

Local and Tribal Health Department Healthcare-Associated Infections and Infection Prevention Training Program Workbook

Section 2: Prevention and Control of Infectious Agents

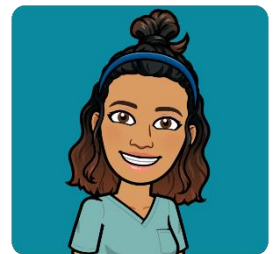
How to Use this Workbook

The Local and Tribal Health Department (LTHD) Healthcare-Associated Infection (HAI) and Infection Prevention Training Program covers a variety of topics and experiences to increase basic healthcare-associated infection and infection prevention and control (IPC) knowledge. Each section of the program has a corresponding workbook with self-paced learning activities and links to additional resources to help supplement your learning. Each workbook includes a list of learning objectives for the section, a tentative meeting and presentation schedule, and self-paced learning activities.

The scenarios and questions included in this workbook are for your own learning and will not be graded. They are intended to supplement group activities and underscore key points in the provided resources. Be prepared to discuss questions, concepts, and scenarios introduced in the self-paced learning sections of this workbook with your regional infection preventionist (IP) or other participants during various follow up activities.

Meet Izzy

Throughout the program, you will follow Izzy, an infection preventionist (IP) at a nursing home, as she encounters IPC scenarios at her facility. Using what you learn in each section, you will help Izzy make decisions that reduce the risk of spreading HAIs in her facility.



Section 2 Objectives

By the end of this section participants will be able to:

- Identify the five types of isolation precautions.
- Identify which type of precaution is most appropriate specific diseases.
- Explain the components of a respiratory protection program (RPP).
- Identify appropriate personal protective equipment (PPE) for each type of precaution.
- Differentiate when alcohol-based hand rub (ABHR) is appropriate versus soap and water for hand hygiene.
- Explain the partnership between employee health and infection control.

Week 1 Activities

Activity 1: Sources of infection 1 hour

1. Review the CDC (Centers for Disease Control and Prevention) webpage: [How Infections Spread](#). Be sure to click on the source, susceptible person, and transmission tabs.
 - a. Name three environmental sources of germs in a health care setting.
 - b. Name a type of illness or disease commonly spread through contact or touch with contaminated hands, medical equipment, or high-touch surfaces.
2. Review the CDC's Introduction to Epidemiology [Chain of Infection section](#).
 - a. What is a portal of exit? What is a portal of entry?
 - b. True or false: Direct transmission refers to the transfer of infectious agent from a reservoir to a host by suspended air particles, vehicles, or vectors.
 - c. What is the final link in the chain of infection?
 - d. Complete [Exercise 1.9](#) and then [check](#) your answers. Reflect on how you did on this exercise.

Activity 2: Recommended precautions 2 hours

There are many different ways that germs can spread and cause infections. For example, germs can spread through contact, sprays and splashes, and inhalation. This is why following precautions appropriate to the specified infection or condition is important in preventing transmission in a health care setting.

There are two tiers of recommended precautions to prevent spread of infections.

- **Standard precautions** are used for all patients, residents, clients, and staff regardless of what you know or do not know about them. All care is to be provided using standard precautions. They are the minimum expectation. Employees can go beyond those expectations, but not below. Standard precautions help keep health care workers, patients and residents, and those in the environment safe.

- **Transmission-based precautions**, also referred to as isolation precautions, are practices used in addition to standard precautions for added protection based on the suspected or identified pathogen. They prevent transmission of infection from person-to-person via staff, shared environments, medical equipment, or other devices.

Browse the following CDC webpages on standard and transmission-based precautions. These are also helpful resources to bookmark and reference if you receive questions from facilities or health care partners.

- [Standard Precautions for All Patient Care webpage](#): See additional information on elements of standard precautions. This page can also serve as a great resource for you as you continue to assist facilities in your jurisdiction in infection prevention and control topic areas.
- [Transmission-Based Precautions webpage](#): Learn about the different types of precautions, including [contact](#), [droplet](#), and [airborne](#). This page also provides the appropriate room placements, PPE use, cleaning and disinfection methods for each precaution, and proper signage.
- [Implementation of Personal Protective Equipment \(PPE\) Use in Nursing Homes to Prevent the Spread of Multidrug-resistant Organisms \(MDROs\)](#): See key points regarding the use of enhanced barrier precautions in nursing homes.
- [Clinical Syndromes or Conditions Warranting Empiric Transmission-Based Precautions in Addition to Standard Precautions](#): Find information on the different types of diseases or conditions require different types of precautions.
- [Type and Duration of Precautions Recommended for Selected Infections and Conditions](#): Use this resource to see recommendations for the type and duration of precautions for many more infections and conditions.

