AIRBORNE PRECAUTIONS HIGHLIGHTS

***2024 updates in red**

<table>
<tr><th>ELEMENT</th><th>ACUTE CARE</th><th>LONG TERM CARE</th><th colspan="2">COMMUNITY</th></tr>
<tr><th></th><th></th><th></th><th>CLINIC SETTING</th><th>IN HOME</th></tr>
<tr><td>SIGNAGE</td><td colspan="2"> 
</td><td colspan="2">N/A</td></tr>
<tr><td>PPE
(Personal Protective Equipment)</td><td colspan="4">Staff must wear FIT-TESTED N95 RESPIRATOR - refer to Disease Specific Protocols
<u>For Tuberculosis</u>: N95 respirator is required for entry into the room or home.
<u>*For Measles</u> <u>(new 2024)</u>: Only health care workers (HCWs) with presumptive immunity to measles should provide care to patients/residents/clients (PRCs) with suspect/confirmed measles due to increased risk of transmission of measles to susceptible individuals. <u>(6.8)</u>
HCWs regardless of presumptive immunity to measles are to wear a fit-tested, seal-checked N95 respirator when providing care to a PRC with suspected or confirmed measles. <u>(6.8)</u>
<u>For All Non-TB Airborne Spread Organisms (germs)</u>: If persons with unknown immunity or non-immune person PRC enter the room or home an N95 is required.
Non-immune, susceptible staff may only enter the room in exceptional circumstances (i.e., no immune staff are available and patient safety would be compromised otherwise).</td></tr>
<tr><td>TRIAGE / RECEPTION</td><td colspan="4">Have persons suspected of having an airborne spread infection clean their hands and put on a medical mask. Place them in a single room with the door closed.</td></tr>
<tr><td rowspan="2">ACCOMMODATION</td><td rowspan="2">Airborne Infection Isolation Room (AIIR) preferred
Single Room if AIIR not available PRC must wear medical mask as much as possible if not in an AIIR.</td><td rowspan="2">Place in clinic room as soon as possible
PRC must wear a medical mask as much as possible.</td><td rowspan="2">N/A</td></tr>
<tr><td>Door must remain closed at all times</td></tr>
</table>

AIRBORNE PRECAUTIONS

AIRBORNE PRECAUTIONS PROTOCOL

1. INTRODUCTION

Airborne Precautions are required for persons diagnosed with or suspected of having infectious microorganisms (germs) spread by the airborne route. Airborne spread occurs when aerosols which contain microorganisms are inhaled and may result in infection in a susceptible host. Aerosols are solid or liquid particles suspended in the air, and can be produced when coughing, sneezing or talking, or artificially through an Aerosol Generating Medical Procedure (AGMP).[6.1]

2. INDICATIONS[6.1]

Implement Airborne Precautions as indicated in the Clinical Presentation and Empiric Precautions Table for your area of care (hospital, community or long term care).

DO NOT wait for the cause to be determined to initiate Airborne Precautions.

If the specific organism or infectious disease is known (has been determined), follow the measures outlined for your area of care in the Microorganism, Infectious Disease Table.

Some conditions and microorganism require two types of precautions (e.g. Airborne and Contact) refer to the specific combined precautions protocol for more information.

Airborne Precautions are followed in addition to Routine Practices. Routine Practices shall be followed at all times by all health care workers (HCWs)/staff.[6.1]

