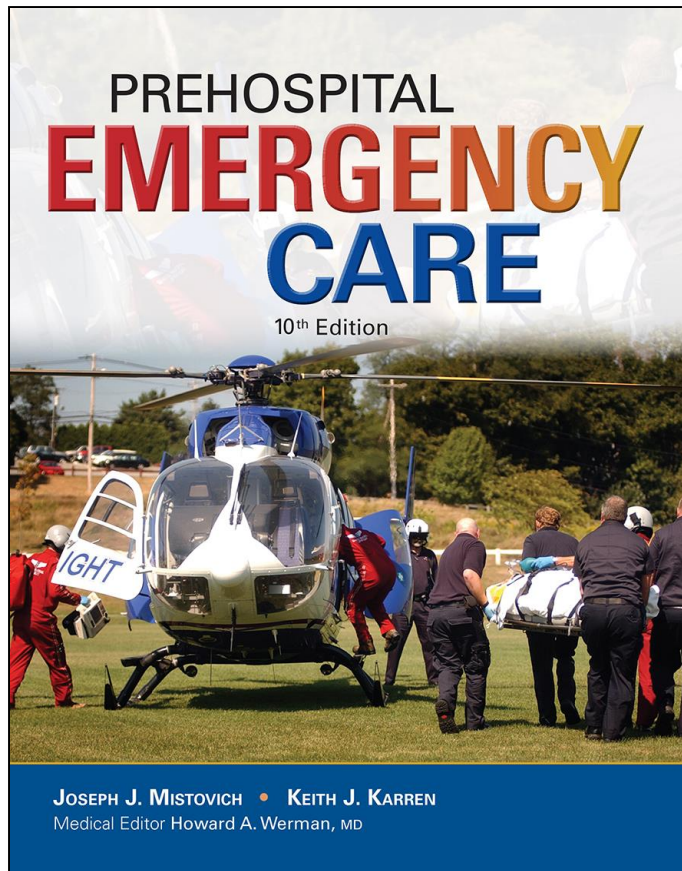


PREHOSPITAL EMERGENCY CARE

TENTH EDITION



CHAPTER 2

Workforce Safety and Wellness of the EMT

Learning Readiness

- EMS Education Standards, text p. 17

Learning Readiness Objectives

- Please refer to pages 17 and 18 of your text to view the objectives for this chapter.

Learning Readiness

Key Terms

- Please refer to page 18 of your text to view the key terms for this chapter.

Setting the Stage

- Overview of Lesson Topics
 - Emotional aspects of emergency care
 - Death and dying
 - Stress
 - Scene safety
 - Infectious disease
 - Injury prevention
 - Wellness principles

Case Study Introduction

EMTs Connor Fleisher and Melinda Jurgens are approaching unit 121 at Ashford Springs, an assisted living facility, where they were dispatched for a report of a sick person.

continued on next slide

Case Study

- Are there particular issues that should be anticipated when responding to an assisted living facility?
- What hazards should the EMTs be looking for in this situation?
- What actions should they consider in anticipation of potential hazards?

Introduction

- EMS providers' safety is the first priority on every call.
- EMTs must be prepared to deal with emotions of patients and their family members.
- EMTs must be concerned with their own physical and emotional wellness.

Death and Dying

- EMTs encounter death and dying in their jobs, and must tend to the emotional needs of patients and their families.

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Death and Dying

- Five stages of grief
 - Denial
 - Anger
 - Bargaining
 - Depression
 - Acceptance

continued on next slide

Death and Dying

- Click the statement on the right that represents the thought process of a person in the stage of grief below:

Denial

"Oh please, if you just let my husband be ok I'll be a better person."

"No! I can't believe this. This can't be happening!"

"This is the doctor's fault. He should have tested me sooner. I am going to sue him!"

"I can't go through this. I can't get up every day knowing I only have a few months to live."

"I know my wife is gone, but life goes on, and I will honor her memory in my actions."

Death and Dying

- Click the statement on the right that represents the thought process of a person in the stage of grief below:

Anger

"Oh please, if you just let my husband be ok I'll be a better person."

"This is the doctor's fault. He should have tested me sooner. I am going to sue him!"

"No! I can't believe this. This can't be happening!"

"I can't go through this. I can't get up every day knowing I only have a few months to live."

"I know my wife is gone, but life goes on, and I will honor her memory in my actions."

Death and Dying

- Click the statement on the right that represents the thought process of a person in the stage of grief below:

Bargaining

"I know my wife is gone, but life goes on, and I will honor her memory in my actions."

"No! I can't believe this. This can't be happening!"

"This is the doctor's fault. He should have tested me sooner. I am going to sue him!"

"I can't go through this. I can't get up every day knowing I only have a few months to live."

"Oh please, if you just let my husband be ok I'll be a better person."

Death and Dying

- Click the statement on the right that represents the thought process of a person in the stage of grief below:

Depression

"Oh please, if you just let my husband be ok I'll be a better person."

"No! I can't believe this. This can't be happening!"

"This is the doctor's fault. He should have tested me sooner. I am going to sue him!"

"I can't go through this. I can't get up every day knowing I only have a few months to live."

"I know my wife is gone, but life goes on, and I will honor her memory in my actions."

Death and Dying

- Click the statement on the right that represents the thought process of a person in the stage of grief below:

Acceptance

"Oh please, if you just let my husband be ok I'll be a better person."

"No! I can't believe this. This can't be happening!"

"This is the doctor's fault. He should have tested me sooner. I am going to sue him!"

"I know my wife is gone, but life goes on, and I will honor her memory in my actions."

"I can't go through this. I can't get up every day knowing I only have a few months to live."

Death and Dying

- EMTs must provide medical care and support the emotional needs of the patient and family.

