Self-Instructional Packet (SIP)

Advanced Infection Prevention and Control

Training Module 3
Standard 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 infections (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 (HAIs) and discuss proper hand hygiene techniques.
3. Explain the importance of Personal Protective Equipment (PPE) in the prevention of healthcare associated infections (HAIs).
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 THREE – Standard Precautions

1) Introduction
A) Standard Precautions are a set of infection control practices used to prevent the spread of infections caused by the transfer of blood/body fluids (blood/OPIM) of one person to a mucous membrane or area of non-intact skin of another person. Standard Precautions are based on the principle that all blood/body fluids (blood/OPIM) are contaminated and should be handled as if they were infectious.

B) Employees working in DBHDD hospitals are required to use standard precautions with all hospitalized individuals, (regardless of diagnosis or risk of infection), when performing tasks where contact with blood/body fluids (blood/OPIM) may occur; including, invasive procedures, physical examinations, suctioning, wound care, catheter care, and perineal care.

C) With standard precautions, hospital employees are expected to:
   1) Practice proper hand hygiene
   2) Use proper Personal Protective Equipment (PPE)
   3) Practice safe handling and disposal of contaminated sharp items (sharps)
   4) Properly dispose of contaminated waste
   5) Comply with adult immunization recommendations

2) Hand Hygiene
A) Proper hand hygiene is considered by many to be the number one defense against the spread of infection. Acceptable hand hygiene methods include the use of plain (or anti-bacterial) soap and warm water for at least 15 seconds, as well as the use of alcohol based waterless hand sanitizers (alcohol based hand rubs) until the material evaporates.

B) In general, when hands are not visibly soiled, alcohol based hand rubs are the preferred method of hand hygiene when providing health care to individuals. However, alcohol based hand rubs are not recommended where spore forming bacteria such as Clostridium difficile (C diff) are present, and therefore hand washing with soap and water is the preferred method to decontaminate hands in these situations.

C) Hand hygiene is performed
   1) Before and after contact with an individual
   2) Immediately after;
      (a) Touching blood/body fluids (blood/OPIM)
      (b) Touching contaminated items (even when gloves are worn during contact)
      (c) Removing gloves
      (d) Touching objects and medical equipment in the immediate vicinity of care for an individual
   3) When moving from contaminated body sites to clean body sites during healthcare procedures
   4) Before eating
   5) After using the restroom
6) After coughing or sneezing (as part of proper respiratory hygiene).

For additional information regarding proper hand hygiene in healthcare settings, go to; http://www.cdc.gov/handhygiene

3) **Personal Protective Equipment (PPE)**

A) Personal Protective Equipment (PPE) is worn by hospital employees to act as barriers between potentially contaminated body substances and the employee’s skin and mucous membranes. Items of personal protective equipment (PPE) that are commonly used in DBHDD hospitals, and their indications are listed below:

1) Gloves - Use gloves when touching mucous membranes, areas of non-intact skin, and blood/body fluids (blood/OPIM). Also use when touching environmental items that may be contaminated by these, including examination room surfaces, medical equipment, and soiled linen.

2) Masks - Wear a mask or face shield to protect mucous membranes of the nose and mouth during patient care activities and other procedures that are likely to generate splashes or sprays of blood/body fluids (blood/OPIM).

3) Protective eyewear or face shields - Wear eye protection or a face shield to protect mucous membranes of the eyes during patient care activities and other procedures that are likely to generate splashes or sprays of blood/body fluids (blood/OPIM).

4) Gowns - Wear a gown to protect skin and prevent soiling of clothing during patient care activities and other procedures that are likely to generate splashes or sprays of blood/body fluids (blood/OPIM).

5) Disposable resuscitation equipment - Use disposable (one-time use) mouthpieces, resuscitation bags, or other ventilation devices instead of mouth to mouth resuscitation techniques during CPR and Rescue Breathing.

B) Remove PPE immediately after use and wash hands. It is important to remove PPE in the proper order to prevent contamination of skin or clothing.

