SPD Employee Continuing Education

Training Guides

1004. Introduction to Infection Control

Prepared by the SPD Advisory Group
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Objectives:

Upon completion of this training, the participant will be able to:

1) Define the term “Infection Control.”
2) Describe the relationship of Infection Control to Supply, Processing, and Distribution (SPD).
3) Define types of microorganisms.
4) Describe the links of transmission.
5) Define Personal Protective Equipment and what it consists of.

SUPPLY, PROCESSING AND DISTRIBUTION (SPD)
CONTINUING EDUCATION

INTRODUCTION TO INFECTION CONTROL

Infection Control is a vital concern for the SPD department. Our role in the prevention of nosocomial infection is clear. Items improperly cleaned, disinfected, or sterilized will increase the risk of transmission of infection to patients and employees.

There are six (6) classifications of Microorganisms:

1) **Bacteria** are single-celled, plant-like microbes that are produced by replication. Bacteria are probably the most versatile of the microorganisms being able to function in a variety of conditions. Anaerobic bacteria grow only in the absence of oxygen. Aerobic bacteria are those that require oxygen to grow. Bacteria come in various shapes (cocci, rod-like bacillus, or spiral forms).
2) **Viruses** are minute infectious agents that grow only in living tissues or cells and can be observed only under a microscope. They depend on air, water, humans, or animals to carry them from one host to another.
3) **Fungus** is a plant-like microorganism that feeds off organic matter. Mold, mushrooms and yeast are examples of fungi.
4) **Algae** are one or more cell-like plants that live in fresh or salt water and on land.
5) **Protozoa** is a one-celled animal organism.
6) **Prion** is a protein segment that has a capacity to replicate in a cell nucleus.

There are six (6) links necessary for the spread of infections:

1) **Causative agent**, i.e., bacteria, viruses and increasingly fungi.
2) **Reservoir** of the agent can survive and may or may not reproduce. Common reservoirs associated with nosocomial infection agents are patients, health care workers, health care equipment and the environment. A common type of reservoir such as bedding, corrugated cardboard and other outside shipping containers are examples of fomites.
3) **Portal of exit** is the path that the infection agent uses to leave the reservoir such as respiratory tract, genitourinary tract, gastrointestinal tract, skin/mucous membrane, blood and transplacental (mother to fetus).
4) **Mode of transmission** is the movement of organisms from the reservoir to the host. Vectors are carriers of pathogenic microorganisms. Examples:
    a. Direct contact between person to person or vector to person as in the transmission of West Nile virus by mosquito's
    b. Indirect contact such as touching contaminated patient care items without gloves on or a vector (fly) landing on a sterile field.
    c. Droplets spread briefly in the air by an infectious agent such as coughing or sneezing

5) **Portal of entry** is the path used by an infectious agent to enter a susceptible host such as respiratory tract, genitourinary tract, gastrointestinal tract, skin/mucous membrane, blood and transplacental (mother to fetus).
6) **Susceptible host** is a person who lacks the ability to resist and infections agent.

Infection Control Practices:

- **Hand washing:**
  a. Single most important step in preventing and controlling transmission of microorganisms from one person to another.
- **Environmentally:**
  b. SPD Department area must be large enough to carry out daily functions.
  c. Cosmetics, drinks, food, and fans are prohibited in all areas of SPD.
  d. Decontamination is physically separated from the preparation and sterile storage areas.
  e. SPD personnel are responsible for cleaning all work surfaces and sinks daily using an approved disinfectant.
  f. Environmental Management Services (EMS) should be responsible for cleaning SPD.
     - Develop a plan in conjunction with EMS outlining cleaning specifications per VA Handbook 7176.
  g. Temperature range is between 65 and 72 degrees.
  h. Humidity range is between 35 and 75 percent.
  i. Air exchanges in SPD must be ten per hour in the preparation and clean/ sterile storage area. Six air exchanges per hour in decontamination.
  j. Air flow:
     - Positive in clean/sterile storage and preparation area.
     - Negative in the decontamination area where the air is exhausted minimizing microorganism movement from dirty to clean areas.
  k. People flow:
     - Restricted in SPD to authorized personnel only.
     - Non-SPD personnel must be properly attired according to the area they are entering.
     - People flow always goes from clean to dirty.
  l. Material flow:
     - Flow of contaminated items is from dirty to clean.
     - Clean/sterile items must be removed from the shipping container/corrugated boxes before entering the clean/sterile storage area.
  m. Work Flow:
     - Moves from dirty to clean areas.
     - Dirty items go through the decontamination process. Then, the items move to the preparation/sterilization area to be inspected, packaged and sterilized as appropriate. The clean/sterilized items are then stored in the clean/sterile storage area and maintained until issued.