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Death and Dying

- Actions to help reduce the emotional burden include:
 - Maintain the patient's dignity.
 - Show respect for the patient.
 - Communicate.

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Death and Dying

- Actions to help reduce the emotional burden include:
 - Allow family members to express themselves.
 - Listen empathetically.
 - Do not give false reassurances.

continued on next slide

Death and Dying

- Actions to help reduce the emotional burden include:
 - Use a gentle tone of voice.
 - If the situation allows, permit the family to touch or hold the patient's body after death.
 - Do what you can to comfort the family.

Case Study

Connor and Melinda are met at the door by a young woman who has been crying, and who says, "It's my grandfather. His name is James Bennett. He has heart failure and kidney failure, but he is a lot worse today. My mom called and said he has a high fever and is disoriented."

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Case Study

- How should Connor and Melinda interact with Mr. Bennett?
- What can they say or do to help comfort his family?
- What is the significance of knowing the patient has a fever?

Emotional Aspects of EMS

- Stressors
 - Long hours
 - Boredom between calls
 - Working too much, too hard
 - Getting little recognition
 - Having to respond instantly

continued on next slide

Emotional Aspects of EMS

- Stressors
 - Making life-and-death decisions
 - Fearing serious errors
 - Dealing with dying people and grieving survivors
 - Being responsible for someone's life

continued on next slide

Emotional Aspects of EMS

- High-stress situations
 - Multiple-casualty incidents (MCIs)
 - Abuse and neglect of children and adults
 - Emergencies involving infants and children

continued on next slide

Emotional Aspects of EMS

- High-stress situations
 - Injury or death of a coworker
 - Responding and providing emergency care to a relative or bystander
 - Severe traumatic injuries such as amputations

continued on next slide

Stress Reactions

- EMTs may suffer three types of stress reactions:
 - Acute stress reaction
 - Delayed stress reaction
 - Cumulative stress reaction

continued on next slide

Stress Reactions

- Acute stress reaction
 - Related to high-stress situations
 - Signs and symptoms occur during or immediately following the incident.
 - Signs and symptoms may be cognitive, physical, behavioral, or psychological.

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Stress Reactions

- Acute stress reaction
 - Common minor symptoms include:
 - Nausea
 - Increased heart rate
 - Appetite changes
 - Trouble concentrating
 - Trouble sleeping

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Stress Reactions

- Delayed stress reaction
 - In posttraumatic stress disorder (PTSD), signs and symptoms may occur days, months, or years after a high-stress incident.
 - The delay in onset can make diagnosis difficult.

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Stress Reactions

- Delayed stress reaction signs and symptoms include:
 - Nightmares
 - Irritability
 - Insomnia
 - Inability to think clearly
 - Flashbacks
 - Increased interpersonal conflict
 - Decreased ability to relate to others

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Stress Reactions

- Delayed stress reaction
 - PTSD can be associated with substance abuse.
 - Anyone with PTSD requires professional mental health assistance.

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Stress Reactions

- Cumulative stress reaction
 - Results from constant exposure to stressful situations over time
 - Can lead to **burnout**—a state of exhaustion and irritability
 - Initial signs and symptoms can be missed, and include increased anxiety and irritability.

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Stress Reactions

- Cumulative stress reaction
 - The condition can progress to emotional exhaustion and can affect physical health.
 - Burnout can lead to turnover in the EMS profession.
 - Early recognition is critical to successful intervention.

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The warning signs of stress.

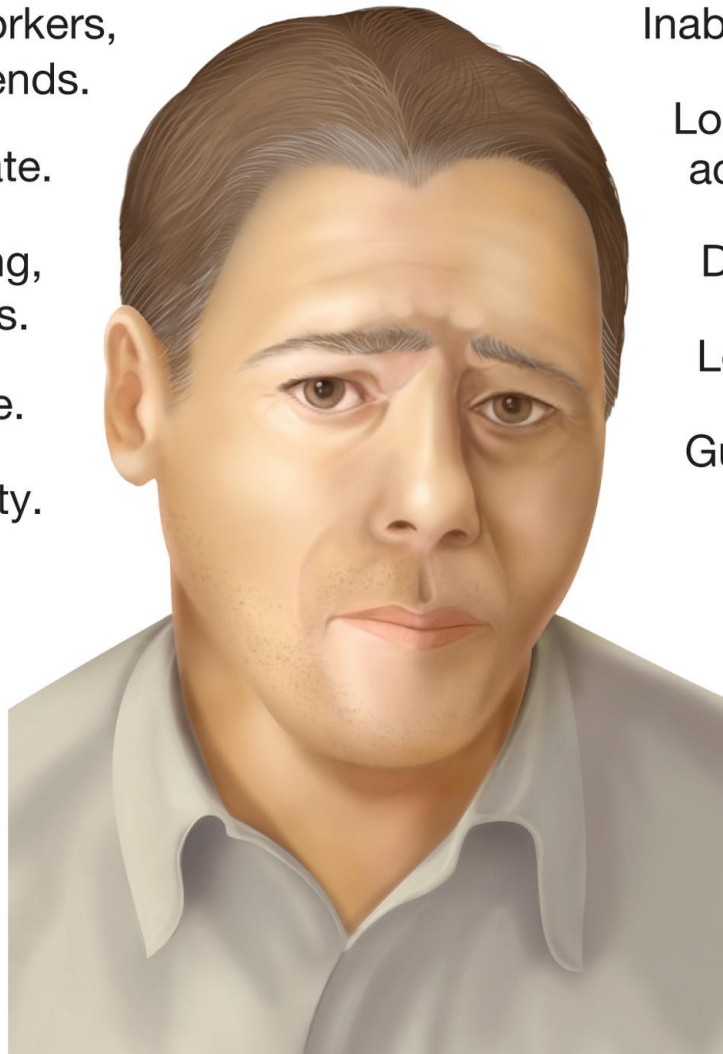
Irritability toward coworkers,
patients, family, and friends.

