Submission to the COVID-19 Response Inquiry

I submit for the Government's consideration once again the request for urgent coordinated national action on aerosol transmission of COVID-19.

This was first presented to the National and State Governments in February 2021, and the lack of action on this has resulted in the ongoing unmitigated disaster of COVID-19 in Australia, now one of the leading causes of death.

Until aerosol transmission of disease is addressed, we will not be ready for "The Next Pandemic" either, as the neglect of this route of transmission is the key failure in quarantine and healthcare.

There follows a summary of the impacts of neglecting aerosol transmission on me personally and professionally, including the impact to my patients.

I am:

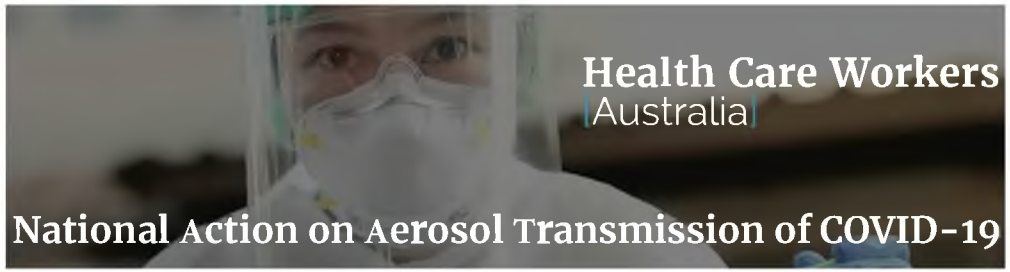
- Suffering moral injury due to the lack of safety for my patients in healthcare settings. I am unable to participate in the ongoing harm. To place COVID19 negative and positive patients in shared air with hygiene theatre practices such as a porous curtain between patients is entirely inadequate to provide safe care. As you know the research shows nosocomial COVID-19 has a 7-10% death rate. It's unconscionable.

- Unable to use public transport, essential services such as grocery stores and chemists without incurring significant risk of contracting COVID19, the consequences of which are unacceptable to me.

- Unable to access safe dental care near to my home. I have to travel for 1 hour to reach the only dentist in NSW I know of that has" Safer Air" practices.

- Unable to access reliably safe education for my child. We must discuss with the school and optimise each activity, one at a time. This is suboptimal as it is much less safe than when the whole school participates in COVID-Safe learning, and over the last two years I have observed the impacts of COVID infections in the other children on their attendance and learning.

Finally, I have been astonished at the National Cabinet process, with regards to "opening up". It was entirely obscure, the reason for permitting the entry and uncontrolled circulation of a novel virus which we knew would cause massive excess deaths and long-term illness based on overseas data. COVID-19 has been and continues to be treated as an "exceptional" disease, in that we chose to ignore it, obscure data on it, and downplay it.



4 February 2021

The Hon Greg Hunt MP
Minister for Health and Aged Care
Parliament of Australia
Via email: [redacted]health.gov.au

Dear Minister Hunt

Australia must take urgent coordinated national action on aerosol transmission of COVID-19.

Urgent upgrades of respiratory protection for healthcare workers are needed as well as improved ventilation in healthcare settings, other indoor public spaces and private homes.

In July of 2020, 239 international scientists brought the issue of airborne transmission of SARS-CoV-2 to the world stage.[1] Since the publication of their letter, there has been increased recognition of this route of transmission from the World Health Organization (WHO), Centers for Disease Control and Prevention (CDC), the European Centre for Disease Prevention and Control (ECDC), and other national disease control agencies.[2] [3] [4]

Despite overwhelming evidence to support airborne, or aerosol, transmission of SARS-CoV-2 [5] [6] [7] [8] [9] [10] [11] this has not translated into appropriate and consistent public health and infection prevention control measures across Australian jurisdictions. While other countries promote the "3 Cs" (avoiding closed spaces, crowded places and close-contact settings), Australian guidelines continue to stress droplet and contact transmission (guidelines from CDNA, ICEG, NSW CEC and others), which have led to a focus on measures of limited or insufficient effectiveness, such as deep-cleaning, handwashing, surface disinfection and 1.5-metre physical distancing.

It is imperative that people in all sectors understand the risk of airborne transmission, as well as the actions that can be taken to combat it.

This open letter has been sent to the prime minister, federal health minister, state and territory premiers and health ministers, chief medical officers of the federal, state and territory governments and the members of the AHPPC, the CDNA and ICEG.

