

Isolation Precautions: Airborne (Pediatric) - CE

ALERT

Don appropriate personal protective equipment (PPE) based on the patient's signs and symptoms and indications for isolation precautions.

Perform hand hygiene with soap and water or use an alcohol-based hand sanitizer immediately after removing all PPE.²

Avoid physical contact with the patient with suspected or confirmed airborne pathogen before donning appropriate PPE.

Ensure that patients in airborne isolation need are placed in a negative-pressure airborne infection isolation room (AIIR). If an AIIR is not available, place a surgical mask on the patient.²

Airborne precautions are the highest level of isolation. Until an airborne-transmitted illness is diagnosed, airborne precautions represent the safest precautions.

OVERVIEW

Infection prevention and control measures help to ensure the protection of patients in a range of settings who may be vulnerable to acquiring an infection both in the general community and when receiving care because of health problems.

Infection-control practices that reduce and eliminate sources of infection transmission help to protect patients and health care team members from disease. The health care team member is responsible for educating a patient about infection control. Knowledge of the infectious process, disease transmission, and critical-thinking skills associated with use of aseptic techniques and barrier protection is essential for both health care team members and patients.

For pediatric patients, airborne isolation precautions are used for rubeola (measles), chickenpox, tuberculosis (TB), and some coronaviruses.

Rubeola

Rubeola is a childhood illness that with vaccination was declared eliminated in the United States (US) in 2000.³ This means that there were no endemic outbreaks. All cases could be traced to travel outside the US. With a growing fear of vaccination and an increasing number of unvaccinated pediatric patients, the cases of rubeola have risen in recent years.³

Rubeola is a highly contagious illness with respiratory and dermatologic components. Prodromal signs and symptoms include high fever (as high as 40.5°C [105.0°F])³, malaise, cough, coryza, conjunctivitis, and Koplik spots. About 14 days³ after exposure a maculopapular rash develops, with a head-to-toe spread. Patients are considered contagious 4 days before the rash appears until 4 days³ after the rash appears. The rubeola virus can live in the air for up to 2 hours.³ Rubeola must be reported to the health department within 24 hours³ of diagnosis. All health care team members and visitors must follow airborne isolation precautions regardless of immunity status.³

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Chicken Pox

Chicken pox is a highly contagious childhood illness with respiratory and dermatologic components. The incubation period is 14 to 16 days.² Prodromal signs and symptoms include mild fever and malaise. The rash develops 1 to 2 days after the prodromal manifestations.² The rash is highly pruritic and begins on the chest, back, and face, then spreading to the rest of the body. The rash starts as macular, becomes papular, and then vesicular. The vesicles are fluid filled and are contagious via the contact route. Symptoms generally last 4 to 7 days.² The patient is contagious from onset of the prodrome (i.e., 1 to 2 days before the onset of the rash) until 4 days after all vesicular lesions have crusted over.² Patients with chicken pox should be cared for in airborne isolation precautions by health care team members with documented immunity. Shingles, also a varicella infection, does not require airborne isolation precautions.

Tuberculosis

TB should be suspected in any patient who has a persistent cough lasting longer than 3 weeks accompanied by chest pain, bloody sputum, unexplained weight loss or loss of appetite, fever, chills, night sweats, malaise, or fatigue.¹

Airborne Isolation

Airborne isolation precautions include an AIIR with special air-handling and ventilation capacity.⁷ Health care team members who care for patients on airborne isolation precautions should wear nonpowered air-purifying respirators (i.e., N95).⁷ These respirators are high-efficiency particulate masks that have the ability to filter 95% of very small (0.3 micron) airborne particles.⁴

N95 respirators must be fit-tested to determine which size mask is appropriate and to ensure that the wearer knows when a good seal is achieved. Fit-testing must be performed before use and repeated at least annually. Fit-testing must also be conducted whenever respirator design or facial changes that may affect a proper fit take place. A respirator that has not been fitted properly may leave unprotected gaps between it and the face, impairing its effectiveness.

