INTRODUCTION SPD

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Supply, Processing and Distribution

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OBJECTIVES

Following training, the employee will be able to:

1. Identify the main objectives of SPD.
2. Discuss the history of SPD.
3. Identify the areas of SPD and their respective functions.
4. Discuss the importance of patient confidentiality and cost containment.
5. Describe the SPD role in infection control.
6. Define: people flow, material flow, work flow, and air flow.
7. Define Universal Precautions.
8. List the safety hazards associated with SPD.
9. Define and explain RACE.
10. Explain MSDS and its use.
11. Identify regulatory agencies which affect healthcare facilities.
12. Explain the advantages of good communication.
13. Discuss the importance of a good understanding of medical/surgical terminology.

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SUPPLY, PROCESSING AND DISTRIBUTION

1. Supply, Processing and Distribution (SPD) is the central hub around which all patient care activities revolve. It is where all medical/surgical supplies and equipment are requisitioned, cleaned, processed, stored, and issued for patient use.

2. SPD's main objective is to provide centralized support to all the medical center's patient care programs, while assuring appropriate aseptic conditions, economy of operation, and consistency in processing, storing, and distribution, all under strictly controlled conditions.

3. SPD is unique in that, it not only functions as an administrative section, it also functions as a clinical one. Administratively, SPD must follow all Federal procurement regulations. Clinically, SPD is involved in facilitating quality patient care by providing the right product in the right condition at the right time.

4. During the 1940's, W.B. Underwood and John J. Perkins promoted the modern concept of centralizing supply, processing and distribution functions. Prior to this, medical and surgical supplies were processed by the individual users. Decontamination and sterilization procedures varied greatly between the users, which led to nosocomial (hospital acquired) infections. There was a tremendous duplication of equipment, effort, and supplies with this system. Underwood and Perkins' concept placed all these functions under one section of the hospital.

5. Before 1967, SPD was known as Processing and Distribution (PAD). PAD organizationally was under Nursing Service. Its function was primarily the distribution of supplies. Sterilization and instrument preparation activities were minimal. The O.R., Dental, and other services requiring sterilization performed these functions on their own. After 1967, the PAD operation was placed under the Acquisition and Materiel Management Service and renamed Supply, Processing and Distribution. With the new name came expanded responsibilities including, but not limited to, decontamination, sterile processing, and inventory management. SPD today is traditionally divided into these three areas: Decontamination, Preparation, and Inventory Management/ Distribution.

6. The Decontamination Area is responsible for cleaning and decontaminating reusable equipment, instruments, and supplies. This is accomplished by manual cleaning, or by mechanical means using items such as ultrasonic washers, glassware washers, glassware dryers, tube washers, tube dryers, flexible endoscope washers, washer/sterilizers, washer/sanitizers, cart washers, and steam guns.

7. The Preparation Area is responsible for assembling, preparing for issue, and/or sterilizing the decontaminated items. The proper assembly of materials must be

chosen, as well as the proper sterilization method. The main sterilization methods are steam and ethylene oxide (EtO).

8. The Inventory Management/Distribution Area is responsible for the requisition, issue, and maintenance of medical/surgical supplies. In addition, Distribution is usually responsible for case cart assembly, exchange cart inventory, secondary inventory, and telephone and/or call window distribution.

9. Cost containment is an issue that concerns all medical supply technicians. Waste can be reduced by the careful handling of supplies, accurate record keeping, and communicating with users to set adequate stock levels and eliminate unofficial inventories. Medical supplies and equipment are very expensive. Incidences of theft and fraud have negative impact on medical centers, are punishable by law, and should be reported immediately.

10. The medical supply technicians must be aware of their responsibility to patient confidentiality. The disclosure of a patient's medical or personal condition should never be communicated to others not directly involved. This information should be held confidential regardless of how it was obtained. Employees should not discuss these issues while at lunch, on breaks, on elevators, etc.

11. SPD is extremely instrumental to infection control in the medical center and is a member of the hospital's Infection Control Committee. Paying careful attention to personal hygiene and good health will minimize the potential for acquiring or transmitting diseases. All SPD employees must help ensure that medical supplies are decontaminated and processed under the best possible conditions for maximum safety and protection of patients, employees, and visitors. Each area within SPD has a dress code which must be strictly adhered to. The purpose of dress codes is to prevent cross-contamination, to maintain a professional appearance, and to protect the employee. In the sterile preparation area, a long sleeve scrub suit or warm-up jacket is required. Post earrings, wedding rings, and a basic watch are allowed. Necklaces are allowed but must be worn inside the scrub shirt. Artificial finger nails, excessive, overwhelming perfumes, and other jewelry are not allowed. Dedicated shoes are recommended for use in this area. When leaving the clean/sterile areas, a cover gown/lab coat is required.

12. Jewelry and artificial finger nails are not recommended in the decontamination area due to the possibility of puncturing and tearing of gloves, leading to potential exposure of the technician to contaminated blood and body fluids.

