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CONTROL IN A RADIOLOGY DEPARTMENT

Infection Control

Definition

Infection control refers to policies and procedures used to minimize the risk of spreading infections, especially in hospitals.

Infection control Purpose

The purpose of infection control is to reduce the occurrence of infectious diseases. These diseases are usually caused by bacteria or viruses and can be spread by human to human contact, animal to human contact, human contact with an infected surface, airborne transmission through tiny droplets of infectious agents suspended in the air

Elements Needed to Transmi Infection

- ① An infectious agent
- ② an environment in which the pathogenic microbes can live and multiply.
- ③ A means of transmission. Infection is transmitted by direct or indirect contact, by droplet, by vehicle, by vector, or by airborne route.
- ④ A portal of entry into a new host.

Infectious agent

- Bacterium, a fungus, a virus or parasite.
- Infectious agents vary in their ability to cause disease

A reservoir or an environment

- The reservoir can be a human being, an animal, a plant, water, food, earth, or any combination of organic materials that support the life of a particular pathogen

A means of transmission

- Infection is transmitted by direct or indirect contact, by droplet, by vehicle, by vector, or by airborne route
- 1-Contact is direct when a person or an animal with a disease or his blood or body fluids are touched
- A person who transmits disease-causing organisms but has no apparent signs or symptoms of that disease is called a **carrier**

Contact

Direct Transmission

1. Patient positioning
2. Hands on approach
3. Hand Hygiene
4. Patient's documents
5. Chairs in a waiting area
6. Door handles
7. Patient support accessories

- *Indirect contact* is defined as the transfer of pathogenic microbes by touching objects (*called fomites*) that have been contaminated by an infected person.
- These objects include dressings, instruments, clothing, dishes, or anything containing live infectious microorganisms.

A portal of entry into a new host

- Entry of pathogenic microorganisms into a new host can be by
 1. ingestion,
 2. inhalation,
 3. injection,
 4. across mucous membranes,
 5. or, in the case of a pregnant woman, across the placenta

Infection control in hospitals

- Infections contracted in hospitals are also called nosocomial infections. They occur in approximately 5% of all hospital patients. These infections result in increased time spent in the hospital and, in some cases, death.

- There are many reasons nosocomial infections are common,
- one of which is that many hospital patients have a weakened immune system which makes them more susceptible to infections. This weakened immune system can be caused either by the patient's diseases or by treatments given to the patient.
- Second, many medical procedures can increase the risk of infection by introducing infectious agents into the patient.
- Thirdly, many patients are admitted to hospitals because of infectious disease. These infectious agents can then be transferred from patient to patient by hospital workers or visitors.

Selected Infectious Diseases And Corresponding Treatment:-

Disease	Symptoms	Transmittal	Treatment
Chicken pox	Rash, low-grade <u>fever</u>	Person to person	None
Common cold/ Influenza	Runny nose, <u>sore throat</u> , cough, fever, <u>headache</u> , muscle aches	Person to person	None
Hepatitis	Jaundice, flu-like symptoms	Sexual contact with an infected person, contami-	None

	headache, pain caused by exposure to light, fever, nausea, drowsiness	person	for bacterial meningitis, hospital care for viral meningitis
Mumps	Swelling of salivary glands	Person to person	Anti-inflam- matory drugs
Ringworm	Skin rash	Contact with infected ani- mal or person	Antifungal drugs applied topically

Commonly recommended precautions to avoid and control the spread of infections include:

- Vaccinate people and pets against diseases for which a vaccine is available. As of 2003, the vaccines used against infectious diseases are very safe compared to most drugs.
- Wash hands often.
- Cook food completely .
- Use antibiotics only as directed.
- See a doctor for infections that do not heal.
- Avoid areas with a lot of insects.
- Be cautious around wild or unfamiliar animals, or any animals that are unusually aggressive

➤ Because of the higher risk of spreading infectious disease in a hospital setting, higher levels of precautions are taken there. Typically, health care workers wear gloves with all patients, since it is difficult to know whether a transmittable disease is present or not. Patients who have a known infectious disease are isolated to decrease the risk of transmitting the infectious agent to another person

➤ Hospital workers who come in contact with infected patients must wear gloves and gowns to decrease the risk of carrying the infectious agent to other patients. All articles of equipment that are used in an isolation room are decontaminated before reuse.

➤ Patients who are immunocompromised may be put in protective isolation to decrease the risk of infectious agents being brought into their room. Any hospital worker with infections, including colds, are restricted from that room.

- Hospital infections can also be transmitted through the air. Thus care must be taken when handling infected materials so as to decrease the numbers of infectious agents that become airborne. Special care should also be taken with hospital ventilation systems to prevent recirculation of contaminated air.



Hand hygiene



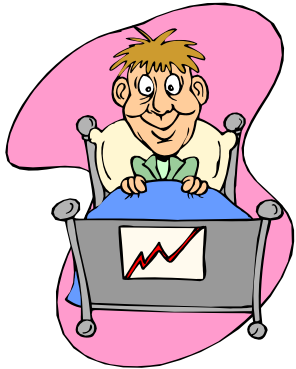
PPE



Masks and Eye protection



Environment

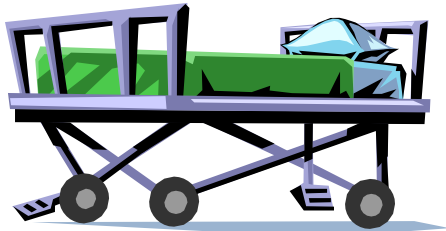


There are 10 elements to Standard Precautions



Clinical Waste

Isolating infectious patients



Patient care equipment



Cough Etiquette

Spillages



Linen



Occupational Exposure

PERSONAL PROTECTIVE EQUIPMENT (PPE)

- ⦿ Gloves
- ⦿ Aprons
- ⦿ Eye protection
- ⦿ Face shields
- ⦿ Masks