



OSHA AcademyTM
Occupational Safety & Health Training

EMERGENCY

Healthcare

Hospital Emergency Room Safety



Doctors, nurses, and staff who work in the emergency department of a hospital face many risks. The emergency room is open to anyone who comes in, including violent criminals, drug addicts, and any number of other individuals. Because many patients have not yet been stabilized, and medical treatment occurs at a more rapid pace, accidents are more likely to happen in this fast-paced setting than some other medical treatment settings. This course is geared towards an employee in the emergency room and provides important information to stay safe in the emergency room setting.

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OSHAcademy Course 633 Study Guide

Healthcare: Hospital Emergency Room Safety

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Contact OSHAcademy to arrange for use as a training document.

This study guide is designed to be reviewed off-line as a tool for preparation to successfully complete OSHAcademy Course 633.

Read each module, answer the quiz questions, and submit the quiz questions online through the course webpage. You can print the post-quiz response screen which will contain the correct answers to the questions.

The final exam will consist of questions developed from the course content and module quizzes.

We hope you enjoy the course and if you have any questions, feel free to email or call:

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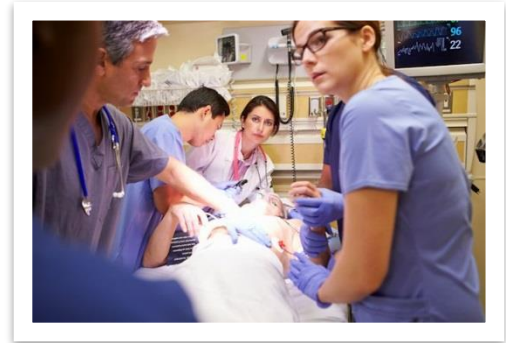
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Course Introduction

Doctors, nurses, and staff who work in the emergency department of a hospital face many risks. The emergency room is open to anyone who comes in, including violent criminals, drug addicts, and any number of other individuals.

Because many patients have not yet been stabilized, and medical treatment occurs at a more rapid pace, accidents are more likely to happen in this fast-paced setting than some other medical treatment settings.



This course is geared towards an employee in the emergency room. Once you complete this training, you will have knowledge of the following topics:

- dealing with hazardous chemicals
- risks of bloodborne pathogens
- warning signs of violence in the emergency room
- measures to monitor violence
- workplace stress
- equipment hazards

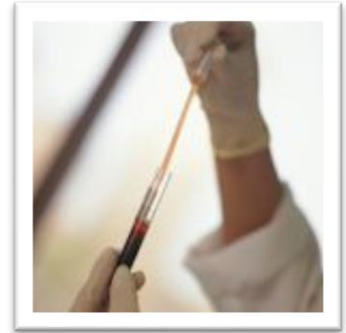
Module 1: Emergency Room Health Risks

From bloodborne pathogens to hazardous chemicals, there are many different types of health risks emergency department (ED) personnel have to deal with on a regular basis. This module will take a closer look at some possible solutions to keep workers safe.

Blood, OPIM, and Bloodborne Pathogens

Potential Hazard

Emergency department workers are at particular risk for exposure to blood, other potentially infectious materials (OPIM), and bloodborne pathogens due to the immediate and life-threatening nature of emergency treatment.



Possible Solutions

The [Bloodborne Pathogen Standard](#) requires precautions when dealing with blood and OPIM. Here are some ways to reduce bloodborne pathogens and OPIM when working with blood:

- Provide engineering and work practice controls.
 - Engineering and work practice controls must be the primary means to eliminate or minimize exposure to bloodborne pathogens. Where engineering controls will reduce employee exposure either by removing, eliminating, or isolating the hazard, they must be used, and changes to the Exposure Control Plan (ECP) must include these engineering controls.
 - For more information on creating an ECP, please see OSHA Academy course [655- Bloodborne Pathogens in the Workplace](#).



Employer Responsibilities

- Ensure employees wear appropriate personal protective equipment (PPE), gloves, gowns, and face masks, when anticipating blood or OPIM exposure [[29 CFR 1910.1030\(d\)\(3\)\(i\)](#)].

