February 19, 2021

The science is clear: Protective measures must fully account for aerosol transmission of the virus, as we said in January.

Dear Dr. Theresa Tam, Hon. Patty Hajdu, Premiers and Medical Officers of Health:

We are following up on our January 4, 2021 letter to you, now from over 640 Canadian and international experts. Our letter called urgently on the federal and provincial governments and public health agencies to implement effective measures to prevent aerosol transmission of the SARS-CoV2 virus, particularly in workplaces.

These issues have become more urgent due to the spread of more contagious virus variants, implicated in at least one very serious outbreak in an Ontario long-term care facility and now a Toronto meatpacking plant and other workplaces. Combined with the slow progress to vaccinate Canadians, this means that public and occupational health measures must be in place for months to come. However long they are needed, these measures **must** fully account for aerosol transmission of the virus.

Support for urgent action has grown significantly since our first letter, along with endorsement of our policy directions. This includes the strong statement about ventilation on January 12 from the Ontario Society of Professional Engineers (OSPE). Internationally, there are many important developments, including Germany's action to require members of the public to wear a higher level of PPE than cloth face coverings in settings such as public transportation.

There are also efforts similar to ours in the UK -- from *Fresh Air NHS*, signed by over 1000 health professionals (Fresh Air NHS); the British Occupational Hygiene Society (BOHS) and the British Medical Association's letter of January 13 (BMA letter). In Australia, a broad coalition of health professionals sent a letter modeled on ours to their government (Australian letter on aerosols). A recent important statement in *The Lancet* by Agius and colleagues supports the directions we recommended (Lancet piece by Agius). And finally, the American Industrial Hygiene Association has issued a joint consensus statement supported

by nine organizations, making recommendations similar to ours (AIHA joint statement).

Adding to the urgency of our recommendations is the report from the COVID-19 Advisory Table for Ontario Science "COVID-19 and Ontario's Long-Term Care Homes" (20 January 2021). Particularly alarming is the finding that "*Canada, at 81%, has the highest proportion of COVID-19 deaths in LTC among the 16 other OECD countries*" (figure 2).

In light of all this, we note the recently revised guidance from the Public Health Agency of Canada (PHAC). We are pleased to see that it takes aerosol transmission more seriously and now recommends improved ventilation overall (COVID-19: Guidance on indoor ventilation during the pandemic, 11 Jan 2021). PHAC now also allows for the possibility of a higher level of PPE in acute care settings based on an individual healthcare worker's Point of Care Risk Assessment (PCRA) (PHAC PPE guidance).

In Quebec, the CNESST (their occupational health and safety and workers' compensation agency) has issued guidance requiring N95 respirators or better for the care of patients with confirmed or suspected COVID-19. (CNESST guidance).

However, PHAC and the provincial governments and agencies need to go much further and endorse our practical recommendations, reiterated at the end of this letter.

While you review those recommendations, we urgently request that the provinces and territories, at minimum, bring their guidance into line with that of PHAC. We recognize that some provinces have begun to do this. For example, Alberta Health Services' materials about school ventilation and indoor air quality more accurately reflect current science than many other guidelines or requirements across the country (Alberta ventilation guidance). On the other hand, we are very concerned about recent guidance from BC (BC CDC and WorkSafeBC) and Ontario (PHO guidance), which insufficiently take aerosol transmission into account.

We are asking you to use your authority and work quickly with a range of appropriate experts to:

- ❑ **Update COVID-19 guidance to address the risk of aerosol transmission of COVID-19**
- ❑ **Promote strategies to reduce transmission risk in private homes and businesses through clear public health messaging and education, specifically:**

- Avoid the "3 C's" (crowded places, close-contact settings and confined and enclosed spaces), indoor mask wearing even when distanced, routinely opening windows to refresh the air, regular HVAC maintenance and filter replacement, turning on available vented range hoods and bathroom exhaust fans

- ❑ **Mandate and fund ventilation assessments and upgrades for essential public institutions such as schools and long-term care homes**
- ❑ **Ensure that no high risk healthcare worker (HCW) or other essential worker is denied access to a fit-tested respirator (N95, elastomeric or equivalent). The onus should be on employers to provide proper protective equipment rather than requiring workers to do individual point of care risk assessments (as PHAC recommends in its recent guidance), often with little time, training, fit-testing or suitable options:**
    - The situations where a respirator is required should go beyond the presence of "aerosol generating procedures" and should take into consideration aerosol generating behaviours (i.e. shouting, singing, coughing, sneezing, heavy breathing and even normal breathing and speaking), proximity to the patient, time spent with the patient, building air quality, and patient compliance with masking for source control
    - For other essential workers, respirators should be required in work situations involving crowding, close contact, presence of aerosol generating behaviours and poor building air quality
- ❑ **Recommend and deploy carbon dioxide (CO_2) monitors as a surrogate measure of inadequate ventilation to reduce long-range transmission risk in shared room air:**
    - During a TB outbreak, CO_2 concentrations above 1000 PPM significantly increased the risk of becoming infected with TB. Improving the building ventilation to a CO_2 concentration of 600 PPM stopped the outbreak in its tracks.
- ❑ **Include appropriately sized portable air filtration (HEPA) units, installed under appropriate professional guidance, as options for filtering out bioaerosols indoors when ventilation is suboptimal**
- ❑ **Engage engineers and other ventilation specialists to develop clear ventilation standards for indoor institutions and integrate these standards into the reopening guidelines for businesses with a higher risk of aerosol transmission (e.g. restaurants, bars and gyms)**

This requires clear public and occupational health messaging, education and enforcement. In addition to infectious disease physicians, governments must also engage the full range of relevant expertise to develop and implement guidance and solutions – including aerosol scientists, occupational hygienists,

and ventilation engineers, as well as communications experts to generate and broadcast clear preventive messaging.

We request your response in the very near future. We stand ready to work with you to make these recommendations a reality.

Sincerely

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