

March 3, 2023

Medical Officer of Health Urges Local Governments to Explore Improvements to Heating Ventilation and Air Conditioning (HVAC) Systems to Improve Indoor Air Quality

TO: Local Governments (Curve Lake First Nation, Hiawatha First Nation, City of Peterborough, County of Peterborough and Townships)

Dear Local Councils:

Re: Improved Indoor Air Quality in public settings

We've learned a great deal about COVID-19 since the pandemic began, most notably, is that **COVID-19 is an airborne virus**,¹ and does not spread as easily as we once thought by touching contaminated surfaces.² The Canadian Centre for Occupational Health and Safety states that "the virus that causes COVID-19 spreads from a person that is infected through the air, by respiratory droplets and aerosols."³ Additionally, the Ontario Science Table noted that "aerosols play a role in the transmission of SARS-CoV-2, especially in poorly ventilated indoor areas."⁴

While provincially legislated 'lockdowns', mask mandates, and gathering limits may be behind us, the COVID-19 pandemic is not over. With all that we have learned, **improvements to indoor air quality of the spaces we occupy are necessary and life-saving** to truly control how the SARS-CoV2 virus and other respiratory/airborne pathogens spread. One important strategy to support this change would be to thoroughly examine your HVAC systems, and implement the strategies detailed below and consider these strategies when undertaking new builds (i.e., the new fire hall and twin pad arena) which would reduce the need for retrofits.

Canada's Chief Science Advisor recommends that owners and operators of indoor public facilities "scale-up and monitor effective prevention interventions, such as improving ventilation in schools, workplaces and public places as part of a first line of prevention of SARS-CoV2 infection and other respiratory/airborne pathogens."⁵ These sentiments are echoed by the Ontario Society of Professional Engineers (OSPE) Indoor Air Quality group who have created many tools and resources to help Ontarians. [Recommendations](#) OSPE have developed, include:

- increasing the minimum number of air exchanges to at least 6 per hour in any indoor occupied space;
- improving ventilation requirements to follow the American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE) and the Canadian Standards Association;
- ensuring that HVAC systems and portable units use at least MERV 13 rated filters, and that portable filters with HEPA filters are in occupied spaces where air quality is a concern;
- having certified technicians install upper room ultraviolet germicidal systems; and
- committing to public transparency about the air quality of a space.⁶

There are clear links between increased ventilation, good IAQ, and the reduction of broad negative health impacts – including staff absenteeism⁷ - from both communicable and noncommunicable diseases. This has been known and promoted by public health professionals for an exceptionally long time. More than twenty

years ago, the World Health Organization European Centre for Environment and Health published a comprehensive report related to IAQ and policy making, noting that IAQ is an important determinant of health and IAQ policy can be developed and strengthened to “protect and promote health in the indoor environment”.⁸

Peterborough Public Health (PPH) recently identified that because of local and provincial protections, 265-291 lives were saved in the area served by our Health Unit⁹, while the CD HOWE Institute found that vaccines alone contributed to a “cost/benefit of -\$0.4 billion to \$2.1 billion without considering mortality.”¹⁰ Including the value of reduced mortality, this figure balloons to “\$27.6 billion, dwarfing the costs of the vaccines and savings associated with averting more minor cases.”¹¹ Given that a multilayer approach – including improved ventilation - is needed when preventing the transmission of COVID-19, **it is clear that the costs of inaction with the toll of COVID-19 transmission and other respiratory viruses is significant.**

As the Chair of our Board of Health, I am writing to you today, imploring you to thoroughly examine municipal/government HVAC operations, and to identify opportunities to make changes to your systems that can be implemented to improve indoor air quality and provide increased protection for the residents of the City and County of Peterborough, and of Curve Lake and Hiawatha First Nations.

The staff at PPH and I are ready to support your teams in moving this forward; please don’t hesitate to reach out if we can be of assistance.

Respectfully,



Councillor Kathryn Wilson
Chair, Board of Health

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¹ Public Health Agency of Canada. (2022). COVID-19: Main modes of transmission. Retrieved October 18, 2022 from: <https://www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection/health-professionals/main-modes-transmission.html>

² Chen T. (2021) Fomites and the COVID-19 pandemic: An evidence review on its role in viral transmission. Vancouver, BC: National Collaborating Centre for Environmental Health. Retrieved October 12, 2022 from <https://ncceh.ca/documents/evidence-review/fomites-and-covid-19-pandemic-evidence-review-its-role-viral-transmission>

³ Ontario Agency for Health Protection and Promotion (Public Health Ontario). (2022). COVID-19 transmission through short and long-range respiratory particles. Toronto, ON: Queen’s Printer for Ontario. Retrieved October 11, 2022 from https://www.publichealthontario.ca/-/media/Documents/nCoV/pHM/2022/01/covid-19-respiratory-transmission-range.pdf?sc_lang=en

⁴ Science M, Thampi N, Bitnun A, et al. (2022). Infection prevention and control considerations for schools during the 2022- 2023 academic year. Science Briefs of the Ontario COVID-19 Science Advisory Table. Retrieved October 11, 2022 from https://covid19-sciencetable.ca/wp-content/uploads/2022/08/Infection-Prevention-and-Control-Considerations-for-Schools-During-the-2022-2023-Academic-Year_20220825_published.pdf

⁵ Chief Science Advisor of Canada. (2022). Post-COVID-19 Condition in Canada: What We Know, What We Don’t Know and a Framework for Action. Retrieved December 15, 2022 from, https://ised-isde.canada.ca/site/science/sites/default/files/attachments/2022/Pre-Report_PCC_Dec2022.pdf

⁶ Ontario Society of Professional Engineers. (2022). Indoor Air Quality Reports. Retrieved December 8, 2022 from <https://ospe.on.ca/indoor-air-quality/>.

⁷ United States Environmental Protection Agency. (2022) Evidence from Scientific Literature about Improved Academic Performance. Retrieved February 7, 2023 from <https://www.epa.gov/iaq-schools/evidence-scientific-literature-about-improved-academic-performance>

⁸ WHO European Centre for Environment and Health Bilthoven. (1999). Strategic approaches to indoor air policy-making. Retrieved October 18, 2022 from: <https://apps.who.int/iris/bitstream/handle/10665/108169/E65523.pdf?sequence=1>

⁹ Peterborough Public Health. (2022). Peterborough Public Health Thanks Community for Efforts in Response to the COVID-19 Pandemic to Date. Retrieved March 2, 2023 from <https://www.peterboroughpublichealth.ca/peterborough-public-health-thanks-community-for-efforts-in-response-to-the-covid-19-pandemic-to-date/>

¹⁰ Wyonch, Rosalie, and Tingting Zhang. 2022. Damage Averted: Estimating the Effects of COVID-19 Vaccines on Hospitalizations, Mortality and Costs in Canada. Commentary 634. Toronto: C.D. Howe Institute. Retrieved March 3, 2023 from https://www.cdhowe.org/sites/default/files/2023-01/Commentary_634.pdf

¹¹ Ibid.