INFECTION PREVENTION, AND CONTROL

Chapter 17

Objectives-Theory

1. Explain how the body's protective mechanisms work to prevent infection
2. Describe how the inflammatory and immune responses protect the body
3. Identify means for removal or destruction of microorganisms on animate and inanimate objects
4. Describe accepted methods of disinfection and sterilization

Objectives-Skills

- Skill 17.1 Hand hygiene
- Skill 17.2 Using Personal Protective Equipment: Gown, Mask, Gloves, Eyewear (244)
- Step 17.1 Removing Gloves

Hand Hygiene Page 239

Hand Hygiene is one of the most effective ways to reduce the number of microorganisms on the hands.

Gloves should be used to prevent contact with any blood or body fluids

Health care workers MUST perform hand hygiene before and after giving care to a patient

Alcohol-based hand sanitizers are the MOST effective method for removing microorganisms from the hands of health care workers and are the preferred method of hand hygiene in most situations

If hands are not visibly soiled, the use of alcohol-based hand rub is appropriate.

Skill 17.1

Hand Hygiene continued

- **When hands are visibly soiled, the CDC recommends wetting the hands; adding soap; performing at *least 15 seconds* of vigorous rubbing to aid in spreading the soap over the hands, fingers, wrists and thumbs; rising the hands under warm running water; and drying the hands thoroughly (Skill 17.1)**
- **30 seconds or longer if in specialty areas or according to agency policy**
- **DO NOT wear jewelry when you are providing patient care because microorganisms become lodged in the settings of stones, grooves of rings, and beneath jewelry.**
- **Fingernails should be kept clean and short! (NO MORE THAN ¼ INCH PAST THE FINGERTIPS) NO artificial Nails!!**
- **Proper hand care includes the prevention of hangnails and skin abrasions which can be portals of entry for bacteria**

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Hand hygiene continued

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- Evidence suggests that hand antisepsis-the cleansing of hands with an antiseptic hand rub-is more effective in reducing health care-associated infections than washing the hands with soap and water

Method for decontaminating hands

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- When using an alcohol-based hand rub, apply product to one hand and rub hands together, covering all surfaces of hands and fingers, until hands are dry.
- While gel is drying **DO NOT** sway hands up and down for faster drying time.
- Because personnel feel a "build-up" of emollients on their hands after repeated us of alcohol hand gels, washing hands with soap and water after 5 to 10 applications of a gel is recommended.
- **Box 17.2**

Standard Precautions

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- **These precautions protect both the nurse and the patient and are to be used for every patient REGARDLESS of suspected or confirmed presence of an infectious agent.**
- Teach patients to perform hand hygiene before eating and after using the bathroom, bedpan or commode.
- Personal Protective equipment (PPE) includes gloves, gowns, masks, protective eyewear, shoe coverings, and hair coverings.
- An isolation or barrier gown is most often an impermeable paper gown with long sleeves and cuffs, although a treated fabric gown may be provided

PPE - Skill 17.2

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Gown

Wear a clean barrier gown that is impermeable(wont seep through) to water and other fluids when there is a chance of being splashed with blood, body fluid, or other infectious material.

Mask

Apply a regular surgical mask before entering the room if there is a chance that you will be in contact with droplets, or splashed bodily fluids. Wear N95 respirator mask when entering an area where airborne microorganisms less than 5 microns in size. (TB) change mask anytime it becomes moist

Eyewear

To prevent fluid from entering the eye area and coming in contact with mucosa or surface of the eye through splattering. Eyewear may in from of googles, a face shield or glasses with side and top piece. Protective eyewear may be disposable or durable. If durable disinfect after each use.

PPE

Head Cover

place a cap or head cover on the head if there is danger of confirmation of the hair or if microorganisms residing in the hair might endanger the patient. A headcover is also required In select locations such as the operating room. This applies to even those who are baldheaded.

Shoe Cover

Cover the skin around the ankles with appropriate protective covers whenever there is a chance of splashing bodily fluids. Shoes are covered so that pathogens are not carried out of the room; the covers are removed when exiting the room

Gloves

Wear disposable gloves for stands precautions when there is a chance of contract with blood or body fluids, mucous membranes, nonintact skin, or secretions or excretions. **Perform Hand hygiene before gloving and immediately after removing the gloves because no glove is 100% protective**. Never reuse or wash gloves.

Removing Gloves steps 17.1 page 247

- Use nonsterile gloves for standard precautions and most isolation procedures. After use, remove the contaminated gloves in a manner that prevents the spread of microorganisms.
- Grasp the cuff of the glove of one hand and slide the glove off the hand, folding the outside of the contaminated glove to the inside.
- Hold the glove removed in the palm of the other gloved hand and slip the ungloved hand under the band of the second glove. Roll the glove off, turning it inside out over the first glove.
- Touching only the inside surface of the rolled up gloves, drop them in the trash.

Donning PPE

1. GOWN
2. MASK
3. GOOGLES/FACE SHIELD
4. GLOVES

DOFFING PPE

- 1. GLOVES
- GOOGLES/FACE SHIELD
- GOWN
- FACE MASK

Latex Allergy

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- Due to the greater exposure through glove use, more people have developed sensitivity or allergy to latex.
- Exposure symptoms: redness, local inflammation, pruritus of the hands, and anaphylaxis.
- If a healthcare worker has an allergy to latex, by law the employer has to supply an alternative type of glove at no cost to the employee.
- Gloves are removed directly over a trash receptacle without "snapping" them off.

Cleaning and Disinfection

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- Pathogens can be killed or inactivated by disinfection, sterilization, or the use of sanitizing agents.
- Always wear gloves when cleaning *visibly soiled* objects or performing wound care.
- Disinfectants are solutions containing chemical compounds such as phenol, alcohol, or chlorine that kill or inactivate nearly all microorganisms.
- A recommended disinfectant is chlorine bleach and water at a ratio of 1:10.
- An antiseptic is a chemical compound that is used on skin or tissue to inhibit the growth of or eliminate microorganisms.

Cleaning and Disinfection

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Disinfectants and antiseptics have bactericidal or bacteriostatic properties

Bactericidal solution destroys bacteria

Bacteriostatic solution prevents the growth and reproduction of some bacteria.

Items that cannot be sterilized, such as skin, can be disinfected with antiseptic agents.

What are 3 spores you may come in contact with?

- **• Clostridium difficile. (c.diff)**
- **• Candida albicans (fungal infection like a yeast infection)**
- **• Bacillus anthracis.(Anthrax, a rod shaped gram-positive bacteria)**

The physical action of washing and rinsing hands is recommended because alcohols, chlorhexidine products, iodophors and other antiseptic agents have poor activity against spores

Key points 252

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- Standard precautions are used for all patients to prevent the spread of microorganisms.
- Hand hygiene is the most effective way to prevent the transfer of microorganisms and is performed before and after caring for each patient.
- PPE is used to carry out standard precautions and includes items such as head covers, gowns, masks, protective eyewear, gloves, and sometimes shoe covers.
- Pathogens can be killed or inactivated by disinfection, sterilization, or using antimicrobial agents.