Infectious Disease Control Orientation

Providence Health & Services
Infection Control

Who is at risk of infection & why?
Exposures and Outcomes

What tools do we use to reduce risk?
Surveillance
Analysis
Interventions
Precautions
Standard, Contact, Droplet, Airborne
Occupational Health Tools and Practices
Who is at risk of infection & why?

Nastiness of organism → Chronic Asymptomatic Infection

Acute Symptomatic Infection

Colonization

Contamination
Who is at risk of infection & why?

- Infection
- Colonization
- Contamination
Factors That Influence the Infectious Process

Host

Microbiological Environment

Social Environment

Physical Environment

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How Do Infection Control Programs Work?

- Surveillance
- Analysis
- Intervention

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Surveillance & Analysis

- Community Acquired & Reportable Patients
- Staff
- Healthcare Associated
• Community Acquired Infections and Reportable diseases (Patients and Staff)

• Emergency Preparedness
  ▪ Emergency Preparedness Committee
  ▪ County Wide Planning
  ▪ Regional Planning
Healthcare Associated Infections (HAI)

- Total House Surveillance - tracking of all HAI in all hospital locations
- NSHN - device associated infections risk stratified and compared to a national benchmark
- Surgeon specific risk stratified surgical site infections and compared to a national benchmark (NSHN)
- Analysis communicated via the Infection Control Committee meetings and department specific updates
- Interventions are developed with the patient care area staff
AIDS Era: Rediscovered Facts of Infectious Disease

- Contact with blood/body substances transmits infectious agents

- Infectious agents present when signs/symptoms or a diagnosis are absent

- Many infectious organisms normally present in, on, or around us
Challenges to Traditional “Isolation Concepts”

- Oral and Genital Secretions (Herpes Simplex)
- Urine (CMV)
- Feces (Normal flora, Hepatitis A before symptoms, many other bacteria, and viruses)

Blood
- ▼ HIV
- ▼ Hepatitis B
- ▼ Hepatitis C
- ▼ Hepatitis D
- ▼ Hepatitis E
- ▼ Hepatitis G
Fluids Containing HIV Infected Cells

- Blood
- Semen
- Vaginal Secretions
- Breast Milk
Hepatitis A

- Transmitted by the oral fecal route
- Self limited without chronic liver problems
- Immune globulin: short term protection
- Vaccine available to “at risk” groups
Hepatitis B

- Transmitted by contact with blood and body fluids
- May have flu-like symptoms and jaundice
- Can become chronic and cause liver cancer and cirrhosis
- Vaccine is readily available and safe
- Vaccine is 95% effective
Hepatitis C

- Transmitted by contact with blood and body fluids
- Only 25% of infected patients symptomatic
- 85-90% of patients infected with Hepatitis C remain chronic
- Leading indication of liver transplant today
Infection Prevention

Pre-AIDS Era
“Isolation”

Post-AIDS Era
Transmission-Based Precautions
Standard
Contact
Droplet
Airborne
Standard Precautions

Personal protective equipment to avoid contact with blood/body substances

- Gloves
- Cover gowns/aprons
- Masks
- Goggles/glasses
- Face shield
- Resuscitation equipment
Standard Precautions: Respiratory Etiquette

Standard Precautions including respiratory etiquette are used at all times. Indications for respiratory etiquette include:

- Cough
- Fever
- Rash
- Mild Respiratory Infection
Standard Precautions: Respiratory Etiquette

Interventions:
- Provide surgical mask
- Segregate from other people

A more complete evaluation may identify the need for precautions in addition to Standard Precautions.
Hand Hygiene

• Following any work likely to contaminate hands
• After removing gloves
• Before and after patient contact
• After using the rest room
Hand Disinfectants

- Use hand disinfectants unless hands are soiled
- Apply product to one hand and rub hands together covering all surfaces of the hands and fingers until evaporated.
Handwashing

- Use soap for 15 seconds
- Rinse hands well and dry with paper towel
- Use paper towel to turn off water
Sharps Management

- No recapping
- Prompt disposal in appropriate container by user
- Disposal at point of use
- Do NOT overfill containers (<3/4 full)
Standard Precautions

Sharps Management

Engineering Controls

- Safety Needles
- Needle disposal containers
LINEN

• Limit linen in patient’s room
• No special handling is required unless the linen is wet or leaking
• If your personal clothing becomes contaminated with blood or other potentially infectious body fluids call the Exposure Hotline to get scrubs to wear and make arrangements for your clothing to be sent the cleaners
• Do NOT take contaminated clothing home to launder
Waste Management

- Liquids
- Solids
- Sharps
Organism transmitted by direct contact with patients or contaminated environment

Indications may include:

- Infection or colonization with multi-drug resistant organisms such as MRSA, VRE or ESBL
- Lice or scabies
- Shingles or rubella
- Incontinence or uncontained drainage
Contact Precautions

- Place proper sign on door
- Gown and glove when entering the room
- Communicate with other involved departments

Epidemiology 24 Hour Consultation Line 261-4487
Droplet Precautions

Organisms transmitted by contact with droplets or environment contaminated with droplets

Indications may include:

- Influenza
- Neisseria meningitidis
- Bordetella Pertussis (Whooping Cough)
- Respiratory Synctial virus (RSV)
Droplet Precautions

• Place proper sign on door
• Wear face shield or surgical mask and goggles when working within three feet of patient
• Gown and glove when entering the room
• Communicate with other involved departments

Epidemiology 24 hour consultation line

261-4487
Key: Suspicion & Early Detection

• Rubeola (measles)

• Varicella (Chicken pox)

• Pulmonary Tuberculosis

• Severe Acute Respiratory Syndrome (SARS)
Pulmonary Tuberculosis

Early Identification

- Cough (greater than 4 weeks)
- Chest pain
- Hemoptysis
- Fever
- Night sweats
- Weight loss
- History of exposure
- Foreign born persons from high incidence areas
**Patient Placement**

- Placement in a negative pressure room
- Airborne Precaution sign should be visible at all times
- Room door must remain closed at all times except exit and entry
- Monitor air flow daily
- Visitors
Respiratory Protection

• When Airborne Precautions are initiated a cart containing respirators is requested through the computer.

• All staff members entering a negative pressure room need to wear a respirator.

• It is the employee’s responsibility to clean the hood after each use with the respirator wipes on the cart.
Patient Transportation

• Ambulation of the patient out of the room for essential purposes only

• Place a surgical mask on the patient while out of the room

• Communicate with receiving departments so that airborne precautions are continued
- Screening
  - Health History (Immunizations, Allergies, etc)
  - Tuberculosis (Two Step PPD)
- Immunizations:
  - Hepatitis B Vaccine
  - Measles, Mumps, Rubella (MMR)
  - Influenza
Hepatitis B Vaccine

- Available to all employees with potential exposure to bloodborne pathogens

- The immunization is a three shot series

- The series can be completed at any time
Employee Illness

Report to your supervisor and Employee Health:

- Skin rashes
- Conjunctivitis
- Fever
- Cough
- Diarrhea
- Nausea and vomiting
- Other symptoms of communicable disease
Bloodborne Pathogen Exposure Management

Potential source?
(visible blood, amniotic fluid etc. NOT urine, feces, saliva without visible blood)

Potential route?
(needle stick, splash to eyes, mouth. NOT blood on intact skin, needle from iv line not containing visible blood)
Bloodborne Pathogen Exposure Management

- Clean the site thoroughly
- Report to your supervisor
- Call the Exposure Hotline 261-4485
Questions??