

GENERAL INFECTION CONTROL MEASURES

Implementation and adherence to infection control practices are the keys to preventing the transmission of infectious diseases, including respiratory diseases spread by droplet or airborne routes. Recommended infection control practices include:

1. Hand hygiene;
2. Standard Precautions/Transmission-Based Precautions (Contact, Droplet, Airborne)
3. Respiratory hygiene

Hand hygiene is the single most effective means of preventing the spread of all infections among hospital patients and personnel. When followed properly, each of these practices decreases the risk of spreading common respiratory pathogens

Hand Hygiene

Proper hand hygiene is the most effective way to prevent the spread of infection. Detailed hand hygiene information is available on the CDC website at www.cdc.gov/handhygiene. To properly wash and clean hands, the following procedure should be followed:

- Wash hands when they are visibly dirty or soiled with blood or other body fluids. Wash hands with either a non-antimicrobial soap or an antimicrobial soap and water. When washing hands with soap and water, wet hands first with water, apply to hands the amount of product recommended by the manufacturer, and rub hands together vigorously for at least 15 seconds, covering all surfaces of the hands and fingers. Rinse hands with water and dry thoroughly with a disposable towel or air dryer. Use a dry paper towel, if available to turn off the faucet.
- If hands are not visibly soiled, an alcohol-based hand rub or gel may be used in place of soap and water in most circumstances. When using an alcohol-based hand rub or gel, apply product to the palm of one hand and rub hands together, covering all surfaces of hands and fingers, until the hands are dry.
- Avoid wearing artificial fingernails when caring for patients at high risk for infection, and keep natural nail tips less than 1/4-inch long.
- Wear gloves when contact with blood or other potentially infectious materials, mucous membranes, and non-intact skin could occur.
- Remove gloves after caring for a patient. Always perform hand hygiene after removing gloves. Do not wear the same pair of gloves for the care of more than one patient, and do not wash gloves between uses with different patients.
- Change gloves during patient care if moving from a contaminated body site to a clean body site.

Standard Precautions

The Standard Precautions/Transmission-Based Precautions system is designed to prevent the transmission of infectious agents. It requires the use of work practice controls and protective apparel for all contact with blood and body substances, but uses Airborne Infection Isolation, Droplet, and Contact Precautions for patients with diseases known to be transmitted in whole or in part by those routes. Standard Precautions include consistent and prudent preventive measures to be used at all times regardless of a patient's known infection status, and include:

Hand hygiene. Practice hand hygiene after touching blood, body fluids, secretions, excretions, or contaminated items, whether or not gloves are worn. Wash hands immediately after gloves are removed, between patient contacts, and when otherwise indicated to avoid transfer of microorganisms to other patients or environments.

Gloves. Wear gloves (clean, nonsterile gloves are adequate) when touching blood, body fluids, secretions, excretions, or contaminated items. Put on clean gloves just before touching mucous membranes and non-intact skin. Change gloves between tasks and procedures. Practice hand hygiene whenever gloves are removed.

Mask, eye protection/face shield. Wear a mask and adequate eye protection (eyeglasses are not acceptable), or a face shield to protect mucous membranes of the eyes, nose, and mouth during procedures and patient care activities that are likely to generate splashes or sprays of blood, body fluids, secretions, or excretions.

Gown. Wear a gown (a clean, nonsterile gown is adequate) to protect skin and to prevent soiling of clothing during procedures and patient care activities that are likely to generate splashes or sprays of blood, body fluids, secretions or excretions. Carefully, remove a soiled gown as promptly as possible, to avoid contamination of personal clothing, and wash hands.

Patient care equipment. Handle used patient care equipment soiled with blood, body fluids, secretions, or excretions in a manner that prevents skin and mucous membrane exposures, contamination of clothing, and transfer of microorganisms to one's self, other patients and the environment. Ensure that reusable equipment is not used for the care of another patient until it has been cleaned and sanitized appropriately. Ensure that single-use items are discarded properly.

Contact Precautions

In addition to Standard Precautions, Contact Precautions should be used for the care of patients known or suspected to have illnesses that could be spread by usual contact with an infected person, or by the contaminated environmental surfaces or patient care items in the room. Example of diseases/organisms requiring Contact Precautions include:

- Severe Acute Respiratory Syndrome (SARS): See "SARS Infection Control" section
- Parainfluenza virus
- Respiratory syncytial virus
- Varicella (chickenpox): Also requires Airborne Infection Isolation
- Herpes Zoster (disseminated or in the immunocompromised host): Also requires Airborne Infection Isolation

Gown. Wear a gown when entering the room. Remove the gown before leaving the patient's environment. After gown removal, ensure that clothing does not contact potentially contaminated environmental surfaces. Wash hands.

Patient transport. Limit the movement of the patient from the room to essential purposes only. During transport, ensure that all precautions are maintained.

Patient care equipment. When possible, dedicate the use of noncritical patient care equipment to a single patient (or cohort of patients infected or colonized with the pathogen requiring precautions) to avoid sharing between patients. If use of common equipment or items is unavoidable, then adequately clean and disinfect them before use for another patient.

