve a brief, sudden loss of awareness for short periods. These are most common in children.
	Febrile seizures, the most common type of seizure in children younger than 5 years, are brought on by a rapid increase in body temperature.
	Epilepsy is a group of neurologic disorders involving recurrent seizures as the main symptom.
	 Status epilepticus is an epileptic seizure that lasts longer than 5 minutes without any signs of slowing down; it is a true medical emergency.

ACTIVITY OPTION A Time: 5 minutes	 Using the following scenario, ask participants to describe the appropriate actions when providing care to the patient experiencing a seizure: You arrive at the scene of a motor-vehicle crash and begin to provide care to two patients who are both alert and conscious with minor lacerations. They are sitting on the curb. Suddenly one of them falls to the side and begins to have a tonic-clonic seizure.
	 Instructor's Note: Reponses should include: Summoning more advanced medical personnel. Protecting the patient from injury and managing the airway are the priorities. This can be achieved by: Moving nearby objects away from the patient. Not placing anything in the mouth. During and after the seizure, positioning the patient on their side, if possible and safe to do so, so that fluids (saliva, blood, vomit) can drain from the mouth. Having a suction device available for all seizure patients. Offering comfort and reassurance. Providing privacy and staying with the patient until fully conscious and aware of surroundings.
ACTIVITY OPTION B	 Divide the participants into small groups. Assign each group a type or types of seizure, being sure to assign all topics. Ask each group to create a chart that describes the type(s) of seizure and associated signs and symptoms. Have each group present its information to the rest of the class.
Time: 10 minutes	 Instructor's Note: Responses should include: Generalized seizures, such as grand mal or tonic-clonic seizures, last from 1 to 3 minutes and involve both hemispheres of the brain and usually a loss of consciousness. Signs and symptoms include the following: Irregular breathing or possible temporary cessation of breathing, drooling, upward rolling of eyes, urinating or defecating Aura phase (sensing something unusual such as a sound, taste or smell, or unusual need to get to safety) Tonic phase (unconsciousness then muscle rigidity) Clonic phase (uncontrolled muscular contractions [convulsions]) Post-ictal phase (diminished responsiveness with gradual recovery and confusion; patient may feel confused and want to sleep) Partial seizures involve only a very small area of one hemisphere of the brain. A simple partial seizure is when a patient remains aware. A complex partial seizure lasts longer, and awareness either is impaired or lost while the patient remains conscious. Signs and symptoms include the following: For simple partial seizures: Involuntary muscular contractions in one body area, possible inability to speak or move, feeling of fear, odd sensations and ability of patient to remember seizure For complex partial seizures: Often a blank stare followed by random movements (lip smacking or chewing), dazed appearance, clumsy movements with activities lacking direction and inability to remember seizure; patient may be confused Absence seizure, such as petit mal seizure, include signs and symptoms such as a brief loss of awareness for short periods; minimal or no movement; a blank stare; and the body remaining still during the seizure with possible eye fluttering and chewing movements present. Febrile seizures are brought on by a rapid increase in body temperature, usually over 102° F (38.9° C). Signs and symptoms include a change in LOC, rhythmic jerking of the head and limbs, loss of bladder or bowel co

TOPIC: DIABETIC EMERGENCIES

Show the video segment, "Diabetic Emergencies" (2:00).
Instructor's Note: This video segment can be shown now to provide an overview of the topic, or it can be shown at the end of this section to provide a mechanism for summarizing important details.
Answer participants' questions about the video segment.
 Diabetes mellitus is one of the leading causes of death and disability in the United States today. The two major types include type 1, formerly known as insulin-dependent diabetes or juvenile diabetes, in which the body produces
little or no insulin, and type 2, formerly known as non-insulin- dependent diabetes or adult-onset diabetes, in which the body produces insulin but the cells do not use it effectively or not enough is produced.
The body cells need glucose (sugar) as an energy source to function normally.
 The body breaks down food into simple sugars during digestion. Insulin, a hormone produced by the pancreas, is needed for sugar to pass into the cells.
Hyperglycemia occurs when the level of blood glucose (sugar) is too high and the insulin level in the body is too low; hypoglycemia occurs when the level of blood glucose (sugar) is too low and the insulin level in the body is too high.
The blood glucose level (BGL) can become too low if a person with diabetes takes too much insulin, fails to eat adequately, over- exercises and burns off sugar faster than normal or experiences great emotional stress.
If left untreated, diabetic ketoacidosis (DKA) can lead to diabetic coma, a life-threatening condition in which a very high blood sugar causes the patient to become unconscious.
MPTOMS OF DIABETIC EMERGENCIES
The major signs and symptoms of hypo- and hyperglycemia are similar and include:
 Changes in LOC (dizziness, drowsiness and confusion). Irregular breathing.
 Irregular breathing. Abnormal pulse (rapid or weak).
 Feeling and looking ill.
 Abnormal skin characteristics.
RE FOR DIABETIC EMERGENCIES
For a diabetic emergency, first perform a primary assessment and care for life-threatening conditions; if the patient is conscious, conduct a physical exam and SAMPLE history.
Look for a medical identification tag, bracelet or sports band and ask the patient if they have diabetes.

If the patient is conscious, able to follow simple commands and can safely swallow, give 15 to 20 grams of sugar, preferably in the form of glucose tablets.
 Glucose or sucrose containing candies that can be chewed, jelly beans, orange juice, fructose based fruit strips and whole milk may be used if glucose tablets are unavailable.
 If none of these options are available, then 4 to 5 teaspoons of table sugar dissolved in a glass of water may be used.
If the conscious patient does not feel better within approximately 10 to 15 minutes, summon more advanced medical personnel and consider re-treating with another 15 to 20 grams of sugar based on local protocols.
If the patient is unconscious or unable to follow simple commands and swallow safely, monitor their condition, keep the patient from getting chilled or overheated, summon more advanced medical personnel and administer supplemental oxygen, if available, based on local protocols.

TOPIC: STROKE

Time: 10 minutes

KEY POINTS Course Presentation Slides 275–278	 Stroke, also called a cerebrovascular accident, is a disruption of blood flow to a part of the brain. Two causes of stroke are blood clots that form or lodge in the arteries supplying blood to the brain, and arteries in the brain that rupture and bleed. Blood clots are the most common cause of stroke. A transient ischemic attack (TIA), or "mini-stroke," is a temporary episode due to reduced blood flow to the brain. The signs and symptoms disappear within a few minutes or hours of onset. Looking or feeling ill or displaying abnormal behavior is common, sudden signs of a stroke or TIA. Other specific signs and symptoms have a sudden onset and include: Weakness or numbness of the face, arm or leg, often on one side of the body. Facial drooping or drooling. Difficulty with speech. Loss of vision or disturbed vision and possibly unequal pupils. Dizziness, confusion, agitation, loss of consciousness, sudden severe headache or other severe altered mental status. Loss of balance or coordination, trouble walking or ringing in the ears. Incontinence. Two common stroke assessment scales used in the prehospital setting are the Cincinnati Prehospital Stroke Scale and the Los Angeles Prehospital Stroke Screen (LAPSS). Both scales should be included in
DVD	 your assessment of the stroke patient and reported to the medical facility. Show the video segment, "Stroke" (4:11).
	 Answer participants' questions about the video segment.

	 Re-emphasize that the components of FAST stand for: Face (smile—look for facial droop or weakness on one side of the face). Arm (arm raising—look for arm drift; weakness on one side). Speech (simple sentence repeating—listen for slurred speech or trouble getting words out). Time (note the time of onset of signs and symptoms—time to get more advanced medical care immediately).
PROVIDING C	CARE FOR STROKE
KEY POINTS	 For the unresponsive patient, ensure an open airway and care for any life-threatening conditions; position the patient on their side to allow any fluids present to drain out of the mouth. Use a finger or suctioning equipment to remove any fluids or vomit from the patient's mouth. Stay with the patient and monitor their condition. For the conscious patient, check for non-life-threatening conditions, offer comfort and reassurance and place the patient in a comfortable position. Do not give the conscious patient anything to eat or drink by mouth. Keep in mind that modern stroke medication and medical procedures can limit the damage caused by stroke, but timely administration is crucial to reduce the effects of stroke to the brain.

TOPIC: ABDOMINAL PAIN

KEY POINTS Course Presentation Slides 279–280	 Abdominal emergencies can be life threatening and require immediate care to prevent shock. A sudden onset of abdominal pain is called acute abdomen. The source and causes of abdominal pain can be difficult to pinpoint. The intensity of abdominal pain does not always reflect the seriousness of the condition. You should always assume that the pain is serious because the patient or family member was concerned enough to seek emergency medical attention. Signs and symptoms associated with abdominal pain may include: Colicky pain or cramps that come in waves. Abdominal tenderness (local or diffuse). Guarded position. Anxiety. Reluctance to move. Loss of appetite. Nausea or vomiting. Fever. Rigid, tense or distended stomach. Signs of shock. Vomiting blood with red or brownish appearance. Blood in stool (red or black). Rapid pulse. Blood pressure changes. While assessing the patient, you should monitor the patient's movements and check to see if the abdomen is distended. Palpate the stomach (if the patient is able to relax the abdomen) for softness or
	movements and check to see if the abdomen is distended. Palpate the

PROVIDING CARE FOR ABDOMINAL PAIN		
KEY POINTS	 Ensure there is no severe, life-threatening bleeding and that the patient has an open airway. Summon more advanced medical personnel for transport. Watch for signs of potential aspiration due to vomiting. Do not give the patient food, water or medication. Watch for signs of shock and if they occur, place the patient on their back, maintain normal body temperature and administer supplemental oxygen, based on local protocols. 	
GASTROINTE	STINAL BLEEDING	
KEY POINTS	 Gastrointestinal bleeding is associated with many causes and may be classified as either upper (bleeding originating in the esophagus, stomach or duodenum) or lower (bleeding in the small intestine, large intestine, rectum or anus), depending on the location of the problem. Signs and symptoms include bloody vomitus, bloody bowel movements or black tarry stools, often accompanied by fatigue, weakness, abdominal pain, pale appearance and shortness of breath. Severe gastrointestinal bleeding can cause blood pressure to drop sharply and the heart rate to increase. More advanced medical personnel should be summoned. 	

TOPIC: **HEMODIALYSIS**

KEY POINTS Patients with advanced renal failure or kidney failure often need dialysis to filter waste products from the blood using a special filtering solution. • Two types of dialysis are peritoneal dialysis and hemodialysis. Course Special considerations when taking a history and performing a Presentation physical exam include: Slide 281 Obtaining information about past dialysis and complications, recent sodium, potassium and fluid intake, the current dialysis session, the patient's dry weight and the amount of fluid removed before the session was terminated. • Determining fluid status, mental status, cardiac rhythm and shunt location as part of the general physical assessment. • Shunts in the arm are common in long-term hemodialysis patients. • During the history, the EMR must ask the patient if the shunt is active or old and nonfunctional. Blood pressure should not be taken in the arm of a patient with an active shunt. • Finding out about any associated medical problems, such as arrhythmias, internal bleeding, hypoglycemia, altered mental status and seizures. • Checking for evidence of possible hypovolemia (cold, clammy skin: poor skin turgor [elasticity], tachycardia and hypotension) or hypervolemia with delayed dialysis (abnormal lung sounds, generalized edema, hypertension or jugular venous distention). • Observing for signs and symptoms of altered mental status. • Assessing cardiac rhythm.

Time: 5 minutes

 Patients on dialysis can experience several types of complications, such as uremia, fluid overload, anemia, hypertension, hyperkalemia and coronary artery disease.
Emergencies also can occur as complications of the dialysis itself, such as hypotension, disequilibrium syndrome, hemorrhage, equipment malfunction or complications from being temporarily removed from medications.

WRAP-UP	Time: 5 minutes
ACTIVITY Course Presentation Slide 282	 Review the closing scenario: As you continue monitoring the patient, he becomes even more confused and agitated. You begin to notice signs of shock. Ask participants: "As an EMR, what should you do while waiting for more advanced medical personnel?" Instructor's Note: Responses should include:
	 Ensuring personal safety as well as that of the patient and bystanders. Approaching the patient calmly since he is agitated and trying to determine who he is, how he got here and what might be happening. Determining if the patient has underlying problems, such as fever, infection, diabetes, head injury, behavioral problems (e.g., Alzheimer's disease or dementia) or another condition that can affect the blood flow or oxygen to the brain. Checking for any type of medical identification tag, bracelet or sports band, or other identification that would help identify any potential or underlying conditions contributing to the patient's current condition. Monitoring the patient's condition, supporting his vital functions (i.e., administering supplemental oxygen based on local protocols), keeping the patient warm (but not overheated), placing the patient on his back, checking for possible bleeding sites and assessing for possible signs and symptoms suggesting the emergency, such as hypoglycemia or stroke.
KEY POINTS	 A medical emergency can strike anyone at any time. Your biggest challenge is that you may not know the cause of the emergency. Medical emergencies have a wide range of causes and are manifested by a variety of signs and symptoms. However, you can provide care without knowing the exact cause by following the same general guidelines for any emergency.
ASSIGNMENT FOR THE NEXT LESSON	 Read Chapter 15, Poisoning, pages 364–371. Read Enrichment: Administering Activated Charcoal (<i>optional</i>), page 382, and Enrichment: Carbon Monoxide and Cyanide Poisoning (<i>optional</i>), pages 383–386.
INSTRUCTOR PREPARATION	 Review Chapter 15, Poisoning, pages 364–371. Review Enrichment: Administering Activated Charcoal (<i>optional</i>), page 382, and Enrichment: Carbon Monoxide and Cyanide Poisoning (<i>optional</i>), pages 383–386. Obtain any necessary equipment and supplies for Lesson 24.

ENRICHMENT: BASIC PHARMACOLOGY

Time: 15 minutes

KEY POINTS Course Presentation Slides 283–285	 You may be called upon to help give medications that are available in several types and forms with a wide range of options on how they are administered and how much of the medications are given. Drug names include the chemical name (based on chemical properties), generic name (non-proprietary name usually a shorter version of the chemical name) and brand or trade name (for use in marketing). A drug profile is a description of what it does, what it is or is not given for and any issues that may develop from taking it. It includes the drug's actions, indications, contraindications, side effects, dose and route. Medication prescriptions must contain specific information, including the pharmacy's name and address, prescription serial number, date of prescription, prescriber's name, patient's name, directions for use (including any precautions), medication name and strength and federal law inscriptions also commonly contain the patient's address, pharmacist's initials or name, pharmacy's telephone number, manufacturer's lot number, drug's expiration date, manufacturer's or distributor's name, quantity of medication dispensed and number of refills remaining. Routes of administration include oral (by mouth), sublingual, inhalation, injection, topical, intravenous, vaginal and rectal.
ADMINISTRA	TION OF MEDICATIONS
KEY POINTS	 Healthcare personnel administering medications must follow the Five Rights: Right patient Right medication Right route Right dose Right date Administration means that you are physically giving the medication to the patient. Assistance with medication means that the patient is able to take the medication, but you help to get the medication ready for the patient. You may administer medications only by routes that you have been licensed or authorized to administer. After administration, you must always assess the effect and document the reason for administration, drug name, dose, route, time, any side effects noted, how often it was administered and any improvement or changes noted. Medical direction (oversight) assumes responsibility for care. When receiving medical direction, you must repeat back the order for confirmation, even if you are sure that you understood correctly.

 ACTIVITY Divide the participants into small groups. Assign each group one of the following drugs: aspirin, nitroglycerin and oral glucose, being sure to assign all topics. Have each group use their textbooks to describe the drug's generic and tade names, indications, contraindications, actions, side effects, precautions, expiration date, dosage and administration. Then have each group report its information to the rest of the class. Instructor's Note: Responses should include: Agmin: Generic/trade names: These include acetylsalicylic acid (ASA), Ecotrin* Enteric Coated Aspirin, Excediri* (which also contains acetaminophen), Praigard* and SJ. Useph*; in countries where aspirin is trademarked (owned by Baye), the term ASA is the generic name. Indications: Aspirini is an analgesic that is used to provide relief for mild-tormoderate pain, including headache, menstrual pain, muscle pain, minor pain of arthritis and toothache. It also teluces fever and inflammation and is given for angina and heart attack. Contraindications: Patients already on blood thinners should not take the opatients who have a known allergy to non-steroidal anti-inflammatory drugs (NSAIDs). Because of the rare complication of Reye's syndrome, children and aclotescents who show flu-like symptoms or who may have a viral liness, such as chicken pox, should not be given to someone should not be given to someone should not be given or someone should not be given or intestinal bleeding; or a bleeding disorder, such as hemophilia, should not take sprin recursive and strukt. Actions: Aspirin thins the blood by reducing the platelets' ability to produce a chemical that hegs form blood choids the sprin aspirin will not preven hemorrhagic strokes and should not be given to someone showing signs and symptoms of a stroke. Actions: Aspirin thins the blood by reducing the platelets' ability to produce a chemical that hegs form blood choids exerption and date aspire aspir			
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 Aspirin: Generic/trade names: These include acety/salicy/ic acid (ASA), Ecotrin[®] Enteric Coated Aspirin, Excedrin[®] (which also contains acetaminophen), Pravigard[®] and St. Joseph[®]; in countries where aspirin is trademarked (owned by Bayer), the term ASA is the generic name. Indications: Aspirin is an analgesic that is used to provide relief for mild- to-moderate pain, including headache, menstrual pain, muscle pain, minor pain of arthritis and toothache. It also reduces fever and inflammation and is given for angina and heart attack. Contraindications: Patients already on blood thinners should not take aspirin. It should not be given to patients who have a known allergy to non-steroidal anti-inflammatory drugs (NSAIDs). Because of the rare complication of Reys's syndrome, children and adolescents who show flu-like symptoms or who may have a virai illness, such as chicken pox, should not be given aspirin or products that contain aspirin. Women who are pregnant or nursing should avoid taking aspirin unless they are instructed to by their healthcare provider. Patients with asthma, ulcer or ulcer symptoms; a recent history of stomach or intestinal bleeding; or a bleeding disorder, such as hemophilia, should not take aspirin. Aspirin will not prevent hemorrhagic strokes and should not be given to someone showing signs and symptoms of a stroke. Actions: Aspirin thins the blood by reducing the platelets' ability to produce a chemical that helps form blood clots. To relieve pain, aspirin reduces inflammation at the source. Side effects: The most common side effects include heartburn, nausea, vomiting and gastrointestinal bleeding and possible allergic reaction. Expiration date: Do not administer aspirin that has passed its expiration date. The effect of the drug decreases if it is to old. Do not use the aspirin if there is a strong smell of vinegar since this may indicate the medication has expired. Dosage: Th		expiration date, dosage and administration. Then have each group report its	,
		 Aspirin: Generic/trade names: These include acetylsalicylic acid (ASA), Ecotrin* Enteric Coated Aspirin, Excedrin* (which also contains acetaminophen), Pravigard® and St. Joseph*; in countries where aspirin is trademarked (owned by Bayer), the term ASA is the generic name. Indications: Aspirin is an analgesic that is used to provide relief for mild- to-moderate pain, including headache, menstrual pain, muscle pain, mino- pain of arthritis and toothache. It also reduces fever and inflammation and is given for angina and heart attack. Contraindications: Patients already on blood thinners should not take aspirin. It should not be given to patients who have a known allergy to non-steroidal anti-inflammatory drugs (NSAIDs). Because of the rare complication of Reye's syndrome, children and adolescents who show flu-like symptoms or who may have a viral illness, such as chicken pox, should not be given aspirin or products that contain aspirin. Women who are pregnant or nursing should avoid taking aspirin unless they are instructed to by their healthcare provider. Patients with asthma, ulcer or ulcer symptoms; a recent history of stomach or intestinal bleeding; or a bleeding disorder, such as hemophilia, should not take aspirin. Aspirin will not prevent hemorrhagic strokes and should not be given to someon showing signs and symptoms of a stroke. Actions: Aspirin thins the blood by reducing the platelets' ability to produce a chemical that helps form blood clots. To relieve pain, aspirin reduces inflammation at the source. Side effects: The most common side effects include heartburn, nausea, vomiting and gastrointestinal bleeding and possible allergic reaction. Expiration date: Do not administer aspirin that has passed its expiration date. The effect of the drug decreases if it is too old. Do not use the aspirin if there is a strong smell of vinegar since this may indicate the medication has expired. Dosage: The averag	or d

Nitroglycerin:
 Generic/trade names: Nitroglycerin is the generic name for Nitrolingual[®] Pump Spray, Nitrostat[®] Tablets and the Minitran[®] Transdermal Delivery System. It also is available by the generic name.
 Indications: Nitroglycerin is given to patients with angina pectoris, a condition in which the blood vessels in the heart constrict and do not allow enough blood and oxygen to circulate. This, in turn, causes chest pain.
 Contraindications: Nitroglycerin should not be given to patients whose systolic blood pressure is below 90 mmHg and should not be given more often than prescribed (usually one to three times), with 5 minutes spaced between doses. Do not give nitroglycerin to patients taking sildenafil (Viagra®) or other similar phosphodiesterase type 5 (PDE) inhibitors, as this could lead to life-threatening complications such as a dangerous drop in blood pressure. Nitroglycerin should not be given to individuals who have severe anemia or a brain injury, hemorrhage or tumor. Nitroglycerin may be harmful to an unborn baby.
 Actions: Nitroglycerin dilates the blood vessels, allowing blood to flow more freely, thus providing more oxygen to the heart tissue.
 Side effects: Rapid dilation of the blood vessels can cause a severe and sudden headache. The headaches may become gradually less severe as the individual continues to take nitroglycerin. Other side effects may include dizziness, flushed skin of the neck and face, light-headedness and worsened angina pain.
• Precautions: Nitroglycerin tablets are reactive to light and should be stored in a dry area in a dark-colored container to maintain their potency.
• Expiration date: Check expiration dates for all types of nitroglycerin. Failure to do so may result in administering medication that is no longer active, thereby delaying proper treatment.
 Dosage: Nitroglycerin sprays and tablets usually are administered as one spray or pill under the tongue, with repeated doses one or two times and with 5 minutes between each dosage if there is no change in the patient's condition. Have the patient sit while taking nitroglycerin since it can cause dizziness or fainting. Nitroglycerin is a very potent medication. It should never be given without a physician's order.
 Oral glucose:
 Action: Oral glucose acts by increasing the amount of blood glucose (sugar) in the bloodstream.
 Indication: Oral glucose is administered to patients who have diabetes and whose blood sugar level has dropped below tolerable levels. At this point, the insulin has no glucose to metabolize.
 Contraindications: Oral glucose should not be given to patients with diabetes whose blood sugar is within or above normal range. It also should not be given to patients who are unresponsive and unable to follow instructions to swallow safely.
 Side effects: Side effects may include nausea, heartburn and bloating. Dosage: The product comes as glucose tablets of 4 to 5 grams each.

Time: 10 minutes

ENRICHMENT: BLOOD GLUCOSE MONITORING

KEY POINTS Course Presentation Slides 286–287	 Blood glucose monitoring refers to the measurement of blood sugar (glucose). Patients with diabetes check their BGLs regularly, often using a portable device called a glucometer. The test requires a drop of blood on a test strip containing a chemical substance that is inserted into the glucometer. The drop of blood is obtained by piercing the skin of a finger pad with a sharp sterile lancet or needle.
	Instructor's Note: Show participants sample glucometers, sterile lancets and test strips.
ACTIVITY	 Divide the participants into several small groups. Using the textbook, have each group identify the steps for using a glucometer, the normal and abnormal ranges for BGLs and what to do if the levels are abnormal. Instructor's Note: Responses should include: Hand washing to ensure that hands are clean and checking the glucometer to ensure it is working. Cleaning the patient's finger with soap and water or an alcohol swab and allowing skin to dry completely. Pricking the pad of the finger with a sterile lancet to allow a drop of blood to form. Collecting the drop of blood on the test strip. Inserting the test strip into the glucometer correctly and reading the results. Checking the reading: normal levels range between 90 and 130 mg/dL before meals and less than 180 mg/dL after meals; abnormal levels are below 70 mg/dL (hypoglycemia). If the patient is conscious, provide 15 to 20 grams of glucose (4 to 5 glucose tablets, depending on the manufacturer) and recheck the blood glucose level after 10 to 15 minutes. If the patient is unconscious or unable to swallow, seek advanced life support immediately.



POISONING

Lesson Length: 30 minutes (50 minutes with Enrichments)

MATERIALS, EQUIPMENT AND SUPPLIES

- Emergency Medical Response textbook
- Course Presentation Slides 288–302
- LCD projector, screen and computer
- Samples of activated charcoal, if available (Enrichment)

LESSON OBJECTIVES

Knowledge

After completing this lesson, participants will be able to:

- List the four ways poisons enter the body.
- Identify the signs and symptoms of poisoning.
- Describe general care guidelines for a poisoning emergency.
- Describe specific care for different types of poisoning emergencies.
- Have a basic understanding of drug interactions.
- List information resources available to responders and the general public from Poison Control Centers (PCCs).

TOPIC: INTRODUCTION

Time: 5 minutes

ACTIVITY	Read the following scenario:
Course Presentation Slides 289–291	Your police unit is summoned to a residence on a report of an unconscious person. When you arrive and size up the scene, you discover parents with their 2-year-old child. The mother is distraught and says she found her toddler on the kitchen floor very drowsy. She noticed that the under-the-sink cabinet door was open, and there was an open bottle of liquid kitchen cleaner lying next to the child. She called 9-1-1 because he was not responding when she tried to wake him up.
	Ask participants:
	 "Would you suspect poisoning?"
	 "How would the poison have entered the body?"
	 "What should you do first?"

Ê	Instructor's Note: Let participants provide responses, guiding them to issues related to poisoning including ways that poisons can enter the body, types of poisons, signs and symptoms of poisoning and the priorities for providing care.
the boo Describ that car antiboo	a poison as any substance that causes injury, illness or death if it enters dy. be a toxin as a poisonous substance produced by a microorganism n cause certain diseases but also is capable of inducing neutralizing dies or antitoxins. In that poisons come in different forms and that a substance that is not
 poisona Empha health a poisona Tell par 	ous in small amounts can be poisonous if taken in larger amounts. usize the role of Poison Control Centers (PCCs) as specialized centers that provide information on poisons and suspected ing emergencies. rticipants: "There is a 24-hour national Poison Help line that can inched at 800-222-1222."

TOPIC: HOW POISONS ENTER THE BODY

Time: 20 minutes

KEY POINTS Course Presentation Slides 292-296	 Poisons are categorized based on how they enter the body. The four major categories are ingestion, inhalation, absorption and injection.
INGESTED PC	DISON
KEY POINTS	 Ingested poisons are those that are swallowed such as foods, drugs, medications and household items (e.g., cleaning products, pesticides, household plants). Young children, who put almost everything in their mouths, and older adults, who may be forgetful or have difficulty reading the small print on medicine container labels, are at a higher risk of ingesting poisons. Bacterial and chemical food poisoning are two of the most common categories of food poisoning. Bacterial food poisoning occurs when bacteria grow on food that is allowed to stand at room temperature after being cooked or through improper food handling; salmonella and <i>Escherichia coli</i> (<i>E. coli</i>) are the two most common causes. Chemical food poisoning occurs when foods with high acid content are stored in containers lined with zinc, cadmium or copper or in enameled metal pans. Mercury also can be a source of food poisoning. Another primary source of chemical food poisoning is lead, which sometimes is found in pipes that supply drinking and cooking water.

ACTIVITY	Divide the participants into two groups. Using their textbooks, assign one group to develop a list of possible signs and symptoms associated with ingested poisons. Have the second group create a list of measures that should be used when providing care to a patient who has ingested a poison. Bring the groups back together to share their information.
	Instructor's Note: Responses should include:
	 Signs and symptoms, including nausea, vomiting or diarrhea, chest or abdominal pain, difficulty breathing, sweating, changes in level of consciousness (LOC), seizures, headache or dizziness, weakness, irregular pupil size, double vision, abnormal skin color and burn injuries around the lips or tongue or on the skin around the mouth. Care includes:
	 Calling for more advanced medical personnel if you are unsure about what to do, you are unsure about the severity of the problem or if it is a life-threatening condition. Otherwise, call the national Poison Help line if the patient is fully conscious and alert and follow the directions given. Not giving the patient anything to eat or drink unless told to do so.
	 If the patient vomits, save some of the vomit (e.g., in a plastic bag).
	 Inducing vomiting only if instructed by medical professionals to do so.
INHALED POI	SON
KEY POINTS	 Poisoning by inhalation occurs when a person breathes in poisonous gases or fumes. Examples include carbon monoxide (CO), carbon dioxide, chlorine gas, ammonia, sulfur dioxide, nitrous oxide, chloroform, dry cleaning solvents, fire extinguisher gases, industrial gases and hydrogen sulfide. Paint or solvent stains around the mouth and nose may indicate deliberate inhalation; pale or bluish skin color may signal CO poisoning. Other signs and symptoms include: Difficulty breathing or a respiratory rate faster or slower than normal. Chest pain or tightness. Burning in the nose or eyes. Nausea or vomiting.
	 Oracles of voluting. Cyanosis. Headaches, dizziness, confusion. Coughing, possibly with excessive secretions.
	• Seizures.
	 Altered mental status with possible unresponsiveness.
	When providing care to a patient who may have inhaled a poison, follow appropriate safety precautions to ensure that you do not inhale the substance and become poisoned as well.
	All patients who have inhaled a poison need supplemental oxygen as soon as possible based on local protocols.
	Remove the patient from the source of the poison only if you can do so without endangering yourself.
	In cases where you notice clues at an emergency scene that lead you to suspect toxic fumes are present, call for specialized services instead of entering the scene.

ABSORBED POISON	
KEY POINTS	 An absorbed poison enters the body through the skin or mucous membranes of the eyes, mouth and nose. Sources include plants, medications and dry and wet chemicals. Signs and symptoms include: Traces of the liquid, powder or chemical on the patient's skin. Skin that looks burned, irritated, red or swollen. Blisters that may ooze fluid or a rash. Itchy skin.
ACTIVITY OPTION A Time: 5 minutes	 Ask participants if any of them have come into contact with poison ivy, poison oak or poison sumac and have them describe the care needed. Instructor's Note: Although responses will vary, typically responses should include washing/flooding the area with water (and possibly soap) for at least 20 minutes and using medicated lotions, antihistamines or other medications, such as corticosteroids, for the lesions.
ACTIVITY OPTION B Time: 10 minutes	 Using the following scenario, ask participants to identify the appropriate care for the patient: You arrive at a local nursery in response to a call that an employee was splashed in the face and on the neck with a liquid chemical to kill weeds. The employee is conscious and is complaining that his skin and eyes feel "like they are on fire." Instructor's Note: Responses should include: Immediately flushing the eyes for at least 15 minutes and the skin with large amounts of cool, running water for at least 20 minutes; making sure that the water flows from the eyes and not directly onto the middle of the cornea or into an uninjured eye and summoning more advanced medical personnel. Taking care not to splash any of the chemicals on yourself while flushing the area.
INJECTED PO	ISON
KEY POINTS	 Injected poisons enter the body through the bites or stings of certain insects, spiders, marine life, animals and snakes or as drugs or misused medications injected with a hypodermic needle. Signs and symptoms include: Bite or sting mark at the point of entry. A stinger, tentacle or venom sac in or near the entry site. Redness, pain, tenderness or swelling around the entry site. Signs of allergic reaction, including localized itching, hives or rash. Signs of a severe allergic reaction (anaphylaxis), including weakness, nausea, dizziness, swelling of the throat or tongue, constricted airway or difficulty breathing. Care for the patient with an injected poison includes: Sizing up the scene and following standard precautions. Performing a primary assessment and providing care for conditions found. Applying a cold pack to the area, if appropriate. Providing specific care for certain bites and stings (e.g., jellyfish). Calling for more advanced medical personnel and assisting the patient with their prescribed epinephrine auto-injector if there are signs and symptoms of anaphylaxis and if protocols allow and you are trained to do so.

WRAP-UP

ACTIVITY Course Presentation Slide 297	 Review the closing scenario: You complete your assessment and find that the toddler is unresponsive and his respiratory and pulse rates are extremely slow. He also has some redness around his mouth and lips, and there is a strong odor of bleach. Based on your findings, you suspect poisoning. Ask participants: "How would the poison have entered the body?" "What should you do first?" Instructor's Note: Responses should include:
	 The patient is experiencing poisoning due to the ingestion of a household cleaner. The poison entered the body by way of ingestion; that is, the patient swallowed the substance. Priorities should include calling the national Poison Help line for instructions and summoning more advanced medical personnel because the toddler is unresponsive (unconscious). In addition, you should perform a primary assessment and take steps to ensure an open airway. If supplemental oxygen is available, you should administer it based on local protocols. You should not attempt to give the patient anything to eat or drink. If the patient vomits, you should save some of it so that it is available should the hospital want to analyze it. You should induce vomiting only if instructed to do so by medical professionals.
KEY POINTS	 A poison is any substance that causes injury, illness or death if it enters the body. Poison Control Centers (PCCs) are specialized health centers that provide information on poisons and suspected poisoning emergencies. A 24-hour national Poison Help line is available and can be reached at 800-222-1222, or call for more advanced medical personnel if needed. Poisons typically enter the body through ingestion, inhalation, absorption and injection. Vomiting is never induced if the patient is unconscious, having a seizure, is pregnant (in the last trimester), has ingested a corrosive substance or petroleum product or is known to have heart disease.
ASSIGNMENT FOR THE NEXT LESSON	 Read Chapter 15, Poisoning, pages 371–380. Read Enrichment: Administering Nasal Naloxone (<i>optional</i>), page 381.
INSTRUCTOR PREPARATION	 Review Chapter 15, Poisoning, pages 371–380. Review Enrichment: Administering Nasal Naloxone (<i>optional</i>), page 381. Obtain any necessary equipment and supplies for Lesson 25.

Time: 5 minutes

ENRICHMENT: ADMINISTERING ACTIVATED CHARCOAL

KEY POINTS Course Presentation Slide 298	 Activated charcoal may be recommended by PCC or medical control if a patient has ingested a poison. Activated charcoal should only be administered if the patient is fully conscious, alert and able to swallow and you have been directed by medical control or PCC.
	 It should not be given to a patient who has overdosed on cyanide or swallowed acids or alkalis.
	The patient may experience black stools after taking activated charcoal. They may also vomit. Check with medical control or PCC about giving a second dose if the patient does vomit.
	You will receive instructions from the PCC or local medical authority about how to administer activated charcoal, but in general you should:
	 Shake the bottle to mix it with water and give it to the patient to drink.
	 Use a straw or opaque container to help make it easier for the patient to tolerate the mixture's less-than-appetizing appearance.
	• If the charcoal settles, shake it again to mix it thoroughly and let the patient finish drinking it.
	The dosage is calculated at 1 g of activated charcoal per kilogram of the patient's weight (1g/kg). An adult dose typically is between 30 and 100 g; a child's or infant's dose usually is between 12 and 25 g.

ENRICHMENT: CARBON MONOXIDE AND CYANIDE POISONING

Time: 15 minutes

ACTIVITY	 Divide the participants into two groups. Using their textbooks, assign one group the topic of CO poisoning and the other group the topic of cyanide poisoning. Have each group develop an oral presentation that describes the signs and symptoms associated with poisoning and the appropriate steps for providing care to a patient with that type of poisoning. Bring the groups back together to share their information. Alternatively, divide the participants into several small groups. Assign each of the following topics to one of the groups, being sure to assign all topics: signs and symptoms of CO poisoning; providing care to a patient with CO poisoning; signs and symptoms of cyanide poisoning; providing care to a patient with cyanide poisoning. Using their textbooks, have each group develop an oral presentation that addresses their topics. Then bring the groups back together to share their information.
	 Signs and symptoms of CO poisoning include:
	 Initially, a dull or throbbing headache and nausea and vomiting.
	 Bluish skin color.
	 Chest pain.
	Confusion.
	 Convulsions. Dizziness.
	 Drzemess. Drowsiness.
	• Fainting.
	• Hyperactivity.
	 Impaired judgment.
	 Irritability.
	 Loss of consciousness.
	 Low blood pressure.
	Muscle weakness.
	 Rapid or abnormal heartbeat. Shock.
	 Shock. Shortness of breath.
	 Care for CO poisoning includes:
	 Ensuring that emergency medical responders (EMRs) are properly outfitted for safety when dealing with CO poisoning.
	 Removing the patient from the situation as quickly as possible, getting the patient to fresh air immediately by opening doors and windows, turning off combustion appliances and leaving the building.
	 Alerting emergency department staff and physicians about the suspicion of CO poisoning.
	 Asking the patient questions about where the symptoms occurred, if the symptoms disappear or decrease away from the location, if anyone else in the building is complaining of similar symptoms and if those symptoms appeared at about the same time, if there are any fuel-burning appliances in the location and whether these appliances have been inspected recently.
	 If CO poisoning has occurred, informing the patient that they may have a blood test to confirm the diagnosis.
	 Monitoring and treating everyone in the area, even if they are not showing any signs or symptoms.
	 Providing supplemental oxygen, based on local protocols. This is the only treatment for CO poisoning that can be administered on the scene.

Ê	 Signs and symptoms of cyanide poisoning via ingestion or absorption through the skin include:
	 Dizziness.
	• Headache.
	 Nausea and vomiting.
	 Rapid breathing.
	 Rapid breathing. Rapid heart rate.
	 Restlessness.
	 Weakness. Weakness.
	 Signs and symptoms associated with large, concentrated or more intense exposure to cyanide include:
	 Convulsions.
	 Loss of consciousness.
	 Low blood pressure.
	 Lung injury.
	 Respiratory failure leading to death.
	 Slow heart rate.
	Providing care to a patient with cyanide poisoning includes:
	 Assuming that it has occurred based on the circumstances because there are no quick, simple blood tests to confirm cyanide poisoning.
	 Observing for the most likely set of symptoms: altered mental status, abnormal pupil dilation, low respiratory rate, low systolic blood pressure with increased heart rate, metabolic acidosis and a large increase in plasma lactate levels.
	 If you or someone else is exposed, seeking medical attention immediately.
	 If there is a risk of inhalation:
	• Seeking ventilation or local exhaust.
	 Using breathing protection such as a gas mask with a hydrogen
	cyanide canister or a positive-pressure self-contained breathing apparatus (SCBA), a SCBA CBRN (chemical, biological, radiological and nuclear) or a CBRN full face-piece air-purifying respirator.
	 Seeking fresh air and rest in a half-upright position.
	 Avoiding mouth-to-mouth resuscitation.
	• Administering supplemental oxygen based on local protocols, if available.
	 If there is a risk of absorption:
	 Using butyl rubber gloves and Teflon[®] or Tychem[®] protective clothing as appropriate.
	 Removing contaminated clothing and rinsing the skin with plenty of water (or shower) if exposure occurs.
	 Wearing protective gloves when administering first aid.
	 Wearing safety goggles, a face shield or eye protection in combination
	with breathing protection because hydrogen cyanide vapor can be absorbed through the eyes.
	 Rinsing eyes with plenty of water for several minutes and removing contact lenses if eyes are exposed.
	 To prevent possible ingestion:
	 Not eating, drinking or smoking during work.
	 Washing your hands before eating.
	 If you are exposed by ingestion, rinse your mouth, follow steps for
	inhalation, do not induce vomiting and seek immediate medical attention.
	 There is a risk of explosion if hydrogen cyanide is mixed with air. Keen

There is a risk of explosion if hydrogen cyanide is mixed with air. Keep the area closed and well ventilated and use explosion-proof electrical equipment and lighting.



SUBSTANCE ABUSE AND MISUSE

Lesson Length: 30 minutes (45 minutes with Enrichment)

MATERIALS, EQUIPMENT AND SUPPLIES

- *Emergency Medical Response* textbook
- Course Presentation Slides 303–325
- LCD projector, screen and computer

LESSON OBJECTIVES

Knowledge

After completing this lesson, participants will be able to:

- Define substance abuse and misuse.
- Identify factors related to substance abuse and misuse and list prevention strategies.

TOPIC: INTRODUCTION

Time: 5 minutes

ACTIVITY Course Presentation Slide 304	 Review the opening scenario: Your emergency medical services (EMS) unit is summoned to a residence on a report of an unconscious person. When you arrive and size up the scene, you discover an older couple. The wife is distraught and says that her husband had been drinking alcoholic beverages heavily earlier in the day. Shortly after taking his prescribed Valium[®], she says he became drowsy and incoherent, and then collapsed. Unable to get him to respond, she called 9-1-1. On assessing the patient, you find that he is unconscious, his breathing is shallow and slow, his heart rate is slow and his pulse is weak. Ask participants: "How would you respond?"
	Instructor's Note: Let participants provide responses, guiding them to issues related to substance abuse and misuse, including the need to summon more advanced medical personnel, the possible synergistic effect of ingesting two depressants, signs and symptoms of substance abuse and misuse and the priorities for providing care.
	 Define substance abuse as the deliberate, persistent and excessive use of a substance without regard to health concerns or accepted medical practices. Define substance misuse as the use of a substance for unintended purposes or for appropriate purposes but in improper amounts or doses.

Emphasize that substance abuse or misuse is not limited to only illegal (or illicit or controlled) substances but that it also includes legal (or licit or noncontrolled) substances, such as nicotine, alcohol and over-the-counter (OTC) medications including sleeping pills and diet pills, which are among those most often abused or misused.

TOPIC: SUBSTANCE ABUSE AND MISUSE **Time: 20 minutes KEY POINTS** Dependency, or the desire to continually use the substance to function normally, can occur with any drug. Addiction occurs from a compulsive need for a substance such that the person would suffer mental, physical and emotional distress if Course they stopped taking the substance. Presentation Withdrawal occurs when a person stops using or abusing a substance Slides 305-322 to which they are addicted. Tolerance occurs when someone continually uses a substance and the effects of the substance on the body decrease, leading the person to increase the amount and frequency of use to obtain the desired effect. Overdose occurs when someone uses an excessive amount of a substance, either intentionally or unintentionally. There are six major categories of substances that are abused: stimulants, hallucinogens, depressants, opioid narcotics, inhalants and cannabis products. When two or more substances are used at the same time, a heightened or exaggerated effect may occur; this is called a synergistic effect. ACTIVITY Divide the participants into small groups. Using their textbooks, assign each group one or more of the following topics, being sure all topics are assigned: stimulants, hallucinogens, depressants, opioid narcotics, inhalants, cannabis products. Have each group develop a chart that describes the substance's effect on the body and lists examples (including street names). Then have each group present its information to the rest of the class. Instructor's Note: Responses should include: Stimulants: • Effects on the body: Affects the central nervous system by increasing physical and mental activity, producing temporary feelings of alertness and preventing fatigue; may suppress the appetite for weight reduction; provides bursts of energy • Examples: Amphetamine, dextroamphetamine and methamphetamine (crystal meth, ice, speed, uppers, bennies, black beauties, crystal, meth, crank), cocaine (coke, snow, blow, flake, foot, nose candy), crack cocaine (rock, freebase rock), ephedra, caffeine and nicotine Hallucinogens: • Effects on the body: Causes changes in mood, sensation, thought, emotion and self-awareness, altering one's perception of time and space; produces profound depression, tension and anxiety, as well as visual, auditory and tactile hallucinations; possible "bad trip" • Examples: Lysergic acid diethylamide (LSD; acid), psilocybin (mushrooms), phencyclidine (PCP; angel dust), mescaline (peyote, buttons, mesc) and ketamine (special K or vitamin K)

	Signs and symptoms of stimulant overdose include:	
	 Moist or flushed skin. 	
	 Sweating or chills. 	
	 Nausea or vomiting. 	
	• Fever.	
	• Headache.	
	• Dizziness.	
	○ Rapid pulse.	
	 Rapid breathing. 	
	• Death.	
	• High blood pressure.	
	• Chest pain.	
	• Possible respiratory distress.	
	• Excitability, restlessness, talkativeness or irritability.	
	• Possible sudden loss of consciousness.	
	• Disruption of normal heart rhythms.	
	Specific signs and symptoms of hallucinogen abuse, as well as abuse of some designer drugs, may include:	
	• Sudden mood changes.	
	• Flushed face.	
	 Claims of seeing or hearing something not present. 	
	• Anxiety or fear.	
	Specific signs and symptoms of depressant abuse may include:	
	• Drowsiness.	
	• Confusion.	
	• Slurred speech.	
	• Slow heart and breathing rates.	
	• Poor coordination.	
	A person who abuses alcohol may smell of alcohol. A person who has consumed a great deal of alcohol in a short time may become	
	unconscious or hard to arouse. The person may vomit violently.	
	 Signs and symptoms of alcohol withdrawal, a potentially dangerous condition that can be life threatening, include: 	
	 Confusion and restlessness. 	
	• Trembling.	
	• Hallucinations.	
	○ Seizures.	
	A sign of cannabis use is red, bloodshot eyes, whereas those abusing inhalants may appear drunk or disoriented in a similar manner to a person abusing hallucinogens.	
PROVIDING (
	PROVIDING CARE FOR SUBSTANCE ABUSE AND MISUSE	
KEY POINTS	To provide care you only need to recognize abnormalities in breathing, skin color and moisture, body temperature and behavior.	
	 Since substance abuse and misuse are forms of poisoning, follow the 	
	same general care principles as for other types of poisoning:	
	 Size up the scene to be sure it is safe. 	
	 Perform a primary assessment to check for any life-threatening 	
	conditions.	
	 Summon more advanced medical personnel. 	

	 Perform a physical exam. Take a SAMPLE history to try to determine what substance was taken, how much was taken and when it was taken. Calm and reassure the patient. Keep the patient from getting chilled or overheated. Keep the patient's airway clear. If the patient is having difficulty breathing, administer supplemental oxygen based on local protocols. If a person becomes agitated or makes the scene unsafe in any way, retreat until the scene can be secured.
PREVENTING	SUBSTANCE ABUSE AND MISUSE
KEY POINTS	 Prevention efforts are far more cost-effective than treatment, but to be effective they must address the underlying issues of substance abuse and ways to approach it. Factors that may contribute to substance abuse include: A lack of supervision from parents or caregivers. The breakdown of traditional family structure. A wish to escape unpleasant surroundings and stressful situations. The widespread availability of substances. Peer pressure and the basic need to belong. Low self-esteem, including feelings of guilt or shame. Media glamorization, especially of alcohol and tobacco, promoting the idea that using substances enhances fun and popularity. A history of substance abuse in the home or community environments. Many poisonings are unintentional; however, poisonings can be intentional when the patient knowingly increases the dosage beyond what is directed. Guidelines that can help prevent unintentional misuse or overdose include: Reading the product information and using only as directed. Asking your healthcare provider or pharmacist about the intended use and side effects of prescription and OTC medication. If you are taking more than one medication, check for possible interaction effects. Never using another person's prescribed medications; what is right for one person is seldom right for another. Always keeping medications in their original, marked containers. Discarding all out-of-date medications. Time can alter the chemical composibily toxic.
	 Always keeping medications out of the reach of children.
THE OPIOID O	CRISIS
KEY POINTS	 While they have a depressant effect, opioid narcotics (which are often derived from opium) are used mainly to relieve pain. Opioid narcotics are so powerful and highly addictive that all are illegal without a prescription, and some are not prescribed at all. When taken in large doses, opioid narcotics can produce euphoria, stupor, coma or death.

Opinid parantia abuse has become a major booth correct in the
Opioid narcotic abuse has become a major health concern in the United States and throughout the world.
Naloxone is commonly used by EMS personnel to reverse the effects of opioid drugs. Recent legislation has allowed individuals in some states who are being prescribed opioids by their healthcare provider to also be given a prescription for naloxone. In fact, in some states, this medication can even be obtained directly from the pharmacist without a prescription.
Naloxone typically comes as a nasal spray or an injectable. Auto- injectors, similar to those used to deliver epinephrine, are also being manufactured for use in the treatment of opioid poisoning.
Before using naloxone, it is important to be trained in how to recognize when to administer it and how to give it using the different methods of administration. Signs and symptoms of opioid overdose include:
• Slowed and/or shallow breathing (or no breathing).
• Extreme drowsiness or becoming unconscious.
• Small pupils.
Severe opioid poisoning is a life-threatening emergency; in severe cases, the patient may be unconscious, not breathing, and have bluish skin (cyanosis) and a faint or absent heartbeat.
If you suspect opioid overdose in a patient, the most important thing to do is to call for more advanced medical personnel.
If used appropriately, based on local protocols, naloxone can reverse all of the effects of opioid poisoning, including unconsciousness and breathing difficulties.

WRAP-UP		Time: 5 minutes
ACTIVITY Course Presentation Slide 323	 Review the closing scenario: Based on your findings, you suspect that the patient ingested drugs and alcohol. Ask participants: "What initial care can you provide?" "What else should you do and why?" "Is this a case of substance misuse? Why or why n 	
	 Instructor's Note: Responses should include: Ensure an open airway and check breathing and pulse, s advanced medical personnel and administer supplement on local protocols. Take additional actions, such as continuing to monitor th gathering information from the patient's wife about the ar Valium[®] (i.e., the number of pills and dosage) that the pa as the time of ingestion. This is most likely a case of substance misuse with the punderstanding that the two substances should not be us since both are considered depressants. It also is possible misread or did not read the prescription bottle and warnin combining the drug with alcohol. 	tal oxygen based e patient and mount of alcohol and tient ingested as well patient not sed in combination le that the patient

KEY POINTS	 Substance abuse is the deliberate, persistent use of a substance without regard to health concerns or accepted medical practices. Substance misuse refers to the use of a substance for unintended purposes or for appropriate purposes but in improper amounts or doses. Substances are categorized according to their effects on the body and include stimulants, hallucinogens, depressants, opioid narcotics, inhalants and cannabis products. Other substances that do not fit neatly into these categories include designer drugs, steroids and OTC substances. The signs and symptoms of substance abuse and misuse are similar to those of other medical emergencies. You do not have to diagnose substance abuse or misuse to provide care; however, always be alert for clues. More advanced medical personnel should always be summoned if you suspect a patient is suffering from alcohol withdrawal or from any form of substance abuse. Prevention of substance abuse is much more cost effective than treatment.
ASSIGNMENT FOR THE NEXT LESSON	 Read Chapter 16, Environmental Emergencies. Read Enrichment: Lightning (<i>optional</i>), pages 418–419, and Enrichment: SCUBA and Free Diving Emergencies (<i>optional</i>), pages 420–421.
INSTRUCTOR PREPARATION	 Review Chapter 16, Environmental Emergencies. Review Enrichment: Lightning (<i>optional</i>), pages 418–419, and Enrichment: SCUBA and Free Diving Emergencies (<i>optional</i>), pages 420–421. Review the video segment, "Cold-Related Emergencies" (3:15). Review the skills and obtain any necessary equipment and supplies for Lesson 26.

ENRICHMENT: ADMINISTERING NASAL NALOXONE

Time: 15 minutes

KEY POINTS	 Trained and authorized responders should assist with the administration of naloxone or administer the drug when: The patient is in respiratory arrest or is unconscious and an opioid every description of a superstant.
Course Presentation Slides 324-325	 overdose is suspected. Other signs and symptoms of overdose include small pupils, respiratory depression, such as slowed or shallow breathing, as well as the presence of drug paraphernalia.
	 Responders should always follow local protocols and regulations for the administration of naloxone including dosing, timing and route of administration.
	One of the most common and available routes of administration for naloxone is intranasal using a nasal atomizer device attached to a syringe containing 2.0 mg of naloxone.
	To reverse the effects of the opioid, 1.0 mg of naloxone is administered into each nostril of the patient.

 Ensure that more advanced medical personnel have been called as the half-life of naloxone is often shorter than the half-life of the opioid causing the overdose. Other complications can occur if the patient has overdosed on several medications at one time. Responders should be ready for different reactions from patients, from the improvement in respiratory effort to regaining consciousness to acting out violently or vomiting. It is important to remember that the purpose of naloxone is to improve a patient's respiratory effort. In other words, ensure that they are breathing normally on their own. It is not necessary to wake up the patient. If authorized to assist with or administer intranasal naloxone, always follow local protocols and the following steps: Ensure scene safety. Maintain appropriate body substance isolation (BSI) precautions. Maintain open airway and assist with ventilations if the person has a pulse but is not breathing. Suction the airway as needed. Assess level of consciousness and vital signs. Summon advanced medical personnel. Assist with administration of naloxone vial. Screw the caps from both ends of the needle-free syringe. Remove the caps from both ends or the needle-free syringe. Attach the nasal atomizer to the opposite end. Give ventilations using a BVM. Assess the patient to ensure their nasal cavity is free of blood or mucus. Control the patient's head with one hand. Gentiy up opsite nostril. Aim slightly upward and toward ear on same side as the nostril. Briskly compress syringe to administer up to 1.0 mg of atomized spray. Control eving ventilations as needed. 	
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area available for absorption).	
• Continue giving ventilations as needed.	
	 Continue giving ventilations as needed.
 If a patient's mental status and respiratory drive do not improve 	
after 3 to 5 minutes, give a second 2.0 mg dose if available and local protocols allow.	after 3 to 5 minutes, give a second 2.0 mg dose if available and



ENVIRONMENTAL EMERGENCIES

Lesson Length: 110 minutes (130 minutes with Enrichments)

MATERIALS, EQUIPMENT AND SUPPLIES

- Emergency Medical Response textbook
- Course Presentation Slides 326–366
- LCD projector, screen and computer
- Emergency Medical Response DVD
- DVD player and monitor
- Samples of epinephrine auto-injectors, if available
- Epinephrine auto-injector training devices (one for every two participants)
- Disposable latex-free gloves (multiple sizes)

LESSON OBJECTIVES

Knowledge

After completing this lesson, participants will be able to:

- Identify the signs and symptoms of a heat-related illness.
- Describe how to care for a patient who has a heat-related illness.
- Identify the signs and symptoms of a cold-related emergency.
- Describe how to care for a patient who has a cold-related emergency.
- Identify the signs and symptoms of anaphylaxis.
- Describe the care provided to a patient experiencing anaphylactic shock.
- Identify the signs and symptoms of the most common types of bites and stings.
- Describe how to provide general care for various bites and stings.
- Describe various methods of rescuing a victim in the water.