3. INFECTION PREVENTION & CONTROL MEASURES

ELEMENT	ACUTE CARE	LONG TERM CARE	COMMUNITY	
			CLINIC SETTING	IN HOME
3.1. HAND HYGIENE	Clean your hands according to the 4 moments of Hand Hygiene: Moment 1: **BEFORE** initial patient/resident/client (PRC) or PRC environment contact Moment 2: **BEFORE** aseptic/clean procedure Moment 3: **AFTER** body fluid exposure risk Moment 4: **AFTER** PRC/PRC contact or environment contact Health care workers should avoid touching the mucous membranes of their eyes, nose and mouth with their hands to prevent self-contamination. **Refer to** Routine Practices			
3.2. PPE (Personal Protective Equipment)	Store PPE outside the room or bed space of the person receiving care (or the anteroom if available) DO NOT carry or store PPE in pockets, as this damages the item(s) and it will not give the same level of protection **N95 Respirators†** **For Tuberculosis:** N95 respirator is required for entry into the room or home ***For Measles** (new 2024): Only health care workers (HCWs) with presumptive immunity to measles should provide care to patients/residents/clients (PRCs) with suspect/confirmed measles due to increased risk of transmission of measles to susceptible individuals. (6.8) HCWs regardless of presumptive immunity to measles are to wear a fit-tested, seal-checked N95 respirator when providing care to a PRC with suspected or confirmed measles. (6.8) **For All Non-TB Airborne Spread Organisms (germs):** If persons with unknown immunity or non-immune person PRC enter the room or home an N95 is required. Non-immune, susceptible staff may only enter the room in exceptional circumstances (i.e., no immune staff are available and patient safety would be compromised otherwise). **N95 Respirators shall be:** • Fit-tested for staff, as directed by Occupational and Environmental Safety and Health (OESH) or designate in Long Term Care Facilities (LTCF) Personal Care Homes (PCH) • Staff should know the type of N95 respiratory they have been fit-tested for by OESH or designate in LTCF/PCH • Staff should only use the type of N95 respirators for which they were fit-tested **†N95 respirators shall be certified by the National Institute of Occupational Safety and Health (NIOSH) with an N95 efficiency rating or better.6.1**			

ELEMENT	ACUTE CARE	LONG TERM CARE	COMMUNITY	
			CLINIC SETTING	IN HOME
3.2 PPE cont'd	**Appropriate Respirator Use:**[6.1] • Perform hand hygiene prior to putting on a respirator • Staff should remain clean shaven in the area where the respirator edges meet the face to ensure a facial seal • Perform a seal check immediately after putting on the respirator • Avoid self-contamination; do not touch the respirator on its external surface during use and disposal • Remove the mask outside the room, in the anteroom if available, or home ○ If there is an anteroom, the anteroom is considered a clean space be careful not to contaminate the environment. • Remove respirators carefully by the straps • Do not dangle a respirator around the neck when not in use; do not reuse disposable respirators • Change the respirator if it becomes damaged, wet or soiled (from the wearer's breathing or due to an external splash) • Change the respirator if breathing becomes difficult • Discard the disposable respirator immediately after its use (i.e., dispose of when removed from the face), into a hands-free waste receptacle (if available) and perform hand hygiene • Follow organization policy for reusable respirators, placing into appropriate receptacle for reprocessing.			
3.3. SOURCE CONTROL				
3.3.1. **Signage**	Place Airborne Precautions sign on the door / bed space. Mark off the Additional Precautions needed: **Airborne** 	optional	n/a	

ELEMENT	ACUTE CARE	LONG TERM CARE	COMMUNITY	
			CLINIC SETTING	IN HOME
3.3.2. **Triage / Reception**	• All persons entering a Healthcare Facility should be asked and encouraged to perform hand hygiene (if able) or be assisted to perform hand hygiene if indicated[6.1] • Have practices in place to identify persons with known or suspected infection that require Airborne Precautions (e.g., infectious Tuberculosis) • Have the person suspected of having an airborne infection immediately put on a medical face mask (procedure or surgical mask) – *not a respirator,* when they present to triage or the registration desk • Immediately place person known or suspected to have an airborne infection directly into an Airborne Infection Isolation Room (AIIR) (formerly known as a negative pressure isolation room). Door must be closed • In facilities without an AIIR place the person in a single room with the door shut. For further details please see the ACCOMMODATION section below.			
3.3.3. **Intubated Persons/ Persons with a tracheostomy**	• Ensure appropriate N100 bacterial filter is placed on the ventilator end of the circuit to prevent contamination of the ventilator and the ambient air • Perform endotracheal suctioning using a closed suction apparatus where possible • Place a bacterial filter on the bag valve mask.		• Ensure N95 respirator is worn if system is opened during the previous 3 hours prior to the visit or at any time during the visit • If system is opened for suctioning in previous 3 hours or during visit, N95 respirator is required.	
3.3.4. **Infants in Incubators.**[6.1]	Ensure an appropriate bacterial air filter is in place to avoid contamination of ambient air	n/a	n/a	

