

Isolation Precautions

CDC Guidelines for
Isolation Precautions in
Hospitals



Objectives

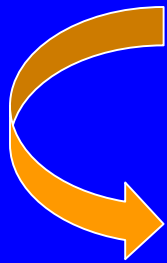
- The purpose of isolation
- Development of guidelines
- Transmission-Based Precautions
- Empiric Precautions

The Purpose of Isolation

- To prevent the transmission of MOs from infected or colonized patients to:
 - Other patients
 - Hospital visitors
 - Health care workers

Isolation

- Expensive
- Time - consuming
- May impede the care of the patient



It should be implemented
only when necessary

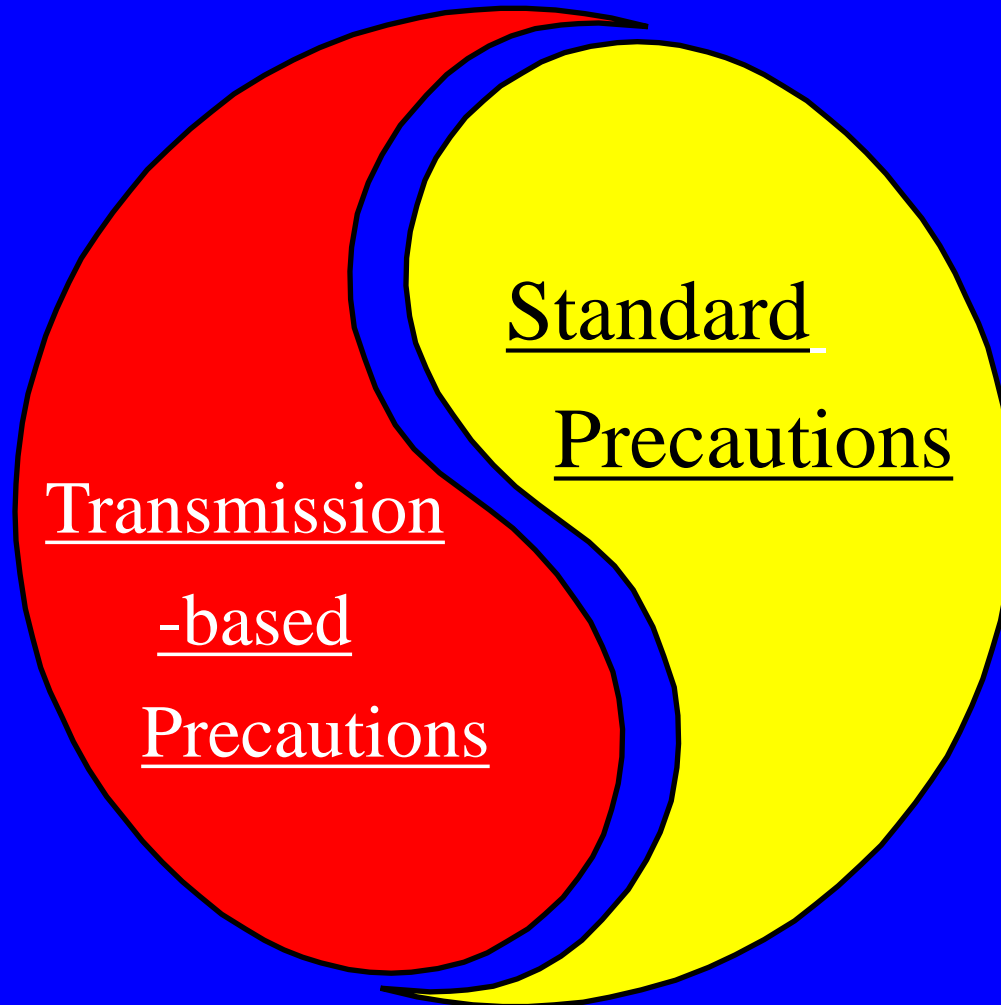
Development of Guidelines

- To maintain epidemiological soundness
- To recognize the importance of all body fluids, secretions, and excretions in the transmission of nosocomial pathogens

Development of Guidelines

- To contain adequate precautions for infections transmitted by the airborne, droplet, and contact routes of transmission
- To be simple and user-friendly as possible
- To provide new terms to avoid confusion with existing systems

Isolation Precautions



Transmission - Based Precautions

- **Supplement to Standard Precautions**
- For use with patients *documented* or *suspected* to be infected or *colonized* with highly transmissible or *epidemiologically* important pathogens

Transmission-Based Precautions

Airborne P.

Droplet P.

