

Infection Prevention and Control

Best Practice Guideline

Seasonal Use of Portable Fans and Air Conditioners for Supplemental Cooling

A printed version of this guideline may not be the most recent version. The OFFICIAL version is located at Infection Prevention and Control.

Site Applicability

All Vancouver Coastal Health Owned, Operated and contracted Acute, Ambulatory, Community, Long-Term Care and Assisted Living sites.

Scope

All VCH owned operated and contracted sites:

- Care Staff
- Facility leadership
- Facilities Maintenance and Operations (FMO) or equivalent Maintenance Staff
- Environmental services

Purpose

Options for cooling healthcare spaces should explore alternative cooling measures and optimization of existing heating, ventilation and air conditioning (HVAC) systems prior to considering the use of portable fans or air conditioners due to the risk of spread of microorganisms.

To define the safe use of portable fans and air conditioners for seasonal hot weather events. Define the process for:

- Product selection
- Care and Maintenance
- Cleaning and disinfection
- Placement
- Storage

General Requirements

Building administrators should review, maintain (including the upgrade of filters where appropriate), and monitor HVAC systems according to the manufactures HVAC systems, particularly in relation to the cleaning and changing of filters.

Even if older systems cannot adequately cool the building during seasonal warm periods, optimal function will help improve general ventilation by:

- Maintaining relative humidity at 40-60%
- Filter the air
- Provide adequate fresh air exchange

Responsibilities

- Site leadership responsible to ensure the product selected meets Health Canada and Canadian Standards Association Z317.2-15.
- For Owned and operated sites, Facilities Maintenance and Operations (FMO) approval is required.

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- Contracted facilities to consult Maintenance Department to ensure power capabilities are sufficient to support use.
- Consult the Infection Control Practitioner when considering purchase, rental or lease of fans and air conditioning units.
- Site leadership to ensure HVAC system is functioning optimally prior to considering other cooling options.
- Site leadership to ensure care and maintenance requirements are followed, including inspection and cleaning of duct work, filter replacement, and regular dust removal from fresh air diffusers and return air grills is routinely performed by housekeeping or maintenance staff.

Procedure

- When the ambient temperature is higher than one's skin temperature, heat loss will only be achieved by evaporation if the person is sweating. The use of fans when temperatures are greater than 35 degrees C may blow hot air and make it difficult for individuals to regulate body temperature through the process of evaporation. This may place individuals at risk of fluid and electrolyte imbalances.
- Portable fans may not prevent heat-related illnesses if the temperature is more than 35°C. Turn fans off and use alternate methods of cooling.
- See: <u>Heat Related Illnesses: Prevention and Management in Long-Term Care</u> <u>Hydration: Promoting</u> <u>Fluid Intake and Preventing Dehydration</u>

Portable Fans Selection Criteria

- The airflow path of all fans, including fan blades and impellers which move air, must be able to be accessed for routine cleaning and disinfection. All fan surfaces must be able to be cleaned and disinfected. Blade cages or shielding in the airflow path that may accumulate dust, and debris must be able to be disassembled for cleaning and disinfection.
- Fans meet CSA Z317.2-15 standards.
- Fans must be able to be cleaned and disinfected using a hospital grade Health Canada approved product for low level disinfection.
- The selection of fan type (bladed or bladeless) does not affect the potential movement of microorganisms and the associated risks.

Portable Air Conditioning Units Selection Criteria

- All portable air conditioning units must be able to be cleaned and disinfected ensuring all touch surfaces, filters and drip trays can be accessed for this purpose.
- Portable air conditioning units are CSA approved and labeled as such.
- Portable air conditioning units meet CSA Z317.2-15 standards.
- Portable air conditioning units must be able to be cleaned and disinfected using a hospital grade Health Canada approved product for low level disinfection.

Placement and Use of Portable Fans and Air Conditioners

- See <u>Placement of Portable Fans Poster</u>
- Air conditioners may be considered for areas that do not have sufficient HVAC to support cooling in Long Term Care and Assisted Living homes.