If facial hair or unusual facial features make fitting a mask-type respirator properly difficult, a powered air-purifying respirator (PAPR) may be used. A PAPR has the same filtering properties as the mask-type respirator and is approved by national organization guidelines.¹ This type of respirator covers the head and uses a blower to move air through the filter and into the face piece, helmet, or hood. A PAPR does not require fit-testing before use.

Respirators are disposable, but the same individual may use them more than once. Respirators should be stored between uses in a clean, breathable container (e.g. paper bag), in a dry place, and out of direct sunlight.⁵ The respirator should be discarded if it becomes wet or damaged.

Using a respirator does not, on its own, fully protect a health care team member from acquiring an infection. Other infection-control practices, such as performing hand hygiene, isolating an infected patient, and using appropriate coughing etiquette are also important to minimize the risk of infection.

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All organizations should have a procedure for removing their particular N95 or PAPR and preparing equipment for reprocessing (e.g., bagging for temporary storage before reprocessing, immediate reprocessing in the doffing area).

EDUCATION

- Provide developmentally and culturally appropriate education based on the desire for knowledge, readiness to learn, and overall neurologic and psychosocial state.
- Explain the purpose of the isolation to the patient and family.
- Incorporate play when explaining the use of PPE to a toddler or young child (e.g., superheroes).
- Give the patient and family information on the signs and symptoms of infections.
- Explain to the patient and family about strategies for infection prevention (e.g., hand hygiene, use of PPE).
- Emphasize to the family the importance of PPE despite exposure to the patient prior to admission.
- Explain to the family that both doors to the anteroom should never be open at the same time.
- Encourage questions and answer them as they arise.

ASSESSMENT AND PREPARATION

Assessment

1. Perform hand hygiene before patient contact.
2. Assess for signs and symptoms of airborne infections (e.g., rubeola, chicken pox).
3. Review the patient's medical history, if available, for possible indications for isolation.
4. Review the precautions for the specific isolation criteria, including appropriate PPE to apply ([Box 1](#)) ([Table 1](#)).
5. Review the patient's laboratory test results, if applicable.
6. Determine whether the patient has a known latex allergy.
7. Determine if the patient needs to be moved to a negative-pressure AIIR.

Preparation

1. Choose isolation precautions that are appropriate for the patient's signs and symptoms or diagnosis ([Box 1](#)) ([Table 1](#)).
 - a. Contact precautions: Standard precautions plus gloves and gown
 - b. Droplet precautions: Standard precautions plus a mask
 - c. Airborne precautions: Standard precautions plus an N95 respirator or PAPR
2. Provide proper PPE access and signage as needed.
3. Prevent extra trips in and out of the room; gather all needed equipment and supplies before entering the room.
4. Dedicate medical equipment (e.g., stethoscope, blood pressure cuff, thermometer) to be used only by the patient.²

