Infection Control Techniques

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Why This Topic?

- To increase employees awareness on infection control
- To make employees aware of potential hazards of infection towards themselves and their elderly patients
- To discuss the proper personal protective equipment needed for different isolation precautions.
Routes of Disease Transmission

- Contact transmission
- Droplet transmission
- Airborne transmission
### Contact Transmission

**Direct Contact (No Intermediate)**
- Host in contact with reservoir e.g. MRSA
- Skin to skin contact e.g. Scabies, herpetic whitlow

**Indirect Contact (Intermediate)**
- Disease carried from reservoir to host-infected or colonized person or object.
- Contaminated surfaces-electronic thermometers, glucose monitoring device.
Airborne transmission

- Very small particles of evaporated droplets or dusts with infectious agents:
  - Remain in air for a long time
  - Travel farther than droplets

Examples:
- Tuberculosis
- Measles
- Chickenpox
Droplet Transmission

- Large droplets within 3 feet, or more, transmit infection through:
  - coughing, sneezing, and talking

Examples:

- Bordetella pertussis (Whooping cough)
- Viral infections e.g. Influenza virus, rhinovirus
- Neisseria meningitidis
- Mycoplasma pneumoniae
Infection Control Methods and Personal Protective Equipment (PPE)
Hand Hygiene

- Single most important practice to reduce transmission of infectious agents.
- Includes both:
  - Hand washing with antiseptic soap and water
  - and Alcohol-based products (gels, rinses, foams) without water.
Types of PPE

- Gloves
- Isolation gowns
- Face protection - masks, goggles, and face shields.
- Respiratory Protection e.g. respirator with N95
- Boots
Infection Control Precautions
Precautions

All requires hand hygiene

- Standard

Transmission based precautions:

- Contact
- Droplet
- Airborne
Standard Precautions

• Prevents the transmission of common infectious agent
• Hand washing is the key
• Assume infectious agents could be present in the patient’s
  - Blood
  - Body fluids, secretions, excretions (except sweat)
  - Non-intact skin, and
  - Mucous membranes
PPE for Standard Precautions

Wear:

- Gloves
- Isolation gowns
- Face protection

If:

- Touching
  - Respiratory secretions
  - Contaminated items
  - Blood or body fluids
- Soiled clothes with patient’s body fluids, secretions, or excretions
- Possible splashes/sprays of blood, body fluids, secretions, and excretions
Contact Precautions

In addition to Standard Precautions

• Isolate or cohort patients

• Gown and gloves for patient or room contact – remove immediately after contact

• Do not touch eyes, nose, or mouth with hands

• Avoid contaminating environmental surfaces
Contact Precautions

- Wash hands immediately after patient contact
- Use dedicated equipment if possible
  - If not, clean and disinfect between uses
- Clean, then disinfect patient room daily
  - Bed rails
  - Bed side tables
  - Toilet surfaces, and other equipments
Droplet Precautions

In addition to standard precautions

- Place patients in single rooms or cohort 3 feet apart
- Wear mask within 3 feet of patient
- Wear face shield or goggles within 3 feet of patient
- Patient wears mask when outside room
Airborne Precautions

In addition to standard precautions

• Prevent spread of infection through inhaled airborne particles
• Patient in Isolation
• Patient in airborne isolation room, if possible
  - Air exhaust to outside or re-circulated with HEPA filtration
• Patient to wear a mask if outside of isolation room
References

• Guidelines for Isolation Precautions 2007:
  http://www.cdc.gov/ncidod/dhqp/guidelines.html

• Infection Control:

• Bloodborne Pathogens:
Questions?