

# Individual Submission for COVID-19 Response Inquiry

## Introduction

I am making this submission as an individual interested in this inquiry and the influence that it will have. I am a student at the Australian National University and as a young person future pandemics, especially engineered ones, are - I believe - one of the greatest threats we face in the modern world. I believe much can be done by government not only to prepare for the next pandemic but also help prevent it by reducing the risk of one occurring. As a young Australian I very much feel as though COVID-19 especially impacted me; my education and relationships with my friends and family especially. and it felt as if my demographic - for social and economic reasons - was less well-equipped than many others to handle the hardships.

It is in this context, that I want to raise a few issues that I think are important and could make sure we're heading in the right direction. My submission will make two arguments:

- The risks of accidents and is too high, we should reconsider laboratory safety
- Early detection of novel pathogens with pandemic potential

The scope of the inquiry - contained within the terms of reference - that I will largely focus on will be:

- Governance including the role of the Commonwealth Government, responsibilities of state and territory governments, national governance mechanisms (such as National Cabinet, the National Coordination Mechanism and the Australian Health Protection Principal Committee) and advisory bodies supporting responses to COVID-19.
- 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).

## Argument 1 - Improve Laboratory Safety<sup>12</sup>

Gopal et al in "Securing Civilisation Against Catastrophic Pandemics" use a range of tools to estimate the likelihood of different future pandemic scenarios. In their estimates of 'worst case' pandemics, they conclude that dangerous pathogens leaking from labs are currently the most likely cause. This isn't surprising, given that the original SARS virus escaped from labs on at least 3 occasions in the early 2000s and the 1977 flu pandemic was caused by a lab leak. This issue addresses many of the Inquiry's terms of reference, including the role of the Commonwealth as a regulator in this space.

One of the factors Gopal et al consider in estimating the likelihood of a pandemic emerging from a lab leak is the annual accidental infection rates of laboratories. Using data from a report by the Center for Arms Control and Nonproliferation, labs registered with the Federal Select Agent Program have accidental infections at a rate of 0.246% per laboratory per year and NIH-funded BSL-3 and BSL-4 laboratories have accidental infections at a rate of 1.6% per laboratory per year.

---

<sup>1</sup> L. Klotz, "The Risk of Lab-created Potential Pandemic Influenza", Center for Arms Control and Nonproliferation, 2019.

<sup>2</sup> See Securing Civilisation Against Catastrophic Pandemics pg 32

While both of these figures seem alarmingly high, Gopal et al argue that the fact that the more tightly regulated Select Agent laboratories exhibited a 6.5-fold lower accidental infection rate strongly suggests that tighter regulations and more regular inspections improve safety.

In Australia, we seemingly have remarkably lax regulations of our equivalent labs. The regulator last updated the guidelines for PC4 facilities in 2007, and the annual reports show that it has only conducted a single inspection of one PC4 facility in the last 3 reporting years.

It seems as if Australians have remarkably low confidence that biosafety is taken seriously here. I understand that in some places its even seen as a mark of respect for scientists working on pathogens being willing to take the personal risk to be the kind of person that 'catches their experiment'. If standards are low in Australia, it's scary to think how much lower they might be in countries that typically have less stringent regulation or higher rates of corruption.

One of the key lessons of COVID is that public confidence in expert advice is essential. Therefore I would ask that the Inquiry recommend Australia have an independent review of its PC3 and PC4 facilities. The review should consider the overall risk to public health from research facilities, the suitability of current Australian regulations, the extent of compliance with existing regulations and the suitability of current oversight regimes. In light of any findings, the review should also consider whether efforts are necessary to build public trust and/or ensure that Australia has international capacity building to ensure Australians aren't at risk from poorly run labs overseas.

## Argument 2 - Early Detection of Novel Pathogens

Preventing future pandemics should pair efforts at stopping pathogens from emerging, with ensuring we have the plans and technologies to rapidly combat them if they do.

Taking 17 November as the date of first human SARS-COV-2 infection, there were 44 days between first infection and first response (31 December 2019), 54 days between first infection and genome publication (10 January 2020), and 67 days between first infection and the lockdown of Wuhan (23 January 2020). For SARS-CoV-2, this was enough time to spread across the world. Modelling shows that if Wuhan had locked down one (16 Jan), two (9 Jan) or three weeks (2 Jan) earlier, cases of COVID-19 in Wuhan could have been reduced by 66%, 86% or 95% respectively.

Despite this failure, we know that success is possible. We can stop an outbreak from turning into a pandemic if we can quickly enact the right response. During the first year of COVID-19, both Taiwan and New Zealand achieved 100 consecutive days free of community transmission. This was largely due to an understanding of the seriousness of SARS-CoV-2 while case numbers were low. The 2002-2004 SARS, ebola, and many other examples also demonstrate that containment is possible.

I think everyone in the world would wish that Wuhan had the capability to detect a novel pathogen outbreak, disseminate information, and respond in a timely manner. Early detection and action could have lead to containment rather than a pandemic – saving millions of lives and trillions of dollars.

However, in Australia, we are in no position to criticise China. We also don't have early detection capacity and we don't have plans to contain novel pathogens at jurisdictional or national levels. When a novel pathogen

emerges here, we are also unlikely to be able to identify it and act early enough to prevent it from spreading beyond our shores.

This Inquiry should recommend that the CDC write a white paper proposing options for a national system for the early detection of pathogens, including setting out the costs and benefits of such a system, and put it to the government before the end of 2024. The white paper should explore a mix of proven techniques and emerging technologies - including metagenomics. The goal should be an enduring system that can protect the lives and livelihoods of Australians from the next pandemic.

## Conclusion

Thank you for giving me the opportunity to raise these ideas in this forum. I hope my submission is read and listened to as I think that the problems and potential solutions I have discussed here are of the utmost importance. 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. Future pandemics could be absolutely terrible and therefore 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.