PROCEDURE

PAPR Option

Donning PPE

1. Enter the designated area for donning PPE and prepare for entry into the isolation room as applicable.

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2. Perform hand hygiene.
3. Inspect PPE before donning. Ensure that the PPE is intact, that all required PPE and supplies are available, and that the correct size has been selected.
4. If a PAPR with a self-contained filter and blower unit integrated inside the helmet will be used, put on the belt and battery before donning the impermeable gown so that the belt and battery unit are under the gown.
5. Don a fluid-resistant gown if the patient is also in contact isolation.
6. If a PAPR with an external belt-mounted blower will be used, attach the tubing and don a belted blower unit. Ensure that the blower and tubing are outside the gown to ensure proper airflow.
7. Don gloves, pulling the cuffs over the sleeves of the gown.
8. Don a PAPR with a full-face shield, helmet, or headpiece.
 - a. For a PAPR with a self-contained filter and blower unit inside the helmet, use a single-use (disposable) hood that extends to the shoulders and fully covers the neck. Ensure that the hood covers all of the hair and the ears and that it extends past the neck to the shoulders.²
 - b. For a PAPR with an external belt-mounted blower unit and attached reusable headpiece, use a single-use (disposable) hood that extends to the shoulders and fully covers the neck. Ensure that the hood covers all of the hair and the ears and that it extends past the neck to the shoulders.
9. Verify the integrity of the PPE. Extend the arms, bend at the waist, and go through a range of motion that is sufficient for delivering patient care.
10. Enter the patient's isolation room, close the door, and arrange the supplies and equipment.
11. Introduce yourself to the patient and family.
12. Verify the correct patient using two identifiers.
13. Explain the procedure to the patient and family and ensure that the patient agrees to treatment.
14. Provide designated care to the patient while maintaining precautions.
 - a. Keep hands away from own face.
 - b. Limit touching surfaces in the room.
 - c. Remove gloves when torn or heavily contaminated, perform hand hygiene, and don clean gloves.
15. Collect any ordered specimens.
 - a. In the presence of the patient, label the specimen per the organization's practice.⁶
 - b. Place the labeled specimen in a biohazard bag.
16. At the door, have another health care team member hold a biohazard bag into which the specimen is placed.

Rationale: This prevents contamination of the outside of the biohazard bag.

17. Discard supplies.

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At the completion of the procedure, ensure that all choking hazards (e.g., syringe caps, port caps, adhesive bandages, bits of tape, twist-off caps from saline bullets) are removed from the patient's linens and placed in the appropriate receptacle.

18. After providing patient care, doff PPE in a designated area by the door or in an anteroom. If an anteroom is in use, leave the isolation room and close the door to doff PPE.

Doffing PPE Option 1: Removal of PPE, if Using a Reusable Gown

1. Remove gloves.

If hands become contaminated during glove removal, or any other step in the PPE doffing procedure, immediately perform hand hygiene.

- a. Using a gloved hand, grasp the palm area of the other gloved hand and peel off the first glove.
- b. Hold the removed glove in the gloved hand.
- c. Slide the fingers of the ungloved hand under the remaining glove at the wrist.
- d. Peel the second glove off over the first glove.

Rationale: Properly removing gloves prevents contact with the contaminated gloves' outer surface.

2. Discard gloves in the proper receptacle.
3. Remove the PAPR with an external belt-mounted blower.
 - a. Remove the headpiece while still connected to the belt-mounted blower and filter unit.

If a PAPR with a self-contained filter and blower unit inside the helmet is used, remove the hood and wait until later in the procedure to remove the integrated components.

- b. Remove the belt-mounted blower unit and place all reusable PAPR components in an area or container designated for the collection of PAPR components for disinfection.
4. Remove the gown.
 - a. Unfasten the gown's neck ties and waist ties, taking care that the sleeves do not make contact with the body when reaching for the ties.
 - b. Pull the gown away from the neck and shoulders, touching only the inside of the gown.
 - c. Turn the gown inside-out and fold it into a bundle.

Rationale: The front of the gown and sleeves are contaminated. Removing the gown as described prevents contact with the contaminated front of the gown.

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- d. Place the gown directly into a designated laundry receptacle.
5. Perform hand hygiene.
6. Leave the anteroom and close the door. Ensure that both doors to the anteroom are never open at the same time.
7. Ensure that specimens have been transported to the laboratory per the organization's practice.
8. Document the procedure in the patient's record.

Doffing PPE Option 2: Removal of PPE, if Using a Disposable Gown

1. Remove gown and gloves.

If hands become contaminated during glove removal, or any other step in the PPE doffing procedure, immediately perform hand hygiene.

- a. Grasp the gown in the front and pull it away from the body so that the ties break. Touch only the outside of the gown with gloved hands.
- b. While removing the gown, fold or roll it inside-out into a bundle, peeling off the gloves at the same time. Touch only the inside of the gloves and gown with bare hands.