ELEMENT	ACUTE CARE	LONG TERM CARE	COMMUNITY	
			CLINIC SETTING	IN HOME

3.4. ACCOMMODATION	**AIIR** (preferred)
	• An AIIR:
	  ○ Is a single-occupancy care room used to isolate those with suspected or confirmed infectious diseases spread via the airborne route
	  ○ Provides negative pressure in the room (so that air flows into the room instead of out of the room into adjacent areas) and direct air exhaust from the room to the outside of the building, or recirculate air through a high efficiency particulate (HEPA) filter before returning to circulation.
	  ○ Provides a more rapid removal of airborne infectious particles from the care environment to the outdoors, and with the negative airflow/pressure into the room, reduces movement of aerosols out of the room to the hallway.
	• **If no AIIR available**, place person requiring Airborne Precautions in a single room with dedicated toilet, hand hygiene sink, and bathing facilities with door closed, away from immunocompromised / at risk persons. See Section 3.4.4 below. *The person must continue to wear a medical mask as much as possible while in the non-AIIR [6.1]
	• The AIIR should have a private in-room toilet (or designated commode chair), designated sink and bathing facility for the person, and ideally a designated hand washing sink for the staff
	• When in use as an AIIR, a basic daily check should be performed and documented by a designated member of staff (e.g., the nurse assigned to that person's care).[6.1] See Section 3.4.2 below for more details
	• Monitor the functioning of the AIIR monthly, quarterly and annually by Facilities Management or equivalent[6.4]
	• Annual verification of exchange rates and an internal inspection shall be done by Facilities Management or equivalent https://home.sharedhealthmb.ca/files/inspection-of-negative-pressure-rooms.pdf
	• When in use as an AIIR, a basic daily check should be performed and documented by a designated member of staff (e.g., the nurse assigned to that person's care).[6.1] See Section 3.4.2 below for more details
	• Regardless of the type of room (AIIR or non-AIIR), the door must remain closed at all times when occupied by a person requiring Airborne Precautions
	  ○ The door from the anteroom to the room should only be open when entering or exiting.
	• The information on accommodation for AGMPs please refer to AGMP document.[6.5]			

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<tr><td>3.4.1. If an AIIR is available</td><td colspan="2">Place a person known or suspected to have an airborne infection directly into an AIIR with the door closed
Allow the person to remove their medical mask once in the AIIR and the door has closed. The room must meet engineering controls for AIIRs
The door between the anteroom and room should not be opened if persons in the anteroom are not wearing the correct PPE.</td><td>Place a person known or suspected to have an airborne infection directly into an AIIR with door closed
Allow person requiring Airborne Precautions to remove their mask once in an AIIR.</td><td>n/a</td></tr>
<tr><td>3.4.2. Monitoring AIIRs</td><td colspan="4">Prior to placing the person requiring Airborne Precautions in an AIIR, designate a member to staff to:
Ensure the AIIR is in "Occupied" mode
Check the pressure differential using visual indicators (e.g., "ball-in-the-wall, smoke tube or facial tissue) or a portable manometer
If the "ball-in-the-wall" is not installed to monitor if the AIIR is functioning, contact Facilities Management (or equivalent) for an alternative visible indicator (e.g., smoke tube or facial tissue) or manometer. See Appendix B for process. 

Daily Checks
Recheck the visual indicators or portable manometers regularly, preferably daily, when AIIRs are in use, whether or not there are continuous differential pressure sensing devices.[6.1]
Document the results of monitoring. Refer to Appendix B: Airborne Infection Isolation Room Daily Negative Air Pressure Monitor log.
AIIR Alarms
Do not inactivate visual or audible alarms when room in use as an AIIR.
If not using room as an AIIR audible alarms may be temporarily inactivated.[6.6]</td></tr>
</table>

ELEMENT	ACUTE CARE	LONG TERM CARE	COMMUNITY	
			CLINIC SETTING	IN HOME

3.4.3. When AIIRs are limited

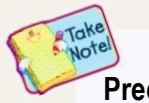
- Use the following risk assessment to assess the priority for AIIR accommodation and/or continued accommodation
  - Use the risk assessment along with clinical judgement and risk benefit analysis. This risk assessment should be done in collaboration with Infection Control Professional (ICP) / designate
  - Use the following criteria to determine the risk of infectivity and risk of transmission and/or disease and exposure to others
- The person considered to be a higher risk for transmission to others, should be a priority for the AIIR.