- Ensure employees discard contaminated needles and other sharp instruments immediately, or as soon as feasible, after use into appropriate containers [[29 CFR 1910.1030\(d\)\(4\)\(iii\)\(A\)\(1\)](#)]
- Provide in their exposure control plan documentation of consideration and implementation of appropriate commercially available and effective engineering controls designed to eliminate or minimize exposure to blood and OPIM. [[Enforcement Procedures for the Occupational Exposure to Bloodborne Pathogens](#)].
- Practice Universal Precautions: Treat all blood and other potentially infectious body fluids as if they are infected and take appropriate precautions to avoid contact with these materials [[29 CFR 1910.1030\(d\)\(1\)](#)].
- The Bloodborne Pathogens Standard does allow hospitals to practice acceptable alternatives to [Universal Precautions such as Standard Precautions or Body Substance Isolation](#).
- The [Revised Bloodborne Pathogen Standard](#) requires needlestick/sharps injuries be recorded on a Sharps Injury Log [29 CFR 1910.1030\(h\)\(5\)](#). The sharps injury log must be established and maintained and the confidentiality of the injured employee must be protected.
- Follow-up area for needlestick injuries and/or exposure incidents: The Bloodborne Pathogens Standard [29 CFR 1910.1030\(f\)\(3\)](#) requires the employer to make immediately available a confidential medical evaluation and follow-up to an employee reporting an exposure incident. This follow-up often occurs in the emergency department.

Hazardous Chemicals

Potential Hazard

Employee exposure to hazardous chemicals, such as pesticides, disinfectants, and hazardous drugs in the workplace.

Possible Solutions

- A program should be in place to maximize employee safety during decontamination of patients.
- A program should be in place to maximize employee safety during administration, disposal, and preparation of hazardous drugs.

OSHA requires employers to implement a written program that meets the requirements of the [Hazard Communication Standard](#) (HCS) to provide for worker training, warning labels, and access to Material Safety Data Sheets (MSDSs).

The Hazard Communication Standard ensures employee awareness of the hazardous chemicals they are exposed to in the workplace.

For more information on the Hazard Communication Standard, please see OSHAcademy course [705: Hazard Communication Program](#).



Slips, Trips, and Falls

Potential Hazard

Because of the emergency atmosphere, (i.e., high traffic and compact treatment spaces) slips/trips/falls may be a specific concern for ED areas.

There is a potential slip and fall hazard if water is spilled on the floor accidentally, electrical cords run across pathways, and/or if emergency equipment or supplies block passageways.

Possible Solutions

- Provide safe clean-up of spills, and keep walkways free of obstruction.
- Keep floors clean and dry [[29 CFR 1910.22\(a\)\(2\)](#)]. In addition to being a slip hazard, continually wet surfaces promote the growth of mold, fungi, and bacteria that can cause infections.
- Provide warning signs for wet floor areas [[29 CFR 1910.145\(c\)\(2\)](#)].
- Keep access to exits clear and unobstructed at all times [[29 CFR 1910.37\(a\)\(3\)](#) - Exit Routes, Emergency Action Plans, and Fire Prevention Plans].

Latex Allergy

Potential Hazard

It is estimated that 8-12 percent of health care workers are latex sensitive with reactions ranging from irritant contact dermatitis and allergic contact sensitivity, to immediate, possibly life-threatening, sensitivity. Some ED employees may develop a latex sensitivity or allergy from exposure to latex in products like latex gloves.



Many workers who are not traditional health care workers, such as housekeepers, laundry workers, and gardeners, may also be exposed to latex products and latex allergy.

Possible Solutions

- Employers must provide appropriate gloves when exposure to blood or other potentially infectious materials (OPIM) exists.
- Alternatives shall be readily accessible to those employees who are allergic to the gloves normally provided [[29 CFR 1910.1030\(d\)\(3\)\(iii\)](#)].

Tuberculosis

Potential Hazard

Emergency department (ED) staff may be exposed to Tuberculosis (TB) and other infectious agents from patients in waiting room and treatment areas. They may be treating an emergency and be unaware of other pre-existing infectious conditions.



Possible Solutions

- Provide and practice early patient screening in the ED to identify potentially infectious patients, and provide isolation to prevent employee exposures. The Centers for Disease Control guidelines say ED employees should treat patients as having suspected infectious TB if they have both a persistent cough lasting at least three weeks, and at least two of the following additional symptoms:
 - bloody sputum