Skill

After completing this lesson, participants will be able to:

- Demonstrate the use of an epinephrine auto-injector.
- Demonstrate appropriate handling and disposal of an epinephrine auto-injector.

TOPIC: INTRODUCTION

ACTIVITY Course Presentation Slide 327	 Review the opening scenario: As the nearest park ranger in the area, you are summoned to a campsite for an incident involving a possible venomous snakebite. When you arrive and size up the scene, you find several campers assisting one of the others, a young adult male. As you begin your primary assessment and investigate the patient's chief complaint, you see two puncture wounds and swelling on his right hand. The patient described the snake as having a triangular-shaped head and distinct diamond-shaped patterns on its body. It struck him like "a bolt of lightning" when he bent down to move some rocks beside the stream. He says the pain is about an 8 or a 9, on a scale of 1 to 10. There is a medical facility at the park headquarters and a regional medical center with antivenom nearby. Ask participants: "How would you respond?"
	Instructor's Note: Let participants provide responses, guiding them to issues related to environmental emergencies, such as snakebites and the associated signs and symptoms, in conjunction with the need to determine if the snakebite is from a poisonous snake to ensure that the appropriate care is provided.
	 Give examples of the wide-ranging situations involved with environmental emergencies, such as heat stroke, frostbite, snakebites and drowning. Tell participants: "Environmental emergencies can range from minor to life threatening."

TOPIC: BODY TEMPERATURE

Time: 10 minutes

KEY POINTS	 The body usually keeps itself at a constant core temperature (internal temperature) of 98.6° F (37° C) through the action of the hypothalamus in the brain. Heat is produced by metabolism; the body also gains heat with any kind of physical activity.
Presentation Slides 328–329	 To keep the body cool, the hypothalamus detects an increase in blood temperature, which causes blood vessels close to the skin to dilate, bringing more blood to the surface and allowing heat to escape.
	If the body becomes too cold, blood vessels close to the skin constrict. If this does not work, the body begins to shiver, which increases body heat because it is a form of movement.
	Five general ways that the body can be cooled include:
	 Radiation, which is the transfer of heat from one object to another without physical contact. Most body heat is lost in this manner.
	 Convection, which is the removal of heat away from the skin when cold air moves over it.
	• Conduction, which is the transfer of heat when the body is in direct contact with a substance that is cooler than the body's temperature.
	 Evaporation, which is when body heat causes perspiration, with the heat absorbed into the sweat, which then dissipates into the air.
	 Respiration, which occurs when air is warmed by the lungs and airway and then is exhaled.

Some individuals are more susceptible to a heat-related illness or cold-related emergency, including those who:
 Work or exercise strenuously in a warm or hot and humid environment or a cold environment.
 Have a pre-existing health problem, such as diabetes mellitus or heart disease.
• Have had a previous heat-related illness or cold-related emergency.
 Take medications to eliminate water from the body (such as diuretics).
 Consume other substances that have a diuretic effect, such as fluids containing caffeine, alcohol or carbonation.
 Live in a situation or environment that does not provide them with enough heating or cooling, depending on the season.
 Do not maintain adequate hydration by drinking enough water to counteract the loss of fluids through perspiration, exertion or exposure to heat and humidity.
 Wear clothing that is inappropriate for the weather.
 Heat-related illnesses and cold-related emergencies occur more frequently among older adults, young children and people with health problems.

TOPIC: HEAT-RELATED ILLNESSES

Time: 15 minutes

KEY POINTS Course Presentation Slides 330–340	 Anyone can experience a heat-related illness; however, several factors can place a person at increased risk, including: Climate (very warm or hot and humid weather). Exercise and activity (exercise or strenuous labor in the heat). Age (the very young and very old). Pre-existing illness and/or conditions (diabetes, infections, obesity, heart disease). Drugs and/or medications (alcohol, diuretics). There are several types of illness related to overheating of the body, or hyperthermia, including exercise-associated muscle cramps, exertional heat exhaustion and heat stroke.
DEHYDRATIO	N
KEY POINTS	 Dehydration, which refers to inadequate fluids in body tissues, can be a serious and even life-threatening situation. It can lead to other heat-related illnesses. The very young and very old have the highest risk. Early signs and symptoms include: Fatigue. Weakness. Headache. Irritability. Nausea. Dizziness. Excessive thirst. Dry lips and mouth.

	 As dehydration worsens, signs and symptoms include: Disorientation or delirium.
	 Loss of appetite.
	 Severe thirst.
	 Dry mucous membranes.
	 Sunken eyes.
	 Lowered blood pressure.
	• Rapid pulse.
	 Dry skin that does not spring back if pinched, creating a "tenting" effect.
	 Lack of tears (particularly important among young children). Decrease in perspiration.
	 Dark, amber urine or lack of urine output.
	• Unconsciousness.
	Care for a patient with dehydration includes:
	• Replacing the lost fluid.
	 Encouraging the patient to drink small amounts of a commercial sports drink or, if one is not available, water, if they are awake and able to swallow.
	 Patient should be allowed to drink until the thirst sensation is guenched.
	 Have the patient sip it at a slow pace or vomiting may occur. If dehydration is severe, fluids may need to be replaced intravenously.
HYPERTHERM	
ACTIVITY	Divide participants into small groups. Assign each group one or more heat- related illnesses (exercise-associated muscle cramps, exertional heat exhaustion and exertional heat stroke), being sure all topics are assigned. Using their textbooks, ask each group to describe the condition, signs and symptoms and appropriate care. Then have each group present their information to the class.
	Instructor's Note: Responses should include:
	Exercise-associated muscle cramps:
	 Description: Painful, spasms of skeletal muscles that occur during or after physical exertion in warm or moderate temperatures that are believed to
	be caused by loss of fluids and associated electrolytes from perspiration
	 Signs and symptoms: Cramps most commonly occur in the legs, arms and abdomen
	• Care:
	 Remove the patient from the heat.
	 Reduce the cramps by having the patient rest and then gently massage and lightly stretch the cramped muscles.
	 Encourage the patient to drink an electrolyte and carbohydrate containing fluid such as a commercial sports drink, fruit juice or milk. Water also may be given if the other drinks are not available.
	 Allow the patient to resume activity with caution if the cramping resolves and the patient feels better.
	 Advise the patient to take frequent breaks and consume liquids to prevent further dehydration and cramping.

Exertional	l heat	exhaustion:
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- Description: A more severe form of heat-related illness that results when fluid lost through perspiration is not replaced by other fluids
- Signs and symptoms:
 - Cool, pale, clammy or slightly flushed skin
 - Fatigue
 - Nausea and/or vomiting
 - Loss of appetite
 - Dehydration
 - Dizziness with possible fainting
 - Elevated heart and respiratory rate
 - Muscle cramps
- O Care:
 - Move the patient out of the hot environment to a cooler area with circulating air.
 - Loosen or remove as much clothing as possible.
 - Apply cool, wet cloths, such as towels or sheets, taking care to remoisten the cloths periodically. Spraying the patient with water and fanning also can help increase the evaporative cooling.
 - If the patient is awake and able to swallow, give them small amounts of a cool fluid such as a commercial sports drink or fruit juice to restore fluids and electrolytes. Milk or water also may be given.
 - Let the patient rest in a comfortable position, and watch carefully for changes in their condition. The patient should not resume normal activities the same day.
 - If the patient's condition does not improve, or they refuse fluids, have a change in level of consciousness or vomit, call for more advanced medical personnel, as these are indications that the patient's condition is getting worse. Stop giving fluids and place the patient on their side in a recovery position if needed. Watch for signs and symptoms of breathing problems. Keep the patient lying down and continue to cool the body any way you can.
- Heat stroke:
 - Description: The most serious heat-related illness, it is a life-threatening condition occurring when the body systems are overwhelmed by heat and begin to stop functioning. There are two types of heat stroke:
 - Classic, which is normally caused by environmental changes, develops slowly with patients exhibiting a minimally elevated core temperature.
 - Exertional, which occurs when excess heat is generated through exercise and exceeds the body's ability to cool off. Exertional heat stroke is seen primarily in young, active individuals.
 - Signs and symptoms:
 - Changes in level of consciousness, including confusion, agitation, disorientation or unconsciousness
 - Trouble seeing
 - Seizures
 - Extremely high body temperature (above 104° F, or 40° C)
 - Flushed or red skin that can be either dry or moist
 - Rapid, shallow breathing
 - Throbbing headache
 - Dizziness, nausea or vomiting

	 Care: Immediately call for more advanced medical personnel. Perform a primary assessment and begin rapid cooling methods, such as immersing the patient in cold water up to their neck if it is safe to do so and resources are available. Douse the patient with ice water-soaked towels over the entire body, frequently rotating the cold, wet towels, spraying with cold water, fanning the patient or covering the patient with ice towels or bags of ice placed over the body. Take steps to minimize shock. Be prepared to give ventilations or perform CPR, if needed.
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TOPIC: COLD-RELATED EMERGENCIES

Time: 15 minutes

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DVD	Show the video segment, "Cold-Related Emergencies" (3:15).
	Answer participants' questions about the video segment.
	 Tell participants: "Cold-related emergencies can be generalized (hypothermia) or localized (frostbite)."
HYPOTHERM	IA
KEY POINTS	 Hypothermia, or generalized cold exposure, is the state of the body being colder than the usual core temperature.
	It is due to either excessive loss of body heat and/or the body's inability to produce heat.
Course Presentation	Predisposing factors include:
Slides 341-347	 Cold environment.
	• Wet environment.
	○ Wind.
	○ Age.
	• Medical conditions.
	 Alcohol, drugs and poisoning.
	 Clothing that is inappropriate for the weather.
	Signs and symptoms include:
	 Shivering (may be absent in later stages of hypothermia).
	• Numbness.
	 Glassy stare.
	 Apathy or decreasing level of consciousness (LOC).
	• Weakness.
	 Impaired judgment.
	The first priority is to move the patient to a warmer environment.

Other critical steps include:
 Performing a primary assessment including a pulse check for up to 30 to 45 seconds based on local protocols.
• Calling for more advanced medical personnel.
 Removing wet clothing and drying the patient.
 Passively rewarming the patient by wrapping all exposed body surfaces and the head with anything at hand, such as warm blankets, clothing or newspapers.
 If far from definitive healthcare, begin active rewarming by placing the patient near a heat source and applying heat pads, hot water bottles or chemical hot packs wrapped in a towel or fabric to the wrists, ankles, armpits, groin and back of the neck to warm the blood in major blood vessels. Active rewarming should not delay definitive care.
 Giving the patient warm—not hot—liquids. Do not give caffeine or alcohol to the patient.
• Administering supplemental oxygen, based on local protocols.
 Monitoring the patient's condition.
Do not rub or massage the patient's extremities nor immerse the patient in warm water.
If you must move the patient, do so slowly and carefully.
 Be prepared to perform CPR or use an automated external defibrillator (AED), if necessary.
Frostbite is the freezing of body tissues, usually the nose, ears, fingers or toes.
 It can be superficial or deep, with either possibly resulting in the loss of the body part.
 Signs and symptoms include:
 Lack of feeling in the affected area.
○ Swelling.
 Skin that appears waxy, is cold to the touch or is discolored (flushed, white, yellow, blue or black).
 Blisters, which may form and the affected part may turn black and show signs of deep tissue damage, in more serious cases.
The priority is to get the patient out of the cold.
Other care measures include:
 Handling the frostbitten area gently.
 If there is a chance the body part may refreeze or if you are close to a medical facility, do <i>not</i> attempt to rewarm the frostbitten area.
 For minor frostbite, rapidly rewarming the affected part using skin- to-skin contact, such as with a warm hand.
 For a more serious injury, rewarming the body part by gently soaking it in water not warmer than about 105° F (41° C).
 Loosely bandaging the area.
 If fingers and toes are frostbitten, placing dry, sterile gauze between them.
 Avoiding the breaking of blisters and taking precautions to prevent hypothermia.
 Monitoring the patient and caring for shock.
 Do not give any ibuprofen or other nonsteroidal anti-inflammatory drugs (NSAIDs) when caring for frostbite.

TOPIC: ANAPHYLAXIS

KEY POINTS	A severe, life-threatening allergic reaction that can be caused by an insect bite or sting, contact with certain drugs, medications, foods and chemicals is called anaphylaxis, a form of shock.
Course	Anaphylaxis can result from any of the four modes of poisoning described in Chapter 15 of the EMR textbook.
Presentation Slides 348–349	Peanuts and tree nuts cause the most cases of fatal and near-fatal allergic reactions to food.
	Signs and symptoms of anaphylaxis include:
	 Trouble breathing.
	 Swelling of the face, neck, tongue or lips.
	 A feeling of tightness in the chest or throat.
	 Skin reactions (such as hives, itchiness or flushing).
	 Stomach cramps, nausea, vomiting or diarrhea.
	• Dizziness.
	 Loss of consciousness.
	 Signs and symptoms of shock.
	To determine if a patient is having a severe, life-threatening allergic reaction (anaphylaxis), look at the situation as well as the patient's signs and symptoms.
	To care for anaphylaxis:
	 Call for more advanced medical personnel.
	 If the patient carries medication (e.g., epinephrine) used for the emergency treatment of anaphylaxis, offer to help the patient use the medication.
	 If you are alone, help the patient administer the medication and then call for additional resources.
	Epinephrine, a form of adrenaline, is used to care for severe allergic reactions, for example, anaphylaxis.
	An epinephrine auto-injector contains a preloaded dose of
	epinephrine (0.3 mg for adults or 0.15 mg for children weighing
	between 33 pounds and 66 pounds) in a spring-loaded plunger that injects the drug when activated by pushing the auto-injector
	against a large muscle mass.
	Always follow medical directions and the manufacturer's instructions for the specific device.
	 Important precautions to keep in mind when assisting with an epinephrine auto-injector include:
	 Determining if the patient has already taken epinephrine or
	an antihistamine and if so, only administering a second dose
	when more advanced medical personnel are not present and if
	anaphylactic symptoms persist after 5 to 10 minutes.
	• Checking the label to confirm that the prescription is for the patient.
	• Checking the expiration date and if expired, not using it.
	 Inspecting the liquid to make sure that it is clear and if it is cloudy, not using it.
	\circ Leaving the safety cap on until the auto-injector is ready to use.

To assist with the administration of an epinephrine auto-injector, you should follow these general guidelines:
 Begin by holding the patient's leg firmly just above the knee to help prevent injury to the patient, and then activate the device by pushing it against the patient's mid-outer thigh.
 Once activated, the device injects the epinephrine into the thigh muscle.
 The device must be held in place for the recommended amount of time to deliver the medication (e.g., 3 seconds, although the recommended time may vary by device). Some medication may still remain in the auto-injector even after the injection is complete.
 After removing the auto-injector, massage the injection site for several seconds (or have the patient massage the injection site).
 Handle the used device carefully to prevent accidental needlestick injuries. Place the used auto-injector in a proper sharps container. If a sharps container is not available, give it to the transporting EMS personnel when they arrive.

SKILL SESSION

ADMINISTERING AN EPINEPHRINE AUTO-INJECTOR ACTIVITY Instructor's Note: To avoid injury during practice, warn participants not to strike their partner too hard with the training injector. For this lesson, participants may use only an epinephrine auto-injector training device. Ask participants to take their textbooks, disposable latex-free gloves and epinephrine auto-injector training devices with them to the practice area. Have participants find a partner (or divide them into small groups if the number of training devices is limited) and guide them through the steps listed on the skill chart as a group. One person will be an EMR and the other will be a conscious patient. Have participants change places and repeat the skill. Other participants should use their textbooks to follow along and give feedback. Observe each participant performing the technique and evaluate completion of the skill using the Skill Checklist. Be sure to point out any common errors, such as failing to obtain consent, not checking that the solution is clear, failing to check the expiration date or removing the safety cap, touching the tip (needle end) or not holding the tip at a 90-degree angle to the injection site. Check off participant's progress on the Participant Progress Log. SKILL After conducting a scene size-up, checking the patient and having someone else call advanced medical personnel, check the auto-injector: Remove the auto-injector from a carrier tube or package, if necessary. If applicable, confirm it is prescribed for the patient. Check the expiration date of the auto-injector. If it has expired, do not use the auto-injector.

If the medication is visible, confirm the liquid is clear and not cloudy. If it is cloudy, do not use it.

	Put on disposable latex-free gloves and make sure the patient is sitting or lying down.
	Note: These instructions are based on the EpiPen [®] . If you are using a different device, follow the manufacturer's instructions.
	IF THE PATIENT IS UNABLE TO SELF-ADMINISTER THE AUTO-INJECTOR, AND IF STATE REGULATIONS ALLOW, and you are authorized by your organization:
	 With the patient sitting or lying down, locate the outside middle of one thigh to use as an injection site.
	Note: If injecting through clothing, check that there are no obstructions at the injection site (e.g., pants seam, keys or a mobile phone).
	Grasp the auto-injector firmly in one fist, and pull off the safety cap with your other hand.
	Note: Hold the auto-injector with the orange tip (needle end) pointing down; pull straight up on the blue safety cap without bending or twisting it.
	Note: Never put your thumb, fingers or hand over the ends of the auto-injector.
	 Hold the patient's leg firmly just above the knee to limit movement during injection. While you are holding the patient's leg, make sure your hands are a safe distance away from the injection site.
	 Hold the auto-injector so that the needle end of the auto-injector is against the patient's outer thigh at a 90-degree angle (perpendicular) to the thigh.
	 Quickly and firmly push the tip straight into the outer thigh. You will hear and/or feel a click indicating that the spring mechanism in the auto-injector has been triggered.
	 Hold the auto-injector firmly in place for 3 seconds "1-1000; 2-1000; 3-1000") to deliver the medication.
	Remove the auto-injector from the thigh carefully and massage (or have the patient massage) the injection area with gloved hands for 10 seconds.
	8. Encourage the patient to remain seated and to lean forward to make it easier for them to breathe. If signs and symptoms of shock are present, encourage the patient to lie down and provide reassurance to the patient that EMS is on the way and you are doing everything you can to help.
	9. Handle the auto-injector carefully while placing it in a sharps container with one hand. Avoid touching the tip of the auto-injector. If a sharps container is not available, give the auto-injector to the transporting EMS personnel when they arrive so the discharged device can be properly disposed.
	 After administering the injection, ensure advanced medical personnel have been called if this has not already been done and monitor the patient's response as follows:
	 Continue to reassure the patient.
	Ask the patient how they feel.Check the patient's breathing.
	If after 5 to 10 minutes advanced medical personnel have not arrived <i>and</i> if symptoms of anaphylaxis have not improved or if they improved but have gotten worse again, administer a second dose of epinephrine in the other thigh.

TOPIC: BITES AND STINGS

ACTIVITY OPTION A Time: 5 minutes Course Presentation Slides 350–359	 Tell participants: "Between 0.5 and 5 percent of the American population is severely allergic to substances in the venom of bees, wasps, hornets and yellow jackets, and these allergic reactions account for an average of 34 reported deaths each year." Using the following scenario, ask participants to identify actions that would be appropriate for this patient: <i>You arrive at a local elementary school in response to a call that a child has been stung by a bee. School officials do not know if the child is allergic to bees.</i>
	 Instructor's Note: Responses should include: Following standard precautions, examining the sting site to see if the stinger is in the skin and removing it if it is still present by scraping the stinger away from the skin with the edge of a tongue depressor or plastic card, such as a credit card. Cleansing the site and covering it with a dressing and applying a cold pack to reduce pain and swelling. Asking if the patient has any history of allergies to insect bites or stings and observing for signs of an allergic reaction, even if there is no known history. Looking for signs of an allergic reaction, even if there is no known history. Difficulty breathing, wheezing or shortness of breath. Tight feeling in the chest and throat. Swelling of the face, neck or tongue. Weakness, dizziness or confusion. Rash or hives. Low blood pressure. Shock. Providing emergency care if anaphylaxis occurs, including assisting with the patient's prescribed epinephrine auto-injector or administering an epinephrine auto-injector, if local protocols; and calling for more advanced
ACTIVITY OPTION B	 <i>medical personnel.</i> Divide participants into two groups. Assign each group two diseases associated with tick bites (Rocky Mountain spotted fever, Babesia infection, Ehrlichiosis and Lyme disease). Using their textbooks, have the groups identify the possible signs and symptoms for each illness. Then have each group present their information to the rest of the class. After the presentations, ask participants to describe how to provide care to a patient with a tick bite.
	 Instructor's Note: Responses should include: Signs and symptoms: Rocky Mountain spotted fever: Fever, nausea, vomiting, muscle pain, lack of appetite, severe headache, rash, abdominal pain, joint pain and diarrhea Babesia Infection: Nonspecific flu-like symptoms, such as fever, chills, sweats, headache, body aches, loss of appetite, nausea or fatigue, and anemia, which can lead to jaundice and dark urine Ehrlichiosis: Fever, headache, fatigue, muscle aches, nausea, vomiting, diarrhea, cough, joint pains, confusion and occasional rash Lyme disease: Fever, headache, fatigue and a characteristic skin rash ("bull's-eye" rash)
	(Continued)

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	 Care: Removing the tick if it is still embedded in the skin using a gloved hand and a fine-tipped, pointed, nonetched, nonrasped (smooth inside surface) tweezers as close to the skin as possible using a slow, steady, firm pulling motion; not attempting to burn the tick off; not applying petroleum jelly or nail polish to the tick Placing the tick in a jar containing rubbing alcohol to kill it Cleaning the bite area with soap and water and applying antiseptic or antibiotic ointment if protocols allow and the patient has no known allergies or sensitivities to the medication Advising the patient to seek medical advice because of the risk of contracting a tickborne disease Arranging for more advanced medical care if the tick cannot be removed
ACTIVITY OPTION C Time: 10 minutes	 Divide the participants into small groups. Assign each group one or more of the following topics, being sure all topics are assigned: General signs and symptoms of spider bites and scorpion stings Signs and symptoms associated with recluse and black widow spider bites Care for a spider bite or scorpion sting Using their textbooks, have each group describe the assigned topic. Then have the groups present their information to the class. Emphasize similarities among the signs and symptoms.
	 Instructor's Note: Responses should include: General signs and symptoms of spider bites and scorpion stings: A mark indicating a possible bite or sting Severe pain in the sting or bite area A blister, lesion or swelling at the entry site Nausea and vomiting Stiff or painful joints Chills or fever Difficulty breathing or swallowing or signs of anaphylaxis Sweating or salivating profusely Irregular heart rhythms Muscle aches or severe abdominal or back pain Dizziness or fainting Chest pain Elevated blood pressure and heart rate Infection of the bite Signs and symptoms of a recluse spider bite: Little or no pain initially but localized pain developing in an hour or more A blood-filled blister forming under the skin surface, possibly in a target or bull's-eye pattern Over time, the blister increasing in size and eventually rupturing and leading to tissue necrosis and a black scab

	 Signs and symptoms of a black widow spider bite: Intense pain or an immediate feeling of a sharp pinprick followed by a dull pain in the area; sometimes, however, no initial pain Muscular rigidity in the shoulders, chest, back and abdomen Restlessness Anxiety Dizziness, headache and profuse sweating Weakness Drooping or swelling of the eyelids Care for a spider bite or scorpion sting: Wash area thoroughly and bandage it. Apply a topical antibiotic ointment if protocols allow and the patient has no known allergies. Apply a cold pack to the site to reduce swelling and pain. Have the patient seek medical attention or, if symptoms are severe, transport the patient to a medical facility, keeping the bite area elevated and as still as possible.
VENOMOUS S	SNAKES
KEY POINTS	 There are an estimated 7000 to 8000 people reported bitten by venomous snakes annually in the United States; however, fewer than five die. Rattlesnakes account for most venomous snakebites and nearly all deaths from snakebites in the United States. Signs and symptoms include: One or two distinct puncture wounds for a pit viper such as a rattlesnake that may or may not bleed, or a semicircular mark for a coral snake. Severe pain and burning at the site immediately or within 4 hours. Swelling and discoloration at the site immediately or within 4 hours. Swelling and discoloration at the site includes: Washing the area with soap and water and keeping the injured area still and lower than the heart. Allowing the patient to walk <i>only</i> if absolutely necessary. While current evidence does not support the use of a pressure immobilization bandage for coral snakes. If local protocols recommend applying a pressure immobilization bandage for coral snakes. If local protocols recommend applying a pressure immobilization bandage against the skin and using overlapping turns. Making sure the wrap covers a long body section, beginning at the point farthest from the heart. Checking above and below the injury for feeling, warmth and color after you have applied an elastic roller bandage. Checking the snugness of the bandage. Keeping the snugness of the bandage. For any snakebite, you should <i>never</i> apply ice, cut the wound, apply suction or a tourniquet or administer electric shock.

MARINE-LIFE	STINGS
KEY POINTS	 The stings of some forms of marine life are not only painful but they can make you sick, and in some parts of the world, can kill you. The side effects can include allergic reactions that can cause breathing and heart problems as well as paralysis and death. Signs and symptoms of marine-life stings include:
	 Rash, which may be red, raised or purplish in the shape of tentacles. Tentacles stuck to the skin. Puncture wounds (from stingrays or sea urchins). Pain or itching. Swelling. Signs and symptoms of an allergic reaction.
	 Basic care steps for jellyfish stings are: Remove the patient from the water.
	 Use gloves or a towel when removing any tentacles.
	 Irrigate the injured part with large amounts of seawater as soon as possible for at least 30 seconds. This can help to remove the tentacles and stop the injection of venom.
	 Do not rub the wound or apply a pressure immobilization bandage, aluminum sulfate, meat tenderizer or other remedies because these may increase pain.
	 Once the stinging action is stopped and tentacles removed, care for pain by hot-water immersion. Have the patient take a hot shower if possible for at least 20 minutes. The water temperature should be as hot as can be tolerated (non-scalding) or about 113° F (45° C) if the temperature can be measured.
	 Pain from most jellyfish stings in U.S. waters resolves within 20 minutes. If pain persists, consider applying a topical over-the- counter lidocaine gel or cream.
	If you know the sting is from a stingray, sea urchin or spiny fish:
	 Flush the wound with tap water. Seawater also may be used. Keep the injured part still and soak the affected area in non-scalding hot water (as hot as the patient can stand) for at least 20 minutes or until the pain goes away.
	 If hot water is not available, packing the area in hot sand may have a similar effect if the sand is hot enough.
	 Carefully clean the wound and apply a bandage.
	 Watch for signs and symptoms of infection and check with a healthcare provider to determine if a tetanus shot or additional care is needed.
DOMESTIC A	ND WILD ANIMALS
KEY POINTS	The bite of a domestic or wild animal carries the risk of infection, as well as soft tissue injury.
	 Dog bites are the most common of all bites from domestic or wild animals.
	The patient should be removed from the situation if possible and only if it is safe.
	 Clean minor wounds from animal bites and control bleeding. Irrigate the wound with large amounts of saline or clean water.

	 The patient should seek more advanced medical care. Heavy bleeding requires immediate control and transportation to a medical facility. Tetanus and rabies immunizations may be necessary, so it is vital that bites from any wild or unknown domestic animals be reported to the local health department or other agency according to local protocols.
HUMANS	
KEY POINTS	 Human bites are quite common and differ from other bites because they may be more contaminated, tend to occur in higher-risk areas of the body (especially on the hands) and often receive delayed care. As with animal bites, if the wound is minor, clean it with large amounts of saline or clean water and control any bleeding. The patient should be advised to seek follow-up care by a healthcare provider or medical facility. If the bite is severe, control bleeding and prepare the patient for transport to a medical facility.

TOPIC: WATER-RELATED EMERGENCIES

Time: 15 minutes

KEY POINTS	Drowning is the fifth most common cause of death from unintentional injury in the United States among all ages but rises to second among those from 1 to 14 years of age.
Course Presentation Slides 360–363	 Drowning is an event in which a victim experiences respiratory impairment due to submersion in water. Drowning may or may not result in death.
	Various factors can contribute to submersion, including children being left alone or unsupervised around water, use of alcohol and recreational drugs, traumatic injury, a condition or disability that may cause sudden weakness or loss of consciousness while in the water or a history of mental illness.
	The length of time that a patient is submerged and unable to breathe and the temperature of the water are other factors determining whether people drown or nearly drown.
	Unconsciousness generally occurs after about 2 minutes of submersion; brain damage can occur in as little as 4 to 6 minutes; death typically results if submersion is longer.
	Signs and symptoms of a drowning incident include:
	 Persistent coughing.
	 Shortness of breath or no breath at all.
	 Disorientation or confusion.
	 Unconsciousness, although the patient may have regained consciousness.
	• Vomiting.
	 Respiratory and/or cardiac arrest.
	Signs of a fatal drowning incident include:
	• Unconsciousness.
	○ No breathing.
	○ No pulse.
	• Rigor mortis.

WATER RESC	CUES
KEY POINTS	 Before attempting a water rescue, you need to consider: The patient's condition (e.g., responsiveness and ability to cooperate, position, any injuries and any condition that may be due to head or neck trauma). Condition of the water (e.g., visibility, water temperature, water movement, water depth and additional hazards, such as exposure to hazardous materials).
	 Resources available. People who drown are not always in easy-to-manage situations. If the patient is in the water, consider your own safety before all else when attempting a water rescue.
	 Water rescues require special training and should be attempted only by those who are properly trained, such as lifeguards. To attempt a water rescue, you must be: A good swimmer.
	 Specially trained in water rescue. Wearing a personal flotation device (PFD). Accompanied by other qualified responders. You should not attempt a water rescue if you are not trained unless the patient is responsive and close to the shore and the emergency
	 has taken place in open, shallow water with a stable bottom. Once secure yourself, you should use the "reach, throw, row then go" technique. The "go" is only for those who are trained to perform deepwater rescue.
	The decision of whether to remove a patient from the water depends on the potential for spinal injury, the patient's overall condition, the temperature of the water and the availability of the necessary equipment and personnel.
	Artificial ventilation may be started in the water; however, chest compressions cannot. If a patient requires CPR, they must be removed from the water.
	If the patient is unresponsive and a spinal injury is suspected, minimize movement to the spine, but priority must be given to airway management.
	If the patient is unresponsive and face-down in shallow water, turn the patient face-up using the head-splint technique. If a spinal injury is suspected, take care to minimize movement of the spine.
	Instructor's Note: Refer the participants to their textbooks for further explanation on caring for an unresponsive patient who is face-up or face-down in shallow water.
	 Follow local protocols for spinal motion restriction, which may include application of a cervical collar and backboarding by more advanced medical personnel.
	 If the patient vomits, turn them to the side to prevent aspiration and choking. Any patient who has been involved in a drowning incident should be
	transported to the medical facility because complications can develop for as long as 72 hours after the incident.

WRAP-UP

ACTIVITY Course Presentation Slide 364	 Review the closing scenario: Based on your findings, you suspect that the snake was venomous and the patient appears to be reacting to the bite. Ask participants: "What initial care can you provide?" "What else should you do and why?"
	 Instructor's Note: Responses should include: Washing the wound and keeping the injured area still and lower than the heart. Transporting the patient via stretcher or by carrying them. If protocols recommend, applying an elastic roller bandage after washing the wound and checking for feeling, warmth and color of the area before bandaging and then checking for feeling, warmth and color above and below the injury after bandaging. Not applying ice, suction or a tourniquet, not cutting the wound and not administering electric shock.
KEY POINTS	 Environmental emergencies include a wide range of situations. As an emergency medical responder (EMR), you need to know how to identify the signs and symptoms to provide the appropriate care. The body tries to protect itself when the body temperature drops below or rises above acceptable levels, but it can only do so to a certain extent. Subsequently, individuals can experience heat-related illnesses and cold-related emergencies. Heat-related illnesses include exercise-associated muscle cramps, exertional heat exhaustion and heat stroke. Heat stroke is a life- threatening emergency. Cold-related emergencies include hypothermia (generalized cold exposure) and frostbite (localized cold exposure). The patient or the area must be rewarmed slowly. Anaphylaxis is a life-threatening emergency. If a patient exhibits two or more signs or symptoms of anaphylaxis, assist with or administer an epinephrine auto-injector based on local protocols. If a patient is stung by an insect or bitten by a tick, remove the stinger or tick carefully. For any snakebite, the injured area should be kept still and lower than the heart. Before entering the water for a water rescue, you need to consider the patient's condition, the condition of the water and resources available. Water rescues require special training and should only be attempted by properly trained responders who follow the "reach, throw, row then go" technique. Always ensure your own safety before trying to help a patient in the water.
ASSIGNMENT FOR THE NEXT LESSON	 Read Chapter 17, Behavioral Emergencies.
INSTRUCTOR PREPARATION	 Review Chapter 17, Behavioral Emergencies. Obtain any necessary equipment and supplies for Lesson 27.

ENRICHMENT: LIGHTNING

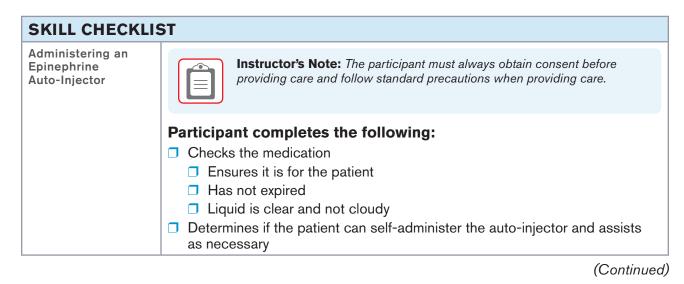
KEY POINTS	 Lightning causes more deaths annually in the United States than any other weather hazard.
	 Lightning can cause burns as well as neurological damage, fractures, and loss of hearing or eyesight.
Course Presentation Slide 365	To prevent being struck by lightning during thunderstorms, individuals should:
	 Postpone activities promptly; do not wait for rain to begin.
	\circ Go quickly inside a completely enclosed building, if possible.
	 Watch cloud patterns and conditions for signs of an approaching storm.
	 Identify safe locations and move or evacuate to a safe location at the first sound of thunder (every 5 seconds between a flash of lightning and the sound of thunder equals a distance of 1 mile).
	 Use the 30-30 rule:
	 Count the time between when you hear the thunder and see the lightning—if 30 seconds or less, the thunderstorm is within 6 miles and you need to seek shelter immediately.
	 Wait at least 30 minutes after the last clap of thunder before leaving shelter.
	 If inside during a storm, keep away from windows as injuries may occur from flying debris or glass if a window breaks.
	 Stay away from plumbing, electrical equipment and wiring during a thunderstorm.
	 Do not use a corded telephone or radio transmitter except for emergencies.
	If you are caught in a storm outdoors and cannot find shelter, you should avoid water, high ground, open spaces, all metal objects and unsafe places, such as under canopies or near trees.
	If lightning is striking nearby when outside and you cannot access shelter, you should crouch down, limit the amount of the body that is touching the ground, keep feet together with your weight only on the balls of your feet, place your hands over the ears and maintain a minimum distance of 15 feet between people.

ENRICHMENT: SCUBA AND FREE DIVING EMERGENCIES

Time: 10 minutes

KEY POINTS	The increasing popularity of SCUBA (self-contained underwater
	breathing apparatus) diving and free diving (deep-water diving without using breathing apparatus) has increased the number of diving-related incidents each year.
Course Presentation	Emergencies associated with SCUBA diving include:
Slide 366	 Barotrauma, which is due to external pressure exerting a crushing type of force on the body parts (i.e., "lung squeeze").

 Pulmonary Overinflation Syndrome (POIS), which occurs because gases under pressure contract and take up less volume; air inhaled at depth will expand as pressure increases during ascent and can go beyond the lungs' capacity. Decompression sickness ("the bends"), which occurs when ascension is too rapid for gases that have been absorbed under pressure to be removed from the body.
 Nitrogen narcosis, which occurs at depths over 100 feet when the pressure causes nitrogen to dissolve into brain nerve membranes, causing a temporary disruption in nerve transmission and resulting in an altered LOC similar to intoxication.
Free diving is dangerous because of the risk of loss of consciousness due to lack of oxygen to the brain and subsequent drowning. Other possible emergencies from free diving include barotraumas, ear perforation, nitrogen narcosis and drowning.
 All diving emergencies are life threatening and require immediate attention, especially if the diver loses consciousness, shows paralysis or shows symptoms of stroke within 10 minutes of surfacing. Care includes the following steps:
 If the patient is alert, place them in a supine (face-up) position; if a spinal injury is suspected, maintain spinal motion restriction.
 If breathing appears adequate, administer supplemental oxygen if available, based on local protocols. If breathing is inadequate, begin positive pressure ventilation and log the exact time of oxygen delivery.
 If needed, initiate ventilations or CPR and apply the AED.
 Try to obtain the patient's diving log and equipment and bring it to the hospital. (Divers keep diving logs to mathematically track how long they have been at a given depth in order to avoid decompression sickness.)
 Transport the patient immediately or call for more advanced medical personnel.
 Medical control will determine if the patient should be transported directly to a facility with a recompression (hyperbaric) chamber. The Divers Alert Network (DAN) maintains a list of recompression facilities and can be reached around the clock at (919) 684-9111 or (919) 684-4326 collect; you can also visit diversalertnetwork.org.



Determines that a conscious patient is unable to self-administer the auto- injector and adheres to local protocols
Locates the outside middle of one thigh to use as the injection site
If injecting through clothing, presses on the area with a hand to determine that there are no obstructions at the injection site, such as keys, coins, the side seam of trousers and so forth
Grasps the auto-injector firmly in the fist and pulls off the safety cap with the other hand
Holds the patient's leg firmly just above the knee to limit movement during injection; makes sure hands are a safe distance from the injection site
Holds the tip (needle end) near the patient's outer thigh so that the auto- injector is at a 90-degree angle to the thigh
 Quickly and firmly pushes the tip straight into the outer thigh and listens for a click
Holds the auto-injector firmly in place for 10 seconds, then removes it from the thigh and massages the injection site with a gloved hand for several seconds
Places the used auto-injector in a proper sharps container, or if one is not available, gives it to transporting EMS personnel when they arrive
Performs an ongoing assessment and observes the patient's response to the epinephrine



BEHAVIORAL EMERGENCIES

Lesson Length: 60 minutes

MATERIALS, EQUIPMENT AND SUPPLIES

- *Emergency Medical Response* textbook
- Course Presentation Slides 367–379
- LCD projector, screen and computer

LESSON OBJECTIVES

Knowledge

After completing this lesson, participants will be able to:

- Identify behavior that suggests a person may be experiencing a behavioral emergency.
- Describe how to approach and care for a person experiencing a behavioral change or psychological crisis.
- Make appropriate decisions about care when given an example of an emergency in which someone is experiencing a behavioral emergency.
- Identify risk factors for suicide.
- Describe how to assess a patient who is contemplating or has already attempted violence toward themselves.

TOPIC: INTRODUCTION

Time: 5 minutes

ACTIVITY Course Presentation Slide 368	 Review the opening scenario: Your fire rescue unit responds to a local mall concerning a man who is threatening violence to anyone who comes near him. When you arrive, police and security guards have the man in protective custody and are trying to calm him down. As you begin interviewing the man and taking a history, his mood abruptly swings to one of remorse and sadness. The smell of alcohol on his breath is overpowering. Ask participants: "How would you respond to this patient?" "What are some things you can do to earn his trust?"
	Instructor's Note: Let participants provide responses, guiding them to issues related to behavioral emergencies, including underlying causes, safety, rapport and trust, and the possible need for restraints.

	 Define behavior as the way that people conduct themselves or respond to their environment. Describe a behavioral emergency as a situation in which a patient exhibits abnormal behavior that is unacceptable or intolerable. Give examples of behavioral emergencies, such as violence, rape and suicide.
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TOPIC: BEHAVIORAL EMERGENCIES

Time: 5 minutes

KEY POINTS Course Presentation Slides 369–370	 A behavioral emergency can be present in individuals who act in an abnormal fashion or in ways that are unacceptable or dangerous to themselves, their family or the community at large. The commonly seen signs and symptoms may present with a rapid onset and include: Emotional reactions, such as panic, anxiety, fear, agitation, depression, withdrawal, confusion and anger. Unusual appearance or speech patterns. Abnormal or bizarre behavior or thought patterns; loss of contact with reality. Aggressive behavior, including threats or intent to harm self or others. Certain odors on the patient's breath, such as alcohol. Pupils that are dilated, constricted or that react unequally. Excess salivation. Loss of bladder control. Visual hallucinations. The primary causes include injury, physical illness, past history of behavioral emergency, alcohol or drug use or abuse, noncompliance with prescribed psychiatric medications, adverse effects of prescribed medications, mental illness and extreme stress. Excited delirium syndrome, in which the person exhibits some or a combination of the following: agitated, violent or bizarre behavior; insensitivity to pain; or extreme increase in body temperature, poses a challenge to emergency medical services (EMS) personnel and law enforcement.
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TOPIC: PSYCHOLOGICAL EMERGENCIES

Time: 10 minutes

KEY POINTS Course Presentation Slide 371	 Psychological emergencies include anxiety and panic, phobias, clinical depression, bipolar disorder, paranoia and schizophrenia. Although a certain amount of anxiety is a normal reaction to stress, excessive anxiety may be part of an anxiety disorder. Individuals experiencing severe anxiety or panic are in real distress and need assistance. Phobias are irrational fears of objects or events that usually are
	 harmless, but they can cause an anxiety or panic attack. Patients who are clinically depressed can experience an emergency that triggers thoughts of suicide.
	 Bipolar disorder is a mental illness in which a person swings from the extreme lows of depression to the highs of mania.
	Paranoia is characterized by feelings of persecution and exaggerated notions of perceived threat.
	Schizophrenia is a severe, chronic mental illness in which the person hears voices or feels that their thoughts are being controlled by others.

ACTIVITY OPTION A Time: 5 minutes	 Using the following scenario, ask participants to identify the behavioral emergency the patient is experiencing. Tell participants that they can use their textbook to help figure out the answer. You arrive at a department store in response to a call that a customer was acting strangely. Upon arrival, you observe the customer moving frantically from one department to another, picking up items and putting them in her bag without paying for them. She is flamboyantly dressed with very dramatic make-up. She is laughing and singing loudly. She is seen approaching several other customers, one right after another, asking each of them if she is beautiful and then asking them to go to the hotel across the street to "have some fun." Instructor's Note: The woman most likely has bipolar disorder, as evidenced by the patient's rapid movements, taking store items, euphoria (with laughing and singing), rapid speech, quickly changing thought patterns, aggressiveness and a desire to "have fun" at the nearby hotel.
ACTIVITY OPTION B Time: 10 minutes	 Divide participants into several small groups. Assign each group one or more of the following psychological emergencies, being sure all topics are assigned: anxiety attack, panic attack, phobias, clinical depression, bipolar disorder, paranoia and schizophrenia. Using their textbooks, have each group develop a list of signs and symptoms for each of the assigned conditions. Then have the groups share their information with the rest of the class. Instructor's Note: Responses should include: Anxiety attack: Fatigue Headaches Muscle tension Muscle aches Difficulty swallowing Trembling or twitching Irritability Sweating Hot flashes Panic attack: Signs and symptoms of an anxiety attack, as well as the following: Difficulty breathing Heart palpitations An out-of-control feeling Phobias: Irrational fear Unexplained, uncontrolled anxiety Desire to flee the situation or avoid the object Inability to continue functioning as long as the person is in the situation or the object is present Acknowledgment that the fear reaction is out of proportion to the situation or or event Physical symptoms, such as heart palpitations, difficulty breathing and sweating

 Clinical depression: Persistent feeling of being useless Loss of interest in regular activities Feeling hopeless or guity Unexplained sadness Crying spells Irritability and restlessness Insomnia or sleeping too much Lack of appetite or overeating (followed by weight loss or gain) Inability to concentrate and make decisions Physical aches and pains with no medical basis Loss of secual desire Thoughts of suicide Bipolar disorder: Signs and symptoms of depression, such as feeling useless or hopeless, alternating between sleeping too much or too little, being unable to go to work and being unable to concentrate Signs and symptoms of mania, such as the following: Rapid speech and quickly changing thought patterns Inability to finish a task Euphoria Increased physical activity Participation in risky activities Inability to sleep Increased physical activity Participation Aggressive behavior Beliefs that there are implants in the person's body that are being monitored Checking for wiretaps (bugs) in every room Accusing people of following them or listening to their conversations Beliefs that there are implants in the person's body that are being monitored Checking for wiretaps (bugs) in every room Accusing people of following them or listening to their conversations Beling suspicious of every person who approaches them Refusing to eat or drink anything that they have not prepared Schizophrenia: Hallucinations (visual or auditory, but mostly auditory) Delusions Lack of personal care or hygiene Inaperiod isolation 	
 Lack of appetite or overeating (followed by weight loss or gain) Inability to concentrate and make decisions Physical aches and pains with no medical basis Loss of sexual desire Thoughts of suicide Bipolar disorder: Signs and symptoms of depression, such as feeling useless or hopeless, alternating between sleeping too much or too little, being unable to go to work and being unable to concentrate Signs and symptoms of mania, such as the following: Rapid speech and quickly changing thought patterns Inability to sit still and/or concentrate Inability to sit still and/or concentrate Inability to finish a task Euphoria Increased physical activity Participation in risky activities Increased desire to have sex Agitation Aggressive behavior Partanoia: Feelings of someone being "out to get them" Feelings of someone being "out to get them" Beliefs that there are implants in the person's body that are being monitored Checking for wiretaps (bugs) in every room Accussing people of following them or listening to their conversations Being suspicious of every person who approaches them Relucing to eat or drink arything that they have not prepared Schizophrenia: Halucinations (visual or auditory, but mostly auditory) Delusions Lack of personal care or hygiene Inappropriate emotions for the situation or lack of emotions altogether Anger 	 Persistent feeling of being useless Loss of interest in regular activities Feeling hopeless or guilty Unexplained sadness Crying spells Irritability and restlessness
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 Paranoia: Feelings of someone being "out to get them" Feelings of being "watched" or "followed" Beliefs that there are implants in the person's body that are being monitored Checking for wiretaps (bugs) in every room Accusing people of following them or listening to their conversations Being suspicious of every person who approaches them Refusing to eat or drink anything that they have not prepared Schizophrenia: Hallucinations (visual or auditory, but mostly auditory) Delusions Lack of personal care or hygiene Inappropriate emotions for the situation or lack of emotions altogether Anger Suspicions and paranoid behavior 	 Signs and symptoms of mania, such as the following: Rapid speech and quickly changing thought patterns Inability to sit still and/or concentrate Inability to finish a task Euphoria Increased physical activity Participation in risky activities Inability to sleep Increased desire to have sex
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TOPIC: PATIENTS WHO ARE VIOLENT TOWARD THEMSELVES

KEY POINTS Course Presentation Slides 372–373	 Patients who are experiencing a behavioral emergency may have no control over what they are feeling at any given moment and can become violent toward themselves or others. For the emergency medical responder (EMR), the primary concern for a patient who is violent toward themselves is to treat any injuries or medical conditions arising from the violence or suicide attempt and then to transport the patient to a facility where they can receive medical and psychiatric treatment.
SUICIDE	
KEY POINTS	 Suicide refers to an intentional act to end one's life. People who commit suicide often feel that they have no other option for resolving their problems except to end their own lives. Suicide is about four times more likely to end in death for males than for females, although females are more likely to attempt suicide. People of any age, race or socioeconomic status are at risk of making suicide attempts; those in the 15- to 24-year-old age group are at highest risk of dying by suicide. Risk factors associated with suicide include: Mental or emotional disorders. History of substance abuse or past suicide attempts. Feelings of hopelessness or isolation. Impulsiveness or aggressiveness. Failed relationships. Personal illness. Failure at work, school or in financial matters. Reluctance to seek help for mental health problems due to the stigma attached to suicidal thoughts, suicide attempts or general mental health problems. An inability to access mental health services. Any threat of suicide must be taken seriously. Ensure the patient is transported for evaluation and ask the patient if they have ever considered suicide. Ask the patient questions to improve your understanding, such as: "How do you feel?" "Are you thinking of hurting yourself or anyone else?" "Have you suffered a personal trauma recently?"
SELE-MUTUA	 "Do you have a weapon nearby?"
SELF-MUTILATION KEY POINTS Self-mutilation. or self-injury. refers to deliberately harming one's own	
	 Self-mutilation, or self-injury, refers to deliberately harming one's own body through acts such as burning or cutting. Self-mutilation may be a component of a mental illness, such as depression, an eating disorder or a personality disorder. It is an unhealthy coping mechanism to deal with overwhelming negative emotions, such as tension, anger and frustration. The individual experiences momentary calmness and a release of tension but then quickly feels a sense of shame and guilt, in addition to a return of the negative feelings that the person was trying to avoid.

TOPIC: PATIENTS WHO ARE VIOLENT TO OTHERS

KEY POINTS	People experiencing a behavioral emergency may become aggressive or violent.
	 Violent behavior can take many forms from verbal abuse to punching, kicking, biting and using weapons.
Course Presentation Slides 374–376	You should be alert to possible signs such as agitation, rapid or incoherent speech, shouting or making threats, clenched fists or a fighting stance, using objects as a weapon or throwing objects.
SEXUAL ASS	AULT
	 Sexual assault is defined as any form of sexual contact, against a person's will, often by coercion, force or threat. Patients suffer from physical and emotional trauma and need to be
	treated with sensitivity.
	Rape refers to non-consensual sexual intercourse often performed using force, threats or violence. Common signs and symptoms seen in rape victims include:
	 Confused, dazed state.
	 Nausea, vomiting, gagging or urination.
	 Intense pain from assault and penetration.
	 Psychological and physical shock and paralysis.
	• Possible bleeding or body fluid discharge.
	• Torn or removed clothing.
	It is vital to manage the rape scene appropriately to preserve evidence.
	\circ Explain what you will be doing and why.
	 Treat the patient on a clean white sheet if possible.
	 Determine the patient's emotional state and complete a physical assessment, checking for trauma.
	 Do not clean the patient or allow them to shower, bathe, brush teeth or urinate to avoid destroying evidence.
	\circ Bag each piece of evidence individually in a paper bag.
	 Follow local protocols and give the evidence to law enforcement personnel as soon as possible.
	Most victims experience rape-trauma syndrome, which occurs in three stages: acute, outward adjustment and resolution.

TOPIC: PROVIDING CARE FOR BEHAVIORAL EMERGENCIES

Time: 15 minutes

	When responding to a possible behavioral emergency, assess the scene to identify any possible sources of harm to yourself, the patient or any bystanders.
Course Presentation Slides 377–378	Identify and locate the patient before you enter the scene and attempt to identify exit or escape routes for your safety, making sure that you remain between the patient and an exit, so you can leave the scene if it is necessary for your own safety.

	As soon as possible, clear the scene of any objects that can be used to injure the patient or others.
	Do not enter the scene if the patient has any kind of weapon.
	Look for clues that may suggest what has happened.
	 Always summon more advanced medical personnel. Do <i>not</i> think that you can manage a situation involving an emotional crisis by yourself. While awaiting their arrival, continue to talk with the patient.
	After entering the scene, establish rapport with the patient before getting too close by speaking directly to the patient and maintaining eye contact, acknowledging that the patient is upset and telling the patient that you are there to help.
	Once you establish rapport, begin to communicate to find out what happened and determine what interventions are needed.
	 Complete an assessment, looking for signs of disorientation or life- threatening conditions. Also, continue to observe for signs of potential violence or sudden behavioral changes.
	Continue to maintain a calm approach; never leave a patient alone.
	Assist with the use of restraints only if instructed by more advanced medical or law enforcement personnel and use only the minimum force needed. Follow local protocols and seek medical direction and approval before applying restraints.
	Document everything you do when using restraints.

WRAP-UP

Time: 5 minutes

ACTIVITY Course Presentation Slide 379	 Review the closing scenario: As you continue to calmly interview the patient, you gradually earn his trust and soon learn that he has had trouble sleeping and has not eaten much in the past 2 weeks. He says he got out of drug rehab 3 months ago. He has not been taking his prescribed medication for about a month and recently lost two very close relatives. The patient says he "sort of went off the wagon." Ask participants: "What are some things you can do to earn his trust?" "What other steps must you consider in providing proper care for this patient?" "What additional resources should you consider?"
	 Instructor's Note: Responses should include: Measures to earn trust, including speaking calmly and directly to the patient; maintaining eye contact; acknowledging that the patient is upset; telling the patient that you are there to help; using a calm, reassuring voice; keeping your distance until it is acceptable to approach; using slow deliberate movements; and not touching the patient without permission. Additional measures, once trust and rapport are established, include being supportive and empathetic without being threatening, confrontational or judgmental; demonstrating that you are listening; making sure that no one interrupts; and continuing to monitor the patient's condition, including changes in behavior. Additional resources include calling for more advanced medical personnel to address alcohol abuse and possible withdrawal symptoms, support services for alcohol detoxification and rehabilitation, and psychological services to help the patient deal with recent losses.