Rationale: The front of the gown and sleeves are contaminated. Removing the gown as described prevents contact with the contaminated front of the gown.

2. Discard the gown and gloves in the proper receptacle.
3. Remove the PAPR with an external belt-mounted blower.
 - a. Remove the headpiece while still connected to the belt-mounted blower and filter unit.

If a PAPR with a self-contained filter and blower unit inside the helmet is used, remove the hood and wait until later in the procedure to remove the integrated components.

- b. Remove the belt-mounted blower unit and place all reusable PAPR components in an area or container designated for the collection of PAPR components for disinfection.
4. Perform hand hygiene.
5. Leave the anteroom and close the door. Ensure that both doors to the anteroom are never open at the same time.
6. Ensure that specimens have been transported to the laboratory per the organization's practice.
7. Document the procedure in the patient's record.

N95 Respirator Option

Donning PPE

1. Don an isolation gown.

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- a. Ensure that the gown covers the torso from the neck to the knees and from the arms to the end of the wrists and that it wraps around the back.
- b. Pull the sleeves of the gown down to the wrists.
- c. Fasten the gown securely at the back of the neck and the waist.

Rationale: Donning a gown properly prevents the transmission of infection and provides protection if the patient has excessive drainage or discharge.

2. Don the N95 respirator and complete a fit check.

- a. Check the respirator before donning it to ensure that there is no damage or tears and that the straps are in good condition.
- b. Place the mask over the nose, mouth, and chin. Ensure that the bottom flap is pulled out completely, if applicable.
- c. Secure the lower elastic strap at the top of the neck and the upper elastic strap above the ears at the back of the head.
- d. Adjust the mask for a secure and comfortable fit.
- e. Place the fingertips on each side of the metal nosepiece. Beginning at the bridge of the nose, move down the cheeks and mold the flexible nosepiece to create a snug fit.

Avoid pinching the nosepiece, which may result in an improper fit.

- f. Perform a fit-check.
 - i. Inhale rapidly and ensure that the mask collapses slightly.
 - ii. Exhale and use the hands to check for leaks around the face.
 - A. Adjust the nosepiece if there are air leaks around the nose.
 - B. Adjust the straps along the sides of the head if there are air leaks at the mask edges.

g. Repeat the fit-check.

3. Don eye protection (i.e., goggles or face shield), if needed, around the face and eyes. Adjust to fit.

Rationale: Donning eye protection properly reduces the risk of exposure to microorganisms that may occur from splashing fluids.

4. Don gloves, pulling the cuffs over the sleeves of the gown.
5. Verify the integrity of the ensemble. Extend the arms, bend at the waist, and go through a range of motion that is sufficient for delivering patient care.
6. Enter the patient's room and arrange the supplies and equipment.
7. Introduce yourself to the patient and family.
8. Verify the correct patient using two identifiers.
9. Explain the procedure to the patient and family and ensure that the patient agrees to treatment.
10. Provide designated care to the patient while maintaining precautions.

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- a. Keep hands away from own face.
- b. Limit touching surfaces in the room.
- c. Remove gloves when torn or heavily contaminated, perform hand hygiene, and don clean gloves.
- d. If supplies are needed, enlist another health care team member to hand in new supplies without entering the room.

11. Collect any ordered specimens.

- a. In the presence of the patient, label the specimen per the organization's practice.⁶
- b. Place the labeled specimen in a biohazard bag.

12. At the door, have another health care team member hold a biohazard bag into which the specimen is placed.

Rationale: This prevents contamination of the outside of the biohazard bag.

13. Discard supplies.

At the completion of the procedure, ensure that all choking hazards (e.g., syringe caps, port caps, adhesive bandages, bits of tape, twist-off caps from saline bullets) are removed from the patient's linens and placed in the appropriate receptacle.

14. After providing patient care, doff PPE in a designated area by the door or in an anteroom. If an anteroom is in use, leave the isolation room and close the door to doff PPE.

