Operating Room
Aseptic Technique


Perioperative Nursing

- Knowledge of surgical anatomy
- Knowledge of physiologic alterations and their consequences for the patient
- Intraoperative risk factors
- Potentials for patient injury and methods of prevention

Perioperative Care

- Preoperative: decision to perform surgery until patient reaches the operating area
- Intraoperative: entire surgical procedure until transfer of patient to recovery area
- Postoperative: admission to recovery room until discharge
Patient and Environmental Safety

- Risk for fluid and electrolyte imbalances
  - Preoperative fluid and food restrictions
  - Intraoperative fluid loss
  - Stress of surgery

- Hypothermia
  - ↑ postoperative discomfort
  - ↑ surgical bleeding
  - ↑ incidents of postoperative cardiac events
  - Impaired wound healing
  - ↑ risk of wound infection
  - Longer length of stay

Infection Control

- Asepsis: absence of infectious organisms
- Surgical Asepsis – measures that render supplies and equipment totally free of microorganisms
- Sterile technique: practices that restrict microorganisms in the environment, on equipment and supplies and that prevent normal body flora from contaminating the surgical wound
Microorganisms that Cause Infection

- Staphylococci
- Enterococci
- Pseudomonas
- Streptococci
- Mycobacterium tuberculosis
- Viruses

Sources of Infection

- Air
- Personnel
- Equipment
- Supplies
- Patient

Controlling Infection in the Perioperative area

- Universal Precautions
- Transmission-based Precautions
  - Airborne
  - Droplet
  - Contact
- Handwashing is the single most important factor in preventing spread of infection
Sterilization

• The complete elimination or destruction of all forms of microbial life, including spores
• Steam sterilization is the oldest, safest, most economical method
• Chemical / Gas sterilization
  – Ethylene Oxide (glass, rubber)
  – Cidex (glass, rubber, metal)

What organism are killed by sterilization?

• Spores: cell produced by fungi, can withstand heat or cold
• Pathogens: microorganism capable of producing disease
• Pus: protein rich fluid containing WBCs

Disinfection

• Process of eliminating many or all pathogenic organisms except bacterial spores
• Types
  – Alcohol
  – Chlorine compounds
  – Glutaraldehyde
  – Hydrogen Peroxide
Principles of Surgical Asepsis

1. Only sterile items are used within the sterile field
2. If there is a question about the sterility of an item, it is considered unsterile
3. Sterility is preserved by touching one sterile item with another sterile item
4. Once a sterile item touches something that is not, it is considered contaminated

Principles of Surgical Asepsis

5. Any partially unwrapped sterile package is considered contaminated
6. A sterile wrapper, if it becomes wet, wicks microorganisms from its supporting surface, causing contamination
7. A commercially packaged sterile item is not considered sterile past its recommended expiration date
8. The longer the time since sterilization, the greater the probability that the item is no longer sterile

Principles of Surgical Asepsis

9. Any opened sterile item or sterile area is considered contaminated if it is left unattended
10. Once a sterile item is opened or uncovered, it is only a matter of time before it becomes contaminated.
11. The outer 1” margin of a sterile area is considered a zone of contamination
12. Coughing, sneezing or excessive talking over a sterile field causes contamination
Principles of Surgical Asepsis

13. Reaching across an area that contains sterile equipment has a high potential for causing contamination and is therefore avoided.

14. Sterile items that are located or lowered below waist level are considered contaminated because they are not within critical view.

15. Sterile gowns are considered sterile in front from the shoulder to the level of the sterile field and 2 inches above the elbow to the cuff.

16. Tables are sterile only at table level.

Sterile Field

Practices to Control Infection

- Traffic control
- Surgical attire
- Surgical hand scrub
- Gowning
- Gloving
- Patient skin disinfection and preparation
Types of Wounds

• Surgical: caused by an incision or excision

Types of Wounds

• Traumatic: caused by mechanical, thermal, or chemical destruction

Types of Wounds

• Chronic: caused by underlying pathophysiologic condition over time
Factors Affecting Wound Healing

- Nutritional status
- Inflammatory response
- Oxygenation
- Body temperature

Dressings

- Cushioning and protection from trauma and gross contamination
- Absorption of drainage
- Debridement of wound
- Support, splinting or immobilization of body part and incisional area
- Aid in hemostasis and minimize edema (pressure)
- Enhance comfort and physical appearance
- Maintain moist environment
- Application of medications

Drains

- Provide exits for air and fluids such as serum, blood, lymph, intestinal secretions, bile, and pus
- Prevent development of deep wound infections
- Can drain to gravity or with suction