

SPD Employee Continuing Education

Training Guides



2002. Processing Patient Care Equipment

**Prepared by the SPD Advisory Group
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**SUPPLY, PROCESSING & DISTRIBUTION (SPD)
CONTINUING EDUCATION
PROCESSING PATIENT CARE EQUIPMENT**

OBJECTIVES:

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

1. Name the items that are considered Personal Protective Equipment
2. Handling and disposing of sharps inadvertently sent to SPD
3. Describe the purpose of detergents and disinfectants.
4. List the accepted means for transporting soiled patient care equipment.
5. Describe the soiled equipment collection procedures.
6. Describe the cleaning and disinfecting procedures for patient care equipment

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1. INTRODUCTION

Decontamination is the process of cleaning and disinfecting reusable medical supplies and equipment. The SPD decontamination area of your medical center is where this process should take place. It is designed to isolate soiled items during the decontamination process. Personnel working in this area are trained in the various methods of processing of medical supplies and equipment. The decontamination process plays a vital role in interrupting the transmission of infectious disease. Important aspects of interrupting disease transmission are the processes by which contaminated instruments and equipment are **collected, processed, and handled**.

2. PERSONAL PROTECTIVE EQUIPMENT (PPE)

- a. The types of PPE used in decontamination include, impervious gowns, impervious shoe covers, surgical hair covers, full-face shields, and designated decontamination gloves. Plastic aprons and ear protection are some additional protective items you can utilize. Ear protection may be necessary when some decontamination equipment is in use that produces greater than 50 decibels. Eye protection must be worn because the potential for splashing is present.
- b. PPE must be worn at all times in the decontamination area and must be removed whenever the technician leaves the area. It is the Medical Center's responsibility to provide healthcare workers with PPE and training to promote personal safety. After removing protective wear, technicians are required to wash their hands. A new set of PPE must be donned before re-entering the decontamination area. The PPE must be stored in an area outside of the decontamination area. Employees will shower at the completion of duties or end of their shift if the facility lay out permits.
- c. Sharps safety. Sharps are defined as needles, scalpel blades, and other sharp objects that can penetrate the skin. Technicians must not reach blindly into a container to retrieve items that cannot be visualized. Safe use must include:
 1. Inspect procedure trays and containers visually for sharps.

2. Always use a forceps to remove a scalpel blade from a reusable handle and to remove needles or other sharp objects from the containers or trays.
3. Place disposable sharps in a puncture-resistant container.
4. Never attempt to pick up broken glassware with your hands. Check procedures for proper disposal in your facility.
5. Never put your hands in a sharps container.

3. DETERGENTS AND DISINFECTANTS

a. Detergents.

1. Detergents are cleaning agents used to reduce surface tension and aid in the removal of soil such as body fluids and tissue from the surface of instruments and equipment. Any bioburden not removed contains potentially disease-causing microorganisms. Items not properly cleaned can't be sterilized.
2. Detergents are utilized in both manual and mechanical processes of decontamination. They are normally chosen according to the pH level. A level of 7.0 is neutral. Any pH level below 7.0 is acidic. For example, blood, vinegar, and lemon juice are highly acidic. Acidic detergents can cause harm to instruments and equipment; examples are rust and corrosion of instruments and equipment surfaces. Any pH level above 7.0 is alkaline. Most detergents and soaps are alkaline compounds.

b. Disinfectants.

1. Disinfectants are substances that destroy the growth of pathogenic Microorganisms. However, they have no effect on bacterial spores.
2. Disinfectants are classified according to their ability to kill microorganisms. They are classified into three levels: high, medium, and low. High-level disinfectants kill bacteria, viruses, and fungi, and are used for items that contact mucous membranes and have the potential for being contaminated with body tissues and fluids. Patient care equipment requires medium-level disinfecting. Medium-level disinfectants kill most pathogenic microorganisms and some viruses. Medium-level disinfection's is appropriate for use on patient care equipment such as: I.V. pumps and poles, feeding pumps, suction pumps, heating pumps, etc. They are effective in killing organisms such as mycobacterium tuberculosis fungi, hepatitis B virus, medium and small size viruses. Low-level disinfectants kill some bacteria with little effect on viruses. They are generally used for floors, walls, and

tabletops. Examples of solutions include chlorine compounds, alcohol (70% to 90% ethanol or isopropyl), and some phenolic and iodophor compounds.

Note: Chlorine compounds (bleach) will cause pitting if used on instrumentation.

4. SYSTEMS USED FOR TRANSPORTING SOILED PATIENT CARE EQUIPMENT

- a. **Solid Containers.** Solid containers provide an excellent barrier to cross-contamination, as well as protection for the SPD technician. The container should be lightweight, durable, and made of material that can be properly cleaned. The container should come with a lid that fits snugly over its opening. The bins must be exchanged and cleaned on a daily basis. Bins should be identified with a Bio Hazard sticker.
- b. **Carts.** A closed cart is preferred or a combination cart with a lightweight solid container that is durable and made of material that can be easily cleaned. This provides an excellent barrier to cross contamination of the environment during soiled pick up and transportation. Carts require regular cleaning and maintenance; of particular importance are the wheels. Wheels must have routine lubrication to keep them moving freely and to avoid lock up, which may occur due to repeated decontamination processing. If the carts are not enclosed, a disposable impervious cover must be applied.
- c. **Automated Transport Systems.** Types of systems available include monorails and robotic transport. The principle of operation for the two systems is similar. The robotics transport is the newer of the two systems. Components consist of an enclosed cart, guide track, programmable robot, and dedicated elevator(s). The technician can program the robot to retrieve a cart from a designated area. The robot automatically loads the waiting cart and returns it to the SPD decontamination area.
- d. **Dedicated Lifts/Dumbwaiters.** These provide a method for the delivery of contaminated supplies and equipment to the decontamination area from the OR and other clinical areas. They reduce handling and provide a direct link between SPD, decontamination area and the clinical areas and need to be disinfected on a regular basis; care must also be taken to avoid cross-contamination.
- e. **Portable Patient Care Equipment.** Transport large equipment such as emergency carts, suction units, infusion pumps, etc., directly to the Decontamination Area. Collection containers for transporting soiled reusable equipment must be made of material that can be properly decontaminated or cleaned daily or after every use. All supplies in emergency carts must be

visually inspected and supplies removed prior to the cart being placed into the decontamination area.