Inability to concentrate.

Difficulty sleeping,
nightmares.

Loss of appetite.

Anxiety.



Inability to make decisions.

Loss of interest in sexual
activities.

Desire to be left alone.

Loss of interest in work.

Guilt.

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Stress Reactions

- General categories of signs and symptoms
 - Thinking
 - Confusion
 - Inability to make judgments or decisions
 - Loss of motivation
 - Chronic forgetfulness
 - Loss of objectivity

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Stress Reactions

- General categories of signs and symptoms
 - Psychological
 - Depression
 - Excessive anger
 - Negativism
 - Hostility

continued on next slide

Stress Reactions

- General categories of signs and symptoms
 - Psychological
 - Defensiveness
 - Mood swings
 - Feelings of worthlessness

continued on next slide

Stress Reactions

- General categories of signs and symptoms
 - Physical
 - Persistent exhaustion
 - Headaches
 - Gastrointestinal distress
 - Dizziness
 - Pounding heart

continued on next slide

Stress Reactions

- General categories of signs and symptoms
 - Behavioral
 - Overeating
 - Increased alcohol or drug use
 - Grinding teeth
 - Hyperactivity
 - Lack of energy

continued on next slide

Stress Reactions

- General categories of signs and symptoms
 - Social
 - Increased interpersonal conflicts
 - Decreased ability to relate to patients as individuals

Stress Management

- The following lifestyle changes can help you deal with stress:
 - Diet
 - Cut down on sugar, caffeine, alcohol.
 - Increase lean protein, limit carbohydrates and saturated fat.
 - Eat frequently, but in small amounts.

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Stress Management

- The following lifestyle changes can help you deal with stress:
 - Exercise more often.
 - Learn to relax.
 - Avoid self-medication/substance abuse.

continued on next slide

Stress Management

- Keep balance in your life.
 - Assess your priorities.
 - Discuss your worries with a trusted person.
 - Accept that no one is perfect and everyone can make mistakes.

continued on next slide

Stress Management

- Recognize the response of your family and friends.
- Your job may cause stress for others.

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Stress Management

- You may find the following:
 - Lack of understanding
 - Fear of separation and being ignored
 - Worry about on-call situations
 - Inability to plan
 - Frustrated desire to share

continued on next slide

Stress Management

- Help your family and friends understand what you do.
- Talk to them and answer questions.
- Make time to include family and friends in your life.

continued on next slide

Stress Management

- Make changes in your work environment.
 - Develop a buddy system with a coworker and look out for each other.
 - Encourage and support coworkers, resist the temptation to dwell on the negative.
 - Take a break to exercise.

continued on next slide

Stress Management

- Make changes in your work environment.
 - Request a different shift.
 - Request a rotation of duty assignment.

continued on next slide

Stress Management

- Seek professional help, if needed.

Critical Incident Stress Management

- Symptoms of burnout may occur after exposure to a critical incident.
- Sufferers of critical incident stress also may have repeated mental images of the situation, inability to function on subsequent calls, and fear of continuing work in EMS.

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Critical Incident Stress Management

- The critical incident stress management (CISM) process consists of two approaches:
 - Critical incident stress debriefing (CISD)
 - Critical incident stress defusing

continued on next slide

Critical Incident Stress Management

- Critical incident stress debriefing
 - Ideally, occurs within 24 to 72 hours of the incident
 - Conducted by peer counselors and mental health professionals
 - Multiple phases with the ultimate goal of overcoming stress and returning to full function
 - May be provided to anyone affected by the situation

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Critical Incident Stress Management

- Critical incident stress defusing
 - Occurs within 1 to 4 hours of the incident
 - Offered to responders most directly involved with the incident

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Critical Incident Stress Management

- Controversy about whether CISD is effective; it currently lacks evidence

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Critical Incident Stress Management

- When CISD is used, it should be part of a comprehensive stress management program that includes the following:
 - Preincident stress education
 - On-scene peer support
 - One-on-one support
 - Disaster support services
 - Defusing

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Critical Incident Stress Management

- When CISD is used, it should be part of a comprehensive stress management program that includes the following:
 - CISD
 - Follow-up services
 - Spouse and family support
 - Community outreach programs
 - Other health and welfare programs

Case Study

Connor assures the family that he and Melinda are there to help and that they will let the family know what their findings are. The EMTs pull on disposable exam gloves as they ask about symptoms that may be related to infectious diseases for which they should take additional precautions.

continued on next slide

Case Study

- What signs and symptoms may indicate that the patient has a communicable illness?
- What factors should the EMTs take into considerations in deciding whether it is necessary to use Standard Precautions other than gloves?
- As they approach the patient, are there other safety considerations?

Protecting Yourself from Disease

- Infectious diseases are caused by microscopic pathogens, which include:
 - Bacteria
 - Viruses
 - Fungi
 - Protozoa
 - Helminths

continued on next slide

Protecting Yourself from Disease

- Bacteria
 - Single-celled organisms that can reproduce
 - Usually respond to antibiotic therapy, when it is needed

continued on next slide

Protecting Yourself from Disease

- Bacteria
 - Common bacterial illnesses include:
 - Sinus infection
 - Ear infection
 - Pneumonia
 - Strep throat
 - Tuberculosis

continued on next slide

Protecting Yourself from Disease

- Viruses
 - Require a host to reproduce
 - Invade cells in order to reproduce new viral particles
 - Not responsive to antibiotics; there are few medications to treat viral infections
 - Most cause mild, self-limiting illnesses

