

Chapter 2: Hazard Recognition and Controls

Chapter 2

Hazard Recognition and Controls

Chapter 2: Hazard Recognition and Controls

2

Preparing for Delivery

Time

The *Hazard Recognition and Controls* chapter is approximately 5 hours of classroom training.

Follow the Lesson Plan for a guide to scheduling this course. Time allotments for specific topics are provided within the plan. You may devote more time to classroom and hands-on activities as needed, as the plan reflects the minimum suggested time allotments.

Staffing

The maximum participant – instructor ratio is 25:1.

During classroom activities, the recommended participant – instructor ratio is 10:1.

During hands-on activities, the recommended participant – instructor ratio is 5:1.

Materials Needed

For this chapter, you will need the following:



- A copy of the Infectious Disease Operations Participant Guide (PG)
- A flip chart or whiteboard and markers
- A computer and projector or monitor

The table on the following page lists the materials needed for this lesson.

Chapter 2: Hazard Recognition and Controls

Preparing for Delivery (continued)

Chapter 2: Hazard Recognition and Controls

Lesson Overview	Media 	Handouts 
Introduction and Objectives (10 min.)	<i>Slides 1 to 5</i>	
Exercise 1: Types of Hazards (30 min.)	<i>Slides 6 to 8</i>	
Exercise 2: Biological Hazards and Controls (50 min.)	<i>Slides 9 to 13</i>	<i>HO 5: Controls for Biological Hazards</i>
Exercise 3: Standard and Expanded Precautions (90 min.)	<i>Slides 14 to 16</i>	<i>HO 6: Standard and Expanded Precautions</i>
Exercise 4: Chemical Hazards and Controls (30 min.)	<i>Slides 17 to 19</i>	<i>HO 7: Chemical Hazards and Controls</i>
Exercise 5: Other Hazards and Controls (40 min.)	<i>Slides 20 to 21</i>	
Exercise 6: Site Safety (40 min.)	<i>Slides 22 to 25</i>	<i>HO 8: Working Safely Around Infectious Diseases</i> <i>IT 1: Safety Hazards Word Search</i>
Summary (10 min.)	<i>Slides 2 to 5</i>	<i>Chapter 2: Things to Remember</i>

Introduction and Objectives

Introduction and Objectives



10
Minutes

Tell participants that this chapter will cover content about recognizing hazards and selecting controls in an infectious disease environment. Ask volunteers to consider their experience, and share what types of hazards they normally encounter on the job, and what types of controls are used to prevent accidents. Allow 2 to 3 minutes for this activity. When finished, tell them they will now explore these topics in more detail.

Display Slides 1 to 5. Introduce the chapter and review the chapter objectives. At the end of this chapter, participants will be able to:

1. List and describe the six general hazard categories on an infectious disease worksite.
2. Describe the key elements of an infectious disease occupational exposure control plan.
3. Explain the importance of workplace control methods, including substitution, engineering controls, administrative controls, and PPE (known as the Hierarchy of Controls).
4. List and demonstrate the key components of Standard Precautions.
5. Explain the key components of the three categories of Expanded Precautions.
6. Describe hazards and controls related to chemical use on infectious disease worksites.
7. Explain the importance of using EPA-approved chemical disinfectants on an infectious disease worksite.
8. Describe physical hazards and controls related to work on infectious disease worksites.
9. Describe ergonomic hazards and controls related to work on infectious disease worksites.
10. Describe psychosocial hazards and controls related to work on infectious disease worksites.
11. Describe safety hazards and controls related to work on infectious disease worksites.
12. List at least five safe work practices for infectious disease worksites.
13. Describe the importance of site safety awareness.

Invite questions about the objectives.



SL 1 to 5



PG: 2-2

Chapter 2: Hazard Recognition and Controls

Exercise 1: Types of Hazards



30
Minutes

Exercise 1: Types of Hazards

Objective

1. List and describe the six general hazard categories on an infectious disease worksite.



SL 6 to 8



PG: 2-3

Display Slides 6 and 7. Open the lesson by asking participants to look at the word cloud. Say, “These words represent examples of different types of hazards that may be present on an infectious disease worksite. One of the best ways to learn about hazards is to group them into different categories. This helps us focus on the types of controls that may be needed for the different hazards on a worksite.”

