

Airborne Precautions - Infection Control

Site Applicability

All PHC Acute and Long Term Care Sites.

Practice Level

All PHC staff working directly or indirectly with patients.

Standards

In addition to [Routine Practices](#), Airborne Precautions are used for patients known or suspected to have microorganisms spread by respiratory aerosols (smaller than 100 microns and may travel long distances carried by air currents).

Nursing staff will initiate Airborne Precautions immediately for all patients as required and will notify Infection Prevention and Control. A physician's order is not required.

Consultation with Infection Prevention and Control and the patient's admitting physician is recommended prior to discontinuing Airborne Precautions. A physician's order is required. Notify Infection Prevention and Control when discontinuing Airborne Precautions.

When a negative pressure airborne isolation room is required to prevent the spread of airborne infections, the patient will be transferred to a facility with the appropriate accommodation.

If demand for negative pressure airborne isolation rooms exceeds capacity, Infection Prevention and Control will decide the priority of use according to the risk of potential airborne transmission.

All staff to wear a fit-tested N95 respirator prior to entering room.

Some examples of conditions requiring Airborne Precautions are:

- Known or suspected infectious pulmonary or laryngeal TB
- Known or suspected Measles
- COVID-19 (also requires Droplet and Contact Precautions)
- During aerosol generating medical procedures for patients with influenza-like illness or viral hemorrhagic fever, during bronchoscopy/sputum induction, and during autopsy of lung tissue

Guideline

All Routine Practices are used with Airborne Precautions.

Patient Placement/Accommodation

- A single/private room with its own toilet, bathing, and hand washing facilities
- Negative pressure is required; the room should have a minimum of 6-9 air exchanges per hour (will be monitored by FMO as per facility established guidelines)
- Room door must be kept closed except when entering/leaving the room
- Daily negative pressure checks are required while the patient is on Airborne Precautions
 - Negative pressure rooms with digital readings should display a negative value of at least -0.25 Pascals (Pa) and preferably -2.5 Pa; if the pressure monitor alarms, ensure the door is closed and notify FMO if alarm continues
- Post an Airborne Precautions sign in a visible place at room entry point (see [Appendix A](#))
- Staff are to use Airborne Precautions when entering the patient's room and until after the minimum air settle time has elapsed after the patient has been discharged; air settle time depends on the room's air exchanges per hour (see [Appendix B](#)):
 - If air exchanges per hour for the room are not known, continue Airborne Precautions with N95 respirator use for 1 hour after discharge in acute care and 2 hours in long term care
- If airborne infection isolation room is not available, prioritize to single room with door closed and notify IPAC.

Hand Hygiene

- Perform hand hygiene with alcohol-based hand rub (ABHR) or soap and water per Routine Practices (i.e., five moments of hand hygiene)
- Perform hand hygiene before donning and after doffing Personal Protective Equipment (PPE)
- Encourage and assist patient to clean hands frequently in addition to practicing respiratory etiquette

Personal Protective Equipment

The correct technique for putting on and taking off PPE should be followed (see [Appendix C](#))

- N95 Respirator:
 - Wear a fit-tested N95 respirator when going into the patient's room
 - Perform hand hygiene prior to donning the N95 respirator before entering the patient's room
 - N95 respirator should cover nose and mouth with an air-tight seal around face; mold the metal bar to the bridge of the nose; perform a seal check by exhaling and feeling with hands for air leaks over top of the nose and under the chin
 - N95 respirators should be discarded when soiled/wet; touch only the elastic straps when doffing mask

- Remove N95 respirator outside of the patient's room when door is closed and perform hand hygiene
- Prolonged use of N95 respirators is acceptable.
- Gloves, Gown, and Eye Protection (based off point of care risk assessment):
 - Wear gloves according to a point of care risk assessment when there is a risk of coming in contact with mucous membranes, non-intact skin, blood, or body fluids, wear a gown if contamination of forearms or clothing is anticipated, and wear eye protection if there is a risk of splashes or sprays

Patient Care Equipment

- Do not take extra equipment or unnecessary supplies into the patient's room
- Dedicate equipment for patient use whenever possible (e.g., stethoscopes, commode) and clean and disinfect equipment between uses
- When common use equipment or items cannot be dedicated, ensure adequate cleaning and disinfection before use with another patient; avoid sharing items that cannot be cleaned and disinfected (e.g., magazines)
- Discard any single-use supplies upon patient discharge

Dishes, Glasses, Cups, and Eating Utensils

- These items are not considered sources of infection and special precautions are not needed
- Disposable dishes/utensils are not required for patients on Airborne Precautions
- Unit staff are required to deliver/remove food trays for patients on Airborne Precautions; Food Services staff will leave trays for patients on Airborne Precautions outside of the patient's room for delivery and pick up finished trays from a designated area/cart on the unit

Housekeeping

- Daily cleaning of all flat surfaces and frequently touched areas and bathrooms
- Do not remove Airborne Precautions sign until discharge cleaning is complete; continue to wear N95 respirator post-discharge until minimum air settle time has elapsed
- Upon discharge: cleaning of all flat surfaces, frequently touched areas, furniture, and bathroom; reusable equipment to be cleaned and disinfected and disposable items to be discarded

Patient Transport

- Do not transport patients with airborne diseases unless absolutely necessary
- Notify receiving department prior to transport of the precautions in place
- The patient should wear a medical mask during transport. If patient can tolerate an N95 and wishes to wear one, this can be accommodated by offering the 1870+ model (note this will not be fit tested for patient). HCW will need to show patient proper donning of respirator.
- For transporting staff, wear an N95 respirator when with the patient during transport

