I was excited to see Australia announce the creation of a Centre for Disease Control. COVID-19 made it clear that Australia needs an institution of this kind. I'm also glad that Australia has commissioned this Inquiry, including to inform the priorities of the CDC.

There's a long-standing public health adage that "prevention is better than a cure". The same logic applies to pandemics. Pike et al in "The Origin and Prevention of Pandemics" show that the "wait-and-respond approach is not sufficient and that the development of systems to prevent pandemics *before* they are established should be considered imperative to human health."

I think this insight should be foundational to the direction of this Inquiry.

My submission focuses on a select issues, but my overall view is that pandemic prevention should be a key priority of the CDC and that our institutions and leaders should never concede that pandemics are inevitable.

Sources:

The Origin and Prevention of Pandemics - PMC (nih.gov)

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 Work Safe 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.

Citations:

National Safety and Quality Health Service Standards (second edition) | Australian Commission on Safety and Quality in Health Care

Handbook: Indoor air quality (abcb.gov.au)

In the context of Terms of Reference 5, support for industry, including in the context of labour shortages, I recommend that the Inquiry consider the paper by Gopal et al from the Geneva Centre for Security Policy titled “Securing Civilisation Against Catastrophic Pandemics”.

The paper begins by unpacking ways that pandemic risk is increasing – in particular the possibility of engineered pandemics. The paper also makes a useful distinction between “stealth” and “wildfire” pandemics, which has deep implications for our policy response.

Importantly, the paper goes on to explain that in a pandemic worse than COVID-19, workers who operate critical infrastructure may die or refuse to attend the workplace. If that happens, a modern interconnected society would rapidly collapse. The second-order consequences from a lack of electricity causing cascading failures in other critical sectors would far exceed the immediate consequences of the virus.

When the Inquiry thinks about support for industry, the primary goal of that support should be keeping the lights on during a future, worse, pandemic. If critical infrastructure fails, other questions like financial support or community support rapidly become irrelevant or impossible.

Among the various recommendations, Gopal et al argue that “pandemic-proof personal protective equipment” (P4E) is essential to dealing with the risk of failing critical

infrastructure. The argument for P4E is that essential workers (such as those critical to providing food, water, power and law enforcement) need the confidence that they can continue to work without endangering themselves and their loved ones. The paper provides requirements for what this kind of equipment would need to look like.

The paper also includes discussions about definitions of essential workers, ways of preparing the workforce and supply chain, and a discussion of social and technological approaches to slowing the spread of future pandemics.

I recommend that the inquiry read Securing Civilisation Against Catastrophic Pandemics and treat it as a foundation stone for other recommendations. That is, our first priority has to be actions that take these worst-case scenarios off the table. Action against other elements of the terms of reference are only possible and impactful if we can be confident that we're in a position to prevent a social collapse.

Citations

- Securing Civilisation Against Catastrophic Pandemics | Geneva Centre for Security Policy (October 2023)

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.

[redacted]