Doffing PPE Option 1: Removal of PPE, if Using a Reusable Gown

1. Remove gloves.

If hands become contaminated during glove removal, or any other step in the PPE doffing procedure, immediately perform hand hygiene.

- a. Using a gloved hand, grasp the palm area of the other gloved hand and peel off the first glove.
- b. Hold the removed glove in the gloved hand.
- c. Slide the fingers of the ungloved hand under the remaining glove at the wrist.
- d. Peel the second glove off over the first glove.

Rationale: Properly removing gloves prevents contact with the contaminated gloves' outer surface.

2. Discard gloves in the proper receptacle.

3. Remove eye protection from the back by lifting the headband or earpieces. Discard eye protection in the proper container or place in an appropriate container for disinfection.

Rationale: The outside of the eye protection is contaminated. Handling as described allows removal without contaminating hands.

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4. Remove the gown.
 - a. Unfasten the gown's neck ties and waist ties, taking care that the sleeves do not make contact with the body when reaching for the ties.
 - b. Pull the gown away from the neck and shoulders, touching only the inside of the gown.
 - c. Turn the gown inside-out and fold it into a bundle.

Rationale: The front of the gown and sleeves are contaminated. Removing the gown as described prevents contact with the contaminated front of the gown.

- d. Place the gown directly into a designated laundry receptacle.
5. Don clean gloves.
 6. Remove the N95 respirator.
 - a. Tilt the head slightly forward.

Rationale: Tilting the head forward aids the doffing process and minimizes the risk of contamination.
 - b. Grasp the bottom elastic strap first and then the top elastic strap.
 - c. Remove them without touching the front of the N95 respirator.

Rationale: Avoiding touching the front of the N95 respirator aids the doffing process and minimizes the risk of contamination.
 - d. Discard the N95 in the proper trash receptacle. Respirators are disposable, but the same individual may use them more than once. Store respirators between uses in a clean, breathable container (e.g., paper bag), in a dry place, and out of direct sunlight. Discard the respirator if it becomes wet or damaged.⁵

7. Remove and discard gloves, taking care not to contaminate the bare hands during the removal process.
8. Perform hand hygiene.
9. Leave the anteroom and close the door. Ensure that both doors to the anteroom are never open at the same time.
10. Ensure that specimens have been transported to the laboratory per the organization's practice.
11. Document the procedure in the patient's record.

Option 2: Removal of PPE, if Using a Disposable Gown

1. Remove gown and gloves.

If hands become contaminated during glove removal, or any other step in the PPE doffing procedure, immediately perform hand hygiene.

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- a. Grasp the gown in the front and pull it away from the body so that the ties break. Touch only the outside of the gown with gloved hands.
- b. While removing the gown, fold or roll it inside-out into a bundle, peeling off the gloves at the same time. Touch only the inside of the gloves and gown with bare hands.

Rationale: The front of the gown and sleeves are contaminated. Removing the gown as described prevents contact with the contaminated front of the gown.

2. Discard the gown and gloves in the proper receptacle.
3. Remove eye protection from the back by lifting the headband or earpieces. Discard the eye protection in the proper receptacle.
4. Don clean gloves.
5. Remove the N95 respirator.

- a. Tilt the head slightly forward.

Rationale: Tilting the head forward aids the doffing process and minimizes the risk of contamination.

- b. Grasp the bottom elastic strap first and then the top elastic strap.
- c. Remove them without touching the front of the N95 respirator.

Rationale: Avoiding touching the front of the N95 respirator aids the doffing process and minimizes the risk of contamination.

- d. Discard the N95 in the proper trash receptacle. Respirators are disposable, but the same individual may use them more than once. Store respirators between uses in a clean, breathable container (e.g., paper bag), in a dry place, and out of direct sunlight. Discard the respirator if it becomes wet or damaged.⁵
6. Remove and discard gloves, taking care not to contaminate the bare hands during the removal process.
 7. Perform hand hygiene.
 8. Leave the anteroom and close the door. Ensure that both doors to the anteroom are never open at the same time.
 9. Ensure that specimens have been transported to the laboratory per the organization's practice.
 10. Document the procedure in the patient's record.