Have participants work in pairs. Tell them there are six main categories of hazards that they’ll be learning about in this chapter. Without looking in their PGs, ask pairs to come up with the different categories of hazards that these examples might represent. You may want to give a hint to start them off; for example, say, “Look at the word ‘viruses.’ What kind of hazard group might that fit into, chemical or biological?”

Have pairs share their categories with the class. Note their answers on the board.

Display Slide 8 to reveal the answers. If time allows, ask volunteers to name any additional hazards that could fall into these categories.

Conclude by telling participants that a lot of these types of hazards may be found on any worksite, but that in addition to common hazards, they’re going to spend some time looking in detail at hazards that are more specific to infectious disease sites.

Exercise 2: Biological Hazards and Controls

Exercise 2: Biological Hazards and Controls

 50
Minutes

Objectives

2. Describe the key elements of an infectious disease occupational exposure control plan.
3. Explain the importance of workplace control methods, including substitution, engineering controls, administrative controls, and PPE (known as the Hierarchy of Controls).

Display Slide 9. Open the lesson by doing a quick review of some of the infectious diseases participants learned about in Chapter 1, and the different routes of transmission infectious agents may use. (For example: hepatitis B, bloodborne; E. coli, food-borne; Zika, mosquito-borne; tuberculosis, airborne; influenza, direct or indirect contact, droplet or aerosol transmissible.) Note answers on the board.

Display Slide 10. Have participants look at the three examples of diseases and routes of transmission. Say, "These infectious diseases are examples of biological hazards. Because we know their routes of transmission, we can look for specific hazards related to these diseases. What types of things do you think workers may need to look out for if one of these diseases is known to be present on a jobsite?"

Have participants discuss their ideas in pairs and then share the answers with the class. Write the information on the board. (Answers may include: hepatitis B: Be aware of sharps such as used syringes that were not disposed of properly; E. coli: Be aware of spoiled food or water in the area; Influenza: this could be spread in many different ways, so avoid touching people or surfaces that may be infected, and be careful not to inhale airborne particles such as droplets or aerosols from coughs or sneezes that may contain infectious agents.)

Display Slide 11. Explain that in an infectious disease work environment, an occupational exposure control plan should be in place. This type of plan looks at how much risk the presence of a particular infectious disease may pose to workers, based on the type of exposure that may result from the job tasks that are involved for that worksite. As presented in Chapter 1, a risk assessment includes looking at criteria such as the virulence of the disease, routes of transmission, and so on.

Have participants look at page 2–5 in the PG (the key elements of an infectious disease occupational exposure control plan). Have them briefly scan the information included in the plan.

Display Slide 12. Point out that in this exercise, participants are going to talk about different types of controls for the specific hazards posed by infectious diseases.



SL 9–13



HO 5: Controls for
Biological Hazards



PG: 2–2 to 2–9

Chapter 2: Hazard Recognition and Controls

Exercise 2: Biological Hazards and Controls (continued)

Ask participants, “What is the Hierarchy of Controls?” Invite a volunteer to come to the board, or a piece of flip chart paper, and draw/list the Hierarchy of Controls (elimination/substitution, engineering controls, administration controls, and PPE).

Display Slide 13 to check the answers.

Ask, “Which controls are the most effective?” (Elimination and substitution.) “Why does this generally not apply to an infectious disease site?” (If diseases are already known to be present on a site, elimination/substitution isn’t an option. This generally applies to use of chemicals on a site, not the presence of biological agents.) “Why is PPE at the bottom of the list?” (PPE should be a last resort, after all other types of controls have been put into place.)

Ask participants to shout out a couple of examples of engineering controls and administrative controls they may use on a jobsite. Note a few examples on the board.

Distribute Handout 5: *Controls for Biological Hazards*. Read the directions aloud. Have participants complete the handout in pairs. Tell participants to look at PG pages 2–5 to 2–11 as a reference. Then have each pair check their answers with another pair. (See the answer key on the following page.)

Check the answers quickly with the class, and ask if participants can add any other controls to their lists. Answer any questions that may have come up in the completion of the handout. Note that there are OSHA standards that require certain types of PPE/training for working around infectious diseases, and that this will be covered in more detail in Chapters 4 and 5.

Conclude by reiterating that exposure control plans must site specific, and that in cases where there aren’t adequate resources for testing for the presence of infectious agents, the rule is that employers should err on the side of *greater* protection than may be deemed necessary.