13. Traffic in SPD is restricted to authorized personnel. Anyone entering an SPD area must also follow the dress code regulations for that area. Control must also be maintained over **people flow**, **material flow**, **work flow**, and **air flow**.

a. **People flow** in SPD is controlled to minimize contamination due to microorganisms found on human bodies and clothing. Traffic patterns are designed so that the people flow is always directed from clean to contaminated areas.

b. **Material flow** is generally considered to be either incoming contaminated items or clean/sterile supplies. Contaminated items enter the decontamination area in covered containers/closed carts. Before leaving the decontamination area, all items are cleaned and disinfected. Clean or sterile packaged items coming into SPD will be removed from shipping and corrugated cartons before entering clean/sterile storage.

c. **Work flow** is the order in which medical/surgical items are received into SPD, processed, and dispensed for patient use without cross-contamination occurring. Contaminated reusable items are transported to the decontamination area in such a manner as to protect people and the environment from contamination. After the decontamination process, items go to the preparation area for inspection, packaging, and sterilization, as necessary, or to the equipment area They are then transferred to the sterile storage area and maintained until issued. Work flow always goes from dirty to clean areas.

d. **Air flow** is controlled to minimize the travel of microorganisms from soiled areas to clean areas. This is accomplished by creating a positive pressure air flow in clean areas as relative to adjacent areas, and exhausting that air through the dirty areas to the outside or a filtered recirculating system.

14. The practice of Universal Precautions is followed by SPD employees, as well as all health care workers. Universal Precautions mandate that all contaminated items be treated as if they are infectious. The use of protective equipment and frequent hand washing further the infection control goals of eliminating cross-contamination in the medical center. Personal protective equipment includes impervious gowns, shoe covers, masks, gloves, goggles/face shields, and hair covering.

15. SPD has a variety of safety hazards associated with each area. With proper training and attention paid to these hazards, incidents can be kept to a minimum.

a. Environmental hazards include cuts or sticks from needles, falls from wet floors in the decontamination area, and burns from steam sterilizers in the preparation area.

b. Chemical hazards come from the many cleaners and disinfectants used in the decontamination area. Ethylene oxide is an extremely toxic, known carcinogenic gas used to sterilize many heat, liquid, or pressure-sensitive items.

c. Biological hazards arrive in the decontamination area from equipment and supplies contaminated with potentially pathogenic microorganisms.

d. Electrical hazards could include shocks from frayed or cut cords, damaged equipment, and improper cleaning of equipment.

e. Mechanical hazards usually involve equipment operation. SPD uses large automated pieces of equipment, such as automatic autoclave doors, automatic transport systems, cart washers, dumbwaiters, and elevators.

f. Physical hazards result from improper lifting, pulling, pushing, and bending.

16. All injuries sustained by SPD employees should be reported to the Chief, SPD, immediately. The employee will be sent to the Employee Health Physician for treatment and documentation. Form CA-1 and VA Form 2162 will then be completed.

17. All SPD employees, as well as all medical center employees, must be familiar with fire safety rules and procedures. The acronym **RACE** is used to define actions to be taken in the event of a fire:

R - Remove - all persons in immediate danger.
A - Alarm - activate fire alarm; dial appropriate number and inform operator where fire is located.
C - Close - all doors.
E - Extinguish - fire with extinguishers only if fire is reasonably small and can be handled alone.

18. Hazard communications are an on-going activity. SPD employees must be aware of the potentially dangerous products they use on a daily basis. A Material Safety Data Sheet (MSDS) is a document that provides information on the physical characteristics and potential health risks of a hazardous material, as well as other information, such as the chemical name, common or trade name, manufacturer, and ingredients. The MSDS also gives instructions in the event of hazardous contact with the product or a leak or spill. All hazardous material in SPD will have an MSDS on file and staff will be trained annually. A copy of the MSDS file must be accessible to all employees for easy reference. Areas where hazardous materials are utilized will have warning signs posted.

19. Many regulatory agencies, Federal, State, and local, have standards which affect health care facilities. Some of these include:

a. Occupational Safety and Health Administration (OSHA) - establishes and enforces laws governing occupational exposure to toxic chemicals, such as EtO and glutaraldehyde.

b. Environmental Protection Agency (EPA) - regulates the manufacturing, labeling, and emissions of ethylene oxide (EtO).

c. Food and Drug Administration (FDA) - regulates the manufacturing and classification of medical devices, such as infusion pumps, feeding pumps, and implantable devices.

d. Centers for Disease Control (CDC) - performs research and makes recommendations regarding infection control issues.

e. National Institute of Occupational Safety and Health (NIOSH) - performs research and makes recommendations regarding occupational safety and health issues.

20. The Joint Commission on Accreditation of Healthcare Organization (JCAHO) is a voluntary accreditation organization to which healthcare facilities may choose to belong in order to qualify for financial reimbursement from insurers. The JCAHO standards which affect SPD are infection control, safety, sterilization, quality assurance, and training.

