Chapter 17

Infection Prevention and Control in the Hospital and Home

Lesson 17.1
Infection Prevention and Control
(Slide 1 of 3)

Theory

1) Describe the our stages of infection.
2) List two common health care–associated infections (HAIs) and describe three ways to decrease the occurrence of each.
3) Explain how Transmission-Based Precautions are used with Standard Precautions.
4) Compare and contrast Airborne Precautions with Droplet Precautions.
5) Discuss the special requirements for Airborne Precautions when the patient has pulmonary tuberculosis.

Lesson 17.1
Infection Prevention and Control
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Theory

6) Compare infection prevention and control procedures appropriate for the hospital with those used in the home.
7) List techniques for handling specimens; disposing of soiled linen, trash, and sharps; and cleaning equipment in the isolation setting.
8) Give three examples of how the nurse can provide psychosocial care of a patient in isolation.
9) State the four rules of surgical asepsis.

Lesson 17.1
Infection Prevention and Control
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Clinical Practice

1) Use Standard Precautions when caring for a patient.
2) Use Transmission-Based Precautions when caring for patients.
3) Properly bag and remove soiled linens and trash from an isolation room.
4) Teach a patient or family member how to properly dispose of soiled items at home.
5) Teach a patient or family member proper hand hygiene techniques.

Infection
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- Stages of Infection
  - Incubation period
    - Begins when organism first enters the body and lasts until the onset of symptoms; infection can be transmitted during this stage
  - Prodromal period
    - Short time from onset of vague symptoms to the onset of specific disease symptoms; this stage is highly infectious

Infection
(Slide 2 of 2)

- Illness period
  - Localized and systemic symptoms appear
  - Fever, headache, malaise, and disease-specific symptoms (e.g., leukocytosis, rash, swelling, wound drainage, diarrhea and vomiting)
  - Severity and duration depend on virulence of pathogen and person's susceptibility
- Convalescent period
  - Begins when symptoms begin to subside and continues until the person returns to normal

Health Care–Associated Infections (HAIs)

- Transmitted while receiving health care services
- Health care workers can also contract an HAI
- Patients at greatest risk include those with:
  - Surgical incisions with or without drains
  - Artificial airways
  - Urinary catheters
  - Intravenous (IV) lines
  - Implanted prosthetic devices
  - Repeated injections or venipunctures
  - Immune compromise

Infection Prevention and Control
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- Uses medical and surgical asepsis, Standard Precautions, and Transmission-Based Precautions
- Strict aseptic technique
  - Used in invasive diagnostic and therapeutic procedures (IV catheters, urinary catheters, surgical procedures)
- Isolation used to prevent contact between patient and others

Infection Prevention and Control (Slide 2 of 2)

- Infection prevention and control involves:
  - Monitoring diagnostic reports related to infection
  - Observing patients for signs of infection
  - Implementing procedures to contain microorganisms
  - Properly handling, sterilizing, or disposing of contaminated items
  - Using approved sanitation methods
  - Recognizing individuals at high risk for infection and implementing appropriate protection

Current Standards

- Tier 1: Standard Precautions
  - Delineate methods for avoiding direct contact with body secretions except sweat
- Tier 2: Transmission-Based Precautions
  - Interrupting mode of transmission by identifying specific secretions that might be infective
- Transmission-Based Precautions used alone or in combination but always in addition to Standard Precautions

Transmission-Based Precautions

- Standard Precautions—for all patients
- Airborne Precautions—measles, varicella, TB (special mask)
- Droplet Precautions—meningitis, pneumonia, diphtheria
- Contact Precautions—GI, skin, wound infections, RSV, herpes simplex

Personal Protective Equipment

- Never touch with bare hands anything that contains fluids from a body surface or cavity
- Gloves are to be worn for contact with body fluids of any sort, including:
  - Saliva, urine
  - Feces, blood
- The only times gloves are not worn is for contact with intact skin or unsoiled articles

Application of the Nursing Process
(Slide 1 of 3)

- Assessment (data collection)
  - Assess for signs of infection that may require Transmission-Based Precautions
  - Wounds should be assessed each shift for infection
  - Monitor the patient's temperature
  - Admission lab studies may indicate infection
- Problem Statement
  - Potential for infection, r/t surgical wound, open wound, or weakened condition