MONITORING AND CARE

1. Remind the patient to cover his or her mouth with a tissue when coughing and to wear a disposable surgical mask when leaving the room.
2. Ensure that equipment is disinfected with an organization-approved disinfectant when it is removed from the room, before use on another patient.

EXPECTED OUTCOMES

- Patient and family cooperate with isolation precautions.
- No evidence of breach of isolation precautions occurs.

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- Health care team members are free from infection.

UNEXPECTED OUTCOMES

- Patient and family do not cooperate with isolation precautions.
- Breach of isolation precautions occurs.
- Health care team member contracts an infection.

DOCUMENTATION

- Education
- Care provided
- Evidence of or suspected breach of isolation precautions
- Unexpected outcomes and related interventions

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ADDITIONAL READINGS

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*In these skills, a “classic” reference is a widely cited, standard work of established excellence that significantly affects current practice and may also represent the foundational research for practice.

Elsevier Skills Levels of Evidence

- Level I - Systematic review of all relevant randomized controlled trials
- Level II - At least one well-designed randomized controlled trial
- Level III - Well-designed controlled trials without randomization
- Level IV - Well-designed case-controlled or cohort studies
- Level V - Descriptive or qualitative studies
- Level VI - Single descriptive or qualitative study
- Level VII - Authority opinion or expert committee reports

Supplies

- Sign for door indicating type of isolation and required PPE
- Dedicated medical equipment (e.g., stethoscope, blood pressure cuff, thermometer) in the room
- Single-use gloves
- Single-use fluid-resistant gown or reusable fluid-resistant gown
- Single-use N95 respirator or PAPR and appropriate related equipment (e.g., hose, hood)
- Single-use full-face shield
- PAPR

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Box 1 Centers for Disease Control and Prevention Isolation Guidelines Standard Precautions (Tier One) for Use with All Patients

Standard precautions apply to blood, blood products, all bodily fluids, secretions, excretions (except sweat), nonintact skin, and mucous membranes.

- Perform hand hygiene before direct contact with patients and after direct contact with a patient’s skin.
- Perform hand hygiene after contact with blood, bodily fluids, mucous membranes, nonintact skin, secretions, excretions, or wound dressings; after contact with inanimate surfaces or medical equipment in the immediate vicinity of the patient; and immediately after removing gloves.
- When hands are visibly soiled or contaminated with blood or bodily fluids, wash hands with either a nonantimicrobial soap and water or an antimicrobial soap and water.
- When hands are not visibly soiled or contaminated with blood or bodily fluids, use an alcohol-based hand rub to decontaminate the hands or wash hands with an antimicrobial soap and water.