Handout 5: Controls for Biological Hazards



Handout 5 Controls for Biological Hazards

Instructions: Read through the list of controls. Write *E* for engineering, *A* for administrative, or *P* for PPE.

1. E Set up a negative-pressure ventilation system.
2. P Use a single-use, full-face shield that is disposable.
3. E Use disinfectants.
4. E Set up isolation rooms.
5. A Set up a training plan that ensures competency.
6. E Use special air handling systems, HEPA filtration, ultraviolet lights.
7. P Wear double gloves.
8. E Use needleless I.V. systems, retractable syringes, and other devices designed to prevent needlestick injuries.
9. A Practice proper hand washing.
10. E Use rigid containers to package waste, including puncture-proof containers for sharps.
11. A Staff the worksite adequately.
12. P Use boot covers that are waterproof and go up to mid-calf, or leg covers.
13. E Use equipment that ventilates outside the work area when treating contaminated waste.
14. A Use hazard communication, labeling, signage, and checklists.
15. P Use surgical hoods, with complete coverage of head and neck.
16. A Avoid areas where hazards are present.
17. A Use PPE observers and a buddy system for donning, doffing, and decontamination.
18. E Use plastic to contain contamination.

Chapter 2: Hazard Recognition and Controls

Handout 5: Controls for Biological Hazards (continued)



Handout 5 Controls for Biological Hazards

19. P Wear a single-use, fluid-resistant or impermeable gown, mid-calf, or coverall without integrated hood.
20. A Limit the number of people who are entering infected areas.
21. P Wear a waterproof apron if infected persons are vomiting or have diarrhea.
22. A Limit movement between outdoor environment and isolation room.
23. A Rotate job tasks to avoid prolonged exposures.
24. E Prepare suitable shelves, straps, or other equipment – especially in transport vehicles, where containers may move or shift – to secure stacked contaminated waste containers.

Exercise 3: Standard and Expanded Precautions

Exercise 3: Standard and Expanded Precautions

 90
Minutes

Objectives

4. List and demonstrate the key components of Standard Precautions.
5. Explain the key components of the three categories of Expanded Precautions.

Display Slide 14. Open the lesson by explaining that the CDC has come up with guidelines for use in healthcare facilities, but that many of these guidelines also apply to environmental service workers who work on sites where infected diseases are known or suspected to be present. These two types of guidelines are known as *Standard Precautions* and *Expanded Precautions*.

Display Slide 15. Explain that Standard Precautions represent a number of engineering, administrative, and PPE controls, several of which are relevant to environmental services workers.

Display Slide 16. Explain that Expanded Precautions (formerly known as Transmission-Based Precautions) are intended to supplement Standard Precautions in patients with known or suspected highly infectious pathogens. The categories of Expanded Precautions are based on the routes of transmission. For diseases that have multiple routes of transmission, a combination of Expanded Precautions may be used.

Divide the class into 3 groups. Distribute Handout 6: *Standard and Expanded Precautions*. Explain that each group will prepare and deliver a short presentation about some of the aspects of Standard or Expanded Precautions; depending on which group they've been assigned. Tell them to prepare notes for their presentations on pieces of flip chart paper, and to practice their delivery. Give them about 20 minutes to prepare. They can look at PG pages 2–11 to 2–22 as a reference.

Have groups take turns giving their presentations to the class. Participants should listen as each group presents, and take notes to answer the questions in their handouts. (See the answer key on the following page.) Answer any questions that may have come up in the completion of the handout.

Conclude by saying that Standard Precautions should always be followed when working on an infectious disease worksite, and that Expanded Precautions may also be required, depending on the types of pathogens present. Employers are responsible for ensuring that workers are trained in these techniques before they begin work.



SL 14–16



HO 6: Standard and Expanded Precautions



Flip Chart



PG: 2–11 to 2–22

Chapter 2: Hazard Recognition and Controls

Handout 6: Standard and Expanded Precautions



Handout 6

Standard and Expanded Precautions

Group 1

Instructions: Prepare and deliver a presentation about the following:

Standard Precautions

1. Hand hygiene
2. Personal protective equipment
3. Respiratory hygiene and cough etiquette

Use this space to prepare your notes, or to take notes as you listen to another group's presentation.