KEY POINTS	 Patients experiencing behavioral emergencies may act in unexpected ways and may pose a danger to themselves or others by reacting in a violent or aggressive manner. Behavioral emergencies can be triggered by injury, physical or mental illness, extreme stress or the use of alcohol or other drugs. Performing the scene size-up is essential to ensure the safety of yourself, the patient and others. Patients may exhibit violence to themselves, such as with suicide or self-mutilation, or toward others, such as abuse, physical attacks, weapons, sexual assault or abuse. Evidence preservation is key when providing care to a patient who was raped. Upon entering the scene of a behavioral emergency, you need to establish rapport with the patient before getting too close. Once rapport is established, you then can communicate to find out what happened and determine what interventions are needed.
ASSIGNMENT FOR THE NEXT LESSON	 Review Chapters 14–17. Begin reading Chapter 18, Shock.
INSTRUCTOR PREPARATION	 Review Chapters 14–17 and Lessons 23–27. Obtain any necessary equipment and supplies for Lesson 28.



PUTTING IT ALL TOGETHER

Lesson Length: 60 minutes

MATERIALS, EQUIPMENT AND SUPPLIES

- Emergency Medical Response textbook
- Course Presentation Slides 380–386
- LCD projector, screen and computer
- Disposable latex-free gloves (multiple sizes) and other personal protective equipment (PPE), as indicated
- Decontamination supplies
- Stethoscopes (one for every two participants)
- Sphygmomanometers (one for every two participants)
- Oxygen cylinders, flowmeters and oxygen delivery devices, such as nasal cannulas, non-rebreather masks and bag-valve-mask (BVM) resuscitators
- Oral airways (one for every two participants)
- Suctioning equipment
- Epinephrine auto-injector training devices (one for every two participants)

LESSON OBJECTIVES

After completing this lesson, participants will be able to:

 Demonstrate the knowledge learned in Lessons 23–27, in addition to all previously learned skills.

INTRODUCTION

Time: 5 minutes

ACTIVITY	Tell participants that they:
	 Will split into several small groups with each group receiving a scenario to role-play, using another member of the class as the patient.
	 Will have approximately 5 minutes to prepare for the role-playing activity and that part of this preparation will include designating the roles each of the group members will assume based on the actual scenario assigned and gathering any necessary equipment and supplies.
	 Are to formulate a response to the scenario integrating the key points and skills learned up to this point in the course, explaining their actions while providing care.

Can explain their actions rather than demonstrate a skill if they feel it necessary to use a skill that they have not yet learned.
 Should be able to answer questions asked by the instructor or other class members.
 Will spend approximately 5 to 10 minutes after role-playing the scenario, critiquing their actions and discussing any problems, errors or difficulties they may have had.

SCENARIO 1: YOU ARE THE EMERGENCY MEDICAL RESPONDER

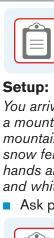
Time: 15 minutes

Course Presentation Slide 381	Instructor's Note: For this scenario, there should be one participant acting as the responder, one participant acting as the patient and at least one participant acting as the bystander. An adult manikin can be used for the patient. You will need to prompt participants during the scenario, noting changes in the patient's condition.
	 Setup: You arrive at the scene of a grocery store in response to a call that an older adult woman has collapsed in the store. One of the bystanders tells you that she saw the woman reaching for an item on the shelf when she suddenly fell to the floor. The woman is lying on the floor. Her eyes are open and she appears to be attempting to talk, but you cannot understand her. One side of her face appears to be drooping and she is drooling. You notice what looks like urine underneath her buttocks and legs and vomit around her mouth and on the floor. Ask participants: "What should you do?"
	 Instructor's Note: Participants should address these areas in their responses: Sizing up the scene, forming a general impression and looking for additional clues as to the mechanism of injury (MOI) or nature of illness; adhering to standard precautions and use of PPE Demonstrating the skill for obtaining a primary assessment, and having a bystander call for more advanced medical personnel
	Instructor's Prompt: Tell participants that the patient responds to verbal stimuli, is breathing and has a pulse.
	 Obtaining as much information as possible from the patient or from bystanders related to events prior to the patient's collapse Assessing the patient using the FAST mnemonic, identifying that the patient is most likely experiencing a stroke Suctioning the mouth if suctioning equipment is available Positioning the patient on her side to keep the airway clear Using an oral airway if the patient becomes unconscious and you are unable to maintain an open airway Performing a focused physical exam to determine if there are any injuries that require immediate treatment Continuing to monitor the patient's condition Demonstrating the skill on an adult manikin for providing supplemental oxygen based on local protocols via nasal cannula, non-rebreather mask or BVM resuscitator as appropriate

SCENARIO 2: YOU ARE THE EMERGENCY MEDICAL RESPONDER

Time: 15 minutes

Course Presentation Slide 382



Instructor's Note: For this scenario, there should be one participant acting as the responder and one acting as the patient.

You arrive at the scene involving a young adult who got lost while hiking through a mountain trail. He was finally discovered after spending two nights in the mountains where the temperature was in the single digits and 10 inches of snow fell. His clothing is wet from the elements and his eyes appear glazed. His hands and face are cold to the touch. The fingers on his left hand appear shiny and white.

Ask participants: "What should you do?"

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Instructor's Note: Participants should address these areas in their responses:

- Ensuring the safety of the scene, forming a general impression and then immediately getting the patient out of the cold and into a warmer environment, taking care to move the patient slowly and carefully
- Adhering to standard precautions and use of PPE
- Summoning more advanced medical personnel
- Performing a primary assessment and continuing to monitor the patient's condition
- Demonstrating the skill of administering supplemental oxygen, if available, based on local protocols
- Removing the patient's wet clothing, drying the patient and applying dry clothing or blankets, being especially careful when handling the patient's left hand (fingers)
- Continuing to monitor the patient's level of consciousness (LOC); if the patient becomes more alert, offering the patient warm fluids
- Warming the patient's left hand in warm water
- Placing dry sterile gauze between the fingers and then loosely bandaging the area

SCENARIO 3: YOU ARE THE EMERGENCY MEDICAL RESPONDER

Time: 15 minutes

Course Presentation Slide 383



Instructor's Note: For this scenario, there should be one participant acting as the responder, one participant acting as the family member and one participant acting as the patient.

Setup:

You arrive at a family home in response to a 9-1-1 call about a teenage male who has been stung by a bee and is having difficulty breathing. The patient's family member, who made the call, meets you at the door to the home. He states that the patient was outside near the garden when he felt a sharp pain like a needle prick on his arm after a bee had landed on him. The patient initially felt OK but started to have trouble breathing and his face and hands have begun to swell. The patient is sitting down and is responsive and has said that he is allergic to bees.

Ask par

WRAP-UP

Time: 10 minutes

R	 Answer participants' questions, ensuring that each participant has an opportunity to resolve any confusion. Review the scenarios and the important elements of care.
KEY POINTS Course Presentation Slides 384–386	 Medical emergencies have a wide range of causes and are manifested by a variety of signs and symptoms. However, the same general guidelines for any emergency are followed, regardless of the cause. Altered mental status includes drowsiness, confusion and partial or complete loss of consciousness. Types of seizures include generalized (grand mal or tonic-clonic), partial, absence (petit mal) and febrile seizures. Epilepsy involves recurrent seizures. There are two types of diabetes mellitus: type 1 in which the body produces little or no insulin and type 2 in which the body produces insulin but the cells do not use it effectively. Hyperglycemia occurs when the blood glucose level is high and the insulin level in the body is too low; hypoglycemia occurs when the blood glucose level is nucleas and the insulin level in the body is too high. Normal blood glucose levels range between 90 and 130 mg/dL before meals and less than 180 mg/dL after meals. A patient experiencing a diabetic emergency should be given a form of sugar if they are conscious and can swallow.

A stroke typically results from blood clots forming or lodging in arteries supplying blood to the brain or from arteries in the brain that rupture and bleed.
 The FAST mnemonic is used to assess a stroke patient.
 Ensuring an open airway is essential for an unconscious patient experiencing a stroke.
The intensity of abdominal pain does not always reflect the seriousness of the condition.
 Patients receiving dialysis can experience emergencies as complications of the dialysis itself or from temporarily being removed from medications.
Poisons typically enter the body through ingestion, inhalation, absorption and injection.
 Vomiting is never induced if the patient is unconscious, having a seizure, is pregnant (in the last trimester), has ingested a corrosive substance or petroleum product, or is known to have heart disease.
 Six major categories of substances may be abused: stimulants, hallucinogens, depressants, opioid narcotics, inhalants and cannabis products.
 When two or more substances are used at the same time, a synergistic (heightened or exaggerated) effect can occur.
 Substance abuse or misuse is not limited to illegal substances only; it also includes legal substances, such as nicotine, alcohol and over-the-counter (OTC) medications.
 Preventing substance abuse and misuse is more cost-effective than treating it.
Environmental emergencies include a wide range of situations.
 Heat-related illnesses include exercise-associated muscle cramps, exertional heat exhaustion and heat stroke (a life- threatening emergency).
 Cold-related emergencies include hypothermia (generalized cold exposure) and frostbite (localized cold exposure). The patient must be rewarmed slowly.
 Anaphylaxis is life threatening. If a patient exhibits two or more signs and symptoms of anaphylaxis assist the patient or, if authorized, administer an epinephrine auto-injector based on local protocols.
With any bite or sting, the stinger or tick should be removed carefully and then the area washed thoroughly.
For any snakebite, the injured area should be kept still and lower than the heart.
Water rescues require special training and should be attempted only by properly trained responders who follow the "reach, throw, row then go" technique.
 Patients experiencing behavioral emergencies may pose a danger to themselves or others.
 Scene size-up is essential to ensure the safety of yourself, the patient and others.
• Upon entering the scene of a behavioral emergency, you need to

ASSIGNMENT FOR THE NEXT LESSON	 Read Chapter 18, Shock.
INSTRUCTOR PREPARATION	 Review Chapter 18, Shock. Review the video segment, "Shock" (1:58). Obtain any necessary equipment and supplies for Lesson 29.

UNIT 6 | TRAUMA EMERGENCIES

Lesson 29:	Shock
Lesson 30:	Bleeding and Trauma
Lesson 31:	Soft Tissue Injuries
Lesson 32:	Injuries to the Chest, Abdomen and Genitalia
Lesson 33:	Injuries to Muscles, Bones and Joints
Lesson 34:	Injuries to the Head, Neck and Spine
Lesson 35:	Skills Review
Lesson 36:	Putting It All Together



SHOCK

Lesson Length: 30 minutes

MATERIALS, EQUIPMENT AND SUPPLIES

- Emergency Medical Response textbook
- Course Presentation Slides 387–397
- LCD projector, screen and computer
- Emergency Medical Response DVD
- DVD player and monitor

LESSON OBJECTIVES

Knowledge

After completing this lesson, participants will be able to:

- List conditions that can result in shock.
- List the signs and symptoms of shock.
- Describe how to provide care to minimize shock.
- Make appropriate decisions about care when given an example of an emergency in which shock is likely to occur.

TOPIC: INTRODUCTION

Time: 5 minutes

ACTIVITY Review the opening scenario: Your ambulance unit is the first to arrive on an isolated road where an 18-year-old male driver lost control of a motor vehicle and collided with a tree. In the crash, the driver's legs were broken, and he is pinned in the wreckage. Course You find the driver conscious, restless and in obvious pain. After a couple of Presentation minutes, the patient's condition has changed. He begins to look ill. You notice Slide 388 he responds only to loud verbal stimuli, is breathing fast and looks pale. His skin is cold and moist, and his pulse is rapid and weak. Ask participants: "What would you do to help the patient?" **Instructor's Note:** Let participants provide responses, guiding them to issues related to shock, including the underlying reasons for shock, the different types of shock, the signs and symptoms of early and late shock and measures to provide care.

 Describe shock as a progressive condition in which the circulatory system fails to adequately circulate oxygenated blood to all parts of the body, resulting in inadequate tissue perfusion.
Tell participants: "Another term for shock is hypoperfusion."

TOPIC: SHOCK-THE WHAT AND WHY

Time: 5 minutes

DVD Course Presentation Slide 389	 Show the video segment, "Shock" (1:58). Answer participants' questions about the video segment. Instructor's Note: This video segment can be shown now to provide an overview of the topic, or it can be shown at the end of the lesson to provide a mechanism for summarizing the important details.
KEY POINTS	 Shock occurs when the vital organs do not receive sufficient oxygenated blood and the body begins a series of responses to protect these organs. Blood flow to the less important tissues of the arms, legs and skin is reduced so that more blood can go to the vital organs. This mechanism can protect the body over the short term, but if the situation is not treated quickly, shock can lead to death. Three conditions are necessary to maintain adequate blood flow: a functioning heart, intact blood vessels with the ability to adjust blood flow and an adequate amount of circulating blood. Injury or sudden illness can disrupt normal body functions. Shock occurs for several possible reasons: Severe bleeding or loss of fluid from the body Failure of the heart to pump enough oxygenated blood Abnormal dilation of the vessels Impaired blood flow to the organs and cells

TOPIC: TYPES OF SHOCK

Time: 5 minutes

KEY POINTS Course Presentation Slides 390–391	 There are four major types of shock: Hypovolemic shock is due to a severe lack of blood or fluid within the body; hemorrhagic shock is the most common type.
	 Obstructive shock is due to some type of obstruction to the blood flow, such as from pulmonary embolism, tension pneumothorax or cardiac tamponade.
	 Distributive shock is due to inadequate distribution of the blood in the blood vessels or throughout the body, resulting in inadequate volume of blood returning to the heart; it includes neurogenic, anaphylactic and septic shock.
	 Cardiogenic shock is due to the heart's inability to supply adequate blood circulation to the vital organs, usually resulting from disease, trauma or injury to the heart.
	 Other types of shock include hypoglycemic, metabolic, psychogenic and respiratory shock.

ACTIVITY	 Divide the participants into small groups. Using their textbooks, have each group describe the mechanisms that lead to the three types of distributive shock (neurogenic, anaphylactic and septic shock). Then have the groups share their information with the class. Using the participants' information, point out similarities and differences among the three types of distributive shock.
	 Instructor's Note: Responses should include: Neurogenic shock is due to spinal cord or brain trauma that interferes with the blood vessels' ability to constrict and dilate. The transmission of messages for the vessels to respond is disrupted, leading to blood pooling at the lowest point of the body. Anaphylactic shock is due to the exposure to an allergen resulting in a whole-body reaction that leads to dilation of the blood vessels and constriction of the airways. Blood pools and breathing is impaired. Septic shock is due to bacteria releasing toxins in the bloodstream from an overwhelming infection. Circulating toxins damage the tissues, leading to a drop in blood pressure. The similarity is that the blood vessels are unable to adapt, which leads to inadequate distribution or inadequate blood volume returning to the heart. The difference lies with the underlying causes (e.g., neurogenic shock is due to a spinal cord or brain injury, anaphylactic shock is due to an allergen exposure and septic shock is due to overwhelming infection).

TOPIC: SIGNS AND SYMPTOMS OF SHOCK

Time: 5 minutes

KEY POINTS	The signs and symptoms of shock may seem minor at first but shock is progressive and responding to the signs and symptoms promptly will increase the patient's chance of survival.
Course	Early signs and symptoms include:
Presentation	 Feelings of apprehension and anxiety.
Slides 392-394	 Slightly lower body temperature.
	 Rapid breathing.
	 Slight increase in pulse rate.
	 Normal or slightly decreased blood pressure.
	 Pale or ashen and cool skin.
	Later signs and symptoms include:
	 Listlessness.
	• Confusion.
	 Difficulty speaking.
	 Shallow, irregular breathing.
	 Decreased blood pressure (diastolic blood pressure may reach zero).
	 Rapid yet weak and irregular pulse.
	• Pale, cold and clammy skin.
	 Low body temperature.
	 Dilated pupils that are slow to respond to light.
	Early signs of shock may be absent in young children because their bodies can compensate; however, the child's blood volume is less than that of an adult, so losing what looks like a small amount of blood can be serious for a child.

 Using the following scenario, ask participants to identify the type of shock that the patient is experiencing and whether he is exhibiting early or late signs of shock: You are providing care to a patient who has fallen off a 6-foot ladder into a pile of construction debris. He has numerous lacerations on his body with two large open wounds on his thighs that are bleeding profusely. The patient is pale but alert and anxious. His respiratory rate is 28 breaths per minute and his pulse rate is 104 beats per minute. His blood pressure is within his usual range.
 Instructor's Note: Responses should include: The cause is most likely hypovolemic/hemorrhagic shock due to the blood loss. The patient is exhibiting signs of early shock—alert but anxious, pale skin, breathing quickly with slightly increased pulse (as evidenced by increased respiratory and pulse rates) and normal blood pressure.

TOPIC: CARE FOR SHOCK

ime: 5 minutes

	 Preventing shock from developing is just as important as caring for shock. To prevent shock, follow the same care steps as you would to treat shock.
Course	Take steps to control any severe, life-threatening bleeding and prevent further blood loss.
Presentation Slides 395–396	You must respond quickly if you identify signs and symptoms of shock.
	Ensure an open, clear airway, perform a primary assessment and call for more advanced medical personnel. Administer supplemental oxygen based on local protocols and provide appropriate ventilatory support.
	Leave the patient in a supine position if you are not sure of their condition.
	 Immobilize any suspected broken bones or dislocated or damaged joints.
	 Maintain normal body temperature and use blankets over and under the patient as necessary.
	Talk to the patient in a calm and reassuring manner.
	Do not give any food or drinks, even if the patient asks for them.
	 Treat any specific injuries or conditions and have the patient transported to a hospital as soon as possible.

WRAP-UP	Time: 5 minutes
ACTIVITY Course Presentation Slide 397	 Review the closing scenario: <i>After extrication teams arrive, they finally free the driver from the vehicle and</i> <i>remove him from the car. You notice that the patient looks worse. He now</i> <i>responds only to painful physical stimuli. His breathing has become very</i> <i>irregular. You know that the hospital is 20 minutes away.</i> Ask participants: "How would you respond?" "What should you do to provide care until the patient arrives at the hospital?"
	 Instructor's Note: Responses should include care to address the patient's late stage of shock, including: Summoning more advanced medical personnel if not already done. Maintaining an open and clear airway and administering supplemental oxygen based on local protocols. Providing ventilations as indicated. Keeping the patient in a supine position. Immobilizing any suspected fractures or dislocations. Applying pressure to control any external bleeding. Covering the patient with blankets to prevent heat loss. Continuing to talk to the patient and monitoring for changes in his overall status, including level of consciousness (LOC), breathing and pulse, and signs and symptoms of progressing shock.
KEY POINTS	 Shock or hypoperfusion can result from any condition where the body's ability to get oxygenated blood to the vital organs is compromised. It can be caused by a loss of blood or body fluids, ineffective pumping of the heart, overdilation of the blood vessels or damage to the chest or airways. Shock is a progressive situation that, if not treated promptly, can lead to death. When providing care to a patient in shock, you must first control any severe, life-threatening bleeding. Ensure an open and clear airway and breathing, keep the patient in a supine position, splint any broken bones or joints, keep the patient from getting chilled or overheated, reassure and comfort the patient, reduce pain, give no food or drink, treat specific injuries, call for more advanced medical personnel and transport the patient as soon as possible.
ASSIGNMENT FOR THE NEXT LESSON	 Read Chapter 19, Bleeding and Trauma. Read Enrichment: Mechanisms of Injury—The Kinematics of Trauma (<i>optional</i>), pages 459–462.
INSTRUCTOR PREPARATION	 Review Chapter 19, Bleeding and Trauma. Review Enrichment: Mechanisms of Injury—The Kinematics of Trauma (<i>optional</i>), pages 459–462. Review the video segments, "Controlling Bleeding" (3:13) and "Using a Commercial Tourniquet" (1:23). Review the skills and obtain any necessary equipment and supplies for Lesson 30.



BLEEDING AND TRAUMA

Lesson Length: 75 minutes (90 minutes with Enrichment)

MATERIALS, EQUIPMENT AND SUPPLIES

- *Emergency Medical Response* textbook
- Course Presentation Slides 398–413
- LCD projector, screen and computer
- Emergency Medical Response DVD
- DVD player and monitor
- Disposable latex-free gloves (multiple sizes) and other personal protective equipment (PPE), as indicated
- Tape
- Dressings, such as sterile and nonsterile gauze dressings of different sizes, universal or trauma dressings and/or occlusive dressings, as available
- Bandages, such as adhesive compresses, roller bandages, elastic bandages and/or triangular bandages
- Tourniquets (commercially manufactured, such as the American Red Cross SOF-T or the Combat Application Tourniquet [CAT[®]], *not* improvised tourniquets)
- Samples of hemostatic dressings
- Simulated limb(s) or trauma manikin (for demonstrating and applying a tourniquet)

LESSON OBJECTIVES

Knowledge

After completing this lesson, participants will be able to:

- Describe the components of a trauma system.
- Differentiate among arterial, venous and capillary bleeding.
- Describe how to care for external bleeding, including when and how to use a tourniquet and hemostatic dressing.
- List appropriate standard precautions to follow when controlling external bleeding.
- Explain the functions of dressing and bandaging.
- List the signs of internal bleeding.
- Describe how to care for a patient who exhibits the signs and symptoms of internal bleeding.
- Make appropriate decisions about care when given an example of an emergency in which a patient is bleeding.

Skill

After completing this lesson, participants will be able to:

- Demonstrate how to control external bleeding with direct pressure, dressings and bandages, including caring for shock.
- Demonstrate how to control severe, life-threatening bleeding using a commercial tourniquet.

TOPIC: INTRODUCTION



- Review the opening scenario:
 - As a member of your company's medical emergency response team (MERT), you are called to assist a worker whose arm has been lacerated by a part that came loose from a lathe. The man's arm is bleeding severely. You arrive to find a co-worker attempting to stop the bleeding.
- Ask participants: "How would you respond?"



Instructor's Note: Let participants provide responses, guiding them to issues related to controlling external bleeding, including the use of direct pressure, dressings and bandages, tourniquets and hemostatic dressings.

 Define bleeding as the loss of blood from arteries, veins or capillaries, either internally or externally. Emphasize that uncontrolled bleeding, whether external or internal, is a life-threatening emergency.

TOPIC: TRAUMA SYSTEM

Time: 5 minutes

KEY POINTS Course Presentation Slide 400	 A trauma system is a regional or community-based system that provides definitive care for injured (trauma) patients. These systems consist of many different components that provide patients with a seamless transition from prehospital care to acute and posthospital care, leading to improved patient outcomes. A comprehensive trauma system also participates in community outreach activities including injury prevention programs. There are four primary levels of facilities for trauma care: Level I trauma center: This facility must have the capability to deal with all levels and types of patient injury on a 24-hour basis. These facilities are leading medical care facilities, often university-based teaching hospitals, and must have an adequate depth of resources and personnel to deal with all levels of patient care. These facilities also conduct research and community outreach. Level II trauma center: This facility is expected to be able to provide definitive care to patients, despite the type of injury the patient may have suffered. Its care capabilities are generally the same as a Level I trauma center: These facilities are often found in smaller communities that do not have immediate access to larger Level I or Level II trauma center: These facilities are often found in smaller communities that do not have immediate access to larger Level I or Level I or II facility as required. Level IV trauma center: These facilities are often rural clinics in remote areas and can generally only offer initial patient care
	• Level IV trauma center: These facilities are often rural clinics

TOPIC: **BLEEDING**

Time: 10 minutes

KEY POINTS Course Presentation Slide 401	 The severity of blood loss can be estimated based on the patient's signs and symptoms and your general impression of the amount of blood loss. It is essential to control bleeding to prevent shock and possible death. Blood can be lost from arteries, veins or capillaries, the most severe of which is typically arterial bleeding. Hemorrhage occurs with the loss of a large amount of blood in a short period of time or with continuous bleeding.
ACTIVITY	 Divide the participants into small groups. Assign each group one or more of the following, being sure all topics are assigned: arterial bleeding, venous bleeding and capillary bleeding. Using their textbooks, ask participants to describe the type of bleeding and develop a list of signs that indicate that type. Then have each group present its information to the class.
	 Instructor's Note: Responses should include: Arterial bleeding is typically the most urgent type of bleeding. Arterial blood is oxygenated and is being pumped from the heart to supply the body with nutrients. External arterial bleeding can be caused by both blunt and penetrating trauma. Arterial bleeding can also occur when organs and blood vessels are damaged. Signs of arterial bleeding: Blood is bright red. Blood spurts from the wound as it is being pushed by the heart's pumping action. Blood decreases in pressure as the patient's blood pressure drops, due to decreased blood volume. Venous bleeding is usually the result of an outside force causing trauma or an internal force breaking through a vein, such as a broken bone or organ damage. The blood is returning to the heart so it does not have as much pressure to move it forward. Bleeding from a vein can be severe. Signs of venous bleeding: Blood is darker red than arterial blood. Blood flows steadily, but the flow can still be quick and severe. Bleeding may be easier to stop because it does not have the same pressure as arterial bleeding. Capillary bleeding is not usually a concern in healthy people. It is usually slow because the vessels are small and the blood is under low pressure. Signs of capillary bleeding: Blood is darker red than arterial blood. Blood is darker red than arterial blood. Blood is od pressure as arterial bleeding.

TOPIC: DRESSINGS AND BANDAGES

Time: 5 minutes

KEY POINTS Course Presentation Slides 402–403	 All open wounds need some type of covering to help control bleeding, absorb drainage and prevent contamination and infections. These coverings commonly are referred to as dressings and bandages. Dressings are pads placed directly on the wound to absorb blood and other fluids and to prevent infection. Firm direct pressure is used. Examples of dressings include sterile and nonsterile gauze, universal or trauma dressings and occlusive dressings.
	Instructor's Note: Show participants various examples of dressings, <i>if available.</i>
	 Bandages, which can be any material used to wrap or cover any body part, can be used to hold dressings in place, apply pressure to control bleeding, help to protect a wound from dirt and infection, and provide support to an injured limb or body part. Examples of bandages include commercial adhesive compresses, bandage compresses, roller bandages, elastic bandages and triangular bandages. A pressure bandage will hold gauze pads in place while maintaining direct pressure. When applying a roller bandage, secure the end of the bandage and wrap it around the body part until the dressing is completely covered and the bandage extends several inches beyond the dressing. Elastic bandages are designed to keep continuous pressure on a body part. When properly applied, they can effectively control swelling or support an injured limb. Triangular bandages can hold a dressing or splint in place on most parts of the body. Used as a sling, the triangular bandage can support an injured shoulder, arm or hand.

TOPIC: EXTERNAL BLEEDING

Time: 35 minutes

KEY POINTS Course Presentation Slides 404-407	 External bleeding usually is easy to control. You should always follow standard precautions when providing care:
	 Avoid contact with the patient's blood—directly or indirectly— by using barriers, such as disposable latex-free gloves and protective eyewear.
	 Avoid eating, drinking and touching your mouth, nose or eyes while providing care or before washing your hands.
	 Always wash your hands thoroughly before (if practical) and after providing care, even if you wore gloves or used other barriers.

	 Fingertip pressure is used first to control bleeding. If the wound is large and fingertip pressure does not work, hand pressure with gauze dressings is used. If the dressing becomes saturated with blood while you are applying pressure, do not remove the original dressing or bandage. Instead, leave the original and replace other dressings and bandages with new dressings and reapply direct pressure. Then cover the dressings with a bandage to hold them in place. Adding multiple dressings and bandages can reduce the overall effectiveness of the dressings by spreading the pressure out over a wider area. If you are controlling bleeding from an open fracture, you should not apply direct pressure over the bones but instead should pack sterile gauze around the area.
DVD	 Show the video segment, "Controlling Bleeding" (3:13). Answer participants' questions about the video segment.
	Instructor's Note: This video segment can be shown now to provide an overview and introduction to the skill session, or it can be shown at the end of this section to provide a mechanism for summarizing the important details.

SKILL SESSION

USING DIREC	CT PRESSURE TO CONTROL EXTERNAL BLEEDING
ACTIVITY	 Ask participants to take their textbooks, disposable latex-free gloves and dressing and bandaging supplies with them to the practice area. Divide participants into pairs and guide the pairs through the steps listed on the skill chart. Have each participant demonstrate how to control external bleeding with their partner. Observe each pair performing the technique and evaluate completion of the skill using the Skill Checklist. Be sure to point out any common errors, such as applying pressure away from the wound, not applying enough pressure or failing to adhere to standard precautions. Check off participant's progress on the Participant Progress Log.
SKILL	 Note: Always follow standard precautions when providing care and summon more advanced medical personnel if necessary. 1. Cover the wound with a dressing, such as a sterile gauze pad, and apply direct pressure firmly against the wound until bleeding stops. If blood soaks through the dressing, leave the original dressing in place, but remove any excess dressings or bandages and apply a new one on top. Then apply additional direct pressure. (Press harder than you did before, if possible.) 2. When the bleeding stops, check for circulation (feeling, warmth and color) beyond the injury.

	3. Apply a roller bandage. Wrap the bandage around the wound several times to hold the gauze pad(s) in place.
	• Tie or tape the bandage to secure it.
	 Check for circulation (feeling, warmth and color) beyond the injury. If there is a change in feeling, warmth or color (indicating that the bandage is too tight), gently loosen it.
	4. Remove your disposable latex-free gloves and wash your hands.
	Note: If the bleeding does not stop with the application of direct pressure, call for more advanced medical personnel if you have not already, and give care for shock if necessary.
NOSEBLEED	S
	 Nosebleeds usually are self-contained and most often can be stopped easily. Providing care for a nosebleed includes: Ensuring that the conscious patient is sitting upright. Tilting the head and upper body forward slightly.
	 Pinching the nostrils together firmly for about 5 to 10 minutes. Telling the patient not to sniffle or blow their nose. Not packing the patient's nose to stop the bleeding. If you suspect a fractured skull, you should not stop a nosebleed; cover the nostrils loosely with sterile gauze.
OTHER METH	IODS TO CONTROL SEVERE, LIFE-THREATENING BLEEDING
KEY POINTS	 For a wound that is bleeding severely, if direct pressure fails to control the bleeding or is not possible, application of a manufactured (commercial) tourniquet or a hemostatic dressing by a properly trained responder can be considered. Manufactured tourniquets are preferred over makeshift or homemade devices.
	 For wounds not on an extremity or when a tourniquet is not available or effective, a hemostatic dressing with firm direct pressure may be considered, following the manufacturer's instructions and local protocols.
TOURNIQUET	rs
KEY POINTS	A tourniquet is a device placed around an arm or leg to constrict blood vessels and stop blood flow to a wound.
	In some life-threatening circumstances, you may need to use a tourniquet to control bleeding as the first step instead of maintaining direct pressure over several minutes.
	Examples of situations where it may be necessary to use a tourniquet include:
	 Severe, life-threatening bleeding that cannot be controlled using direct pressure.
	• A physical location that makes it impossible to apply direct pressure to control the bleeding (e.g., the injured patient or their limb is trapped in a confined space).
	 Multiple patients with life-threatening injuries who need care and there are limited resources available.
	• A scene that is or becomes unsafe.

	 If you find yourself in a situation where you need to apply a tourniquet, follow the manufacturer's instructions for applying it. Tourniquets can be extremely painful. If you must apply a tourniquet, make sure the patient understands the reason for the tourniquet, and warn them that it may be painful.
DVD	 Show the video segment, "Using a Commercial Tourniquet" (1:23). Answer participants' questions about the video segment.

SKILL SESSION

USING A COM	IMERCIAL TOURNIQUET WITH A WINDLASS
ACTIVITY	Instructor's Note: Whenever possible, practice this skill by applying the tourniquet to a simulated limb or if unavailable, a pool noodle cut up into 12- to 18-inch sections. When using a commercial tourniquet, follow manufacturer's instructions.
	 Ask participants to take their textbooks, disposable latex-free gloves and manufactured tourniquet with them to the practice area. Have participants find a partner (or divide them into small groups if the number of training devices is limited) and guide them through the steps listed on the skill chart as a group. Do not allow participants to practice the skill on each other. Have participants change places and repeat the skill. Other participants should
	 use their textbooks to follow along and give feedback. Observe each participant performing the technique and evaluate completion of the skill using the Skill Checklist. Be sure to point out any common errors, such as failing to obtain consent, not tightening the tourniquet or placing the tourniquet directly over a joint. Check off participant's progress on the Participant Progress Log.
SKILL	Note: Always follow the manufacturer's instructions and local protocols when applying a tourniquet.
	After conducting a scene size-up, checking the patient and having someone else call for more advanced medical personnel and then determining that standard first aid care for bleeding (direct pressure) is not effective or appropriate for controlling the severe, life-threatening bleeding:
	1. Place the tourniquet around the limb, approximately 2 inches above the wound. Avoid placing the tourniquet over a joint
	2. Route the tag end of the strap through the buckle of the tourniquet, if necessary.
	3. Pull the strap tightly and secure it in place.
	4. Tighten the tourniquet by twisting the rod (windlass) until the flow of bleeding stops and then secure the rod in place. Do not cover the tourniquet with clothing.
	5. Note and record the time that you applied the tourniquet and give this information to more advanced medical personnel.

HEMOSTATIC	DRESSINGS
KEY POINTS	 A hemostatic dressing is a dressing treated with an agent or chemical that speeds up clotting. As is the case with tourniquets, hemostatic dressings are used when severe life-threatening bleeding exists and standard procedures (direct pressure) for bleeding control fail or are not practical.
	 Typically, hemostatic dressings are used on parts of the body where a tourniquet cannot be applied, such as the neck, torso and junctional areas such as the abdomen and groin. Hemostatic dressings may also be used on extremities when a
	 tourniquet is not available or is not effective. Hemostatic dressings need to be applied at the site of the bleeding and be packed deep inside the wound along with direct pressure. Follow the manufacturer's instructions for proper application of the
	 hemostatic dressing according to local protocols. To be effective, hemostatic dressings require continuous direct pressure at the source of the bleeding until the bleeding is controlled. Any time a hemostatic dressing is applied, the patient needs to be evaluated by a healthcare provider.

TOPIC: INTERNAL BLEEDING

KEY POINTS Course Presentation Slides 408–410	 Internal bleeding can be caused by a variety of injuries or conditions, including blunt force trauma. The damage is not visible, so bleeding is concealed and can be extensive. Internal bleeding also can occur with external bleeding. Internal bleeding may not be easy to recognize. Signs and symptoms include: Discoloration of the skin around the area (bruising) on the neck, chest, abdomen or side. Nausea, vomiting or coughing up blood. Discolored, painful, tender, swollen or firm tissue (e.g., the abdomen). Tenderness and guarding (protecting the area). Signs and symptoms of shock may be present, including: Anxiety or restlessness. Rapid breathing. Skin that feels cool or moist or that looks pale, ashen or bluish. Excessive thirst. Declining level of consciousness (LOC). Drop in blood pressure. If a patient is bleeding internally: Call for more advanced medical personnel if serious internal bleeding is suspected. Ensure the patient remains as still as possible, to reduce the heart's blood output. Care for shock. When internal bleeding is from the capillary blood vessels, the
	result is bruising around the wound area and is not serious. To reduce discomfort for the patient, you can apply a cold pack.

ACTIVITY	 Using the following scenario, ask participants to identify the type of bleeding that is occurring and what care they would provide: You arrive on the scene of an emergency in which a patient has fallen off an 8-foot porch roof into a pile of trash being cleared from the home. He initially landed on his feet and then fell backward. You notice a large open wound on his lower left leg with what looks like a piece of bone protruding. The wound is bleeding steadily from the site. He is complaining of severe pain in his back.
	 Instructor's Note: Responses should include: The patient is experiencing external bleeding as evidenced by the open wound. Also, possible internal bleeding is occurring due to a suspected fracture as well as how the patient fell backward. The steadily flowing blood from the wound suggests venous bleeding. Care includes: Summoning more advanced medical personnel. Keeping the patient as still as possible. Packing sterile gauze around the area of the suspected fracture to control the bleeding and prevent infection. Immobilizing the extremity. Positioning the patient flat. Monitoring for signs and symptoms of internal bleeding and shock.

WRAP-UP	Time: 5 minutes
ACTIVITY Course Presentation Slide 411	 Review the closing scenario: You have called for more advanced medical personnel. Blood is spurting with each beat of the patient's heart. The bandage is soaked with blood and your partner notices that the patient is turning pale and his LOC is changing. Ask participants: "How would you respond?" "What other concerns do you have and what additional steps should you take until emergency medical services (EMS) personnel arrive?" Instructor's Note: Responses should include: Immediately attempt to control the bleeding because it is arterial; apply direct pressure, and summon more advanced medical personnel. If direct pressure fails to control the bleeding or is not possible, apply a manufactured (commercial) tourniquet or a hemostatic dressing.
	Additional concerns include that the bleeding is arterial and the patient is developing signs and symptoms of shock.
KEY POINTS	 A trauma system provides a seamless transition for patients to move between each phase of care. There are four levels of trauma care: Level I, Level II, Level III and Level IV. Bleeding can be external or internal and it may have an arterial, venous or capillary origin. External bleeding can be controlled with direct pressure alone or with other methods such as tourniquets and hemostatic dressings when direct pressure does not work. Internal bleeding can occur alone or with external bleeding. Whether the bleeding is external or internal, shock is always a possibility.

ASSIGNMENT FOR THE NEXT LESSON	 Read Chapter 20, Soft Tissue Injuries.
INSTRUCTOR PREPARATION	 Review Chapter 20, Soft Tissue Injuries. Review the video segment, "Caring for Burns" (6:16). Obtain any necessary equipment and supplies for Lesson 31.

ENRICHMENT: MECHANISMS OF INJURY—THE KINEMATICS OF TRAUMA

Time: 15 minutes

VEHICLE COL	LISIONS
KEY POINTS	 Motor-vehicle collisions are some of the most frequent scenes to which an EMR may be called.
	 Collisions are categorized as head-on impact, rear impact, side impact, rotational impact and rollover.
Course Presentation Slides 412–413	Each collision category shows a predictable pattern of injury, which is influenced by the type of restraint worn by the occupant at the time of the collision.
	Injuries common to both head-on and rear-impact collisions include face, head, neck, chest and abdominal injuries.
	In side-impact collisions, persons on the impacted side of the collision sustain more injuries than do occupants on the opposite side. The body moves one way and the head the other, making head and neck injuries more common. Chest and pelvic injuries also are possible in this situation.
	Rotational impact occurs off center, when the car strikes an object and rotates around it until the car either loses speed or strikes another object. Injuries similar to head-on and side-impact collisions can be expected in these cases.
	In rollovers, the occupants of the car change positions as the car rolls. In these cases, predicting injury is impossible since every object in the car becomes potentially lethal. Common injuries in rollovers include soft tissue injuries, multiple broken bones and crushing injuries.
	 Although proper use of restraints in a vehicle will help to lessen the likelihood of injury for the occupants, injuries still can be sustained. A lap belt prevents occupants from being thrown from a car, but it does not prevent head, neck and chest injuries and can cause internal injuries, including injury to the diaphragm, if not worn properly.
	• Lap and shoulder belts prevent occupants from striking the steering wheel and dashboard, but they do not prevent head and neck injury, and a severe impact can cause damage to the clavicle.
	 An air bag must have a high impact to deploy, and occupants must be wearing seat belts for full effect. Deployed air bags can cause burns, contusions (bruises) and other, more serious injuries. Headrests limit the effects of head, neck and spinal injuries when
	properly adjusted.
	There are four potential scenarios that occur with motorcycle collisions: head-on, angular, ejection and laying the bike down.
	 All-terrain vehicle collisions commonly result in head, neck and extremity injuries.

FALLS	
KEY POINTS	 A significant number of trauma-related injuries are caused by falls each year, particularly in older adults. Severity of the injury depends on the distance of the fall, any interruptions during the fall, which body parts sustain impact first, the surface on which the patient lands and the patient's physical condition before the fall. There are two types of falls: feetfirst falls and headfirst falls. Feetfirst falls cause energy to travel up the skeleton as the patient lands. If knees are bent on landing, injury will be less severe. Headfirst falls begin with the arms and extend to the shoulders on impact, making spine and head injuries common. Falls on the side of the head often do not show signs and symptoms until 1 to 2 hours after the injury.
PENETRATING	G INJURIES
KEY POINTS	 When an object is pushed through the surface and soft tissue of the body, a penetrating injury occurs. They can be low velocity or medium to high velocity. Low-velocity injuries usually occur with the use of hand-powered weapons, such as knives or arrows. Severity of the injury depends on the location of the injury, length of the weapon and strength and force capacity of the attacker. Medium- to high-velocity injuries are caused by guns, leading to more widespread tissue damage.
BLAST INJUR	IES
KEY POINTS	 Explosions can produce unique patterns of injury, often inflicting multiple life-threatening injuries on several patients simultaneously. Blast injuries are divided into four categories: primary, secondary, tertiary and miscellaneous. Primary blast injury is caused by the direct effect of blast overpressure on a patient's tissue, resulting in injury to air-filled structures, such as the lungs, ears and gastrointestinal tract. Secondary blast injury occurs when a patient is struck by flying objects; this type of injury is responsible for most of the casualties in explosions. Tertiary blast injury occurs when individuals fly through the air and strike other objects, generally from high-energy explosions. Miscellaneous blast-related injuries, sometimes termed quaternary blast injuries, encompass all other injuries caused by explosions, including burns, crush injuries and inhalation of toxic fumes or substances.

SKILL CHECK	(LIST
Using Direct Pressure to Control External Bleeding	Instructor's Note: The participant must always follow standard precautions when providing care and summon more advanced medical personnel if necessary.
	Participant completes the following:
	Covers the wound with a dressing, such as a sterile gauze pad
	 Applies direct pressure firmly against the wound until bleeding stops
	 When the bleeding stops, checks for circulation (feeling, warmth and color) beyond the injury
	Covers the dressing with a roller bandage and secures it directly over the wound
	Checks for circulation beyond the injury (check for pulse, skin temperature and feeling)
	□ If the bleeding does <i>not</i> stop:
	 Leaves the original and replaces other dressings and bandages with new dressings and reapplies direct pressure; or if severe, life-threatening bleeding, uses a tourniquet or hemostatic dressing to control bleeding Takes steps to minimize shock
	 Summons more advanced medical personnel Follows local protocols when considering other methods of bleeding control
Using a Commercial Tourniquet With a Windlass	Instructor's Note: Always follow standard precautions when providing care and summon more advanced medical personnel. Always follow the manufacturer's instructions and local protocols when applying a tourniquet.
	Participant completes the following:
	Positions the tourniquet around the exposed limb, approximately 2 inches above the wound but not over a joint
	Routes the tag end of the strap through the buckle, if necessary
	Pulls the strap tightly and secures it in place
	Ensures the patient understands the reason for the tourniquet, and warns them that it may be painful
	Tightens the tourniquet by twisting the rod until the flow of bleeding stops and secures the rod in place
	Does <i>not</i> cover the tourniquet with clothing
	Notes and records the time the tourniquet was applied and gives this information to more advanced medical personnel
	Does not remove the tourniquet

LESSON 31

SOFT TISSUE INJURIES

Lesson Length: 60 minutes

MATERIALS, EQUIPMENT AND SUPPLIES

- Emergency Medical Response textbook
- Course Presentation Slides 414–439
- LCD projector, screen and computer
- Emergency Medical Response DVD
- DVD player and monitor

LESSON OBJECTIVES

Knowledge

After completing this lesson, participants will be able to:

- List the types of soft tissue injuries.
- Describe the emergency medical care for a patient with a soft tissue injury.
- Describe the emergency medical care for a patient with an injury from an embedded object.
- Describe the emergency medical care for a patient with an open wound.
- Describe the emergency medical care for a patient with an amputation.
- List the signs and symptoms of closed wounds.
- List the causes of a burn injury.
- List conditions under which you would summon more advanced medical personnel for a burn injury.
- Describe the emergency medical care for burns.
- Describe the kinds of injuries that might occur from a thermal, electrical, chemical and radiation burn.
- Describe how to care for thermal, chemical, electrical and radiation burns.

TOPIC: INTRODUCTION

ACTIVITY Course Presentation Slides 415–416	 Review the opening scenario: You are on the medical emergency response team (MERT) responding to a call at a power plant that at least one worker has suffered an electrical shock from a live junction box. Plant workers thought that a colleague had turned off the power, but when the injured worker reached inside and touched a wire, he received a shock and an electrical burn. The injured worker lost consciousness momentarily. A second worker at the scene moved away from his co-worker and called for help. When you arrive, the co-worker who placed the call relates what happened. Ask participants:
	 "How would you respond?" "What are your immediate concerns?"
	Instructor's Note: Let participants provide responses, guiding them to issues related to soft tissue injuries, including the various types of soft tissue injuries, closed and open wounds, burns and their appropriate care.
	 Describe soft tissue injuries as those involving the layers of skin, fat and muscle that protect the underlying body structures. Tell participants: "An injury to the soft tissues is called a wound, and the injuries typically are classified as closed or open." Explain that burns are a special type of soft tissue injury and are classified as superficial, partial thickness or full thickness.

TOPIC: CLOSED WOUNDS

Time: 5 minutes

KEY POINTS Course Presentation Slides 417-418	 Closed wounds occur beneath the skin's surface. The simplest closed wound is a bruise, also known as a contusion. A more serious closed wound can be caused by a violent force hitting the body, injuring large blood vessels and deeper layers of muscle tissue, causing heavy bleeding. This is called a hematoma. Signs and symptoms of closed wounds include discoloration and swelling.
PROVIDING C	ARE FOR CLOSED WOUNDS
KEY POINTS	 Many closed wounds, such as bruises, do not require special medical care. To care for a closed wound, be sure to keep the injured area still. Applying cold can be effective early on in helping control both pain and swelling. When applying cold: Make a cold pack by filling a sealable plastic bag with a mixture of ice and water, and then apply it to the injured area for about 20 minutes. Place a thin towel as a barrier between the cold pack and the bare skin. If an ice-and-water mixture is not available, use a bag of frozen vegetables or a chemical cold pack as an alternative. Do not place ice directly on a wound.
	 Remove the cold pack and wait 20 minutes before reapplying a new cold pack. If the patient is not able to tolerate a 20-minute application, limit
	application to 10 minutes.
	 Elevating the injured part may help to reduce swelling; however, do <i>not</i> elevate the injured part if doing so causes more pain or you suspect a dislocation or fracture.

Call for more advanced medical care if:
 The patient complains of severe pain or cannot move a body part without pain.
 The force that caused the injury seems great enough to cause serious damage.
 An injured extremity is blue or extremely pale.
 The patient's abdomen is tender and distended.
 The patient is vomiting blood or coughing up blood.
 The patient shows signs and symptoms of shock.

TOPIC: **OPEN WOUNDS**

Time: 10 minutes

KEY POINTS	Open wounds are injuries that break the skin. They can be minor or deep.
	The six main types of open wounds include the following:
Course Presentation	 Abrasions are the most common type and are characterized by skin that has been rubbed or scraped away.
Slides 419–424	 Amputations are the complete severing of a body part.
	 Avulsions are the partial or complete tearing away of a portion of the skin and sometimes other soft tissue.
	 Crush injuries occur when a body part is subjected to a high degree of pressure, most commonly after being compressed between two heavy objects.
	 Punctures/penetrations result when the skin is pierced with a pointed object.
	 Lacerations are cuts that are made by a sharp object, with jagged or smooth edges.
PROVIDING C	CARE FOR OPEN WOUNDS
KEY POINTS	 Always follow standard precautions to avoid contact with blood and OPIM.
	For a major open wound, control bleeding immediately with direct pressure using sterile dressings and pressure bandages and care for shock.
	For a minor open wound:
	 Use a barrier between your hand and the wound. If readily available, put on disposable latex-free gloves and place a sterile dressing on the wound.
	\circ Apply direct pressure for a few minutes to control any bleeding.
	 Wash the wound thoroughly with soap and water and gently dry it with clean gauze. If possible, irrigate an abrasion for 5 minutes with clean, warm, running tap water.
	 Cover the wound with a clean dressing and a bandage (or with an adhesive bandage) to keep the wound moist and prevent drying. Apply an antibiotic ointment or wound gel to the dressing or bandage first if the patient has no known allergies or sensitivities to the medication. Do not apply the ointment or gel directly to the wound as doing so may contaminate the tube.
	 Wash your hands immediately after giving care, even if you wore gloves.

	 An impaled object is one that has been embedded into an open wound. Remove the impaled object only if it has pierced through the cheek, resulting in uncontrolled bleeding and interfering with airway management, or if it has pierced through the chest and is interfering with CPR. Otherwise, you should leave the object in place, secure it manually and control bleeding with direct pressure using sterile dressings to the edges of the wound. Once bleeding has stopped, you should apply a bulky dressing around the object, pack dressings around it and secure everything in place. For an amputation, control external bleeding and have a second responder search for and provide care for the body part: If the body part is completely severed, find it, wrap it in sterile gauze, moistened in sterile saline if available. Place it in a plastic bag, seal the bag and label it with the patient's name and the time and date it was placed in the bag. Keep the bag cool by placing it in a larger bag or container of an ice and water slurry, <i>not</i> on ice alone and <i>not</i> on dry ice. Transfer the bag to the emergency medical services (EMS) personnel transporting the patient to the hospital. If the amputation is incomplete (i.e., an avulsion), <i>never</i> remove the body part. Care for it as you would any soft tissue injury, stabilizing the part.
ACTIVITY	 Using the following scenario, ask participants to describe how they would provide care to the patient: You and your partner are called to the scene of a construction site. One of the workers was using an electric saw when he suddenly lost control of it. As the saw fell to the ground, it came into contact with his lower leg, severing it completely. Instructor's Note: Responses should include: Immediately control the bleeding and have one responder care for the patient while the other responder cares for the severed body part. Summon more advanced medical personnel. Provide care for the patient, including performing a primary assessment and caring for his immediate injuries, as well as monitoring the patient for signs and symptoms of shock. Provide care for the severed body part including: Wrapping it in sterile gauze. Moistening it with sterile saline. Placing it in a plastic bag, sealing the bag and labeling it with the patient's name, date and time of the placement. Keeping the bag cool by placing it in a larger bag or container of an ice and water slurry and transferring the bag to the emergency medical services (EMS) personnel who transport the patient.

TOPIC: BURNS

Time: 35 minutes

KEY POINTS Course Presentation Slides 425–438	 Burns are another type of soft tissue injury caused by heat (primarily) or exposure to chemicals, electricity or radiation. The severity of a burn depends on the: Temperature of the source of the burn. Length of exposure to the source. Location of the burn. Size of the burn. Patient's age and medical condition. Burns are classified by their depth, their extent, whether there is any respiratory involvement, the body part burned and the source (or cause).
DEPTH OF BU	JRN
KEY POINTS	 Generally, three depth classifications are used for burns. The deeper the burn, the more severe it is. Superficial (formerly referred to as first degree) Partial thickness (formerly referred to as second degree) Full thickness (formerly referred to as third degree) A superficial burn involves only the top layer of skin (epidermis). Partial-thickness burns involve the epidermis and dermis. Full-thickness burns involve destruction of both skin layers and any or all underlying structures (fat, muscles, bones and nerves). They are life threatening.
EXTENT OF B	URN
KEY POINTS	 The extent of a burn is another important aspect of the severity. It is commonly described using the Rule of Nines, which approximates the percentage of burned surface area of the patient. The Rule of Nines divides the body surface into 11 sections, each comprising approximately 9 percent of the body's skin coverage. The genitals make up the last 1 percent. For pediatric patients, the Lund-Browder diagram is used. The palm of the patient's hand, which represents approximately 1 percent of the body's total surface area, can be used to estimate the size of a patchy burn that does not cover an entire section.
ACTIVITY	 Using the following scenario and the illustration of the Rule of Nines in their textbooks, ask participants to estimate the percentage of body surface area burned: You are assessing a patient who has sustained partial- and full-thickness burns over various parts of his body. Assessment reveals burns on his right arm, anterior chest and right leg. Instructor's Note: The estimated body surface area burned is 45 percent (9 percent for the right arm plus 18 percent for the anterior chest plus 18 percent for the right leg).

RESPIRATOR	
KEY POINTS	 The respiratory system also may be damaged when a patient is burned. Soot or burns around the mouth, nose or rest of the face may signal that air passages or lungs have been burned. Respiratory damage may include airway closure due to swelling. A hoarse voice is a sign of respiratory involvement. Swelling of the larynx also may occur due to inhalation of superheated air. Respiratory arrest or compromise or poisoning may occur with severe inhalation of smoke and toxic gases. Circumferential burns, where the burn encircles an entire body part, can lead to circulatory compromise with an extremity burn. A chest circumferential burn can interfere with expansion and contraction of the chest needed for respiration.
BODY PART E	BURNED
KEY POINTS	 Burns to a particular body area also determine the seriousness of a burn. Burns to the head, face, eyes and ears may be associated with respiratory problems and disfigurement. Burns to the hands and feet can impact a patient's function. Burns to the genitals or groin are critical because of the potential loss of function and high susceptibility to infection. Burns to joint areas can impact joint function.
CAUSE OF B	URN
KEY POINTS	 It is important to take into account the source of the burn. Thermal burns include those caused by an open flame; contact with a hot object, steam or gas; or scalding by hot liquids. Other causes include chemicals, electricity and radiation.
SEVERITY OF	F THE BURN
KEY POINTS	 Critical burns require immediate attention of more advanced medical personnel. They are potentially life threatening, disfiguring and/or disabling. Even superficial burns to large areas of the body or to certain body parts can be critical. Call for more advanced medical personnel for assistance with burns causing difficulty breathing; signs of burns around the mouth or nose; burns covering more than one body part or to the head, face, neck, hands, feet or genitals; any partial-thickness or full-thickness burns to a child or older adult; and any burns from chemicals, explosions or electricity.
DVD	 Show the video segment, "Caring for Burns" (6:16). Answer participants' questions about the video segment. Instructor's Note: This video segment can be shown now to provide an overview and introduction to the topic, or it can be shown at the end of the section to provide a mechanism for summarizing important details.

