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Medical Officer of Health Urges Province to Explore Improvements to Ontario Building Code to Improve Indoor Air Quality

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Dear Honourable Ministers:

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 through consideration of simple amendments to the Ontario Building Code (OBC).

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]

Plainly, we need to action these evidence-based approaches and apply science to the laws that protect the residents of Ontario. O. Reg. 332/12: Building Code, Part 9 (Housing and Small Buildings), subsection 9.32.1.3 (3) speaks to the ventilation of rooms and spaces, however, falls short of OSPE recommendations of at least 6 air exchanges per hour and the use of HEPA filters or filters with a MERV 13 rating in HVAC systems.[7] **Amending the OBC to include these requirements would bolster the defined purpose of the Building Code**, which includes standards for public health and safety.

We must start including the quality of the air we breathe when we think of and refer to the safety of indoor settings. The OBC, like other building and construction codes in Canada, emphasizes air tightness and energy efficiency to cope with winter cold and summer heat, and while these too are important objectives, this may unintentionally result in poorly or under-ventilated public and private settings, creating additional threats to public health and safety.[8]

While we recognize the cost-implications of these changes, they could be operationalized in a way to minimally impact builders. Building housing supply is also a critical priority and so, economic considerations should factor in to changes to OBC. However, low to no cost solutions exist to improve indoor air quality.

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 Unit[9], 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 the OBC, and to identify opportunities to make changes to the Code that can be implemented to improve indoor air quality and provide increased protection for residents of Ontario.

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,

Original signed by

Councillor Kathryn Wilson
Chair, Board of Health

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cc: Local MPPs
Curve Lake First Nation
Hiawatha First Nation
Association of Local Public Health Agencies
Ontario Boards of Health

[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

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[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

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

[7] Ibid.

[8] Eykelbosh A. Public health and public libraries in partnership to promote healthy indoor air quality [blog]. Vancouver, BC: National Collaborating Centre for Environmental Health; 2022 Sep 14. Retrieved October 18, 2022 from: https://ncceh.ca/content/blog/public-health-and-public-libraries-partnership-promote-healthy-indoor-air-quality

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[11] Ibid.