continued on next slide

Protecting Yourself from Disease

- Viral illnesses include:
 - Colds and influenza
 - Acquired immune deficiency syndrome (AIDS), caused by the human immunodeficiency virus (HIV)
 - Pneumonia
 - Hepatitis (A, B, C, and others)

continued on next slide

Protecting Yourself from Disease

- Viral illnesses include:
 - Severe acute respiratory syndrome (SARS)
 - Chickenpox (varicella)
 - Respiratory syncytial virus (RSV)

continued on next slide

Protecting Yourself from Disease

- Fungi
 - Plant-like microorganisms
 - Usually do not cause illness when the immune system is functioning normally
 - Can be a problem in patients with immune deficiency

continued on next slide

Protecting Yourself from Disease

- Protozoa
 - Single-celled organisms capable of movement
 - Often found in the soil
 - Illnesses include:
 - Some forms of gastroenteritis
 - Some vaginal infections
 - Malaria

continued on next slide

Protecting Yourself from Disease

- Helminths
 - Parasitic worms
 - Examples include:
 - Roundworms
 - Flukes
 - Tapeworms
 - Hookworms

continued on next slide

Protecting Yourself from Disease

- Infectious diseases are contracted from pathogens.
- Some infectious diseases can be passed from person to person, and are called communicable diseases.

continued on next slide

Protecting Yourself from Disease

- Communicable diseases can be spread directly or indirectly.
 - Examples of direct transmission include:
 - Blood-to-blood contact
 - Contact with mucous membranes or wounds
 - Contact with respiratory secretions (coughing, sneezing)

continued on next slide

An open sore on the foot of an apparent drug user is an example of an open wound that has the potential to spread infection.



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Protecting Yourself from Disease

- Communicable diseases can be spread directly or indirectly.
 - Indirect transmission can occur from contact with an object, such as a needle, that is contaminated with another person's blood.

continued on next slide

Protecting Yourself from Disease

- Standard Precautions
 - Guidelines developed by OSHA to protect health care workers from communicable disease
 - Employers must ensure that the equipment needed for Standard Precautions is available, and must have a written exposure control plan.

continued on next slide

Protecting Yourself from Disease

- Standard Precautions
 - Standard Precautions is the general term for the process of protecting yourself from communicable disease transmission through blood and body fluids.
 - The equipment used for some of the steps of Standard Precautions is called personal protective equipment (PPE).

continued on next slide

Protecting Yourself from Disease

- Standard Precautions
 - Federal law permits notification of EMS personnel who have been exposed to certain communicable diseases.
 - Guidelines for Standard Precautions are on the following slides.

continued on next slide

Thoroughly washing hands after patient contact is the first line of protection against infectious disease.



continued on next slide

Protecting Yourself from Disease

- Hand washing is the single most important measure for preventing disease transmission.
 - Wash after patient contact, even when you wore gloves for patient care.
 - Remove jewelry.
 - Vigorously rub for at least 10 to 15 seconds.

continued on next slide

Protecting Yourself from Disease

- Hand washing is the single most important measure for preventing disease transmission.
 - Rinse well.
 - Dry with a disposable towel.

continued on next slide

Protecting Yourself from Disease

- Alcohol-based hand sanitizer can be used when you do not have access to soap and water.
 - Use a product with at least 60% alcohol.
 - As soon as possible, wash with soap and water.

continued on next slide

Protecting Yourself from Disease

- PPE consists of barriers that protect your skin and mucous membranes from contact with patients' blood and body fluids.
 - Eye protection
 - Protective gloves
 - Gowns
 - Masks

continued on next slide

Protecting Yourself from Disease

- Eye protection is used to prevent blood and fluids from contacting the mucous membranes of your eyes.

continued on next slide

Wear a protective eyeshield and other personal protective equipment when suctioning a patient.



continued on next slide

Protecting Yourself from Disease

- Vinyl or latex gloves protect your hands.
- Change gloves between patients.
- Use the correct procedure to remove contaminated gloves.
- Wash hands immediately after removing gloves.

EMT SKILLS 2-1

Safe Glove Removal

Follow a safe technique for removal of gloves. Use only contaminated glove surfaces to touch other contaminated glove surfaces, and use clean inside glove surfaces to touch other clean inside glove surfaces. Do not touch a contaminated surface with your bare hand or fingers.



Use a gloved finger to pull a cuff out and down on the other glove. Do not touch the inside of the glove.



Without touching the inside of the glove, continue pulling it downward.



Pull until the glove is inside out and off all but the tips of the fingers and thumb.



Protecting Yourself from Disease

- Gowns
 - Worn when there are large amounts of blood or fluid with the risk for splashing, such as with childbirth
 - Change your uniform if it becomes contaminated.

continued on next slide

Protecting Yourself from Disease

- Masks
 - Disposable surgical masks prevent fluids from splashing into your nose or mouth, and protect against most airborne diseases.
 - When tuberculosis is suspected, use a high-efficiency particulate air (HEPA) mask or N-95 respirator.

continued on next slide

Use surgical masks to protect against blood splatters or airborne disease.



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Wear a special high-efficiency particulate air (HEPA) respirator or an N-95 respirator when you suspect tuberculosis.



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Protecting Yourself from Disease

- Additional guidelines
 - Use disposable equipment when possible; disinfect nondisposable equipment.
 - Do not reuse disposable equipment.
 - Use biohazard bags for potentially infectious waste.
 - Wash soiled uniforms in hot water with detergent for at least 25 minutes.

continued on next slide

Put items in a biohazard bag if infectious or contaminated with blood or other body fluids.



continued on next slide

Protecting Yourself from Disease

- Additional guidelines
 - Dispose of needles and other sharp instruments in a rigid, puncture-proof sharps container.
 - Never recap a needle.
 - Clean up blood and body fluids with a bleach and water solution or disinfectant.
 - Wash your hands after cleaning the ambulance and equipment.

continued on next slide

Place all sharp instruments in a rigid, well-mounted, puncture-resistant container.



