Self-Instructional Packet (SIP)

Advanced Infection Prevention and Control

Training Module 4
Transmission Based Precautions
Learning Objectives

Module One – Introduction to Infection Prevention and Control

After completing Module One, the learner will be able to:

1. Explain the role of Infection Prevention and Control in DBHDD hospitals.
2. Define the term pathogen and explain what constitutes an infection.
3. Define the term healthcare associated infection (HAI) and explain the difference between these and community associated infections (CAIs).
4. Explain the potential impact on hospitalized individuals and hospital employees who contract healthcare associated infections.
5. Define the term colonization and explain the difference between colonization and infection.
6. Define the term asymptomatic infection and list two examples of pathogens that can result in asymptomatic infections in some individuals.
7. Define the term carrier and explain the infection risk that carriers bring to hospitalized individuals and hospital employees.
8. List five of the typical signs and symptoms of infections and describe the responsibility hospital employees have to report any of these signs.
9. Name two multi-drug resistant organisms (MDROs) that are tracked at DBHDD hospitals and explain why these pathogens pose a significant health risk to hospitalized individuals.
10. Name two bloodborne pathogens (BBPs) that are tracked at DBHDD hospitals and explain how these infections are typically transmitted.
11. Define the term true exposure and describe what action DBHDD hospital employees must take when a true exposure occurs.

Module Two – The Chain of Infection

After completing Module Two, the learner will be able to:

1. Explain the “Chain of Infection” and list at least three of the six essential elements or links in this chain.
2. Discuss at least three examples where the potential for the spread of infections exists at DBHDD hospitals and other healthcare facilities (HCFs).
3. Explain some of the actions and precautions taken by hospital and other healthcare facility (HCF) employees that can help break the chain of infection.

Module Three – Standard Precautions

After completing Module Three, the learner will be able to:

1. Explain the basic principles of Standard Precautions and when they should be used.
2. Explain the importance of hand hygiene in the prevention of healthcare associated infections (HAI) and discuss proper hand hygiene techniques.
3. Explain the importance of Personal Protective Equipment (PPE) in the prevention of healthcare associated infections (HAI).
4. List at least three examples of Personal Protective Equipment (PPE) used in DBHDD hospitals.
5. Define the term “Sharps” and can list at least two examples of sharps that can be encountered in DBHDD hospitals.
6. Explain why the handling and disposal of sharps are so important.
7. Discuss how sharps can be safely handled and explain the proper disposal method for sharps.
8. Explain what constitutes contaminated waste and the proper disposal method.
9. Explain the importance of adult immunizations in the prevention of healthcare associated infections (HAIs).
10. List at least two examples of adult immunizations that are available to individuals and employees in DBHDD hospitals.

Module Four – Transmission-Based Precautions
After completing Module Four, the learner will be able to:
1. Define the term “Transmission-Based Precautions” and explain the general indication for these groups of precautions.
2. Define the term “Contact Precautions” and explain when and how they are used.
3. Define the term “Droplet Precautions” and explain when and how they are used.
4. Define the term “Airborne Precautions” and explain when and how they are used.
5. Name at least one pathogen that was presented in this module for which Contact Precautions are indicated.
6. Name at least one pathogen that was presented in this module for which Droplet Precautions are indicated.
7. Name at least one pathogen that was presented in this module for which Airborne Precautions are indicated.

Module Five – Selected Pathogens
After completing Module Five, the learner will be able to:
1. Define the term “Bloodborne Pathogens” (BBPs) and name at least two examples of bloodborne pathogens presented in this module.
2. Name the infection control precautions indicated for bloodborne pathogens (BBPs).
3. Define the term “Contact Transmitted Pathogens” and name at least two contact transmitted pathogens presented in this module.
4. Name the infection control precautions indicated for contact transmitted pathogens.
5. Define the term “Droplet Transmitted Pathogens” and name at least two droplet transmitted pathogens presented in this module.
6. Name the infection control precautions indicated for droplet transmitted pathogens.
7. Define the term “Airborne Pathogens” and name at least two airborne pathogens presented in this module.
8. Name the infection control precautions indicated for airborne transmitted pathogens.
9. Explain the difference between tuberculosis (TB) infection and tuberculosis (TB) disease.
MODULE FOUR – Transmission-Based Precautions

1) Introduction
A) Transmission-Based Precautions are a set of infection control practices used to prevent the spread of infections that can be acquired by routes that are not blocked by Standard Precautions alone. Pathogens in this category include, but are not limited to;
1) Tuberculosis (TB)
2) Seasonal influenza
3) Common Cold
4) Multi-Drug Resistant Organisms (MDROs) such as;
   (a) Methicillin resistant staph aureus (MRSA)
   (b) Vancomycin resistant Enterococcus (VRE)
   (c) Clostridium difficile (C.diff)
B) Transmission-Based Precautions are indicated anytime a hospitalized individual is diagnosed with (or suspected of having) one of these infections; and should be used in addition to Standard Precautions. They include;
1) Contact Precautions
2) Droplet Precautions
3) Airborne Precautions

2) Contact Precautions
A) Contact Precautions are indicated when caring for individuals known, or suspected of having, infections spread by direct or indirect contact.
1) Examples of pathogens causing infections transmitted in this manner include:
   (a) C. diff
   (b) MRSA
   (c) VRE
B) Protocol for Contact Precautions:
1) Place precautionary signage or other hospital defined mechanisms to notify persons entering the room/area of the precautions that are in-place
2) Perform hand hygiene upon entering the room and put on gloves
3) Wear gowns and face shields if:
   (a) Clothing may contact the individual or potentially contaminated environmental surfaces
   (b) The individual is incontinent, has diarrhea, an ileostomy, colostomy or wound drainage
   (c) Spray, splash, or spatter of blood/body fluids are anticipated
4) Remove all PPE and perform hand hygiene before leaving the room (Note: Once prepared to leave, avoid touching the individual or any items or surfaces that may be contaminated)
5) Clean and disinfect all re-usable items taken into the individual’s room before removing them from the room. Discard disposable items at the point of use.
3) **Droplet Precautions**

A) Droplet Precautions are indicated when caring for individuals with known or suspected infections spread by contaminated droplets such as those that can be generated when an infected individual coughs, sneezes, or laughs.