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- When considering the use of fans or air conditioners for clients/patient/residents on additional precautions consult your Infection Control Practitioner (ICP).
- During outbreaks consult IPAC for guidance on fan or air conditioner use.
- Fans and air conditioners should not be used in medication rooms, clean supply or soiled utility rooms which are in small, confined spaces or near nursing stations.
- Fans should not be used in areas with directed air flow (positive pressure rooms, OR and procedure rooms, or MDRD).
- Place the fan on a clean surface at the client/patient/resident's bed level (at least 24 inches or 61 cm from the floor) or higher.
- Excess air turbulence increases the risk of spreading microorganisms. Use the lowest fan setting that effectively cools the client/patient/resident to avoid unnecessary turbulence and do not use the oscillating function.
- Airflow should be aimed in the direction of the client/patient/resident and tilted upwards toward the ceiling, avoiding smoke detectors.
- The portable fan or air conditioner must not blow directly on wounds (open/dressed), tubes/lines/drains, open tracheostomy or directly at the client/patient/resident's face.
- Airflow should not be directed towards the door of the room or across environmental surfaces.
- In multi-client/patient/resident rooms airflow should not blow across one client/patient/ resident's breathing zone to the breathing zone of another client/patient/resident. Horizontal cross breezes should be avoided.
- Fans placed in windows must consider IPAC engineering needs, air quality conditions as well as infection sources from outside the building such as:
 - > Maintaining established negative pressure in isolation rooms (windows cannot be opened).
 - Construction activity (e.g. excavation or demolition of nearby buildings). Gardens recently mulched or near any composted or rotting organic materials.
 - > Air quality advisories.
- Fans and air conditioners must be turned off:
 - > When providing care.
 - When Environmental services is cleaning the room.

Care and Maintenance

- Regular inspection is required for product integrity and safety prior to placement (seasonally, when new and at the end of the season prior to storage).
- Remove from service any fans or air conditioners that are damaged and cannot be repaired.
- Follow manufacturer's instructions for use and maintenance.
- Develop a preventative maintenance schedule and assign responsibility that includes:
 - Visual inspection daily
 - > Weekly cleaning and disinfection of all components
 - Additional cleaning and disinfection when visibly soiled.
 - > Empty clean and disinfect the drip pan daily to prevent biofilm buildup.
 - > Do not leave water sitting in the air conditioner when not in daily use.
- When renting or leasing units ensure there is an established maintenance program with the company, including regular maintenance, filter cleaning/replacement and installation.



See:

Appendix A Portable Fans for Supplemental Cooling: Care and Maintenance Appendix B Portable Air Conditioners for Supplemental Cooling: Care and Maintenance

References

- 1. ASHRAE. (2022). ASHRAE position document on infectious aerosols. American Society of Heating, Refrigerating and Air-Conditioning Engineers.
- 2. Canadian Standards Association Group. (2019). CSA Z8317-15: Special requirements for heating, ventilation, and air conditioning (HVAC) systems in healthcare facilities.
- 3. EU CDC. (2020). <u>Heating, ventilation and air-conditioning systems in the context of COVID-19.</u> European Centre for Disease Prevention and Control. November 10, 2020.
- 4. Ontario Agency for Health Protection and Promotion (Public Health Ontario). (2023). <u>Heating</u>, <u>Ventilation and Air Conditioning</u>
- 5. Public Health Agency of Canada. (2024). <u>COVID-19: Guidance on indoor ventilation during the pandemic</u> <u>- Canada.ca</u>
- WorkSafe BC (2022). COVID-19 frequently asked questions: General ventilation and air circulation. Retrieve from: <u>Prevent the spread of communicable disease</u>: <u>Ventilation and air circulation |</u> <u>WorkSafeBC</u>

Appendices

Appendix A Portable Fans for Supplemental Cooling: Care and Maintenance Appendix B Portable Air Conditioners for Supplemental Cooling: Care and Maintenance

First Released:	June 2021			
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Revision #:	Description of Changes:		Revised By:	Effective
				Date:
April 2025	Turn off fans when temperature over 35°C; AC units appropriate for LTC/AL sites		Edwin Tunod;	April 2025
			Jacquie Hlagi	
	without central AC; do not use oscillating			
	function with fans.			