- **Personal Protective Equipment (PPE):**

  PPE forms a barrier between personnel and potentially dangerous/hazardous agents. PPE consists of an impervious gown, long cuffed, rubber/vinyl, decontamination gloves (not exam), face shield or goggles, impervious shoe covers and head covering. Written policies and procedures must be in place to protect the employee against transmission of disease. These policies and procedures must include the required PPE and methods to handle contaminated, processed, and sterile items. PPE for use in the decontamination area must be stored outside the area so that it can be donned before entering the area. SPD staff must use standard precautions at all times. By using these precautions, SPD staff treats all items as if they are contaminated. SPD staff must use correct policy and procedures in handling sterile supplies to prevent cross-contamination.

- **Storage and Distribution of Clean/Sterile Supplies:**

  Shipping cartons and corrugated boxes are not allowed in clean/sterile storage areas. SPD staff will follow the VA 7176 Handbook which states: sterile supplies must be covered or closed during transport. Items that fall on the floor must be inspected for damage to determine if there is a need for reprocessing or disposal. Clean/sterile items will never be transported on or in the same cart, or in the same container as the contaminated items. When selecting an item for distribution you must check the expiration date and inspect the integrity of the package. SPD technicians will never leave distribution carts unattended. When transporting the clean/ sterile supplies or equipment, an impervious cover such as a plastic bag or an enclosed transport cart with a solid bottom or barrier must be used. This is to protect the clean/sterile items from environmental hazards. Such hazards include; dust from the floors and wheels, and contact from others in the facility.

  All shelving units in SPD Primary and Secondary distribution areas must be wiped down weekly with a damp cloth. Approved disinfectant is recommended. The lower shelves in storage areas will be solid and have at least 8 inches of space between the floor and the bottom shelf to allow for proper cleaning under the shelving units. Top shelves and contents will be arranged 18 inches from fire detecting or extinguishing systems that are installed or suspended from the ceiling. Shelving must be at least 2 inches from the outside walls to avoid condensation and contamination of supplies.

Post Test

Introduction to Infection Control

1. Name the six (6) different classifications of microorganisms.
    a.
    b.
    c.
    d.
    e.
    f.

2. Name the three (3) different types of bacteria.
    a.
    b.
    c.

3. How often are workstations in the decontamination section cleaned?

4. List 5 examples of PPE.
    a.
    b.
    c.
    d.
    e.

5. _____ is the single most important step in preventing and controlling the transmission of microorganisms from one person to another or from one site to another.

6. _____boxes and _____cartons must be kept out of the clean/sterile storage area.

7. The air exchanges required in the decontamination area are _____per hour and _____ per hour in the clean/sterile area.

Answer Key:

1. Bacteria, Viruses, Fungus, Algae, Protozoa, Prion
2. Spherical Cocci, Rod- like bacillus, Spiral Forms
3. Daily
4. Impervious gown, gloves used for decontamination, face shield or goggles with facemasks, impervious shoe covers and head cover.
5. Hand washing
6. Corrugated and shipping
7. Six (6) and ten (10)

Reference:

1) Central Service Technician Manual, International Association of Healthcare Central Service Materiel Management;
2) Supply, Processing and Distribution Training Manual-Level 1 Training
3) VA Handbook 7176