AIIR RISK ASSESSMENT (done with ICP / designate)[6.1]

Factors to consider include

(but not limited to):

1. **Degree of transmissibility of the infectious disease**
   "How likely is it the person can pass the infectious organism on to others?"
2. **Presence of communicable symptoms**
   "Is the person having symptoms of the infection (e.g., coughing or sneezing)?"
3. **Stage of recovery of the person receiving care**
   "Is the person considered no longer infectious?"
4. **Immune status of others in the unit/area**
   e.g., surgical ward vs. transplant unit
5. **Frequency of AGMPs**
   e.g., A person needing more AGMPs will pose a higher risk than someone who has infrequent AGMPs

ELEMENT	ACUTE CARE	LONG TERM CARE	COMMUNITY	
			CLINIC SETTING	IN HOME
3.4.4. **When an AIIR is NOT available**	• The designated member of staff should perform an AIIR Risk Assessment with the ICP/designate to determine the appropriate room location • Place person requiring Airborne Precautions in a single room with dedicated toilet, hand hygiene sink, and bathing facilities with door closed, away from immunocompromised / at risk persons • The person on Airborne Precautions should wear a medical face mask as tolerated when not inside the isolation room. *The person must continue to wear a medical face mask as much as possible, even when inside the room and door has been closed[6.1] • Open and close the door slowly when entering or exiting to minimize "dragging" air from the room[6.5] • Minimize traffic in and out of the room[6.5] • Provide N95 respirators for non-immune individuals entering room • Ensure Additional Precautions sign on door marked off as indicated above in Signage section.  **Consider transferring persons requiring Airborne Precautions as soon as medically feasible to a facility/unit with an available AIIR**. If all staff and all other persons in facility are immune and if non-immune visitors can be excluded, transfer to a facility with an AIIR may not be essential.[6.1]		• As soon as possible place the person requiring Airborne Precautions in a single room with door closed, away from immuno-compromised/at risk persons • *The person requiring Airborne Precautions must keep the medical face mask on at all times, even when in the room • After leaving the room, the door must be closed. • When person has left the facility allow sufficient time to clear the air of aerosolized droplet nuclei before using room for another person receiving care. See Appendix C - *Air Exchange Table*.	If the person is receiving care with Tuberculosis Home Care, consult with Public Health to determine if that person is infectious and requires Airborne Precautions
3.4.5. **Cohorting**	• Persons with tuberculosis must not share rooms as strains and levels of infectivity may differ • Non-immune or persons for whom immune status is unknown, should not share rooms with persons with measles, or varicella or herpes zoster contacts • Persons known to be infected with the same virus (e.g., measles, or varicella or herpes zoster contacts) may share a room • In the event of an outbreak or exposure where large numbers of persons require Airborne Precautions, consult ICP/designate to determine room placement and/or cohorting.		n/a	n/a

ELEMENT	ACUTE CARE	LONG TERM CARE	COMMUNITY	
			CLINIC SETTING	IN HOME
3.5. TRANSPORT	**Transport the person requiring Airborne Precautions out of the room for medically essential purposes only. They should be accompanied by staff whenever outside the room.**			
3.5.1. Internal Transfer	• Consult ICP/designate for any circumstances • Securely cover skin lesions and draining wounds associated with *M. tuberculosis* • Securely cover vesicles associated with disseminated zoster (shingles) until crusted over. **Precautions for Staff:** • Follow Airborne Precautions to enter the room • Perform hand hygiene before and after contact with the person • Use a clean wheelchair or stretcher • *With measles: Staff transporting the person requiring Airborne Precautions must wear an N95 respirator regardless of presumptive immunity • Staff transporting the person requiring Airborne Precautions must wear an N95 respirator unless immune • Perform hand hygiene before contact with the person, before leaving the room and after taking off PPE • Assist person to perform hand hygiene and put on a medical mask when exiting room if they don't have an artificial airway • *Use transport routes that minimize contacts • *Clear all hallways and elevators along the route • Avoid waiting in hallways. **Precautions for Person Receiving Care:** • Person to perform hand hygiene on leaving room (staff to assist as necessary) • Person to wear a medical face mask and follow respiratory hygiene during transport if able.  **If transfer is unavoidable, advise transport and the receiving unit of the need for Airborne Precautions in advance.**		***Ensure all medically care is provided*** Perform as much of the care as possible in the original clinic room the person was placed in. If the person requiring Airborne Precautions must go to another area (e.g., lab) in the facility, advise the area that Airborne Precautions are required and tell the person to wear a medical face mask until outside of the facility.	