THERMAL BURNS

THERMAL BU	RNS
KEY POINTS	The signs and symptoms of thermal burns depend on the extent of the burn.
	 Superficial burns are painful. They appear as a red area that turns white when touched and do not have blisters; the skin appears moist.
	Superficial partial-thickness burns are painful. They have a red area that turns white to the touch; the skin may have mottling, blisters and may appear moist; and the hair is still present.
	Deep partial-thickness burns may or may not be painful (nerve endings may be destroyed), may be moist or dry (sweat glands may be destroyed), may or may not turn white when the area is touched and the hair usually is gone.
	Full-thickness burns are painless. There is no sensation to the touch and the skin is pearly white or charred, dry and may appear leathery.
	Care for thermal burns includes sizing up the scene for safety, performing a primary assessment and physical examination.
	If thermal burns are present, once you have removed the patient from the source, you should follow these three basic care steps:
	 Cool any burned areas <i>immediately</i> with large amounts of cool or cold running water for at least 10 minutes or until pain is relieved.
	 Do not use ice or ice water. Ice or ice water can cause critical body heat loss and may make the burn deeper.
	 Flush the area using whatever resources are available (e.g., a tub, shower or garden hose). You can apply soaked towels, sheets or other wet cloths to a burned face or other area that cannot be immersed. Be sure to keep these compresses cold by frequently resoaking them with cold water; otherwise, they will not absorb the heat from the skin's surface.
	 Be careful not to cause hypothermia when cooling large burns or burns on small children. Children are more prone to hypothermia than adults due to their greater skin surface area relative to their weight.
	• When the burn is cool, remove any remaining clothing from the area by carefully removing or cutting material away. Do not try to remove any clothing that is stuck to skin. Remove any jewelry only if doing so will not further injure the patient, as swelling may occur.
	• Cover the burned area to keep out air and help reduce pain. Use dry, sterile dressings, and loosely bandage them in place. The bandage should <i>not</i> put pressure on the burn surface. If the burn covers a large area of the body, cover it with clean, dry sheets or other clean cloth.
	 Minimize shock by having the patient lie down unless they are having trouble breathing. Administer supplemental oxygen based on local protocols and if it is safe to do so.
	In addition, keep the patient warm to prevent hypothermia.

ACTIVITY	 Divide participants into two groups. Assign one group the topic of chemical burns; assign the other group the topic of electrical burns. Using their textbooks, have each group describe the type of burn, signs and symptoms and appropriate care. Have each group present its information to the rest of the class.
	have each group describe the type of burn, signs and symptoms and appropriate
	 Ensuring scene safety. Performing a primary assessment once the electrical current is secured and no longer passing through the patient. Caring for any immediate life-threatening conditions. Looking for two burn sites (entry and exit wound). Cooling any electrical burns with cool or cold running water. Covering with a dry sterile dressing. Providing care to minimize shock.

RADIATION E	BURNS
KEY POINTS	 Radiation burns may result from exposure to nuclear radiation, x-rays, solar radiation or as a side effect of radiation therapy. They also can be caused by tanning beds.
	 Solar burns are similar to heat burns, often resulting in superficial and sometimes partial-thickness burns. They may blister, involving more than one layer of skin.
	Care for sunburn as you would any other burn. Cool the burn and protect the burned area from further damage by keeping it away from the source of the burn.

WRAP-UP

Time: 5 minutes

ACTIVITY Course Presentation Slide 439	 Review the closing scenario: The safety officer quickly verifies that power has been shut off and it is safe to approach the scene. You perform a primary assessment. The patient regains consciousness and complains of pain in his hand and elbow. Your partner has called for more advanced medical personnel. Ask participants: "What types of injuries or conditions should you suspect and what emergency care should be provided?" "Is calling for advanced medical personnel appropriate? Why or why not?"
	 Instructor's Note: Responses should include: Injuries related to electrical burns include severe, deep tissue damage; possible respiratory or cardiac arrest; fractures; and injuries related to the patient losing consciousness. Emergency care includes: Confirming that the scene is safe and moving the patient away from the electrical source. Performing a primary assessment once the electrical current is secured and no longer passing through the patient. Caring for any immediate life-threatening conditions. Looking for two burn sites. Cooling burns with cool or cold running water. Covering with a dry sterile dressing. Providing care to minimize shock. Calling for EMS personnel is appropriate because electrical burns often are deep, even though the wounds may look superficial, and the tissue beneath the skin may be severely damaged.
KEY POINTS	 Soft tissue injuries involve the layers of the skin, fat and muscle and include closed and open wounds. Closed wounds typically appear as bruises (contusions) or hematomas. Open wounds include abrasions, amputations, avulsions, crush injuries, punctures/penetrations and lacerations. Burns are another type of soft tissue injury and can be classified by their depth (superficial, partial thickness or full thickness), extent (described using the Rule of Nines), respiratory involvement, body part burned and cause (thermal, chemical, electrical or radiation). Providing care for burns includes sizing up the scene for safety, removing the patient from the source of the burn, cooling the burn, covering the burn area and minimizing shock.

ASSIGNMENT FOR THE NEXT LESSON	 Read Chapter 21, Injuries to the Chest, Abdomen and Genitalia.
INSTRUCTOR PREPARATION	 Review Chapter 21, Injuries to the Chest, Abdomen and Genitalia. Obtain any necessary equipment and supplies for Lesson 32.



INJURIES TO THE CHEST, ABDOMEN AND GENITALIA

Lesson Length: 60 minutes

MATERIALS, EQUIPMENT AND SUPPLIES

- Emergency Medical Response textbook
- Course Presentation Slides 440–460
- LCD projector, screen and computer

LESSON OBJECTIVES

Knowledge

After completing this lesson, participants will be able to:

- Describe general care steps for injuries to the chest, abdomen and pelvis.
- List the different types of chest injuries.
- List the signs and symptoms of chest injuries.
- Describe how to care for a sucking (open) chest wound.
- Describe how to care for an impaled or embedded object in the chest.
- List different types of abdominal injuries.
- List the signs and symptoms of abdominal injuries.
- Explain assessment techniques for abdominal injuries.
- Describe how to care for closed and open abdominal injuries.
- List the signs and symptoms of genital injuries.
- Describe how to care for genital injuries.

TOPIC: INTRODUCTION

Time: 5 minutes

ACTIVITY
Course
Presentation
Slide 441

Review the opening scenario:

Your police unit responds to a call in a part of town plagued by violence. When you arrive, you find the scene is empty except for a young woman lying on the sidewalk. After sizing up the scene and approaching the young woman, you notice that she has been shot and is bleeding profusely.

Ask participants: "How would you respond?"



Instructor's Note: Let participants provide responses guiding them to issues related to injuries involving the chest, abdomen and genitalia, including the types of injuries, signs and symptoms and appropriate care to provide based on the type of wound.

Tell participants: "Many injuries to the chest and abdomen involve only soft tissues. However, a violent force or mechanism, known as trauma, results in more severe injuries. These include fractures and injuries to organs, which can cause severe bleeding or impair breathing."
 Explain that the chest, abdomen and pelvis contain many organs important to life, so injury to these areas can be fatal if left untreated.
Tell participants: "The general care for these types of injuries includes calling for more advanced medical personnel, limiting movement, monitoring breathing and other vital signs, controlling bleeding and minimizing shock."
 Review the components of the thoracic, abdominal and pelvic cavities. Refer participants to Chapter 4, The Human Body, for review.

TOPIC: CHEST INJURIES

Time: 25 minutes

KEY POINTS Course Presentation Slides 442-453	 Chest injuries are a leading cause of trauma deaths each year in the United States. Chest wounds can be open or closed. Open chest wounds occur when an object penetrates the chest wall or when fractured ribs break through the skin. Closed chest wounds generally are cause by a blunt object. Certain types of chest injuries may be life threatening whereas others merely cause discomfort. Blunt trauma is injury caused by the force of an object that impacts—but does not penetrate—the body. Traumatic asphyxia, or severe lack of oxygen due to trauma, can result from chest injury. It often is caused by a strong crushing mechanism or occurs when patients have been pinned under a very heavy object. Rib fractures usually are caused by a forceful blow to the chest. A simple rib fracture, although painful, rarely is life threatening. A flail chest is a serious, life-threatening rib fracture that results from a severe blow or crushing injury in which multiple ribs fracture in multiple places, causing loose sections of ribs that move abnormally in the chest. Pneumothorax is the collapse of a lung that occurs when air in the chest cavity presses on the lung, preventing it from expanding. Hemothorax is an accumulation of blood between the lungs and chest wall that creates pressure on the heart and lungs and prevents the lungs from expanding.
	 Iungs from expanding. A tension pneumothorax is a serious, life-threatening injury in which there is complete collapse of the lung. Air enters the space around the lungs and remains trapped there.
ACTIVITY	 Divide the participants into small groups. Assign each of the groups one or more of the following types of chest injuries, being sure all topics are assigned: blunt trauma, traumatic asphyxia, fractured ribs, flail chest, pneumothorax, hemothorax and tension pneumothorax. Using their textbook, have each group create a list of signs and symptoms associated with the injury. Then have each group present its information to the rest of the class.

	 Instructor's Note: Responses should include: For blunt trauma: Severe shortness of breath; chest pain; and rapid, possibly irregular pulse For traumatic asphyxia: Shock; distended neck veins; bluish discoloration of the head, tongue, lips, neck and shoulders (cyanosis); broken blood vessels in the eyes (subconjunctival hemorrhage); black eyes; pinpoint-sized red dots (petechiae) on the head and neck; rounded, "moonlike" facial appearance; bleeding from the nose or ear; coughing up or vomiting blood; and loss of consciousness, seizures or blindness For fractured ribs: Leaning toward the side of the fracture, pressing a hand or arm over the injured area and shallow breathing For flail chest: Same as for fractured ribs but more severe, difficulty breathing, inadequate oxygenation, severe bleeding, and signs and symptoms of shock For pneumothorax: Pain while breathing, pain at the site (of rib fractures), decreased breath sounds and possible signs of hemorrhage or shock For hemothorax: Pain and shortness of breath, decreased breath sounds, dullness on tapping (percussion), possible signs of shock and abnormal or unstable blood pressure (if massive) For tension pneumothorax: Respiratory distress with diminished or absent breath sounds, abnormal sounds (hyperresonance) during percussion on the affected side of the chest, trachea shifting away from the side of the injury (a very late sign), swollen neck veins (jugular venous distension [JVD]) and unstable blood pressure (low)
SIGNS AND S	YMPTOMS OF CHEST INJURIES
KEY POINTS	 Regardless of whether the wound is open or closed, the signs and symptoms of a serious chest injury include: Shortness of breath and difficulty breathing. Pain during breathing. Pain at the site of the injury that increases with deep breathing or movement. Obvious deformity, such as that caused by a fracture. Flushed, pale, ashen or bluish discoloration of the skin. Coughing up blood. Distended (protruding) neck veins. Drop in blood pressure.
PROVIDING C	ARE FOR A SUCKING (OPEN) CHEST WOUND
KEY POINTS	 A forceful puncture may penetrate the chest and allow air to enter the chest through the wound, preventing the lungs from functioning normally. With each breath the patient takes, a sucking sound can be heard coming from the wound. This is called a sucking (open) chest wound. To care for a sucking (open) chest wound, you should: Control any bleeding with a sterile gauze dressing, but do not let the wound become occluded. Because of the risk of creating a tension pneumothorax, most open chest wounds should be left uncovered and not be sealed until advanced medical personnel are on scene and are able to recognize and treat a tension pneumothorax, should one develop. Follow local protocols for care of open chest wounds and the use of chest seals and occlusive dressings. Administer supplemental oxygen based on local protocols, and take steps to minimize shock. If no spinal injury is suspected, have the patient sit or lie in a comfortable position.

PROVIDING C	ARE FOR IMPALED OBJECTS IN THE CHEST
KEY POINTS	 An impaled object is one that remains in an open wound. You should <i>never</i> remove the object unless it interferes with chest compressions. Emergency care for an impaled object includes: Stabilizing the object to prevent further damage. Removing clothing to expose the wound. Controlling bleeding by applying direct pressure to the edges of the wound (but avoiding direct pressure on the object). Using a sterile bulky dressing to help hold the object in place, carefully packing the dressing around the object. Securing the sterile bulky dressing in place with gauze, a cravat or tape.
ACTIVITY OPTION A	 Ask participants to identify which actions are the same when providing care to a patient with a chest wound, regardless of the type of injury.
Time: 5 minutes	 Instructor's Note: Responses should include: Performing a primary assessment. Assisting the patient to a position of comfort to facilitate breathing. Administering supplemental oxygen, based on local protocols. Caring for the wound. Observing for and minimizing shock.
ACTIVITY OPTION B	 Using the following scenario, ask participants to identify the type of injury and the care that should be provided: You arrive at a nearby athletic field where an adult softball league is practicing. One of the players was hit in the chest by a line drive with a softball. The impact knocked the player to the ground. The player is alert but complaining of severe pain on the left side of her chest. You notice her leaning toward the left side and breathing shallowly.
	 Instructor's Note: Responses should include: The injury is most likely blunt trauma due to the impact of the softball with the chest. It also may be a rib fracture(s) due to the force of the blow. Care steps include: Inspecting the area to ensure that there are no open wounds. Having the patient hold a blanket or pillow against the injured side of the chest or using a sling and binder to hold the patient's arm against the injured side of the chest. Administering supplemental oxygen, based on local protocols. Monitoring the patient's breathing and summoning more advanced medical personnel to assist with transport to determine the extent of the injury because more than one rib may be involved.

TOPIC: ABDOMINAL INJURIES

KEY POINTS Course Presentation Slides 454-458	 Like a chest injury, an injury to the abdomen is either open, such as lacerations, abrasions, punctures, evisceration or disembowelment, or closed, such as contusions and gastrointestinal bleeding. The abdomen is easily injured because it is not surrounded by bones. Although protected at the back by the spine and ribs, certain organs, such as the liver, spleen and stomach, are easily injured or tend to bleed profusely when injured.
	Signs and symptoms of abdominal injuries include:
	 Severe abdominal pain.
	\circ Tenderness or swollen feeling in the abdominal area.
	• Bruising.
	• External bleeding.
	 Nausea and vomiting.
	• Pale or ashen, cool, moist skin.
	• Weakness.
	• Thirst.
	 Protruding organs. When assessing a patient with a potential abdominal injury,
	you should:
	• First, establish spinal motion restriction if a spinal injury is suspected.
	 Check the patient's position. Knees flexed toward the chest are a good indication the patient has suffered an abdominal injury.
	 Inspect the abdomen for contusions, lacerations, abrasions and punctures.
	 Look for signs of potential internal bleeding, including a distended abdomen as well as discoloration and bruising around the navel and sides.
	 Inspect the patient for internal organs protruding from an open abdominal wound (abdominal evisceration or disembowelment).
	 Palpate the four quadrants of the abdomen from the farthest point away from the pain, noting tenderness or masses.
	 If the patient has a decreased mental status, it is important to note grimacing or signs of pain as you palpate. Keep in mind that the patient may be contracting stomach muscles to avoid pain, or the contractions may be the result of muscle spasms.
	• Assess both the upper and lower extremities for injury and a pulse, as abdominal aortic injury may cause the pulses of the lower extremities to be weaker than the upper. If no foot pulses are found, check the pulses at the back of the knee or thigh. These should be equal to or stronger than the radial pulse, even in the case of shock.
	 Assess motor and sensory function.
	 Log roll the patient and inspect for signs of trauma on their back.
	 Assess baseline vital signs, especially for indications of blood loss and shock. Symptoms such as low blood pressure, rapid heartbeat or pale, cool, moist skin are all indications of shock.
	 Ensure that the airway is open and the patient is able to breathe adequately. If inspection of the airway shows signs of bloody vomitus, suctioning may be required. If the patient is not breathing adequately, begin positive pressure ventilation with supplemental oxygen based on local protocols.

	Care for a closed abdominal injury includes:
	 Carefully positioning the patient on their back.
	 Avoiding application of direct pressure.
	 Bending the patient's knees slightly. Doing so allows the muscles of the abdomen to relax. Place rolled-up blankets or pillows under the patient's knees. If moving the patient's legs causes pain, or you suspect spinal injury, leave the legs straight.
	 Administering supplemental oxygen based on local protocols.
	 Taking steps to minimize shock.
	 Summoning more advanced medical personnel.
	A severe open abdominal injury may result in evisceration, a situation in which abdominal organs protrude through the wound.
	Care for an open abdominal wound includes:
	 Summoning more advanced medical personnel.
	 Carefully positioning the patient on the back.
	 Avoiding application of direct pressure.
	 Avoiding pushing the organs back in.
	 Removing clothing from around the wound.
	 Applying moist sterile or clean dressings loosely over the wound.
	\circ Covering the dressings loosely with plastic wrap, if available.
	 Covering the dressings lightly with a folded towel to maintain warmth.
	 Keeping the patient from getting chilled or overheated.
	 Administering supplemental oxygen based on local protocols.
	If an object is impaled in the abdomen, it should not be removed. The wound should be dressed around the object to control bleeding, and the objects should be stabilized with bandages.
D.	

TOPIC: GENITAL INJURIES

lime: 5 minutes

KEY POINTS	 Assessment and treatment of a patient with a genital injury requires a calm and professional approach with the utmost concern for the patient's privacy.
	Injuries to the penis, which usually result from an incident or assault, can be open or closed but are always extremely painful.
Presentation Slide 459	Injuries to female genitalia also are extremely painful but are rare because the female genitalia are smaller and more protected. These injuries are rarely life threatening.
	Straddle injury, sexual assault and childbirth are the most common situations involving female genital injury.
	 Signs and symptoms of genital injury are similar to those for an abdominal injury.
	Care for a closed wound to the male genitals is the same as for any closed wound. You should wrap the penis in a soft, sterile dressing moistened with saline solution and apply a cold pack to reduce pain and swelling.
	If the injury is an open wound, apply a sterile dressing and direct pressure with your gloved hand or the patient's hand.

 Care for an injury to the female genitals includes controlling the bleeding with pressure using compresses moistened with saline, using a diaperlike dressing for the wound, stabilizing any impaled objects with a bandage and using cold packs over the dressing to reduce swelling and ease pain. If you suspect that the patient is a victim of sexual assault, take appropriate steps to ensure privacy and maintain the integrity of the evidence.

WRAP-UP	Time: 5 minutes
ACTIVITY Course Presentation Slide 460	 Review the closing scenario: As you begin your assessment, you notice that the young woman has multiple gunshot wounds to her chest and abdomen. Ask participants: "How should you care for this patient?"
	 Instructor's Note: Responses should include: Care such as ensuring an open airway. Administering supplemental oxygen based on local protocols. Keeping the patient as still as possible. Applying direct pressure to the wounds. Taking steps to minimize shock.
KEY POINTS	 The chest, abdomen and pelvis contain many organs important to life. Injury to these areas can be life threatening. General care includes calling for more advanced medical personnel, limiting patient movement, monitoring breathing and other vital signs, controlling bleeding and minimizing shock. Chest injuries include blunt trauma, traumatic asphyxia, rib fractures, flail chest, pneumothorax, hemothorax and tension pneumothorax. A sucking (open) chest wound should be left exposed to the air based on local protocols. An impaled object in the chest or abdomen should never be removed unless it interferes with chest compressions. Rather, the object should be stabilized with bulky dressings. An injury to the abdomen is either open, such as lacerations, abrasions, punctures, evisceration or disembowelment, or closed, such as contusions. Signs and symptoms of serious abdominal injury may include severe pain, tenderness or swollen feeling in the abdominal area; bruising; external bleeding; nausea and vomiting; pale or ashen, cool, moist skin; weakness; thirst; and protruding organs. Genital injuries usually are extremely painful and possibly embarrassing for you as well as the patient. A calm, professional approach and maintenance of the patient's privacy are essential when caring for a patient with a genital injury. If possible, someone of the gender of the patient's choosing should treat them.

ASSIGNMENT FOR THE NEXT LESSON	 Read Chapter 22: Injuries to Muscles, Bones and Joints. Read Enrichment: Agricultural and Industrial Emergencies (<i>optional</i>), pages 522–528.
INSTRUCTOR PREPARATION	 Review Chapter 22: Injuries to Muscles, Bones and Joints. Review Enrichment: Agricultural and Industrial Emergencies (<i>optional</i>), pages 522–528. Review the video segments, "Injuries to Muscles, Bones and Joints" (1:58) and "Splinting" (1:29). Review the skills and obtain any necessary equipment and supplies for Lesson 33.



INJURIES TO MUSCLES, BONES AND JOINTS

Lesson Length: 60 minutes (75 minutes with Enrichment)

MATERIALS, EQUIPMENT AND SUPPLIES

- Emergency Medical Response textbook
- Course Presentation Slides 461–475
- LCD projector, screen and computer
- Emergency Medical Response DVD
- DVD player and monitor
- Disposable latex-free gloves (multiple sizes) and other personal protective equipment (PPE), as indicated
- Blankets, towels, pillows, slings, binders and cravats
- Rigid splints
- Samples of commercial splints and pelvic sling/wrap, if available

LESSON OBJECTIVES

Knowledge

After completing this lesson, participants will be able to:

- List the three mechanisms of muscle, bone and joint injuries.
- Describe different types of musculoskeletal injuries.
- Describe how to assess for muscle, bone and joint injuries.
- List the signs and symptoms of muscle, bone and joint injuries.
- Describe general care for muscle, bone and joint injuries.
- List general guidelines for splinting.
- List the purposes of immobilizing an injury.

Skill

After completing this lesson, participants will be able to:

Demonstrate how to immobilize muscle, bone and joint injuries.

TOPIC: INTRODUCTION

ACTIVITY Course Presentation Slide 462	 Review the opening scenario: You arrive on the scene of a minor motor-vehicle collision. Local law enforcement have secured the scene. As you approach, you find the driver sitting on the ground against her vehicle complaining of knee pain. Ask participants: "How would you respond?"
	Instructor's Note: Let participants provide responses, guiding them to issues related to injuries involving the muscles, bones and joints, including the types of injuries, the signs and symptoms associated with each type, general care and splinting for immobilization.
	 Tell participants: "Although musculoskeletal injuries are usually painful, they rarely are life threatening, but if they do not receive proper care there may be serious consequences, such as permanent disability and even death." Review the components of the musculoskeletal system, addressing bones, muscles, tendons and ligaments.
	 Refer participants to Chapter 4, The Human Body, for review.

TOPIC: INJURIES TO MUSCLES, BONES AND JOINTS

Time: 20 minutes

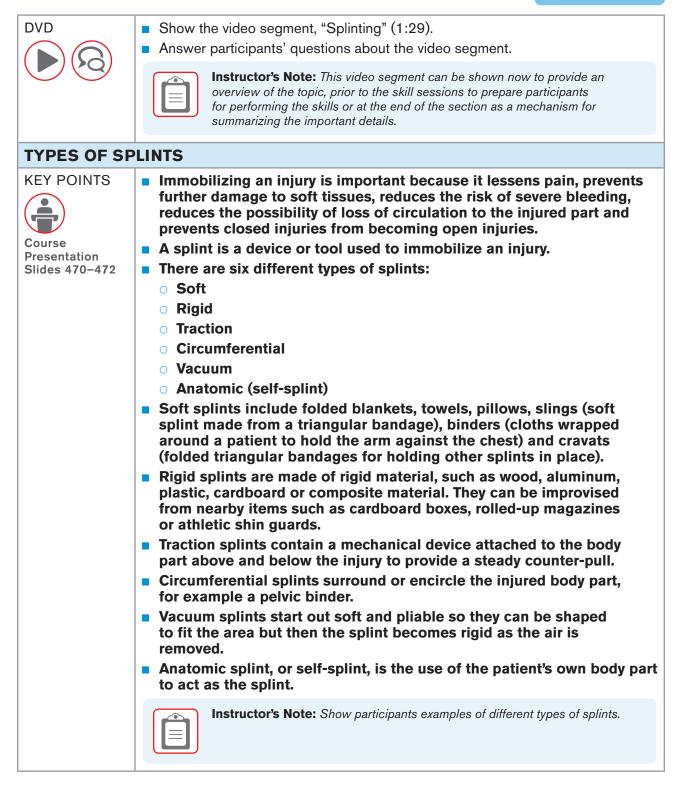
DVD	 Show the video segment, "Injuries to Muscles, Bones and Joints" (1:58). Answer participants' questions about the video segment.
	Instructor's Note: This video segment can be shown now to provide an overview of the topic, or it can be shown at the end of the lesson to provide a summary of important information.
KEY POINTS	Muscles, bones and joints are injured when force is applied to them.
	There are three basic mechanisms of injury (MOIs): direct force, indirect force and twisting force.
Course	There are four basic types of injuries to muscles, bones and joints:
Presentation Slides 463-469	 A fracture is a break or damage to the bone. It can be closed (skin over the bone is intact) or open (open wound over the fracture).
	 A dislocation is the movement of a bone at a joint away from its normal position. Bones that normally meet at a joint are displaced or separated, and ligaments and tendons are stretched, displaced or torn. This most commonly occurs in the fingers and shoulders.
	 Sprains are partial or complete tearing or stretching of ligaments and tissues at a joint. They usually occur at the ankle, knee, wrist and fingers.
	 Strains are excessive stretching or tearing of muscles or tendons. They most often involve the muscles of the neck, back, thigh or calf.

ASSESSING	FOR INJURIES TO MUSCLES, BONES AND JOINTS
KEY POINTS	 Injuries to the musculoskeletal system are identified during the physical examination. While completing the physical examination, consider how the body normally looks and feels. Check for deformity and compare the injured side with the uninjured side. Ask the patient how the injury happened and listen for clues, such as a fall from a height or a serious motor-vehicle collision. Ask the patient if any areas are painful and carefully examine the entire body, starting with the head. Keep in mind that if the force was sufficient to fracture a bone or dislocate a joint, it also may cause bleeding, internal injuries and shock.
SIGNS AND S	SYMPTOMS OF INJURIES TO MUSCLES, BONES AND JOINTS
KEY POINTS	 Common signs and symptoms associated with musculoskeletal injuries include: A snapping sound. Deformity or angulation. Pain and tenderness. Crepitus (a grating or popping sound under the skin). Swelling. Restricted movement. Visible break. Bruising or discoloration. Loss of circulation or sensation.
ACTIVITY	 Ask participants whether they have ever experienced a musculoskeletal injury and if so, to share the signs and symptoms that they experienced with the class. Instructor's Note: Although responses will vary, commonly reported signs and symptoms would include pain, swelling, restricted movement and bruising or discoloration.
PROVIDING (CARE FOR INJURIES TO MUSCLES, BONES AND JOINTS
KEY POINTS	 A gentle, reassuring approach is important in caring for patients with muscle, bone and joint injuries. The patient is likely to be experiencing severe pain and may be frightened. Avoid moving the injured parts of the patient's body as much as possible, as this is likely to increase the pain and may cause further injury. Keep the injured area stable in the position found until more advanced medical personnel take over.

	 For any muscle, bone or joint injury, follow these general guidelines when providing care: Follow standard precautions. Control bleeding if present. Ensure that the patient is breathing effectively, and administer supplemental oxygen based on local protocols. If a spinal injury is suspected, maintain spinal motion restriction and keep the patient flat. Avoid any movements or changes in position that cause pain. The patient will usually find the most comfortable position. Keep the injured area immobile in that position.
	 Remove any jewelry or restrictive clothing in the affected area so that swelling does not cause more pain or injury. Clean and bandage any open wounds before splinting. Follow the steps on Skill Sheets 22-1 to 22-4 to immobilize the injured joint or bones with splints only if you must transport the patient to definitive medical care and you can do so without causing more pain.
	 Check for circulation and sensation to the limb. Feel for the patient's distal pulse, skin temperature and ability to move and detect touch in the injured parts, before and after splinting. You should call for more advanced medical personnel if: You suspect a fracture to an area proximal to the wrist or ankle. The injury involves severe bleeding. The injury impairs breathing. The injury involves the head, neck or spine. You see or suspect multiple injuries.
	 In addition, you should use the "RICE" acronym when providing care: Rest Immobilize (in the position it was found) Cold Elevate (above the level of the heart)
ACTIVITY	 Using the following scenario, ask participants to identify findings that would lead them to suspect that the patient has a fracture: You are called to the scene of an emergency involving an older woman who was attempting to cross the street when she slipped on the ice and fell. She tells you that she thinks she "twisted her right ankle because she heard a cracking sound when she fell." You notice that the right ankle is visibly more swollen than the left and the patient complains of intense pain and tenderness when you touch the area. When the patient moves her ankle, you hear a grating sound. The patient also mentions that her toes feel like they are asleep.
	 Instructor's Note: Assessment findings to support the suspicion of a fracture include: Swelling and discoloration. The patient's mention of a cracking sound on falling and a "twisting force." The patient's complaint of intense pain and tenderness. A grating sound (crepitus) when attempting to move the joint.

TOPIC: **SPLINTING**

Time: 30 minutes



RULES FOR SPLINTING	
KEY POINTS	 No matter where the splint will be applied or the type of injury, there are some general rules for splinting: Splinting should only be performed if you have to move or transport the patient to receive medical care and you can do so without causing more pain. Assess the patient's distal pulse, skin temperature, ability to move and ability to feel the body part that is on the other side of the injury from the heart. Continue to assess every 15 minutes after the splint has been applied. If a fracture is suspected, immobilize the bones or joints above and below the injury. Cut off or remove any clothing around the injury site. Cover any bleeding or open wounds, including open fractures, with sterile dressings and carefully bandage with minimal pressure. Do not try to push protruding bones back below the skin. Do not attempt to straighten an angulated fracture; always splint the limb in the position found. Do not allow patient to bear weight on an injured lower extremity. Pad the splints so that they will be more comfortable and conform to the shape of the injured body part. Secure the splint in place with folded triangular bandages, roller bandages or other wide strips of cloth. Elevate the splinted part, if possible.

APPLYING A RIGID SPLINT	
ACTIVITY	 Ask participants to take their textbooks, disposable latex-free gloves and splinting materials with them to the practice area. Divide participants into pairs and guide participants through the steps listed on the skill chart. Have each participant demonstrate how to apply a rigid splint on another participant. Observe each pair performing the technique and evaluate completion of the skill using the Skill Checklist. Be sure to point out any common errors, such as failing to support the injured body part above and below the site of injury, forgetting to assess circulation and sensation before and/or after application, using an inappropriate sized splint or failing to adhere to standard precautions. Check off participant's progress on the Participant Progress Log.
SKILL	 Always follow standard precautions when providing care and obtain consent. Support the injured body part <i>above and below</i> the site of the injury. Check for circulation and sensation beyond the injured area. Place an appropriately sized rigid splint (e.g., padded board) under the injured body part. Note: Place padding, such as a roller gauze, under the palm of the hand to keep it in a normal position. Tie several folded triangular bandages <i>above and below</i> the injured body part. Recheck for circulation and sensation beyond the injured area. Note: If a rigid splint is used on an injured forearm, immobilize the wrist and elbow. Bind the arm to the chest using folded triangular bandages or apply a sling. If splinting an injured joint, immobilize the bones on either side of the joint.

APPLYING A	SLING AND BINDER
ACTIVITY	 Ask participants to take their textbooks, disposable latex-free gloves and splinting materials with them to the practice area. Divide participants into pairs and guide participants through the steps listed on the skill chart. Have each participant demonstrate how to apply a sling and binder on another participant. Observe each pair performing the technique and evaluate completion of the skill using the Skill Checklist. Be sure to point out any common errors, such as failing to support the injured body part above and below the site of injury, forgetting to assess circulation and sensation before and/or after application, placing the triangular bandage over the injured arm, failing to bind the injured area to the chest or failing to adhere to standard precautions. Check off participant's progress on the Participant Progress Log.
SKILL	 Always follow standard precautions when providing care and obtain consent. Support the injured body part <i>above and below</i> the site of the injury. Check for circulation and sensation beyond the injured area. Place a triangular bandage under the injured arm and over the uninjured shoulder to form a sling. Tie the ends of the sling at the side of the neck. Bind the injured body part to the chest with a folded triangular bandage. Recheck for circulation and sensation beyond the injured area.

APPLYING AN	
ACTIVITY	 Ask participants to take their textbooks, disposable latex-free gloves and splinting materials with them to the practice area. Divide participants into pairs and guide participants through the steps listed on the skill chart. Have each participant demonstrate how to apply an anatomic splint on another participant. Observe each pair performing the technique and evaluate completion of the skill using the Skill Checklist. Be sure to point out any common errors, such as failing to support the injured body part above and below the site of injury, forgetting to assess circulation and sensation before and/or after application, failing to pad the injured body part or failing to adhere to standard precautions. Check off participant's progress on the Participant Progress Log.

SKILL	After checking the scene and the injured patient:
	1. Always follow standard precautions when providing care and obtain consent.
	2. Support the injured body part <i>above and below</i> the site of the injury.
	3. Check for circulation.
	 Check for feeling, warmth and color beyond the injured area.
	4. Position the bandages.
	 Place several folded triangular bandages <i>above and below</i> the injured body part.
	5. Align body parts.
	 Place the uninjured body part next to the injured body part.
	6. Place padding between the body parts and fill any voids. Tie the triangular bandages securely around both body parts.
	7. Recheck for circulation.
	 Recheck for feeling, warmth and color.
	Note: If you are not able to check warmth and color because a sock or shoe is in place, check for feeling.

APPLYING A SOFT SPLINT	
ACTIVITY	 Ask participants to take their textbooks, disposable latex-free gloves and splinting materials with them to the practice area.
	 Divide participants into pairs and guide participants through the steps listed on the skill chart.
	 Have each participant demonstrate how to apply a soft splint on another participant.
	 Observe each pair performing the technique and evaluate completion of the skill using the Skill Checklist.
	 Be sure to point out any common errors, such as failing to support the injured body part above and below the site of injury, forgetting to assess circulation and sensation before and/or after application, failing to pad the injured body part or wrap the injured part with a soft object or failing to adhere to standard precautions. Check off participant's progress on the Participant Progress Log.
SKILL	1. Always follow standard precautions when providing care and obtain consent.
	2. Support the injured body part above and below the site of the injury.
	3. Check for circulation and sensation beyond the injured area.
	4. Place several folded triangular bandages <i>above and below</i> the injured body part.
	5. Gently wrap a soft object (e.g., a folded blanket or pillow) around the injured body part.
	6. Tie triangular bandages securely with knots.
	7. Recheck for circulation and sensation beyond the injured area.
	Note: If you are not able to fully check circulation because a sock or shoe is in place, check for feeling.

WRAP-UP

ACTIVITY Course Presentation Slide 473	 Review the closing scenario: <i>After approaching the driver, you find out that she slammed her knee into the dashboard and cannot put weight on the right leg without significant pain. The ambulance has not yet arrived on scene.</i> Ask participants: "How should you respond?" "What actions should you take?"
	 Follow standard precautions and ensure that the patient is breathing effectively, control any bleeding, avoid any movements or changes in position that cause pain and clean and bandage any open wounds before splinting. Assess the patient's injury to determine if it is a fracture, dislocation, sprain or strain and whether the injury is open or closed; inspect the area for signs and symptoms to confirm your suspicions; and do not allow the patient to bear weight on the area. Follow the steps of RICE and splint the injured area with the appropriate type of splint, improvise as necessary based on available supplies; check for circulation and sensation.
KEY POINTS	 Injuries to the bones, muscles and joints generally are caused by significant force. Injuries include fractures to the bones, dislocation of joints, and sprains and strains involving muscles, ligaments and tendons. Injuries to the pelvis or femur are potentially critical because of the major blood vessels and the potential for shock. The general care for all musculoskeletal injuries is similar: rest, immobilize, cold and elevate (RICE). Immobilizing an injured area lessens pain, prevents further damage to soft tissues, reduces the risk of severe bleeding, reduces the possibility of loss of circulation to the injured part and prevents closed extremity injuries from becoming open ones. Types of splints include soft, rigid, traction, circumferential, vacuum and anatomic. After splinting, you must check circulation and feeling beyond the injured area every 15 minutes.
ASSIGNMENT FOR THE NEXT LESSON	 Read Chapter 23, Injuries to the Head, Neck and Spine. Read Enrichment: Removing Helmets and Other Equipment (<i>optional</i>), pages 548–550 and Enrichment: Cervical Collars and Backboarding (<i>optional</i>), pages 551–552.
INSTRUCTOR PREPARATION	 Review Chapter 23, Injuries to the Head, Neck and Spine. Review Enrichment: Removing Helmets and Other Equipment (<i>optional</i>), pages 548–550 and Enrichment: Cervical Collars and Backboarding (<i>optional</i>), pages 551–552. Review the video segment, "Injuries to the Head, Neck and Spine" (3:57). Review the skills and obtain any necessary equipment and supplies for Lesson 34.

ENRICHMENT: AGRICULTURAL AND INDUSTRIAL EMERGENCIES

KEY POINTS Course Presentation Slides 474-475	 Some of the most serious injuries occur on agricultural and industrial sites because of the heavy equipment involved. Scene size-up is essential for an agricultural or industrial emergency because of the risk of hazardous materials, fire hazards, unstable running machinery or unsecured livestock. If necessary, call specialized personnel, such as the fire department or a hazardous material (HAZMAT) removal team, to stabilize the scene before entering. Working in confined spaces is another safety concern.
AGRICULTUR	AL EMERGENCIES
KEY POINTS	 AL EMERGENCIES Injuries on an agricultural site most often involve the hands and arms. The most common injuries include: Abrasions. Amputations. Animal bites. Avulsions. Burns. Concussions. Concussions. Concussions. Concussions. Eye injuries. Fractures. Sprains. Strains. Injuries associated with different types of machinery involve a different approach. You need to have a basic understanding of how each piece of equipment works and how it can cause harm. The equipment must always be stabilized and shut down before trying to extricate a patient. A patient trapped by a tractor can be freed by digging a trench underneath the patient's body or by cutting off a piece of the machine; alternatively, the tractor may need to be lifted off the patient. The reverse feature should <i>never</i> be used in an attempt to extricate a patient from a combine. Instead, pry bars or other tools should be used to jam the moving parts. The tines of a hay baler may need to be disassembled to free a patient who is caught. An acetylene torch should <i>never</i> be used to take apart a hay baler since the combustible dust inside may ignite. The major hazard in a silo is the gas formed during fermentation. A self-contained breathing apparatus (SCBA) must be worn to rescue a patient from a rea with unsecured livestock.
	 Protective clothing should be worn before entering a scene that may contain pesticides or other chemicals.

INDUSTRIAL	- EMERGENCIES
	The hazards of industrial emergencies often mimic those of agricultural emergencies and include exposure to gases, fumes or other chemicals and to unstable machinery.
	 Scene size-up is essential; you should not enter a scene until it has been secured.
	The industrial safety or management personnel can provide you with emergency protocols that are to be in place at every industrial site.
	 Hazardous equipment at industrial sites includes all types of dangerous chemicals and machinery.
	Dangerous locations include trenches and confined spaces.
	A wide range of chemicals in gas, aerosol, liquid or solid state may be found at various industrial sites.
	Employers should have an effective plan in place to assist employees in reaching shelter safely.
	During or after a toxic chemical release, and if the duration of the chemical release or airborne concentration is unknown, Occupational Safety and Health Administration (OSHA) personal protective equipment (PPE) Level B protection (which requires the highest level of respiratory protection but a lower level of skin protection) should be considered a minimum.
	 Required equipment includes a SCBA, hooded chemical resistant clothing, special gloves, boots with covers and a hard hat.

SKILL CHECKLIST Applying a Instructor's Note: The participant must always size up the scene, perform **Rigid Splint** a primary assessment and summon more advanced medical personnel, if necessary. Participant completes the following: Follows standard precautions and obtains consent **I** Supports the injured body part *above and below* the site of the injury Checks for circulation and sensation beyond the injured area Delta Places an appropriately sized rigid splint (e.g., padded board) under the injured body part □ If a rigid splint is used on an injured forearm: Immobilizes the wrist and elbow Attempts to keep the wrist higher than the elbow in order to prevent swelling of the forearm Binds the arm to the chest using folded triangular bandages or applies a sling □ If splinting an injured joint, immobilizes the bones on either side of the joint **Ties several folded triangular bandages** *above and below* the injured body part Rechecks for circulation and sensation beyond the injured area

Applying a Sling and Binder	Instructor's Note: The participant must always size up the scene, perform a primary assessment and summon more advanced medical personnel, if necessary.
	 Participant completes the following: Follows standard precautions and obtains consent Supports the injured body part <i>above and below</i> the site of the injury Checks for circulation and sensation beyond the injured area Places a triangular bandage under the injured arm and over the uninjured shoulder to form a sling Ties the ends of the sling at the side of the neck Binds the injured body part to the chest with a folded triangular bandage Rechecks for circulation and sensation beyond the injured area
Applying an Anatomic Splint	Instructor's Note: The participant must always size up the scene, perform a primary assessment and summon more advanced medical personnel, if necessary.
	 Participant completes the following: Follows standard precautions and obtains consent Supports the injured body part <i>above and below</i> the site of the injury Checks for circulation Checks for feeling, warmth and color beyond the injured area If not able to fully check circulation because a sock or shoe is in place, checks for feeling Positions the bandages Places several folded triangular bandages <i>above and below</i> the injured body part Aligns body parts Places the uninjured body part next to the injured body part Places padding between the body parts and fills any voids. Ties triangular bandages securely Rechecks for circulation Checks for feeling, warmth and color
Applying a Soft Splint	Instructor's Note: The participant must always size up the scene, perform a primary assessment and summon more advanced medical personnel, if necessary.
	 Participant completes the following: Follows standard precautions and obtains consent Supports the injured body part <i>above and below</i> the site of the injury Checks for circulation and sensation beyond the injured area If not able to fully check circulation because a sock or shoe is in place, checks for sensation Places several folded triangular bandages <i>above and below</i> the injured body part Gently wraps a soft object (e.g., a folded blanket or pillow) around the injured body part Ties triangular bandages securely with knots Rechecks for circulation and sensation beyond the injured area



INJURIES TO THE HEAD, NECK AND SPINE

Lesson Length: 90 minutes (120 minutes with Enrichments)

MATERIALS, EQUIPMENT AND SUPPLIES

- Emergency Medical Response textbook
- Course Presentation Slides 476–495
- LCD projector and screen and computer
- Emergency Medical Response DVD
- DVD player and monitor
- Disposable latex-free gloves (multiple sizes) and other personal protective equipment (PPE), as indicated
- Adult manikins (one for every two participants)
- Sterile gauze dressings, bulky dressings or clean cloths
- Roller bandages
- Tape
- Water or saline solution
- Sterile cotton swabs
- Eye pads or shields
- Paper cups
- Cervical collars (C-collars) (Enrichment)
- Backboards with straps (*Enrichment*)
- Head immobilizers (Enrichment)

LESSON OBJECTIVES

Knowledge

After completing this lesson, participants will be able to:

- Relate the mechanism of injury to potential injuries of the head, neck and spine.
- List signs and symptoms of head, neck and spinal injuries.
- Describe general care for head, neck and spinal injuries.
- Describe care for specific head injuries.
- Describe the method of determining if a responsive patient may have a spinal injury.
- Explain the importance of minimizing the movement of a victim with a possible head, neck or spinal injury.
- Discuss various ways of preventing head, neck and spinal injuries.

Skill

After completing this lesson, participants will be able to:

- Perform the proper care for specific head injuries.
- Demonstrate manual stabilization of the head, neck and spine.

TOPIC: INTRODUCTION

ACTIVITY Course Presentation Slide 477	 Review the opening scenario: You are the emergency medical responder (EMR) with an ambulance crew responding at the scene of a motorcycle crash. As you round a curve and approach the scene, you begin your size-up and see that the motorcycle driver is lying on the road, not moving, and two bystanders appear to be rendering assistance. The motorcycle is a considerable distance from where the driver is located. The motorcyclist is wearing a helmet. Ask participants: "As you begin your primary assessment, how should you adjust your methods?" "What types of injuries should you suspect?"
	Instructor's Note: Let participants provide responses, guiding them to issues related to injuries involving the head, neck and spine; the mechanisms of injury (MOIs); the various types of injuries; the importance of manual stabilization; the signs and symptoms associated with the different types of injuries; and the appropriate care, including the need to summon more advanced medical personnel, if appropriate.
	 Tell participants: "Head, neck and spine account for only a small percentage of all injuries, but they are the cause of a significant number of fatalities annually." Traumatic brain injuries (TBI) alone account for about 30 percent of all injury deaths and approximately 2.5 million emergency department visits a year in the United States. Falls are the leading cause of TBIs as well as other head, neck and spinal injuries with a large percentage occurring in children up to 14 years of age and adults over the age of 65. Emphasize that survivors of serious head, neck and spinal injuries have a wide range of physical and mental impairments including paralysis, speech and memory problems and behavioral disorders. Review the anatomy of the head, neck and spine. Refer participants to Chapter 4, The Human Body, for additional review.

TOPIC: HEAD INJURIES

Time: 35 minutes

KEY POINTS	The head is easily injured because it lacks the padding of muscle and fat that is found in other body areas.
	The most common cause of death in patients with head injuries is the lack of oxygen to the brain.
Course Presentation Slides 478-485	Head injuries can be open or closed.
Silues 470-405	

OPEN HEAD INJURIES	
KEY POINTS	 Open head injuries involve a break in the skull or occur when an object penetrates the skull. There is direct damage to the skull and brain damage may be involved. With open head injuries: Control bleeding promptly with dressings, direct pressure and a pressure bandage, while limiting spinal movement. Do not apply direct pressure over where there is an obvious skull fracture or depression. Do not remove any penetrating object; instead, stabilize it with thick dressings.
CLOSED HEA	D INJURIES
KEY POINTS	 Closed head injuries occur when the brain is struck against the skull but the skull remains intact. They also can occur from an impact with a blunt object. If swelling or bleeding in the brain occurs, brain damage may occur, depending on the nature and force of the injury. With closed head injuries, do <i>not</i> control bleeding using direct pressure. This could cause further injury by pushing bone fragments into the brain.
ACTIVITY	 Divide the participants into small groups. Assign each group one or more of the following, being sure all topics are assigned: skull fractures, penetrating wounds and scalp injuries. Ask each group to describe the injury, associated signs and symptoms and appropriate care. Have each group present their information to the rest of the class. Instructor's Note: Responses should include: Skull fractures: Possible result of any significant trauma to the head, even with a closed head injury; may be accompanied by brain damage due to bleeding or swelling in the brain Signs and symptoms: Damage to the skull, including deformity to the skull or face; pain or swelling at the site of injury; blood or other fluids leaking from the mouth, nose, ears or scalp wound; unequal facial movements (drooping, unequal or unresponsive pupils) or vision problems in one or both eyes; bruising around the eyes ("raccoon eyes"); bruising behind the ears ("Battle's sign") Care: Summoning more advanced medical personnel immediately Penetrating wounds: An object passing through the skull and lodging in the brain Signs and symptoms: Visible or nonvisible object in the skull Care: If an object is impaled in the skull, not removing it but rather stabilizing it and the wound site with bulky dressings and dress the surrounding area with sterile gaze; covering the area lightly with sterile dressings if you suspect an object has penetrated the skull, but it is not visible Scalp injuries: Injuries to the scalp Signs and symptoms: Minor or severe bleeding; possibly more than expected because of the large number of blood vessels in the scalp Care: Applying direct pressure, using gentle pressure at first because the skull may be injured; not putting direct pressure on the wound if you feel a depression, a spong yarea or bone fragments; attempting to control bleeding with pressure on the area around the wound; summoning more advanced medic

CONCUSSION	
KEY POINTS	A concussion is a common type of traumatic brain injury that involves a temporary loss of brain function.
	 Concussions are particularly common sports-related injuries, but they can occur whenever a person experiences a bump, blow or jolt to the head or body that results in rapid movement of the head. A patient who has had one concussion is at increased risk for subsequent concussions. Many patients who experience a concussion do not lose consciousness, or they may only lose consciousness very briefly. Signs and symptoms of a concussion include: The patient may seem confused, dazed or stunned; lose the ability to remember or follow simple instructions; or ask repeatedly what happened. The patient may complain of a headache; feel nauseated or vomit; have blurred or double vision; experience dizziness; or be especially sensitive to light or noise.
ACTIVITY	 Divide the class into small groups and assign each group one or more of the categories from Table 23:1 Signs and Symptoms of a Concussion in the textbook, being sure all categories are assigned: thinking and remembering; physical; emotional; and behavioral. Have each group discuss and provide examples of the signs and symptoms for their assigned category and how these signs and symptoms might be seen or heard by a responder. Instructor's Note: Ensure course participants understand how each of the signs and symptoms may manifest themselves in a real situation. Responses should include: Thinking and remembering: Difficulty thinking clearly Difficulty remembering events that occurred just prior to the incident and just after the incident Difficulty remembering new information Difficulty processing information Physical: Headache Blurry vision Nausea or vomiting Diziness Sensitivity to noise or light Balance problems Feeling sluggish (lack of energy) Ermotional: Hritability Sadness Heightened emotions Nervousness or anxiety Behavioral: Changes in sleeping habits (sleeping more or less than usual, difficulty falling asleep) Changes in playing and eating habits (in children)

CONCUSSION CARE		
KEY POINTS	 If you think that a patient has sustained a concussion: Advise them to stop the activity they were engaged in when the incident occurred. The patient should follow up with a healthcare provider for a full evaluation. A healthcare provider is best able to evaluate the severity of the injury and make recommendations about when the patient can return to normal activities. While rare, permanent brain injury and death are potential consequences of failing to identify and respond to a concussion in a timely manner. 	
	SYMPTOMS OF HEAD AND BRAIN INJURY	
KEY POINTS	 Typical signs and symptoms of head and brain injury include: Damage to the skull, including deformity to the skull or face. Pain or swelling at the site of the injury. Irregular breathing. Sudden, debilitating headache. Nausea or vomiting. Incontinence (involuntary urination or defecation). High blood pressure and slowed pulse. Paralysis or droopiness, often on one side of the body; rigidity of limbs. Loss of balance. Asymmetrical facial movements. Confusion, unresponsiveness or other type of altered mental state. Facial bruising, including "raccoon eyes" (visible bruising around the eyes). External bleeding of the head. Unusual bumps or depressions on the head. Blood or other fluids draining from the ears, mouth or nose. Bruising behind the ears ("Battle's sign"). Unequal pupil size and unresponsive pupils; disturbance of vision in one eye or both. Speech problems. Seizures. 	
PROVIDING C	CARE	
KEY POINTS	 First, summon more advanced medical personnel. Follow standard precautions to prevent disease transmission and provide the following care while waiting for more advanced medical personnel to take over: Establish manual stabilization of the head and neck, perform a primary assessment and maintain spinal motion restriction (SMR) while at the scene. Maintain an open airway. Monitor the airway, suction if needed and administer supplemental oxygen, based on local protocols. Control any bleeding and apply dressings to any open wounds. Do not apply direct pressure if there are any signs of an obvious skull fracture. 	

0	If there is leaking of cerebrospinal fluid from the ears or a wound in the scalp, cover the area loosely with a sterile gauze dressing.
0	Do <i>not</i> attempt to remove any penetrating object; instead stabilize it with a bulky dressing.
0	Maintain manual stabilization until other emergency medical services (EMS) responders relieve you. If you are trained to do so and protocols allow, apply a cervical collar (also called a C-collar).
0	Monitor the patient's vital signs and mental status closely and watch for any changes in the patient's status.
0	Try to calm and reassure the patient. Encourage the patient to engage in conversation with you; it may prevent loss of consciousness.

SPINAL MOTION RESTRICTION USING MANUAL STABILIZATION		
ACTIVITY	 Ask participants to take their textbooks and disposable latex-free gloves with them to the practice area. Divide participants into pairs and guide participants through the steps listed on the skill chart. Have each participant demonstrate how to perform manual stabilization on another participant. Observe each pair performing the technique and evaluate completion of the skill using the Skill Checklist. Be sure to point out any common errors, such as moving the patient too much, failing to position the head properly, failing to maintain an open airway or turning the patient's head. 	
	Check off participant's progress on the Participant Progress Log.	
SKILL	Note: Always follow standard precautions when providing care and call for more advanced medical personnel for a head, neck or spinal injury, while minimizing movement of the head, neck and spine.	
	1. Minimize movement by placing your hands on <i>both</i> sides of the patient's head.	
	2. Support the head in the position found.	
	Note: Do <i>not</i> align the head and neck with the spine if the head is sharply turned to one side, there is pain on movement or if you feel any resistance when attempting to align the head and neck with the spine. Instead, gently maintain the head and neck in the position found.	
	3. Maintain an open airway. Control any external bleeding and keep the patient from getting chilled or overheated.	
	Note: Gently position the patient's head in line with the body if you cannot maintain an open airway, you need to remove a helmet or you need to apply a C-collar.	

