

INFECTION PREVENTION AND CONTROL

PROVINCIAL GUIDELINES

Provincial Infection Prevention and Control Guidelines for Portable Fans in Health Care Settings in British Columbia

October 5, 2023

Summary of Changes

Version	Summary of major changes
August 4, 2021	<ul style="list-style-type: none">Guidance was first published
October 5, 2023	<ul style="list-style-type: none">Title changed to remove COVID-19 specific guidance.Scope expanded from COVID-19 to general infection prevention and control.Reference information provided for ventilation during extreme heat guidance.

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Scope

This guidance is for infection prevention and control (IPC), workplace health and safety (WHS), health-care workers (HCWs) and operational leadership in health care settings. It provides information on IPC practices to minimize the transmission risks of communicable diseases, including viral respiratory infections such as COVID-19 and influenza. Guidance regarding the clinical monitoring and management of conditions related to extreme heat (e.g., heat stress, dehydration) is beyond the scope of this document. The references listed in the background sections provide information on these topics.

Definitions of Key Terms

Health care settings: Areas in which the delivery of health care services is provided across the continuum of care, including acute care (e.g., hospitals), outpatient care (e.g., clinics) and long-term care and assisted living facilities.

Health care workers: Includes all direct care providers (e.g., physicians, nurses, allied health, care aides, support workers), all employees including non-clinical staff (e.g., administration staff), contracted service providers (e.g., security, environmental services) and volunteers of the organization.

Patients: Individuals receiving care across all health care settings (e.g., patients, residents, tenants, clients).

Portable fans: Devices that can be easily moved to different locations, such as tabletop and floor fans.

Viral respiratory infection (VRI): Any new-onset of acute infectious respiratory illness suspected or confirmed to be caused by a viral agent (e.g., SARS-CoV-2, influenza, respiratory syncytial virus [RSV]) with either upper- or lower-respiratory tract involvement, presenting with symptoms of a new or worsening cough and often fever.

Background

Extreme weather conditions can cause discomfort and adverse health outcomes. Extreme temperatures, sub-optimal heating, ventilation and air conditioning (HVAC) systems and frequent or prolonged use of personal protective equipment (PPE) may exacerbate these concerns. Although fans can provide some relief, they may not prevent heat-related illnesses during extreme heat when ambient room temperatures exceed >35 degrees Celsius with high humidity, and may be counter-productive in some circumstances for individuals at risk.^{1,2} Refer to the following Health Canada guidance for health care settings during extreme heat events:

- [Extreme heat events guidelines: technical guide for health care workers](#);¹
- [Acute care during extreme heat: recommended information for health care workers](#)³; and,
- [Health facilities preparation for extreme heat: recommendations for retirement and care facility managers](#).⁴

Portable fans do not increase air exchange or improve ventilation, but they may circulate air within the room or area.^{5,6} However, they also potentially increase the risk of spreading dust (where microorganisms may survive and reproduce) and respiratory droplets and aerosols by disrupting the airflow and propelling infectious particles from their source (e.g., persons, surfaces, etc.) to other individuals.⁵⁻⁷ Further, portable fans can be difficult to clean and disinfect; they may act as fomites contributing to the spread of infection.⁶

General Principles

Where there are concerns regarding the temperature and humidity of a health care environment, consult local facilities, maintenance & operations (FMO) and/or qualified HVAC professionals to address appropriate airflow, cooling and ventilation performance. Engineering controls are essential in the hierarchy of controls for minimizing exposures to hazards in the workplace.⁸ An HVAC system in good working order is expected to provide comfortable conditions for patients and HCWs.⁹ Other cooling methods (e.g., hydration, cooling supplies, cooling rooms/areas) for patients and HCWs should be explored prior to using portable fans.^{7,10-12} Refer to Health Canada's guidance for [acute care during extreme heat: recommended information for health care workers](#)³ and [health facilities preparation for extreme heat: recommendations for retirement and care facility managers](#)⁴. After consultation with FMO and if other cooling methods for patients and HCWs are inadequate, this document can be used to guide practices to mitigate the potential transmission risks of communicable viral respiratory infections and other infectious agents from using portable fans.

In general:

- All portable fans must meet electrical requirements established by the local facility and with Canadian Standards Association requirements (e.g., CSA certified). Fans must be appropriately labelled.
- All portable fans must be procured through standard organizational purchasing processes, including approval by local FMO.
- All fans require regular inspection and maintenance as determined by local FMO teams.
- Conduct a risk assessment prior to use to confirm that the potential benefits from using portable fans outweigh the potential for increasing the transmission risk of infectious agents^{11,12}
 - Risks and benefits can change over time (e.g., increased respiratory illness activity during extreme weather events), so risk assessments and decision making about the use of portable fans need to be made within the context of this changing environment. The need for portable fans requires ongoing assessment of the potential risks and benefits associated with their use to avoid prolonged and routine use. Long term solutions, via HVAC systems, should be evaluated and considered.

Cleaning and Disinfection

Follow organizational equipment procurement and consultation processes prior to purchasing and use. Consult with FMO to validate electrical compatibility. Consult with environmental cleaning services to verify ability to disassemble and reassemble the portable fan and to establish cleaning and disinfection protocols.