- night sweats
- weight loss
- fever
- anorexia
- Provide engineering, work practice, and administrative procedures to reduce the risk of exposure. For example:
 - Patients with a productive cough could be asked to wear a mask to prevent the spread of infection.
 - Post waiting rooms signs that state, "If you are coughing you may be asked to wear a mask."
- Isolate patient until verification testing is negative.
- Some EDs provide an isolation room to safely isolate potentially infectious patients. Others can designate an isolation area for infectious patients. Isolation rooms must be respiratory acid-fast bacilli (AFB) rooms that are maintained under negative pressure. AFB isolation refers to a negative-pressure room or an area that exhausts room air directly outside or through HEPA filters if re-circulation is unavoidable.
- Protect employees from exposure to the exhaled air of an individual with suspected or confirmed TB [[29 CFR 1910.134\(a\)\(2\)](#)].
- Isolate patients who have suspected or confirmed TB.
- Post a warning sign outside the ED respiratory isolation room [29 CFR 1910.145\(a\)\(1\)](#) to prevent accidental entry. [29 CFR 1910.145\(f\)\(4\)](#) requires that a signal word (i.e. "STOP", "HALT", or "NO ADMITTANCE") or biological hazard symbol be presented as well as a major message. An example of a description of necessary precautions is "Respirators must be donned before entering."
- Employers must provide suitable respirators when such equipment is necessary to protect the health of the employee [[29 CFR 1910.134\(d\)\(1\)\(i\)](#)]. The minimally acceptable level of respiratory protection for TB is the Type N95 Respirator.



- Establish and maintain a respiratory protective program which includes the requirements outlined in [[29 CFR 1910.134\(c\)](#)].
- Worker education: OSHA requires worker education and training to ensure employee knowledge of TB, including signs, symptoms, transmission, controls, and post-exposure protocols.

Methicillin-Resistant Staphylococcus Aureus (MRSA)

Methicillin-resistant Staphylococcus aureus (MRSA) is bacteria that is resistant to many antibiotics. Staph and MRSA can cause a variety of problems ranging from are skin infections and sepsis to pneumonia to bloodstream infections.

Potential Hazard

ED staff can be exposed to MRSA infections from environmental sources (e.g., homeless patients or IV drug abuse patients). Staff can become infected and then become carriers who can infect other staff members or patients. As MRSA becomes more resistant to antibiotics such as methicillin and potentially vancomycin, it will become more difficult to treat.

Possible Solutions

- Hospitals in different geographical locations will need to establish their own local MRSA data and provide treatment information to clinicians.
- Practice Universal Precautions to help protect employees from infection.
 - Universal Precautions is an approach to infection control to treat all human blood and certain human body fluids as if they were known to be infectious for HIV, HBV and other bloodborne pathogens.
- The CDC's recommendations for preventing transmission of MRSA in hospitals consist of [Standard Precautions](#), which should be used for all patient care. In addition, the CDC recommends “contact precautions” (used for infections spread by skin to skin contact or contact with other surfaces such as herpes simplex virus) in special cases, when the facility deems the multi-drug-resistant microorganism to be of special clinical and epidemiological significance.

Module 1 Quiz

Use this quiz to self-check your understanding of the module content. You can also go online and take this quiz within the module. The online quiz provides the correct answer once submitted.

1. Employees are responsible for providing their own personal protective equipment.

- a. true
- b. false

2. When should an employee treat patients as having suspected infectious tuberculosis?

- a. patient has persistent cough lasting at least three weeks
- b. bloody sputum
- c. weight loss
- d. all of the above

3. _____ of healthcare workers are latex sensitive with reactions ranging from irritant contact dermatitis to possibly life-threatening, sensitivity.

- a. 3-6%
- b. 10-15%
- c. 8-12%
- d. 15-20%

4. Make sure employees discard contaminated needles _____ into appropriate containers.

- a. immediately
- b. as soon as feasible
- c. after use
- d. all of the above

- 5. Emergency department staff can be exposed to MRSA infections from ____.**
- a. hypodermic needles
 - b. environmental sources
 - c. hugging an infected person
 - d. not washing hands

Module 2: Workplace Violence in the Emergency Department

Introduction

Workplace violence is an issue in EDs because of the crowded and emotional situations that can occur with emergencies. In addition, ED patients could be involved with crimes, weapons, or violence from other people that could put the ED employee at an increased risk of workplace violence.

The Bureau of Labor Statistics shows the majority (nearly 60 percent) of all assaults (nonfatal) and violent acts in the workplace occurred in the health care and social assistance industries in 2007.