ELEMENT	ACUTE CARE	LONG TERM CARE	COMMUNITY	
			CLINIC SETTING	IN HOME
3.5.1 Internal Transfer cont'd	**Precautions for Person with an Artificial Airway (endotracheal tube and tracheostomy if ventilated)** • For special circumstances, consult Respiratory Therapy for guidance regarding airway management during transport • Resolve any air leaks prior to transport • Inflate/maintain inflation of endotracheal tube (ETT) cuff (if present) for the duration of the transport to minimize contamination • If an air leak occurs during transport and is not readily resolved, consider extubating and a tube exchange • Exhaled gases must be N100 filtered. **Precautions for Person with Tracheostomy, Laryngectomy or ETT (non-ventilated)** • Add Oxygen (O_2) via trach adapter (if O_2 needed to keep SpO_2 more than 90%) • Apply a procedure/surgical mask (with ear loops) over the person's mouth and nose • Cover trach mask with non-occlusive barrier (i.e., face cloth) to prevent droplet expulsion. **If Person Requiring Airborne Precautions is Unable to Wear Mask**[6.2] • Avoid common areas. • Transport person in the elevator with only the HCW		Defer care (e.g., foot care) and services (e.g., interactions with volunteers) that are not medically necessary until after the person has been determined to be no longer infectious	
	Infants: Infants should be transported in an incubator	n/a	n/a	n/a

3.5.2. **Interfacility Transport**	**Precautions for Transport Service** • See Precautions for Staff • Follow Airborne Precautions at the receiving facility Person requiring Airborne Precautions can remove medical mask once in a suitable AIIR. See Accommodations

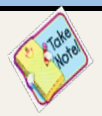
Notify transport service and receiving facility that Airborne precautions are needed.
Document Airborne Precautions on Interfacility Transport Form/Transfer Referral Form

ELEMENT	ACUTE CARE	LONG TERM CARE	COMMUNITY	
			CLINIC SETTING	IN HOME
3.6. MANAGEMENT OF THE HEALTHCARE ENVIRONMENT	Follow Routine Practices			
3.6.1. **Cleaning**	• When precautions are discontinued or the person requiring Airborne Precautions is discharged/transferred complete a discharge clean and disinfection of the room, cubicle or bed space and bathroom as per your facility standard operating procedure using a IP&C Approved Disinfectant. An Isolation Room Discharge clean (i.e. terminal clean) is not indicated • At time of discharge or discontinuation of Airborne Precautions, wear an N95 respirator while cleaning and disinfecting • Leave the Additional Precautions sign on the door until discharge cleaning and disinfection is completed and time required for air clearance has elapsed. Continue to wear an N95 respirator whenever entering the room, until the required amount of air exchanges has taken place (see below for more details) or 3 hours have gone by if air exchanges are unknown. **If Air Exchanges are Known Within the Last Year:** • Allow adequate time for air clearance according to the Air Exchange Table in Appendix C, to get (ideally) 99.9% and (minimally) 99% of airborne microorganisms removed from the room.		Once the person on Airborne Precautions has left the facility – **If Air Exchanges are Known:** • Keep the door closed and allow adequate time according to the Air Exchange Table in Appendix C, to get (ideally) 99.9% and (minimally) 99% of airborne microorganisms removed from the room **If Air Exchanges are Unknown:** • Keep the door closed and use Airborne Precautions for three hours after the person receiving care has left the room (i.e., wear an N95 respirator if entering the room within the 3-hour time period). **Place a sign on the door indicating the number of hours required to complete required number of air exchanges. Indicate on the sign the room**	Person to maintain routine household cleaning practices

	If Air Exchanges are Unknown (non-AIIR): • Maintain Airborne Precautions for three hours after the person is discharged or Airborne Precautions are discontinued	**must not be used until air exchanges are complete.** **Clean and Disinfect** • The clinic room as usual between appointments with IP&C Approved Disinfectant • All equipment used, horizontal and frequently touched surfaces.	