Presentations should include the following information:

1. Hand Hygiene

Hand hygiene includes the washing of hands with soap and water if they are soiled or exposure is proved or suspected. If hand washing is not possible, rub hands with an alcohol-based hand rub that contains 60–95% alcohol. Hand hygiene stations should be strategically placed to ensure easy access.

- Handwashing with soap and water.
- Sample procedures for performing hand hygiene.
- Using alcohol-based hand rub (follow manufacturer's directions).
- Indications for hand hygiene.

2. Personal Protective Equipment

PPE use in Standard Precautions involves specialized clothing and/or equipment worn by facility staff for protection against infectious materials. The selection of PPE is based on the nature of the patient interaction and potential for exposure to blood, body fluids or infectious agents. A review of available PPE should be performed periodically (e.g., annually) due to new product developments and improvements. Some of the precautions with PPE include:

- gloving;
- face protection; and
- gowning.

3. Respiratory Hygiene and Cough Etiquette

To prevent the transmission of respiratory infections in a healthcare facility, the following infection prevention measures are implemented for all potentially infected persons at the point of entry and continuing throughout their time spent in the facility.

- Cover the mouth and nose with a tissue when coughing or sneezing.
- Dispose of the used tissue (and masks, if applicable) in the nearest waste receptacle.
- Perform hand hygiene after contact with respiratory secretions and contaminated objects/materials.

Handout 6: Standard and Expanded Precautions (continued)



Handout 6 Standard and Expanded Precautions

Group 2

Instructions: Prepare and deliver a presentation about the following:

Standard Precautions

4. Cleaning and Disinfection of Devices and Environmental Surfaces

Use this space to prepare your notes, or to take notes as you listen to another group's presentation.

4. Cleaning and Disinfection of Devices and Environmental Surfaces

The procedures pertain to the cleaning and disinfection of noncritical patient-care devices (e.g., blood pressure cuff) and environmental surfaces in patient-care areas (e.g., exam rooms) and certain common-use areas (e.g., bathrooms).

(Presentations should focus on the following topics:)

- supplies and cleaning products;
- frequency of cleaning;
- cleaning patient-care areas;
- cleaning bathrooms;
- cleaning spills of blood and body substances;
- handling and laundering soiled linens; and
- waste disposal.

Chapter 2: Hazard Recognition and Controls

Handout 6: Standard and Expanded Precautions (continued)



Handout 6

Standard and Expanded Precautions

Group 3

Instructions: Prepare and deliver a presentation about the following:

Expanded Precautions

1. Contact Precautions
2. Droplet Precautions
3. Airborne Precautions

Use this space to prepare your notes, or to take notes as you listen to another group's presentation.

Presentations should include the following:

1. Contact Precautions:

- Apply to patients with the presence of stool incontinence, draining wounds, uncontrolled secretions, pressure ulcers, rashes, or presence of ostomy tubes and/or bags draining body fluids.
- Perform hand hygiene before wearing gloves.
- PPE use.
- Perform hand hygiene after removal of PPE.
- Clean/disinfect the exam room accordingly.
- Patients with known or suspected infectious diarrhea should use a separate bathroom, if available.

2. Droplet Precautions:

- Apply to patients known or suspected to be infected with a pathogen that can be transmitted by droplet route.
- Perform hand hygiene after contact with respiratory secretions and contaminated objects/materials.
- PPE use.
- Clean and disinfect the exam room accordingly.

3. Airborne Precautions:

- Apply to patients known or suspected to be infected with a pathogen that can be transmitted by airborne route.
- PPE use.
- Perform hand hygiene before and after contact with respiratory secretions and/or body fluids and contaminated objects/materials.
- Once the infected patient leaves, the exam room should remain vacant for generally one hour before anyone enters.
- If staff must enter the room during the wait time, they are required to use respiratory protection.

Exercise 4: Chemical Hazards and Controls

Exercise 4: Chemical Hazards and Controls

 30
Minutes

Objectives

6. Describe hazards and controls related to chemical use on infectious disease worksites.
7. Explain the importance of using EPA-approved chemical disinfectants on an infectious disease worksite.

Display Slides 17 and 18. Open the lesson by asking participants to think about the types of chemicals they have used in their work experience. Ask, “What kinds of chemicals have you used? What were they used for? What kinds of hazards do these chemicals present? What kinds of controls were put in place to reduce or eliminate these hazards?”