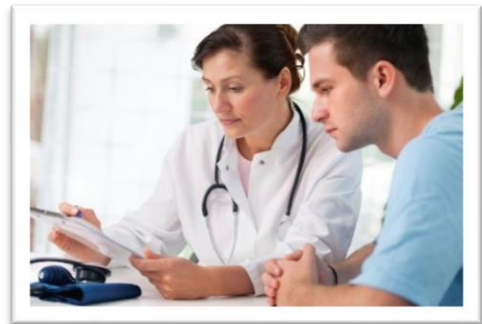
And, according to the Emergency Nurses Association, nearly half (46 percent) of all assaults (non-fatal) and violence that result in days away from work are committed against registered nurses.



Possible Solutions

Good work practice recommends a security management program that addresses workplace violence in the ED and could include:

- Train staff to recognize and diffuse violent situations and patients.
- Be alert for potential violence and suspicious behavior and report it.
- Provide intervention measures including verbal, social, physical, and pharmacological interventions.
- Adequate staffing levels, with experienced clinicians on each shift.
- Counseling and treatment for employees who have experienced workplace violence.
- The use of appropriate engineering controls to provide security such as:



- Install concealed panic buttons in the ED, on staff, and at the check-in area, that can be pushed for emergency help. These buttons could notify hospital security as well as directly reach the local Police Department.
- Improve lighting and video surveillance.
- Use an escort or buddy system.
- Limit access to ED area and personnel, by implementing:
 - A waiting room area with controlled access to ED area. Patients must be buzzed in by receptionist from a secure door.
 - ED exits that exit out only, so people off the streets can't access the ED unless they enter through the waiting room area.
 - The use of metal detectors.
- Provide a "secure" room for patients identified to be violent. This room could include controls such as:
 - video camera surveillance
 - visual surveillance with a window
 - door locks on patient rooms
 - bed with tie down straps
 - locked cabinets
 - furniture and equipment attached to the floor so patients can't throw them at employees



Warning Signs of Violence

The warning signs of increasing anger/violence include:

- pacing and/or restlessness
- clenched fist
- increasingly loud speech
- excessive insistence
- threats
- cursing

Behavioral Clues

- posture: tense, clenched
- speech: loud, threatening, insistent
- motor: restless, pacing, easily started

Historical and Epidemiologic Clues

- history of violence (especially if frequent, serious or unprovoked)
- threats or plans of violence
- symbolic acts of violence
- young and male

Kind of Diagnosis

Certain diagnoses are associated with violent behavior:

- substance abuse, either acute intoxication or withdrawal
- acute psychoses (especially acute mania or acute schizophrenia)
- acute organic brain syndrome
- personality disorders
- partial complex seizures
- temporal lobe epilepsy

Time of Day

Incidents are more likely to occur on a night shift. During a recent study performed at the University of California at Irvine, almost 32% of violent incidents occurred between 11 p.m. and 7 a.m.

Primary Reason for Hospital Violence

According to the American College of Emergency Physicians, there has been quite an increase in ED hospital violence.

The organization says the primary reason is an overall increase in societal violence today. This includes:

- increased presence of gangs, particularly in urban, inner-city settings
- prolonged waits for patients seeking medical care, sometimes compounded by unpleasant waiting room environments
- increased prevalence of drug and alcohol use in society
- increased numbers of private citizens arming themselves related to perceived threats of violence in their neighborhoods
- use of emergency departments for “medical clearance” of drug- and alcohol-related arrests
- unavailability of acute psychiatric treatment, so emergency department provides “psychiatric clearance”

Emergency Staff Response

Emergency staff should trust their senses if they feel uncomfortable around a patient. They should be vigilant and not isolated. They should call security when they first become aware of a threat.

In addition, emergency staff should maintain a safe distance, if possible, and keep an open path for exiting. They should present a calm, caring attitude and not match threats or give orders. It’s important to acknowledge the person’s feelings and avoid behaviors that may be interpreted as aggressive. Eye contact should be limited.

Measures to Manage Violence

Emergency departments should have a plan for managing potentially violent situations. This plan should include who responds, a team leader, each person's responsibility (including the team leader), and the steps that should be taken to respond. In addition, each hospital and emergency department must base its responses to violence on physical location, types of patient populations and histories of prior violent incidents.

Some measures that can be taken are:

- Train personnel: Increase training of doctors, nurses and security personnel about de-escalation techniques (and “take down” techniques), how to recognize potentially violent patients early and getting help before incidents occur.