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Protecting Yourself from Disease

- Cleaning
 - Washing a soiled object with soap and water
 - Used for surfaces that are not contacted by patients, such as walls

continued on next slide

Protecting Yourself from Disease

- Disinfecting
 - Includes cleaning and using a hospital-grade disinfectant or germicide to kill many of the microorganisms that may be present on the surface of the object
 - Objects that come into contact with a patient's intact skin, such as backboards, should be disinfected.

continued on next slide

Protecting Yourself from Disease

- Sterilization
 - Process (use of chemicals or heat) that kills all microorganisms on the surface of an object
 - Not performed in the prehospital setting
 - Used for any item that comes into contact with mucous membranes or non-intact skin

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Protecting Yourself from Disease

- Have TB testing yearly.
- Immunizations:
 - Influenza (annually)
 - Tetanus (every 10 years)
 - Hepatitis B
 - Polio
 - Rubella
 - Measles
 - Mumps
 - Varicella (chickenpox)

Protecting Yourself from Disease

- Report exposures following state and local laws and your employer's policies.
- In general, report the exposure as soon as possible to your supervisor, including the date, time, and details of the exposure.

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TABLE 2-1 Infectious Diseases, Transmission, and Personal Protective Measures

Disease	Transmission Mode	Incubation Period	Protective Measures
<i>HIV/AIDS</i>	Blood, semen, vaginal fluid, blood transfusion, needlestick, transplacental	Months	Gloves, eyewear, hand washing
<i>Hepatitis B and C</i>	Blood, semen, vaginal fluid, needlestick, transplacental, human bite, sexual contact (HBV)	Weeks or months	Gloves, eyewear, hand washing
<i>Tuberculosis</i>	Respiratory secretions, airborne or direct contact	2 to 6 weeks	Gloves, eyewear, HEPA or N-95 respirator, hand washing
<i>Influenza</i>	Airborne droplets, direct contact with body fluids	1 to 3 days	Gloves, surgical mask, hand washing
<i>Chicken pox (varicella)</i>	Airborne droplets, direct contact with open sores	11 to 21 days	Gloves, surgical mask, hand washing
<i>Bacterial meningitis</i>	Oral and nasal secretions	2 to 10 days	Gloves, surgical mask, hand washing
<i>Pneumonia</i>	Respiratory secretions and droplets	1 to 3 days	Gloves, surgical mask, hand washing
<i>German measles (rubella)</i>	Airborne droplets, transplacental	10 to 12 days	Gloves, surgical mask, hand washing
<i>Whooping cough (pertussis)</i>	Respiratory secretions, airborne droplets	6 to 20 days	Gloves, surgical mask, hand washing
<i>Staphylococcal skin infection</i>	Direct contact with infected lesion or contaminated object	1 to 3 days	Gloves, hand washing
<i>Severe acute respiratory syndrome (SARS) coronavirus</i>	Respiratory airborne, direct contact	10 days	Gloves, hand washing, surgical mask, eye protection

Diseases of Concern to the EMT

- Hepatitis B and hepatitis C are viral infections of the liver.
 - Contracted through contact with blood and body fluids
 - Infected persons can be asymptomatic, but still transmit the disease.

continued on next slide

Diseases of Concern to the EMT

- Signs and symptoms of hepatitis
 - Fatigue
 - Nausea, loss of appetite
 - Abdominal pain
 - Headache
 - Fever
 - Jaundice
 - Dark urine

continued on next slide

Diseases of Concern to the EMT

- To prevent infection with hepatitis
 - Obtain hepatitis B vaccine; there is no vaccination to prevent hepatitis C.
 - Use Standard Precautions.

continued on next slide

Diseases of Concern to the EMT

- Tuberculosis
 - Prevalence has increased over the past several years.
 - There are antibiotic-resistant forms.
 - Most often tuberculosis affects the lungs, but it can affect other tissues.
 - It usually spreads by breathing in the infected droplets of sputum of a the patient with a cough.

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Diseases of Concern to the EMT

- Tuberculosis signs and symptoms include:
 - Fever
 - Cough; patient may cough up blood
 - Night sweats
 - Weight loss

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Diseases of Concern to the EMT

- For known or suspected active TB
 - Wear gloves.
 - Wear a HEPA mask or N-95 respirator.
 - Wash your hands.
 - Disinfect equipment.

continued on next slide

Diseases of Concern to the EMT

- Acquired immune deficiency syndrome (AIDS)
 - Results from infection with the human immunodeficiency virus (HIV)
 - More difficult than hepatitis B to transmit through occupational exposure
 - Impairs the body's ability to fight infections
 - Follow Standard Precautions.

continued on next slide

Diseases of Concern to the EMT

- Acquired immune deficiency syndrome (AIDS)
 - Transmitted by:
 - Sexual contact involving exchange of semen, blood, cervical, or vaginal secretions
 - Infected needles
 - Infected blood or blood products

continued on next slide

Diseases of Concern to the EMT

- Acquired immune deficiency syndrome (AIDS)
 - Transmitted by:
 - Mother-child transmission
 - Contact between mucous membranes or open skin with infected body fluids

continued on next slide

Diseases of Concern to the EMT

- The most common signs and symptoms of HIV/AIDS include:
 - Persistent, low-grade fever
 - Night sweats
 - Swollen lymph glands
 - Loss of appetite
 - Nausea

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Diseases of Concern to the EMT

