COVID-19 Inquiry - Public submission by Krystal Ha

Thank you for the opportunity to make a submission and share my views and experiences about the Government's COVID-19 response.

As a young Australian, I feel like I was especially impacted by COVID-19. It impacted my education and relationships and it felt as if my demographic - for social and economic reasons - was less well-equipped than many others to handle the hardships.

While the experience has given me a range of views about the ways government can support individuals and communities - even the best-managed pandemic will have terrible consequences. I think the main goal should be pandemic prevention.

It seems to me that Australia's governments invest heavily in hazard reduction for other natural disasters and are increasing their efforts because of climate change. But I'm not aware of any similar investment in reducing the likelihood of pandemics, even though the risk to the average Australian seems much higher.

In that context, I'd like to raise a few issues that I think are important and could make sure we're heading in the right direction.

My points address the following Terms of Reference:

- Key health response measures (for example across COVID-19 vaccinations and treatments, key medical supplies such as **personal protective equipment**, quarantine facilities, and public health messaging).
- Broader health supports for people impacted by COVID-19 and/or lockdowns (for example mental health and suicide prevention supports, and access to screening and other **preventive health measures**).
- **Support for industry and businesses (for example responding to supply chain and transport issues, addressing labour shortages, and support for specific industries).**

Indoor air quality could make a big difference, and could be improved by adopting emerging technology such as far UV-C

I believe that the Australian government should create clear codes of practice and standards for indoor air quality (IAQ) and introduce regulations for high-risk spaces. Every year, Australians fall ill as a result of exposure to airborne pathogens in indoor environments. Some of the most vulnerable members of our community, the elderly and immunocompromised, are particularly exposed to this risk. Better controls on IAQ would not only help protect us against current and

future pandemics, but they can also reduce the negative health outcomes caused by other hazards like indoor smog, toxic materials, non-pandemic respiratory diseases, and other known airborne health hazards.

Despite Australians spending at least 90% of their time indoors, the Australian Department of Climate Change, Energy, the Environment and Water highlights that Australia has no specific controls on IAQ aside from the limited control specified by Safe Work Australia. Without nationalised standards and codes specifying minimum performance requirements for infection control, I worry that the nation will default to ineffective interventions that provide little protection against pathogens.

Clear and effective codes of practice and standards for IAQ Australia would provide clear metrics and targets for air quality with the goal to reduce pathogen transmission. Without clear metrics and targets, I worry that manufacturers and innovators will create products that are ineffective at cleaning indoor air to suitable levels to reduce pathogen transmission. Evidence-based standards for IAQ which are informed by the latest scientific research into respiratory disease, air filtration and sanitation, public health, and behavioural science would provide the correct regulatory environment to ensure effective IAQ interventions are available to the Australian public. Additionally, clear requirements should be specified for high-risk environments in which airborne infections are potentially life threatening such as in aged care facilities, hospitals, healthcare facilities, and other facilities caring for the immunocompromised.

The Lancet COVID-19 Commission Task Force has proposed Non-infectious Air Delivery Rates (NADR) so we now have measurable goals for ventilation and filtration targets that protect against infectious disease transmission. The Task Force highlights that, while there is ongoing scientific debate over what metrics and targets are optimal, there is agreement that current practices are insufficient. I recommend that the Inquiry read the report to gain a better understanding of the considerations in setting effective codes and standards for IAQ

IAQ codes and standards could be defined by the Australian Building Codes Board (ABCB) in the National Construction Code. The ABCB could draw on the expertise of the Australian Commission on Safety and Quality in Health Care and the Australasian Health Infrastructure Alliance (AHIA), as well as the existing IAQ work done by the ABCB. ASHRAE Standard 241, Control of Infectious Aerosols may also be helpful in informing codes and standards.

I believe that clearer codes of practice and standards for IAQ can help safeguard all Australians against airborne pathogens in indoor environments. With the right regulatory environment we can reduce the spread of pathogens, reduce the burden on our public health system, and safeguard the most vulnerable members of our community.

In a worse pandemic, next-generation PPE may be essential to keep critical infrastructure functioning.

In a paper by [redacted] called "Electric Power Grids Under High-Absenteeism Pandemics: History, Context, Response, and Opportunities" they explain that the electric power systems, which modern society relies on, drive interdependent services, such as water systems, communication networks, transportation systems, health services, etc. They argue that modern power grids require constant attention in such a way that a health emergency that limits the available workforce could cause a cascading collapse. Addressing Terms of Reference one, two and six requires addressing this challenge.

They argue that COVID-19 was unlike many other historic pandemics because the majority of deaths occurred in people over 65, while the majority of employees essential to the continued operation of the power grid are under 65.

If a future pandemic was more severe in a younger age group, it could lead to cascading failures of critical infrastructure in a way that wasn't possible without highly optimised (and hence brittle) modern infrastructure. That fact leads them to argue that safeguarding the nation's power grid in the face of rapidly evolving outbreaks is among the top priorities.

On that basis, I recommend that the Inquiry recommend that the Office of Supply Chain Resilience, the Home Affairs Critical Infrastructure Centre and the National Emergency Management Agency collaborate on preparation and response planning for a pandemic that interrupts supply chains and causes workforce shortages in critical infrastructure sectors.

Both [redacted] and a separate paper by Gopal et al titled "Securing Civilisation Against Catastrophic Pandemics" provide practical detail on what this might look like. This includes ensuring that power generators, transmission providers and distribution providers have robust pandemic plans and the ability to provide high-quality PPE and other safeguards to their workers during a crisis. Given the importance of generating confidence in the workforce, the Government's plans and exercises need to include the industry and be transparent to the public.

The notable public health challenges of history have been solved by innovative people bringing new ideas and perspectives to the challenge of health. As the scope of public health has grown, so has its ability to improve longevity and quality of life.

The terms of reference of this inquiry are fundamentally about doing better in the future. Given how terrible future pandemics could be – the best thing the Inquiry could do for the future is to prioritise pandemic prevention, including the novel ways pandemics could occur in the future. While that will require uncomfortable thinking about unexpected topics and emerging technologies, these are the issues that could have the biggest impact towards securing a healthier future.