

Best Practice Guideline	Seasonal Use of Portable Fans and Air Conditioners for Supplemental Cooling
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Site Applicability

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

Scope of Practice

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, FMO approval is required.

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. 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.



[Heat Stress: Planning for and Preventing in Residential Care](#)
[Hydration: Promoting Fluid Intake and Preventing Dehydration](#)

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.

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 that are damaged and cannot be repaired.

Follow manufacturers instruction for use and maintenance.

Cleaning and Disinfection

Perform hand hygiene before and after cleaning, handling, or maintaining fans.

Clean and disinfect prior to first use.

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

See [Appendix A](#)

Placement and use of fans



When considering use of fans for clients/patient/residents on additional precautions consult Infection Control.

During outbreaks consult Infection Control for guidance on fan use.

During times when fans are not recommended consider alternative cooling methods.

Fans should not be used in medication rooms, clean supply or soiled utility rooms which are located in small confined spaces or near nursing stations.

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.

Airflow should be aimed in the direction of the client/patient/resident and tilted upwards toward the ceiling, avoiding smoke detectors.

The portable fan 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 other client/patient/resident. Horizontal cross breezes should be avoided.

Fans placed in windows must consider Infection Control 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 must be turned off:

- When providing care.
- During room cleaning by environmental services.
- During short duration maintenance activities in the room, that result in open ceiling tiles, walls, floors or disturbed plumbing.

In non- client/patient/resident areas, such as healthcare nursing stations, break rooms, airflow should be directed upwards toward the ceiling within the area rather than blowing into the hallway or other adjoining rooms.



Storage

- Clean and disinfect prior to storing.
- Store covered in a plastic bag.

When bringing the fan out of storage, remove and discard the plastic covering prior to placing the fan in the care area.

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.

Care and Maintenance

Inspection of product integrity and safety is required prior to placement (seasonally, when new and at the end of the season prior to storage).

Remove from service any portable air conditioning units that are damaged and cannot be repaired.

Follow manufacturers instruction for use and maintenance.

When renting or leasing units ensure there is an established maintenance program with the company, including regular maintenance, filter cleaning/replacement and instillation.

Cleaning and Disinfection

Perform hand hygiene before and after cleaning, handling, or maintaining units.

Clean and disinfect prior to first use, at the end of season and prior to storage.

Develop a preventative maintenance schedule and assign responsibility that includes:



- Visual inspection daily.
- 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.
- Weekly cleaning and disinfection of all components.
- Additional cleaning and disinfection when visibly soiled.
- Drain water vapor to the exterior of the building through an exhaust hose for units without a drip pan.

See [Appendix B](#)

Placement and use of portable air conditioning units

When considering use of air conditioning units for client/patient/resident on additional precautions consult infection control.

During outbreaks consult Infection Control for guidance on use.

During times when portable air conditioning use is not recommended consider alternative cooling methods.

Portable air conditioning should not be used in medication rooms, clean supply or soiled utility rooms which are located in small confined spaces or near nursing stations.

The lowest possible setting should be used to effectively cool the client/patient/resident to prevent turbulent airflow as this contributes to spread of microorganisms.

Airflow should be directed away from the client/patient/resident.

Airflow must not blow directly on wounds (open/dressed), tubes/lines/drains, open tracheostomy or directly at the client/patient/resident's face.

Storage

Clean and disinfect prior to storing or returning to company.

Store covered in a plastic bag.

When bringing the fan out of storage, remove and discard the plastic covering prior to placing the fan in the care area.

References

1. ASHRAE. (2020). ASHRAE position document on infectious aerosols. American Society of Heating, Refrigerating and Air-Conditioning Engineers.



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3. EU CDC. (2020). Heating, ventilation and air-conditioning systems in the context of COVID-19. European Centre for Disease Prevention and Control. November 10, 2020.
4. Minnesota Department of Health. (2020). Heating, ventilation and air conditioning (HVAC) and fan considerations for long-term care during COVID-19.
5. Ontario Agency for Health Protection and Promotion (Public Health Ontario). Heating, ventilation and air conditioning (HVAC) systems in buildings and COVID-19. Toronto, ON: Queen's Printer for Ontario; 2021.
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