1. Scenario: Mr. Smith, a resident at Izzy’s nursing home, has a three-day history of watery diarrhea and abdominal pain. Use the resources listed above to help you answer the following questions.

- Izzy observes staff as they provide care for Mr. Smith, including helping with toileting and changing briefs. Izzy notices staff are following standard precautions. Izzy wonders if additional precautions are necessary. Which of the resources listed above will help Izzy determine what type of transmission-based precautions, if any, staff in her facility should take when caring for Mr. Smith?
- What type of transmission-based precautions, if any, should the staff caring for Mr. Smith implement prior to providing care?
- What type of PPE, if any, should be used when caring for Mr. Smith?



- 2. Scenario:** Izzy's nursing home is preparing to admit a new resident, Ms. Brown, who is currently having symptoms of respiratory infection. Testing is currently underway to identify the potential pathogen causing the infection. Use the resources listed above to help you answer the following questions.
- The director of nursing calls Izzy and asks her what transmission-based precautions, if any, should be used when Ms. Brown is admitted. What should Izzy tell the director of nursing?
 - The director of nursing then asks what type of PPE should be used. What should Izzy tell her?
 - Testing confirms Ms. Brown has RSV. What precaution(s) should be utilized?
 - According to [Type and Duration of Precautions Recommended for Selected Infections and Conditions](#), how long should Ms. Brown remain on precautions?
- 3. Scenario:** Izzy was closely involved in implementing enhanced barrier precautions (EBPs) at her facility. When Mr. Garcia, a resident at Izzy's nursing home, tests positive during screening for colonization with carbapenemase-producing Carbapenem-resistant *Acinetobacter baumannii* (CP-CRAB), a multidrug-resistant organism (MDRO), staff ask Izzy the following questions. (**Hint:** Refer to the [Implementation of Personal Protective Equipment \(PPE\) Use in Nursing Homes to Prevent the Spread of Multidrug-resistant Organisms \(MDROs\)](#) guidance document and accompanying [frequently asked questions](#) for help.)
- Should Mr. Garcia be placed on EBPs?
 - Should Mr. Garcia be placed in a single-person room because of his colonization status? Why or why not?
 - Mr. Garcia's roommate currently uses an indwelling catheter. Should the roommate also be placed on EBPs?

- d. How long should Mr. Garcia remain on EBPs?

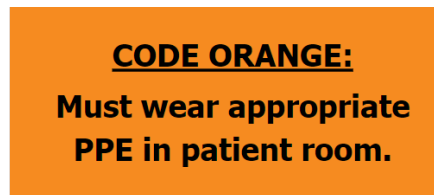
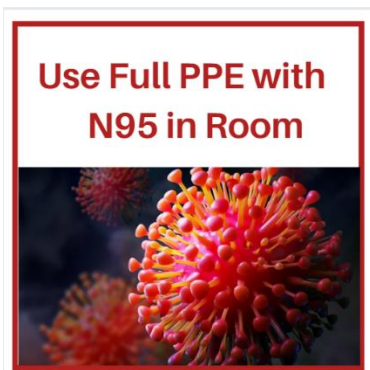
- e. During which types of activities or situations should PPE be used when caring for Mr. Garcia?

Activity 3: Precaution signage 30 minutes

Facilities post signage outside of patient rooms to alert staff and visitors of the necessary transmission-based precautions they should take prior to entering the room.

- 1. Review examples of signage from CDC for [contact](#), [droplet](#), and [airborne](#) precautions.
 - a. What are common elements included on each sign?

- 2. Review these examples of poor signage below:
 - a. How are these examples different than the signage provided from CDC? What elements are missing? How could these signs be improved?



STOP! Wear mask and see nurses station before entering.



Week 2 Activities

Activity 1: What is source control? 10 minutes

1. Watch the CDC video "[What is Source Control?](#)" for an overview of source control, using COVID-19 as an example.
 - a. What is the goal of source control?
 - b. For COVID-19, source control focuses on covering your nose and mouth with a mask to keep your respiratory droplets out of the air. What is an example of source control for a different infection?

Activity 2: Personal protective equipment 1 hour

1. Review CDC's [PPE for Health Care Personnel](#) (section II.E to II.F) to learn more about the types of PPE and when they should be worn.
 - a. True or false: The selection of PPE is based on the nature of the patient interaction and modes of transmission.
2. Complete the "[Choosing the Right PPE for COVID-19](#)" and "[Choosing the Right PPE Throughout Your Workday](#)" interactive activities (10 minutes).