- The most common signs and symptoms of HIV/AIDS include:
 - Persistent diarrhea
 - Headache
 - Sore throat
 - Fatigue
 - Weight loss

continued on next slide

Diseases of Concern to the EMT

- The most common signs and symptoms of HIV/AIDS include:
 - Shortness of breath
 - Mental status changes
 - Muscle and joint aches
 - Rash
 - Various opportunistic infections

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Diseases of Concern to the EMT

- Severe acute respiratory syndrome (SARS)
 - Outbreak in 2003
 - Spread by person-to-person respiratory contact
 - Accompanied by high fever, headache, body aches

continued on next slide

Diseases of Concern to the EMT

- Severe acute respiratory syndrome (SARS)
 - Causes pneumonia and severe respiratory distress
 - PPE includes surgical mask and eye protection; place a mask on the patient.

continued on next slide

Diseases of Concern to the EMT

- West Nile virus
 - Mosquito-borne
 - Most infected patients have no symptoms or mild symptoms
 - A few patients develop severe symptoms that can last for weeks

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Diseases of Concern to the EMT

- Mild symptoms of West Nile virus include:
 - Fever
 - Headache, body ache
 - Nausea, vomiting
 - Rash on the chest, stomach, back
 - Swollen lymph nodes in the neck

continued on next slide

Diseases of Concern to the EMT

- Severe symptoms of West Nile virus include:
 - High fever
 - Headache and stiff neck
 - Confusion, disorientation, coma
 - Seizures
 - Muscle weakness
 - Numbness, paralysis
 - Vision loss

continued on next slide

Diseases of Concern to the EMT

- Multidrug-resistant organisms
 - Common in patients who are in hospitals or long-term care facilities, or those who have frequent contact with the health care system
 - May cause pneumonia; infections of the blood, ear, sinuses, and skin; peritonitis

continued on next slide

Diseases of Concern to the EMT

- Multidrug-resistant organisms
 - Methicillin/oxacillin-resistant *Staphylococcus aureus* (MRSA)
 - Vancomycin-resistant enterococci (VRE)
 - Penicillin-resistant *Streptococcus pneumoniae* (PRSP)
 - Drug-resistant *Streptococcus pneumoniae* (DRSP)

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Diseases of Concern to the EMT

- Multidrug-resistant organisms
 - Follow Standard Precautions, and any additional instructions provided by the medical facility.

Case Study

Mr. Bennett has not had a cough, but has a history of urinary tract infections that have led to similar signs and symptoms. Mr. Bennett's confusion is accompanied by some agitation, so Connor and Melinda speak calmly to him, but maintain alertness to the possibility that the agitation could lead to physical combativeness.

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Case Study

- In addition to gloves, what PPE, if any is needed?

Protecting Yourself from Injury

- Prevention strategies include:
 - Use of vehicle restraint systems
 - Safe lifting and moving techniques
 - Getting adequate sleep
 - Physical fitness and proper nutrition
 - Using Standard Precautions

continued on next slide

Protecting Yourself from Injury

- Other actions to protect yourself must be taken in the following situations:
 - Rescue operations
 - Hazardous materials incidents
 - Violence/crime scenes
 - Biological and chemical weapons of mass destruction

continued on next slide

Protecting Yourself from Injury

- Other actions to protect yourself must be taken in the following situations:
 - Hazardous materials
 - Use binoculars and the U.S. DOT *Emergency Response Guidebook* to identify hazardous materials.
 - Request a hazardous materials team.
 - Allow hazardous materials personnel to decontaminate the patient and bring him to you.

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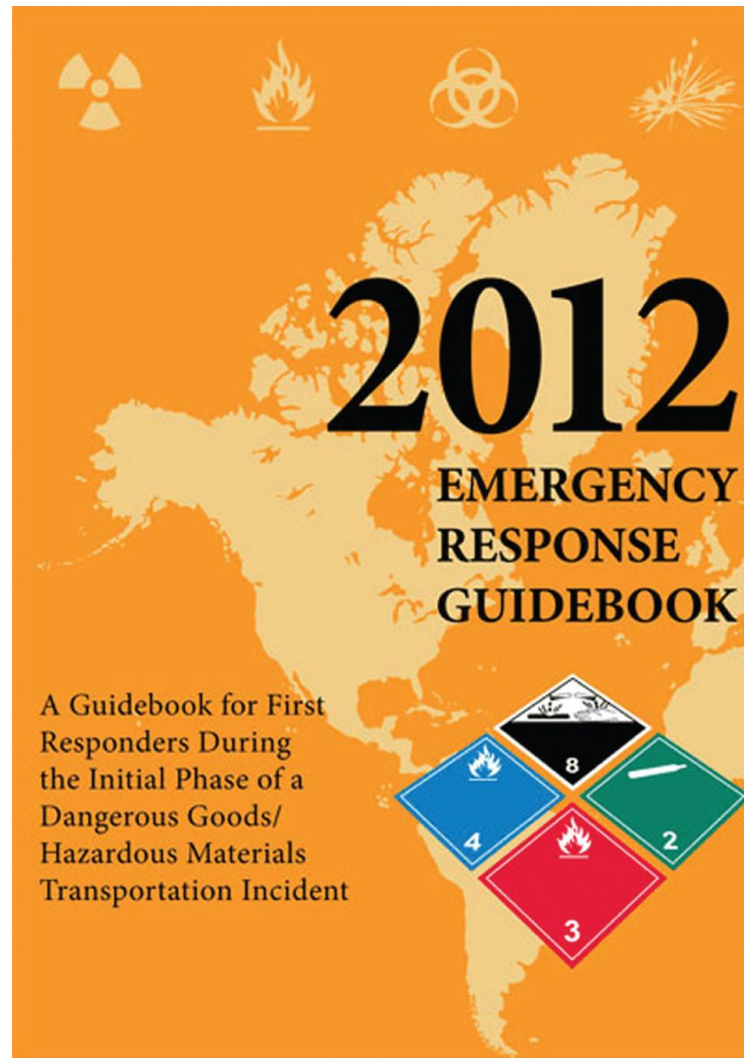
Examples of hazardous materials warning placards.