1) Examples of pathogens causing infections transmitted in this manner include:
   - (a) Seasonal Influenza
   - (b) Non-Aspiration Pneumonia
   - (c) Common Cold
   - (d) Pertussis
   - (e) Meningococcal Disease

B) Protocol for Droplet Precautions:

1) Place precautionary signage or other hospital defined mechanisms to notify persons entering the room/area of the precautions that are in-place.

2) If a private room is not available, an individual infected with the same organism (and no other organism), may share the room (cohort).

3) If a private room or cohort is not available, all other individuals must maintain a distance of at least 3 feet (6 feet in the case of small pox) from the infected individual(s).

4) Masks must be worn when entering the room and when approaching within 3 feet (6 feet in the case of small pox) of infected individuals.

5) Transport must be restricted unless absolutely necessary, and when necessary, respiratory protection such as a face mask must be placed on the individual.

4) **Airborne Precautions**

A) Airborne Precautions are indicated when caring for individuals known or suspected of having infections carried by contaminated airborne particles.

1) Examples of pathogens causing infections transmitted in this manner include:
   - (a) Tuberculosis
   - (b) Measles
   - (c) Chickenpox
   - (d) Severe Acute Respiratory Syndrome (SARS)

B) Protocol for Airborne Precautions:

1) Airborne Precautions require the use of negative pressure rooms. DBHDD hospitals do not have these rooms; therefore, any individual with known or suspected infections spread by contaminated airborne particles must be transported immediately to a facility that can provide this level of isolation.

2) Special notification and respiratory protection must be provided when transporting one of these individuals including placement of a standard surgical mask on the individual and use of disposable N95 masks or N95 respirators by transport staff.

3) Until transportation arrives, suspect individuals should wear a standard surgical mask and be isolated from others as much as possible. In addition, disposable
N95 masks or N95 respirators should be worn by those who must attend to the individual.

I. **Hospital Specific Training**

A. DBHDD hospitals follow Multi-Drug Resistant Organism (MDRO) Exposure Control Plans and Tuberculosis (TB) Exposure Control Plans that are reviewed and updated at least annually. These are unique to each hospital and employees receive classroom instruction regarding these exposure control plans for the hospitals in which they work.

B. Time is set aside during the classroom instruction for employee questions covering any of the covered topics including, but not limited to:
   1. The MDRO Exposure Control Plan
   2. The TB Exposure Control Plan
   3. Contact Precautions
   4. Droplet Precautions
   5. Airborne Precautions
Module Four – Competency Exam

<table>
<thead>
<tr>
<th>A</th>
<th>Tuberculosis Disease</th>
<th>B</th>
<th>C. diff</th>
<th>C</th>
<th>Cohort</th>
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<tr>
<td>D</td>
<td>Transmission-Based Precautions</td>
<td>E</td>
<td>Contact Precautions</td>
<td>F</td>
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<tr>
<td>G</td>
<td>Droplet Precautions</td>
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Select the best match from the choices above (each choice is used only once)

1. Two individuals with the same infection sharing a room
2. Infection that can be transmitted by contact with contaminated clothing or linen
3. Precautions used by DBHDD hospital employees to combat the risk of healthcare associated infection (HAIs) whose transmission is not blocked by Standard Precautions alone
4. One of the Transmission-Based Precautions used with pathogens such as C. diff, VRE, and MRSA
5. One of the Transmission-Based Precautions used with pathogens such as tuberculosis and chickenpox
6. One of the Transmission-Based Precautions used with pathogens such as influenza and pneumonia
7. An infection that requires a private room with monitored negative air pressure

True or False

8. Transmission-Based Precautions are based on the principle that some infections can be transmitted by routes that are not blocked by Standard Precautions alone
9. Transmission-Based Precautions should be used with any hospitalized individual that is diagnosed with (or suspected of having) any infection
10. N95 masks and N95 respirators are recommended when providing healthcare services for hospitalized individuals with active tuberculosis
11. Whenever possible, it is important to remove all personal protective equipment and perform hand hygiene before leaving a room where “Contact Precautions” are in force

Multiple Choice (select the best answer)

12. Which of the following is not usually transmitted by contaminated droplets?
   a. MRSA  
   b. Pneumonia  
   c. Influenza  
   d. Common Cold  
   e. All of the above  
   f. None of the above

13. Which of the following is not usually transmitted by airborne particles?
   a. Tuberculosis  
   b. Measles  
   c. VRE  
   d. Chickenpox  
   e. All of the above  
   f. None of the above

14. Which of the following is usually transmitted by direct and indirect contact?
   a. C. diff  
   b. MRSA  
   c. VRE  
   d. All of the above  
   e. None of the above  
   f. b and c