- Provide secure environments:
 - Use 24-hour presence of trained security officers and closed circuit television cameras with 24-hour trained observers (especially useful in low-traffic areas).
 - Place "panic buttons" unobtrusively in several locations of an emergency department.
 - Use direct phone lines to security in the hospital or local police departments.
 - Control access and egress between the emergency department and other areas of the hospital.
 - Use coded badges for patients and visitors.
 - Install metal detectors (Henry Ford Hospital in Detroit used this with success without diminishing access or level of care. In the first 6 months of screening, 33 handguns, 1,324 knives, 97 mace sprays and many other hazardous items were confiscated).
 - Install physical barriers or bullet proof glass at hospital emergency department entrances.

Real-Life Scenario

Emergency room nurse Erin Riley suffered bruises, scratches and a chipped tooth last year (2009) from trying to pull the clamped jaws of a psychotic patient off the hand of a doctor at a suburban Cleveland hospital.

A second assault just months later was just as upsetting: She had just finished cutting the shirt off a drunken patient and was helping him into his hospital gown when he groped her.

"The patients always come first — and I don't think anybody has a question about that — but I don't think it has to be an either-or situation," said Riley, a registered nurse for five years.

[Read Entire Article](#)

For more information, including how to create a violence prevention program at your facility, please see OSHAcademy course [776: Preventing Workplace Violence in Healthcare](#).

Module 2 Quiz

Use this quiz to self-check your understanding of the module content. You can also go online and take this quiz within the module. The online quiz provides the correct answer once submitted.

- 1. The Bureau of Labor Statistics shows _____ of all assaults and violent acts occurred in the healthcare industry.**
 - a. 40%
 - b. 60%
 - c. 35%
 - d. 20%

- 2. The Emergency Nurses Association says _____ of all assaults that result in days away from work are committed against _____.**
 - a. 35%, doctors
 - b. 46%, registered nurses
 - c. 20%, registered nurses
 - d. 46%, doctors

- 3. When should emergency staff contact security, if they feel threatened?**
 - a. when they first become aware of a threat
 - b. after they have talked to the patient
 - c. once they calm the patient down
 - d. after someone gets injured

- 4. Which of the following is/are measures to manage violence in the emergency room?**
 - a. use 12-hour presence of trained security officers
 - b. place "panic buttons" in several locations
 - c. use coded badges for patients and visitors
 - d. both (b) and (c)

5. You should avoid behaviors that may be interpreted as aggressive.

- a. true
- b. false

Module 3: Other Hazards

Equipment Hazards

Potential Hazard

Injury may occur to employees from improper training or use of equipment (e.g., defibrillators). Electric shock may also occur as a result of lack-of maintenance or misuse of equipment and/or its controls. Oxygen-enriched atmospheres and water may also contribute to hazardous conditions.



Possible Solutions

Each ED should have a program that routinely monitors the status of equipment and proper training of employees to use equipment safely.

Needlestick/Sharps Injuries

According to the Centers for Disease Control and Prevention (CDC), about 385,000 sharps injuries occur annually to hospital employees.

Potential Hazard

Exposure to blood and other potentially infectious materials (OPIM) because of:

- unsafe needle devices
- improper handling and disposal of needles and other sharps

Possible Solutions

- Use safer needle devices and needleless devices to decrease needlestick or other sharps exposures.
- Properly handle and dispose of needles and other sharps according to the Bloodborne Pathogens Standard.



Handling Needles/Sharps

- Do not bend, recap, or remove contaminated needles and other sharps unless such an act is required by a specific procedure or has no feasible alternative [[29 CFR 1910.1030\(d\)\(2\)\(vii\)](#)].

- Do not shear or break contaminated sharps. (OSHA defines *contaminated* as the presence or the reasonably anticipated presence of blood or other potentially infectious materials on an item or surface) [[29 CFR 1910.1030\(d\)\(2\)\(vii\)](#)].

Containerization

- Have needle containers available near areas where needles may be found. [[29 CFR 1910.1030\(d\)\(4\)\(iii\)\(A\)\(2\)](#)].
- Discard contaminated sharps immediately [[29 CFR 1910.1030\(d\)\(4\)\(iii\)\(A\)\(1\)](#)] or as soon as feasible into appropriate containers.

Sharps containers [[29 CFR 1910.1030\(d\)\(4\)\(iii\)\(A\)\(1\)](#)], must be:

- closable, puncture-resistant, and leak-proof on sides and bottom
- accessible, maintained upright, and not allowed to overflow
- labeled or color coded according to [29 CFR 1910.1030\(g\)\(1\)\(i\)](#)
- colored red or labeled with the biohazard symbol
- labeled in fluorescent orange or orange-red, with lettering and symbols in a contrasting color [[29 CFR 1910.1030\(g\)\(1\)\(i\)\(C\)](#)]



Workplace Stress

Studies suggest work stress may increase a person's risk for cardiovascular disease, psychological disorders, workplace injury, and other health problems. Early warning signs may include headaches, sleep disturbances, difficulty concentrating, job dissatisfaction, and low morale.