21. Professional organizations offer recommendations and/or guidelines which impact SPD. Among those are:

a. International Association of Hospital Central Service Personnel (IAHCSP)

b. International Association of Hospital Central Service Material Managers (IAHCSMM)

c. Association of the Advancement of Medical Instrumentation (AAMI)

d. Association of Operating Room Nurses (AORN)

e. Association of Practitioners of Infection Control (APIC)

f. American Society for Healthcare Central Service Personnel (ASHCSP)

These organizations provide enhancement of patient care by elevating the standards of SPD personnel.

22. Individual medical center policies and procedures manuals provide rules and regulations and indicate specific steps in completing tasks. These policies should be kept at hand as a reference and read by all personnel. Equipment manuals provide instructions on operation, maintenance, and troubleshooting and are readily available for reference.

23. The medical supply technician communicates daily with individuals from various backgrounds, from doctors and nurses to patients and their families. Communication is extremely important in that pertinent information is exchanged regarding patient care

needs, thus meeting the user's demands and keeping medical supply technicians up-to-date on current inventory and their specific uses. Communication is also essential within the SPD section. Good interpersonal relationship skills promote a productive work environment. Gossip, malicious talk, and rumors lead to dissension and dissatisfaction within SPD, which ultimately affects the service provided. In face-to-face meetings or phone conversations, the technician must be polite and courteous. A helpful attitude promotes good will and smoother work production.

24. Knowledge of basic medical/surgical terminology is essential for the SPD technician. Correct terminology between the technician and user will allow rapid responses to their requests. Many times when items are requested, generic or "slang" terminology is used. It is essential that the medical supply technician be familiar with the vast amount of terminology used. In instances where an unfamiliar item is requested, as much information as possible should be obtained. For example, when a catheter is requested, they may need a cardiac catheter, a Foley catheter, or a uretral catheter. A call received for an airway may indicate a need for an oral airway, nasal trumpet, or an endotracheal tube. Patient care incidents can be avoided if the medical supply technician can comprehend and correctly use medical terminology. Understanding what an item is used for, and why, will also enable the technician to obtain the item quickly and correctly. The key to understanding medical terminology is understanding the relationship between root words, prefixes, and suffixes.

25. The root word is the building block of the word. For example, the root word of dermatitis, dermatome, dermatologist, and dermatology is derma, which means skin. The prefix appears at the beginning of a word and enhances its meaning. Dispense, disinfect, disease, and disperse all have dis as their prefix. The suffix appears at the end of a word and also enhances its meaning. Cytology, biology, physiology, and cardiology all have ology as their suffix.

26. The SPD department has come a long way in the last 20 years in sophistication, skill levels required, and knowledge necessary to perform many duties adequately.

IMPORTANT TERMS - INTRODUCTION TO SPD

Air Flow
Biological Hazards
Centers for Disease Control
Chemical Hazards
Confidentiality
Electrical Hazards
Environmental Hazards
Environmental Protection Agency
Food and Drug Administration
Joint Commission on Accreditation of Healthcare Organization
Material Flow
Material Safety Data Sheet
Mechanical Hazards
National Institute of Occupational Safety and Health
Nosocomial
Occupational Safety and Health Administration
People Flow
Physical Hazards
Prefix
RACE
Suffix
Universal Precautions
Work Flow

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SPD

1. SPD is the area where medical/surgical supplies and equipment are _____, _____, _____, _____and _____ for patient use.

2. _____ and _____ promoted the centralized sterile supply concept.

3. The decontamination area is responsible for _____ and _____ reusable equipment and supplies.

4. The main sterilization methods are _____ and _____ _____.

5. The issue and maintenance of medical/surgical supplies occurs in the _____ area.

6. The purposes of dress codes are to prevent _____, maintain a _____ appearance, and to protect the _____.

7. Control is maintained over _____flow, _____flow, ____flow, and ____ flow.

8. A needle stick represents an _____ hazard.

9. A _____ is a document accompanying hazardous materials which lists important information about that material.

10. _____ governs occupational exposure to toxic chemicals.

11. Used in the decontamination area to mechanically clean is:

    a. ultrasonic washer
    b. flexible endoscope washer
    c. washer/sanitizer
    d. all of the above

12. Treating all items as infectious is:

    a. Paranoid
    b. Universal Understanding
    c. Overall Contamination
    d. Universal Precautions

13. The "R" in the acronym RACE stands for:

    a. Run away quickly
    b. Remove all persons in danger
    c. Ring the fire alarm
    d. Respond to the evacuation team

14. An MSDS includes:

    a. chemical name
    b. manufacturer
    c. price
    d. a & b

15. Which is NOT a JCAHO standard affecting SPD?

    a. hiring
    b. sterilization
    c. training
    d. infection control

16. SPD's main objective is:

    a. support patient care
    b. assure aseptic conditions
    c. display consistency in operations
    d. all of the above

17. Underwood and Perkins' work was documented in the:

    a. 1900's
    b. 1940's
    c. 1890's
    d. 1960's

18. Which is NOT a distribution area function?

    a. issue of supplies
    b. case cart assembly
    c. operation of tube dryer
    d. secondary inventory

19. "Work flow" always goes from:

    a. decontamination to preparation
    b. soiled to clean
    c. preparation to distribution
    d. all of the above