Contact P.

1. Airborne Precautions

- Should be used in addition to Standard P. for patients known or suspected to be infected with microorganisms transmitted by airborne droplet nuclei (*5 microns or smaller*) :
 - ***Patient placement**
 - ***Respiratory protection**
 - ***Patient transport**

1. Airborne Precautions

- **TB**
- **VZV**
- **Measles**
- **SARS**
- **Avian flu**

Patient Placement

- Place the patient in a *private room* that has:
 - 1) *Negative* air pressure
 - 2) 12 air exchange or more
 - 3) Appropriate discharge of *air outdoors*/ HEPA
- Keep the room door *closed*, and the *patient in* the room
- Cohorting





High-filtration Respiratory Mask

- Special microstructure filter disc to flush out particles > 0.3 micron



These masks are further classified:

- Oil proof = P
- Oil resistant = R
- Not resistant to oil = N



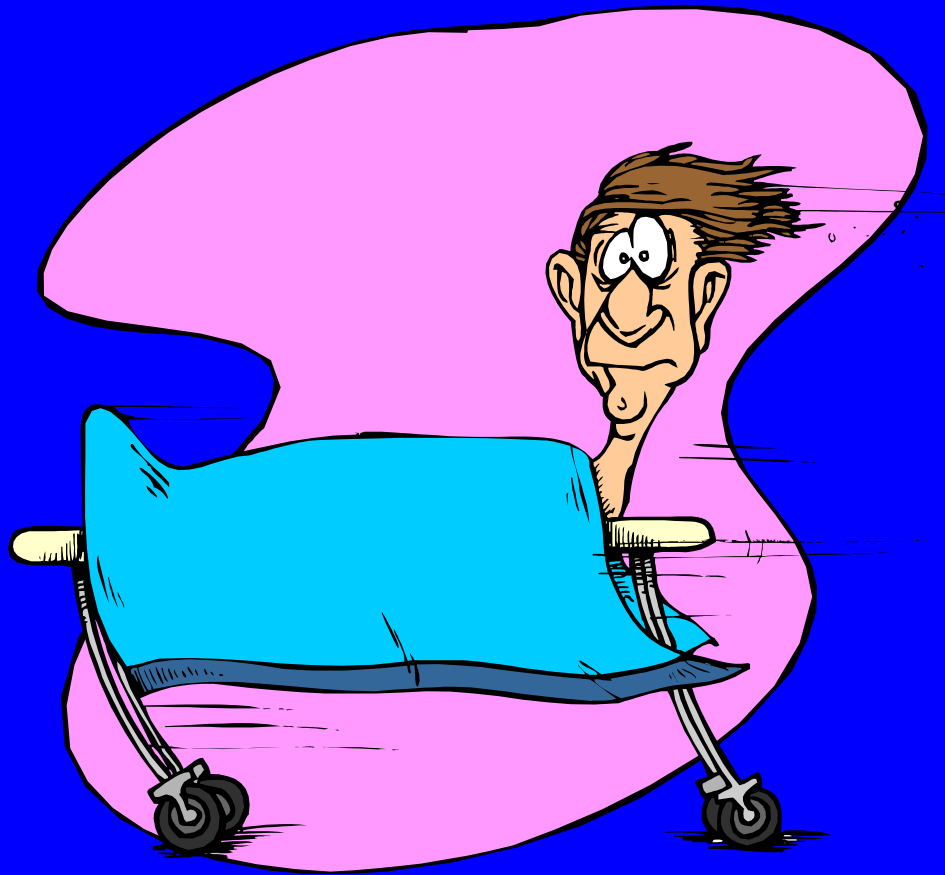


High-filtration Respiratory Mask

- The more a mask is resistant to oil, the better it is
- No. beside mask  filtration efficiency:
- N95 mask  95% efficiency in filtering out particles > 0.3 micron under normal rate of respiration



Patient Transport



2. Droplet Precautions

Should be used in addition to Standard Precautions for a patient known or suspected to be infected with microorganisms transmitted by droplets *larger* than 5 microns that can be transmitted by *coughing, sneezing, talking*, or by the performance of procedures such as *suctioning*.