Ask participants to work in pairs to come up with their own list for each of the categories (chemical, purpose, hazard, controls) using the style of the chart on Slide 18. Have pairs share their charts with the class. Create a master chart on the board or on a piece of flip chart paper.

Ask, “How might working with chemicals be different for jobs on an infectious disease site?” Explain that the EPA has a list of approved disinfectants for use on infectious disease sites, and that some of these have been tested for their effectiveness against certain biological agents, such as Ebola or MRSA. The EPA website has up-to-date lists of disinfectants.

Display Slide 19 to show an example of a partial list of EPA-approved disinfectants for use against Ebola. Note the categories that are used in the list.

Distribute Handout 7: *Chemical Hazards and Controls*. Read the instructions aloud. Explain that this will largely serve as a review for chemical hazards and controls on infectious disease sites. Have participants complete the handout in pairs. Tell them to refer to PG pages 2–22 to 2–23 as a reference.

Check the answers with the class. (See the answer key on the following page.) Ask which word was not used (controls). Answer any questions that may have come up in the completion of the handout.

Conclude by saying that while many of the types of chemical hazards and controls on infectious disease sites may be similar to those in other environmental services work, there are some additional precautions that workers should be aware of, such as reducing the risk of generating bioaerosols during cleaning, or doffing PPE in a way that reduces contamination.



SL 17–19



HO 7: Chemical
Hazards and Controls



PG: 2–22 to 2–23

Chapter 2: Hazard Recognition and Controls

Handout 7: Chemical Hazards and Controls



Handout 7 Chemical Hazards and Controls

Instructions: Complete the sentences with the words below. One word will not be used.

ammonia	bioaerosols	bleach	controls
inhalation	labels	mix	regulates
contamination	tools	train	ventilation

- The U.S. Environmental Protection Agency (EPA) regulates disinfectants used on environmental surfaces, and there are EPA-approved lists of disinfectants for different infectious diseases, such as MRSA and Ebola.
- Certain chemical disinfectants may pose hazards for workers through inhalation, exposure to skin or open cuts, or through the eyes, nose, or mouth.
- Pay close attention to hazard warnings and directions on product labels.
- Cleaning products and disinfectants often call for the use of gloves or eye protection. For example, gloves should always be worn to protect your hands when working with bleach solutions.
- Do not mix cleaners and disinfectants unless the labels indicate it is safe to do so.
- Combining certain products (such as chlorine bleach and ammonia cleaners) can result in serious injury or death.
- Ensure adequate ventilation in areas where workers are using disinfectants, including by opening windows and doors.
- The use of chemical disinfectants may require an employer to train workers on how to protect themselves against chemical hazards and comply with OSHA's Hazard Communication, 29 CFR 1910.1200, and other standards.
- Use tools, such as tongs from a spill kit, as much as possible rather than doing cleanup work directly with gloved hands.
- After cleaning and disinfection work is complete, remove PPE in a way that avoids self-contamination.
- Avoid cleaning techniques, such as using pressurized air or water sprays, which may result in the generation of bioaerosols whenever possible.

Infectious Disease Operations

Exercise 5: Other Hazards and Controls

Exercise 5: Other Hazards and Controls

 40
Minutes

Objectives

8. Describe physical hazards and controls related to work on infectious disease worksites.
9. Describe ergonomic hazards and controls related to work on infectious disease worksites.
10. Describe psychosocial hazards and controls related to work on infectious disease worksites.

Display Slides 20 and 21. Open the lesson by asking participants to name the three categories of hazards represented by the images (physical [heat stress], ergonomic [back injury from repetitive motion], psychosocial [stress]). Ask participants if they have ever encountered these types of hazards on the job. Note their answers on the board. Explain that on infectious disease cleanup sites, there may be tasks that feature some of these hazards more prominently, such as heat stress from wearing protective suits in areas where HVAC systems have been turned off, repetitive actions from cleaning, or stress from working in the presence of highly infectious diseases.

Take three sheets of flip chart paper and write one of the headings at the top of each one: *Physical*, *Ergonomic*, and *Psychosocial*. Under each heading, write a T-chart with the headings Hazards on one side and Controls on the other. Post the sheets of paper around the class.

Example:

Physical	
Hazards	Controls

Have participants work in small groups. Give each group a set of sticky notes. Tell the groups to write hazards and controls on sticky notes for each of the three categories. (Write one hazard or one control on each sticky note.) After they're done, have them post their sticky notes in the correct places on the flip chart papers.

