Decision Question: Should mask use in public settings be required under the Health Protection and Promotion Act (HPPA) s.22[i] to prevent the transmission of COVID-19 in Lambton County?

Mandatory Mask Use in the Community

Context

Lambton County is a community with low population density. Physical distancing can be maintained in most (not all) settings. Lambton County's population density is 42 people/km^2. Comparison to other regions:

- Wellington County: 82 people/km^2
- London: 186 people/km^2
- Windsor: 322 people/km^2
- Toronto: 4334 people/km^2[ii]

Evidence – Models & Studies

Early modelling exercises show a reduction in COVID-19 transmission with mask use in addition to other public health measures (ie. physical distancing, proper hygiene)[iii]. Mask use was most effective when:

- >80% of people use them correctly
- Used early enough in an outbreak situation
- Used as an addition to other public health measures

Limitations with models: only as good as assumptions used to create them and quality of information used for inputs.

A Lancet review article of 29 studies (of which only 3 were outside of health care settings) using masks in the prevention of SARS, MERS-CoV, and COVID-19 found some benefit to mask use[iv]. However, the overall evidence was qualified as "low certainty." The authors write: "although direct evidence is limited, the optimum use of face masks, in particular N95 or similar respirators in health-care settings and 12-16 layer cotton or surgical masks in the community could depend on contextual factors; actions needed at all levels to address the paucity of better evidence."

Mask-related considerations that remain unclear

- What is the benefit if masks are used in place of physical distancing?
- What are the potential harms of mask use? Examples include: difficulties communicating (especially for those who read lip movements), psychological effects on children, direct or indirect harms from the behaviour of mask users towards non-users, harms created by justification required to explain non-mask compliance (ie. personal health information).
- Will mask use make people less careful about physical distancing or less likely to isolate when ill?
- Will mask use make people touch their faces more often, thereby increasing transmission risk to themselves?
- What will be the adherence to masking over time? Will there be "mask fatigue" that limits the sustainability of this intervention?
- What will be the prevalence of proper use of masks in the population, given our experiences with other behaviour change interventions?

Ethics[v]

How does the intervention affect the autonomy of the population?

- Compulsory masking would remove autonomy from individuals required to mask in order to access basic needs in public settings. It also may create harms to autonomy from others who seek justification for the lack of mask wearing by a member of the public.

How are the benefits and burdens distributed?

- It is unclear at this time, however there may be a disproportionate burden on:

    - People who may not be able to afford/access masks
    - People who may not be able to wear masks, and
    - People who may be denied access to critical needs as a result of not masking

What are the costs and opportunity costs of the intervention?

- Simple cloth masks can be made or purchased at low cost (although none of the studies have demonstrated their effectiveness and they may be less effective at containing droplets than N95 respirators or surgical masks).
- The opportunity cost of a focus on mask use may be significant if people use masks *instead of* other public health measures such as physical distancing, which are likely to be more effective.

Consistency

The decision to require community mask use through an HPPA class order is not consistent with prior uses of this power. First, class orders through the HPPA are not the norm, though they have become increasingly used through COVID-19 in Ontario. Second, the most usual scenario for the use of a s.22 order is against an identified or identifiable individual who is known to be creating a specific hazard with respect to a communicable disease (e.g., a person with active tuberculosis who refuses to take treatment and continues to have social contact with others). Finally, when viewed in the context of other diseases of public health importance it is worth noting the following:

- In 2020, the Canadian Cancer Society projects that 6,900 people will die in Ontario from lung cancer [if current trends continue in the second half of the year, Ontario can expect just over 5,000 deaths from COVID this year][vi]. 90% of lung cancer is caused by smoking cigarettes, so over 6,000 deaths a year in Ontario are preventable by eliminating the source hazard - cigarettes. There is robust, high-quality evidence that stopping people from smoking can save lives - but s.22 orders related to banning tobacco have rarely been used to fight this deadly disease.
- From 2011 to 2015, there were almost 7000 cases of vaccine preventable illness every year in Canada[vii]. If 90% of these could be prevented from vaccination, we could prevent over 6000 cases of disease every year by making vaccines mandatory. There are decades of robust, high-quality, high-certainty evidence on vaccine safety and effectiveness, and it is an intervention that benefits *both* the person who is vaccinated as well as the population. Section 22 orders have not been used to mandate vaccination (nor has it been mandated by other legislation), which would prevent many cases of illness and have tremendous benefit at the population level.