Droplet Precautions



Droplet Precautions

- **Patient placement :**
 - *Private room or
 - *Cohorting or
 - *Separation of at least 3 feet between the infected patient and other patients and visitors
- **Masking** when working within 3 feet of a patient
- **Patient transport**





2. Droplet Precautions, Examples

- **Diphtheria**, pharyngitis
- **Hib** : Pneumonia: infants and children;
Meningitis, Epiglottitis,...
- **Influenza**: Pandemic, Seasonal, Avian?
- **N. meningitidis** : Pneumonia, Meningitis,
Sepsis

2. Droplet Precautions, Examples

- Mumps
- Mycoplasma p.
- Parvovirus B 19
- Pertussis
- Plague, pneumonia
- **Adenovirus: Pneumonia**

2. Droplet Precautions, Examples

- S. pneumonia
- **Strep. A** pharyngitis, scarlet fever in infants or young children
- **Strep. A** : Pneumonia; Serious invasive disease; Major skin wound or burn; TSS
- Rubella

2. Droplet Precautions, Examples

- Respiratory Infectious Disease:
 - Rhinovirus
 - SARS
- TSS : S.A
- Viral Hemorrhagic Fevers:
Lassa,...; CCHF

3. Contact Precautions

Contact precautions should be used in addition to Standard precautions for a patient *known* or *suspected* to be *infected* or *colonized* with epidemiologically important microorganisms that can be transmitted by *hand* or *skin-to-skin* contact or *indirect* contact with environmental surfaces or patient-care items in the patient's room.

Contact Precautions



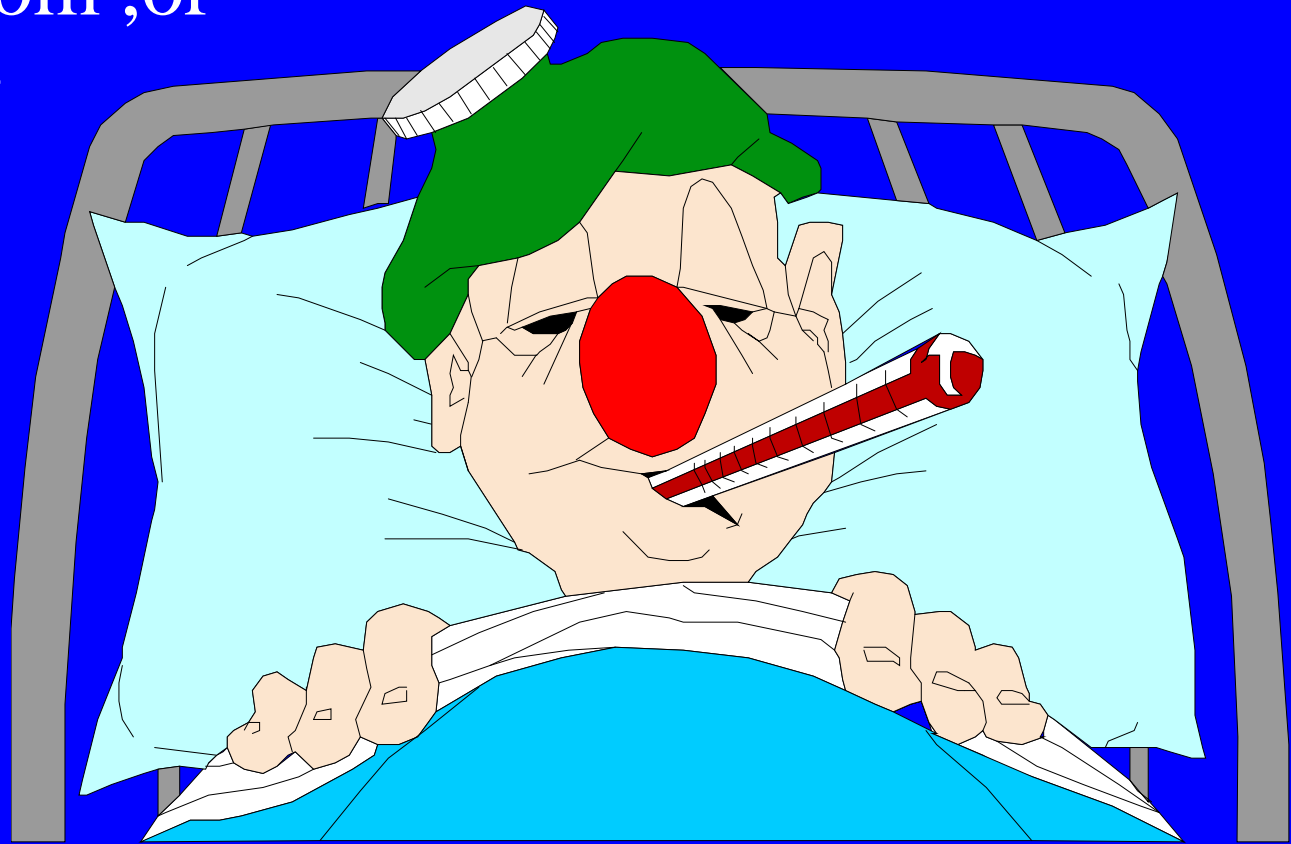
Contact Precautions

- Patient placement
- Gloves and hand washing
- Gowns
- Patient transport
- Environmental control
- Patient care equipment
- Additional precautions for preventing the spread of vancomycin-resistance