Patient placement (private room). Place the patient in a private room. If a private room is not available, place the patient in a room with other patients with the same illness (cohorting).

Contact Precautions include:

Gloves, gown and hand hygiene. Wear gloves when entering the room. During the course of providing care for a patient, change gloves after having contact with infective material. Wear gown to protect clothing if contact with body fluids is anticipated. Remove gloves and gown before leaving the patient's room and practice hand hygiene immediately with an antimicrobial agent or a waterless antiseptic agent. After glove removal and hand hygiene, ensure that hands do not touch potentially contaminated surfaces or items in the patient's room.

Droplet Precautions

In addition to Standard Precautions, use Droplet Precautions for a patient known or suspected to be infected with microorganisms transmitted by droplets (large-particle, wet droplets [larger than 5µm in size]) that can be generated by the patient during coughing, sneezing, talking, or the performance of procedures.

Examples of diseases/organisms requiring Droplet Precautions include:

- Invasive Hemophilus influenzae disease: meningitis, pneumonia (in infants and small children), epiglottitis
- Invasive Neisseria meningitidis disease: meningitis, pneumonia, and bacteremia
- Mycoplasma pneumonia
- Group A streptococcal pneumonia, pharyngitis, or scarlet fever in infants and young children
- Influenza
- Adenovirus: Also requires Contact Precautions
- Parvovirus B19
- Rubella

Droplet Precautions include:

Patient placement. Place the patient in a private room. When a private room is not available, place the patient in a room with a patient(s) who has active infection with the same microorganism but with no other infection (cohorting). When a private room is not available and cohorting is not achievable, maintain spatial separation of at least three feet between the infected patient and other patients and visitors. Special air handling and ventilation are not necessary, and the door may remain open.

Mask. In addition to standard precautions, wear a mask or respirator when working within three feet of the patient. (Hospitals may want to implement the wearing of a mask to enter the room.)

Patient transport. Limit the movement and transport of the patient from the room to essential purposes only. If transport or movement is necessary, minimize patient dispersal of droplets by masking the patient, if possible.

Airborne Infection Isolation

In addition to Standard Precautions, Airborne Infection Isolation measures are designed to reduce the risk of transmission of infectious agents that may be suspended in the air in either small particle aerosols or dust particles. Patients requiring Airborne Infection Isolation must be given a private room with special air handling and ventilation (negative pressure). Respiratory protection for healthcare workers is necessary when entering the patient's room.

Examples of diseases/organisms requiring Airborne Infection Isolation include:

- SARS: See "SARS Infection Control" section
- Tuberculosis (pulmonary or laryngeal, suspected or confirmed)
- Varicella: Also requires Contact Precautions
- Herpes Zoster (shingles) in an immunocompromised patient: Also requires Contact Precautions
- Measles (rubeola)

Airborne Infection Isolation includes:

Patient placement. Airborne Infection Isolation requires a negative pressure room in addition to a private room. Keep the room door closed and the patient in the room. When a private room is not available, place the patient in a room with a patient who has active infection with the same microorganism, but with no other infection (cohorting).

Respiratory protection. Respiratory protection must be worn when entering the room of a patient in Airborne Infection Isolation. A NIOSH-certified, fit-tested disposable N-95 respirator mask is recommended for all persons entering the room, including visitors. The use of higher-level respirators may be considered for certain procedures. If a particulate respirator with filter efficiency of 95% or greater is not available, a surgical mask should be worn. The mask should fit tightly around the nose and mouth to protect against large droplet transmission.

Respiratory Hygiene/Cough Etiquette

"Respiratory hygiene" is a term that has been adopted by the Centers for Disease Control and Prevention (CDC) and the Iowa Department of Public Health (IDPH) to describe measures that can be taken to decrease the risk of spreading respiratory pathogens. A universal "respiratory hygiene/cough etiquette" strategy for a healthcare facility should include the following:

- Place signs at the entrances of all outpatient facilities requesting that patients and visitors inform healthcare personnel of respiratory symptoms upon registration.
- Provide masks (e.g., surgical) for all patients presenting with respiratory symptoms (especially cough) and provide instructions on the proper use and disposal of masks.

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- If a patient cannot wear a mask, provide tissues and instructions on when to use them (i.e., when coughing, sneezing or controlling nasal secretions), how and where to dispose of them, and the importance of hand hygiene after handling this material (cough etiquette).
- Provide hand hygiene materials in waiting room areas and encourage patients with respiratory symptoms to wash their hands.
- If possible, designate an area in waiting rooms where patients with respiratory symptoms can be segregated (ideally by more than three feet) from other patients without respiratory symptoms.
- Place patients with respiratory symptoms in a private room or cubicle as soon as possible for further evaluation.
- Healthcare workers evaluating patients with respiratory symptoms should wear a surgical or procedure mask.
- Consider the installation of Plexiglas barriers at the point of triage or registration to protect healthcare workers.
- If a physical barrier is not possible, instruct registration and triage staff to remain at least three feet from unmasked patients. Staff should consider wearing a surgical mask during registration and triage.
- Continue to use Droplet Precautions to manage patients with respiratory symptoms until it is determined that the cause of symptoms is not an infectious agent that requires precautions beyond Standard Precautions.