1) If PPE or other disposable items are saturated with blood/body fluids (blood/OPIM) such that fluid may be poured, squeezed, or dripped from the item, discard the PPE into a contaminated waste receptacle. PPE that is not saturated may be placed directly in routine trash.

For additional information regarding proper donning & removal of PPE, go to; http://www.cdc.gov/HAI/pdfs/ppe/ppeposter148.pdf

4) **Needle Stick and other Sharps Injury Prevention**

A) DBHDD hospitals are required to see that employees use sharps with engineered safety devices as they become commercially available (e.g., needleless IV systems, retractable scalpel blades, retractable lancets, and self-sheathing syringes).

B) Used needles, lancets, razors, and other potentially contaminated sharps are placed in a sharps container immediately after use. Needles are not to be recapped, bent, cut,
removed from the syringe or tube holder, or otherwise manipulated. Note: There is an exception in dentistry that will not be discussed in this module.

5) **Cleaning and Disinfection**
   
   A) Individual care areas, common waiting areas, and other areas where potentially contaminated surfaces or objects are frequently touched by individuals and hospital employees (e.g., doorknobs, sinks, toilets, other surfaces, etc.) are cleaned routinely with the disinfectant that has been approved by the hospital for this purpose.

   B) Housekeeping surfaces such as floors and walls do not need to be disinfected unless visibly soiled with blood/body fluids (blood/OPIM). They may be routinely cleaned with a detergent only or a detergent/disinfectant product.

   C) Most disinfectants are not effective in the presence of dirt and organic matter, therefore cleaning must occur prior to disinfection.

   D) Some pathogens such as norovirus and Clostridium difficile (C. diff) are not inactivated by many of the commercial disinfectants that are routinely used. In situations where contamination with these pathogens is suspected, and the disinfectant does not inactivate these pathogens (as stated on the product label), a bleach solution (1:10) is recommended for disinfecting contaminated surfaces and items.

   E) Some items used in the care of the individual may be damaged or destroyed by certain disinfectants. Maintain these items isolated in a closed plastic bag and consult with the manufacturer of the item before applying disinfectants.

6) **Respiratory Hygiene (Cough and Sneeze Etiquette)**

   A) Proper respiratory hygiene helps to avoid the spread of respiratory secretions that can transmit respiratory disease. Although not intended to prevent the spread of bloodborne pathogens, respiratory hygiene is discussed in this module as good hygiene practice.

   B) Elements of respiratory hygiene and cough etiquette include:

   1) Covering the nose/mouth with a tissue when coughing or sneezing or using the crook or bend of the elbow to contain respiratory droplets

   2) Using tissues to contain respiratory secretions and discarding into the nearest waste receptacle after use. (In general, tissues need not be discarded into contaminated waste receptacles)

   3) Performing hand hygiene immediately after contact with respiratory secretions and contaminated objects/materials

   4) Considering having hospitalized individuals with signs and symptoms of respiratory illness wear a mask when in common areas

   5) Ensuring that hospital employees with signs and symptoms of respiratory illness either do not come to work or consider having them wear a mask when providing care to individuals and in all common areas

   6) Ensuring that tissues, waste receptacles, and alcohol based hand sanitizers are readily available for use
7) Placing cough etiquette signs in prominent locations including the entrance to buildings

For additional information regarding proper respiratory hygiene, go to;
http://www.cdc.gov/flu/protect/covercough.htm

7) Contaminated Waste Disposal
   A) Contaminated waste can spread infection if not handled properly.
   B) Used sharp items are disposed of in sharps containers that are lockable, puncture resistant, leak-proof, closable, and labeled with the biohazard symbol and are red in color. Sharps containers are replaced when filled up to the indicated “full” line and/or when they are 2/3rds full.
   C) Other used disposable items (items that are saturated with blood/body fluids [blood/OPIM] such that fluid can be poured or squeezed from the item or dried fluid is flaking from the item) are discarded into contaminated waste receptacles that are closable, puncture resistant, and leak-proof. These receptacles must be properly labeled with a biohazard symbol and/or are red in color. Such items may include used bandages, personal protective equipment (PPE) and other disposable supplies.

