Surgical Asepsis Outline

- Surgical Asepsis - AKA Sterile technique
  - Those practices that keep an area or objects free of MO
  - Includes practices that destroy MO

- Sterilization
  - Physical and chemical techniques that destroy all MO including spores

- Disinfection
  - Eliminates many or all MO except spores

- Sterilization Techniques
  - Steam under pressure
    - Most dependable
    - Autoclave – steam pressurizer
      - Heat sensitive tape
        - Stainless steel equipment
        - Towels
        - Parenteral solutions
  - Ethylene Oxide – gas
  - Dry Heat
  - Radiation – UV
  - Disinfection
    - E.g. Alcohols and chlorines
    - May be toxic to hands

- Disposable equipment
  - What are advantages?
  - What are disadvantages?

- Use of Sterile Technique
  - Procedures that involve perforation of the skin
  - When skin is broken by trauma or burns
  - Invasive procedures

- Which body cavities are sterile?

- Principles of Surgical Asepsis
  - Once equipment and areas are free of MO, they remain that way if contamination is prevented
  - Determine if the following techniques result in either maintaining sterility or contamination
    - Sterile or contaminated?
    - Sterile touching sterile?
    - Sterile touching clean?
    - Sterile touching questionable?
    - Placing object in sterile field?
    - Border of sterile field?
    - Sterile field or object out of line of vision?
    - Where should hands be placed to maintain sterility
    - Prolonged exposure to air?
      - Avoiding air currents
      - Contact with wet area?
      - Fluid running by gravity over sterile area?
- Partially unwrapped sterile item?
- Past expiration date?
- Coughing, sneezing, excessive talking over sterile field?
- Reaching across sterile field?
- Turning back on sterile field?
- Leaving sterile field to gather further supplies?
- Items placed below the waist?

- Maintaining Asepsis
  - Honesty is the most important attribute in maintaining asepsis.
- Nosocomial Infections
  - Blood
  - Lungs
  - Urinary Tract
  - Open wounds
- How can you prevent these infections?
  - C difficile
  - Most common cause of nosocomial diarrhea

Wound Care
- Wound Classification
  - Different classifications – see page 1489-1491
- Process of Wound Healing
  - Healing depends on location, severity and extent of injury
  - Wound Repair
  - Partial thickness wounds
    - Inflammatory response
    - Epithelial cell proliferation and migration
    - Reestablishment of epidermal layers
  - Full thickness wounds
    - Inflammatory phase
    - Proliferative phase
    - Remodeling
- Primary Intention
  - No loss of tissue
  - Skin edges are approximated
  - Risk of infection low
  - Inflammatory response typically subsides in less than 24 hours

- Secondary intention
  - Wounds occur from trauma, ulceration or infection
  - Tissue loss
  - Wound left open and filled with scar tissue
  - Longer to heal
  - Increased infection risk
  - May require removal of dead tissue
    - Debrided

- Tertiary Intention
Delayed primary intention
- Due to:
  - Delayed suturing of wound
  - Or original split open and is then allowed to heal
  - Large amount of scar tissue formed

Pressure Ulcers
- Tissue necrosis - usually over bony prominence
  - Sacrum – most common site
  - Heals – second most common
- Factors contributing to PU
  - Pressure
  - Shearing force
  - Excessive moisture

Pressure Ulcer Stages
- I - A defined area of persistent redness
  - No open areas
- II – Partial thickness skin loss involving epidermis or dermis or both
  - Superficial – looks like abrasion, blister or shallow crater
- III – Full-thickness loss
  - Damage or necrosis to of subcutaneous tissue that may extend down to but not into underlying fascia
- IV – Full-thickness skin loss
  - Extensive destruction, necrosis
  - Damage to muscle, tendon or bone
  - Undermining and sinus tracts possible
- Healing pressure ulcers are not renamed as they heal.
  - E.g. A stage IV never becomes a stage III or II or I
  - It will always be called a stage IV ulcer
  - “Healing stage IV pressure ulcer”

Braden Scale
Color Classification of Wounds
- Red
- Yellow
- Black

Wound Assessment
- Size
- Depth
- Width
- Tunneling/Tracts
- Temperature of skin
- Erythema
- Undermining
- Dehiscence
- Fistula
- Evisceration
• Exudate
  o Serous
  o Sanguineous
  o Serosanguineous
  o Purulent
  o odor

• Evisceration
  o Protrusion of visceral organs through wound
  o Medical emergency
  o Cover with moist sterile towels (NS) – why?
  o Lower head of bed – why?
  o NPO – why?
  o Notify MD stat
  o Critical Thinking
    ▪ What order would you do the above?

• Purpose of Dressings
  o Protection
  o MO
  o Trauma
  o Aiding homeostasis
  o Promoting healing
  o Debridging
  o Support/splinting
  o Thermal insulation
  o Moist environment

• Types of Dressing
  o Gauze
  o Wet to dry
  o Wet to wet
  o Transparent film (Opsite)
  o Hydrocolloids (Duoderm)
  o Hydrogels (Vigilon)
  o Absorptive or filler
  o Foam and alginate dressings

• Cleansing a wound
  o Use non toxic solutions
  o Cleanse from least contaminated to most contaminated
  o Use gentle friction
  o Irrigation
  o From least contaminated to most contaminated

• Culturing a Wound
• Wound V.A.C.
• Wound – Vacuum Assisted Closure