Application of the Nursing Process
(Slide 2 of 3)

- Planning
  - Expected outcomes would include “No health care–associated infection is evident”
  - When using Transmission-Based Precautions that require putting on personal protective equipment, the nurse must prepare before each entry into the patient’s room

Application of the Nursing Process
(Slide 3 of 3)

- Implementation
  - Patient teaching is needed on disease process, modes of transmission, and precautions to prevent spread of infection
  - Standard Precautions used for each contact with patient
  - Hand hygiene
    - Most important in preventing infection transmission
    - Before and after contact with patient, wound care, or invasive procedure
    - Before donning gloves and after removing them

General Guidelines for Isolation Precautions (Slide 1 of 4)

- Specimen preparation and transportation—label specimen container before entering room, collect specimen and place it in a leakproof container without contaminating the outside
- Soiled linens—handle as little as possible; roll up and place inside linen hamper inside patient's room

General Guidelines for Isolation Precautions (Slide 2 of 4)

- Trash and biohazard waste—disposable soiled equipment should be placed in plastic bags lining the waste receptacle; a biohazard (red) bag may be needed
- Sharps—never recap a needle before disposal; all sharps are dropped into sharps containers, which are replaced when two-thirds full

General Guidelines for Isolation Precautions (Slide 3 of 4)

- Other equipment—reusable equipment cleaned if visibly soiled, then sent to central supply to be disinfected
- Natural defenses—institute measures to enhance the patient's natural body defenses, such as protect intact skin; promote a balanced diet; provide opportunity for sleep; decrease stress

General Guidelines for Isolation Precautions (Slide 4 of 4)

- Patient placement—patients who need Transmission Precautions should be placed in a private room or with another patient infected with the same organism
- Transporting the patient—avoid unless absolutely necessary; patient is given standard mask to wear outside the room

Infection Prevention and Control in the Home (Slide 1 of 2)

- Keep clothing and linens away from others until washed
- Teach patient and family proper hand hygiene techniques
- Disinfect bathroom with 1:10 bleach/water solution
- Wash dishes in scalding water and let air dry

Infection Prevention and Control in the Home (Slide 2 of 2)

- Use heavy plastic jug with secure top to hold needles
- Use clean gloves for wound care or dressing changes, and teach family how to remove soiled gloves
- Clean patient's room frequently

Protective Environment

- Protective isolation
  - Patient in special room with its own ventilation system
  - No one with active infection allowed in patient's room
  - Remain aware of your facility's policies and procedures regarding protective isolation, and follow them at all times

Psychological Aspects of Isolation

- The patient in Transmission-Based Isolation Precautions is at risk for decreased self-esteem and sensory deprivation
- Signs: boredom, slow thought, disorganized thoughts, excessive sleeping during the day, anxiety, hallucinations, panic attacks

Infection Prevention and Control for the Nurse

- OSHA regulations protect health care workers from exposure to blood-borne pathogens in the workplace
- Three main modes of occupational exposure to blood-borne pathogens are:
  - Puncture wounds from contaminated needles or other sharps
  - Skin contact, allowing blood, body fluids, and other potentially infectious materials to enter through damaged or broken skin
  - Mucous membrane contact, allowing infectious materials to enter through the mucous membranes of the eyes, mouth, and nose

Surgical Asepsis

- Four rules of surgical asepsis
  - Know what is sterile
  - Know what is not sterile
  - Separate sterile from unsterile
  - Remedy contamination immediately
- Goal: keep an area free from microorganisms

Surgical Scrub

- More lengthy and vigorous than regular hand hygiene
- Remove as many microorganisms as possible without damaging the skin
- Timing based on actual time spent scrubbing, not including rinse time
- Usually 2 to 4 minutes
- Brushless technique with antimicrobial agent may be used

Opening Sterile Packages

- Perform hand hygiene
- Open sterile package away from the body
- Touch only the outside wrapper
- Do not reach across a sterile field
- Always face the sterile field
- Allow at least 6 inches between the body and the sterile field

Evaluation

- Patient recovering without additional instances of infection from other organisms or infection of other body areas
- Assessing whether the patient's infection has been transmitted to any health care worker or any other patient on the unit or in the hospital