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- Wash hands with nonantimicrobial soap and water or an antimicrobial soap and water if contact with spores (e.g., *Clostridium difficile*) is likely to have occurred. Alcohols, chlorhexidine, iodophors, and other antiseptic agents have poor activity against spores.
- Do not wear artificial fingernails or extenders if duties include direct contact with patients at high risk for infection and associated adverse outcomes (e.g., ICU, OR settings).
- Wear gloves when it is likely that contact with blood, bodily fluids, secretions, excretions, nonintact skin, mucous membranes, or contaminated intact skin (e.g., patient incontinent of stool or urine) or items or surfaces is likely. Remove gloves and perform hand hygiene between patient care encounters and when going from a contaminated to a clean body site (e.g., face).
- Wear a gown when it is likely that contact with blood, bodily fluids, secretions, excretions, nonintact skin, mucous membranes, or contaminated intact skin or items or surfaces could occur.
- Remove gown and perform hand hygiene between patient care encounters. Do not reuse gowns, even for repeated contacts with the same patient.
- Routine donning of gowns upon entrance into high risk units is not indicated.
- Wear mouth, nose, and eye protection when the anticipated patient care activities are likely to generate splashes or sprays of blood or bodily fluids, secretions, and excretions.
- Select masks, goggles, face shields, and combinations of each based on the task performed and the agent the patient is suspected of being infected with (e.g., *M. tuberculosis*, SARS, or hemorrhagic fever viruses).
- Respiratory hygiene and cough etiquette—have patients and accompanying individuals:
 - Cover the nose and mouth, or both when coughing or sneezing.
 - Use tissues to contain respiratory secretions and dispose in nearest no-touch waste container.
 - Perform hand hygiene after contacting respiratory secretions and contaminated objects or materials.
 - Contain respiratory secretions with procedure mask for coughing or other symptomatic patients.
 - Sit at least 91.4 cm (3 ft) away from others if coughing.
- Wear PPE (e.g., gloves, gown), according to the level of anticipated contamination, when handling patient care equipment and instruments or devices that are visibly soiled or may have been in contact with blood or bodily fluids.
- Discard all contaminated sharp instruments and needles in a puncture-resistant container. Health care facilities must make needleless devices available. Any needles should be disposed of uncapped, or a mechanical safety device must be activated for recapping.
- Infection control practices for special lumbar puncture procedures: Wear a procedure mask when placing a catheter or injecting material into the spinal canal or subdural space (i.e., during myelograms, lumbar puncture, and spinal or epidural anesthesia).

ICU, intensive care unit; *OR*, operating room; *PPE*, personal protective equipment; *SARS*, severe acute respiratory syndrome

(Modified from Siegel, J.D. and others. [2007, updated 2019]. 2007 Guideline for isolation precautions: Preventing transmission of infectious agents in healthcare settings. Retrieved April 1, 2020, from <https://www.cdc.gov/infectioncontrol/pdf/guidelines/isolation-guidelines-H.pdf>)

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Table 1: Centers for Disease Control and Prevention Isolation Guidelines Transmission-Based Precautions (Tier 2) for Use with Specific Types of Patients		
Category	Infection or condition	Barrier protection
Airborne precautions (droplet nuclei smaller than 5 microns)	Rubeola (measles), chickenpox, tuberculosis, coronavirus	Negative-pressure room with airflow of at least 6 to 12 exchanges per hour via HEPA filtration A fit-tested NIOSH-approved N95 or higher-level respirator Gown, gloves, and eye protection A surgical mask on the patient being transported out of isolation room
Droplet precautions (respiratory droplets larger than 5 micrometers that are generated by a patient who is coughing, sneezing or talking)	Diphtheria (pharyngeal), rubella, streptococcal pharyngitis, pneumonia, scarlet fever, pertussis, mumps, meningococcal pneumonia, or sepsis	Mask Private room Gown, gloves, and eye protection if contact is expected
Contact precautions (direct patient or environmental contact)	Colonization or infection with multidrug-resistant organisms such as VRE and MRSA, <i>Clostridium difficile</i> , <i>Shigella</i> , and other enteric pathogens; major wound infections; herpes simplex; scabies; varicella zoster (disseminated); RSV	Gown and gloves Mask and eye protection if splashing is expected Private room
Protective or reverse isolation	Immunocompromised patients	Positive pressure room with airflow with 12 or more air exchanges per hour; HEPA filtration for incoming air Mask and gloves Mask to be worn by patient when in public environments

HEPA, high-efficiency particulate air; MRSA, methicillin-resistant *Staphylococcus aureus*; NIOSH, National Institute for Occupational Safety and Health; RSV, respiratory syncytial virus; VRE, vancomycin-resistant enterococcus

(Modified from Siegel, J.D. and others. [2007, updated 2019]. 2007 Guideline for isolation precautions: Preventing transmission of infectious agents in healthcare settings. Retrieved April 1, 2020, from <https://www.cdc.gov/infectioncontrol/pdf/guidelines/isolation-guidelines-H.pdf>)