Review the list of hazards and controls that the groups generated with the whole class. Compare the lists to the information on PG pages 2–23 to 2–29 and note any additions.

Conclude by telling participants that many of these hazards are common on any worksite, but some may be more prevalent in infectious disease sites because of the tasks associated with cleanup of infectious disease sites.



SL 20–21



Flip Chart



Sticky Notes



PG: 2–23 to 2–29

Chapter 2: Hazard Recognition and Controls

Exercise 6: Site Safety



40
Minutes

Exercise 6: Site Safety

Objectives



SL 22 to 25

11. Describe safety hazards and controls related to work on infectious disease worksites.
12. List at least five safe work practices for infectious disease worksites.
13. Describe the importance of site safety awareness.



IT 1: Safety Hazards
Word Search

Display Slide 22. Ask participants what types of safety hazards can be present on any type of jobsite. List a few answers on the board. Tell participants that when working on infectious disease sites, it's important to remember that common safety hazards should still be taken into account, in addition to safe work practices that may be specific to those types of worksites.

Divide the class into groups. Print out 4–5 copies of the *Safety Hazards Word Search* (see Instructional Tools) and give one copy to each group.



HO 8: Working
Safely Around
Infectious Diseases

Display Slide 23. Tell participants that there are 18 different safety hazards hidden inside the word search. Tell them to work together to find all 18 items. Point out that some of the 18 terms are made up of two separate words. (You may wish to set a time limit to make the activity more competitive.)

Display Slide 24 to reveal the answers after time is up. Ask, "What types of safe work practices should be in place to avoid these hazards?" List their answers on the board.

Explain that in an infectious disease worksite, certain work practices may be needed to help reduce the risk of exposure to pathogens through inhalation, contact with surfaces, and so on.



PG: 2–27 to 2–29

Distribute Handout 8: *Working Safely Around Infectious Diseases*. Read the instructions. Ask, "What are you going to do with this handout?" (Complete each of the sentences.) Have participants complete the handout in pairs or small groups. Tell them to try to complete the handout with their own ideas first, without looking at the PG. If they get stuck, tell them to look at PG pages 2–27 to 2–29 as a reference.

Review the answers to the handout with the class. Answer any questions that may have come up in the completion of the handout.

Ask participants what site safety awareness means. Write a definition on the board based on their responses. (Possible answer: Site safety awareness means a continuous awareness of site-related safety concerns on a worksite.) Ask participants to think of the types of

Exercise 6: Site Safety (continued)

questions they may need to ask their employer to be aware of site safety issues. Note their ideas on the board.

Display Slide 25 and compare their answers with the list of questions.

Conclude by saying that safe work practices should be followed on all worksites, but that infectious disease sites may have special practices to ensure safety of workers around different types of pathogens. In addition, all employees must be aware of site hazards and remain alert to identifying new or additional hazards that may arise as operations progress.

Chapter 2: Hazard Recognition and Controls

Instructional Tool 1: Safety Hazards Word Search



Instructional Tool 1 Safety Hazards Word Search

c	e	c	d	o	r	t	r	k	f	o	i	d	e
b	l	o	c	k	e	d	a	i	s	l	e	s	o
i	a	n	f	c	r	d	f	g	t	v	s	r	s
g	d	f	r	a	y	e	d	c	o	r	d	s	l
d	d	i	o	f	f	a	m	r	u	i	a	i	
c	e	n	o	l	o	l	e	a	l	t	t	p	p
v	r	e	f	o	c	r	s	s	d	f	g	s	s
m	s	d	s	i	s	o	k	c	f	e	s	d	g
d	l	s	s	d	l	s	l	o	r	c	d	e	
i	m	p	r	o	p	e	r	w	i	r	i	n	g
s	c	a	f	f	o	l	d	s	a	f	d	e	a
e	u	c	n	l	l	o	c	k	o	u	t	s	i
g	h	e	i	g	h	t	s	p	i	l	l	s	p
c	p	s	m	o	v	i	n	g	p	a	r	t	s

Infectious Disease Operations

Handout 8: Working Safely Around Infectious Diseases



Handout 8 Working Safely Around Infectious Diseases

Instructions: Complete the sentences.