In principle, one reason these other orders have not been issued is that, historically, Ontarians value personal autonomy highly enough that the threshold for evidence of benefit has not yet been passed with decades of high-quality, high-certainty evidence on the risks of tobacco use and the benefits of immunization. So it is not consistent to use these same orders to override personal autonomy for an intervention, to require a specific behaviour with unclear benefits for the person who does it, given the low certainty of benefit for the population.

Equity

Equity concerns related to this intervention have not been fully described or characterized. However, they may include:

- Lack of access to masks that disproportionately burdens some groups of individuals
- Denial of essential or important goods and services to those who do not or cannot adhere to masking requirements

- The potential for differential enforcement of the order resulting in higher burden on marginalized groups.

Enforcement

Enforcement of HPPA orders is a lengthy, and often slow process, which requires documentation of lack of compliance, followed by request for enforcement through the courts. Medical Officer of Health s. 22 HPPA orders can be appealed as well to the Health Protection Appeals Review Board with relative ease.

Overall Assessment

Due to the low quality of evidence of benefit, the low certainty of benefit, the presence of other mechanisms to achieve the objective of disease transmission (physical distancing and case/contact identification and isolation), the inconsistency with prior decisions related to the use of orders, the lack of discussion of potential harms, and the general limitations related to the enforcement of HPPA orders, the clinical decision of the Medical Officer of Health is not to use the HPPA for this purpose at this time.

Endnotes

[i] Health Protection and Promotion Act, R.S.O. 1990, c. H.7. Order by M.O.H. re communicable disease. 22 (1) A medical officer of health, in the circumstances mentioned in subsection (2), by a written order may require a person to take or to refrain from taking any action that is specified in the order in respect of a communicable disease. Retrieved from https://www.ontario.ca/laws/statute/90h07#BK27

[ii] Statistics Canada 2016

[iii] Stutt, R., Retkute, R., Bradley, M., Gilligan, C., & Colvin, J. (2020). A modelling framework to assess the likely effectiveness of facemasks in combination with 'lock-down' in managing the COVID-19 pandemic. *Proceedings Of The Royal Society A: Mathematical, Physical And Engineering Sciences*, *476*(2238), 20200376. doi: 10.1098/rspa.2020.0376

[iv] Chu, D., Akl, E., Duda, S., Solo, K., Yaacoub, S., & Schünemann, H. et al. (2020). Physical distancing, face masks, and eye protection to prevent person-to-person transmission of SARS-CoV-2 and COVID-19: a systematic review and meta-analysis. *The Lancet*, *395*(10242), 1973-1987. doi: 10.1016/s0140-6736(20)31142-9

[v] Marckmann, G., Schmidt, H., Sofaer, N., & Strech, D. (2015). Putting Public Health Ethics into Practice: A Systematic Framework. *Frontiers In Public Health*, *3*. doi: 10.3389/fpubh.2015.00023

[vi] Brenner DR, Weir HK, Demers AA, Ellison LF, Louzado C, Shaw A, Turner D, Woods RR, Smith LM. Projected estimates of cancer in Canada in 2020. CMAJ 2020;192:E199-205.

[vii] Canada, P. (2020). Archived: Vaccine Preventable Disease: Surveillance Report to December 31, 2015 - Canada.ca. Retrieved from https://www.canada.ca/en/public-health/services/publications/healthy-living/vaccine-preventable-disease-surveillance-report-december-31-2015.html#fig1

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