8) Safe Injection Practices
   A) Outbreaks of hepatitis B and hepatitis C infections in US ambulatory care facilities have prompted the need to re-emphasize safe injection practices. All DBHDD hospital employees who give injections must strictly adhere to the Centers for Disease Control and Prevention (CDC) recommendations for safe injections which include:
      1) Use of a new needle and syringe every time a medication vial or IV bag is accessed
      2) Use of a new needle and syringe with each injection of an individual
      3) Use of medication vials for one individual only, whenever possible

For additional information regarding safe injection practices, go to;
http://www.cdc.gov/injectionsafety

9) Adult Immunizations
   A) Hospitalized individuals and hospital employees are encouraged to receive immunizations that are recommended based on age, health, and other risk factors. Immunizations that may be helpful in reducing the number of susceptible hosts include:
      1) Influenza
      2) Pneumococcal Pneumonia
      3) Hepatitis B
      4) Zoster
      5) Tetanus, Diphtheria, Pertussis (Td/ Tdap)
      6) Varicella Zoster
      7) MMR (measles, mumps, rubella)
For additional information regarding adult immunizations, go to;
http://www.vaccineinformation.org/

10) Hospital Specific Training

A) DBHDD hospitals follow Bloodborne Pathogen (BBP) Exposure Control Plans that are reviewed and updated at least annually. These are unique to each hospital and employees receive classroom instruction regarding the specific Bloodborne Pathogen Exposure Control Plan for the hospital in which they work. Included in this instruction is:
   1) A discussion of Engineering and Work Practice Controls
   2) The Hepatitis B immunization program for employees
   3) The True Exposure Protocol

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 Bloodborne Pathogen Exposure Control Plan
   2) Engineering and Work Practice Controls
   3) The Hepatitis B immunization program for employees
   4) The True Exposure Protocol
   5) Standard Precautions
   6) Adult Immunizations
Module Three – Competency Exam

Select the best match from the choices above (each choice is used only once)

1. Clothing and other devices worn to provide a barrier between the hospital employee and blood/OPIM
2. Encouraged for hospitalized individuals and hospital employees when recommended based on immune status, age, health, other risk factors
3. Worn to protect the mucus membranes of the nose and mouth from blood/OPIM
4. Used during CPR as an alternative to mouth to mouth technique
5. Puncture resistant plastic container designed for disposal of items used during healthcare procedures that are sharp and capable of causing a contaminating injury
6. Precautions used by DBHDD hospital employees to combat the risk of healthcare associated infection (HAIs) transmitted by bloodborne pathogens (BBPs)

True or False

7. Standard Precautions is based on the principle that all body substances may be contaminated and should be handled as if they were infectious
8. Standard Precautions should be used with all hospitalized individuals, regardless of diagnosis or risk of infection, when contact with body substances may occur
9. Proper hand hygiene is the number one defense against the spread of infection
10. Any waste receptacle can be used for contaminated waste disposal as long as everyone knows what it is being used for
11. Nurses may recap syringe needles as long as they are extra careful not to get stuck
12. Sharps containers should be replaced when they are ½ full
13. It is not necessary to wash your hands or use waterless hand sanitizer after removing gloves unless a glove has a visible hole or tear
14. Proper handwashing requires a person to thoroughly scrub all surfaces of both hands and wrists for at least 15 seconds

Multiple Choice (select the best answer)

15. Which of the following items is not considered personal protective equipment for healthcare workers?
   a. Masks
   b. Gloves
   c. Disposable resuscitation equipment
   d. Reflective safety vests

16. Which of the following items need not be disposed of in a Sharps container?
   a. Used syringe needles
   b. Used razor blades
   c. Used bandages
   d. Used scalpel blades

17. Under Standard Precautions, which of the following are considered potentially infectious body substances?
   a. All body fluids including blood & blood products
   b. All mucous membranes and intact skin
   c. All body excretions and secretions (except sweat)