

Creation of Temporary Airborne Isolation Rooms

This document outlines how to select and adapt rooms for temporary airborne isolation when airborne isolation rooms (AIRs) are not available. It is intended to facilitate bed management and minimize the need for inter-facility transport when care needs can be met at the admitting healthcare facility. Healthcare facilities should continue to assess the level of care provided at their site, the needs of the patient population, and their role in communicable disease preparedness responses when determining the number of AIRs required (CSA Z8000-18 7.5.5.1).

Sites can find the zone inventories of existing, purpose-built AIRs that can accommodate patients requiring airborne precautions on AHS Insite: Home > Teams > Emergency/Disaster Management > Emergency Response Plans (Sites / Services).

Facilities with no AIRs, or a lack of sufficient AIRs to meet clinical need, may have the ability to create temporary AIRs by either:

- 1) Utilizing existing building HVAC systems to establish temporary AIRs or,
- 2) Using portable HEPA filtration systems to create temporary AIRs.

Ideally investigation of options for creation of temporary AIRs should be done in advance.

- Establish a list of best suited spaces that can most easily be set up as temporary AIR spaces.
- Selection process may be complex so best not to wait until there is an immediate need.
- Build a (detailed) plan in advance so when needed there is only set up to consider. In addition, then other resources such as the fans & pressure monitors can be determined and sourced.
- Establish a multidisciplinary team (MDT). Representation should include (but is not limited to) Clinical Operations, Infection Prevention and Control (IPC), and Facilities Maintenance and Engineering (FM&E).

Version	Date (YYYY-MM-DD)
Created	2024-04-17
Updated	
Revised	

Temporary AIR Requirements

Room feature	Requirements (in order of preference)
Room with attached private bathroom	<ol style="list-style-type: none"> 1. Use single patient room with private bathroom. 2. Use of two bed, semi-private rooms used for single occupancy of the patient on airborne isolation precautions may be considered (i.e., the second bed remains unoccupied). 3. Considerations for rooms other than existing single patient room with private bathroom: <ul style="list-style-type: none"> • Non-carpeted. • A sink within the room that can be used for hand hygiene. • Proximity to nursing station, nurse call requirements and code response. • Provide a dedicated commode to patient(s) if no bathroom within room.
Ceiling	<ol style="list-style-type: none"> 1. Solid ceiling in place. 2. If drop ceiling with ceiling tile: <ul style="list-style-type: none"> • Do not use rooms that have a drop ceiling with plenum return air. • Fire walls should extend from the floor to the deck to improve containment of the space. 3. Consult with FM&E and IPC for other facility-specific options (if possible).
Pressure monitoring	<ol style="list-style-type: none"> 1. Use room with existing pressure monitor at the entrance to the room (CSA Z317.2:19 6.10.4.1.5) 2. Rooms without an existing pressure monitor: <ul style="list-style-type: none"> • Implement a negative pressure monitoring and response plan. • Install a temporary alarmed pressure monitor.
Venting (when using a portable HEPA filtration system)	<ol style="list-style-type: none"> 1. Use a room with a window that can be used to vent outside. <ul style="list-style-type: none"> • Avoid using rooms with windows that are adjacent to air intakes or entrances to the healthcare facility. • Seal air return vents. 2. Consult with FM&E and IPC for other facility-specific venting options.

Portable HEPA Filtration System Criteria

1. Pressure requirements: support 7.5 Pa negative pressure relative to the hallway **and** adjacent spaces (CSA Z317.2:22 6.10.4.1.1).
 - a. Consult with FM&E and IPC if -7.5 Pa cannot be achieved.
 - b. Consider the patient population in adjacent spaces when deviating from negative pressure requirements (i.e., immunosuppressed, pregnant, infants less than 12 months, etc.).
2. Filtration requirements: collection efficiency of 99.97% at 0.3 µm.
3. Air dilution requirements: provide a minimum of 12 air changes per hour (ACH).
 - a. Consult with FM&E and IPC if this cannot be achieved.
4. Selection criteria for portable HEPA filtration systems:
 - a. Adjustable airflow.
 - b. Generate as little noise as possible.
 - c. Be performance leak tested according to clause 6.6.4 of the CSA Z317.13:22.
 - d. Have established maintenance schedules with associated documentation.
 - e. Have a wipeable exterior that is compatible with AHS cleaning and disinfection products.

References

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- Shakoor S, Mir F, Zaidi AK, Zafar A. Hospital preparedness in community measles outbreaks- challenges and recommendations for low-resource settings. Emerg Health Threats J. 2015 Apr 15;8:24173.
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