CONTROLLIN	G BLEEDING FROM AN OPEN HEAD WOUND
ACTIVITY	 Ask participants to take their textbooks, disposable latex-free gloves, dressing supplies and roller bandages with them to the practice area. Divide participants into pairs and guide participants through the steps listed on the skill chart. Have each participant demonstrate how to control bleeding from an open head wound on another participant. Observe each pair performing the technique and evaluate completion of the skill using the Skill Checklist. Be sure to point out any common errors, such as removing saturated dressings instead of placing additional dressings over top. Check off participant's progress on the Participant Progress Log.
SKILL	 Note: Always follow standard precautions when providing care and summon more advanced medical personnel for a head, neck or spinal injury, while minimizing movement of the head, neck and spine, if necessary. 1. Apply direct pressure. Place a sterile dressing or clean cloth over the wound and press gently against the wound with your hand. Do <i>not</i> put direct pressure on the wound if you feel a depression, spongy area or bone fragments. Press gently on the area <i>around</i> the wound. 2. Elevate the head and shoulders <i>unless</i> you suspect an injury to the spinal. 3. Apply a pressure bandage. Using a roller bandage, cover the dressing completely, using overlapping turns. Tie or tape the bandage in place. If blood soaks through the bandage, leave the original dressing in place but remove and replace any additional dressings and bandages over the wound. 4. If bleeding stops: Determine if further care is needed. 5. If bleeding does <i>not</i> stop: Summon more advanced medical personnel.

TOPIC: EYE INJURIES

Time: 20 minutes

KEY POINTS	Injuries to the eye can involve the eyeball, the bone and the soft tissue surrounding the eye. Blunt objects, like a fist or a baseball, may injure the eye and surrounding area or a smaller object may penetrate the eyeball.
Course Presentation Slide 486	Injuries that penetrate the eyeball or cause the eye to be removed from its socket are very serious and can cause blindness.
	 Never put direct pressure on the eyeball. Remember that all eye injuries should be examined by a healthcare provider.
	 Foreign bodies that get in the eye, such as dirt or slivers of wood or metal, are irritating, painful and can cause significant damage to the cornea.

	 It is important to tell the patient <i>not</i> to rub the eyes. Never touch the eye and always follow standard precautions when caring for the patient. If chemicals have been in contact with the patient's eyes, irrigate the affected eye or eyes with clean water from nose to outside of eye for at least 15 minutes. If only one eye is affected, make sure you do not let the water run into the unaffected eye. Continue care while transporting the patient. Sterile saline can be used if water is not available. 	
IMPALED OBJECTS		
KEY POINTS	 If an object is impaled in the eye, do not remove it. Keep the patient in a face-up position and enlist someone to help stabilize the patient's head. Stabilize the object by encircling the eye with a gauze dressing or soft sterile cloth, being careful not to apply any pressure to the area. Position bulky dressings around the impaled object, such as roller gauze, and then cover it with a shield such as a paper cup. 	

BANDAGING AN EYE WITH AN INJURY FROM AN IMPALED OBJECT	
ACTIVITY	 Ask participants to take their textbooks, disposable latex-free gloves, sterile dressings, and paper cup or eye shield with them to the practice area. Tell participants that the skill will be practiced using a simulated or imaginary impaled object. Divide participants into pairs and guide participants through the steps listed on the skill chart. Have each participant demonstrate how to bandage an eye with an impaled object (simulated) on a manikin. Observe each pair performing the technique and evaluate completion of the skill using the Skill Checklist. Be sure to point out any common errors, such as moving the object, failing to stabilize the object, using the wrong type of cup as a shield, forgetting to comfort the patient or failing to follow standard precautions. Check off participant's progress on the Participant Progress Log.
SKILL	 Note: Always follow standard precautions when providing care. Do <i>not</i> attempt to remove an object that is impaled in the eye. Keep the patient in a face-up position and enlist someone to help stabilize the patient's head. 1. Stabilize the object by encircling the eye with a gauze dressing or soft sterile cloth. Do <i>not</i> apply any pressure to the area. 2. Position bulky dressings around the impaled object, such as roller gauze, and then cover it with a shield, such as a paper cup. The shield should <i>not</i> touch the object. Note: Do <i>not</i> use Styrofoam[®]-type materials, as small particles can break off and get into the eye. 3. Bandage the shield and dressing in place with a self-adhering bandage and roller bandage, covering the patient's injured eye to keep the object stable and minimize movement. 4. Comfort and reassure the patient. Note: Do <i>not</i> leave the patient.

TOPIC: ORAL INJURIES

KEY POINTS	 Oral injuries include injuries to the teeth or jaws. Situations that cause jaw fractures or dislocations also can cause head, neck or spinal injuries. The priorities are to maintain an open and clear airway and restrict
Course Presentation	spinal motion.
Slide 487	Signs and symptoms of oral injuries include:
	$\circ~$ Uneven, loose or missing teeth or teeth that do not meet.
	 Inability to open or close the mouth.
	 Saliva mixed with blood.
	• Pain in areas around the ears.
	 Difficulty or pain when speaking.
	If there is bleeding from the mouth but a head, neck or spinal injury is not suspected, the patient is placed in the sitting position with the head tilted slightly forward or on the side to allow blood to drain from the mouth.
	If the lip is penetrated, a rolled dressing is placed between the lip and gum and another dressing is placed on the outer surface of the lip; if the tongue is bleeding, a dressing and direct pressure are applied.
	If a tooth is knocked out, control the bleeding by placing a rolled gauze pad into the space left by the missing tooth and have the patient gently bite down to maintain pressure. Try to locate and save the tooth, because a dentist or other healthcare provider may be able to reimplant it.
	 Handle the tooth by the crown.
	 Place the tooth in Hanks' Balanced Salt solution (e.g., Save-A-Tooth[®]), if available. If you do not have Hanks' Balanced Salt solution, place the tooth in egg white, coconut water or whole milk. If these are not available, place the tooth in the injured patient's saliva.
	 Do not attempt reimplantation. Do not allow the tooth to dry out.
	 Contact a dentist or bring the tooth and the patient to an emergency care center as soon as possible. The sooner the tooth is reimplanted, the better the chance that it will survive. Ideally, reimplantation should take place within 30 minutes.
	Dentures should remain in place unless they are broken.

TOPIC: INJURIES TO THE NECK AND SPINE

lime: 20 minutes

KEY POINTS	Injuries to the neck and spine can damage both bone and soft tissue, including the spinal cord.
	Since it is difficult to determine the extent of damage in neck and spinal injuries, you should always treat them as serious.
Course Presentation Slides 488–492	A patient's ability to walk, move or have feeling in the arms or legs does not necessarily rule out injury to the spinal cord.
	Because the carotid artery and jugular vein are both located in the neck, injuries to one or both of them can produce serious, possibly fatal, bleeding.

ACTIVITY	Ask participants for examples of possible situations that might result in neck or
ACTIVITI	spinal injuries.
	 Write their responses on newsprint and then have them compare their
	information with that found in the textbook.
	Instructor's Note: Responses should include:
	Injury as a result of a fall greater than a standing height.
	 An injury involving a diving board or water slide or caused by the person entering water from a significant height, such as an embankment, cliff
	or tower.
	Any injury, such as from a car or other vehicle collision, involving severe
	blunt force to the person's head or trunk.
	A motor-vehicle, motorized cycle or bicycle collision involving a pedestrian or
	driver or passengers not wearing safety belts or one that results in a broken windshield or a deformed steering wheel.
	 Injury as the result of a hanging.
	 Any unresponsive trauma patient.
	 Injury involving a penetrating trauma to the head, neck or torso.
	Any person thrown from a motor vehicle.
	 Any injury in which a patient's industrial hard hat or helmet is broken,
	including a motorcycle, bicycle, football or other sports helmet.
	A person who has other painful injuries, especially of the head and neck.
	 A person complaining of neck or back pain or tenderness, tingling in the extremities or weakness.
	 An injured person who appears to be frail.
	 An injured person who is not fully alert or appears to be intoxicated.
	 Someone with an obvious head or neck injury.
	Any injury caused by entry into shallow water.
	Has sensory deficit or muscle weakness involving the torso or
	upper extremities.
	Children less than 3 years of age with evidence of head or neck trauma.
SIGNS AND S	YMPTOMS OF NECK AND SPINAL INJURIES
KEY POINTS	 Signs and symptoms of neck injuries include: Obvious lacesticing excelling or bruising
	 Obvious lacerations, swelling or bruising. Objects immeded in the needs
	 Objects impaled in the neck.
	 Profuse external bleeding.
	 Impaired breathing as a result of the injury.
	• Difficulty speaking or complete loss of voice.
	 A crackling sound when the patient is speaking or breathing, due to air escaping from an injured trachea or larynx.
	 Obstructed airway caused by swelling of the throat.
	 Signs and symptoms of spinal injuries include:
	 Pain or pressure in the back, independent of movement
	or palpation.
	 Tenderness in the area of the injury.
	 Pain associated with moving.
	 Numbness, weakness, tingling or loss of feeling or movement in the extremities.
	 Partial or complete loss of movement or feeling below the
	 suspected level of the injury. Difficulty breathing or shallow breathing.
	 Difficulty breating or shallow breathing. Loss of bladder and/or bowel control.

PROVIDING CARE KEY POINTS Restrict spinal motion using manual stabilization and control bleeding for any patient with a suspected neck or spinal injury because movement can irreversibly damage the spinal cord. Approach patients from the front so they can see you without turning their heads. Perform a primary assessment and assess the patient's pulse, movement and feeling in the extremities. Ask a responsive patient the following questions, while maintaining spinal motion restriction (SMR), to further assess the situation: • "Does your neck or back hurt?" • "What happened?" • "Where does it hurt?" • "Can you move your hands and feet?" • "Can you feel where I am touching?" For an unresponsive patient, maintain an open airway using the jaw-thrust (without head extension) maneuver and assist ventilation if needed. Do not attempt to align the head and neck with the body unless you cannot maintain an open airway, you need to remove a helmet or you need to assist with the application of a C-collar. If a patient is wearing a helmet, assess whether it is necessary to remove it. Situations that may require helmet removal include those in which: • You cannot access or assess the patient's airway and breathing. • The airway is impeded and cannot be opened with the helmet on. • The patient is in cardiac arrest. • You cannot immobilize the spine. • A minimum of two responders are needed to remove a helmet. **PREVENTING HEAD, NECK AND SPINAL INJURIES** ACTIVITY Tell participants that many head, neck and spinal injuries are preventable. Ask participants for examples of measures that are appropriate for preventing head, neck and spinal injuries. Write their responses on newsprint and then have them compare their information with that found in the textbook. Instructor's Note: Responses should include: Knowing your risk and being aware of your surroundings and wearing appropriate safety equipment and protective devices, such as padding, footwear, helmets and eye protection. Not diving into a body of water if you are unsure of the depth. • Wearing seat belts in a motor vehicle, insisting that passengers wear seat belts and always transporting children in approved child safety seats in the back of the vehicle, according to state and local regulations. Preventing head and neck injuries in rear-end collisions by properly adjusting your motor vehicle's headrest. The top of the headrest should be as high as the top of your head and no more than 4 inches from the back of your head. Preventing falls by safety-proofing your home and workplace, ensuring that hallways and stairways are well lit and stairways have handrails.

 Always using a stepstool or a stepladder for out-of-reach objects and not attempting to pull heavy objects that are out of reach over your head. Using good lifting techniques when lifting and carrying heavy objects. Using nonslip treads or carpet on stairways and securing any area rugs w double-sided tape. Using nonslip mats in the bathtub or installing handrails. Knowing your risk for osteoporosis, a bone disease responsible for many spine, hip, wrist and other fractures; making sure you have enough calcium in your diet; and engaging in weight-bearing exercises, such as walking or weight training, to increase bone density and stimulate new bone formation.
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WRAP-UP		Time: 5 minutes
ACTIVITY Course Presentation Slide 493	 Review the closing scenario: As you assess the patient, you find that you cannot determinairway or breathing because of the patient's helmet. Ask participants: "What injuries should you suspect?" "What can you do to access and assess the airway 	
	 Instructor's Note: Responses should include: Possible injuries could include head, neck and spinal injclosed head injury, concussion, skull fracture and/or spin Care would include possibly removing the helmet, but of so and there is a second responder available; alternative shield out of the way or if not possible, cutting it off rather the helmet. 	nal injury. nly if trained to do sly, lifting the face
KEY POINTS	 Often, the cause of an injury to the head, neck or spin indicator of whether it should be considered serious; such injuries can damage both bone and soft tissue, spinal cord. You also must carefully assess the signs and sympton have any doubts about the seriousness of an injury, s advanced medical personnel. Movement of any patient with a suspected head, neck should be minimized by using manual stabilization. Administer supplemental oxygen based on local prote available. Apply a C-collar and secure the patient to a if you must move the patient, you are trained to do so protocols allow. Head injuries can be closed or open. Suspect a skull time there is significant trauma to the head, even if th head injury. Control bleeding with direct pressure while being car pressure to a possible skull fracture or to the eyeball an eye injury. 	however, including the ms. If you summon more k or spinal injury ocols if it is a backboard o and local fracture any nere is a closed reful not to apply

ASSIGNMENT FOR THE NEXT LESSON	 Review Chapters 18–23. Review skill sheets for Chapters 18–23. Begin reading Chapter 24, Childbirth.
INSTRUCTOR PREPARATION	 Review Chapters 18–23. Review the skills for Chapters 18–23. Obtain any necessary equipment and supplies for Lesson 35.

ENRICHMENT: REMOVING HELMETS AND OTHER EQUIPMENT

Time: 15 minutes

DVD	 Show the video segment, "Injuries to the Head, Neck and Spine" (3:57). Answer participants' questions about the video segment.
	Instructor's Note: This video segment can be shown now to provide an overview and introduction to the section, or it can be shown at the end of this section to provide a mechanism for summarizing the important details.
KEY POINTS Course Presentation Slide 494	 Helmets fall into multiple categories including sports helmets and motorcycle helmets. Sports helmets usually have an opening in front, which allows for easier access to the airway. You can usually remove the face mask on a football helmet by unsnapping the plastic clips that hold the face mask to the helmet or by cutting the plastic clips. It is more difficult to access the airway with a motorcycle helmet in place, as they usually cover the full face and the airway. Removal of a nonathletic helmet requires two responders using the
	 following steps: 1. Before attempting to remove the helmet, remove glasses if the patient is wearing them. 2. The first responder applies stabilization by holding both sides of the helmet, with the fingers on the patient's lower jaw. 3. The second responder loosens the strap at the D-rings while the first responder maintains stabilization. 4. The second responder then places one hand on the patient's
	 mandible at an angle, with the thumb on one side, and the long and index fingers on the other. With the other hand, the second responder holds the back of the patient's head (occipital region). 5. The first responder then removes the helmet halfway, making sure to clear the ears, while the second responder readjusts hand position under the patient's head. The first responder then removes the helmet the rest of the way, making sure to tilt it backward to avoid hitting the nose.
	 6. The second responder maintains manual stabilization throughout, from below, preventing head tilt. After the helmet has been removed, the first responder replaces the hands over the ears, taking over responsibility for stabilization. 7. The first responder maintains manual stabilization from above until a C-collar can be applied and complete immobilization is achieved with a backboard.

Removal of athletic equipment is usually more challenging because removal of the helmet alone, without removal of the athlete's shoulder pads, increases the risk of cervical movement and further spinal injury.
An athlete's helmet is removed only when:
• The face mask cannot be removed after a reasonable period of time to gain access to the airway.
 The design of the helmet and chinstrap, even in the absence of the face mask, does not allow for a controlled airway or adequate ventilation.
 The design of the helmet and chinstraps is such that the head is not held securely in place (immobilization of the helmet does not also immobilize the head).
 The helmet prevents immobilization of the patient for transport in an appropriate position.
A face mask should be removed after an athlete is suspected of having a spinal injury, even if the patient is conscious.
To remove the helmet and shoulder pads, one responder must provide manual stabilization while a second responder cuts away the chinstrap, shoulder pad straps and jersey.
Removal of protective athletic equipment is a skilled technique that requires hours of practice. It often requires a minimum of five responders trained in this skill.

ENRICHMENT: CERVICAL COLLARS AND BACKBOARDING

Time: 15 minutes

KEY POINTS Course Presentation Slide 495	A C-collar is a rigid device positioned around the neck to limit movement of the head and neck.
	 Once spinal motion restriction (SMR) is achieved, a rigid C-collar should be applied (if medical direction and local protocols allow).
	Application requires two responders: one to maintain SMR while the other applies the collar.
	The collar must be the proper size. An appropriately sized collar is one that fits securely, with the patient's chin resting in the proper position and the head maintained in line with the body.
	Do not apply a C-collar in a circumstance in which you would not want to align the head with the body.
	Once a C-collar has been applied and SMR maintained, the patient's entire body should be immobilized with a backboard, head immobilized and straps.

SKILL SESSION: ENRICHMENT

IMMOBILIZING A HEAD, NECK OR SPINAL INJURY	
ACTIVITY	 Ask participants to take their textbooks, disposable latex-free gloves, C-collar, backboard and head immobilizer with them to the practice area.
	Divide participants into groups of three and guide participants through the steps listed on the skill chart.
	 Have each participant demonstrate how to immobilize a head, neck or spinal injury on another participant.
	 Observe each pair performing the technique and evaluate completion of the skill using the Skill Checklist.
	Be sure to point out any common errors, such as moving the head too much, not maintaining SMR with application of the C-collar, failing to log roll the patient, failing to secure the patient's body to the backboard, failing to secure the patient's head or failing to summon more advanced medical personnel.
	 Check off participant's progress on the Participant Progress Log.
SKILL	Note: Always follow standard precautions when providing care and call for more advanced medical personnel for a head, neck or spinal injury while minimizing movement of the head, neck and spine.
	1. Apply spinal motion restriction.
	 Place your hands on both sides of the patient's head.
	• Gently position the head in line with the body, if necessary.
	• Support the head in that position.
	Note: Do <i>not</i> align the head and neck with the spine if the head is sharply turned to one side, there is pain on movement or if you feel any resistance when attempting to align the head and neck with the spine. Instead, gently maintain the head and neck in the position found.
	2. Apply a C-collar.
	 One responder maintains spinal motion restriction.
	 Second responder applies appropriately sized C-collar (correct size as determined by manufacturer's instructions).
	3. Log roll the patient onto a backboard.
	 One responder maintains spinal motion restriction of the head.
	 Additional responders support the patient's shoulders, hips and legs.
	 Roll the patient in unison, keeping the patient's head and spine in alignment until the patient is resting on their side.
	 Position the backboard.
	 Log roll the patient onto the backboard.
	4. Secure the patient's body.
	• Secure the patient's chest.
	• Secure the patient's arms, hips, thighs and legs with the remaining straps.
	 If necessary, secure the patient's hands in front of the body.
	5. Secure the patient's head.
	 Place padding beneath the head if it is not resting in line with the body. If a commercial head immobilizer is not available, place a folded or rolled blanket around the head and neck.
	 Secure the forehead.

SKILL CHECKLIST		
Spinal Motion Restriction Using Manual Stabilization	Instructor's Note: The participant must always follow standard precautions when providing care and call for more advanced medical personnel for a head, neck or spinal injury, while minimizing movement of the head, neck and spine.	
	 Participant completes the following: Minimizes movement by placing hands on both sides of the patient's head Supports the head in the position found Maintains an open airway Controls any external bleeding Keeps the patient from getting chilled or overheated 	
Controlling Bleeding From an Open Head Wound	Instructor's Note: The participant must always follow standard precautions when providing care and summon more advanced medical personnel for a head, neck or spinal injury while minimizing movement of the head, neck and spine, if necessary.	
	 Participant completes the following: Applies direct pressure Places a sterile dressing or clean cloth over the wound and presses gently against the wound with the hand Does <i>not</i> put direct pressure on the wound if they feel a depression, spongy area or bone fragments Presses gently on the area <i>around</i> the wound Elevates the head and shoulders <i>unless</i> they suspect an injury to the spinal Applies a pressure bandage Uses a roller bandage, covers the dressing completely, using overlapping turns Ties or tapes the bandage in place If blood soaks through the bandage, leaves the original dressing in place but removes and replaces any additional dressings and bandages over the wound and applies firmer pressure If bleeding stops: Determines if further care is needed If bleeding does <i>not</i> stop: Summons more advanced medical personnel 	
Bandaging an Eye With an Injury From an Impaled Object	Instructor's Note: The participant must always follow standard precautions when providing care.	
	 Participant completes the following: Does not attempt to remove an object that is impaled in the eye Keeps the patient in a face-up position and enlists someone to help stabilize the patient's head Stabilizes the object by encircling the eye with a gauze dressing or soft sterile cloth Does <i>not</i> apply any pressure to the area 	

	 Positions bulky dressings around the impaled object, such as roller gauze Covers it with a shield such as a paper cup Does <i>not</i> use Styrofoam[®]-type materials that have small particles that can break off and get into the eye Does <i>not</i> allow the shield to touch the object Bandages the shield and dressing in place with a self-adhering bandage and roller bandage covering the patient's injured eye to keep the object stable and minimize movement Comforts and reassures the patient Does <i>not</i> leave the patient unattended
Immobilizing a Head, Neck or Spinal Injury	 Instructor's Note: The participant must always follow standard precautions when providing care and call for more advanced medical personnel for a head, neck or spinal injury while minimizing movement of the head, neck and spine. Participant completes the following: Applies spinal motion restriction Places hands on both sides of the patient's head Gently positions the head in line with the body, if necessary Supports the head in that position Applies a C-collar One responder maintains spinal motion restriction Second responder applies appropriately sized C-collar (based on
	 manufacturer's instructions for sizing) Log rolls the patient onto a backboard One responder maintains spinal motion restriction of the head Additional responders support the patient's shoulders, hips and legs Rolls the patient in unison, keeping the patient's head and spine in alignment until the patient is resting on their side Positions the backboard Log rolls the patient onto the backboard Secures the patient's chest Secures the patient's arms, hips, thighs and legs with the remaining straps If necessary, secures the patient's head Places padding beneath the head if it is not resting in line with the body If a commercial head immobilizer is not available, places a folded or rolled blanket around the head and neck

SKILLS REVIEW

Lesson Length: 60 minutes

MATERIALS, EQUIPMENT AND SUPPLIES

- *Emergency Medical Response* textbook
- Skill Checklists for Lessons 29–34
- Disposable latex-free gloves (multiple sizes) and other personal protective equipment (PPE), as indicated
- Adult and infant manikins (one for every two participants; child manikins optional)
- Decontamination supplies
- Dressings, such as sterile and nonsterile gauze dressings of different sizes, universal or trauma dressings, occlusive dressings, bulky dressings and/or clean cloths
- Bandages, such as adhesive compresses, roller bandages, elastic bandages and triangular bandages
- Blankets, towels, pillows, slings, binders and cravats
- Rigid splints
- Samples of commercial splints, if available
- Manufactured tourniquets
- Simulated limbs
- Eye pads or shields
- Paper cups
- Tape
- Cervical collars (Enrichment skill)
- Backboards with straps (Enrichment skill)
- Head immobilizers (Enrichment skill)

LESSON OBJECTIVES

Skill

After completing this lesson, participants will be able to:

Demonstrate the skills covered in Lessons 29–34.

TOPIC: INTRODUCTION

Time: 5 minutes

ACTIVITY	Explain that the participants will be divided into pairs or small groups to practice
	the skills at various stations around the room.
	 Emphasize that the partners or groups should work together and rotate through the stations.
	 Tell participants that they may need to assume the role of the patient, bystander or family member(s) if requested, especially in situations that require verbal interaction between the emergency medical responder (EMR) and the patient or others.
	 Encourage participants to bring their textbooks to the various practice stations and to practice all of the skills at each station.
	 Remind participants that they should include scene size-up and primary assessment as part of their skill practice.
	 Tell participants that you will be walking around to the various stations, observing their skills, asking them questions and answering any questions that they may have.
	Instructor's Note:
	 At each of the stations, observe the participants performing the skills. Provide feedback and assistance as necessary.
	During observation, use the Skill Checklists to assist in evaluating the participant's competency in performing the skill.
	Emphasize the need for the participants to perform the complete sequence of activities when performing the skills from beginning to end including scene size-up and primary assessment.
	1

SKILL PRACTICE

Time: 50 minutes

ACTIVITY	Set up practice stations for the following skills:
	 Using Direct Pressure to Control External Bleeding
	 Using a Commercial Tourniquet with a Windlass
	 Applying a Rigid Splint
	 Applying a Sling and Binder
	 Applying an Anatomic Splint
	 Applying a Soft Splint
	 Spinal Motion Restriction Using Manual Stabilization
	 Controlling Bleeding from an Open Head Wound
	 Bandaging an Eye with an Injury from an Impaled Object
	 Immobilizing a Head, Neck or Spinal Injury (Enrichment)
	Instructor's Note: Depending on equipment availability, number of participants, classroom size and time, it may be necessary to combine several skills for practice at one station.

WRAP-UP		Time: 5 minutes
	 Provide feedback to participants about their performance. Encourage continued practice with the skills to gain confider and competency. Emphasize the need to always size up the scene, adhere to sprecautions, perform a primary assessment and adhere to stawhen performing any skill. 	standard
ASSIGNMENT FOR THE NEXT LESSON	 Review Chapters 18–23. 	
INSTRUCTOR PREPARATION	 Review Chapters 18–23 and Lessons 29–34. Review the skills from Lessons 29–34. Obtain any necessary equipment and supplies for Lesson 36.).



PUTTING IT ALL TOGETHER

Lesson Length: 60 minutes

MATERIALS, EQUIPMENT AND SUPPLIES

- Emergency Medical Response textbook
- Course Presentation Slides 496–502
- LCD projector, screen and computer
- Disposable latex-free gloves (multiple sizes) and other personal protective equipment (PPE), as indicated
- Decontamination supplies
- Adult manikins (one for every two participants)
- Resuscitation masks (adult and pediatric; one for each participant)
- Oxygen delivery devices, such as nasal cannula, non-rebreather masks, resuscitation masks (with oxygen inlet), and bag-valve-mask (BVM) resuscitators (adult and pediatric) (one for every two participants)
- Clothing, blankets, tarps, sheets or drapes
- Dressings as indicated
- Stethoscopes (one for every two participants)
- Sphygmomanometers (one for every two participants)
- Automated external defibrillator (AED) training devices (one for every two participants)
- Tape, sterile and nonsterile dressings of different sizes
- Bandages, including adhesive, roller, elastic and triangular bandages
- Manufactured tourniquets
- Simulated limbs
- Blankets, towels, pillows, slings, binders and cravats
- Commercial rigid splints and/or cardboard boxes, magazines, shin guards or items to fashion a rigid splint
- Eye pads or shields
- Paper cups
- Skill Checklists for Lessons 30, 33–34

LESSON OBJECTIVES

After completing this lesson, participants will be able to:

 Demonstrate the knowledge and skills learned in Lessons 29–35, in addition to all previously learned skills.

TOPIC: INTRODUCTION

ACTIVITY	 Tell participants that they: Will split into several small groups with each group receiving a scenario to role-play, using either a manikin or another member of the class as the patient. Will have approximately 5 minutes to prepare for the role-playing activity
	and that part of this preparation will include designating the roles each of the group members will assume based on the actual scenario assigned and gathering any necessary equipment and supplies.
	 Are to formulate a response to the scenario integrating the key points and skills learned up to this point in the course, explaining their actions while providing care.
	 Should be able to answer questions asked by the instructor or other class members.
	 Will spend approximately 5 to 10 minutes after role-playing the scenario critiquing their actions and discussing any problems, errors or difficulties they may have had.

SCENARIO 1: YOU ARE THE EMERGENCY MEDICAL RESPONDER

Time: 15 minutes

Course Presentation Slide 497	Instructor's Note: For this scenario, there should be one participant acting as the responder, one participant acting as the patient, one participant acting as the driver of the car and at least one or two participants acting as bystanders. Alternatively, a manikin can be used as the patient.
	 Setup: You arrive on the scene where a bicyclist has been struck by a motor vehicle. The collision happened on a busy two-lane highway. Bystanders report that the bicyclist was thrown from the bike, hitting her head as she fell to the ground. The bicycle flew up in the air and landed on her chest and abdomen. The driver of the car has stopped to help. As you approach, you notice that the bicyclist is bleeding from a deep laceration on her upper arm and she is moaning in pain. Her left leg is twisted and deformed. She has numerous abrasions on her legs. Ask participants: "What should you do?"
	 Instructor's Note: Participants should address these areas in their responses: Performing a scene size-up to determine the safety for yourself, the patient and the bystanders Summoning more advanced medical personnel; notifying dispatch for additional assistance from law enforcement for traffic control or obtaining the assistance of a bystander to help with traffic control until law enforcement arrive Adhering to standard precautions Performing a primary assessment; forming a general impression noting that since patient is moaning in pain, she has an open airway, is breathing and has a pulse Cutting off or removing any clothing around the upper arm laceration; demonstrating the skill for controlling external bleeding of the upper arm laceration by applying direct pressure to the area with dressings If bleeding cannot be controlled with direct pressure, demonstrating the use of hemostatic dressings or a manufactured tourniquet (simulated limb only)

 Administering supplemental oxygen, based on local protocols Demonstrating the skill for manual stabilization of the head, neck and spine Assessing the patient for signs and symptoms of chest and/or abdominal injuries and inspecting the chest and abdomen for injuries, such as fractured ribs, flail chest or pneumothorax
 Cutting off or removing any clothing around the injured leg
 Assessing the lower extremities for musculoskeletal injuries; cleaning and bandaging abrasions on the legs
Immobilizing the leg in the position it was found
Demonstrating the skill for splinting the left leg using rigid splints and securing them properly; checking circulation and sensation above and below the injury before and after applying the splint
Applying a cold pack to the injured area
Continuing to monitor the patient's condition for changes

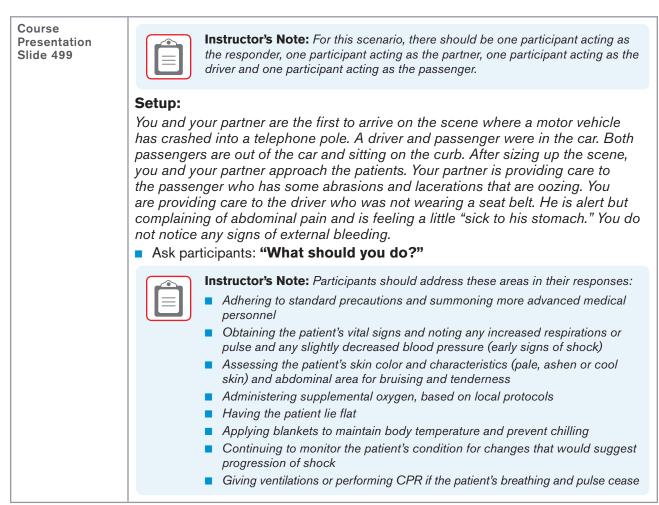
SCENARIO 2: YOU ARE THE EMERGENCY MEDICAL RESPONDER

Time: 15 minutes

Course **Instructor's Note:** For this scenario, there should be one participant acting as Presentation the responder, one participant acting as the patient and one or two participants Slide 498 acting as fire personnel. Setup: You are called to the scene of a fire in an office building. Fire personnel already are on the scene. Suddenly a woman runs out of the building. The arm of her blouse and jacket are on fire. She falls to the ground screaming. Ask participants: "What should you do?" **Instructor's Note:** Participants should address these areas in their responses: Performing a scene size-up of the area and then entering the area if it is safe Summoning more advanced medical personnel Performing a primary assessment and physical examination Instructor's Prompt: The patient is screaming, so she has an open airway, is breathing and has a pulse. Determining the burn depth (superficial, partial thickness or full thickness) and the extent of the burn (using the Rule of Nines) Immediately cooling the burned area with large amounts of cold water, soaked towels, sheets or other wet cloths for 10 minutes or until pain is relieved (if pain returns, reapply cold water) Removing any material or clothing from the burned area unless it is stuck to the skin Covering the burned area with dry, sterile dressings or clean, dry sheets and loosely bandaging them in place Using an emergency or nonemergency move (such as shoulder, ankle or firefighter's drag; firefighter's carry; pack-strap carry; or walking assist) to get the patient to a safer area Minimizing shock by laying the patient down, placing the patient in the face-up position Administering supplemental oxygen, based on local protocols Continuing to monitor the patient's condition until more advanced medical personnel take over

SCENARIO 3: YOU ARE THE EMERGENCY MEDICAL RESPONDER

Time: 15 minutes



WRAP-UP

Time: 10 minutes

<u>B</u>	 Answer participants' questions, ensuring that each participant has an opportunity to resolve any confusion. Review the scenarios and the important elements of care.
KEY POINTS Course Presentation Slides 500–502	 Shock or hypoperfusion can result from any condition where the body's ability to get oxygenated blood to the vital organs is compromised. It can be caused by a loss of blood or body fluids, ineffective heart pumping, over-dilation of the blood vessels or damage to the chest or airways. The major types of shock include hypovolemic, obstructive, distributive and cardiogenic. Providing care to a patient in shock includes controlling bleeding, ensuring an open and clear airway and breathing, laying the patient flat, splinting any broken bones or joints, keeping the patient warm, reassuring and comforting the patient, reducing pain, giving no food or drink, treating specific injuries, calling for more advanced medical personnel and transporting the patient as soon as possible.

 Bleeding can be external or internal from arteries, veins or capillaries. External bleeding can be controlled with direct pressure alone or with other methods, such as tourniquets and hemostatic dressings. Shock is always a possibility, regardless if the bleeding is external or internal. Soft tissue injuries involve the layers of the skin, fat and muscle and include closed and open wounds. Closed wounds typically appear as bruises (contusions) or hematomas. Open wounds include abrasions, amputations, avulsions, crush injuries, punctures/penetrations and lacerations. Burns are another type of soft tissue injury and can be classified by their depth (superficial, partial thickness or full thickness), extent
 (described using the Rule of Nines), respiratory involvement, body part burned and cause (thermal, chemical, electrical or radiation). Providing care for burns includes sizing up the scene for safety, removing the patient from the source of the burn, cooling the burn, covering the burn area and minimizing shock.
 The chest, abdomen and pelvis contain many organs important to life and injury to these areas can be life threatening. General care includes calling for more advanced medical personnel, limiting patient movement, monitoring breathing and other vital
 signs, controlling bleeding and minimizing shock. Chest injuries include blunt trauma, traumatic asphyxia, rib fractures, flail chest, pneumothorax, hemothorax and tension pneumothorax.
• An impaled object in the chest or abdomen is <i>never</i> removed unless it interferes with chest compressions. Rather the object is stabilized with bulky dressings.
 Genital injuries are usually extremely painful and possibly embarrassing for you as well as the patient.
Injuries to the bones, muscles and joints are generally caused by significant force and include fractures to the bones, dislocations of joints, and strains and sprains involving muscles, ligaments and tendons.
 Injuries to the pelvis or femur are potentially critical because of the potential for shock.
 The general care of musculoskeletal injuries is similar for all types and includes rest, immobilize, cold and elevate (RICE).
 Immobilizing an injured area lessens pain, prevents further damage to soft tissues, reduces the risk of severe bleeding, reduces the possibility of loss of circulation to the injured part and prevents closed extremity injuries from becoming open ones.
 Types of splints include soft, rigid, traction, circumferential, vacuum and anatomic or self-splint.
 After splinting, you must check circulation and sensation beyond the injured area every 15 minutes.

	 Injuries to the head, neck and spine often involve both soft tissue and bones. The cause of the injury is often the best indicator of whether an injury to the head, neck or spine should be considered serious. Any bleeding should be controlled with direct pressure, being careful not to apply pressure to a possible skull fracture or to the eyeball if the patient has an eye injury. Movement of any patient with a suspected head, neck or spinal injury should be minimized by using spinal motion restriction. Head injuries can be closed or open. A skull fracture should be suspected any time there is significant trauma to the head, even if there is a closed head injury. Neck or spinal injuries can damage both bone and soft tissue, including the spinal cord, and always should be treated as serious.
ASSIGNMENT FOR THE NEXT LESSON	 Read Chapter 24, Childbirth. Read Enrichment: More Complications During Pregnancy and Delivery (<i>optional</i>), pages 576–578.
INSTRUCTOR PREPARATION	 Review Chapter 24, Childbirth. Review Enrichment: More Complications During Pregnancy and Delivery (<i>optional</i>), pages 576–578. Obtain any necessary equipment and supplies for Lesson 37.

UNIT 7 | SPECIAL POPULATIONS

Lesson 37:	Childbirth
Lesson 38:	Pediatrics
Lesson 39:	Older Adults
Lesson 40:	Patients with Special Healthcare or Functional Needs
Lesson 41:	Putting It All Together



CHILDBIRTH

Lesson Length: 60 minutes (70 minutes with Enrichment)

MATERIALS, EQUIPMENT AND SUPPLIES

- Emergency Medical Response textbook
- Course Presentation Slides 503–520
- LCD projector, screen and computer
- Obstetrical pack, if available

LESSON OBJECTIVES

Knowledge

After completing this lesson, participants will be able to:

- Describe each trimester of pregnancy.
- Describe the four stages of labor.
- Describe how to help the mother with labor and normal delivery.
- Describe how to assess a newborn.
- Describe how to control bleeding after birth.
- Describe how to care for the newborn and mother.
- List complications during pregnancy.
- Describe complications during delivery.

TOPIC: INTRODUCTION

Time: 5 minutes

ACTIVITY Review the opening scenario: You are the lifeguard at a local pool and are working as the emergency medical responder (EMR) at that facility for the day. A young woman runs over to you and tells you that she thinks her older sister is in labor. Course Ask participants: "How should you respond?" Presentation Slide 504 Instructor's Note: Let participants provide responses, guiding them to important issues related to normal pregnancy such as trimesters, the due date, and the labor and birth process. Emphasize that childbirth is a natural process and that things rarely go wrong. Reinforce that in unplanned situations, your feelings as well as those of the mother may be intensified.

TOPIC: NORMAL PREGNANCY

KEY POINTS Course Presentation Slides 505–507	 A full-term pregnancy spans a 9-month period (38 weeks) during which the embryo implants and grows in the woman's uterus. The due date is calculated as 40 weeks from the woman's last menstrual period. Pregnancy is divided into three trimesters, each about 3 months: First trimester involves implantation and rapid development of the embryo. Second trimester is when women commonly feel re-energized and begin to "show," putting on weight with the growth of the fetus. Third trimester is characterized by the greatest weight gain as the fetus grows most rapidly; the woman's abdomen expands, causing the navel to become convex. Pregnancy culminates in the birth process or labor, during which the baby is delivered. Labor begins with rhythmic contractions of the uterus and is divided into four distinct stages, each varying in length and intensity.
ACTIVITY	 Divide participants into small groups. Using their textbooks, have each group identify and briefly describe the four stages of labor, listing the events usually associated with each stage. Have each group present its information to the rest of the class. Instructor's Note: Responses should include: First stage (dilation): Time of first contraction until full cervical dilation; emergence of mucous plug (bloody show); release of amniotic fluid (water breaking); and increasing intensity, frequency and duration of contractions Second stage (expulsion): Complete cervical dilation including baby's movement through the birth canal and delivery, feeling of the need to push or bear down and crowning with birth imminent Third stage (placental delivery): Starts after emergence of baby's body; separation of placenta with exit from birth canal, usually within 30 minutes of delivery Fourth stage (stabilization): Initial recovery and stabilization of mother, uterine contraction to control bleeding and maternal recovery from physical and emotional stress of childbirth

TOPIC: ASSESSING LABOR

Time: <u>5 minutes</u>

KEY POINTS	When assisting a pregnant woman, determine if the woman is actually in labor.
	 False labor contractions, or Braxton Hicks contractions, do not get closer together, do not increase in length and do not feel stronger over time. They tend to be sporadic.
Presentation Slides 508–509	 True labor contractions occur at regular intervals.
	 Determine how far along she is in the pregnancy, including when the baby is due and if she expects any complications.
	Assess if birth is imminent by feeling the mother's abdomen with a gloved hand and timing the length of movements in seconds (from time the abdomen begins to tighten until it relaxes) and timing the start of one contraction to the start of another in minutes.

	 If contractions are 5 minutes apart or longer, transport the woman to a medical facility, if possible; if contractions are 2 minutes apart or less, expect birth to be imminent. Call for more advanced medical personnel. Ask the following questions: Is there a chance of multiple births? Is this a first pregnancy? Is there a bloody discharge? Has the amniotic sac ruptured? Does the woman have an urge to bear down? Is the baby crowning?
ACTIVITY	Using the following scenario, ask participants to describe the information that would need to be obtained about the woman to determine whether to transport the woman to a medical facility or prepare her for an imminent birth: You arrive at the home of a pregnant woman who has called 9-1-1 because her "water broke" and she has been having contractions off and on for several hours. This is the woman's first pregnancy and she is at home alone.
	 Instructor's Note: Responses should include: Assessing contractions to determine if they are false (Braxton Hicks) or true contractions. Finding out the woman's due date and whether any complications are expected. Actually feeling contractions and timing them; if 5 minutes apart, arranging for transport; if 2 minutes apart, preparing for imminent birth. Checking for crowning and if present, preparing for imminent birth.

TOPIC: HELPING THE MOTHER WITH LABOR AND DELIVERY

Time: 15 minutes

KEY POINTS Course Presentation Slides 510–511	 An obstetric pack is a first aid kit containing items helpful in an emergency delivery, such as personal protective equipment (PPE), towels, clamps, ties, sterile scissors and bulb syringe. The primary assessment should include checking the woman's breathing and pulse and checking for a potentially closed airway. Breathing rate may be increased due to pain, anxiety or blood loss. Labor pain ranges from discomfort similar to menstrual cramps to intense pressure or pain.
	 Having the woman breathe slowly and deeply in through the nose and out through the mouth can help her because it: Aids muscle relaxation.
	• Offers distraction.
	 Ensures adequate oxygen supply to mother and baby.
	Contact medical direction for assistance if the following signs and symptoms of imminent delivery are noted:
	• Intense contractions 2 minutes apart or less, lasting 60 to 90 seconds
	 Woman's abdomen is very tight and hard
	 Mother reports feeling the infant's head moving down the birth canal or feeling the urge to defecate
	• Crowning occurs
	 Mother reports a strong urge to push

 Create a clean environment and help to guide the baby from the birth canal, minimizing injury to the mother and baby. Position the mother on her back, with her head and upper back raised, not lying flat. Her legs should be bent, with the knees drawn up and apart. Once crowning occurs, the following steps should be taken: Place one hand on top of the baby's head and apply light pressure. Have the woman stop pushing; encourage her to pant. Puncture the amniotic sac, if necessary. Check whether the umbilical cord has looped around the neck and,
 not lying flat. Her legs should be bent, with the knees drawn up and apart. Once crowning occurs, the following steps should be taken: Place one hand on top of the baby's head and apply light pressure. Have the woman stop pushing; encourage her to pant. Puncture the amniotic sac, if necessary. Check whether the umbilical cord has looped around the neck and,
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• Check whether the umbilical cord has looped around the neck and,
if so, gently slip it over the head or shoulders.
 Guide one shoulder out at a time; do not pull.
 Use a clean towel to receive or hold the baby.
 Place the baby on its side between the mother and you.
 Note the time of birth.

TOPIC: CARING FOR THE NEWBORN AND MOTHER

CARING FOR THE NEWBORN

Time: 15 minutes

KEY POINTS Upon delivery, once the umbilical cord stops pulsating, clamp or tie it in two places between the mother and newborn based on local protocols. Follow local protocols and medical direction for guidance on cutting the cord. The clamp closest to the newborn should be about 6 inches from the baby. There should only be about 3 inches between the two clamps. Clear the newborn's mouth and nasal passages. Clear or suction the mouth before the nose.

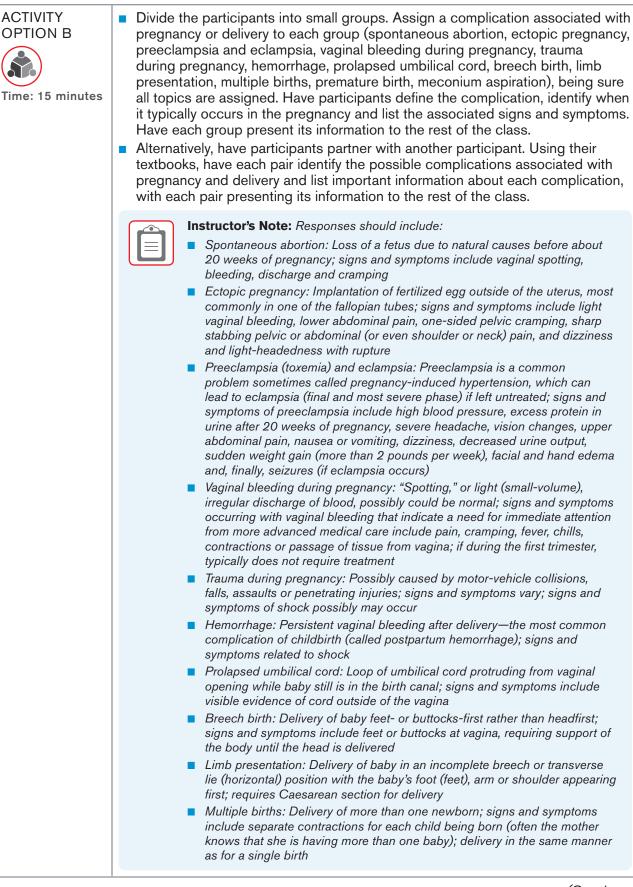
- Support the newborn's head when handling and keep the newborn warm and dry to prevent heat loss.
- Assess the APGAR score.
 - APGAR (Appearance, Pulse, Grimace, Activity and Respiration) scoring system is a universally accepted method for assessing a newborn at 1 and 5 minutes after birth.
 - $\,\circ\,$ Each area is given a score between 0 and 2, which then are summed.
 - A score of 7 to 10 indicates an active, vigorous newborn.
 - A score of 4 to 6 indicates a moderately depressed newborn requiring stimulation (tapping the bottom of the foot, gently but firmly rubbing the lower back) and administering supplemental oxygen based on local protocols.
 - A score of 1 to 3 indicates a severely depressed newborn requiring intensive care (supplemental oxygen based on local protocols with assisted ventilations and CPR).
- If the baby is in distress and needs life-saving care, determining the APGAR score is not a priority.
- Begin immediate resuscitation if:
 - Respirations fall to fewer than 30 per minute or the newborn is gasping or not breathing normally.
 - Pulse is less than 100 beats per minute (bpm).
 - Cyanosis (bluish skin) persists around the chest and abdomen despite having administered supplemental oxygen.

ACTIVITY	 Using the following scenario, have participants identify what actions would be appropriate: You are called to an employee lounge at a local manufacturing plant because a pregnant woman is in labor and the newborn is crowning. Shortly after your arrival, the woman gives birth to a baby girl who appears to be smaller than normal. The baby does not cry spontaneously after birth.
	Instructor's Note: Responses should include taking action to stimulate the baby, such as tapping the bottom of the newborn's foot or gently but firmly rubbing the newborn's back. If these are ineffective, then other measures, such as clearing the airway, administering supplemental oxygen based on local protocols, providing ventilations or initiating CPR, may be indicated.
CARING FOR	THE MOTHER
KEY POINTS	 Slowly guide the placenta out of the vagina and expect to see vaginal bleeding. Do not pull on the placenta; place it on a clean towel or in a clean container. Immediately after delivery, the placenta will remain in the uterus, attached to the baby by the umbilical cord. Uterine contractions usually expel the placenta within 10 minutes of delivery and almost always within 30 minutes. Using gauze pads or clean towels, gently clean the mother. Place a sanitary pad or towel over the vagina; do not insert anything into the vagina. Instruct the mother to place her legs together. Massaging the uterus should slow bleeding. Watch for signs of shock from uncontrolled bleeding. Continue to provide physical and emotional care to the woman, keeping her calm and comfortable and monitoring her vital signs until more advanced medical care arrives.

TOPIC: COMPLICATIONS DURING PREGNANCY AND DELIVERY

Time: 10 minutes

KEY POINTS Course Presentation Slides 517-518	 Complications during pregnancy are rare; most births occur without complications. All complications require the help of more advanced medical personnel.
ACTIVITY OPTION A	 Using their textbooks, ask participants to identify conditions that might be considered a complication of pregnancy or delivery.
Time: 5 minutes	Instructor's Note: Responses may vary but should include conditions such as miscarriage, bleeding, tubal pregnancy and premature birth.



 Premature birth: Baby born before the end of 37 weeks of pregnancy; signs and symptoms include small and thin appearance, red and wrinkled skin, single foot crease, fuzzy and fine scalp hair; specialized care is necessary because of the lack of full development Meconium aspiration: Inhalation of meconium (baby's first bowel movement) leading to possible problems such as blocked airway, respiratory distress, pneumonia or infection; signs and symptoms include greenish or brownish
yellow amniotic fluid (instead of clear fluid)

WRAP-UP

Time: 5 minutes

ACTIVITY Course Presentation Slide 519	 Revisit the opening scenario: While approaching the young woman who is in labor, her sister tells you that the patient is 26 years old. The pregnant woman is yelling, "The baby is coming!" She tells you that this will be her fourth child. Ask participants: "What should you do?"
	 Instructor's Note: Responses should include: Preparing for an imminent birth based on the information from the patient, especially since this is her fourth pregnancy and she "feels" the baby coming. Additionally, other actions should include feeling and timing contractions, calling for more advanced medical personnel, checking for rupture of membranes and crowning, providing support and reassurance to the patient and assisting with the delivery.
KEY POINTS	 Knowledge of the four stages of labor and how to prepare the expectant mother for delivery are important when assisting with childbirth. Birth is imminent if a woman's contractions are 2 minutes apart or crowning is observed. Creating a clean environment for delivery is your key responsibility. Appropriate PPE is necessary to prevent contact with the mother's and baby's body fluids. After delivery, assess the newborn closely and initiate resuscitation measures if the newborn is unresponsive, gasping or not breathing or has a respiratory rate less than 30 breaths per minute, a pulse less than 100 bpm or shows cyanosis around the chest or abdomen after administering supplemental oxygen. Other duties include assisting with delivery of the placenta, controlling bleeding, monitoring vital signs, and comforting and calming the mother. Complications during pregnancy are rare. Most births occur without complications, but they can occur. All complications require the help of more advanced medical personnel.
ASSIGNMENT FOR THE NEXT LESSON	 Read Chapter 25, Pediatrics.
INSTRUCTOR PREPARATION	 Review Chapter 25, Pediatrics. Obtain any necessary equipment and supplies for Lesson 38.

ENRICHMENT: MORE COMPLICATIONS DURING PREGNANCY AND DELIVERY

KEY POINTS	Placenta previa occurs when the placenta implants lower on the uterine wall, touching or covering the cervix.
	 Danger occurs if the placenta pulls away from the uterine wall, causing bleeding.
Course Presentation	 Painless vaginal bleeding is the initial and only symptom.
Slide 520	• Arrange for immediate transport.
	 Elevate the patient's legs and maintain her body temperature.
	Abruptio placentae is a life-threatening emergency in which the placenta prematurely detaches from the uterus, partially or completely.
	 Signs and symptoms include abdominal pain, back pain, rapid uterine contractions, uterine tenderness and vaginal bleeding (may not be apparent at first).
	 First signs may be pain, abdominal rigidity and shock.
	 Arrange for immediate transport. Monitor vital signs and treat for shock, if necessary.
	Ruptured uterus, although rare, has a high incidence of infant fatality.
	 Signs and symptoms include abdominal pain, abnormal fetal heart pattern, cessation of contractions, deceleration of fetal heartbeat, failure of labor to progress, uterine hyperstimulation, shock and vaginal bleeding.
	 Arrange for immediate transport. Stabilization of mother and fetus is imperative.
	Shoulder dystocia occurs when the fetus's shoulders are wider than the head and as delivery progresses, the head will emerge but one or both shoulders become caught.
	 Retraction of the fetal head after emerging from the vagina, called the "turtle sign," indicates shoulder dystocia.
	 Danger lies with umbilical cord being compressed between the fetus and maternal pelvis.
	 Do not apply excessive force since this is unlikely to free the fetus and may cause injury. Only a healthcare provider can manage shoulder dystocia during childbirth.



PEDIATRICS

Lesson Length: 60 minutes

MATERIALS, EQUIPMENT AND SUPPLIES

- Emergency Medical Response textbook
- Course Presentation Slides 521–550
- LCD projector, screen and computer

LESSON OBJECTIVES

Knowledge

After completing this lesson, participants will be able to:

- Identify anatomical differences among adults, children and infants.
- Describe the general age groups for the purposes of emergency medical care.
- Describe the stages of child development.
- List the general considerations for assessing children and infants.
- Describe components of a pediatric assessment.
- Describe how to conduct a SAMPLE history for a pediatric patient.
- Identify common problems in pediatric patients.
- Describe common respiratory problems in children.
- Describe how to assess for and manage seizures in children.
- Describe considerations for children with special healthcare or functional needs.

TOPIC: INTRODUCTION

Time: 5 minutes

 ACTIVITY
 Review the opening scenario: You are working as the camp health officer at a local summer camp when a young girl approaches you complaining that she has a rash. She says that she is allergic to certain things and may have come into contact with something that has now given her hives.
 Ask participants: "How would you respond?"
 Instructor's Note: Let participants provide responses, guiding them to important areas related to being aware of differences in pediatric anatomy, such as airway and ventilation, development and assessment (e.g., taking a SAMPLE history).