1. When working around infectious diseases, *always* follow...
Standard Precautions and Expanded Precautions as directed.
2. Reduce hand-to-mouth transfer of pathogens by...
refraining from eating, drinking, chewing, or smoking.
3. Face and hands should be thoroughly washed...
upon leaving the work area and before eating, drinking, or any other activities.
4. Excessive facial hair...
is not allowed if the facial hair interferes with a satisfactory respirator fit.
5. Avoid contact with...
contaminated surfaces or with surfaces suspected of being contaminated.

Infectious Disease Operations

Chapter 2: Hazard Recognition and Controls

Summary



10
Minutes

Summary

Distribute *Chapter 2: Things to Remember.*

Explain that the *Things to Remember document* is a take-home list of information that can be used for reference or self-study. Note that this document provides information about the chapter's learning objectives and may be used as a study guide for the end-of-course assessment.



Chapter 2:
Things to Remember

Display Slides 2 to 5 and briefly review the chapter objectives with the class. Review the information on the *Things to Remember* handout for each objective. Ask participants if they are comfortable with their knowledge about, or ability to do, each of the objectives, or if they need review or additional support on any of the items listed.



SL 2 to 5

Ask the participants if they have any questions regarding any other topics of the chapter.

Address any questions or concerns.



PG: 2-30 to 2-31

Chapter 2: Things to Remember



Chapter 2: Hazard Recognition and Controls Things to Remember

1. Hazards on an infectious disease worksite can be classified by the following categories:
 - **Biological:** Bacteria, viruses, insects, plants, birds, animals and humans.
 - **Chemical:** Exposure to chemical disinfectants used in cleaning operations.
 - **Physical:** Heat stress, noise, radiation.
 - **Ergonomic:** Repetitive movements, improper setup of workstation.
 - **Psychosocial:** Stress, violence.
 - **Safety:** Slipping/tripping hazards, inappropriate machine guarding, equipment malfunctions or breakdowns.
2. Key elements of an infectious disease exposure control plan (ECP) include the following:
 - management commitment and employee involvement;
 - risk assessment;
 - hazard control;
 - decontamination, disinfection and sterilization
 - reporting and recordkeeping;
 - training;
 - post-exposure and occupational health procedures; and
 - plan updates/evaluation.
3. Biological worksite hazards include infectious agents, which are organisms that can produce infection or infectious disease. You may also see them referred to as pathogens or biological agents. They include bacteria, fungi, viruses, and parasites. Prevention of occupational exposures to pathogens begins with employers developing a written exposure control plan (ECP), which is required by the OSHA Bloodborne Pathogens Standard. Key elements include universal/standard precautions, engineering and workplace controls, personal protective equipment (PPE) and housekeeping, among others.
4. Standard precautions are a list of guidelines from the CDC. They include a number of engineering, administrative and PPE controls, several of which are relevant to environmental services workers. These include hand hygiene, use of PPE, respiratory hygiene and cough etiquette, and safe handling of potentially contaminated equipment or surfaces.
5. The CDC's expanded precautions include contact, droplet and airborne precautions. These additional precautions are used in conjunction with standard precautions. Contact precautions apply to patients with the presence of stool incontinence, draining wounds or uncontrolled secretions. These include performing hand hygiene before wearing gloves and after removing PPE, and cleaning/disinfecting the exam room. Droplet precautions apply to patients known or suspected to be infected with a pathogen that can be transmitted by droplet route. These include performing hand hygiene after contact with respiratory secretions and contaminated objects/materials, wearing a facemask, and cleaning/disinfecting the exam room. Airborne precautions apply to patients known or suspected to be infected with a pathogen that can be transmitted by airborne route. These include wearing a fit-tested N-95 or higher level disposable respirator, performing hand hygiene before and after contact with respiratory secretions and/or body fluids and contaminated objects/materials, and leaving the exam room vacant for at least one hour.