ELEMENT	ACUTE CARE	LONG TERM CARE	COMMUNITY	
			CLINIC SETTING	IN HOME

3.7. EDUCATION	**Inform** the person receiving care and/or visitors/Accompanying Individuals (AI)/Designated Caregivers (DC) as appropriate about Airborne Precautions, including:
	• How the germ is spread
	• When and how to clean their hands according to the 4 Moments of Hand Hygiene
	• How to put on, take off and dispose of PPE safely
	• Duration of Precautions – see Section 4 below
	• Refer to Airborne Precautions Fact Sheet
	• Instruct the person on Airborne Precautions to wear a medical face mask and to cover skin lesions (wounds) if they *must* leave the room
	• Instruct visitors/AIs/DCs/ to wear N95 respirators unless known to have had prolonged exposure to the person on precautions, discuss with ICP/designate as needed
	• Inform the visitor/AI/DC that although this is a N95 mask the protection afforded by this mask is at a reduced level as it has not been fit tested.
	• If indicated, instruct visitors/AI/DC on how to use an N95 respirator:
	  ○ How to correctly apply and wear an N95 respirator
	  ○ How to perform a seal check
	  ○ How to remove the N95 respirator outside the AIIR/private room
	  ○ How to perform hand hygiene following removal of the N95 respirator
	• If required, instruct the visitor/AI/DC how to:
	  ○ Correctly apply/remove a medical face mask to/from the person on Airborne Precautions
	  ○ Wear an N95 respirator when out of the room with the person requiring precautions unless the visitor is immune.
	• Refer to Airborne Precaution Fact Sheet
	• Document that risk notification and teaching/information provided
			PPE may not be necessary for exposed parents, household members or caregivers who are providing the usual care of the person or child, instruct as necessary	

ELEMENT	ACUTE CARE	LONG TERM CARE	COMMUNITY	
			CLINIC SETTING	IN HOME
3.8. VISITOR / ACCOMPANYING INDIVIDUAL/ DESIGNATED CAREGIVER MANAGEMENT	 **As directed on the Additional Precautions sign, visitors are to report to the nursing station before entering the room**[6.1] • Only close (essential) Visitors/Accompanying Individuals (AI)/Designated Caregivers (DC) should be allowed (close family members and those providing care, including essential emotional support as specified by the person or alternate decision maker).[6.1] • All persons must clean their hands when entering and exiting the room. • Visitors/AI/DC should have access to the same PPE as staff. • Provide instruction on hand hygiene and use of PPE as necessary, including an N95 respirator • N95 Respirators: o Staff shall show visitor/AI/DC how to seal check an N95 Respirator o Although this is an N95 respirator the protection afforded by this respirator is at a reduced level as it has not been FIT tested. [6.7] **Visitor/AI/DC must be made aware of this risk.** • Educate the visitor/AI/DC on: o The risk to the health of the visitor/AI/DC o The risk of the visitor to spread infection o The ability of the visitor/AI/DC to follow precautions **For Tuberculosis:** • Limit visitors should be limited to immediate family, AI, DC. • Screen close contact visitors/AI/DC (e.g., household members or those who routinely have visited the person's home, etc.) for the presence of cough. • Refer coughing AI/DCs for Tuberculosis assessment immediately (e.g., have the coughing person perform hand hygiene and put on a medical face mask. If emergency department/urgent care (ED/UC) available in the same facility – have a volunteer or other member of staff escort them to the ED/UC. Notify ED/UC in advance, the person has been sent and why. For facilities without an ED/UC ask the AI/DC to seek medical assessment at an ED/UC as soon as possible. o Until DC has been assessed they cannot to attend the facility. If it is absolutely essential they attend they must wear a medical mask at all times while in the facility. • Refer to the Tuberculosis Specific Protocol (SPD) for more information.		All persons must clean their hands when entering and exiting the facility PPE is usually not necessary for exposed parents, household members or caregivers who are providing the usual care of the person or child	

	For Airborne Spread Microorganisms: • Visitors/AI/DC must be confirmed to be immune to the specific infection for which the patient/resident is on precautions. • If visitors are non-immune or immune status is unknown, they may be permitted if they are designated caregivers or in exceptional circumstances. These DCs must wear an N95 respirator. See N95 respirators bullet above • All DCs should not visit other people after visiting a person on Airborne Precautions and shall be instructed accordingly.	

4. DURATION OF PRECAUTIONS

Discontinue Airborne Precautions when the person can no longer spread germs and adequate air exchanges have been completed. See applicable disease in the Clinical Presentation and Empiric Precautions Table, or the Microorganism, Infectious Disease Table for your area of care (hospital, long term care or community). If air exchanges are **known**, allow adequate time according the to the Air Exchange Table in Appendix C below, for ideally 99.9% and minimally 99% of airborne microorganisms to be removed from the room. If air exchanges are **unknown** maintain Airborne Precautions for three hours after the person is discharged or Airborne Precautions are discontinued the Additional Precautions sign may only be removed when this time has passed.[6.1]

5. OCCUPATIONAL HEALTH

Contact Occupational and Environmental Safety and Health (OESH) / Occupational Health designate for staff assessment and/or concerns.

6. REFERENCES

6.1 Routine Practices and Additional Precautions: Preventing the Transmission of Infection in Health Care. (June 2019). Manitoba Health. Accessed November 21, 2019.