TOPIC: ANATOMICAL DIFFERENCES

KEY POINTS Course Presentation Slides 523–524	 Anatomically, children and infants are different from adults. The most significant differences involve the airway and breathing. Differences from adults include: Larger tongues that may block the airway. Primarily nose breathing in newborns and infants. A higher epiglottis and narrower trachea. More rapid (two to three times faster) and shallower breathing (in children younger than 5 years). General age groups have been developed based on a physiological, epidemiological and recognition approach: Infants: younger than about 1 year of age Children: between the ages of 1 year and about 12 years (for the purpose of using an automated external defibrillator [AED], a child is someone between the ages of 1 and 8 years or weighing less than 55 pounds) Adults: about 12 years of age or older

TOPIC: CHILD DEVELOPMENT

Time: 5 minutes

ACTIVITY Course Presentation Slide 525	 Divide the participants into small groups. Assign each group one or more developmental stages, being sure all topics are assigned. Have them define the stage and describe the characteristics associated with the stage that would be helpful in an emergency situation. Then have each group present its information to the rest of the class. Alternatively, using their textbook, have participants work with a partner to create a table or chart that identifies each stage of development and its common characteristics.
	 Instructor's Note: Responses should include: Infants (birth to 1 year): Inability to do anything for themselves; inability to communicate; beginning ability to recognize a parent's or caregiver's voice after the first few weeks; ability to recognize faces after a few months; different qualities of crying based on the cause (e.g., hunger, pain, fear or wet diaper) Toddlers (1 to 3 years): Ability to recognize familiar faces; possible fear of strangers; possible lack of cooperation when dealing with an unknown person; fear of separation from people they know; crying interfering with ability to communicate; curious about the world around them Preschoolers (3 to 5 years): More effective communication skills but difficulty with certain concepts; possible difficulty understanding complex sentences that contain more than one idea; belief that thoughts and behaviors cause bad things to happen; fears out of proportion to the events School-age children (6 to 12 years): Greater exposure to more unfamiliar faces; increased likelihood of cooperation with strangers; reassurance from familiar faces (parents, caregivers, guardians, teachers) likely to aid in their understanding of the situation once it has been explained; ability to cooperate with emergency responders; fascination with the topic of death; possible strong fantasies or imaginary ideas; need for continual reassurance Adolescents (13 to 18 years): Highly variable depending on age group; increased ability to provide accurate information and cooperate with emergency responders; possible feelings of mass hysteria (multiple adolescents feel they all are experiencing the same problems or symptoms); modesty and need for privacy; awareness of the potential for fatality or permanent disability with a fear that they will experience this

TOPIC: ASSESSING PEDIATRICS

GENERAL CO	NSIDERATIONS
KEY POINTS Course Presentation Slides 526–533	 If the child is conscious, perform the primary assessment unobtrusively, in a manner that is unnoticeable, to allow the child time to get used to you and feel less threatened. Use careful observation, without touching the child, to carry out as many components of the initial evaluation as possible. Observe the child for breathing, presence of blood, movement and general appearance. Start the assessment in a head-to-toe fashion. If the child is agitated or upset and there are no signs or symptoms of a serious injury or illness, the assessment can be done toe to head to allow the child to see what you are doing from the beginning. Observe the scene from the moment of arrival and be alert for other signs of possible issues, such as child abuse or poisoning.
ASSESSMEN	Т
KEY POINTS	 The Pediatric Assessment Triangle, an initial assessment of a child, takes between 15 and 30 seconds and provides a picture of the severity of the child's or infant's injury or illness. It is done during the scene size-up, before beginning the check for breathing and pulse, and includes: Appearance. Breathing. Skin (circulation). The AVPU (alert, verbal, painful, unresponsive) scale may be used to determine the child's level of consciousness (LOC). Alternatively, check the child's pupils for reaction to light. The child should be kept covered, removing only a portion of the cover or blanket to examine a particular area. The parents' or caregivers' cooperation is necessary when taking a child's SAMPLE history. Cooperation is encouraged by remaining respectful and polite during the conversation, even if the adults are difficult or child abuse or child neglect is suspected. Questions should require detailed answers rather than "yes" or "no." Participation of a young child should be encouraged. An older child, such as an adolescent, may want to speak in private. This is important if sensitive questions about topics such as sexual activity or drug use need to be asked. A SAMPLE history should address: Symptoms and duration, such as fever, unusual activity level, vomiting, diarrhea and abdominal pain. Allergies to medications, food and environmental elements, such as dust, pollen or bees. Medications, such as prescriptions or over-the-counter medications. Pertinent medical problems or chronic illnesses, such as asthma, diabetes mellitus or recent illnesses. Last intake and output, such as history of eating, drinking and urine output. Key events leading up to the current problem.

ACTIVITY	 Using the following scenario, ask participants to identify the child's developmental stage and what they would address in the primary assessment: You are called to the local playground to evaluate a 4-year-old child who has fallen backward off the steps of a slide. The child's mother states that her daughter was on the fourth step (of five) when she suddenly slipped and fell. The child is lying on her back and crying quietly.
	 Instructor's Note: Responses should include: Identifying the developmental stage as that of a preschooler (between the ages of 3 to 5 years). Primary assessment to evaluate appearance, breathing, pulse and skin characteristics. Also need to assess for a head, neck or spinal injury.

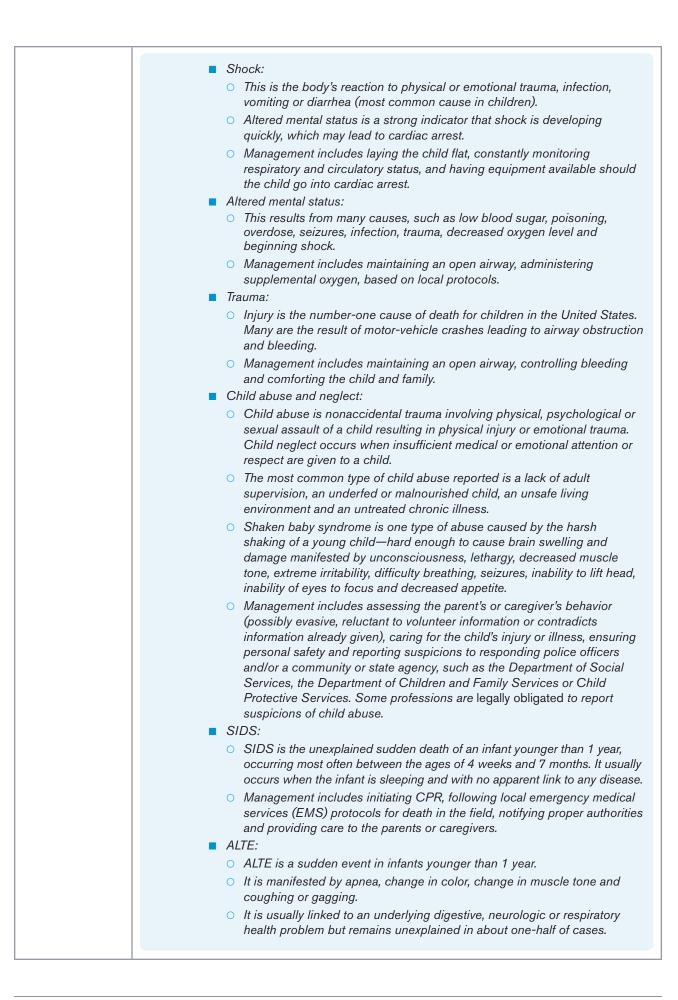
TOPIC: COMMON PROBLEMS IN PEDIATRIC PATIENTS

Time: 20 minutes

KEY POINTS Course Presentation Slides 534–548	 Certain problems are unique to children, such as specific kinds of injury and illness. Some of the most common airway problems encountered with small children and infants are airway obstructions. Anatomical differences among adults, children and infants can change their susceptibility to respiratory difficulties and affect how to provide emergency care. Early recognition of respiratory emergencies can mean the difference between life and death. Dealing with emergency situations can be difficult, especially when they involve children, particularly in cases of suspected child abuse or sudden infant death syndrome (SIDS). The death of a child, especially if declared on the scene, can be very difficult for any responder. You are entitled to your own thoughts and emotions.
ACTIVITY OPTION A Time: 10 minutes	 Using the following scenario, ask participants for examples of appropriate questions to use when assessing the child and to identify the priorities for managing the child: You are called to the home of a young couple who called 9-1-1 because their 4 year old collapsed and started shaking. The parents say, "He was sitting on the floor playing with his toys, and then all of sudden he fell over and his whole body started making these strange jerky movements."
	 Instructor's Note: Although actual questions asked may vary, the responses should include: Questions focusing on the child's and/or family's history of seizures; use of any medications for seizures; history of diabetes and insulin use and blood sugar levels, if monitored; recently added new medications and possibility of an overdose; any recent head injury, illness or fever; description of seizure, including what happened, what body parts were involved and any injuries if the child fell when the seizure started. Priorities include preventing injury, protecting the airway and ensuring an open airway after the seizure ends.

ACTIVITY OPTION B Time: 10 minutes	 Divide the participants into small groups. Assign each group one or more of the following respiratory or breathing problems, being sure all topics are assigned: respiratory distress, croup, epiglottitis, asthma and choking. Using the textbook, have each group describe the condition, possible signs and symptoms, and management. Then ask each group to present its information to the rest of the class.
	 Instructor's Note: Responses should include: Respiratory distress: This is when a child typically has difficulty breathing but visibly still is able to breathe. Respiratory distress can possibly lead to respiratory failure or respiratory arrest, which is the complete cessation of breathing. It is manifested by a respiratory rate greater than 60 breaths per minute in infants or 30 breaths per minute in children; nostril flaring; use of neck and rib muscles to breathe; abnormal, high-pitched sounds when breathing; cyanosis; altered mental status; and grunting. Management includes focusing on preventing progression and subsequent respiratory failure. Croup: This is an upper airway virus that causes airway constriction. It is manifested by an unusual-sounding cough (high-pitched wheeze to barking), usually occurring during the evening and night hours. Management includes using humidified oxygen and exposure to cool, outdoor air. Erejdottitiz: This is a bacterial infection that causes severe swelling of the epiglottis. It is manifested by a tripod position in an older child, drooling, difficulty swallowing, voice changes and fever. Management includes keeping the child calm, avoiding use of a tongue blade or placing anything in the child's throat during the exam and preventing respiratory failure. Management includes use of rescue medications, if available, and preventing deterioration in respiratory status. It is manifested by a friegen object or matter, or an anatomical structure such as the tongue. It is commonly caused by ingestion of small objects, such as coins, buttors, small toys and paris of toys, and balloons, as well as certain food items; is particularly hazardous to children younger than 4 years. Management includes use of rescue for a conscious choking child or infant who cannot cough, speak, cry or breatherd—a combination of back blows and abdominal t

ACTIVITY OPTION C Time: 15 minutes	 Have participants select a partner and using the textbook, select two types of pediatric emergencies from the following: circulatory failure, seizures, fever, poisoning, shock, altered mental status, trauma, child abuse and neglect, SIDS or an apparent life-threatening event (ALTE). Ask them to discuss the condition and appropriate measures for each condition. Alternatively, divide the participants into small groups. Assign each group one or more of the following pediatric emergencies, being sure all topics are assigned: circulatory failure, seizures, fever, poisoning, shock, altered mental status, trauma, child abuse and neglect, SIDS and an ALTE. Referring them to the textbook, ask them to explain the condition and the appropriate care. Then have the groups come together and present their information to the rest of the class.
	 Circulatory failure: This is most commonly a respiratory emergency that develops into a cardiac emergency. If uncorrected and undetected in children and infants, it can lead to cardiac arrest. Management includes identifying problems, opening the airway, removing obstructions, providing ventilation, observing for signs of cardiac arrest, performing CPR and using an AED. Seizures: These are a disorder in the brain's electrical activity, sometimes marked by loss of consciousness and often by uncontrollable muscle movement; also called a convulsion; possibly due to a chronic condition (such as
	 epilepsy) or an acute event. Febrile seizures are the most common in children. Other causes include head trauma, epilepsy or other seizure disorders, low blood glucose, poisoning, hypoxia or serious infection. Assessment focuses on the type of seizure and possible cause. Management includes preventing injury, placing the child in a side-lying recovery position if it is safe to do so during the seizure and protecting the airway and ensuring an open airway after seizure has ended. This includes administering supplemental oxygen based on local protocols and suctioning. Calling for more advanced medical personnel for a child or an infant who has had a seizure and for a young child or an infant who experienced a febrile seizure brought on by a high fever.
	 Fever: This is an elevation in body temperature typically indicating an infection. Management includes gentle cooling with lukewarm water, removing excess clothing and blankets, avoiding the use of ice water or rubbing alcohol for cooling and avoiding aspirin or products that contain aspirin due to risk of Reye's syndrome. (Reye's syndrome is an illness brought on by high fever that affects the brain and other internal organs. It can be caused by the use of aspirin or other products containing salicylates in children and infants.) Initial care for a child with a high fever is to gently cool the child. Never rush cooling down a child.
	 Poisoning causes many types of emergency calls, from seizures to cardiac arrest. Poisoning is a leading cause of unintentional death in the United States for adolescents, children and infants. Children younger than 6 years of age account for half of all exposures to poisonous substances in the United States. Poisoning in young children usually is caused by ingesting medications and household products.



TOPIC: CHILDREN WITH SPECIAL HEALTHCARE OR FUNCTIONAL NEEDS

KEY POINTS Course Presentation Slide 549	 A child with special healthcare or functional needs experiencing an emergency may have additional health concerns. The parent or caregiver can provide you with the most information because they are the most familiar with the medical equipment used by the child, such as power wheelchairs, ventilators, communication
	 systems and feeding apparatus. Do not make assumptions about a child's mental capacity if the child is unable to express thoughts or words.
	Ask the parent or caregiver what the child is capable of understanding and speak directly to the child, as you would to any other child.
	Do not speak to the parent or caregiver as if the child is not in the room.

Time: 5 minutes

WRAP-UP **Time: 10 minutes** Remind participants that caring for children is similar in many ways to caring for adults but that physical and emotional differences exist. Emphasize that caring for a child often also means providing support and care Course to the parents or caregivers who are often stressed and anxious. Presentation Slide 550 ACTIVITY Review the opening scenario: As you continue to monitor the child's condition, you notice that the hives have spread beyond the affected area. Ask participants: • "What care should you provide?" Instructor's Note: Responses should include: Initially using observation as much as possible, gathering information about the child's rash, how long it has been present and any other signs and symptoms that she might be experiencing. Completing a physical exam in a head-to-toe manner unless the child becomes upset and then proceeding in a toe-to-head fashion. Summoning more advanced medical personnel. Providing care measures such as using lukewarm water to provide gentle, slow cooling, removing excess clothing and blankets, avoiding the use of rubbing alcohol or ice water for cooling and not giving aspirin or products containing aspirin due to the risk of Reye's syndrome. Continually monitoring the child's status, especially the child's temperature, and being alert for the possibility of febrile seizures.

KEY POINTS	 For the purpose of providing emergency medical care, anyone who appears younger than about 1 year of age should be considered an infant; about 1 to 12 years, a child; and about 12 years and older, an adult. Careful observation of appearance, breathing, pulse and skin characteristics make up the primary assessment of a child and an infant. A SAMPLE history requires the cooperation of the child and parents or caregivers. The physical exam usually is performed in a head-to-toe manner. If the patient becomes upset or agitated, then perform the exam in a toe-to-head manner. Airway obstructions are some of the most common problems encountered with children and infants. Croup, epiglottitis, asthma and choking are common problem encountered with children and infants. Early recognition of respiratory emergencies can mean the difference between life and death. Cardiac emergencies commonly result from a respiratory emergency. Fevers are the most common cause of seizures in children. You must remain professional when dealing with a child's death but also recognize that it is normal to feel upset, anxious, angry or any other emotion.
ASSIGNMENT FOR THE NEXT LESSON	 Read Chapter 26, Older Adults and Patients with Special Healthcare or Functional Needs, pages 599–608.
INSTRUCTOR PREPARATION	 Review Chapter 26, Older Adults and Patients with Special Healthcare or Functional Needs, pages 599–608. Obtain any necessary equipment and supplies for Lesson 39.



OLDER ADULTS

Lesson Length: 30 minutes

MATERIALS, EQUIPMENT AND SUPPLIES

- *Emergency Medical Response* textbook
- Course Presentation Slides 551–561
- LCD projector, screen and computer

LESSON OBJECTIVES

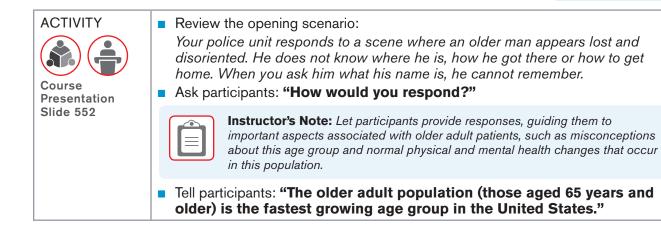
Knowledge

After completing this lesson, participants will be able to:

- Describe physical and mental differences that are important in older adult patients.
- Describe how to assess an older adult patient.
- Describe how to provide care for an older adult patient.
- Describe common problems in older adult patients.
- List the types of elder abuse.
- List risk factors for elder abuse.
- List signs and behaviors of elder abuse.

TOPIC: INTRODUCTION

Time: 5 minutes



TOPIC: PHYSICAL AND MENTAL DIFFERENCES TO CONSIDER IN OLDER ADULTS

KEY POINTS Course Presentation Slide 553	 Normal changes in physical and mental function occur with aging. These changes occur in all body systems, including nervous, digestive, respiratory, circulatory, musculoskeletal, integumentary, genitourinary and endocrine systems.
ACTIVITY	 Divide the participants into small groups. Assign one or more of the following topics to each group, being sure all topics are assigned: sensory changes, circulatory changes, respiratory changes, digestive changes, nervous system changes and musculoskeletal changes. Have the groups use their textbook to identify the age-related changes that occur in their assigned systems. Instructor's Note: Responses should include: Sensory changes: Decreased sensory sharpness, diminished vision (decreased night and peripheral vision, farsightedness, cataracts and decreased tolerance to glare), gradual reduction in hearing ability, diminished pain sensation, decreased taste and/or smell Circulatory changes: Thickening of heart muscle; stiffening of arteries; plaque buildup leading to atherosclerosis; increased risk for blood clots, heart failure, valvular problems, arrhythmias and aneurysm Respiratory changes: Less elastic, stiffer lungs; airway shrinking; weakening of chest muscles; decreased air in and out of lungs; increased risk for lung infections Digestive changes: Stiffer digestive tract, decreased intestinal contraction and problems causing different symptoms affecting appetite and nutrition leading to fatigue and weight lose.
	 leading to fatigue and weight loss Nervous system changes: Majority of older adults retain abilities to learn, remember and solve problems; some exhibit cognitive impairment (memory loss, issues with perception, balance, coordination, reasoning, judgment and sleep), which is not a normal part of aging Musculoskeletal changes: Less dense bones leading to fractures and problems leading to increased sedentary lifestyle and inactivity

TOPIC: ASSESSING AND CARING FOR THE OLDER ADULT PATIENT

Time: 5 minutes

KEY POINTS	Assess an older adult patient, following the same care and
Course Presentation Slides 554–555	 procedures—including assessing the breathing and pulse—as you would for a young adult but with the following considerations: The patient may become tired easily.
	 You will need to clearly explain what you are doing before beginning the examination.
	 The patient may downplay symptoms due to fear of institutionalization or losing independence.
	 It may be difficult to assess peripheral pulses.
	• Some signs and symptoms you observe may be a part of normal aging; distinguish these from any that may be related to the emergency.

When caring for an older adult patient:
 Explain everything you are doing calmly and slowly.
\circ Handle the patient's skin with special care, as it can tear easily.
 If the patient is responsive and a stroke is suspected, the patient may have difficulty chewing, swallowing and clearing the airway of secretions.
 Dentures and other dental devices can cause airway obstruction.
 If artificial ventilation is required and the patient is wearing dentures, it may be easier to leave the dentures in place.
 If it is difficult to tilt the patient's head back due to conditions such as a curvature of the spine, perform a jaw-thrust (without head extension) maneuver.
 Blood-thinning medications and aspirin may make any bleeding more difficult to control.
 If the patient's mental status changes and the patient is unable to maintain the airway, consider inserting an oropharyngeal airway (OPA). OPAs should only be used on unconscious patients with no gag reflex.
 Be prepared to assist with ventilation, but do <i>not</i> apply too much pressure, as this could result in chest injury.
 Continue to re-evaluate during transport.

TOPIC: COMMON PROBLEMS IN THE OLDER ADULT

Fime: 10 minutes

KEY POINTS Course Presentation Slides 556–560	 Older adult patients can become confused when their cognitive functions decrease. Confusion is a symptom of memory loss and can be a sign of cognitive impairment. Dementias are types of cognitive impairment that are chronic and cannot be reversed. Alzheimer's disease is the most common type of dementia among older people.
ACTIVITY	 Have participants break up into small groups. Using their textbooks, ask the participants to explore dementias including Alzheimer's disease. They should identify common behavioral patterns seen. Ask each group to report its findings to the rest of the class.
	Instructor's Note: Responses should address common patterns, such as putting up a social facade, pacing and wandering, rummaging and hoarding, extreme catastrophic reactions, speaking nonsense, hallucinating, and exhibiting depression, anger or suspicion. Sundowning refers to restlessness, anxiety, worried expression, reluctance to enter own room or brightly lit areas, crying, wringing hands, pushing others away, gritting teeth and taking off clothing as late afternoon or early evening approaches.

ELDER ABUS	E
KEY POINTS	 Elder abuse occurs when someone does something that harms or threatens the health and welfare of an older adult or when a caregiver fails to provide adequate care for an older adult. It includes physical and emotional abuse, neglect, financial exploitation, abandonment or any combination. Risk factors for elder abuse include: Mental impairment or isolation of the patient and/or caregiver. Inadequate living situation. Inability to perform daily functions. Frailty. Family conflict. Abuse or stress or history of these. Poverty and financial stress. Signs of possible elder abuse include: Atient who is left alone frequently. History of emergency department visits. Old and new injuries. Repeated falls. Unexplained skin problems or hair loss. Inappropriate dress. Poor hygiene. Malnourishment. Lack of energy or spirit.
ACTIVITY	 Using the following scenario, ask participants to identify risk factors and clues that may point to possible elder abuse: You are called to the home of an older adult woman who lives with her son and daughter-in-law in a small two-bedroom apartment. The son called 9-1-1 to report that his mother had fallen earlier when she was home alone. Upon arrival, you notice that the apartment is extremely cold and cluttered with old newspapers, dirty dishes and other items. The woman is sitting on the floor of the kitchen wearing only a cotton robe and slippers. She is holding her right arm near the wrist. When you ask her what happened, she hesitantly replies, "I fell." Your assessment reveals several areas of old bruises on her inner arms and legs. Instructor's Note: Responses could include: Inadequate living conditions (cold, cluttered apartment) and patient lacking appropriate clothing to maintain warmth. Patient left alone. Hesitancy in sharing information. Evidence of old bruises on other body areas.

WRAP-UP	Time: 5 minutes
	 Emphasize the need for treating all patients with respect, regardless of their age, health condition, mental status or physical ability. Reinforce the fact that not all older adult patients have diminished cognitive abilities.
ACTIVITY Course Presentation Slide 561	 Review the closing scenario: As you continue your care, the man begins to remember small bits of information, but still does not remember where he lives or where he is. He becomes agitated at the help being provided, saying he does not need any help. Ask participants: "How should you continue to provide care for the patient?"
	 Instructor's Note: Responses should include: Approaching this patient in a respectful manner, treating the patient as a responsible adult and identifying possible changes in functioning related to aging, such as changes in the senses, memory loss and cognitive impairment. Keeping in mind that the patient may tire easily and you need to explain what you are doing before beginning any part of the history or exam. Ensuring that the patient has given consent for assistance and treatment. Speaking slowing and clearly to the patient and allowing time for the patient to answer, responding at all times in a kind, gentle manner, which may help to calm the patient. Asking if the patient has any family or friends nearby that you can contact to help with the situation.
ASSIGNMENT FOR THE NEXT LESSON	 Read Chapter 26, Older Adults and Patients with Special Healthcare or Functional Needs, pages 608–613.
INSTRUCTOR PREPARATION	 Review Chapter 26, Older Adults and Patients with Special Healthcare or Functional Needs, pages 608–613. Obtain any necessary equipment and supplies for Lesson 40.



PATIENTS WITH SPECIAL HEALTHCARE OR FUNCTIONAL NEEDS

Lesson Length: 30 minutes

MATERIALS, EQUIPMENT AND SUPPLIES

- Emergency Medical Response textbook
- Course Presentation Slides 562–569
- LCD projector, screen and computer

LESSON OBJECTIVES

Knowledge

After completing this lesson, participants will be able to:

- Identify and describe chronic diseases and disabilities.
- Describe considerations for providing care to patients with special healthcare or functional needs.

TOPIC: INTRODUCTION

Time: 5 minutes

ACTIVITY	 Review the following scenario:
Course	Your unit responds to a scene where a woman, who appears to be in her early
Presentation	30s, has fallen while using her walker to cross the street. She is having a
Slide 563	difficult time paying attention to you and cannot remember what happened. Ask participants: "What do you think might be happening with this patient?" "Would you consider this an acute illness or a chronic illness?"
	Instructor's Note: Let participants provide responses, guiding them to important aspects associated with patients with special healthcare or functional needs, such as those with a mental illness (e.g., Alzheimer's disease or dementia) and chronic illnesses.

TOPIC: SPECIAL NEEDS

Time: 20 minutes

KEY POINTS	 Mental illness is a broad term that describes a range of medical conditions affecting a person's mood or ability to think, feel, relate to others and function in everyday activities.
Course Presentation Slides 564–568	 Examples include mood disorders, schizophrenia, anxiety disorders, eating disorders, attention-deficit/hyperactivity disorder (ADHD), autism and Alzheimer's disease.
Shues 304-300	 Patients with intellectual disabilities have significantly below-average scores on tests of mental ability or intelligence.
	 Ability to function in daily life is limited.
	 Down syndrome, a genetic condition, often results in mild-to- moderate intellectual impairment.
	 Health problems include heart disease, dementia, hearing loss and problems with the intestines, eyes, thyroid and skeleton.
	Someone who has survived a traumatic brain injury may have permanent cognitive and physical problems.
	 Cognitive impairment often includes difficulty with attention, memory, judgment, reasoning, problem solving and decision making.
	 Physical problems can range from mild to severe.
	Chronic diseases and disabilities occur gradually and continue over a long period of time, often lasting throughout the patient's life.
	 Examples include heart disease, cancer, arthritis, diabetes mellitus, cerebral palsy, cystic fibrosis, multiple sclerosis (MS), muscular dystrophy and autism.
	 Patients with some chronic conditions, such as MS, can live for years with few symptoms and then suddenly experience a flare-up with many symptoms appearing at once.
	 Hospice care is the care provided to a terminally ill patient in the final 6 months of life.
	 The focus is on keeping the person as comfortable and pain-free as possible and providing physical, emotional, social and spiritual comfort to the dying person.
	 Visual impairments include a loss of visual acuity or a loss of visual field.
	The term "deaf" describes someone who is unable to hear well enough to rely on hearing as a means of communication while the term hard of hearing can be used to describe people who have a less severe hearing loss and can rely on their hearing for communication.
	A person who is physically challenged may have been born with the condition or may have acquired it later in life and have a diminished ability to move due to injury or illness.

 Divide the participants into small groups. Have them use their textbooks to explore the information about vision and hearing problems. Ask them to develop a list of appropriate techniques to use when caring for a patient who is visually impaired, deaf or hard of hearing. Instructor's Note: Responses should include:
 For visual impairment: Announcing approach and identifying yourself and the reason for being there (if the patient has a known visual impairment) Asking the patient if they can see Explaining what is happening and any sounds that the patient may be hearing Helping the patient find glasses at the scene, if glasses appear to be missing Reassuring the patient with explanations and gentle touch For deaf and hard of hearing: Identifying yourself Speaking slowly and clearly, without shouting Asking if the patient can hear you Positioning yourself so that the patient can hear better (e.g., speak when facing the patient or speak directly into patient's ear) Turning off background noises, if possible If necessary, writing down questions
Engage the participants in a class discussion about their experiences with different chronic conditions that they have seen, heard about or dealt with. Ask them to identify how these conditions might affect the care that they would need to provide.
Instructor's Note: Although responses will vary based on the participants' experiences, common chronic conditions would most likely include heart disease, arthritis, diabetes and cancer. Responses related to how the condition might affect care would vary also based on the condition but might include allowing more time for the patient to respond or to answer questions due to fatigue or from tiring easily (e.g., with heart disease or cancer), adjusting positioning techniques to move or position a joint or extremity (e.g., with arthritis or muscular dystrophy) and assisting with movement or walking (e.g., with muscular dystrophy).
Have the participants break up into small groups. Ask each group to use their textbooks to create a chart that compares and contrasts muscular dystrophy and MS. Then have each group present its information to the class for a comparison of information.
 Instructor's Note: Responses should include: For muscular dystrophy: It is the progressive weakness and degeneration of muscles that in its most common form begins in early childhood. Signs and symptoms are mild-to-severe muscle weakness with possible involvement of cardiac muscles. Progression of the disease often leads to respiratory problems requiring assisted ventilation.

 For MS: It is a nervous system disorder affecting the coating on nerve cells interfering with the nerves' ability to communicate with each other. MS occurs more often in females. Symptoms appear and disappear over a period of years. Both are chronic conditions with variable onset: muscular dystrophy (most common form beginning in early childhood) as progressive with muscle involvement, and MS (usually beginning in early teenage years) as fluctuatin with nerve involvement. 	ng
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WRAP-UP

Time: 5 minutes

Course Presentation Slide 569	 Emphasize the need to treat each patient individually in accordance with their specific symptoms and difficulties.
ACTIVITY	 Review the closing scenario: As you continue to care for the patient, you suspect that she has a traumatic brain injury. She does not remember where she lives or what happened and is having trouble deciding if she wants to go to the hospital. Ask participants: "What led you to suspect the patient has a traumatic brain injury?"
	 Instructor's Note: Responses should include: Signs and symptoms associated with a traumatic brain injury include: Cognitive impairment such as difficulty with attention, memory, judgment, reasoning, problem solving and decision making. Physical problems that can range from mild to severe and may result in the person moving slowly or relying on a mobility aid, such as a walker or wheelchair.
ASSIGNMENT FOR THE NEXT LESSON	 Review Chapters 24–26. Begin reading Chapter 27, EMS Support and Operations.
INSTRUCTOR PREPARATION	 Review Chapters 24–26 and Lessons 37–40. Obtain any necessary equipment and supplies for Lesson 41.

LESSON 41

PUTTING IT ALL TOGETHER

Lesson Length: 60 minutes

MATERIALS, EQUIPMENT AND SUPPLIES

- Emergency Medical Response textbook
- Course Presentation Slides 570–575
- LCD projector, screen and computer
- Disposable latex-free gloves (multiple sizes) and other personal protective equipment (PPE), as indicated
- Decontamination supplies
- Adult and infant manikins (one for every two participants; child manikins are optional)
- Resuscitation masks (adult and pediatric; one for each participant)
- Stethoscopes (one for every two participants)
- Sphygmomanometers (one for every two participants)
- Automated external defibrillator (AED) training devices (one for every two participants)
- Pediatric AED training pads (one for every two participants)
- Oxygen cylinders, flowmeters and oxygen delivery devices, such as nasal cannulas, non-rebreather masks and bag-valve-mask (BVM) resuscitators (adult and pediatric)

LESSON OBJECTIVES

After completing this lesson, participants will be able to:

Demonstrate the knowledge learned in Lessons 37–40, in addition to all previously learned skills.

INTRODUCTION

ACTIVITY	Tell participants that they:
	 Will split into several small groups with each group receiving a scenario to role-play, using either a manikin or another member of the class as the patient. Will have approximately 5 minutes to prepare for the role-playing activity and that part of this preparation will include designating the roles for each of the group members based on the actual scenario assigned and gathering any
	necessary equipment and supplies.
	• Are to formulate a response to the scenario integrating the key points and skills learned up to this point in the course, explaining their actions while providing care.
	 Should be able to answer questions asked by the instructor or other class members.
	 Will spend approximately 5 to 10 minutes after role-playing the scenario critiquing their actions and discussing any problems, errors or difficulties they may have had.

SCENARIO 1: YOU ARE THE EMERGENCY MEDICAL RESPONDER

Time: 15 minutes

Course Presentation Slide 571

Instructor's Note: For this scenario, there should be one participant acting as the responder, one participant acting as the pregnant woman and one participant acting as the co-worker. An adult manikin can be used for the pregnant woman and an infant manikin can be used as the newborn. You will need to prompt participants during the scenario, noting changes in the patient's condition.

Setup:

You are called to a local office building based on a call to 9-1-1 that a pregnant woman is in labor. The woman is 33 years old and is pregnant with her second child. When you arrive, the woman is sitting in a chair in the employee lounge with a co-worker nearby. She states that she has been having "contractions off and on for the past 30 minutes."

Ask participants: "What should you do?"



Instructor's Note: Participants should address these areas in their responses:

- Sizing up the scene, forming a general impression and performing a primary assessment; putting on PPE such as disposable latex-free gloves, goggles and gown; since the woman is alert and talking, assuming that her airway is open, she is breathing and she has a pulse
- Determining how far along the woman is in the pregnancy, including when the baby is due and if she expects any complications
- Assessing the woman's contractions, including how frequently they are occurring, how long they are lasting and if they are getting closer together, longer or stronger
- Actually feeling the contractions with a gloved hand and timing the length of movement in seconds and the duration in minutes
- If contractions are 5 minutes apart or longer, preparing to transport the woman to a medical facility; if contractions are 2 minutes apart, preparing for imminent birth
- Determining if the woman's water (amniotic sac) has broken and if she is experiencing an urge to bear down or push
- Checking for crowning
- Summoning more advanced medical personnel and contacting medical direction for assistance if birth is imminent; ensuring that obstetric pack is readily available should birth be imminent
- Encouraging slow, deep breathing in through the nose and out through the mouth
- Ensuring a clean environment for delivery; positioning the woman on her back with head and upper back raised, with legs bent and knees drawn up and apart
- Assisting with delivery including applying light pressure to baby's head (when crowning presents), checking for umbilical cord looping around the neck and gently slipping it over the head or shoulders, guiding one shoulder out at a time, using a clean towel to receive the baby, placing the infant on their side between the mother and the responder
- Preparing for possible preterm birth if woman is less than 37 weeks pregnant

Instructor's Prompt: The newborn's body is pink but limbs are slightly blue; the pulse rate is 104 beats per minute (BPM); the newborn shows some facial grimacing and is actively moving around with good respirations and a strong cry.

 Providing care to the mother and newborn after delivery For the newborn, describes clamping or tying umbilical cord, assigns APGAR score (in this case, an APGAR score of 8 (1 for appearance, 2 for pulse, 1 for grimace, 2 for activity and 2 for respiration), clears the mouth and nasal passages and begins resuscitation if respirations fall to less than 30 breaths per minute, newborn is gasping or not breathing normally, pulse is less than 100 bpm or newborn is cyanotic
 For the mother, describes assisting with placental delivery and continuing physical and emotional care, including monitoring vital signs

SCENARIO 2: YOU ARE THE EMERGENCY MEDICAL RESPONDER

Time: 15 minutes

Course Presentation Slide 572



Instructor's Note: For this scenario, there should be one participant acting as the responder, one as the child and one as the mother. You will need to prompt participants during the scenario, noting changes in the patient's condition.

Setup:

The mother of a 5-year-old girl calls 9-1-1 because her daughter has been vomiting and having diarrhea for the past 24 hours. When you arrive on the scene, the mother states, "She hasn't been able to keep anything down, including sips of water or juice, and now I'm having trouble getting her to stay awake to try and drink."

Ask participants: "What should you do?"



Instructor's Note: Participants should address these areas in their responses:

- Sizing up the scene, forming a general impression and obtaining consent from the mother to provide care for the child
- Summoning more advanced medical personnel
- Checking responsiveness using the AVPU (alert, verbal, painful, unresponsive) scale or checking the child's pupils for reaction to light
- Obtaining a SAMPLE history from the mother
- Using careful observation without touching the child to carry out as many components of the initial evaluation, checking for clues as to the nature of the child's illness
- Employing a head-to-toe approach for the assessment
- Obtaining vital signs
- Demonstrating or describing the skill for administering supplemental oxygen based on local protocols if assessment findings support the need for it
- Identifying the need to be alert for LOC changes, which is a strong indicator that shock is developing
- Continually monitoring respiratory and circulatory status for changes

Instructor's Prompt: Tell participants that the child becomes unresponsive.

- Starting ventilations if the child goes into respiratory arrest
- Initiating CPR and using an automated external defibrillator (AED) with proper pediatric equipment and pad placement if the child goes into cardiac arrest

SCENARIO 3: YOU ARE THE EMERGENCY MEDICAL RESPONDER

Time: 15 minutes

Course Presentation Slide 573

Instructor's Note: For this scenario, there should be one participant acting as the responder, one participant acting as the patient, one participant acting as the niece and at least one participant acting as a family member. You will need to prompt participants during the scenario noting changes in the patient's condition.

Setup:

You and your partner arrive at the home of a family who has called 9-1-1 because the older uncle has "passed out" while sitting at the dinner table. The niece states that he was eating dinner and then all of a sudden his head dropped down. "We called to him but he wouldn't answer. I think he stopped breathing, but when we lifted his chin up, he started to breathe, but just barely." The patient is a 92-year-old man with severe arthritis of his neck, back and upper extremities. He wears a hearing aid in his right ear.

Ask participants: "What should you do?"



Instructor's Note: Participants should address these areas in their responses:

- Sizing up the scene, forming a general impression including determining possible clues to what has happened
 Performing a primary assessment of the patient, taking into consideration age-related changes, sensory deficits (use of hearing aid) and underlying musculoskeletal condition (severe arthritis)
- Talking slowly and clearly to the patient, allowing him time to respond, positioning the patient so that he can hear (face the patient or speak directly into the patient's ear)
- Using AVPU scale to assess the patient's LOC
- Properly positioning the patient to maintain an open airway
- Checking for breathing and pulse

Instructor's Prompt: Tell participants that the patient is unresponsive, not breathing and does not have a pulse.

- Demonstrating the skill for CPR and use of an AED
- Obtaining a SAMPLE history from the family, including any history of other underlying conditions such as respiratory or cardiac problems as well as his history of arthritis
- Conducting a secondary assessment and assessing vital signs
- Moving the patient carefully from the chair to the stretcher in preparation for transport, making sure to protect the patient's extremities, skin and joints

Instructor's Prompt: Tell participants that after several cycles of CPR and use of an AED, the patient is still unresponsive but is breathing shallowly and has a pulse.

- Positioning the patient to maintain an open airway
- Providing clear communication and support to the family and patient

WRAP-UP

ର	Answer participants' questions, ensuring that each participant has an opportunity to resolve any confusion.
	 Review the scenarios and the important elements of care.
KEY POINTS Course Presentation Slides 574–575	opportunity to resolve any confusion.
	\circ In children, cardiac emergencies commonly result from a respiratory
	emergency.
	 Fevers are the most common cause of seizures in children. You are legally obligated to report any suspicions of child abuse.
	\odot fou are regard obligated to report any suspicions of child abuse.

	 Normal changes in physical and mental function occur with aging. Assessment of an older adult patient follows the same care and procedures, including checking for breathing and a pulse, as for a young adult with some modifications. Older adult patients can become confused when their cognitive functions decrease. Alzheimer's disease is the most common type of dementia among older people. Elder abuse includes physical and emotional abuse, neglect, financial exploitation, abandonment or any combination. Each patient must be treated individually based on their specific symptoms and difficulties. Some patients may have special needs, such as mental illness, intellectual disabilities or chronic diseases and disabilities. Hospice care is provided to a terminally ill patient in the final 6 months of life.
ASSIGNMENT FOR THE NEXT LESSON	 Read Chapter 27, EMS Support and Operations. Read Enrichment: Operational Safety and Security Measures (<i>optional</i>), page 634.
INSTRUCTOR PREPARATION	 Review Chapter 27, EMS Support and Operations. Review Enrichment: Operational Safety and Security Measures (<i>optional</i>), page 634. Review the video segment, "EMS Support and Operations" (11:34). Obtain any necessary equipment and supplies for Lesson 42.

UNIT 8 | EMS OPERATIONS

Lesson 42:	EMS Support and Operations
Lesson 43:	Access and Extrication
Lesson 44:	Hazardous Materials Emergencies 445
Lesson 45:	Incident Command and Multiple-Casualty Incidents
Lesson 46:	Response to Disasters and Terrorism 457
Lesson 47:	Special Operations
Lesson 48:	Putting It All Together
Lesson 49:	Final Practical Evaluation
Lesson 50:	Final Written Exams

EMS SUPPORT AND OPERATIONS

Lesson Length: 60 minutes (70 minutes with Enrichment)

MATERIALS, EQUIPMENT AND SUPPLIES

- Emergency Medical Response textbook
- Course Presentation Slides 576–590
- LCD projector, screen and computer
- Emergency Medical Response DVD
- DVD player and monitor
- Jump kit, fully supplied for an emergency medical responder (EMR) (optional)

LESSON OBJECTIVES

Knowledge

After completing this lesson, participants will be able to:

- Describe the roles of traditional and nontraditional emergency medical responders (EMRs).
- Explain all phases of an emergency medical services (EMS) response and associated responsibilities of an EMR.
- Identify the basic equipment used by an EMR.
- Define air medical transport and the criteria for when it should be requested.
- Discuss safety issues related to air medical transport and landing zones (LZs).
- Discuss emergency vehicle safety and other safety issues during response.
- Identify and describe high-risk situations.
- Summarize patient care issues in the ambulance.

TOPIC: INTRODUCTION

ACTIVITY	Review the opening scenario:
Course Presentation Slides 577-578	You are an emergency medical responder (EMR) approaching the scene of a two-car collision at a busy intersection. It is rush hour, and traffic is heavy. One of the involved cars is situated on the median strip, and the other is off the road on the shoulder, just past the intersection. There are multiple occupants in each vehicle.
	 Ask participants: "How would you respond?" "What should you consider when you size up the scene?"

(Continued)



Instructor's Note: Let participants provide responses, guiding them to important areas associated with EMS support and operations, such as roles of an EMR, the phases of an EMS response, equipment, vehicle safety and high-risk situations.

- Explain to participants that, in general, the term EMR refers to an individual who has been trained to provide a minimum of standard of care according to current national scope of practice and EMS educational standards.
- Tell participants: "Traditional EMRs are those who function within the 9-1-1 system. Examples include EMS personnel, firefighters and police officers."
- Explain that nontraditional EMRs, such as athletic trainers, industrial medical emergency response teams (MERTs), park rangers and trip leaders, have the same basic training as traditional EMRs but work in less traditional settings.

TOPIC: PHASES OF A RESPONSE

DVD	 Show the video segment, "EMS Support and Operations" (11:34). Answer participants' questions about the video segment.
	 Divide the participants into small groups. Assign each group one or more of the nine phases of a typical EMS response, being sure all topics are assigned. Using their textbooks, have each group identify the activities associated with each phase and then present their information to the rest of the class.
Presentation Slide 579	 Instructor's Note: Responses should include: Preparation for an emergency call: Preparing yourself, your equipment and your vehicle by making sure the equipment is properly maintained, that you understand how to use it and continue to train on it, and that all supplies are stocked up and neatly stored Dispatch: Using a communications center/public safety answering point (PSAP) with a central access number, such as 9-1-1, for ambulance, police or fire rescue personnel En route to the scene (either by walking or driving a vehicle): Obeying the traffic laws governing the use of lights, sirens and intersection procedures Arrival at the scene and patient contact: Ensuring scene safety, following standard precautions before making any contact with the patient and gathering pertinent medical information to be transferred with the patient Transferring the patient to the ambulance: Getting the patient ready for transport and moving the patient onto the stretcher En route to the receiving facility: Notifying the receiving facility about the patient and the expected time of arrival (ETA) Arrival at the receiving facility: Transferring the patient to the care of the nurses and physicians, giving information about the scene and the patient and cleaning the ambulance Clear medical facility: Notifying the communications center and returning to the station Available for next emergency call: Refueling the vehicle, making repairs or adjustments, restocking disposable items, cleaning and disinfecting equipment and completing any necessary paperwork

TOPIC: AIR MEDICAL TRANSPORT

Time: 10 minutes

KEY POINTS Course Presentation Slides 580–583	 With severely injured or ill patients, it is sometimes better to use a rotorcraft (helicopter) for transport to the receiving facility so that the patient can be transported quickly to specialty centers and large treatment facilities. Geography and other circumstances play a role in the decision. Local and state protocols always must be followed.
WHEN TO RE	QUEST AIR MEDICAL TRANSPORT
KEY POINTS	 Air medical transport is requested mostly when one or more patients are in critical condition. Specific trauma alert criteria vary from state to state and are driven by local protocols. General trauma alert criteria indicating the need for air medical transport might include: Vital signs and level of consciousness: Glasgow Coma Scale ≤ 13 SBP of < 90 mmHg Respiratory rate of < 10 or > 29 breaths per minute (< 20 in infants aged < 1 year), or need for ventilatory support Anatomic: All penetrating injuries to the head, neck, torso and extremities proximal to the elbow or knee Chest wall instability or deformity (e.g., flail chest) Two or more proximal long-bone fractures Crushed, de-gloved, mangled or pulseless extremity Amputation proximal to the wrist or ankle Pelvic fractures Open or depressed skull fractures Paralysis Patients who fit one of the following mechanisms of injury criteria should be transported to a trauma center, but need not be the highest level of care: Falls: Adults: > 20 feet (one story = 10 feet) Children: > 10 feet or two to three times the height of the child High-risk motor-vehicle crash: Intrusion, including roof: > 12 inches occupant site; > 18 inches any site Ejection (partial or complete) from motor vehicle Death in the same passenger compartment Vehicle telemetry data consistent with a high risk for injury Automobile versus pedestrian/bicyclist thrown, run over, or with
L	(Continued)

 The following special patients, along with system considerations, should be considered for transport to a trauma center for evaluation and initial management: Older adults: Risk for injury/death increases after age 55 SBP < 110 mmHg might represent shock after age 65 Low-impact mechanisms (e.g., ground-level falls) might result in severe injury Children: Should be triaged preferentially to pediatric-capable trauma centers Anticoagulants and bleeding disorders: Patients with a head injury are at high risk for rapid deterioration Burns: Without other trauma mechanism: triage to burn facility Without other trauma mechanism: triage to trauma center		
trauma center. CONSIDERATIONS WITH AIR MEDICAL TRANSPORT KEY POINTS Image: Colspan="2">The two main types of air medical transport include rotorcrafts and fixed-wing crafts. Image: Colspan="2">Rotorcrafts are used to get into areas that are not accessible by any other type of rescue craft. Image: Colspan="2">Fixed-wing crafts are used to transport over long distances, usually between medical facilities. Image: Colspan="2">Weather, such as visibility and air temperature, plays a significant role in the use of aircraft for rescue and transport. Image: Colspan="2">Because of the design of the vehicle, the pilot cannot see below the helicopter, which is why guidance is always needed. Image: Colspan="2">The amount of space available in a helicopter depends on the type of helicopter and its maximum takeoff and landing weights. Image: Colspan="2">A safe landing zone (LZ) is of paramount importance. Ideally it should include: Image: Colspan="2">A marea clear of any obstacles, such as trees or utility poles. Image: Colspan="2">A marea clear of any obstacles, such as trees or utility poles. Image: Colspan="2">A marea that is well lit that can easily be seen by the pilot. Image: Platient transfer includes interacting with flight personnel, packaging and preparing the patient for transport and ensuring scene safety in		 should be considered for transport to a trauma center for evaluation and initial management: Older adults: Risk for injury/death increases after age 55 SBP < 110 mmHg might represent shock after age 65 Low-impact mechanisms (e.g., ground-level falls) might result in severe injury Children: Should be triaged preferentially to pediatric-capable trauma centers Anticoagulants and bleeding disorders: Patients with a head injury are at high risk for rapid deterioration Burns: Without other trauma mechanism: triage to burn facility With trauma mechanism: triage to trauma center Pregnancy > 20 weeks EMS provider judgment Air medical transport should also be considered for the following: It will take more than 30 minutes by ambulance to transport the patient to a trauma center. It will take longer to transport. The patient's transport will be delayed by more than 30 minutes because of the need for extrication. The patient will require rapid transport to a specialty center. This
 CONSIDERATIONS WITH AIR MEDICAL TRANSPORT KEY POINTS The two main types of air medical transport include rotorcrafts and fixed-wing crafts. Rotorcrafts are used to get into areas that are not accessible by any other type of rescue craft. Fixed-wing crafts are used to transport over long distances, usually between medical facilities. Weather, such as visibility and air temperature, plays a significant role in the use of aircraft for rescue and transport. Because of the design of the vehicle, the pilot cannot see below the helicopter, which is why guidance is always needed. The amount of space available in a helicopter depends on the type of helicopter and its maximum takeoff and landing weights. A safe landing zone (LZ) is of paramount importance. Ideally it should include: A minimum area of 10,000 square feet (100 feet by 100 feet). Flat, firm land. An area clear of any obstacles, such as trees or utility poles. An area that is well lit that can easily be seen by the pilot. Patient transfer includes interacting with flight personnel, packaging and preparing the patient for transport and ensuring scene safety in 		• • •
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TOPIC: EMERGENCY VEHICLE SAFETY

ACTIVITY Course Presentation Slides 584–587	 Assign partners or have participants select a partner. Tell the partners to use their textbooks to explore issues related to emergency vehicle safety, emphasizing vehicle preparedness, equipment preparedness, use of lights and sirens and responding with due regard.
	 Instructor's Note: Responses should include: Vehicle safety: Ensuring proper tire inflation, checking for wear and tear, completing vehicle inspections and ensuring warning devices are in working order and vehicle is properly maintained Equipment preparedness: Having appropriate personal protective equipment (PPE) readily available and in full working condition and using reflective clothing in dark or inclement weather Use of lights and sirens: Using lights and sirens in accordance with agency protocols and state and local laws (e.g., using sirens to warn approaching and oncoming traffic and air horns to clear traffic in a single situation, like an intersection) Responding with due regard: Obeying traffic laws, being careful at intersections, driving in emergency mode when lights and sirens are on and considering weather, road conditions and traffic
HIGH-RISK S	ITUATIONS
ACTIVITY	 Ask participants for examples of what they would consider to be high-risk situations. Instructor's Note: Responses will vary but could include situations involving debris or broken glass in the roadway, multiple patients, bad weather and traffic.
KEY POINTS	 High-risk situations include intersections, entrances onto roadways and highways, speeding and driving distractions. Other high-risk situations include: Inclement weather, such as rain, ice, snow or fog. An aggressive driver (someone who not only threatens other drivers verbally or with gestures but who also ignores traffic laws). Unpaved roadways, such as dirt roads and gravel-covered surfaces. Responding alone or being the first on the scene. Fatigue, especially during long transports. Downed electrical lines. Leaking fuel or fluids. Smoke or fire. Broken glass. Trapped or ejected patients.

ACTIVITY	Using the following scenario, ask participants to identify factors that would make this situation high risk: You are the first to arrive at the scene involving a tree that has fallen onto a house after a violent thunderstorm. The house is located in a rural section of the town. The wind is blowing hard and rain continues to fall, somewhat heavy at times. The tree has hit the second story of the house, damaging the roof and several windows. Tree branches, window shards and pieces of the roof litter the ground. The utility pole in front of the house is leaning toward the house. The family members, who were on the second floor when the tree hit, are outside sitting on the grass. They are dazed and have numerous cuts and lacerations that are oozing blood. Fire and utility crews have been notified but have yet to arrive.
	 Instructor's Note: Responses should include: The EMR arriving on the scene alone. Weather, including the continued rain and blowing wind. Debris, such as tree branches, glass from the windows and the pieces of the roof. Possible electrical hazards, such as the leaning utility pole, as well as the potential for fire due to the tree hitting the house.
PATIENT CAR	E IN THE AMBULANCE
KEY POINTS	 It is important to follow safety precautions when caring for a patient in an ambulance. All personnel riding in the vehicle must be properly seated and secured. Patients must <i>always</i> be properly secured while in the patient compartment with stretcher straps in place and tightened. You should always hold onto something secure if you need to remove your safety belt in the patient compartment to provide care. Three of five essential body parts should be safely "hugging" the ambulance at all times: two hands, two feet and backside (EMRs should be seated as much as possible during ambulance movement). All moveable equipment in the cab must be secured for safety reasons.

TOPIC: EMS EQUIPMENT

Time: 5 minutes

KEY POINTS
When responding to an emergency, you should have basic medical equipment on hand.
A jump kit should be fully stocked and ready to go.
Minimum supplies for a jump kit include oral airways, suctioning equipment, artificial-ventilation devices, basic wound supplies and PPE.
Instructor's Note: If you have a jump kit available, show the contents to participants.

WRAP-UP	Time: 5 minutes
Course Presentation Slide 589	 Emphasize that all EMRs (traditional or nontraditional) are trained to meet a minimum standard of care according to the current national scope of practice and EMS educational standards.
ACTIVITY	 Review the closing scenario: Additional fire rescue, police and EMS units arrive. You see that one of the occupants of the vehicle that is on the shoulder of the road apparently was not wearing a seat belt, was ejected from the vehicle and is not moving. The driver of the car on the median strip is conscious, but because of traffic you cannot get to that vehicle. Ask participants: "What are some safety considerations and issues with this situation?" "With heavy traffic backing up in all directions and one patient with severe trauma, what transport options should be considered?"
	 Instructor's Note: Responses should include: Determining the safety issues related to dealing with potential hazards at the scene, such as the location at a busy intersection, traffic, potential for trapped patients and broken glass or leaking fluid related to the collision. Identifying transport options, including air medical transport to deal with the multiple patients.
KEY POINTS	 An EMS response typically has nine phases. Air medical transport may be appropriate in certain situations. You must be able to depend on your equipment and transportation and have all necessary equipment and supplies on hand.
ASSIGNMENT FOR THE NEXT LESSON	 Read Chapter 28, Access and Extrication.
INSTRUCTOR PREPARATION	 Review Chapter 28, Access and Extrication. Obtain any necessary equipment and supplies for Lesson 43.