Chapter 2: Hazard Recognition and Controls

Chapter 2: Things to Remember (continued)



Chapter 2: Hazard Recognition and Controls

Things to Remember

6. Chemical hazards include disinfectants for highly infectious diseases, which can pose hazards for workers through inhalation, exposure to skin or open cuts, or through the eyes, nose or mouth. Pay close attention to hazard warnings and directions on product labels. Cleaning products and disinfectants often call for the use of gloves or eye protection. For example, gloves should always be worn to protect your hands when working with bleach solutions. It is important to recognize that, in some cases, you are protecting for both the infectious hazard and the chemical hazard. In addition to PPE listed on product labels for disinfectants, other controls may reduce the risks of chemical exposures. These include ensuring adequate ventilation where workers are using disinfectants, using tools rather than doing cleanup directly with gloved hands, and the removal of PPE in a way that avoids self-contamination.
7. The U.S. Environmental Protection Agency (EPA) regulates disinfectants used on environmental surfaces, and there are EPA-approved lists of disinfectants for different infectious diseases, such as MRSA and Ebola.
8. A physical hazard is any harmful level of electromagnetic radiation, noise, vibration, temperatures or light. Of these, heat is often the most common and serious physical hazard on infectious disease worksites, especially where containment systems will be constructed. This will interrupt the normal airflow in the work area, and the use of personal protective clothing such as Tyvek® will prevent the flow of air over the worker's skin. Heat stress can pose serious threats to workers' health. Safety training for workers in decontamination units can help them recognize the signs and symptoms of heat stress, and limiting the amount of time workers spend in a decontamination unit is another example of an administrative work practice control.
9. Ergonomic hazards occur when the type of work, body positions and working conditions put strain on your body. They are the hardest to spot since you don't always immediately notice the strain on your body, or the harm that these hazards pose. Short-term exposure may result in sore muscles the next day or in the days following exposure, but long-term exposure can result in serious long-term illnesses. Engineering controls include using a device to lift and reposition heavy objects, reducing the weight of a load, repositioning work tables, using diverging conveyors and installing diverters on conveyors, and redesigning tools to enable neutral postures. Administrative controls include requiring two people to lift heavy loads, establishing systems that rotate worker tasks, using staff "floaters" to provide periodic breaks, and properly using and maintaining pneumatic and power tools. PPE for ergonomic hazards includes padding to reduce direct contact with hard, sharp or vibrating surfaces; and good-fitting thermal gloves to help with cold conditions.
10. Psychosocial hazards are stressors that cause stress (short-term effects) and strain (long-term effects). These hazards are associated with workplace issues such as workload, lack of control and/or respect, etc. Other examples of psychosocial hazards include workplace violence, intensity and/or pace, flexibility, social support and sexual harassment. Psychosocial controls can range from management training and effective policies and procedures, to support groups or individual counseling, depending on the source of the issue(s).

Chapter 2: Things to Remember (continued)



Chapter 2: Hazard Recognition and Controls Things to Remember

11. Safety hazards are the most common type of hazards, and will be present in most workplaces at one time or another. They include unsafe conditions that can cause injury, illness, and death. Common safety hazards include:
 - Spills on floors, or tripping hazards such as blocked aisles or cords running across the floor.
 - Working from heights, including ladders, scaffolds, roofs or any raised work area.
 - Unguarded machinery and moving machinery parts.
 - Electrical hazards such as frayed cords, missing ground pins, or improper wiring.
 - Confined spaces.
 - Machinery-related hazards (lockout/tagout, boiler safety, forklifts, etc.)
 - One of the most prevalent safety hazards for housekeeping workers in healthcare settings is slips, trips and falls due to exposure to wet floors. Controls for this include keeping floors dry or using mats, providing warning signs for wet floor areas, and eliminating uneven floor surfaces.
12. Safe work practices are habits that workers can adopt and use to protect themselves while performing specific duties. Safe work practices for infectious disease worksites include the following:
 - Following standard precautions and any expanded precautions, as directed.
 - Prohibiting eating, drinking, chewing, smoking, or any practice that increases the probability of hand-to-mouth transfer in any area designated as contaminated.
 - Thoroughly washing face and hands upon leaving the work area, and before eating, drinking, or any other activities.
 - Not allowing excessive facial hair on personnel required to wear respiratory protection, if the facial hair interferes with a satisfactory fit.
 - Avoiding contact with contaminated surfaces, or with surfaces suspected of being contaminated.
13. General site safety includes a continual awareness of site-related safety concerns. All employees must be aware of site hazards and remain alert to identifying new or additional hazards that may arise as operations progress. Site safety awareness includes knowing what PPE is required, what potential explosive and/or flammable conditions are present, what emergency equipment is available and where it is located, what decontamination procedures have been prescribed, and whether or not you have the proper training and equipment to perform your duties.