



COVID-19 Infection Prevention and Control Guidance on Portable Fans in Health-Care Settings

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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.

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Scope

This document provides IPC and WHS guidance for using portable fans in health-care settings for HCWs and patients to minimize the risk of SARS-CoV-2 transmission and other infectious agents.

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.

Definitions of Key Terms

Health-care settings: Areas in which the delivery of health-care services are 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. They include tabletop and floor fans.

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.

Portable fans do not increase air exchange or improve ventilation, but they may circulate air within the room or area.^{1,2} However, they also potentially increase the risk of spreading dust (where microorganisms may survive and reproduce) and SARS-CoV-2 by disrupting the airflow and propelling infectious particles from their source (e.g., persons, surfaces, etc.) to other individuals.¹⁻³ Further, portable fans can be difficult to clean and disinfect; they may act as fomites contributing to the spread of infection.²

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.⁴ An HVAC system in good working order is expected to provide comfortable conditions for



patients and HCWs.⁵ Other cooling methods (e.g. hydration, cooling supplies, cooling rooms/areas) for patients and HCWs should be explored prior to using portable fans.^{3,6-8}

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 risk of SARS-CoV-2 transmission and other communicable respiratory infections 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). These fans must be appropriately labelled.
- All portable fans must be procured through standard organizational purchasing processes, including approved 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 risk of SARS-COV-2 transmission.^{7,8}
 - 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 local equipment procurement and consultation processes prior to purchasing and use. Consult with FMO to validate electrical compatibility. Consult with environmental cleaning services to housekeeping to validate electrical compatibility, 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 locally approved products and according to the manufacturer's instruction for use.⁷⁻⁹
- Roles and responsibilities for cleaning and disinfection must be clearly outlined and documented.^{3,8}
- 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](#)¹⁰).
- Fans must be cleaned and disinfected immediately when visibly dusty.
- Perform hand hygiene before and after cleaning and disinfection.^{3,8}



Placement of Portable Fans

Portable fans are NOT to be used in the following areas:*

- Areas with a suspected or confirmed outbreak of any infectious agents.
- Rooms with immune compromised patients (as defined by the local health authority).^{8,9}
- Rooms where additional precautions have been implemented (e.g., droplet and contact precautions, airborne precautions).^{8,9}
- Rooms with directed air flow (e.g., negative and/or positive pressure room), including operating rooms, bronchoscopy/endoscopy/minor procedures rooms.^{8,9}
- Storage area for clean and sterile medical devices and supplies (e.g., clean supply room).^{3,8}
- Medical device reprocessing departments.³
- Soiled utility rooms.

Portable fans are NOT to 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).³
- During any procedures that may cause sprays or splashes of body fluids (e.g., chest drain).⁸
- Procedures where particle spread can occur (e.g., aerosol generating medical procedures).³

*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; consultation with IPC and WHS is required.

For HCW Use

Follow local health authority guidelines and consult WHS as needed. There is increased risk for the transmission of infectious agents, including SARS-CoV-2, in areas where HCWs are not wearing masks (e.g., eating and drinking in break rooms, lounges).

For health-care worker fan use:

- 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.^{3,9}
- Avoid using in areas that do not have fresh air introduced.³
- Do not use the “oscillating” function, so 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 blown towards a person.
- 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 area.
- Prior to opening any windows, consult with FMO to minimize potential HVAC disruptions.
- Avoid directing airflow toward smoke detectors.



For Patient Care Areas

Follow local health authority guidelines and consult IPC and clinical teams as needed.

For fans in patient care areas:

- Place the portable fan on a clean surface at the patient’s bed level or higher. If 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 regions have recommended a range from 24 -30 inches (61-76 cm) distance above the floor.
- Do not use the “oscillating” function, so 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.³
- 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.^{3,8}
 - 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).^{3,11}
- If used in a multi-bed area, close the curtains to ensure that the airflow is directed towards a specific patient space.⁹

Storage of Portable Fans

When not in use, portable fans should first 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

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References

1. Public Health Agency of Canada. COVID-19: Guidance on indoor ventilation during the pandemic. Modified January 18, 2021. Accessed May 28, 2021. <https://www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection/guidance-documents/guide-indoor-ventilation-covid-19-pandemic.html#a10>
2. Public Health Agency of Canada. Using Ventilation and filtration to reduce aerosol transmission of COVID-19 in long-term care homes. Modified April 12, 2021. Accessed May 28, 2021. <https://www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection/guidance-documents/guide-ltch-ventilation-covid-19-pandemic.html>
3. Ontario Agency for Health Protection and Promotion (Public Health Ontario). At a Glance: The Use of Portable Fans and Portable Air Conditioning Units during COVID-19 in Long-term Care and Retirement Homes. Updated July 14, 2020. Accessed May 28, 2021. <https://www.publichealthontario.ca/en/diseases-and-conditions/infectious-diseases/respiratory-diseases/novel-coronavirus>
4. U.S. Centers for Disease Control and Prevention. Hierarchy of Controls. Published 2015. Accessed May 28, 2021. <https://www.cdc.gov/niosh/topics/hierarchy/default.html>
5. Bartley J. Heating, Ventilation, and Air Conditioning. October 3, 2014. Association for Professionals in Infection Control and Epidemiology Text. Accessed May 28, 2021. <https://text.apic.org/>
6. Health Canada. Health Facilities Preparation for Extreme Heat: Recommendations for Retirement and Care Facility Managers. Modified December 16, 2020. Accessed May 28, 2021. <https://www.canada.ca/en/health-canada/services/environmental-workplace-health/reports-publications/climate-change-health/health-facilities-preparation-extreme-heat-recommendations-retirement-care-facility-managers-health-canada-2011.html>
7. Alberta Health Services. Use of Portable Bedside Fans and Air Conditioners in Healthcare during the COVID-19 Pandemic. Revised August 11, 2020. Accessed May 28, 2021. <https://www.albertahealthservices.ca/assets/healthinfo/ipc/if-hp-ipc-info-sheet-portable-fans.pdf>
8. Health Service Executive. 2018 Guidelines for the Use of Portable Electric Fans in Healthcare Settings. Accessed June 1, 2021. <https://www.hse.ie/eng/services/list/5/publichealth/publichealthdepts/extreme/fan-guidelines.html>
9. Winnipeg Regional Health Authority. Infection Prevention and Control Communication Form. Portable Fans - Cleaning and Use Restrictions. Revised January 2019. Accessed May 31, 2021. https://professionals.wrha.mb.ca/old/extranet/ipc/files/manuals/acutecare/Portable_Fans_Restrictions.pdf
10. Provincial Infection Control Network of British Columbia. British Columbia Best Practices for Environmental Cleaning for Prevention and Control of Infections in All Healthcare Settings and Programs. Published 2016. Accessed July 2, 2021. <https://www.picnet.ca/wp-content/uploads/British-Columbia-Best-Practices-for-Environmental-Cleaning-for-Prevention-and-Control-of-Infections-in-All-Healthcare-Settings-and-Programs.pdf>
11. Shared Health Manitoba. COVID-19: Infection Prevention and Control Checklist for Personal Care Homes. January 11, 2021. Accessed May 31, 2021. <https://sharedhealthmb.ca/files/covid-19-pch-ipc-checklist.pdf>

