

COVID-19: Risk of SARS-CoV-2 Aerosol Transmission in Health-Care Settings

This information is intended for health-care providers. It is based on known evidence as of March 5, 2021.

SARS-CoV-2, the virus that causes COVID-19, is spread by respiratory droplets from an infected person to others when they speak, sing, cough or sneeze. The droplets can range in size from large liquid droplets, which quickly fall to the ground usually within two metres, to smaller aerosols, which can linger in the air under some circumstances. Infection can occur when droplets and aerosols containing sufficient quantities of SARS-CoV-2 virus come into contact with the mucous membranes of another person's eyes, nose or mouth, or are inhaled into the respiratory tract. The virus can also be spread by touching surfaces with the virus on it and then touching one's eyes, nose or mouth. The amount of virus, or infectious dose, needed to cause infection is still under investigation.

Concerns have been raised about the possible role of aerosol transmission. However, current global evidence shows that COVID-19 is primarily spread by close-range droplets and direct contact, with protection provided by physical distancing, mask use and hand hygiene. Aerosols can float in the air for a longer period of time and can accumulate in enclosed spaces unless they are diluted with clean air from a ventilation system or from outdoors. Their role in transmission causing infection, however, has been demonstrated in limited circumstances in community settings under conditions that contribute to aerosol build-up. Examples of these are enclosed or crowded spaces with poor ventilation, prolonged exposure from people doing activities that involve expiratory exertion and prolonged exposure without the use of medical-grade personal protective equipment (PPE). There is currently no evidence of transmission over long distances through the air, from room to room or through air ducts. Transmission of SARS-CoV-2 aerosols is also possible during aerosol generating medical procedures (AGMP).

Health-care settings are expected to have a hierarchy of infection prevention and control (IPC) measures during the pandemic including adequate ventilation, COVID-19 symptom and risk factors screening, continuous masking, IPC education and training, and enhanced cleaning and disinfection of the environment and equipment. Although medical-grade PPE is an important control measure, it is only one form of protection in the hierarchy of controls and should be used in conjunction with environmental and administrative control measures in health-care settings. Where possible, patients confirmed with COVID-19 or with COVID-19 risk (e.g., have symptoms of COVID-19 or are required to self-isolate following close contact or travel) should be placed in well-ventilated, uncrowded spaces. The risk of SARS-CoV-2 transmission to health professionals from patients is low when hierarchies of control are used including appropriate use of PPE. For current COVID-19 PPE information, see the BCCDC page on [personal protective equipment](#) and [how to wear a face mask](#) poster.

The World Health Organization, Public Health Agency of Canada and provincial public health agencies (including Public Health Ontario, Alberta Health Services and BC Centre for Disease Control) **continue to recommend droplet and contact precautions** in health-care settings for a person who is confirmed with COVID-19 or a person with COVID-19 risk. Health-care workers should undertake a [point-of-care risk assessment](#) for potential exposure risks and to determine the selection of appropriate actions and PPE. The use of an N95 respirator or equivalent (e.g., elastomeric half-face respirators) is recommended for airborne precautions or when performing an AGMP on a person confirmed with COVID-19 or with COVID-19 risk. Please consult the [BCCDC AGMP guidance](#) and your local health authority guidance on AGMP. Talking, sneezing or coughing are not considered AGMP. Where frequent or unexpected AGMPs are performed, additional recommendations for use of respirators can be made in consultation with IPC and workplace health professionals.

References

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