5. SOILED EQUIPMENT COLLECTION PROCEDURES

- a. All contaminated supplies and equipment should be collected in covered conveyances or containers, such as waterproof plastic bags, tote-boxes with lids, or closed or covered carts. Collection containers for holding soiled reusable supplies and equipment will be made of material that can be properly decontaminated or disposed of. Gloves must be removed and disposed of following each pick up. All nursing units and clinic areas should have a dedicated soiled utility or dirty room. Enclosed carts or containers should be provided in these rooms and all contaminated procedure trays and reusable equipment placed in them. It is the user's responsibility to dispose of sharps appropriately and to remove or dispose of gross soil from items being returned to SPD.
- b. Technicians are required to wear appropriate attire when collecting and transporting soiled items. Gloves must be changed after direct handling of contaminated items. After the gloves are removed, hands and keys, if used, must be washed. This procedure will reduce the chance of cross-contamination between soiled pickup points and public conveyance (i.e., elevator buttons, door handles, and telephones).

7. SOILED SUPPLY SORTING PROCEDURES

Items must be sorted as they are removed from the transport container depending on the method of cleaning. Items should be inspected for condition and missing parts. The locations of pick up should be identified so the user can be contacted to account for missing parts. Items are sorted into the following categories:

- a. Electrical equipment must be manually wiped down starting at the top and working down (examples of electrical equipment are infusion pumps, feeding pumps, K-pad motors, air compressors, portable suction machines, and hypothermia units.) Use a brush to reach all crevices. Hands wash and inspect electrical cords and plugs for damage, then coil, and secure the cord. Casters and wheels must be washed last. Apply good aseptic technique when cleaning all equipment. If cleaning an item on a counter top, be sure to wipe the work surface with disinfectant solution before turning the item over to be cleaned. Rinse the cloth in disinfectant solution between pieces of equipment. As always, inspect all electrical equipment for proper operation. Manufactures recommendations will be followed regarding disassembly and cleaning of power equipment.

- b. Non-electrical equipment, examples of non-electrical equipment are foot cradles, commode/shower chairs, IV poles, litters, isolation carts, and wheelchairs. Use the same procedure listed above to manually clean non-electrical equipment. If equipment can be disassembled, dismantle the item to the smallest component. Inspect and pre clean the item by removing all gross soil, tape, or residual adhesive before mechanical cleaning.

8. CLEANING AND DISINFECTING PROCEDURES FOR PATIENT CARE EQUIPMENT.

The following steps must be followed in cleaning patient care equipment:

1. Put on appropriate PPE.
2. Follow specific equipment cleaning procedures, provided by the manufacture.
3. After the equipment is cleaned and disinfected, the item is taken to the clean/sterile storage area, or appropriate assembly area where they are inspected and/or packaged. If a tagging system is used, a tag will be attached indicating (1) the item has been processed and is now clean. (2) when the item was processed, (3) who processed it, and (4) who it belongs to. All equipment will be checked to ensure that it functions correctly prior to re-issue.
4. Equipment must be covered with a bag to keep it clean.
5. Equipment will then be logged into the equipment tracking system, and stored in the SPD equipment holding room, or returned to the unit.

POST TEST

PROCESSING PATIENT CARE EQUIPMENT

1. Important aspects of infection control are the processes by which instruments and equipment are _____, _____, and _____.
2. _____ is the process of cleaning and disinfecting medical supplies and equipment.
3. It is the Medical Center's responsibility to provide healthcare workers with _____ and _____ to promote personal safety.
4. Detergents and disinfectants are the _____ compounds used with _____ and _____ processing of instruments and equipment.
5. Detergents are used to aid in the removal of soil such as _____, _____, _____, and _____ from the surface of instruments and equipment.
6. _____ are substances that destroy the growth of pathogenic microorganisms.
7. When transporting large equipment such as emergency carts, suction units, etc., a plastic _____ should be placed over the items.
8. Personnel involved in collecting contaminated _____ and _____ should wear _____.
9. Equipment should be sorted into the following categories: _____ and _____.
10. Always follow _____ for preparing your hospital approved disinfecting solution.
11. Any pH level below 7.0 is acidic. True () False ()
12. Any pH level above 7.0 is alkaline. True () False ()
13. Most detergents and soaps are alkaline compounds. True () False ()

14. Medium-level disinfectants kill spores. True () False ()
15. 70% - 90% ethanol or isopropyl alcohol can be used as a medium- level disinfecting solution. True () False ()

POST TEST ANSWERS

PROCESSING PATIENT CARE EQUIPMENT

1. Collected, processed, and handled
2. Decontamination
3. PPE and training
4. Chemical, manual and mechanical
5. Blood, pus, bone fragments and urine
6. Disinfectants
7. Waterproof bag
8. Supplies and equipment, protective clothing
9. Electrical, nonelectrical
10. Manufacturer's recommendations
11. True
12. True
13. True
14. False
15. True

References:

1. VA Handbook 7176 – August 16, 2002
2. Supply Processing and Distribution Training Manual, Level 1: Training