Family/Visitors

- Visitors will be kept to a minimum

- Instruct family/visitors on the importance of hand hygiene before and after visiting the patient
- Instruct family/visitors on the appropriate use of PPE if they will enter the patient's room; offer visitors the 1870+ N95 respirator if not fit-tested

Transfer/Discharge

- Notify the receiving unit, hospital, facility, long term care home, or community agency as well as any transport shuttle/ambulance crew of the precautions in place prior to transfer

Documentation

- Ensure order for Airborne Precautions is in patient's Cerner chart, and discontinue order if no longer indicated (requires physician's order to discontinue)

Related Documents

- [B-00-07-13045](#) – Routine Practices - Infection Control

Appendix A: Airborne Precautions Sign

AIRBORNE PRECAUTIONS

**Private Room
Negative Pressure**

Keep door closed

**Families
and
visitors:**



**Please report
to staff before
entering**

**Clean hands
before entering and
when leaving room**



Clean hands with
A) hand foam/gel or B) soap and water

Staff:



**KEEP
SIGN POSTED
UNTIL ROOM
CLEANED
HOUSEKEEPER will
remove sign after
"Discharge"
cleaning**

Required:

- Point of Care Risk Assessment
- N95 Respirator



Notify Infection Prevention & Control - Before Discontinuing Airborne Precautions

Appendix B: Air Settle/Clearance Times

When room air exchanges per hour are unknown:

Acute Care:

- Do not admit a new patient into a room after a patient with an airborne infection has been discharged for 1 hour. If entering room before 1 hour, wear an N95 respirator.

Long Term Care:

- Do not admit a new resident into a room after a resident with an airborne infection has been discharged for 2 hours. If entering room before 2 hours, wear an N95 respirator.

When room air exchanges per hour are known:

Table 1*: Time in minutes needed to reduce airborne contaminants by 99% or 99.9% depending on room air exchanges per hour.

Air exchanges per hour	99% Clearance	99.9% Clearance
2	138	207
4	69	104
6	46	69
12	23	35
15	18	28
20	14	21

*This table was adapted from CDC recommendations

In general, 99% clearance is considered adequate for a room prior to allowing another patient to enter or staff to enter without an N95 respirator.

Appendix C: Sequence for Donning and Doffing Personal Protective Equipment

Sequence for donning Personal Protective Equipment (PPE)

Perform hand hygiene

1. GOWN

- Fully cover torso from neck to knees, arms to end of wrists and wrap around the back
- Fasten in back of neck and waist



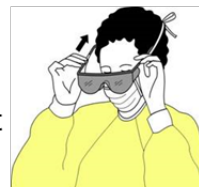
2. MASK OR RESPIRATOR

- Secure ties or elastic bands at middle of head and neck (or fit loops over ears)
- Fit flexible band to nose bridge
- Fit snug to face and below chin
- Fit check respirator



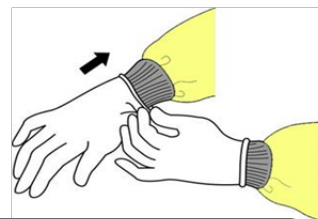
3. GOGGLES OR FACE SHIELD

- Place over face and eyes and adjust to fit



4. GLOVES

- Extend to cover wrists of isolation gown



Use Safe Work Practices to Protect Yourself and Limit the Spread of Pathogens

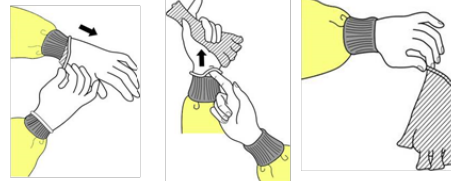
- Perform hand hygiene
- Keep hands away from face
- Limit surfaces touched
- Change gloves when torn or heavily contaminated

Adopted from the Guidance for Selection and Use of Personal Protective Equipment (PPE) in Healthcare Settings (CDC, 2018)

Sequence for removing Personal Protective Equipment (PPE)

1. GLOVES

- Outside of gloves are contaminated
- Grasp outside of glove with opposite gloved hand; peel off
- Slide fingers of ungloved hand under remaining glove at wrist
- Peel glove off over first glove



Perform hand hygiene

2. GOWN

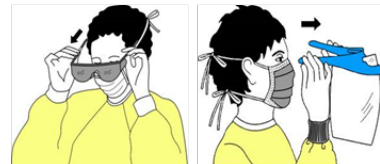
- Gown front and sleeves are contaminated
- Unfasten ties
- Pull away from neck and shoulders, touching inside of gown only
- Turn gown inside out
- Fold or roll into a bundle and discard



Perform hand hygiene and leave isolation room

3. GOGGLES or FACE SHIELD

- Outside of goggles or face shield is contaminated
- To remove, handle by headband or ear pieces



Perform hand hygiene

4. MASK or RESPIRATOR

- Front of mask/respirator is contaminated
DO NOT TOUCH
- Grasp bottom, then top ties, or elastic loops to remove
- Discard in waste container



Perform hand hygiene



INFECTION PREVENTION AND CONTROL
PROVIDENCE HEALTH CARE

Adopted from the Guidance for Selection and Use of Personal Protective Equipment (PPE) in Healthcare Settings (CDC, 2018)

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