

## APPENDIX 4: Overview of Infection Control Precautions

### Transmission of Pathogens

Pathogen transmission varies by type of organism. Most have a main transmission pathway, and some are transmitted by multiple routes. In healthcare settings, the two main transmission pathways are via touch or air.

- (1) *Transmission via touch* – occurs through physical direct or indirect contact with a pathogen. Also called contact transmission, it is the most frequent mode of transmission of healthcare-associated infections (HAIs).
  - (a) Direct-contact transmission involves direct skin or mucous membrane contact with an infected or colonized individual that causes physical transfer of pathogens.
  - (b) Indirect-contact transmission involves contact of an individual with a contaminated intermediate reservoir, such as healthcare personnel's hands or gloves, shared patient equipment, environmental surfaces, or water systems.
  
- (2) *Transmission via air* – pathogens suspended in the air are inhaled or deposited in the nose, mouth, or conjunctiva. Pathogens spread via air preferentially transmit over short distances due to greater concentrations of infectious particles near the infectious person, but each pathogen has a spectrum of transmission across short and long distances over time.
  - (a) Droplet transmission – Droplets  $>5 \mu\text{m}$  are generated when an infected individual coughs, sneezes, or talks. Droplets are heavy and do not remain suspended in the air for long time periods or distances ( $\leq 6$  feet). Pathogens transmitted by droplet transmission include, but are not limited to, pertussis, influenza, and Respiratory Syncytial Virus (RSV).
  - (b) Airborne transmission – Droplet nuclei  $\leq 5 \mu\text{m}$  (aerosols) are also generated when an individual coughs, sneezes, or talks, or when an infected individual undergoes certain procedures such as suctioning or emergent intubation. Microorganisms carried in this manner can stay suspended in the air for several hours, can be dispersed widely by air currents and may become inhaled by a susceptible host within the same room or over a longer distance from the infected individual, depending on environmental factors. Pathogens transmitted by airborne transmission include, but are not limited to, *Mycobacterium tuberculosis* (TB), COVID-19, measles, and varicella.

### Standard Precautions

Applicable to all healthcare environments, standard precautions assume that every individual is potentially infected or colonized with a pathogen that could be transmitted in a healthcare environment. Healthcare personnel should use the following tools to protect themselves and their patients after assessing their risk of exposure or transmission of infectious pathogens.

- (1) *Hand Hygiene* – Hand-washing is the single most important method to prevent transmission of infectious pathogens in all healthcare settings.

- (a) Hands should be washed:
    - Before and after each patient contact/exposure
    - After exposure to blood or potentially infectious body fluid
    - Between dirty and clean procedures
    - Before putting on gloves
    - Immediately after removing gloves
    - Before and after performing invasive procedures
    - After using the restroom
    - Whenever they are visibly soiled
  - (b) Routine hand-washing is performed by covering the hands with soap and vigorously rubbing all surfaces of the hands for at least 20 seconds. Liquid soap in pump dispensers is recommended. Paper towels are recommended for hand-drying. Alcohol-based waterless hand-washing solutions are appropriate when hands are not visibly soiled. The waterless solutions are high in alcohol and can cause skin to dry out. Non-petroleum-based hand lotions are recommended to prevent or minimize skin dryness and irritation.
  - (c) When exposure to gastrointestinal pathogens and/or spore-forming bacteria is likely, hand-washing with soap and water is recommended.
- (2) *Personal Protective Equipment* – When healthcare personnel identify risk for exposure to infectious pathogens in a job task, use of readily-available PPE can mitigate risk when used correctly.
- (a) Gloves should be worn when contact with body fluids, secretions, excretions, items contaminated with these fluids or non-intact skin is anticipated. Gloves should also be changed between patients, care activities, and when visibly soiled. Hands should be washed before donning and after doffing gloves to prevent contamination of clean gloves.
  - (b) Masks and eye protection should be worn if splashing of body fluids is anticipated or the patient is presenting with respiratory symptoms. Prescription eye wear is not an acceptable form of eye protection because they do not wrap around the face to protect from peripheral transmission.
  - (c) When soiling of clothes with body fluids, secretions, or excretions is anticipated, fluid-impermeable gowns should be worn.
- (3) *Respiratory Hygiene/Cough Etiquette* – Encourage individuals seeking care in your facility to cover their cough, don a procedural mask when presenting with respiratory symptoms, and perform frequent hand hygiene. When space permits, create physical separation between symptomatic individuals and others as soon as possible.
- (4) *Environmental Cleaning and Disinfection* – Use EPA-registered disinfectants that have microbicidal activity against the pathogens most likely to contaminate the patient care environment to regularly clean and disinfect frequently touched surfaces. Always follow the manufacturers' instructions for use of cleaning products.
- (5) *Injection and Medication Safety* – Use aseptic techniques when handling injectable medications. Always treat needles and syringes as single patient use.

