Local and Tribal Health Department Healthcare-Associated Infection (HAI) and Infection Prevention Training Workbook
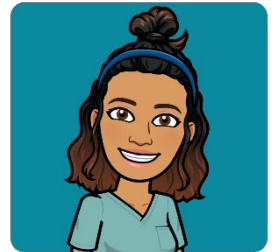
Workbook 6: Disinfection and Sterilization

WISCONSIN DEPARTMENT
of HEALTH SERVICES

How to Use this Workbook

This workbook covers a number of topics in a variety of different formats to help local and Tribal health departments (LTHDs) increase their knowledge on HAIs and infection prevention and control practices. The scenarios and questions included in this workbook are intended to enhance your own, self-paced learning. Each workbook includes a list of learning objectives, self-paced learning activities, links to additional helpful resources related to a given topic, and an answer key.

Meet Izzy

Throughout the program, you will follow Izzy, a communicable disease investigator at her local health department in charge of all things infection control. Using what you learn in each section, you will help Izzy provide infection control consultation and assistance to those in her jurisdiction.

Workbook 6 Objectives

By the end of this workbook, you will be able to:
- Explain the importance of cleaning, disinfection, and sterilization in health care.
- Correctly interpret dwell or contact time.
- Identify appropriate cleaning and disinfection agents.

Workbook 6 Activities

Activity 1: High contact surfaces `5 minutes`

Health care facilities may conduct audits to ensure cleaning and disinfection done by environmental services staff is done correctly. High contact surfaces are commonly a source of infection and should be clean and disinfected frequently.

    a. Review the photo below. What are high contact surfaces in the room?

Activity 2: Understanding where germs live and how they spread 10 minutes

Explore the [CDC (Centers for Disease Control and Prevention) Project Firstline interactive infographic](#) to learn where germs live and how environmental infection control can stop the spread of germs.

    a. How can germs in water spread through medical devices?

    b. What infection control actions should be used when coming in contact with dry, high-touch surfaces?

    c. What types of viruses are spread in the health care setting through blood?

    d. What infection control actions should be used when coming in contact with gastrointestinal system germs?

Activity 3: The complexity of clean 45 minutes

Listen to the [*5 Second Rule* podcast](#) from the Association for Professionals in Infection Control and Epidemiology (APIC) on cleaning in a health care setting.

    a. What does "EVS" refer to?

    b. What cleaning and disinfection challenges in the health care setting were discussed in the podcast?

    c. How can patients or visitors help ensure their health care environment is clean?

Activity 4: Environmental cleaning and disinfection `2 hours`

Complete the [Healthcare Infection Control Practices Advisory Committee (HICPAC) Recommended Core Practices: Environmental Cleaning and Disinfectant toolkit](#) from North Carolina's Statewide Program for Infection Control and Epidemiology (NC SPICE). Watch the videos, listen to the expert commentary, and briefly review resources included throughout the toolkit. Don't forget to complete the pre- and post-tests.

   a. What areas are especially important to frequently clean and disinfect in common areas?

   c. True or false: The hardest organisms to kill are enveloped viruses such as HIV or hepatitis B.

   d. How long can *Clostridioides difficile* (*C. diff*) survive on surfaces?

Activity 5: Reading a disinfectant label `30 minutes`

1. Review the [CDC Project Firstline fact sheet](#) on how to read a disinfectant label.

   a. What is the contact time for this disinfectant?

   b. What types of PPE should be used when handling this disinfectant?

   c. Which organism(s) does this disinfectant kill?

   d. True or false: This disinfectant is registered with the Environmental Protection Agency (EPA).

2. Time to do it on your own! Review the [cleaning product label](#) carefully and answer the following questions.

   a. What is the contact time for this product?

b. This is not the full product label. What other information not included on this label would be helpful for environmental cleaning staff to know when using this product?

Activity 6: Behind the scenes of central processing 45 minutes

Go behind the scenes of an instrument reprocessing area in this NC SPICE video.

a. Why is it important that organic and inorganic material be removed from instruments prior to sterilization?

b. What kinds of instruments must be cleaned by hand?

c. What are three types of indicators used to monitor the effectiveness of a sterilization cycle? Name an example for each indicator.

d. What is a load identification number used for?

Activity 7: What should Dena do? 30 minutes

Step into Dena's shoes and become an advocate for your patients to stop infection control breaches in the "Partnering to Heal" simulation.

a. What was the outcome of your decisions as Dena?

b. What types of choices led to that outcome?

c. What are things that you can do in your role to help prevent infection control breaches in health care facilities within your jurisdiction?

Additional Resources

The following are optional readings, articles, and other resources for information on the topics covered in Workbook 6.

Cleaning, disinfection, and sterilization
- View the *CDC Guidelines for Environmental Infection Control in Health-Care Facilities*, 2003.
- Refer to standards from the Association for the Advancement of Medical Instrumentation (AAMI) for disinfection and sterilization.
- Refer to the FDA's selected EPA-registered disinfectants lists.
- Refer to the HICPAC recommendations on flexible endoscope reprocessing.

Monitoring and auditing
Review a sample checklist for monitoring terminal cleaning from CDC.

Workbook Key

Activity 1: High touched surfaces

(a.) Bed rails, bed frame, moveable lamp, tray table, bedside table, handles, IV pole, blood pressure cuff, monitor screen, etc. Note: Discuss the sticky tape marks on the bedside table.

Activity 2. Understanding where germs live and how they spread

(a.) If medical instruments and equipment, such as central lines, get wet, bacteria can grow. When those devices are used, that bacteria can get into the patient's body. (b.) Cleaning and disinfection, device sterilization, hand hygiene, and PPE. (c.) HIV, hepatitis B, and hepatitis C. (d.) Hand hygiene, PPE, cleaning and disinfection, textile management, and waste management.

Activity 3. The complexity of clean

(a.) Environmental services, or housekeeping staff. (b.) Unclear responsibilities and room or equipment turnover. (c.) Speak up if you see something that isn't clean or isn't done properly. Patients can also use source control, practice hand hygiene, and reduce contact with their surroundings.

Activity 4. Environmental cleaning and disinfection

(a.) Frequently touched surfaces; surfaces that are frequently touched or shared, such as pens, doorknobs, railings, counters, tables, and chairs. (b.) False. (c.) Up to five months.

Activity 5. Reading a disinfectant label

1. *(a.) 10 minutes (b.) Gloves and eye protection. (c.) Staphylococcus aureus and Pseudomonas aeruginosa. (d.) True.*
2. *(a.) All surfaces must remain wet for one minute. Use a five-minute contact time for TB and 10-minute contact time for fungi. (b.) What PPE to use with the product.*

Activity 6. Behind the scenes of central processing

(a.) To remove bioburden from instruments so they can properly sterilized. (b.) Powered instruments that cannot be machine washed. (c.) Physical (mechanical) indicators: timed temperature charts; chemical indicators: heat- or chemical-sensitive dyes; biological indicators: a spore that is more resistant to sterilization cycle. (d.) It helps during a recall in the event of a positive biological indicator.

Activity 7. What should Dena do?

(a., b., and c.) Open interpretation.