Potential Hazard

All hospital employees, especially ED employees, are exposed to many stressors at work that can cause workplace stress and burnout. These stressors are due to factors such as:

- shift work
- long hours
- fatigue

- intense emotional situations (e.g., the suffering and death of patients)

Possible Solutions

- Educate employees and management about job stress.
- Establish programs to address workplace stress, such as: Employee Assistance Programs (EAP) or Organizational Change Programs.
 - **An Employee Assistance Program (EAP)** can improve the ability of workers to cope with difficult work situations. Stress management programs teach workers about the nature and sources of stress, the effects of stress on health, and personal skills to reduce stress (e.g., time management or relaxation exercises).
 - EAPs also provide individual counseling for employees for both work and personal problems.
 - **Organizational Change Programs** change hospital policies and procedures to reduce organizational sources of stress. This is done by bringing in a consultant to recommend ways to improve working conditions. This approach is the most direct way to reduce stress at work. It involves the identification of stressful aspects of work (e.g., excessive workload, conflicting expectations) and the design of strategies to reduce or eliminate the identified stressors. Some strategies include:
 - Ensure the workload is in line with workers' capabilities and resources.
 - Design jobs to provide meaning, stimulation, and opportunities for workers to use their skills.
 - Clearly define workers' roles and responsibilities.
 - Give workers opportunities to participate in decisions and actions affecting their jobs.

Terrorism

Potential Hazard

ED staff and other hospitals workers to patients can be exposed to biological agents, chemical agents, and mass casualties as a result of terrorist attacks or events.



Possible Solutions

- Provide and plan for emergency response for health care employers and emergency responders.

Emergency Response Plan

OSHA's HAZWOPER standard requires hospitals to plan for emergencies if they expect to assign their employees to respond to emergencies involving hazardous substances. A hospital designated by a hazardous waste site as a decontamination facility must have an Emergency Response Plan (ERP) which addresses, among other things, decontamination, personal protective equipment, and the roles and functions of trained personnel.

OSHA also recommends the development of an ERP for any other hospitals that may receive and treat victims whose treatment may present decontamination issues, even if they have not been designated as decontamination facilities.

Elements of a Hospital Emergency Response Plan

The hospital's ERP should address the following elements:

- pre-emergency drills implementing the ERP
- personnel roles and responsibilities, including who will be in charge of directing the response, training, and communications
- description of the hospital's system for immediately accessing information on toxic materials
- plan for managing emergency treatment of non-contaminated patients
- prevention of cross-contamination by airborne substances via the hospital's ventilation system or other means
- post-emergency critique and follow-up of drills and actual emergencies

Anthrax

Anthrax is an acute infectious disease caused by a spore-forming bacterium called *Bacillus anthracis*. It is generally acquired following contact with anthrax-infected animals or anthrax-contaminated animal products.

- Health care workers in occupational settings such as hospitals, clinics, and medical laboratories may be exposed to anthrax as a result of contact with patients whose skin, clothing, or personal effects are contaminated with anthrax spores, or through contact with contaminated equipment.
- Anthrax is not a contagious disease.
- Because the most likely exposure route for health care workers is dermal contact, take normal health and safety precautions (such as wearing latex/nitrile examination gloves) to protect yourself against cutaneous anthrax exposure.



Module 3 Quiz

Use this quiz to self-check your understanding of the module content. You can also go online and take this quiz within the module. The online quiz provides the correct answer once submitted.

- 1. Which of the following are signs of workplace stress?**
 - a. headaches
 - b. confusing behavior
 - c. job dissatisfaction
 - d. Both A and C are correct

- 2. What method is considered the most direct way to reduce stress at work?**
 - a. Hazard Communications Program
 - b. organizational change program
 - c. employee assistance program
 - d. workplace safety program

- 3. A hospital designated by a hazardous waste site as a decontamination facility must have a(n) _____.**
 - a. Emergency Response Plan
 - b. workplace safety plan
 - c. employee assistance program
 - d. team meeting

- 4. Anthrax is not a contagious disease.**
 - a. true
 - b. false

- 5. Which of the following is a component of a stress management program?**
 - a. source of stress
 - b. effects of stress on health
 - c. personal skills to reduce stress
 - d. all of the above

Endnotes

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