## Transmission-Based Precautions

In addition to standard precautions, transmission-based precautions should be used for patients with suspected or confirmed infection with transmissible pathogens. Some patients may have infections that require combinations of transmission-based precautions based on the pathogen's unique routes of transmission (e.g., patients with RSV should have droplet and contact isolation applied).

Hand hygiene and donning of PPE should always occur prior to entering a patient room or contaminated area. Hands should be washed and PPE should be doffed prior to leaving the room or area where any of these precautions are in place.

Type of precaution	Examples of conditions requiring this type of precaution	Isolation Procedures
<b>Contact</b>	<ul style="list-style-type: none"> <li>• Impetigo</li> <li>• Infected skin lesions</li> <li>• Infectious diarrhea</li> <li>• Hepatitis A</li> <li>• Infection or colonization due to multi-drug resistant organism (MDRO)</li> </ul>	<ul style="list-style-type: none"> <li>• Single room preferred or cohort with similar patient</li> <li>• Patients with diarrhea need an individual toilet</li> <li>• Gloves and gown necessary</li> </ul>
<b>Enhanced Barrier Precautions</b> <i>(long-term care facilities only)</i>	<ul style="list-style-type: none"> <li>• Require wound care</li> <li>• Have an indwelling medical device</li> </ul>	<ul style="list-style-type: none"> <li>• Use only when Contact isolation is not otherwise indicated</li> <li>• Single room when available</li> <li>• Use gown and gloves during high-contact resident care activities</li> </ul>
<b>Droplet</b>	<ul style="list-style-type: none"> <li>• Pneumonic plague</li> <li>• Influenza</li> <li>• Mumps</li> <li>• Rubella</li> <li>• Pertussis</li> </ul>	<ul style="list-style-type: none"> <li>• Single room or cohort with similar patient; keep door closed</li> <li>• HCP/visitor wears procedural mask when in room</li> <li>• Patients wear procedural mask when out of room</li> </ul>
<b>Airborne</b>	<ul style="list-style-type: none"> <li>• Measles</li> <li>• Varicella</li> <li>• Active pulmonary tuberculosis (TB)</li> <li>• COVID-19</li> </ul>	<ul style="list-style-type: none"> <li>• Single, airborne isolation infection room (AIIR) with negative pressure</li> <li>• HCP wears fit-tested N95 or higher-level respirator and eye protection</li> <li>• For vaccine preventable diseases, an immune caregiver is preferred</li> <li>• Patients wear procedural mask when out of room</li> </ul>

Adapted from:

[Infection Control Basics: Standard Precautions for All Patient Care 2024](#) [Accessed 9/2025].

[CDC's Core Infection Prevention and Control Practices for Safe Healthcare Delivery in All Settings 2024](#) [Accessed 9/2025]

[Frequently Asked Questions about Enhanced Barrier Precautions in Nursing Homes](#) [Accessed 1/2026]