Healthcare-Associated Infections (HAIs)

- A leading cause of death and increased morbidity for hospitalized pts
- Hospitals, nursing homes, long-term care facilities, home care settings
- Higher rate of infections in hospitalized pts, 5%-10
- Decreased immunity, chronic disease in older population
- Increased use of invasive devices and procedures
- 2002: 1.7 million HAIs in adults and children, 33% in ICUs
- 99,000 related deaths, around $30 billion in medical costs
GOALS of the Infection Control (IC) Program

• Decrease the risk of infection to patients and personnel.
• Monitor for occurrence of infection and implement appropriate prevention measures.
• Identify and correct problems relating to infection prevention practices.
• Maintain compliance with local, state and federal regulations and accrediting agencies relating to infection control.
• Integrate the IC program with the ASC’s quality and safety programs and initiatives.
• Integrate IC into the CMS Quality Assessment and Improvement reporting requirements (mandatory for survey compliance).
Four Types of Precautions

• Standard Precautions
• Contact Precautions
• Airborne Precautions
• Droplet Precautions
Standard Precautions (SPs)

• SPs represent measures that should be followed for **ALL patients** in a healthcare facility.
• SPs apply to blood; all body fluids, secretions, and excretions (except sweat), regardless of whether they contain visible blood; non-intact skin; and mucous membranes.
• SPs measures include:
  – Hand washing/hand hygiene
  – PPE: gloves, gown, masks and eyewear
  – Sharps precautions
  – Proper handling of lab specimens, blood spills, linen, bio waste
Contact Precautions

• Should be followed for patients who are known to have or are highly suspected to have colonization or infection.

• Use if ptn is incontinent, has diarrhea, colostomy, wound drainage

• The goal is to reduce exogenous transmission of micro-organisms through direct or indirect contact from healthcare professionals or other patients.

• Gloves and gown before ptn contact, then remove prior to leaving ptn’s environment. Hand washing required.
Airborne Precautions

• Used for patients who are highly suspected of having infection that is spread by airborne droplet nuclei.
• Examples include tuberculosis, measles, or varicella (chickenpox).
• Private room that has:
  • Monitored negative air pressure
  • 6 to 12 air changes per hour
  • discharge of air outdoors or high-efficiency filtration
  • Keep the patient in the room with the door closed
• Use a N95 respirator.
Droplet Precautions

• Targets infections that are transmitted through larger droplets
• Includes invasive *Haemophilus influenzae* type b disease, diphtheria (pharyngeal), pertussis, group A streptococcal pharyngitis, influenza, mumps, and rubella.
• Offer patients that are coughing, sneezing tissues and face masks.
• Maintain spatial separation of at least 3 feet between the infected patient and others.
• Special air handling and ventilation are not necessary, and the door may remain open.
HAND HYGIENE

• Hand washing/hand hygiene is generally considered the most important single procedure for preventing Healthcare-associated infections
Hand Washing Technique

• Turn on water to a comfortable warm temperature.
• Moisten hands with soap and water and make a heavy lather.
• Wash well under running water for a minimum of 15 seconds, using a rotary motion and friction.
• Rinse hands well under running water.
• Dry hands with a clean paper towel. Use a clean paper towel to turn off the faucet, then discard.
Gloves and Hand Hygiene

- Hand hygiene prior to donning gloves.
- Gloves should be worn while providing care for the patient.
- Change gloves after exposure to infective material.
- After glove removal, perform hand hygiene immediately.
- Avoid direct hand contact with potentially contaminated environmental surfaces or items.
Gloves should be used:

- When touching excretions, secretions, blood, body fluids, mucous membranes or non-intact skin;
- When the employee's hands have any cuts, scrapes, wounds, chapped skin, dermatitis, etc.;
- When cleaning up spills or splashes of blood or body fluids;
- When handling potentially contaminated items;
- When it is likely that hands will come in contact with blood, body fluids, or other potentially infectious material;
- When performing phlebotomy or starting an IV.
“To be or not to be……that is the question?”

- Is the opening phrase of a dialog in the
- "Nunnery Scene" of William Shakespeare's play Hamlet.
TB or not TB... that is the "Consumption"!

- Tuberculosis—the lung-liquefying disease of "consumption"
- is the world's second-biggest infectious killer, caused by Mycobacterium Tuberculosis
Tuberculosis

• TB is spread through the air from one person to another.

• It is spread through air when a person with TB disease of the lungs or throat coughs, sneezes, speaks, or sings.

• People nearby may breathe in these bacteria and become infected.
TB is NOT spread by:

• shaking someone's hand
• sharing food or drink
• touching bed linens or toilet seats
• sharing toothbrushes
• kissing
Symptoms of TB disease include:

- a bad cough that lasts 3 weeks or longer
- pain in the chest
- coughing up blood or sputum
- weakness or fatigue
- weight loss
- no appetite
- Chills
- Fever
- sweating at night
Tuberculosis

• Most infections do not have symptoms, known as latent tuberculosis.

• About 1 in 10 latent infections eventually progresses to active disease which, if left untreated, kills more than 50% of those so infected.

• In 2013 there was between 1.3 and 1.5 million associated deaths, most of which occurred in developing countries.

• The total number of tuberculosis cases has been decreasing since 2006.
HANDLING OF USED NEEDLES

• Recapping of needles is acceptable only for sterile needles.
• In the event of a needlestick injury, the employee should:
  • Immediately wash the wound with soap and running water;
  • Cause the injured site to bleed;
  • If desired, apply alcohol or hydrogen peroxide to the wound;
  • Notify the Nursing Manager, Infection Preventionist or Employee Health Coordinator of the incident as soon as practical.
Usage of Multiple Medication Vials

- Opened multidose medication vials (MMVs) can NOT be kept in the patient treatment area (room).
- If an un-opened MMV is opened within the ptn treatment area, it must be treated like a single dose vial and wasted at the end of the case.
- Multiple syringes may be filled from the same MMV using aseptic technique, providing this is performed away from the treatment room.
- All syringes must be labeled, with drug name, dosage, date and time.
- These syringes may be placed in a zip bag within the anesthesia cart, removing only one prior to each patient case.
- Label the MMV with opening date, new expiration date (28 days from opening) and your initials.
Healthy human’s defenses against infection

- **Intact skin** (except HPV, some parasites, but not bacteria nor fungi)
- **Mucous membranes** (respiratory, gastrointestinal, genitourinary)
- The membranes secretions have antimicrobial properties
- **Immune responses** (activated to resist micro-organisms from invading)
Causative agents of Healthcare Associated Infections

• Bacterial:
  – Most common source
  – Highest morbidity and mortality

• Viruses:
  – More common in children
  – High epidemic risk

• Fungal:
  – Following prolonged antibiotic therapy
  – Patients with compromised immune systems