To this end, specific strategies to reduce indoor aerosol transmission of COVID-19 are adeptly summarised in the Chief Science Advisor of Canada's COVID-19 Expert Panel's bioaerosol report,[12] the Occupational Safety and Health Administration (OSHA) Alert,[13] the Harvard TC Chan Risk Reduction Strategies for Reopening Schools Report,[14] the CDC's "COVID-19 Ventilation in Buildings" guidance,[15] the European CDC's "Heating, Ventilation and Air-Conditioning Systems in the Context of COVID-19: First Update",[16] and the "ASHRAE Position Document on Infectious Aerosols".[17]

The importance of airborne transmission has been highlighted by the German government, which has committed 500 million Euros to mitigating its effects in public buildings[18] "Lüften", or airing, is now German policy and has been longstanding in South Korea, Vietnam, Taiwan and in other regions which embraced the principles of the 3 Cs early on in the pandemic. Indeed, China's very first announcement of this novel coronavirus on 31st December 2019 also made public recommendations for ventilation of enclosed spaces, avoiding crowded indoor places and wearing masks.[19] The initial clinical guidance[20] on 24th January 2020 strongly recommended airborne PPE for clinicians. Italy, New Zealand and Japan have all accepted and now promote aerosol messaging.

With this evolving science, the importance of monitoring and improving ventilation has become increasingly clear and thus US, UK and Canadian government agencies have produced improved guidance.[21] [22] [23] [24] However, despite increasing global recognition and mitigation efforts, there continues to be a lack of attention to the importance of ventilation in Australia. The Australian Government has not produced any specific guidance or mandated relevant standards.

This lack of acknowledgement of aerosol transmission has had far-reaching effects. It has contributed to the healthcare outbreaks associated with over 3,500 healthcare worker infections in Victoria, healthcare facility closures across Melbourne and in Burnie, Tasmania. It seeded outbreaks into the community, resulting in further economic and social upheaval.

More recently, essential workers, such as paramedics and bus drivers transporting people in hotel quarantine, continue to use "droplet and contact precautions", wearing poorly-fitted surgical masks, which unlike airborne protections (fit-tested N95/P2 respirators, etc.), do not afford any satisfactory level of protection against airborne pathogens in high-risk environments.[25] This has led to infections in these workers and spread into the wider community, resulting in outbreaks with major economic and social disruption.

To reflect the current scientific evidence, we call on the Australian authorities to:

- Take the most urgent measures to reduce the risk of workers at the international border and in hotel quarantine becoming infected. This must include the provision and wearing of airborne respiratory protection at all times for these workers, urgent vaccination with the highest efficacy vaccines, and urgent audits and upgrading of ventilation infrastructure. Delays in these simple measures will increase the risk of further outbreaks in Australia and potentially allow the establishment of highly

transmissible variants in the community which cannot be controlled as 'easily' as we have controlled outbreaks to date.

- Update all COVID-19 guidance to emphasise the risk of aerosol transmission of COVID-19.
- Mandate and fund ventilation assessments and upgrades of essential public institutions, such as hospitals, schools, aged care facilities and prisons.
- Promote strategies to reduce transmission risk in private homes, businesses and other enclosed spaces through clear public health messaging and education. Avoid the "3 Cs" through indoor mask wearing when community transmission is present (even when physically distanced), routinely opening windows to refresh the air, regular HVAC maintenance and filter replacement or upgrade.
- Ensure that no high-risk health care worker or other essential worker, including those in hotel quarantine, is denied access to a fit-tested respirator (N95, elastomeric or equivalent) for suspected or confirmed COVID-19 positive patients.
- Risk assessment for health care workers should go beyond the presence of "aerosol generating procedures" and should take into consideration aerosol-generating exposures (e.g., shouting, singing, coughing, sneezing, heavy breathing), proximity to the patient, time spent with the patient, indoor air quality, and patient compliance with mask-wearing for source control.
- Fast track research and recommendations into indoor air quality. This includes the study of carbon dioxide (CO2) monitoring as a surrogate measure of indoor air quality and airborne pathogen risk [26] with a putative threshold set at 600 PPM based on termination of a TB outbreak.[27]
- Include recommendations on usage of air cleaners such as appropriately sized portable air filtration (HEPA) units or simple, practical and low-cost homemade devices using MERV-11/13 filters and box fans, as options for filtering out bioaerosols indoors when ventilation is suboptimal.
- Engage engineers and other ventilation specialists to develop clear ventilation standards for indoor environments and integrate these standards into the reopening guidelines for businesses with a higher risk of aerosol transmission (e.g., restaurants, bars and gyms).
- Convene a suitably diverse group of experts from aerosol science, engineering, HVAC, occupational hygiene, OH&S and organisational psychology to work alongside infection control experts, in accordance with the Australian Governance Principles.

Future respiratory viral pandemics are a certainty.[28]

Investing in ventilation, indoor air quality and appropriate personal protective equipment now will save lives and prevent economic hardship in the future. The public health "sanitary reformers" of the late 1800s led the way in overcoming water-borne diseases like cholera and typhoid fever through investments in sewer systems and water treatment plants [29]. We are certain that there were those who thought the task at hand was insurmountable.

We hope that Australia will consolidate the excellent work done so far in safeguarding our nation by rapidly translating the science on aerosols into action on the ground. Addressing the fundamentals of disease transmission is critical to mitigating disease transmission.

Acknowledging and taking action on airborne transmission must be a key priority.

It must be appropriately managed in all sectors to ensure an enduring recovery for Australia.

Yours faithfully,

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