ENRICHMENT: OPERATIONAL SAFETY AND SECURITY MEASURES

KEY POINTS	The beginning of each shift should involve a briefing in person or
	through written notes about any issues involving crew safety.
	The threat of stolen vehicles is real; therefore, an ambulance or rescue vehicle is never left running or unattended with the key in the ignition.
Course Presentation	All vehicles must be monitored, whether in or out of service.
Slide 590	All use of ambulances and rescue vehicles must be tracked to avoid unauthorized use.

ACTIVITY Ask participants	for examples of potential threats to crew safety.
Time: 5 minutes	r's Note: Responses will vary but should include issues related to: nmental threats, such as hazardous gases or vapors, weather-related (ice, visibility or wind), terrain or location of the emergency (rural, ban or city area or confined space). Is to personnel, such as from combative or aggressive patients or ders or due to criminal situations or the mechanism of injury (MOI).

ACCESS AND EXTRICATION

Lesson Length: 30 minutes

MATERIALS, EQUIPMENT AND SUPPLIES

- *Emergency Medical Response* textbook
- Course Presentation Slides 591–601
- LCD projector, screen and computer
- Basic extrication equipment including crowbars, screwdrivers, chisels, hammers, pliers, work gloves and goggles, wrenches, shovels, car jacks, tire irons, knives and ropes or chains (optional)

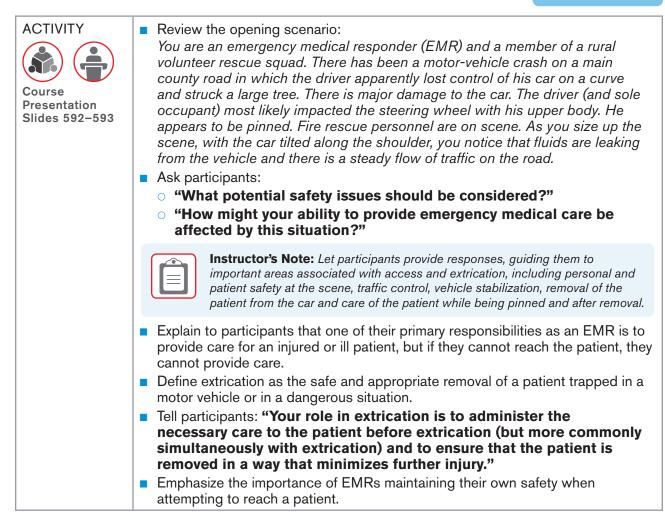
LESSON OBJECTIVES

Knowledge

After completing this lesson, participants will be able to:

- Have a basic understanding of access and extrication.
- Explain the role of the emergency medical responder (EMR) in an extrication operation.
- List basic extrication equipment.
- Describe basic personal protective equipment (PPE) used in extrication operations.
- Describe steps necessary to ensure patient safety during extrication.
- List the reasons for controlling traffic at an emergency scene.
- Describe unique hazards that may exist at an emergency scene.
- Define hazardous materials (HAZMATs).
- List basic safety procedures associated with a HAZMAT situation.
- Describe the importance of vehicle stability.
- List the general steps to stabilize a vehicle.
- Know the difference between simple access and complex access.
- Know how to provide care to patients who require extrication at the scene.

TOPIC: INTRODUCTION



TOPIC: FUNDAMENTALS OF EXTRICATION AND RESCUE OPERATIONS

Time: 10 minutes

KEY POINTS Fire rescue workers, emergency medical technicians (EMTs) and other specially trained personnel will perform most extrication procedures, but when EMRs are involved, they should work closely with other responders to protect the patient. Course Basic extrication equipment includes crowbars, screwdrivers, chisels, Presentation hammers, pliers, work gloves and goggles, wrenches, shovels, car Slides 594-596 jacks, tire irons, knives, and ropes or chains. All personnel involved at the scene should wear protective clothing and follow guidelines set up by state and local protocols. You should familiarize yourself with the guidelines put forth by the National Fire Protection Association (NFPA) and the Occupational Safety and Health Administration (OSHA). Minimum equipment for collisions and extrications include protective helmets and eyewear, turnout gear, protective gloves and boots with steel toes and insoles.

	 Once safe access to a trapped patient is obtained, provide the same care you would to any trauma patient: maintain spinal motion restriction, complete the primary assessment and provide critical interventions as necessary. You should also protect patients from debris created by the extrication process. Try to lessen their fears by explaining what you will do and any noise that may occur in the process. Ask patients if they are prepared at each step in the extrication process to help them feel more in control of the situation. Ask bystanders to stay away from the scene. Emergency vehicles should be placed in optimal positions for safety and easy patient loading. Blocking is a positioning technique that creates a physical barrier between the work area and traffic flowing toward the emergency scene, creating a safer environment and providing an optimal position for patient loading.
	Instructor's Note: If available and time allows, pass around samples of some basic extrication equipment for participants to examine.
ACTIVITY	 Divide the participants into small groups. Assign each group one or more of the following unique hazards, being sure all topics are assigned: alternative-fueled vehicles, undeployed vehicle safety devices and HAZMAT incident. Using their textbooks, ask the groups to describe the hazard and appropriate response measures to deal with the hazard. Then have each group present its information to the rest of the class. Instructor's Note: Responses should include: Alternative-fueled vehicles: Problem: Electrically controlled Response: Remove the ignition key or press on/off switch and disconnect the battery, follow the manufacturer's emergency response guides for the specific model, chock or block the wheels and avoid placing cribbing under any high-voltage cabling. Undeployed vehicle safety devices: Problem: Air bags in various locations that have not deployed Response: Disconnect both battery cables if the patient is pinned directly behind an undeployed air bag and wait for deactivation of the system before extricating. Do not mechanically cut through or displace the steering column until after deactivation, and do not cut or drill into the air bag module or apply heat to the area of the steering wheel hub. HAZMAT incident: Problem: A situation dealing with the release of hazardous material, which is any chemical substance or material that can pose a threat to the health, safety and property of an individual Response: Stay away from the area or in the designated cold zone if you have not received special training in a HAZMAT situation, obtain as much information prearrival as possible, stay upwind and uphill of the scene, use the "fuel of thumb" to determine the danger zone (position yourself far enough away from the scene that your thumb, pointing up at arm's length, covers the hazardous area from your view), and be able to recognize clues that indicate the presence of hazardous material.

TOPIC: VEHICLE STABILIZATION

Time: 5 minutes

ACTIVITY OPTION A	 Ask participants for examples of situations that would suggest that a vehicle is unstable.
Time: 5 minutes Course Presentation Slides 597-598	 Instructor's Note: Responses may vary, but should include a vehicle that is: On a tilted surface. On top of another vehicle, even partly. On a slippery surface. Overturned or on its side.
ACTIVITY OPTION B	 Using the following scenario, ask participants to identify the steps necessary to stabilize a vehicle:
Time: 10 minutes	You arrive at the scene of a motor-vehicle crash in which a car went through a guardrail head-on into a hillside. The car is positioned at a 45-degree angle. The driver is pinned inside the car but is alert and responsive.
	 Instructor's Note: Responses should include: Putting the vehicle in "park" or in gear (if a manual transmission). Setting the parking brake. Turning off the vehicle ignition and removing the key. Moving the seats back and rolling down the windows if there are no patients in the seats. Disconnecting the battery or power source. Identifying and avoiding hazardous vehicle safety components, such as seat belt pretensioners, undeployed air bags, integrated child booster seats and a lower anchors and tethers for children (LATCH) system. Additional steps necessary may include cribbing (using wood or supports arranged diagonally to the vehicle's frame to safely prop up a vehicle), using lift bags, chocking (placing blocks or wedges against the wheels of the vehicle), letting the air out of the car's tires or using a strong rope or chain attached to the car's frame and secured to a strong anchor point or using struts to block a vehicle in a stable position.

TOPIC: ACCESS AND EXTRICATION

KEY POINTS	 Simple access is the process of getting to a patient without use of equipment.
	Complex access is the process of using specialized tools or equipment to gain access to a patient.
Course Presentation Slides 599–600	One of the most commonly used extrication tools is the power hydraulic tool, known as the Hurst Jaws of Life [®] . Other extrication tools used include cutters (used to cut) and the ram (used to spread).
	Extricating the patient is a task carried out by specially trained personnel with the primary concern of preventing further harm to the patient.
	 The device, not the patient, is moved during extrication.
	 Maintain spinal motion restriction at all times.
	You should stay with the patient at all times and continually monitor their condition, staying in constant communication with the patient.

WRAP-UP

ACTIVITY Course Presentation Slide 601	 Review the closing scenario: As you perform the primary assessment, the patient complains of numbness and tingling in his hands. Ask participants: "What type of injury do you suspect the patient may have?" "What other steps would you take as you provide care for this patient?"
	 Instructor's Note: Responses should include: Injuries related to the driver's upper body hitting the steering wheel, such as to his chest (ribs and lungs) and upper abdomen; injuries related to being pinned, such as crush injuries or fractures to his legs or other body area that is pinned. Additional steps such as calming the patient, explaining what is happening with extrication and continuing to provide care, including maintaining spinal motion restriction, monitoring the patient's status throughout the extrication process and communicating any changes in the patient's condition to the rest of the team members.
KEY POINTS	 As an EMR, you may be called upon to assist in vehicle extrication. Vehicle extrication involves multiple steps—stabilizing the vehicle, attempting to gain access to patients inside the vehicle or, if unable to do so, carrying out the steps involved in extricating the patients from the vehicle in the safest manner possible. You must take steps to ensure your own safety and take steps to protect the patient's head, neck and spine when providing care.
ASSIGNMENT FOR THE NEXT LESSON	 Read Chapter 29, Hazardous Materials Emergencies.
INSTRUCTOR PREPARATION	 Review Chapter 29, Hazardous Materials Emergencies. Review the video segment, "Hazardous Materials Emergencies" (1:15). Obtain any necessary equipment and supplies for Lesson 44.



HAZARDOUS MATERIALS EMERGENCIES

Lesson Length: 30 minutes

MATERIALS, EQUIPMENT AND SUPPLIES

- Emergency Medical Response textbook
- Course Presentation Slides 602–612
- LCD projector, screen and computer
- Emergency Medical Response DVD
- DVD player and monitor
- Samples or examples of placards designating hazardous materials
- The Emergency Response Guidebook (optional)

LESSON OBJECTIVES

Knowledge

After completing this lesson, participants will be able to:

- Define hazardous materials (HAZMATs).
- Describe the basic response to a HAZMAT incident.
- Know where to find available resources regarding training and response to HAZMAT incidents.
- Have a basic understanding of placards and the *Emergency Response Guidebook*.
- List basic personal protective equipment (PPE) necessary for responding to a HAZMAT incident.
- Know other resources available to respond to HAZMAT incidents.
- Understand the principles of decontamination and providing care during a HAZMAT incident.

TOPIC: INTRODUCTION

Time: 5 minutes

Instructor's Note: Let participants provide responses, guiding them to important areas associated with emergencies involving hazardous materials (HAZMATs), such as identifying the substance as hazardous and following the incident plan, which includes ensuring scene safety and the use of personal protective equipment (PPE).
 Tell participants: "As EMRs, you must be able to quickly identify situations involving chemicals or other harmful or toxic substances and activate specially trained personnel to deal with them." Emphasize that a HAZMAT incident is an everyday concern, not just one
that involves train or truck crashes. Hazardous materials are found in homes, schools, industry and various public places as well.

TOPIC: HAZARDOUS MATERIALS

Time: 10 minutes

DVD	 Show the video segment, "Hazardous Materials Emergencies" (1:15). Answer participants' questions about the video segment.
KEY POINTS Course Presentation Slides 604–607	 A hazardous material is any chemical substance or material that can pose a threat or risk to life, health, safety and property if not properly handled or contained. Federal law requires that placards, or signs, be placed on any vehicles that contain specific quantities of hazardous materials. Manufacturers and those associated with the production and distribution of these materials are required to display the appropriate placard. Information about hazardous materials can be obtained from various sources including: The <i>Emergency Response Guidebook</i>. The Chemical Transportation Emergency Center (CHEMTREC) hotline (800-262-8200). CAMEO[®] online library of data sheets. Safety Data Sheets (SDSs). Resources from the National Institute for Occupational Safety and Health (NIOSH).
ACTIVITY OPTION A Time: 5 minutes	 Ask participants whether anyone has been involved in a situation that involved hazardous materials. Have those who have been involved share their experiences with the rest of the class about what it was like and what was done. Instructor's Note: Responses will vary based on the participants' experiences and the hazardous material involved.
ACTIVITY OPTION B	 Using their textbooks, ask participants to describe why they would use the <i>Emergency Response Guidebook</i> and what information it provides. Ask participants to identify the type of materials on the four placards on Slide 4.

	 Instructor's Note: Responses should include: The Emergency Response Guidebook identifies hazardous materials and the appropriate care for those exposed to them. The guidebook assists responders in making initial decisions upon arriving at the scene of a HAZMAT incident. The placards include the following: Top row, from the left to right: Explosive Flammable Bottom row, from left to right: Corrosive Radioactive
HAZMAT INC	
KEY POINTS	 A HAZMAT incident is any situation that deals with the release of hazardous material. When dealing with a HAZMAT incident, you work within a structured system that provides guidance in managing this type of scene. Indications of the presence of hazardous materials include: Placards. Spilled, spattered, smoking, burning or boiling materials. Unusual odors. Vapor clouds. Containers that are leaking (with possible frost near the leak), in deteriorating condition or otherwise are atypical. Once a HAZMAT incident has been identified and you are in a safe position, you should try to identify the hazardous substances and seriousness of the incident. Although the HAZMAT team ultimately is responsible for identifying the substance, in your role as an EMR, you can provide the initial identification from labels on the containers or placard information on the vehicle.

TOPIC: SCENE SAFETY AND PERSONAL PROTECTIVE EQUIPMENT

 KEY POINTS You should stay away from a HAZMAT scene unless you are properly trained and have the proper equipment. If radiation is suspected, you should immediately don a positive-pressure self-contained breathing apparatus (SCBA) and protective
Course Presentation Slide 608 Clothing, sealing off all openings with duct tape and wearing double gloves and two pairs of paper shoe covers under heavy rubber boots. Three safety zones are established to prevent the perimeter of the HAZMAT incident from expanding: Hot zone (exclusion zone): Area where the most danger exists Warm zone (contamination reduction zone): Area immediately outside of the hot zone Cold zone (support zone): Outer perimeter; all contaminated PPE and equipment are removed before entering this zone

TOPIC: CONTAMINATION AND DECONTAMINATION

KEY POINTS Course Presentation Slides 609–611	 There are several routes of possible exposure and contamination including topical, respiratory, gastrointestinal or parenteral. Decontamination methods include gross, dilution, absorption, neutralization and isolation/disposal. Establishing a clear perimeter between zones is critical in preventing the spread of contamination. When arriving at the scene, you should park upwind and uphill from the scene at a safe distance. Keep bystanders and any others away from the scene. Isolate the scene and establish hot, warm and cold zones, keeping people out of areas accordingly. Determine the number of patients involved in the incident and evaluate the need for additional resources. Follow safety practices that minimize your exposure and that of other people at the scene. When assessing and treating a patient in a HAZMAT incident, concentrate on the life-threatening signs and symptoms as opposed to strictly dealing with the contamination and exposure itself. The patient may need to be decontaminated prior to transport to a receiving facility. Any equipment or PPE used at the scene may need decontamination as well.
ACTIVITY	 Using the following scenario, ask participants to identify which method of decontamination would be most appropriate to use: You are assisting at a HAZMAT incident involving an explosion in a chemical plant. Several of the employees were exposed when the chemicals sprayed into the air and onto themselves and their clothing. Hot, warm and cold zones have been set up. Instructor's Note: Responses should include: Gross decontamination of the individuals with soap and copious amounts of water would be appropriate when they enter the warm zone; any contaminated clothing or other items would be left in the hot zone. Refer to the SDS if they are available for appropriate decontamination methods. Isolation/disposal would be appropriate for any contaminated materials or equipment used. Absorption and neutralization would be inappropriate methods for these individuals; they would be more appropriate for use on the chemical material.

WRAP-UP	Time: 5 minutes
ACTIVITY Course Presentation Slide 612	 Review the closing scenario: Based on what you see, you recognize the scene as a HAZMAT incident. Ask participants: "What questions should you ask yourself immediately?" "What initial actions should you take and why?"
	 Instructor's Note: Responses should include: Questions related to the identity of the hazardous substance, where it is coming from, the condition of the container, weather conditions (especially wind direction), number of patients involved; additional questions such as: What has been done? What is being done? What actions need to be taken next? Actions such as initiating or assisting with a HAZMAT incident plan, helping to establish safe zones and assisting with care. If not specially trained, you would stay away from the area and protect yourself.
KEY POINTS	 HAZMAT incidents are always a possibility. Planning for HAZMAT incidents is essential for an effective response. You must know how to quickly identify such situations and activate specially trained personnel to deal with the situation. There are several resources available to assist you in identifying hazardous materials. Your priorities are to protect the safety of the responders and patients at the scene by providing care and assisting with decontamination.
ASSIGNMENT FOR THE NEXT LESSON	 Read Chapter 30, Incident Command and Multiple-Casualty Incidents.
INSTRUCTOR PREPARATION	 Review Chapter 30, Incident Command and Multiple-Casualty Incidents. Review the video segment, "Incident Command and Multiple-Casualty Incidents" (2:16). Obtain any necessary equipment and supplies for Lesson 45.



INCIDENT COMMAND AND MULTIPLE-CASUALTY INCIDENTS

Lesson Length: 60 minutes

MATERIALS, EQUIPMENT AND SUPPLIES

- *Emergency Medical Response* textbook
- Course Presentation Slides 613–626
- LCD projector, screen and computer
- Emergency Medical Response DVD
- DVD player and monitor
- Triage tags (optional)

LESSON OBJECTIVES

Knowledge

After completing this lesson, participants will be able to:

- Describe the purpose of the National Response Framework (NRF).
- Describe the purpose and functional positions of the incident command system (ICS).
- Explain the role of the emergency medical responder (EMR) in the ICS.
- Define multiple-casualty incidents.
- Explain the principles of triage.
- Conduct a triage assessment.
- Understand different triage systems and pediatric variations.
- Understand the stressors associated with multiple-casualty incidents (MCIs).

TOPIC: INTRODUCTION

Time: 5 minutes

ACTIVITY

Review the opening scenario:

A school bus carrying 30 students is involved in a collision and is severely damaged near the front of the bus. The students are scared, and some are injured. People are starting to crowd around the area, and the local fire department already is on scene. You arrive as an EMR on scene.



Ask participants: "What should you do?"



Instructor's Note: Let participants provide responses, guiding them to important areas associated with incident command and multiple casualties, including determining who is in charge and how an EMR functions as part of the incident command system (ICS).

	Tell participants: "As EMRs, you are likely to be required to assist with an emergency with multiple patients, and to do so, you need a plan of action to allow you to rapidly determine what additional resources are needed and how best to manage them."
	 Emphasize that in situations involving multiple patients, the management of an appropriate initial response can eliminate potential problems for arriving personnel and possibly save the lives of several injured people.

TOPIC: INCIDENT MANAGEMENT SYSTEMS

Time: 20 minutes

DVD	Show the video segment, "Incident Command and Multiple-Casualty Incidents" (2:16).
	Answer participants' questions about the video segment.
KEY POINTS Course Presentation Slides 615-617	 The National Incident Management System (NIMS) provides a systematic, proactive approach to guide governments, nongovernmental organizations and the private sector in responding to the effects of incidents. The National Response Framework (NRF) is a guide to how an all-hazards response is conducted in the United States. It describes specific authorities and best practices for managing incidents. NIMS provides the template for the management of incidents, whereas the NRF provides the structure and mechanisms for national-level policy for incident management. The incident command system (ICS) is a management system that organizes who is responsible for overall direction, the roles of other participants and the resources required. ICS originally was developed to help manage fighting forest fires but was transformed into an all-hazards incident management system that is especially effective at handling emergencies with multiple patients. It is comparable to an organization of responders working together for a common goal. The incident commander is responsible for establishing the incident objectives and managing resources and then supervising the use of these resources.
EMS ROLES	IN THE ICS
ACTIVITY	Ask participants to break up into small groups. Using their textbooks, have the
OPTION A	groups identify the roles of the EMR in the ICS.

	The transportation officer arranges for ambulances or other transport vehicles
	 while tracking priority, identity and destination of all injured or ill people leaving the scene. The staging officer releases and distributes resources as needed to the incident and works to avoid transportation gridlock. The safety officer maintains scene safety by identifying potential dangers and taking action to prevent them from causing injury to all involved.
ACTIVITY OPTION B	Divide the participants into small groups. Ask each group to compare and contrast the roles and functions of the EMR when they are the first on the scene with the roles and functions when they are <i>not</i> the first on the scene.
Time: 10 minutes	 Instructor's Note: Responses should include: As first on the scene, acting as incident commander: Identifying the scene as a multiple-casualty incident (MCI) Assessing the scene's safety to determine if any action must be taken to secure the scene to prevent further injury Accounting for the number of patients and determining if anyone needs extrication Determining the number of ambulances required and indicating the number of functional positions and extra personnel required Ensuring access to areas to stage resources and making note of any situations that may affect the scene Identifying yourself as the incident commander Relaying all important and pertinent information verbally to the person relieving you If not the first on the scene, fitting in wherever needed: Identifying yourself to the incident commander and reporting to the staging officer Going to the task area where you are most needed

TOPIC: MULTIPLE-CASUALTY INCIDENTS

ACTIVITY	 Ask participants to identify examples of MCIs.
Course Presentation Slide 618	Instructor's Note: Responses may vary but could include crashes involving motor vehicles, trucks or other transportation vehicles (e.g., airplanes); explosions; fires; natural disasters, such as floods, earthquakes, tornadoes and hurricanes; and structure collapses.
KEY POINTS	 An MCI is an incident that generates more patients than can be managed with available resources using routine procedures. It requires a plan to acquire and manage additional personnel, equipment and supplies. MCIs can strain the resources of a local community. In an MCI, you must modify your assessment skills and technique for checking injured or ill people.

TOPIC: TRIAGE

ACTIVITY	 Ask participants to define the term "triage."
Course Presentation	Instructor's Note: Responses should address areas related to "sorting" or categorizing patients based on their injuries.
Slides 619–624	
KEY POINTS	 Triage refers to a process in which you identify the patients who require urgent care in an MCI. A triage officer (assigned by the incident commander) determines the requirements for additional resources, performs triage of all patients and assigns personnel and equipment to the highest-priority patients. Primary triage is used on scene to rapidly categorize the condition of the patients and includes noting the number and location of the patients and what transportation is needed. A secondary triage often is performed after patients are moved to the treatment area or at a funnel point just before entering the treatment area. Each patient is triaged and identified by a triage tag or tape. Although tagging systems may vary, the colors green, red, yellow and black commonly are used.
THE CTART OV	systems, if available. Alternatively, refer participants to the figures in Chapter 30, Incident Command and Multiple-Casualty Incidents, for examples.
THE START SYS	
KEY POINTS	 The START system is a simple way to quickly assess and prioritize injured or ill people and requires checking only three items: Breathing Circulation Level of consciousness (LOC) From this assessment, patients are classified into one of four levels based on the severity of their injury or illness and the need for care. Some advanced triage systems use a fifth category.
ACTIVITY	 Using a prepared triage kit, if available, or construction paper squares in green, yellow, red, white and black to simulate triage tags, ask for three or four participants to act as EMRs. Assign the remaining participants varying injuries, conditions or signs and symptoms that patients in an MCI might be experiencing. Have the participants acting as EMRs assign color swatches according to the conditions found.

	 Instructor's Note: Participants acting as EMRs should identify the "patient" with the following: Ambulatory patients (walking wounded) should be given a green tag. Assess whether the patient is able to move on their own to a designated area. Immediate care patients should be given a red tag. Assess whether the patient needs immediate care and transport to a medical facility, beginning the assessment by checking breathing, by opening the airway and determining the respiratory rate. Assess whether the patient has a respiratory rate greater than 30 breaths per minute, has severe bleeding that needs direct pressure, is unconscious and responds only to painful stimuli or inappropriately to verbal stimuli. Delayed care patients should be given a yellow tag. Assess whether the patient has severe injuries but a delay in treatment will not reduce their chance of survival. Also, assess whether the patient is alert and responds appropriately to verbal stimuli. Deceased/non-salvageable/expectant patients should be given a tag color of black. Assess whether the patient is obviously dead or has mortal injuries, has no respirations and does not begin breathing independently even with the airway open. Hold patients should be given a white tag. Assess whether the patient with minor injuries requires a physician's care or if the patient may obtain basic first aid care at home or elsewhere.
	IODS OF TRIAGE
KEY POINTS	 The Sort-Assess-Lifesaving Interventions-Treatment and/or Transport (SALT) Mass Casualty Triage is another method of triage. Step 1 sorts patients into three priorities: Priority 1: still/obvious life threat Priority 2: waving/purposeful movement Priority 3: walking Step 2 involves primary assessments and limited, rapid lifesaving interventions (LSIs), which then lead to assigning the patient into one of five categories:
	 Immediate Expectant Delayed Minimal Dead An MCI involving children is handled differently than one involving
	adults. When the patient appears to be a child (regardless of chronological
	 age), the JumpSTART triage method is used. With JumpSTART triage you would assess whether the child is ambulatory, the respiratory status, whether there is any major bleeding and the mental status. It is not used for infants younger than 12 months.

ACTIVITY	 Using the following scenario, ask participants to identify the appropriate assessment method to use and which triage level they would assign: You are assisting with triage at the scene of a multi-vehicle collision involving several automobiles and a tractor trailer. One of the patients, a 35-year-old woman, is alert and responsive with a small cut on her forehead and forearm
	and is complaining of a headache. An 8-year-old child has a fractured leg with the bone protruding through the skin with significant bleeding. A third victim, a 65-year-old male, is not breathing, even after attempting to open and clear his airway.
	 Instructor's Note: Responses should include: Use the START system for the two adult patients and the JumpSTART method for the 8-year-old.
	Classify the patients as follows: the 35-year-old woman is most likely ambulatory (walking wounded) and should be tagged green; the 8-year- old child is immediate (due to the bleeding) and should be tagged red; the 65-year-old man is deceased/non-salvageable and should be tagged black.

TOPIC: STRESS AT AN MCI

Time: 5 minutes

WRAP-UP

ACTIVITY Course Presentation Slide 626	 Review the closing scenario: A number of students from the bus are yelling at you to help them, and one of the firefighters asks you to come over and check the coach, whose pain in his abdomen and chest seems to be getting worse. Ask participants: "What should you do?"
	 Instructor's Note: Responses should include: After arriving on the scene, you identify yourself as an EMR to the incident commander and are assigned to assist in assessing the patients and determining the severity of the injuries. Depending on the actual injuries, you would most likely triage the coach as needing immediate care using a red tag color due to the increase in abdominal and chest pain. You might triage him as delayed care with a yellow tag if his injuries are severe but a delay in treatment will not reduce his chance of survival.

KEY POINTS	 To assist with an emergency involving multiple people, you need a plan of action so that you can rapidly determine what additional resources are needed and how best to use them. If you are the first to arrive on the scene, you may find yourself acting as incident commander, being responsible for identifying the situation as an MCI and assessing the scene's safety. If you are not the first on the scene, your role is to fit into the team wherever you are assigned. The two most important issues associated with an MCI are assessment and communication. In an MCI, you must be able to provide care to as many patients as possible, so you must focus on those who can be saved or helped. Communication is a vital link in the smooth running of an MCI. If you find yourself in a situation where communication is not ideal, remember that your first priority is your patients and the care you are there to provide. Do not let the frustration over difficulties with communication affect your work. Communication with patients and their loved ones will help keep them from panicking and help them listen to instructions. Equally important is caring for yourself and being aware of the signs of stress.
ASSIGNMENT FOR THE NEXT LESSON	 Read Chapter 31, Response to Disasters and Terrorism. Read Enrichment: Preparing for a Public Health Disaster—Pandemic Flu (<i>optional</i>), page 692 and Enrichment: Personal Preparedness (<i>optional</i>), page 693.
INSTRUCTOR PREPARATION	 Review Chapter 31, Response to Disasters and Terrorism. Review Enrichment: Preparing for a Public Health Disaster—Pandemic Flu (<i>optional</i>), page 692 and Enrichment: Personal Preparedness (<i>optional</i>), page 693. Obtain any necessary equipment and supplies for Lesson 46.

RESPONSE TO DISASTERS AND TERRORISM

Lesson Length: 90 minutes (100 minutes with Enrichments)

MATERIALS, EQUIPMENT AND SUPPLIES

- Emergency Medical Response textbook
- Course Presentation Slides 627–647
- LCD projector, screen and computer
- Nerve agent antidote training injectors (e.g., DuoDote[™]) (optional)

LESSON OBJECTIVES

Knowledge

After completing this lesson, participants will be able to:

- Have a basic understanding of emergency medical services (EMS) operations during terrorist, public health, weapons of mass destruction (WMD) and disaster emergencies.
- Describe the National Incident Management System (NIMS) and the National Response Framework (NRF).
- Discuss basic elements of preparation and planning for disaster and chemical, biological, radiological/nuclear and explosive (CBRNE)/WMD response.
- Describe general steps of disaster response.
- Describe general steps of a CBRNE/WMD response.
- List different types of WMD.
- Describe the roles of emergency medical responders (EMRs) during a natural, human-caused or biological disaster.
- Describe how to provide emergency medical care during disaster or CBRNE/WMD response.
- Identify the basic equipment needed by EMRs for a CBRNE/WMD response.
- List the steps to provide self-care and peer care in response to nerve agent poisoning.

TOPIC: INTRODUCTION

Time: 5 minutes



Review the opening scenario:

You are an emergency medical responder dispatched to the scene of an explosion. On arrival you are staged with other emergency vehicles a safe distance away. You are told that police suspect that a building was targeted by an extremist group and it is thought there were no injuries from the blast.

○ "WI ○ "Hc	rticipants: nat should concern you at this time?" w would you respond?" nat should you consider when you size up the scene?"	
Ê	Instructor's Note: Let participants provide responses, guiding them to important areas associated with preparing for disasters and terrorist incidents (including WMD), such as the type of disease/agent (CBRNE), acting as the leader, assisting the leader or assuming another role (including triaging patients or preparing patients for evacuation), dealing with and responding to such an incident, determining scene safety and providing care.	
situat yourse	Tell participants: "To deal successfully with disaster and terrorism situations, it is crucial to carefully prepare, ensure the safety of yourself and others, and understand the nature of and appropriate response to disasters."	
violenc the civ	terrorism according to the FBI as the unlawful use of force and be against persons or property to intimidate or coerce a government, ilian population or any segment thereof, in furtherance of political or objectives.	
that dis fires ar or cont	d participants that not all disasters are caused by terrorists. Emphasize sasters can be natural, such as hurricanes, floods, earthquakes, wildland id tornadoes; the result of outbreaks of communicable diseases/pandemics amination of the food or water supply; or biological, resulting from naturally ng outbreaks.	

TOPIC: PREPARING FOR DISASTERS AND TERRORIST INCIDENTS

KEY POINTS Course Presentation Slide 630	 Preparedness for disasters and terrorist incidents involves many different agencies working together in a coordinated effort to meet a common goal. The Federal Emergency Management Agency (FEMA) is the federal agency responsible for coordinating the response to and recovery from disasters in the United States when the disaster is large enough to overwhelm local and state resources. FEMA developed and introduced the National Response Framework (NRF), which guides all organizations involved in disaster management on how to respond to disasters and emergencies.
	 management on how to respond to disasters and emergencies. The NRF identifies the National Disaster Medical System (NDMS) as the system to augment the nation's medical response capabilities.
	as the system to augment the nation's medical response capabilities.

TOPIC: NATIONAL INCIDENT MANAGEMENT SYSTEM

KEY POINTS Course Presentation Slides 631-634	 The National Incident Management System (NIMS), a comprehensive national framework for managing incidents, outlines the structures for response activities for command and management. It provides a consistent, nationwide response at all levels. Sixteen emergency support functions (ESFs) are contained within the structure of NIMS and act as mechanisms for grouping the functions most frequently used to provide emergency management support during emergency/disaster incidents and planned events. As EMRs, you typically are supported by ESF #8 (Public Health and Medical Services) but also may coordinate with ESFs #4 (Firefighting) and #9 (Search and Rescue). The American Red Cross is the primary agency for ESF #6 (Mass Care, Emergency Assistance, Housing and Human Services) and also acts as a support agency for ESFs #3 (Public Works and Engineering), #5 (Emergency Management), #8 (Public Health and Medical Services), #11 (Agriculture and Natural Resources), #14 (Long-Term Community Recovery) and #15 (External Affairs).
ACTIVITY OPTION A Time: 10 minutes	 Divide the participants into small groups. Using the textbook, have each group identify the areas associated with the core set of common concepts, principles, terminology and technologies of the NIMS. Instructor's Note: Areas should include: Incident command system (ICS). Multiagency coordination system (MACS). Unified command. Training. Identification and management of resources. Mutual aid and assistance. Situational awareness. Qualifications and certification. Collection, tracking and reporting of incident information. Crisis action planning. Exercises.
ACTIVITY OPTION B Time: 15 minutes	 Have participants break up into small groups. Assign each group several of the ESFs, being sure all topics are assigned. Using the textbook, have the groups create a chart listing the ESF and the activities involved with each. Then have each group share their information with the rest of the class. Instructor's Note: Responses should include: ESF #1—Transportation: Aviation/airspace management and control, transportation safety, restoration/recovery of transportation infrastructure, movement restrictions, and damage and impact assessment ESF #2—Communications: Coordination with telecommunications and information technology industries; restoration and repair of telecommunications infrastructure; protection, restoration and sustainment of national cyber and information technology resources; and oversight of communications within the federal incident management and response structures

ESF #3—Public Works and Engineering: Infrastructure protection and emergency repair, infrastructure restoration, engineering services and construction management, and emergency contracting support for life-saving and life-sustaining services, including water supplies
 ESF #4—Firefighting: Coordination of federal firefighting activities and support to wildland, rural and urban firefighting operations
 ESF #5—Emergency Management Information and Planning: Coordination of incident management and response efforts, issuance of mission assignments, resource and human capital, incident action planning and financial management
 ESF #6—Mass Care, Emergency Assistance, Housing and Human Services: Mass care, emergency assistance, disaster housing and human services
ESF #7—Logistics Management and Resource Support: Comprehensive, national incident logistics planning, management and sustainment capability and resource support (facility space, office equipment and supplies, contracting services, etc.)
 ESF #8—Public Health and Medical Services: Public health, medical, mental health services and mass fatality management
 ESF #9—Search and Rescue: Life-saving assistance and search and rescue operations
 ESF #10—Hazardous Materials Response: Hazardous materials (chemical, biological, radiological, etc.) response and environmental short- and long- term cleanup
ESF #11—Agriculture and Natural Resources: Nutrition assistance, animal and plant disease and pest response, food safety and security, natural and cultural resources and historic properties protection and restoration, and safety and well-being of household pets
 ESF #12—Energy: Energy infrastructure assessment, repair and restoration; energy industry utilities coordination; and energy forecast
 ESF #13—Public Safety and Security: Facility and resource security; security planning and technical resource assistance; public safety and security support; and support for access, traffic and crowd control
ESF #14—Long-Term Community Recovery: Social and economic community impact assessment; long-term community recovery assistance to states, local governments and the private sector; and analysis and review of mitigation program implementation
 ESF #15—External Affairs: Emergency public information and protective action guidance, media and community relations, congressional and international affairs, and tribal and insular affairs
ESF #16—Law Enforcement: Establishment of procedures for the command, control and coordination of all state and local law enforcement personnel and equipment to support impacted local law enforcement agencies

TOPIC: THE ROLE OF THE EMERGENCY MEDICAL RESPONDER

 KEY POINTS
 Types of disasters are varied but fall into three main categories: natural disasters, biological disasters and human-caused disasters (terrorist attacks, fire, hazardous material [HAZMAT] incidents and multiple-casualty incidents).
 If you are the first responder at the scene of a disaster, you may be called on to assume a leadership role.

	If someone else has assumed this role, you are responsible for assisting the leader or assuming another role, usually in triaging patients, providing medical care, providing patient reception at staging facilities or preparing patients for evacuation.
	In any kind of large-scale disaster, it is important to use an all-hazards approach, which means being prepared with the equipment and resources needed to respond to many different types of disasters.

TOPIC: WEAPONS OF MASS DESTRUCTION

Time: 25 minutes

ACTIVITY	 Ask participants for examples of what they would consider to be weapons of mass destruction.
Course Presentation Slides 637–641	Instructor's Note: Responses may vary but could include examples such as chemicals; biological agents, such as anthrax, botulism or smallpox; nuclear devices; and explosives.
KEY POINTS	 Weapons of mass destruction (WMD) are commonly classified by the acronym CBRNE: Chemical Biological Radiological/Nuclear Explosives This classification system is recognized internationally. Another system of classification that may be used is B NICE, which stands for biological, nuclear, incendiary, chemical and explosive.
ACTIVITY OPTION A	Divide the participants into small groups. Assign each group one or more WMD classifications, being sure all topics are assigned. Using the textbook, have the groups create a chart that lists the classification, the types of agents included in
	that classification, possible symptoms associated with the types of agents and appropriate care.
Time: 15 minutes	 Have each group share its information with the rest of the class.
	 Instructor's Note: Responses should include: Chemical agents: Five types including nerve agents, blister agents, blood agents, pulmonary agents and incapacitating agents: Nerve agents turn into a combination vapor/liquid when dispersed and are usually odorless or may have a fruity or fishy odor. Symptoms vary based on dose but include runny nose, watery eyes, twitching, pinpoint pupils, drooling, excessive sweating, weakness, drowsiness, change in heart rate and blood pressure, irritation to the eyes and respiratory tract, severe blistering with large doses and death immediately if inhaled or absorbed through the skin. Care priorities include decontamination, ventilation (exposure to fresh air), antidote administration, medications to prevent seizures and supportive therapy. Blister agents are called vesicants, which cause the skin and mucous membranes to form blisters on contact. Exposure leads to irritation of the eyes and respiratory tract, blisters similar to second-degree burns and possible systemic effects to the bone marrow and lining of the gastrointestinal tract. Care priorities are primarily supportive and include decontamination. No known antidotes or specific treatments are available.

- Blood agents, such as cyanide, disrupt cellular respiration, usually entering the body by ingestion, injection or inhalation. Effects lead to asphyxia and cyanosis (bluish discoloration of the skin). Cyanide can cause death within 5 to 8 minutes if exposure is severe. Care focuses on administering an antidote.
- Pulmonary agents, such as phosgene, cause lung injury when they contact mucous membranes, leading to irritation and damage to lung tissue. Signs and symptoms are severe illness, severe respiratory distress and possible death from pulmonary edema. Care priorities include removing the person from the agent and resuscitation. There is no antidote for phosgene.
- Incapacitating agents, such as Mace[®] (pepper spray) and tear gas, generally are not used by terrorists but may be used by law enforcement to control a violent crowd. Peripheral effects include pupil dilation, dry mouth and skin, and flushing. Systemic effects include disturbances of consciousness, delusions and hallucinations, impaired memory and poor judgment, disorientation and ataxia. Care priorities include monitoring the patient and preventing yourself from being exposed.

Biological weapons: Viruses, bacteria or other pathogens that cause illness, disease or death in people, animals or plants; classified into three groups or classes:

- Class A is the highest level of threat and includes anthrax, plague, smallpox, tularemia, viral hemorrhagic fevers and botulism.
- Class B is a moderate level of threat and includes brucellosis, Q fever, glanders, alphaviruses, food pathogens, water pathogens, Ricin toxin, staphylococcal enterotoxin B and epsilon toxin of Clostridium perfringens.
- Class C is the lowest level of threat and includes hantavirus, Nipah virus, yellow fever, multidrug-resistant tuberculosis and tickborne viruses, which have the potential to be engineered for mass dissemination and are easily spread.
- Signs and symptoms include unusual presentation of a disease and/ or transmission routes, unusual patterns of illness or death, or a sudden increase in nonspecific illnesses. Typically patients exhibit flu-like symptoms, such as fever, aches and fatigue.
- Care priorities include recognizing the agent, providing supportive care and possible isolation and use of personal protective equipment (PPE) if agent is considered contagious.
- Radiologic/nuclear agents: Damage due to air blast, heat, ionizing radiation, ground shock and secondary radiation:
 - Acute radiation syndrome follows a predictable pattern that unfolds over several days or weeks. Symptoms include nausea and vomiting, thermal burn-like lesions without documented heat exposure, tendency to bleed and hair loss. Delayed symptom clusters include headache, fatigue, weakness, partial and full-thickness skin damage, ulceration, anorexia, decreased white blood cells, bruising and infection.
 - Care priorities include treating life-threatening injuries, moving patients away from the hot zone (and staying within the controlled zone if contamination is suspected), exposing wounds and covering with sterile dressings, decontaminating open wounds and further decontamination.
- Explosives and incendiary weapons: Two major types—high-order explosives (TNT, C-4, Semtex, nitroglycerin, dynamite and ammonium nitrate fuel oil), which produce a defining supersonic over-pressurization shock wave; and low-order explosives (pipe bombs, gunpowder and pure petroleum-based bombs), which create a subsonic explosion:

	 Primary effects are due to impact of the over-pressurization wave on body surfaces, such as injuries to the lungs, gastrointestinal tract, eyes, head and middle ear; secondary effects are due to flying debris and bomb fragments; and tertiary effects are due to individuals being thrown by the blast wind. Care priorities include initiating rescues of severely injured and/or trapped patients, evacuating ambulatory patients, performing triage, treating life-threatening injuries and treating the site as a crime scene.
ACTIVITY OPTION B	 Have participants select a partner or assign partners. Using the textbook, ask each pair to select one classification for WMD. From this classification, have them choose two types of agents and identify the effects that these agents have on the body.
Time of 4.5 and incide of	Instructor's Note: Responses should include:
Time: 15 minutes	 Chemical agents: Easy dispersal into open environments with rapid effect on the body, often causing symptoms to appear immediately; five types, including nerve agents, blister agents, blood agents, pulmonary agents and incapacitating agents: Nerve agents turn into a combination vapor/liquid when dispersed and
	usually are odorless or may have a fruity or fishy odor. Symptoms vary based on dose but include runny nose, watery eyes, twitching, pinpoint pupils, drooling, excessive sweating, weakness, drowsiness, change in heart rate and blood pressure, irritation to the eyes and respiratory tract, severe blistering with large doses and death immediately if inhaled or absorbed through the skin. Care priorities include decontamination, ventilation (exposure to fresh air), antidote administration, medication to prevent seizures and supportive therapy.
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	 Blood agents, such as cyanide, disrupt cellular respiration usually entering the body by ingestion, injection or inhalation. Effects lead to asphyxia and cyanosis. Cyanide can cause death within 5 to 8 minutes if exposure is severe. Care focuses on administering an antidote.
	 Pulmonary agents, such as phosgene, cause lung injury when they contact mucous membranes, leading to irritation and damage to lung tissue. Signs and symptoms are severe illness, severe respiratory distress and possible death from pulmonary edema. Care priorities include removing the person from the agent and resuscitation. There is no antidote for phosgene.
	 Incapacitating agents, such as Mace[®] (pepper spray) and tear gas, generally are not used by terrorists but may be used by law enforcement to control a violent crowd. Peripheral effects include pupil dilation, dry mouth and skin, and flushing. Systemic effects include disturbances of consciousness, delusions and hallucinations, impaired memory and poor judgment, disorientation and ataxia. Care priorities include monitoring the patient and preventing yourself from being exposed.

•	 Biological weapons: Viruses, bacteria or other pathogens that cause illness, disease or death in people, animals or plants; classified into three groups as Class A, B or C: Class A biological agent/diseases (highest level of threat) include anthrax,
	 plague, smallpox, tularemia, viral hemorrhagic fevers and botulism. Class B biological agents/diseases (moderate level of threat) include brucellosis, Q fever, glanders, alphaviruses, food pathogens, water pathogens, Ricin toxin, staphylococcal enterotoxin B and epsilon toxin of Clostridium perfringens.
	 Class C biological agents/diseases include hantavirus, Nipah virus, yellow fever, multidrug-resistant tuberculosis and tickborne viruses. They have the potential to be engineered for mass dissemination and are easily spread.
	 Signs and symptoms include unusual presentation of a disease and/ or transmission routes, unusual patterns of illness or death, or a sudden increase in nonspecific illnesses. Typically patients exhibit flu-like symptoms, such as fever, aches and fatigue.
	• Care priorities include recognizing the agent, providing supportive care and possible isolation and use of PPE if agent is considered contagious.
	Radiologic/nuclear agents: Damage due to air blast, heat, ionizing radiation, ground shock and secondary radiation:
	 Acute radiation syndrome follows a predictable pattern that unfolds over several days or weeks. Symptoms include nausea and vomiting, thermal burn-like lesions without documented heat exposure, tendency to bleed and hair loss. Delayed symptom clusters include headache, fatigue, weakness, partial and full thickness skin damage, ulceration, anorexia, decreased white blood cells, bruising and infection.
	 Care priorities include treating life-threatening injuries, moving patients away from the hot zone (and staying within the controlled zone if contamination is suspected), exposing wounds and covering with sterile dressings, decontaminating open wounds and further decontamination.
	Explosives and incendiary weapons: Two major types—high-order explosives (TNT, C-4, Semtex, nitroglycerin, dynamite and ammonium nitrate fuel oil), which produce a defining supersonic over-pressurization shock wave; and low-order explosives (pipe bombs, gunpowder and pure petroleum-based bombs), which create a subsonic explosion:
	 Primary effects are due to impact of the over-pressurization wave on body surfaces, such as injuries to the lungs, gastrointestinal tract, eyes, head and middle ear; secondary effects are due to flying debris and bomb fragments; and tertiary effects are due to individuals being thrown by the blast wind.
	 Care priorities include initiating rescues of severely injured and/or trapped patients, evacuating ambulatory patients, performing triage, treating life-threatening injuries and treating the site as a crime scene.

TOPIC: RESPONSE TO A CBRNE/WMD INCIDENT

KEY POINTS Course Presentation Slide 642	 Planning for a WMD incident involves several aspects of preparation, including medical direction, personal preparation, equipment, transportation and communication. Medical direction is provided on a massive scale during a WMD incident. All levels of support services need to define their respective roles and responsibilities at the scene and be managed by the ICS. Planning must include an assessment of hazards, exposure potential, respiratory protection needs, entry conditions, exit routes and decontamination strategies. 	
EQUIPMENT	AND SUPPLIES	
ACTIVITY	 Ask participants to identify examples of the different types of equipment and supplies that may be required for different types of WMD. 	
	Instructor's Note: Responses may vary but should include drugs (antidotes) and ventilators for nerve agents; specialized PPE, such as positive-pressure self-contained breathing apparatus (SCBA) or hazardous material (HAZMAT) suits for chemical agents; heavy rescue equipment; search and rescue units; devices for electronic detection; and trained search dogs for explosions.	
ARRIVAL ON	THE SCENE	
KEY POINTS	 When arriving first on the scene, your first priorities are to size up the scene to measure the scope of the disaster and collect information to identify the appropriate resources. When approaching the scene: Consider the time since the incident occurred, your distance from it and any necessary shielding. Provide an initial on-scene report to dispatch, describing the incident, the need for specialized resources, initial actions taken, the number of injured patients, and the nature and quantity of additional resources required. Look for outward signs and characteristics of terrorist incidents and attempt to identify the weapon used. 	
	 Determine the number of people involved and implement local protocols for multiple-casualty incidents. 	
SCENE SAFETY		
KEY POINTS	 Approach the scene from upwind and uphill if a chemical, biological or nuclear weapon is suspected. Avoid confined spaces where chemical or biological agents may be trapped. Ensure your own safety by keeping in mind the possibility of secondary devices at the scene. Determine the proper PPE needed to enter the scene using an all-hazards safety approach. 	

PROVIDING (PROVIDING CARE	
	 Each scenario requires a different approach to treatment, potential for contamination and other considerations depending on the classification of the WMD. 	
	Written protocols address the signs and symptoms associated with each type of WMD and instruct on the recommended treatment.	
	You may find that the types of injuries among patients encountered are similar due to the effects of the incident.	
	You also may be faced with unique challenges, such as administering medications or caring for patients for longer times than you are used to doing, possibly witnessing their conditions worsening in front of you without being able to do anything to prevent their deaths.	
	The concept of the "greater good" applies to triage, meaning that you must treat everyone according to their injury or illness, including terrorists or criminals.	

Time: 15 minutes

TOPIC: PROVIDING SELF-CARE AND PEER CARE FOR NERVE AGENTS

KEY POINTS The initial effects of exposure to a nerve agent depend on the dose and route (inhalation via gas, absorption through skin or ingestion from liquids or food). • Exposure to a small droplet of liquid nerve agent on the skin may Course produce sweating, blanching and occasional muscle twitching at Presentation the site soon after exposures but possibly may be delayed for as Slides 643-644 long as 18 hours. • Symptoms of exposure to a large amount of liquid nerve agent occurs within 1 to 30 minutes and includes loss of consciousness, seizure activity, apnea and muscle flaccidity. Effects from nerve agent vapor begin within seconds to several minutes after exposure. • Exposure to a very low amount of vapor leads to miosis, which can last for 15 to 30 minutes after the patient is removed from the vapor. • Effects may continue to progress for a period of time but usually not for more than a few minutes after exposure stops. Ventilation is required when patients demonstrate obvious symptoms. Remove secretions, maintain an open airway and use artificial ventilation if necessary and possible. Atropine and pralidoxime chloride are antidotes for nerve agent toxicity. Decontamination is critical for skin exposure. If you or a peer show signs and symptoms that indicate the presence of nerve agent poisoning and if you are authorized to do so by medical direction, administer a nerve agent auto-injector kit.

ACTIVITY OPTION A	 Using the textbook and the following scenario, ask participants how they would respond: You and several other EMRs are providing care to patients at the scene involving exposure to a nerve agent. You observe a fellow EMR begin to sweat excessively and cough. He starts complaining of headache and nausea. You also notice a runny nose, watery eyes and pinpoint pupils. You suspect
	that he is exhibiting signs of nerve agent poisoning.
	 Instructor's Note: Responses should include: Decontamination and ventilation. Contact with medical direction to report findings and obtain authorization to administer a nerve agent auto-injector kit.
ACTIVITY OPTION B	 Have the participants select a partner or assign partners. Using nerve agent antidote training injectors, have each pair practice the steps involved in using a nerve agent auto-injector. Remind participants that since there is no needle on the trainer devices, they will need to simulate the last two steps.
Time: 15 minutes	 Instructor's Note: Responses should address the need for always following medical direction and the manufacturer's instructions for use of any nerve agent antidote auto-injector; participants should demonstrate the steps as follows: 1. Tear open the plastic pouch at any of the notches. 2. Remove the DuoDote[™] Auto-Injector from the pouch. 3. Place the DuoDote[™] Auto-Injector in your writing hand. 4. Firmly grasp the center of the DuoDote[™] Auto-Injector with the green tip (needle end) pointing down. Do not touch the green end. 5. Pull off the gray safety release. 6. Quickly and firmly push the green tip straight down (at a 90-degree angle) against the mid-outer thigh. The DuoDote[™] Auto-Injector trigger. 8. Remove the DuoDote[™] Auto-Injector from the thigh and look at the green tip. If the needle is not visible, the injection has not been made. Check to be sure the gray safety release has been removed, and repeat from Step 4. You must press hard enough to ensure that the injection has been made. 9. Push the needle against a hard surface to bend the needle back against the DuoDote[™] Auto-Injector. 10. Put the used DuoDote[™] Auto-Injector back into the plastic pouch. Keep the DuoDote[™] Auto-Injector with the patient.

WRAP-UP

Time: 5 minutes

ACTIVITY	Review the closing scenario:
Course Presentation Slide 645	 There is some question about the cause of the explosion but police strongly suspect that it was a terrorist act using a WMD, most likely a high-order explosive. While waiting at the staging area, you notice a large trash bag near a dumpster in close proximity to staged apparatus. Ask participants: "What other types of situations should you be alert for and how would you react upon their discovery?"