Activity 3: Respiratory protection programs 1 hour

1. Watch [WisCon's presentation](#) on respiratory protection programs.
 - a. What is something that you didn't know prior to this presentation?
 - b. How might you take what you learned and help facilities in your jurisdiction?

Activity 4: Hand hygiene 1 hour and 15 minutes

1. Listen to the [HAI Long-Term Care Education Series session from June 2021](#) (until minute 33) for an overview of hand hygiene and the impact of hand hygiene in health care settings.
 - a. When should alcohol-based hand rub for hand hygiene be used?

 - b. When should soap and water for hand hygiene be used?

2. Take the [CDC hand hygiene interactive education course](#) (30 minutes).

3. Review the [fact sheet](#) on moments for hand hygiene from the World Health Organization (WHO).
 - a. List all moments for hand hygiene.

Week 3 Activities

Activity 1: Infection prevention and control in different settings 2 hours

1. Attend the presentation on infection prevention and control in different health care settings (meeting invitation to follow).
 - a. What are three things you learned from the presentation that will be helpful in your role at the LTHD?
 - 1)
 - 2)
 - 3)
 - b. What care settings do you currently work with or anticipate working with in your role?

Week 4 Activities

Activity 1: Employee health relationship with infection prevention

2 hours

1. Watch North Carolina's [Statewide Program for Infection Control and Epidemiology \(SPICE\) video](#) (15 minutes) for an overview of the relationship between infection preventionists and employee health.
 - a. What strategies can you think of that would help prevent a culture of presenteeism in a workplace, especially in health care?
 - b. Name a few examples of infection prevention measures and programs that may be implemented by employee health programs to protect patients and health care workers.
 - c. Employee health and infection prevention roles often overlap or are even one in the same. Reflect on your experience either working with an employee health colleague or you yourself doing in employee health job responsibilities. How did you work together? What are some examples of things that you worked on?

Activity 2: Immunization programs

15 minutes

1. Review the CDC [Infection Control in Healthcare Personnel Immunization Program](#) and [vaccine information for adults](#) webpages.
 - a. List four elements of an effective immunization program.
 - b. What barriers to immunization for health care workers exist and what strategies would you implement to improve vaccination coverage in a health care facility?

- c. Which vaccines are recommended for health care workers?

Activity 2: Bloodborne pathogens 10 minutes

1. Review the [Occupational Health and Safety Administration \(OSHA\) fact sheet](#) on the bloodborne pathogens standard.
 - a. List the 11 elements required of employers by the standard.

2. Review the [bloodborne pathogens section](#) of the DHS *IP Starter Kit*.
 - a. True or false: Bloodborne pathogen plans should be reviewed monthly.

Additional Resources

The following are optional readings, articles, and other resources for information on the topics covered in Section 2.

Standard precautions

- CDC provides [recommendations for the application of standard precautions for the care of all patients](#).
- The WHO has the following resources on standard precautions:
 - [Standard Precautions for the Prevention and Control of Infections](#)
 - [Standard Precautions in Health Care](#)

PPE

Browse the [CDC National Institute for Occupational Safety and Health \(NIOSH\) webpage](#) and resources for health care workers on PPE.

Respiratory protection programs

- Listen to [APIC Podcast: Working Together for Healthcare Worker Safety: the Gown and Glove Connection \(19 minutes\)](#).
- Read through CDC's [Personal Protective Equipment: Questions and Answers](#).
- View CDC's "[Understanding the Difference](#)" graphic to compare surgical masks and respirators.
- Review [CDC's PPE Sequence factsheet](#).
- Review [IP Starter Kit: Respiratory Protection Programs](#).
- Review [National Institute for Occupational Safety and Health Publication, Hospital Respiratory Protection Toolkit](#).

Hand hygiene

- Take the CDC [Hand Hygiene, Glove Use, and Preventing Transmission of *C. difficile*](#) training.
- Listen to the CDC Project Firstline hand hygiene [video](#).

Employee health

- Read the [commentary](#) on required vaccinations for health care workers in the *Pharmacy and Therapeutics Journal*, volume 34, issue 11.
- Read the [article](#) from *Infection Control Today* on occupational health and its relationship with infection prevention.
- Read a [literature review](#) of presenteeism among health care workers in the *Brazilian Journal of Occupational Medicine*, volume 18, issue 1.

Notes, questions, and comments