6.2 Patient Transport, Dr. J. Embree, expert opinion (2017), February 10), email.

6.3 Johnston, N., Good, M., Nicol, L., Simcoe, T., Zarembo, M., Winnipeg Regional Health Authority Respiratory Therapy. Expert opinion July 2015 email.

6.4 CSA-Z317.2-15 Special Requirements for heating, ventilation, and air-conditioning (HVAC) systems in health care facilities. Table 5 – Monitoring of System Performance.

6.5 Manitoba Health. COVID-19 Provincial Guidance for Aerosol Generating Medical Procedures (AGMPs). (July 14, 2020).

6.6 AIIR alarms. Craig Doerksen – Executive Director – Capital and Facilities Management, expert opinion (2020, August) email.

6.7 Visitor use of N95 Respirators without fit test. Kelsey S. McCue, Legal Counsel – Health Law. Memo March 23, 2023.

6.8 Measles: Information for Health Care Providers. 2nd ed. Public Health Ontario (PHO). (March, 2024). Available at: https://www.publichealthontario.ca/-/media/Documents/M/24/measles-information-health-care-providers.pdf?rev=89f22e24634f4884b0450c599e43eea6&sc_lang=en

Appendix A: AIIR Prioritization

Priority for AIIRs includes, but is not limited to (listed in priority):

1. Novel Pathogens i.e.: Severe Acute Respiratory Illness (SARI)
2. Viral Hemorrhagic fever
3. Smallpox or Mpox
4. Proven or suspected infectious respiratory tuberculosis (includes pleural or laryngeal) as well as multi-drug resistant (MDR) or extensive drug resistant (XDR)
5. Measles
6. Laboratory confirmed active respiratory TB (sputum smear positive for AFB or culture positive MTB) or clinically confirmed (committed to TB treatment) with priority for most infectious
7. TB under investigation
8. Varicella
9. When an Aerosol Generating Medical Procedure (AGMP) is anticipated and respiratory TB or other pathogens spread by the airborne route are suspected or confirmed.

***When requests for patient prioritization do not follow the suggested list, Infection Prevention and Control/designate shall determine the priority for use**

Appendix B: Airborne Infection Isolation Room (AIIR) Daily Negative Air Pressure Monitoring

The negative pressure in an AIIR should be checked daily by unit/area staff when negative pressure is activated, and room is being used as an AIIR[1]

Ball-in-the-Wall Method	Tissue or Smoke Test	Portable Manometer
1. Observe the *"ball-in-the-wall"* indicator above or near the door of the AIIR **2.** Notice if the red ball is present or absent int the cylinder **3.** If the room has negative pressure: **a.** The ball is not seen in the cylinder means the ball has been pulled into the wall due to the negative pressure. **4.** If the room does **not** have negative pressure: ***a.*** The ball can be seen in the cylinder means the negative air pressure is not working effectively	**1.** To check the negative pressure in a room, hold the tissue or smoke tube near the bottom of the door, approximately 5 cm (2 in) in front of the door. a. If using a smoke tube: Generate a small amount of smoke by gently squeezing the bulb b. The smoke tube should be held parallel to the door, and the smoke should be released slowly from the tube to ensure that the velocity of the smoke does not overpower the air velocity. The smoke will travel in the direction of airflow c. If using a tissue: hold the tissue loosely between two fingers and let the tissue dangle down **2.** This test must be performed outside the room with the door closed. **3.** If the room has negative pressure: a. The **smoke** will travel under the door and into the room (e.g., from higher to lower pressure) b. A **tissue** will be drawn towards the room **4.** If the room does **not** have negative pressure: a. the smoke will be blown outwards or will remain still b. tissue will be blown outwards or will remain still **5.** If there is an anteroom, release smoke at the inner door as above, with both anteroom doors shut **6.** In addition to the main entry, some isolation rooms or areas are accessed through a wider wheeled-bed stretcher door. Test all door entrances to isolation rooms or areas **7.** If room air cleaners are being used in the room, they should be running during the test. **8.** The smoke is irritating if inhaled, care should be taken to prevent direct inhalation from the smoke tube. However, the quantity of smoke issued from the tube is minimal and is not detectable at short distances from the tube.	**NOTE:** This may not be an option in all facilities. **Please consult with Facilities Management (or equivalent) to arrange for and set up a portable manometer.**

If negative pressure cannot be detected through observational methods (ball, smoke or tissue) or portable manometer: ***Do not use this room as an AIIR.***