	 Instructor's Note: Responses could include: Concerns such as the type of explosive used, the possibility of other explosions, scene safety and location related to possible vapors (from the type of explosive used) and debris being transported by the wind. Responses such as reporting to the incident commander, assisting with and working cooperatively with other responders already on the scene,
	 ensuring that appropriate supplies and equipment are available and the scene is safe. Other types of situations to be alert for such as the trash bag nearby and what it contains, reporting your finding to the incident commander and taking measures to ensure the safety of everyone at the staging area.
KEY POINTS	 Types of disasters include natural disasters, terrorist attacks, human-caused disasters or biological disasters. FEMA coordinates the response to and recovery from disasters in the United States when the disaster is large enough to overwhelm local and state resources. NIMS provides a consistent, nationwide response at all levels. Regardless of the type of disaster, an all-hazards approach is used. WMD can be divided into five major categories, collectively referred to as CBRNE. Each WMD is unique with regard to the damage it can inflict, the associated hazards, the signs and symptoms of exposure and the specific care required for helping people involved in the disaster. In any wide-scale disaster, it is critical to be prepared with sufficient and appropriately trained personnel, equipment and supplies, communication systems and the appropriate protocols.
ASSIGNMENT FOR THE NEXT LESSON	 Read Chapter 32, Special Operations.
INSTRUCTOR PREPARATION	 Review Chapter 32, Special Operations. Obtain any necessary equipment and supplies for Lesson 47.

ENRICHMENT: PREPARING FOR A PUBLIC HEALTH DISASTER— PANDEMIC FLU

lime: 5 minutes

KEY POINTS	Pandemic influenza (pandemic flu) is a virulent human influenza A
	virus that causes a global outbreak of serious illness in humans.
	The 9-1-1 system and EMS personnel are well integrated into the nation's pandemic influenza planning.
Course Presentation	The National Strategy for Pandemic Influenza is built on three pillars:
Slide 646	 Preparedness and communication
	 Surveillance and detection
	 Response and containment

EMS planning for pandemic influenza is carried out in the context of the phases of pandemic influenza:
 Early detection
 Treatment with antiviral medications
 Use of infection control measures to prevent transmission
• Vaccination
Interventions to help contain the spread of the virus include:
 Treatment with influenza antiviral medications and isolation of confirmed or probable cases.
 Voluntary home quarantine of household members (with confirmed or probable cases).
 Student dismissal from school and school-based activities and possible closure of child-care programs.
 Social distancing measures to reduce contact between adults in the community and workplace.

ENRICHMENT: PERSONAL PREPAREDNESS

Time: 5 minutes

KEY POINTS	Responders need to understand how to prepare on an individual basis for disasters.
	Three basic steps needed to prepare to respond to a disaster or life- threatening emergency are:
Course Presentation Slide 647	 Get a kit: Obtain a minimum of 3 days' worth of items, such as water, food, medications, radio, first aid kit, personal documents, contact information, map, money, clothing, sanitary supplies, pet supplies and tools.
	 Make a plan: Turn off utilities, use life-saving tools (e.g., fire extinguishers), practice evacuations, identify alternative routes, choose an out-of-area contact to call and identify two predetermined meeting places.
	 Be informed: Identify ways to get information during a disaster or emergency and learn about your region and possible disasters that may occur and learn first aid.



SPECIAL OPERATIONS

Lesson Length: 75 minutes

MATERIALS, EQUIPMENT AND SUPPLIES

- Emergency Medical Response textbook
- Course Presentation Slides 648–661
- LCD projector, screen and computer
- Throwing equipment, such as the following (one for each group; *optional*):
 - Ring buoy
 - Throw bag
 - Life jacket
 - Water jug with line attached
 - Heaving line
- Targets for throwing assist activity (optional)



Instructor's Note: Set up an area with two targets, one approximately 5 feet away and the other approximately 15 feet away, with a simulated shoreline. Area should be free from hazards and allow objects to be thrown for practice.

LESSON OBJECTIVES

Knowledge

After completing this lesson, participants will be able to:

- Have a basic understanding of specialized operations units.
- Recognize the signs of distressed swimmers or drowning victims.
- Be familiar with nonswimming rescues and assists.
- Have a basic understanding of special rescue situations, such as ice rescues, hazardous terrain, confined space rescues, cave-ins, crime scenes, fireground operations and special events.

TOPIC: INTRODUCTION

ACTIVITY Course Presentation Slide 649	 Review the opening scenario: You are the emergency medical responder (EMR) at the scene of a construction site cave-in. On arrival, you find a man who was working in an open trench that has collapsed around him to mid-chest level. Ask participants: "How would you respond?" "What are your immediate concerns?" Instructor's Note: Let participants provide responses, guiding them to important areas associated with special rescue situations, such as cave-ins, including injuries sustained during the actual cave-in, the effect of the soil surrounding the patient, the need for calling specialized rescue and remaining clear of the trench and the area immediately around it.
	Tell participants: "You may be involved in rescues where you find yourself in some precarious and dangerous situations; these situations will require special operations units to assist in the rescue efforts."

TOPIC: SPECIAL OPERATIONS UNITS

Time: 10 minutes

KEY POINTS Course Presentation Slide 650	 Special operations units may include: Tactical Emergency Medical Services (EMS) Unit. Hazardous Materials (HAZMAT) EMS Response Unit. Fire Rehabilitation Unit. Disaster/Multiple-Casualty Incident (MCI) Response Unit. Search and Rescue (SAR) Unit. Specialized Vehicle Response Unit.
ACTIVITY	 Divide the participants into small groups. Assign each group one or more special operations units, being sure all topics are assigned. Using the textbook, have the groups identify situations that would require the involvement of their assigned special operations units. Have each group share its information with the rest of the class.
	 Instructor's Note: Responses should include: The Tactical EMS Unit: For situations such as hostage barricades, active shooters, high-risk warrants and other situations requiring a tactical response team The HAZMAT EMS Response Unit: For situations involving weapons of mass destruction (WMD) and HAZMAT incidents, to provide EMS care to patients in the warm zone, the area immediately outside of the hot zone (the area in which the most danger exists) The Fire Rehabilitation Unit: To provide "rest, rehydration, nourishment and medical evaluation to members (firefighters) who are involved in extended or extreme incident scene operations" (Source: NFPA 1584) The Disaster/MCI Response Unit: To support responders at MCIs, major incidents and those responding to other disasters with basic MCI equipment, such as caches of backboards, splinting equipment, wound care supplies and IV administration supplies; also provides services for managing large-scale or special rescue situations The SAR Unit: To support search and rescue operations involving all-terrain response vehicles required for difficult-to-reach or hazardous terrains

TOPIC: WATER RESCUE

Time: 25 minutes

KEY POINTS Course Presentation Slides 651–653	 A drowning is an event in which a victim experiences respiratory impairment due to submersion in water. Drowning may or may not result in death. Drowning is the fifth most common cause of death from unintentional injury in the United States, but rises to second among those 1 to 14 years of age. Children with seizure disorders are 13 times more likely to drown than individuals who do not have seizure disorders. A victim may have never intended on being in the water. Younger children can drown at any moment, even in as little as an inch of water. Young children commonly drown in home pools. Most people who are drowning spend their energy trying to keep their mouth and nose above the water and cannot or do not call for help. Recognizing someone who seems to be having trouble in the water may help save their life. There are three types of water-related victims: a distressed swimmer, a drowning victim who is active and a drowning victim who is passive. Only those trained in swimming rescues should enter the water to assist with drowning emergencies. You should look for a lifeguard before attempting a rescue, have the appropriate safety equipment, call for help immediately if you do not have the equipment.
ACTIVITY OPTION A Time: 5 minutes	 Using the following scenario, ask participants how they would respond: You are assigned to a local waterfront as part of the EMR team because you have received training in swimming rescues. You are stationed near a lake and notice that a young teenage swimmer has been treading water for the past several minutes and then begins to move her arms wildly. Instructor's Note: Responses should include: Identifying the teenager as a distressed swimmer. Looking for a lifeguard before attempting the rescue. Ensuring that you have the necessary equipment for your safety and the teenager's safety. Letting the teenager know that help is on the way and getting out to the teenager.
ACTIVITY OPTION B	 Have participants break up into small groups. Using the textbook, ask the groups to compare and contrast the behaviors related to breathing, arm and leg action, body position and locomotion that are seen with a distressed swimmer, a drowning victim who is active and a drowning victim who is passive.

	 Instructor's Note: Responses should include: Distressed swimmer: Able to breathe and possibly call for help; floating, sculling or treading water and possibly waving for help; positioned horizontally, vertically or diagonally making little or no forward progress with decreasing ability to support themselves Drowning victim—active: Could be at the surface or sinking; vertical, leaning back slightly; struggling to breathe and unable to call for help; arms at the side, alternately moving up and pressing down with no supporting kick; vertical body position with no locomotion Drowning victim—passive: Body is limp or may have convulsive-like movements; no breathing; no leg or arm action; horizontal or vertical with face up, down or possibly submerged; no locomotion
NONSWIMMI	NG RESCUES AND ASSISTS
KEY POINTS	 Nonswimming rescues and assists include reaching assists, throwing assists and wading assists. Reaching assists involve reaching out to the person with an object such as a pole, oar or paddle, tree branch, shirt, belt or towel that will extend your reach. Throwing assists are used when the person is beyond your reach. A floating object with a line attached is thrown out to the person. Once the person grabs it, they are pulled to safety. Wading assists are used if the water is safe and shallow enough that you can wade in to reach the person. The distance of the victim and the conditions of the water dictate which method is best.
ACTIVITY OPTION A Time: 5 minutes	 Using the same scenario above, ask participants which type of assist would be most appropriate to use and why: You are assigned to a local waterfront as part of the EMR team because you have received training in swimming rescues. You are stationed near a lake and notice that a young teenage swimmer has been treading water for the past several minutes and then begins to move her arms wildly. Instructor's Note: Responses will vary but should include: Using the reaching assist from the pier or shoreline if the teenager is close enough or using the throwing assist if the teenager is further out in the lake beyond reach.
ACTIVITY OPTION B Time: 10 minutes	 If space allows, divide the participants into small groups and provide them with equipment for practicing a throwing assist. Explain to participants that they will practice throwing assists on dry land. Explain that to perform a throwing assist, they should throw the victim a buoyant object tied to a line. The victim can then grasp the object and be pulled to safety. Demonstrate a throwing assist. Line the groups up about 5 and 15 feet from the preplaced targets. Let participants try to toss the throwing assist equipment at the target. Accuracy is rated by tossing the equipment over the object so that the rope strikes the target.

TOPIC: ICE RESCUE

Time: 5 minutes

KEY POINTS Course Presentation Slide 654	 In icy water, a patient's body temperature begins to drop almost as soon as the person hits the water and swallowing water accelerates this cooling. The metabolic rate drops as the body's core temperature drops. Call for an ice rescue team immediately if a person falls through the ice.
	Never go onto the ice to attempt a rescue if a person falls through the ice.
	Reaching and throwing assists should be used in the case of a drowning person.
	 Provide care for hypothermia if you are able to pull the person from the water.

TOPIC: HAZARDOUS TERRAIN

Time: 5 minutes

KEY POINTS	 Rescue in hazardous terrain poses several challenges. One of the challenges you may face is evacuating a patient from a dangerous area where the terrain is rough and difficult to maneuver over.
Course Presentation Slide 655	The position of the patient in relation to the terrain may be another factor; the more drastic the angle of terrain, the more risky the rescue.
	The most common equipment used for this type of rescue is the "litter," or portable stretcher.
	A rope system may be necessary for a high-angle rescue.
	It is your responsibility to assess the situation and call for the proper rescue team.

TOPIC: CONFINED SPACE

Time: 5 minutes

KEY POINTS Course Presentation Slide 656	 A confined space is any space at, above or below ground with limited access that is not intended for continuous human occupancy. Rescues in confined spaces usually result from falls, explosions, asphyxia, medical problems or machinery entrapment. Cave-ins from a trench are associated with particular risk. To prevent cave-ins, the Occupational Safety and Health Administration (OSHA) has rules about shoring or making a "trench box" in any trench deeper than 5 feet to prevent walls from giving way. A specialized rescue team is necessary for a cave-in.
	A specialized rescue team is necessary for a cave-in.
	No one should enter the trench or the area immediately around it because of the increased likelihood of a secondary cave-in.

TOPIC: CRIME SCENE

KEY POINTS Course Presentation Slides 657–658	 Law enforcement officers are in charge of a crime scene. Your responsibility is to keep in mind the importance of maintaining the integrity of the evidence that can be compromised or destroyed when you enter a crime scene. Four types of crime scene situations in which you may be involved include: Closed access to an unsecured crime scene (hazard still exists). Limited-access crime scene (critical evidence could be destroyed or compromised, and hazards still may be present). Open-access crime scene (evidence still needs to be collected, but personnel have access to the entire area). Cold crime scene (no evidential concerns or hazards are present).
ACTIVITY	 Using the following scenario, ask participants to describe what actions would be appropriate: You arrive at the scene of a convenience store robbery in which a store employee was shot in the leg. The suspect has been caught and is in police custody. You are to provide care to the store employee.
	 Instructor's Note: Responses should include: Taking precautions not to remove or disturb anything at the scene unless it is absolutely necessary to perform critical patient care. Documenting any situations in which you need to disturb the scene in the interest of patient care. Not cutting clothing through or near the bullet wound holes when removing clothing. Allowing bloody clothing to dry; not rolling clothes up in a ball or putting wet or bloody clothes in plastic bags. Handling clothing as little and as carefully as possible since powder flakes from gunshot wounds may be present and handling the clothing may compromise the validity of the results of powder-deposit examination. Preventing the patient's hands from contaminating the area or clothing (e.g., bagging the patient's hands) if the situation permits, and if required by local protocols. Minimizing the introduction of evidence into a crime scene; communicating with law enforcement concerning any items you left behind (such as medical supplies) and if you disturbed anything (such as moving furniture to access a patient). Yielding to the primary investigative agency on the scene.

TOPIC: OTHER SPECIAL SITUATIONS

Time: 10 minutes

	In fireground operations, only firefighters who are highly trained and use equipment that protects them against fire and smoke should approach a fire.
Course Presentation Slides 659–660	 If you are not trained to fight fires or lack the necessary equipment, follow these basic guidelines: Do not approach a burning vehicle. Never enter a burning or smoke-filled building. If you are in a building that is on fire, always check doors before opening them. If a door is hot to the touch, do not open it. Since smoke and fumes rise, stay close to the floor. Never use an elevator in a building that may be burning.

For special events, such as sporting events or concerts, you may be assigned or be on stand-by in case there is a need for emergency medical attention.
A special event EMS incident commander must be assigned at a special event to supervise the EMS team during the event.
 Special event emergency medical staff must be certified at basic life support (BLS) or advanced life support (ALS) levels.
The number of staffed, licensed ambulances or transport vehicles required depends on the number of spectators or participants.
Personnel must be available to care for special event spectators or participants within 10 minutes of notification of the need for emergency care.
EMS personnel must be currently certified at the ambulance attendant, EMR, emergency medical technician (EMT), advanced EMT paramedic or healthcare provider level.
A special event EMS system also must have on-site communication capabilities to ensure uniform access to patients in need of EMS care. Receiving facilities and ambulances providing emergency transportation also must be ensured.

WRAP-UP **Time: 5 minutes** ACTIVITY Review the closing scenario: You find that the patient is conscious but appears to be in respiratory distress from the compression of the soil surrounding him. Ask participants: Course Presentation • "What are your treatment priorities?" Slide 661 • "What kind of additional support will you need, and what are some special safety considerations you must consider in order to rescue this patient?" Instructor's Note: Responses should include: Treatment priorities such as: • Remaining at a safe distance from the cave-in and performing a scene size-up for possible dangers, such as in the area immediately surrounding the cave-in. • Immediately calling for additional assistance. • Assessing the patient's level of consciousness (LOC), airway and breathing and asking the patient if he is having any pain. • Assessing the patient's respiratory status closely for changes due to possible chest injuries and/or pressure of surrounding soil on the patient's chest. • Ensuring that no one enters the area of the cave-in or the immediate surrounding area to prevent the risk of a secondary cave-in. Additional support, including supplemental oxygen and specialized extrication equipment and rescue personnel, such as a specialized trench team to assist in rescuing the patient.

 Drowning is the fifth most common cause of death from unintentional injury in the United States. Younger children can drown at any moment, even in as little as 1 inch of water.
 Three types of water-related victims include the distressed swimmer, an active drowning victim and a passive drowning victim.
 Reaching, throwing or wading assists are used when attempting to retrieve a patient from the water.
 Never swim out to a person unless you have the proper training, skills and equipment.
 Hazardous terrains can make evacuating a patient difficult due to the physical demands of litter rescue and the slope of the area.
 Confined spaces pose dangers associated with gases, engulfment and possible drowning or electrocution.
 Law enforcement personnel are in charge at a crime scene. Fireground operations are passed onto the fire rescue team.
 Certification in BLS or ALS is necessary for special event emergency medical staff.
 Review Chapters 1–32, including skills.
 Review Chapters 1–32 and Lessons 1–47. Obtain any necessary equipment and supplies for Lesson 48.

LESSON 48

PUTTING IT ALL TOGETHER

Lesson Length: 60 minutes

MATERIALS, EQUIPMENT AND SUPPLIES

- Emergency Medical Response textbook
- Course Presentation Slides 662–667
- LCD projector, screen and computer
- Disposable latex-free gloves (multiple sizes) and other personal protective equipment (PPE), as indicated
- Decontamination supplies
- Adult and infant manikins (one for every two participants; child manikins optional)
- Resuscitation masks (adult and pediatric; one for each participant)
- Supplemental oxygen and oxygen delivery devices
- Clothing, blankets, tarps, sheets or drapes
- Dressings as indicated
- Oral airways
- Manual and/or mechanical suctioning devices
- Splints, slings and binders
- Stethoscopes (one for every two participants)
- Sphygmomanometers (one for every two participants)
- Automated external defibrillator (AED) training devices (one for every two participants)
- Pediatric AED training pads (one for every two participants)
- Triage tags or kits
- Nerve agent antidote training injectors (e.g., DuoDote[™]) (optional)

LESSON OBJECTIVES

After completing this lesson, participants will be able to:

Demonstrate the knowledge and skills learned in Lessons 42–47, in addition to all previously learned skills.

INTRODUCTION

Time: 5 minutes

ACTIVITY	Tell participants that they:
	 Will split into several small groups with each group receiving a scenario to role-play, using either a manikin or another member of the class as the patient.

 Will have approximately 5 minutes to prepare for the role-playing activity and that part of this preparation will include designating the roles for each of the group members based on the actual scenario assigned and gathering any necessary equipment and supplies.
 Are to formulate a response to the scenario integrating the key points and skills learned up to this point in the course, explaining their actions while providing care.
 Should be able to answer questions asked by the instructor or other class members.
 Will spend approximately 5 to 10 minutes after role-playing the scenario, critiquing their actions and discussing any problems, errors or difficulties they may have had.

SCENARIO 1: YOU ARE THE EMERGENCY MEDICAL RESPONDER

Time: 15 minutes

Course Presentation Slide 663



Instructor's Note: For this scenario, there should be one participant acting as the responder, one participant acting as a later arriving responder, four participants acting as the patients and at least two or three participants acting as bystanders.

Setup:

You are the first to arrive on the scene of a small commuter jet crash in a rural field. The plane is engulfed in flames, and black smoke is billowing for miles. There is a pungent odor in the air. Debris is strewn all over the ground. The plane was carrying six passengers in addition to the pilot and co-pilot. The pilot and co-pilot are still in the cockpit of the plane and are not moving. There are four adults visible on the ground about 150 to 200 feet from the plane. They are not moving. Two of the adults are unconscious but breathing. Both have burns over several areas of their body and open wounds that are bleeding. Another adult is unconscious and not breathing. The fourth adult is responsive to painful stimuli. After a search of the area surrounding the crash, you do not find the two remaining passengers. Fire sirens are heard in the distance, and a small group of bystanders are beginning to gather nearby.

Ask participants: "What should you do?"



Instructor's Note: Participants should address these areas in their responses:

- Establishing incident command and identifying themselves as the incident commander until someone with more experience arrives
- Identifying the scene as a multiple-casualty incident (MCI)
- Performing the scene size-up to determine what calls to make, what additional services are needed and what tasks need to be done
- Ensuring scene safety, including personal safety and that of the bystanders (due to smoke, debris and pungent odor in the air)
- Identifying potential hazards including the need to arrange for hazardous material (HAZMAT) management due to possible jet fuel leakage
- Securing the scene to prevent further injury
- Dealing with the bystanders to ensure that they remain safe
- Setting up staging areas and access for emergency vehicles, arriving additional emergency medical personnel, firefighters and other agencies that may be involved
- Accounting for the number of patients, which at this time appears to be four, but there may be others not readily visible

 Possibly notifying the need for air medical transport depending on the status of the patients Arranging for adequate numbers of emergency transport vehicles, such as ambulances for patient transport Setting up appropriate stations including triage Providing clear communication with the person who arrives and will be assuming the role of incident commander Assuming role as designated by the oncoming incident commander, such as triage officer or assisting with care for triaged patients Completing triage of the patients such as immediate (red) for the two unconscious patients with burns and bleeding, delayed (yellow) or nonsalvageable (black) for the patient who is unconscious and not breathing and immediate (red) or delayed (yellow) for the patient who is responsive to painful stimuli Demonstrating appropriate skills when providing care, such as performing an emergency move or lift; performing a primary assessment; obtaining baseline vital signs; inserting an oral airway; performing manual or mechanical suctioning; performing one- or two-responder CPR; administering supplemental oxygen based on local protocols; caring for major wounds; applying splints, slings or binders; or maintaining spinal motion restriction for a patient with a head, neck or spinal injury
for a patient with a nead, neck or spinal injury

SCENARIO 2: YOU ARE THE EMERGENCY MEDICAL RESPONDER

Time: 15 minutes

Course Presentation Slide 664



Instructor's Note: For this scenario, there should be at least one participant acting as the EMR, one participant acting as the incident commander and at least two or three other participants acting as the injured patients who have been moved.

Setup:

You are among several other EMRs who arrive at the scene of an incident involving an explosion at a chemical warehouse. The explosion is believed to be the result of a terrorist attack. Four people are lying on the ground approximately 15 feet from the building. Each of them has significant open wounds that are bleeding. Approximately 5 to 10 more people with various types of injuries have been moved across the street to a nearby park. Most of these individuals have walked to the area. You report to the incident commander and are assigned to assist with caring for the patients who have been moved.

Ask participants: "What should you do?"



Instructor's Note: Participants should address these areas in their responses:

- Performing the scene size-up surrounding the moved patients and ensuring safety of themselves and that of the patients
- Describing the need to be aware of potential secondary devices since the explosion was believed to be terrorist related
- Identifying this as an MCI and potential HAZMAT incident
- Completing triage of the patients if it has not already been done
- Assigning appropriate triage categories based on the injuries assessed using the START system; for example, immediate (red) for the patients with open wounds that are bleeding, walking (green) for those who were able to walk across the street to the park.

Demonstrating a primary assessment of the patients
 Checking for severe bleeding and applying direct pressure and other bleeding control methods as appropriate
 Assessing patients for injuries related to the primary effects of the explosion, such as to the lungs, gastrointestinal tract, eyes, head and middle ear
 Checking for injuries due to the secondary effects, such as flying debris and bomb fragments
 Checking for injuries related to the tertiary effects, such as being blown by the blast wind
Demonstrating the skills for obtaining baseline vital signs, performing one- or two-responder CPR, administering supplemental oxygen based on local protocols, inserting an oral airway, performing manual or mechanical suction, caring for a major open wound, and applying a splint, sling or binder based on local protocols
 Assisting with moving and transporting the patients to emergency vehicles including possible air medical transport
Demonstrating and describing the need for clear communication among team members
team members

SCENARIO 3: YOU ARE THE EMERGENCY MEDICAL RESPONDER

Time: 15 minutes

Course Presentation Slide 665	Instructor's Note: For this scenario, there should be one participant acting as the responder, one acting as the driver and one acting as the passenger.
	 Setup: You are called to the scene of a motor-vehicle crash in which a car went off the road, hit a tree and came to rest on the bank of a small river. The hood of the car is in about 5 feet of water. The driver of the car does not appear to be moving. Another individual, a passenger, has gotten out of the car and waded into the river. She is seen chest-high in the water, approximately 15 feet from the car, waving her arms frantically and calling out for help. Ask participants: "What should you do?"
	 Instructor's Note: Participants should address these areas in their responses: Performing the scene size-up and forming a general impression to ensure the safety of themselves Attempting initially to stabilize the vehicle if possible to prevent the vehicle from further entering the water Performing a primary assessment of the driver Summoning more advanced medical personnel and special operations, such as water rescue units Identifying themselves as there to help to the passenger Identifying possible dangers due to water conditions, such as current, depth and water temperature, that could impact rescue of the passenger Describing methods to help the passenger, such as what to do to help with the rescue (e.g., asking her to move toward them using the back float or small strokes) or using reaching assists, throwing assists or wading assists to reach the passenger

WRAP-UP

Time: 10 minutes

	 Answer participants' questions, ensuring that each participant has an opportunity to resolve any confusion.
	Review the scenarios and the important elements of care.
KEY POINTS Course Presentation Slides 666–667	 Emergency medical services (EMS) response typically has nine phases that span from preparing for the emergency call to becoming available for the next call. Air medical transport is requested most often when one or more patients are in critical condition. Vehicle and equipment preparedness are crucial when responding to an emergency. A jump kit should be fully stocked and ready to go. Extrication involves the safe and appropriate removal of a patient trapped in a motor vehicle or dangerous situation. Vehicle extraction involves multiple steps: stabilizing the vehicle, attempting to gain access to patients inside the vehicle and if unable to do so, carrying out the steps involved in extricating patients from the vehicle in the safest manner possible. Ensuring personal safety and protection of the patient's head, neck and back are crucial. Priorities during a HAZMAT incident are to protect the safety of the responders and patients at the scene. Indications of hazardous materials include: placards; spilled, splattered, smoking, burning or boiling materials; unusual odors; vapor clouds; leaking, deteriorating or otherwise atypical containers. The three zones that are established to decrease the risk of the HAZMAT incident from expanding are the hot zone, warm zone and cold zone. Contamination can occur via topical, respiratory, gastrointestinal or parenteral exposure. Decontamination methods include gross, dilution, absorption, neutralization and isolation/disposal.

Incident command is used to assist with emergencies involving multiple patients to allow for rapid determination of what additional resources are needed and how best to use them.
 If you are the first to arrive on the scene, then you are the incident commander until relieved by appropriate personnel.
 If you are not the first to arrive, your role is to fit into the team wherever you are assigned.
Triage refers to a process of identifying which patients require urgent care in an MCI.
 The colors of green (ambulatory/walking wounded), red (immediate care), yellow (delayed care), black (deceased/nonsalvageable/expectant) and white (hold) are commonly used for triage tagging systems.
• The START system is a simple way to quickly assess and prioritize injured or ill patients by checking breathing, circulation and level of consciousness (LOC).
 The JumpSTART system is used for children.
• Communication is a vital link in the smooth running of an MCI.
 Preparedness for disasters and terrorist incidents involves many different agencies working together in a coordinated effort to meet a common goal.
 The types of disasters include natural disasters, terrorist attacks, and human-caused or biological disasters.
 An all-hazards type approach is used regardless of the type of disaster.
 Weapons of mass destruction (WMD) are classified by the acronym CBRNE as chemical, biological, radiological/nuclear and explosives.
 Priorities include performing the scene size-up and collecting information to identify the appropriate resources, approaching the scene from upwind and uphill, avoiding confined spaces, being aware of the possibility of secondary devices and determining the proper PPE needed to enter the scene.
 If exposure to a nerve agent occurs, ventilation, antidote (atropine or pralidoxime chloride) and decontamination are key.
• A nerve agent auto-injector kit may be used under medical direction if you or a peer show signs of nerve agent poisoning.
Special operation units are called to assist in rescue efforts that may involve precarious and dangerous situations such as water or ice rescue, hazardous terrain, confined spaces and cave-ins, crime scenes or special events.
 Drowning is the fifth most common cause of death from unintentional injury in the United States.
 Three types of water-related victims include the distressed swimmer, a drowning victim—active and a drowning victim—passive.
 Reaching, throwing or wading assists are used when attempting to retrieve a patient from the water.
 You should never swim out to a person unless you have the proper training, skills and equipment.
• Hazardous terrain can make patient evacuation difficult.
 Confined spaces pose dangers associated with gases, engulfment and possible drowning and electrocution.

ASSIGNMENT FOR THE NEXT LESSON	 Review Chapters 1–32. Review the skills in Chapters 1–32. Review completed <i>Emergency Medical Response Workbook</i> activities and online quizzes (<i>optional</i>). Review critical facts in the textbook. Prepare for final practical evaluation.
INSTRUCTOR PREPARATION	 Review Chapters 1–32. Obtain any necessary equipment and supplies for Lesson 49.



FINAL PRACTICAL EVALUATION

Lesson Length: 120 minutes

MATERIALS, EQUIPMENT AND SUPPLIES

- *Emergency Medical Response* textbook
- Skill checklists for Lessons 1–48
- All equipment and supplies needed for Lessons 1-48

LESSON OBJECTIVES

After completing this lesson, participants will be able to:

Demonstrate the knowledge and skills learned in Lessons 1-48.

TOPIC: SCENARIOS

Time: 115 minutes

ACTIVITY	 Tell participants that they: Will split into several small groups, with each group being tested individually and as a group based on scenarios that evaluate the skills learned in this course. Will be evaluated using the skill sheets found in their textbooks and workbooks.
	 Instructor's Note: Establish five simulated scenarios involving patients with injuries that would test the following skills: Patient assessment and management Airway management and breathing devices Bleeding control and shock management Immobilization of muscle, bone and joint injuries Combined skills Ensure that scenarios allow the participants the opportunity to use skills that they have acquired as part of this course. Participants should be able to apply these skills in a manner that provides appropriate care to the patient(s). Enlist the aid of co-instructors to help with testing. Use additional persons as patients; when possible, use moulage to add realism to injuries. Reinforce to participants that this is a testing situation and not a learning situation. Make the scenarios as realistic as possible by providing the necessary props, such as a car, motorcycle, bike, ladder, etc. Allow approximately 20–25 minutes for each scenario. Use the Skill Checklists to evaluate the participants' performance of the required skills.

WRAP-UP	Time: 5 minutes
	 Answer participants' questions, ensuring that each participant has an opportunity to resolve any confusion.
ASSIGNMENT FOR THE NEXT LESSON	 Review Chapters 1–32. Prepare for the final written exam.
INSTRUCTOR PREPARATION	 Review Chapters 1–32. Obtain the appropriate number of copies for the final written exam, both A and B.

FINAL WRITTEN EXAMS

Lesson Length: 120 minutes

MATERIALS, EQUIPMENT AND SUPPLIES

- Final written exams (one for each participant)
- Answer sheets (one for each participant)
- Answer keys
- Pencils

LESSON OBJECTIVES

After completing this lesson, participants will be able to:

Demonstrate understanding of the information presented in Lessons 1–48.

TOPIC: FINAL EVALUATION

Time: 110 minutes

ACTIVITY	Tell participants that they:
	 Will receive 2 written exams (one with 75 multiple-choice questions and another with 20 multiple-choice questions) on materials from the textbook for this course. Need to answer at least 80 percent of the questions correctly on each exam in order to pass. May not use their textbooks or workbooks to find the answers. Should come to you or raise their hand when they have completed the exam or have any specific questions.
	 Instructor's Note: Give exams and answer sheets to each participant. Review the exam instructions: Write only on the answer sheet. Clearly mark all answers. Use a pencil to mark the answers in case participants would like to erase or change their answers. Check answers before handing in the exams. Score the exams using the answer keys located in Appendix E of this instructor's manual. As participants hand in their answer sheets, quickly grade the exams and return the exams to them so they can review any missed questions.

If time allows, discuss with the class any specific test items that were
problematic.

- Collect all answer sheets and exams before the participants leave the class.
- If a participant fails one or both exams, ask them to see you after class to schedule a retest.

WRAP-UP

Time: 10 minutes

 Inform participants how they will receive their American Red Cross Emergency Medical Response and Basic Life Support for Healthcare Providers certification if they have:
 Attended all class sessions.
 Participated in all course activities.
 Demonstrated competency in all required skills and scenarios.
 Demonstrated competency in the final skills scenarios.
 Passed both the Emergency Medical Response final written exam and the Basic Life Support for Healthcare Providers final written exam with minimum grades of 80 percent.
 Remind participants that a certification by the Red Cross does not authorize or license an individual to function in the role as an EMR. Successful participants should consult their local, regional or state EMS authorities for certification and licensing information.
 Inform participants about other courses and volunteer opportunities with the American Red Cross.
Thank all participants for attending the course.



Appendix A:	Materials, Equipment and Supplies Checklist
Appendix B:	American Red Cross Emergency Medical Response Video Segments
Appendix C:	Participant Progress Log 495
Appendix D:	Guidelines for Conducting Emergency Medical Response Review and Challenge Courses
Appendix E:	Final Written Exam Answer Keys 502



MATERIALS, EQUIPMENT AND SUPPLIES CHECKLIST

The following is a list of the materials, equipment and supplies necessary to teach the American Red Cross Emergency Medical Response course. The items are arranged in three categories: for the class; for the participants; and for you, the instructor. Some equipment used during the course (such as disposable latex-free gloves) and a wide range of Red Cross retail products are available through the Red Cross Store (redcrossstore.org).

For the Class

- Equipment for viewing video segments
 - Internet access if streaming video segments from Instructor's Corner OR
 - DVD player and monitor or LCD projector, screen and computer
 - Extension cord and grounded plug adapter, if needed
- Emergency Medical Response DVD
- Emergency Medical Response course presentation (*optional*)
- Whiteboard or easel pad, newsprint, markers, pens and tape
- Samples of advance directives, if available
- Examples of documentation forms
- Blank documentation forms
- Illustrations, posters or anatomical models of the various body systems, if available
- Alcohol-based hand sanitizer
- Disposable latex-free gloves (multiple sizes) and other personal protective equipment (PPE), such as gowns, masks, eye protection and face shields, as indicated
- Blankets or mats (one for every two participants)
- Additional clothing, blanket, tarp, drape, bedspread or sheet
- Decontamination supplies (decontaminating solution, 4" × 4" gauze pads, soap and water, brush, basins or buckets, disposable latex-free gloves in multiple sizes and any accessories that may be recommended by the manufacturer of the manikin)
- Adult manikins (one for every two participants)
- Child manikins (one for every two participants) (*optional*)
- Infant manikins (one for every two participants)
- AED training devices (one for every two participants)
- Adult AED training pads (one set per training device)
- Pediatric AED training pads (one set per training device)
- **External bleeding control materials for every two participants**
 - Two roller bandages
 - □ Four nonsterile dressings or gauze pads
- Dressings, such as sterile and nonsterile gauze dressings of different sizes, universal or trauma dressings and/or occlusive dressings, bulky dressings and/or clean cloths, as available
- Samples of hemostatic dressings

- **D** Bandages, such as adhesive compresses, roller bandages, elastic bandages and triangular bandages
- Simulated limb(s) or trauma manikins (for demonstrating and applying a tourniquet) (one for every four participants)
 - □ A pool "noodle" may be used as a simulated limb
- Tourniquets (commercially manufactured such as the American Red Cross SOF-T or the Combat Application Tourniquet [CAT[®]]; not improvised tourniquets)
- Splinting materials for each pair of participants
 - □ Four triangular bandages
 - One 3-inch roller bandage
 - □ Rigid splint (magazine, cardboard or long and short boards)
- Blankets, towels, pillows, slings, binders and cravats
- Commercial rigid splints and/or cardboard boxes, magazines, shin guards or items to fashion a rigid splint
- Samples of pelvic sling/wrap, if available
- Eye pads or shields
- Paper cups
- Sphygmomanometers (blood pressure [BP] cuff) (one for every two participants)
- □ Stethoscopes
- □ Airway manikin (*optional*, if available)
- Breathing devices and equipment
- Oxygen cylinders with pressure regulators and flowmeters and oxygen delivery devices such as oxygen tubing, nasal cannulas and non-rebreather masks
- Resuscitation masks (adult and pediatric) (one for each participant)
- Bag-valve-mask (BVM) resuscitators (adult and pediatric)
- Oropharyngeal airways (one for every two participants)
- Tongue blades or tongue depressors (*optional* for child or infant oral airway insertion; one for every two participants)
- □ Nasopharyngeal airways (*optional*) (one for every two participants)
- Manual and mechanical suction devices (one for every three participants); suction tips
- Spinal immobilization materials
- Backboards with straps
- Cervical collars (optional)
- Blanket or commercial head immobilizers (optional)
- Asthma inhaler trainers (optional) and peak flowmeters (optional)
- **D** Epinephrine auto-injector trainers (one for every two participants)
- □ DuoDote[™] injector trainers (optional)
- Samples of glucometers, sterile lancets and glucometer test strips
- Samples of activated charcoal, if available (optional)
- Obstetrical pack, if available
- Jump kit, fully supplied for an emergency medical responder (EMR) (optional)
- Basic extrication equipment including crowbars, screwdrivers, chisels, hammers, pliers, work gloves and goggles, wrenches, shovels, car jacks, tire irons, knives and ropes or chains (*optional*)
- **I** Samples or examples of placards designating hazardous materials
- Triage tags or kits
- Examples of masks (including high-efficiency particulate air [HEPA] and N95), gowns, eye protection, CPR breathing barriers and biohazard bags
- Throwing equipment, such as the following (one for each group) (*optional*): ring buoy, throw bag, life jacket, water jug with line attached, heaving line
- Targets for throwing assist activity (optional)
- Water or saline solution
- Sterile cotton swabs
- Emergency Response Guidebook (optional)

For the Participants

- Name tag
- Pencil and/or pen
- □ Emergency Medical Response textbook
- D Emergency Medical Response Workbook (optional)
- □ Final written exams and answer sheets

For the Instructor

- American Red Cross identification
- Name tag
- Emergency Medical Response textbook
- Emergency Medical Response Workbook
- Emergency Medical Response Instructor's Manual
- Skill charts
- Skill checklists
- Final written exams and answer sheets
- Final written exams answer keys
- Extra manikin lungs, airways and faces
- Participant Progress Log (Appendix C)
- Extra pens or pencils

AMERICAN RED CROSS EMERGENCY MEDICAL RESPONSE VIDEO SEGMENTS

Preparatory

- Emergency Medical Responders (0:49)
- The Role of the Emergency Medical Responder (1:02)
- Bloodborne Pathogens Training: Preventing Disease Transmission (15:00)
- The Human Body (15:15)

Assessment

- Performing a Primary Assessment (2:36)
- Using a Resuscitation Mask (3:31)
- History Taking and Secondary Assessment (9:41)
- Secondary Assessment for an Unresponsive Patient (2:11)

Airway

- Giving Ventilations—Adult, Child and Infant (3:33)
- Using a Bag-Valve-Mask Resuscitator (2:27)
- Using a Mechanical Suctioning Device (1:18)
- Using a Manual Suctioning Device (1:02)
- Choking—Adult and Child (2:49)
- Choking—Infant (1:41)
- Oxygen Delivery (3:02)

Circulation

- CPR—Adult and Child (6:17)
- CPR—Infant (2:48)
- Two-Responder CPR—Adult and Child (3:15)
- Two-Responder CPR—Infant (2:15)
- Using an AED—Adult, Child and Infant (3:23)

Medical Emergencies

- Altered Mental Status (1:39)
- Seizures (2:49)
- Diabetic Emergencies (2:00)
- Stroke (4:11)
- Cold-Related Emergencies (3:15)

Trauma Emergencies

- Shock (1:58)
- Controlling Bleeding (3:13)
- Using a Commercial Tourniquet (1:23)
- Caring for Burns (6:16)
- Injuries to Muscles, Bones and Joints (1:58)
- Splinting (1:29)

EMS Operations

- EMS Support and Operations (11:34)
- Hazardous Materials Emergencies (1:15)
- Incident Command and Multiple-Casualty Incidents (2:16)

Enrichment

- Asthma (2:57)
- Injuries to the Head, Neck and Spine (3:57)



PARTICIPANT PROGRESS LOG

Name of Participant

	÷	2	છં	4.	ù	Ö	7.	œ	ō	10.
Removing Disposable Latex-Free GlovesClothes DragBlanket DragShoulder DragAnkle DragFirefighter's Drag										
Shoulder Drag										
Ankle Drag										
Firefighter's Drag										
Firefighter's Carry										
Pack-Strap Carry										
Walking Assist										
Two-Person Seat Carry										
Direct Ground Lift										
Extremity Lift										
Primary Assessment										
Opening the Airway—Head-Tilt/ Chin-Lift Maneuver										
Jaw-Thrust (Without Head Extension) Maneuver										
Using a Resuscitation Mask—Adult, Child and Infant										

Name of Participant

		2.	č	4.	5.	6.	7.	8.	9.	10.
Using a Resuscitation Mask—Head, Neck or Spinal Injury Suspected: Jaw-Thrust (Without Head Extension) Maneuver— Adult or Child										
How to Obtain a SAMPLE History										
How to Perform a Secondary Assessment for a Responsive Trauma Patient										
Physical Exam										
How to Obtain Baseline Vital Signs										
Taking and Recording a Patient's Blood Pressure (by Auscultation)										
Taking and Recording a Patient's Blood Pressure (by Palpation)										
Giving Ventilations—Adult and Child										
Giving Ventilations—Infant										
Giving Ventilations—Head, Neck or Spinal Injury Suspected: Jaw-Thrust (Without Head Extension) Maneuver—Adult and Child										
Giving Ventilations Using a Bag-Valve- Mask Resuscitator—One Responder										
Giving Ventilations Using a Bag-Valve- Mask Resuscitator—Two Responders										
Using a Mechanical Suctioning Device										
Using a Manual Suctioning Device										
Inserting an Oral Airway										
Choking—Adult and Child										
Choking—Infant										
Oxygen Delivery										
CPR/AED—Adult										
CPR/AED—Child										
CPR/AED-Infant										

Name of Participant

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Two-Responder CPR—Adult and Child										
Two-Responder CPR—Infant										
AED—Adult, Child and Infant										
Administering an Epinephrine Auto-Injector										
Using Direct Pressure to Control External Bleeding										
Using a Commercial Tourniquet with a Windlass										
Applying a Rigid Splint										
Applying a Sling and Binder										
Applying an Anatomic Splint										
Applying a Soft Splint										
Controlling Bleeding from an Open Head Wound										
Bandaging an Eye with an Injury from an Impaled Object										
Caring for Foreign Bodies in the Eye										
Spinal Motion Restriction Using Manual Stabilization										
Immobilizing a Head, Neck or Spinal Injury										
Final Practical Scenario 1: Patient Assessment and Management										
Final Practical Scenario 2: Airway Management and Breathing Devices										
Final Practical Scenario 3: Bleeding Control and Shock Management										
Final Practical Scenario 4: Immobilization of Muscle, Bone and Joint Injuries										
Final Practical Scenario 5: Combined Skills										
Emergency Medical Response Final Written Exam A/B										
Basic Life Support for Healthcare Providers Final Written Exam A/B										



Instructor's Note: The skills may need modification for participants with disabilities or other conditions. This awareness challenges instructors to focus on the skill components that are needed to successfully complete an objective, as opposed to perfecting every facet of the skill. Always teach to the standard, but be aware that participants may modify how a skill is accomplished and still meet the objective. Test participants' skills accordingly.

All skill sessions include practicing with appropriate standard precautions, such as using a resuscitation mask and disposable latex-free gloves.



GUIDELINES FOR CONDUCTING EMERGENCY MEDICAL RESPONSE REVIEW AND CHALLENGE COURSES

Review Courses

The purpose of a review course is to give participants the opportunity to review the course content within a formal class setting. A review course allows eligible individuals to recertify and receive a certificate for EMR without participating in a full course. The format optimizes a participant's ability to successfully complete the knowledge and skill evaluations. The responsibility for preparing for the final written exams is shared by the instructor and participant. Each participant should have the opportunity to view the video segments, practice and perform skills for evaluation and complete the written exams for the course.

To be eligible to participate in a review course, the participant must possess a current American Red Cross Emergency Medical Response certification or an EMR certificate that has expired by no more than 30 days. Those without a certification may not participate in the review course. **During the review course, participants must practice and demonstrate competency in all of the skills within a lesson, excluding Enrichment skills.**

Lesson	Title	Time			
UNIT 1:	PREPARATORY	·			
1	The Emergency Medical Responder	10 minutes			
2	Bloodborne Pathogens: Preventing Disease Transmission	30 minutes			
3	The Well-Being of the Emergency Medical Responder	5 minutes (10 minutes with Enrichment)			
4	Medical, Legal and Ethical Issues	25 minutes			
5	The Human Body	20 minutes			
6	Lifting and Moving Patients	20 minutes			
7	Putting It All Together	60 minutes			
UNIT 2: /	ASSESSMENT				
8	Scene Size-Up	25 minutes (35 minutes with Enrichment)			
9	Primary Assessment	55 minutes (65 minutes with Enrichment)			
10	History Taking and Secondary Assessment	60 minutes (70 minutes with Enrichment)			
11	Communication and Documentation	15 minutes			

(Continued)

Lesson	Title	Time
12	Skills Review	60 minutes
13	Putting It All Together	60 minutes
UNIT 3: /	AIRWAY	· · ·
14	Airway and Ventilation	65 minutes (110 minutes with Enrichments)
15	Airway Management	25 minutes (35 minutes with Enrichment)
16	Supplemental Oxygen	20 minutes
17	Skills Review	60 minutes
18	Putting It All Together	60 minutes
UNIT 4: 0	CIRCULATION	
19	The Circulatory System and Cardiac Emergencies	15 minutes (20 minutes with Enrichment)
20	CPR and Automated External Defibrillation	60 minutes
21	Skills Review	60 minutes
22	Putting It All Together	60 minutes
UNIT 5:	MEDICAL EMERGENCIES	
23	Medical Emergencies	25 minutes (50 minutes with Enrichments)
24	Poisoning	10 minutes (30 minutes with Enrichments)
25	Substance Abuse and Misuse	10 minutes (20 minutes with Enrichment)
26	Environmental Emergencies	30 minutes (70 minutes with Enrichments)
27	Behavioral Emergencies	10 minutes
28	Putting It All Together	60 minutes
UNIT 6: "	TRAUMA EMERGENCIES	
29	Shock	10 minutes
30	Bleeding and Trauma	20 minutes (45 minutes with Enrichment)
31	Soft Tissue Injuries	25 minutes
32	Injuries to the Chest, Abdomen and Genitalia	20 minutes
33	Injuries to Muscles, Bones and Joints	30 minutes (45 minutes with Enrichment)
34	Injuries to the Head, Neck and Spine	35 minutes (65 minutes with Enrichments)
35	Skills Review	60 minutes
36	Putting It All Together	60 minutes

(Continued)

37	Childbirth	
	Childbirth	
00		20 minutes (30 minutes with Enrichment)
38	Pediatrics	25 minutes
39	Older Adults	10 minutes
40	Patients with Special Healthcare or Functional Needs	10 minutes
41	Putting It All Together	60 minutes
UNIT 8: E	MS OPERATIONS	
42	EMS Support and Operations	20 minutes (30 minutes with Enrichment)
43	Access and Extrication	10 minutes
44	Hazardous Materials Emergencies	15 minutes
45	Incident Command and Multiple-Casualty Incidents	20 minutes
46	Response to Disasters and Terrorism	25 minutes (35 minutes with Enrichments)
47	Special Operations	25 minutes
48	Putting It All Together	60 minutes
49	Final Practical Evaluation	120 minutes
50	Final Written Exams	120 minutes

Challenge Courses

The purpose of a challenge course is to provide participants with the opportunity to demonstrate knowledge and skill competency outside of a formal class setting. Participants have sole responsibility to prepare for the knowledge and skill evaluations. Anyone is eligible to participate in a challenge. Participants who do not possess a current American Red Cross Emergency Medical Response certification (or equivalent) may participate in the challenge option once. If they do not pass the challenge, they should be referred to the Training Support Center (1-800-RED-CROSS or support@redcrosstraining.org) for information on taking a full course. They are not permitted to attempt the challenge again. Participants who hold a current American Red Cross Emergency Medical Response certification (or equivalent) may take a challenge course as often as the courses are available and their certifications remain valid. **During the challenge course, participants must demonstrate competency in all of the items on the Participant Progress Log without coaching from the instructor.**



FINAL WRITTEN EXAM ANSWER KEYS

- American Red Cross Emergency Medical Response Answer Key-Exam A
- American Red Cross Emergency Medical Response Answer Key—Exam B
- American Red Cross Basic Life Support for Healthcare Providers Answer Key-Exam A
- American Red Cross Basic Life Support for Healthcare Providers Answer Key-Exam B

Answer Key

Exam A

1.	a	b		d	21.		b	С	d
2.	a	b		d	22.	(a)	b		d
З.		b	С	d	23.	a		C	d
4.	a	b	С		24.	a		С	d
5.	a	b	С		25.	a	b	С	
6.	a	b	С		26.		b	C	d
7.	a	b		d	27.	a		С	d
8.	a		С	d	28.	a	b		d
9.	a	b		d	29.	a	b		d
10.	a	b	С		30.		b	С	d
11.		b	С	d	31.	a		С	d
12.	a		С	d	32.	a	b	С	
13.	a	b	С		33.	a	b		d
14.	a		С	d	34.	a		С	d
15.	a	b		d	35.	a	b		d
16.	a		С	d	36.		b	С	d
17.		b	С	d	37.	a		С	d
18.	a	b		d	38.		b	С	d
19.	a	b		d	39.	a	b		d
20.	a		С	d	40.	a	b		d
								(Contir	nued)

Answer Key

Exam A									
41.	a	b		d	59.	a	b	С	
42.		b	С	d	60.	a	b	С	
43.	a	b	С		61.		b	С	
44.	a		С	d	62.		b	С	
45.	a	b	С	•	63.	a		C	
46.	a	b		d	64.		b	C	
47.	a		С	d	65.	a	b		
48.		b	С	d	66.	a	b	C	
49.		b	С	d	67.	a	b		
50.	a		С	d	68.	a		C	
51.	a	b		d	69.	a	b	C	
52.		b	С	d	70.		b	С	
53.	a		С	d	71.	a		C	
54.	a	b		d	72.		b	С	
55.	a		С	d	73.	a		C	
56.		b	С	d	74.	a		С	
57.	a		С	d	75.	a		С	
58.	a		С	d					

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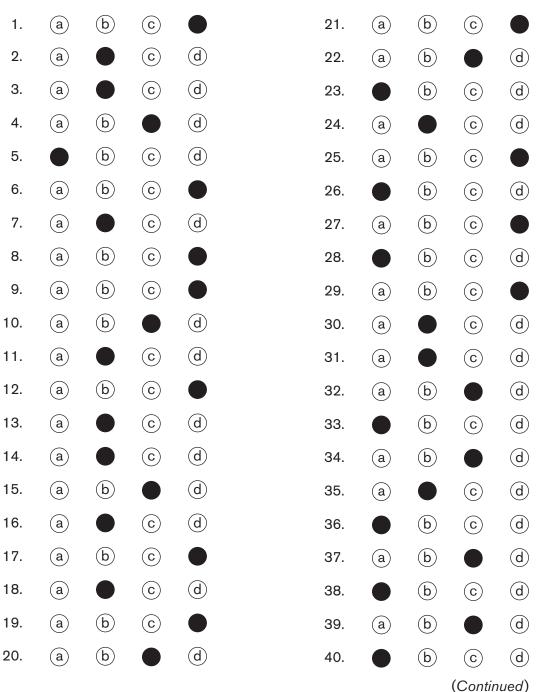
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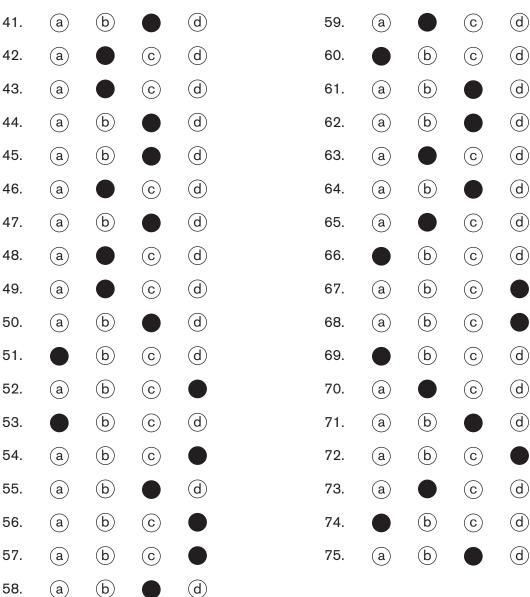
Answer Key

Exam B



Answer Key

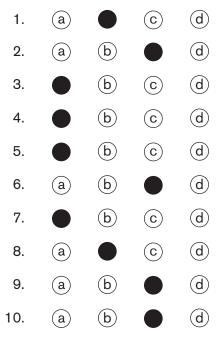
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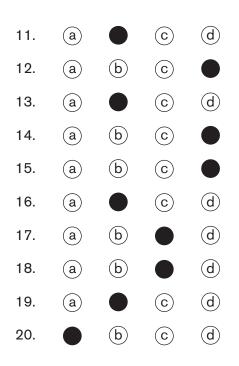


American Red Cross Basic Life Support for Healthcare Providers Final Written Exam

Answer Key

Exam A

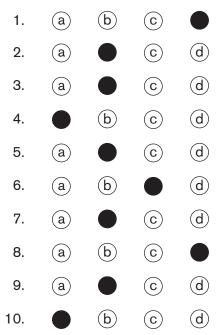


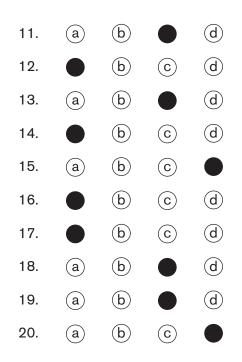


American Red Cross Basic Life Support for Healthcare Providers Final Written Exam

Answer Key

Exam B







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