Hazardous Materials Warning Placards

DOMESTIC PLACARDING

<div style="border: 1px solid black; padding: 5px; width: 100px; height: 100px; margin: 0 auto;"> <div style="border: 1px solid black; width: 80px; height: 80px; position: relative;"> <div style="position: absolute; top: 5px; left: 5px; border: 1px solid black; width: 20px; height: 20px; text-align: center; line-height: 20px;">1</div> <div style="position: absolute; top: 50%; left: 50%; transform: translate(-50%, -50%); font-weight: bold;">EXPLOSIVES A 1</div> </div> </div>	<div style="border: 1px solid black; padding: 5px; width: 100px; height: 100px; margin: 0 auto;"> <div style="border: 1px solid black; width: 80px; height: 80px; position: relative;"> <div style="position: absolute; top: 5px; left: 5px; border: 1px solid black; width: 20px; height: 20px; text-align: center; line-height: 20px;">2</div> <div style="position: absolute; top: 50%; left: 50%; transform: translate(-50%, -50%); font-weight: bold;">EXPLOSIVES B 1</div> </div> </div>	<div style="border: 1px solid black; padding: 5px; width: 100px; height: 100px; margin: 0 auto;"> <div style="border: 1px solid black; width: 80px; height: 80px; position: relative;"> <div style="position: absolute; top: 5px; left: 5px; border: 1px solid black; width: 20px; height: 20px; text-align: center; line-height: 20px;">3</div> <div style="position: absolute; top: 50%; left: 50%; transform: translate(-50%, -50%); font-weight: bold;">BLASTING AGENTS 1</div> </div> </div>	<div style="border: 1px solid black; padding: 5px; width: 100px; height: 100px; margin: 0 auto;"> <div style="border: 1px solid black; width: 80px; height: 80px; position: relative;"> <div style="position: absolute; top: 5px; left: 5px; border: 1px solid black; width: 20px; height: 20px; text-align: center; line-height: 20px;">4</div> <div style="position: absolute; top: 50%; left: 50%; transform: translate(-50%, -50%); font-weight: bold;">POISON GAS 2</div> </div> </div>	<div style="border: 1px solid black; padding: 5px; width: 100px; height: 100px; margin: 0 auto;"> <div style="border: 1px solid black; width: 80px; height: 80px; position: relative;"> <div style="position: absolute; top: 5px; left: 5px; border: 1px solid black; width: 20px; height: 20px; text-align: center; line-height: 20px;">5</div> <div style="position: absolute; top: 50%; left: 50%; transform: translate(-50%, -50%); font-weight: bold;">FLAMMABLE GAS 2</div> </div> </div>	<div style="border: 1px solid black; padding: 5px; width: 100px; height: 100px; margin: 0 auto;"> <div style="border: 1px solid black; width: 80px; height: 80px; position: relative;"> <div style="position: absolute; top: 5px; left: 5px; border: 1px solid black; width: 20px; height: 20px; text-align: center; line-height: 20px;">6</div> <div style="position: absolute; top: 50%; left: 50%; transform: translate(-50%, -50%); font-weight: bold;">NON-FLAMMABLE GAS 2</div> </div> </div>	<div style="border: 1px solid black; padding: 5px; width: 100px; height: 100px; margin: 0 auto;"> <div style="border: 1px solid black; width: 80px; height: 80px; position: relative;"> <div style="position: absolute; top: 5px; left: 5px; border: 1px solid black; width: 20px; height: 20px; text-align: center; line-height: 20px;">7</div> <div style="position: absolute; top: 50%; left: 50%; transform: translate(-50%, -50%); font-weight: bold;">CHLORINE 2</div> </div> </div>
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<div style="border: 1px solid black; padding: 5px; width: 100px; height: 100px; margin: 0 auto;"> <div style="border: 1px solid black; width: 80px; height: 80px; position: relative;"> <div style="position: absolute; top: 5px; left: 5px; border: 1px solid black; width: 20px; height: 20px; text-align: center; line-height: 20px;">15</div> <div style="position: absolute; top: 50%; left: 50%; transform: translate(-50%, -50%); font-weight: bold;">POISON 6</div> </div> </div>	<div style="border: 1px solid black; padding: 5px; width: 100px; height: 100px; margin: 0 auto;"> <div style="border: 1px solid black; width: 80px; height: 80px; position: relative;"> <div style="position: absolute; top: 5px; left: 5px; border: 1px solid black; width: 20px; height: 20px; text-align: center; line-height: 20px;">16</div> <div style="position: absolute; top: 50%; left: 50%; transform: translate(-50%, -50%); font-weight: bold;">RADIOACTIVE 7</div> </div> </div>	<div style="border: 1px solid black; padding: 5px; width: 100px; height: 100px; margin: 0 auto;"> <div style="border: 1px solid black; width: 80px; height: 80px; position: relative;"> <div style="position: absolute; top: 5px; left: 5px; border: 1px solid black; width: 20px; height: 20px; text-align: center; line-height: 20px;">17</div> <div style="position: absolute; top: 50%; left: 50%; transform: translate(-50%, -50%); font-weight: bold;">CORROSIVE 8</div> </div> </div>	<div style="border: 1px solid black; padding: 5px;"> <p>[WHITE] SQUARE BACKGROUND FOR PLACARD HIGHWAY</p> <ul style="list-style-type: none"> • Used for "HIGHWAY ROUTE CONTROLLED QUANTITY OF RADIOACTIVE MATERIALS". (Sec. 172.507) <p>RAIL</p> <ul style="list-style-type: none"> • Used for RAIL SHIPMENTS-"EXPLOSIVE A." "POISON GAS" and "POISON GAS-RESIDUE" placards. (Sec. 172.510(a)) </div>			

The *Emergency Response Guidebook* should be carried on all EMS vehicles.