For cleaning and disinfection:

- Portable fans must be cleaned and disinfected using organizationally approved products and according to the manufacturer's instruction for use.¹¹⁻¹³
- Roles and responsibilities for cleaning and disinfection must be clearly outlined and documented.^{7,11}
- Portable fans must be cleaned and disinfected prior to initial use and based on a regular schedule that is determined by the risk of contamination during use (refer to [British Columbia Best Practices for Environmental Cleaning for Prevention and Control of Infections in All Healthcare Settings and Programs](#)¹⁴).
- Fans must be cleaned and disinfected immediately when visibly dusty.
- Perform hand hygiene before and after cleaning and disinfection of fans.^{7,11}

Placement of Portable Fans

Exclusion Considerations for Portable Fans

Portable fans should not be used in the following areas:*

- Rooms with directed air flow (e.g., negative and/or positive pressure room), including operating rooms, bronchoscopy/endoscopy/minor procedures rooms.^{11,13}
- Storage areas for clean and sterile medical devices and supplies (e.g., clean supply rooms).^{7,11}
- Medical device reprocessing departments.⁷
- Soiled utility rooms.
- Other areas/rooms with specifically designed airflow requirements or equipment that are sensitive to changes in airflow (e.g., biological safety cabinets).

Portable fans should not be used during the following clinical situations: *

- During sterile and aseptic procedures (e.g., wound care, dressing change, intravenous cannulation, urinary catheter insertion, lumbar puncture).⁷
- During any procedures that may cause sprays or splashes of body fluids (e.g., chest drain).¹¹
- Procedures where particle spread can occur (e.g., aerosol generating medical procedures).⁷

Consult with IPC prior to using fans in the following areas:

- Areas with a suspected or confirmed outbreak of any infectious agents. Additionally, consult with Medical Health Officer or their official delegate during outbreaks.
- Rooms with immune compromised patients as defined by the local health authority.^{11,13}
- Rooms where additional precautions have been implemented (e.g., droplet and contact precautions, airborne precautions).^{11,13}

*Note: There may be other areas and clinical situations where it is not recommended to use portable fans. Consult local IPC and WHS teams as needed. There may also be exceptional circumstances where portable fans may be used in the areas mentioned above; consult with IPC and WHS.

Portable Fans For Health Care Worker Use

Health care worker fan use:

- Follow local health authority guidelines and consult with IPC and WHS as needed.
- Direct airflow within the area so it is not at face level of HCWs (e.g., in nursing stations) to avoid directing exhaled air from one HCW to other HCWs.^{7,13}
- Avoid using fans in areas that do not have fresh air introduced.⁷ Consult with FMO.
- Do not use the “oscillating” function to ensure that the direction of airflow is limited to the area where it is needed.
- Set the portable fan to the lowest speed that achieves the intended effect.
- Consider positioning the fan in front of an open window or the air supply to promote clean air being blown towards a person. Consult with FMO prior to opening windows as this may adversely affect the HVAC system.
- If placed in or near windows, consider outside conditions (e.g., construction, renovation, smoke) that could potentially introduce contaminated air or dust particles and avoid directing this airflow into the area.
- Prior to opening any windows, consult with FMO to minimize potential HVAC disruptions.
- Avoid directing airflow toward smoke detectors.

Portable Fans In Patient Care Areas

Fans in patient care areas:

- Follow local health authority guidelines and consult with IPC and WHS as needed.
- Place the portable fan on a clean surface at the patient’s bed level or higher. When portable floor fans are used, consult local health authority guidance to determine how high the stand needs to be above the floor to

minimize contamination of nearby surfaces and equipment. Some provincial experts recommended a range from 24-30 inches (61-76 cm) distance above the floor.

- Do not use the “oscillating” function to ensure that the direction of airflow is limited to the area where it is needed.
- Set the portable fan to the lowest speed that still achieves the intended effect.
- Consider positioning the fan in front of an open window or the air supply to promote clean air being drawn towards a patient.
- Avoid using in areas that do not have fresh air introduced.⁷
- If placed in or near windows, consider outside conditions (e.g., construction and renovation) that could potentially introduce contaminated air or dust particles and avoid directing this airflow into the patient area. Prior to opening any windows, consult with FMO to minimize potential HVAC disruptions.
- Direct airflow towards the patient and upwards, towards the ceiling and avoid smoke detectors.^{7,11}
 - Ensure that the airflow is not directed towards skin conditions (e.g., open wound, dressings and rashes) and clean environments (e.g., PPE and medication carts).
 - Avoid directing exhaled air from one patient on to other patients.
 - Consider directing exhaled air towards an exhaust grill whenever possible.
- Avoid directing airflow towards contaminated areas (e.g., garbage) and towards the door of the patient care area (e.g., towards common hallways).⁷
- If used in a multi-bed area, close the curtains to ensure that the airflow is directed towards a specific patient space and does not flow to other patient spaces.¹³

Storage of Portable Fans

When not in use, portable fans should be cleaned, disinfected and stored in a clean area. Cover fans during storage where possible and store in a manner to protect them from dust and moisture. Clean and disinfect portable fans after removing them from storage and before use.

Acknowledgement

This document was developed by the Provincial Infection Control Network of B.C. (PICNet) in consultation with the Infection Prevention and Control/Workplace Health and Safety Provincial COVID-19 Working Group.

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