1. Move person on Airborne Precautions to another AIIR
2. Contact site Facility Management (or equivalent) to have the problem corrected

[1]Frances J. Curry National Tuberculosis Center. (2011). Tuberculosis Infection Control A practical manual for preventing TB. https://www.currytbcenter.ucsf.edu/sites/default/files/ic_book_2011.pdf

Appendix B: Airborne Infection Isolation Room (AIIR) Daily Negative Air Pressure Monitoring

Daily Negative Air Pressure Monitoring Log	Admit Date: Room #: Unit #: Date AIIR activated: dd/mm/yyyy Time AIIR activated: xx:xx

METHOD: ☐ Ball-in-the-Wall ☐ (Facial) Tissue ☐ Smoke Tube ☐ Manometer ☐ Other

DATE	TIME	NEGATIVE PRESSURE OBSERVED	NEGATIVE PRESSURE NOT OBSERVED	CORRECTIVE ACTION

7. Appendix C: Air Exchanges – Time Needed (by Number of Air Changes per Hour) to Remove Airborne Microorganisms

This table was adapted from the CDC Recommendations: Centers for Disease Control and Prevention. Guidelines for preventing the transmission of Mycobacterium tuberculosis in healthcare settings

AIR CHANGES PER HOUR	MINUTES REQUIRED FOR REMOVAL OF AIRBORNE MICROORGANISMS	
	99%	99.9%
2	138	207
4	69	104
6	46	69
12	23	35
15	18	28
20	14	21
50	6	8

Appendix D: Airborne Precautions in the Operating Room (OR) Environment

Requirement	Airborne Precautions *shall be maintained at all times* within the OR environment (e.g. Pre-op, OR Theatre, Post-Op, etc.)
Pre-Operative	1. Postpone until the person receiving care (patient) is non-infectious *Exception E1 or E2 cases 2. Consider scheduling the case at the end of day or ensure appropriate time post operatively to allow for adequate air exchanges. 3. Notify Patient Transport Services, receiving area and recovery area as appropriate regarding the need for Airborne Precautions in advance.
Transportation	See 3.5.1 Internal Transfer
Inter-Operative	1. Post an Additional Precautions sign on the OR door indicating **Airborne Precautions** are to be followed. 2. Maintain OR Theatre in normal air handling system operation (i.e. positive pressure). 3. Minimize theatre door opening and closing.
Appropriate PPE	1. Patient should wear a surgical mask if possible and tolerated. 2. All staff entering the OR theatre shall wear an N95 respirator unless immune.
Code Blue	1. Code Blue Team entering the OR theatre shall wear an N95 respirator unless immune. 2. No special considerations for the code blue cart.
Post-Operative	1. Keep the OR theatre door closed after the patient leaves the theatre. If air exchanges are unknown, maintain Airborne Precautions for one hour after the patient has left OR. If air exchanges are known, allow adequate time according to the Air Exchange Table in Appendix C, for ideally 99.9% and minimally 99% of airborne microorganisms to be removed from the room. 2. The Airborne Precautions sign may be removed when this time has passed and OR has been cleaned. 3. Notify the receiving area re: need for Airborne Precautions. 4. See Section 3.5.1 Internal Transfer.
Operating Room Theatre Environmental/Instrument Cleaning	1. If cleaning occurs prior to adequate air exchanges, staff must wear N95 respirator unless immune. 2. Follow routine cleaning procedures. No special cleaning procedures are required while Airborne Precautions are in place, when discontinued, or upon patient discharge. *Please refer to the Evidence Informed Practice Toll (EIPT) Guidelines for Routine Environmental Cleaning of the Operating Room.* 3. Leave Additional Precautions sign on the OR door until cleaning and disinfection is complete.

References

1. The ORNAC Standards, Guidelines and Position Statements for Perioperative Registered Nurses (14th ed.). (2019). Operating Rooms Nurses Association of Canada (ORNAC).

2. Routine Practices and Additional Precautions: Preventing the Transmission of Infection in Health Care. (June 2019). Manitoba Health.

3. 110.050.010 Code Blue Team Resuscitation in Acute Care ADULT (2017) Winnipeg Regional Health Authority.

4. Canadian Tuberculosis Standards 8th Edition. (2022, March 25). Public Health Agency of Canada. Available at: Canadian Journal of Respiratory, Critical Care, and Sleep Medicine: Vol 6, No sup1 (tandfonline.com)