Self-contained breathing apparatus (SCBA).



Typical hazardous materials protective suits.



Protecting Yourself from Injury

- Other actions to protect yourself must be taken in the following situations:
 - Rescue situations that can pose hazards include:
 - Downed power lines or other potential for electrocution
 - Fire or threat of fire
 - Explosion or threat of explosion
 - Hazardous materials

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Downed power lines pose a potential life threat for patients and rescuers. (© Mark C. Ide)



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Protecting Yourself from Injury

- Other actions to protect yourself must be taken in the following situations:
 - Possible structural collapse
 - Low oxygen levels in confined spaces
 - Trenches that are not properly secured
 - Biological, nuclear, and chemical weapons

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Protecting Yourself from Injury

- Rescue situations
 - Call for specialized teams to handle the hazard.
 - Use personal protective gear if you cleared to enter the area to provide patient care.

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Full protective gear, including eye protection, helmet, turnout gear, and gloves.



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Protecting Yourself from Injury

- At roadway scenes, EMS personnel must wear high-visibility apparel that meet ANSI/ISEA Class 2 or Class 3 standards.

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Protecting Yourself from Injury

- Violence and crime
 - Violence can arise from patients, bystanders, family members, or perpetrators of a crime.
 - If you suspect the potential for violence, request law enforcement.
 - Do not enter an unsafe scene.

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Protecting Yourself from Injury

- Scenes with high risk for violence include:
 - Domestic disputes
 - Patients (or bystanders) under the influence of drugs or alcohol
 - Agitated, hostile patients, family, bystanders

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Protecting Yourself from Injury

- Scenes with high risk for violence include:
 - Street or gang fights; bar fights
 - Potential suicide
 - Behavioral emergencies
 - Crime scenes

Case Study

Conner and Melinda complete their assessment and initial treatment of Mr. Bennett, and prepare to place him on the stretcher for transport.

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Case Study

- What are the potential risks to Connor and Melinda at this phase of the call?
- How can EMTs be proactive about minimizing these risks?

Physical Well-Being

- Physical well-being is necessary to performing the job of an EMT.
- Physical well-being includes:
 - Physical fitness
 - Adequate sleep
 - Injury prevention

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Physical Well-Being

- The core components to physical fitness are:
 - Cardiovascular endurance
 - Muscle strength
 - Muscle endurance
 - Muscle flexibility
 - Body composition

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Physical Well-Being

- Cardiovascular endurance
 - Improves the ability of the heart, lungs, and blood vessels to supply the body with oxygen and nutrients
 - Activities include walking, jogging, swimming, and elliptical or step machines
 - Reach and maintain your target heart rate for 30 to 40 minutes, at least three times per week.

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Physical Well-Being

- Cardiovascular endurance
 - Target heart rate:
 - Measure your resting heart rate.
 - Subtract your age from 220, which provides your estimated maximum heart rate.

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Physical Well-Being

- Cardiovascular endurance
 - Target heart rate:
 - Subtract your resting heart rate from your maximum heart rate, and then multiply that figure by 0.70.
 - Add the final calculated number from step 3 to your resting heart rate.

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Physical Well-Being

- Muscle strength
 - Required for the frequent, heavy lifting EMTs do
 - Attained through weight lifting or other resistance exercises
- Muscle endurance
 - Ability of muscle to function over time without fatigue

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Physical Well-Being

- Muscle flexibility
 - Allows movement through the full range of motion without injury
 - Achieved through stretching
- Body composition
 - Ratio of body fat to total weight
 - Lower ratio of body fat decreases risk of chronic illnesses

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Physical Well-Being

- Adequate sleep
 - Working shifts that conflict with your body's natural rhythms can create physical, mental, and social difficulties.
 - Obtain 8 to 10 hours of sleep each day.

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Physical Well-Being

- Tips for improving sleep:
 - Create an environment that mimics nighttime.
 - Create a block of time for uninterrupted sleep.
 - Avoid heavy meals, caffeine, and exercise before sleep time.
 - Reduce interruptions by turning off pagers and phones, if possible.

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Physical Well-Being

- Smoking cessation
 - Smoking is a risk to your personal health and a violation of your responsibility to promote public health.
- Alcohol and drug-related issues
 - Avoid self-medication or abuse of alcohol or medications to cope with stress.
 - Seek professional assistance for alcohol and drug issues.

Mental Well-Being

- Stress associated with EMS can affect your mental well-being.
- Over time, stress can lead to chronic physical illness and emotional issues.

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Mental Well-Being

- Talk to your family and friends.
- Exercise, relax, engage in enjoyable activities.
- Seek professional help if needed.

Case Study

Connor and Melinda transport Mr. Bennett to the emergency department, where they turn his care over to the nursing staff with verbal and written reports. The EMTs dispose of their gloves and wash their hands. Connor puts on a fresh pair of gloves and performs routine cleaning and disinfection of the ambulance and equipment.

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Case Study

After their shift, Connor heads to the gym, while Melinda plans to read a book after taking a walk with her dog. After a good night's sleep, both EMTs return to work the next day, ready to meet any challenges that await them.

Lesson Summary

- Dealing with death and dying is a regular part of EMTs' jobs.
- There are five stages of grief.
- Take measures to manage job stress.
- Recognize signs and symptoms of stress reactions.

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Lesson Summary

- Be aware of the risks associated with emergency response.
- Use Standard Precautions for protection from communicable disease.
- Assess all scenes for potential hazards and make sure they have been addressed before entering the scene.