Contact Precautions

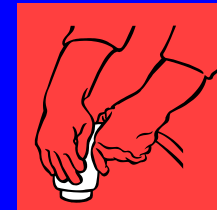
Patient Placement :

- Private room ,or
- Cohorting



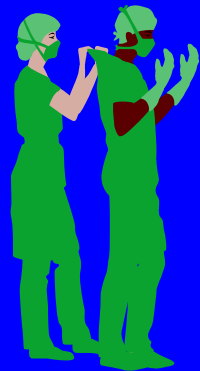
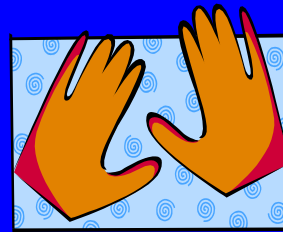
Contact Precautions

- **Gloves and hand washing :**
 - Wearing gloves when entering the patient's room
 - Removing gloves before leaving the patient's room and ,
 - *Scrub* hands with an antimicrobial agent



Contact Precautions

- **Wearing a gown** when entering the patient's room if :
 - Clothing will have substantial contact with the patient , surfaces, items
 - The patient is incontinent,has diarrhea, an ileostomy,or wound drainage not contained by dressing
- **Removing the gloves** before leaving the patient's environment



Contact Precautions

- **Environmental control :**
Ensure that patient care items, bedside equipment, and frequently touched surfaces receive daily cleaning

Contact Precautions

Patient care equipment :

When possible, use non critical patient-care equipment and items (stethoscopes, bedside commodes , sphygmomanometers , or electronic rectal thermometers) to a single patient.

If use of common equipment is unavoidable, items must be adequately cleaned and disinfected before use with another patient.



3. Contact Precautions, Examples

- Acute diarrhea with likely infectious cause **in incontinent or diapered patient:**

E.coli 0157:H7 , HAV , HEV, Rotavirus ,
Shigella, Y.enterocolitica, Enterovirus, ...

- Diarrhea : C. difficile
- Rotavirus GE

3. Contact Precautions, Examples

- **Respiratory** infections in *infants and young children* : Parainfluenza infection , RSV infection (and immunocompromised),...
- **Bronchiolitis** in *infants and young children*
- **Conjunctivitis**, acute viral hemorrhagic : Adenovirus , Enterovirus 70, Coxsackie A

3. Contact Precautions, Examples

- SARS
- Human metapneumovirus
- Pneumonia: Adenovirus; B. cepacia in C.F

3. Contact Precautions, Examples

- Vesicular rash
- HSV (neonatal; disseminated; severe primary mucocutaneous)
- Varicella
- Zoster (disseminated or immunocompromised)

3. Contact Precautions, Examples

- Lice
- Scabies
- Monkeypox
- Smallpox
- Vaccinia

3. Contact Precautions, Examples

- Hemorrhagic fevers (Lassa, Marburg, Ebola, CCHF)
- Rubella, congenital
- Enteroviral infections (*infants, young children*)

3. Contact Precautions, Examples

- History of infection or colonization with *MDR* organisms ,MDR bacterial infection or colonization (MRSA,VISA,VRE,GNB,..)
- Skin,wound , or urinary tract infection in patient with recent hospital or nursing home stay in facility where MDR are prevalent

3. Contact Precautions, Examples

- Abscess or draining wound that cannot be covered(Major)
- Abscess not covered or drainage not contained
- Cellulitis, uncontrolled drainage(major)
- Decubitus ulcer,infected and drainage not contained (Major)

3. Contact Precautions, Examples

- **Anthrax**, cutaneous, uncontained drainage,.
- **Diphtheria**, cutaneous
- **Impetigo**
- **Extrapulmonary TB**, draining lesion

3. Contact Precautions, Examples

- **Furunculosis, S.A** (*infants, young children*)
- **SSSS**
- **Strep. Group A , S. aureus** major skin, burn, or wound infection
- **C. perfringens**, extensive W. drainage

Conclusion

Isolation precautions can **protect only** if they are used **consistently** and **properly** .

