Submission for the COVID-19 Response Inquiry Panel

My name is Gaetan Selle, I am a permanent resident in Australia and I work in video production. I have been thinking a lot about global catastrophic risks from nuclear war, artificial intelligence and biorisks are definitely high on my list of concerns.

My submission underscores the importance of Australia's shift towards a proactive stance in preventing future pandemics, rather than exclusively concentrating on preparedness. As a resident of Australia, I experienced the profound disruption that COVID-19 wrought upon my life, mirroring the experiences of countless others. It impeded not only my professional endeavors and interpersonal connections but also served as a stark reminder that COVID-19 was, in many ways, a mere dress rehearsal for a far graver threat. The contemplation of how drastically life could have been altered had the mortality rate surged to a harrowing 50% is a haunting prospect that underscores the urgency of our preventative measures.

Surely this investigation should analyze all avenues for the administration to better assist citizens in the next pandemic. However, even a well-managed pandemic brings awful outcomes. Hence, deterrence should be the main ambition.

I know Australia invests heavily in mitigating natural disasters, increasing due to climate change. But I am unaware of similar efforts to curb pandemics, despite higher average risk for Australians.

The risk of engineered pandemic

In that framework, I want to surface important issues to steer us appropriately. One prevention area demanding more gravity is the expanding prospect of man-made pandemics. The inquiry's scope focuses on expecting pandemics. Evidence shows effectively doing so necessitates weighing this possibility.

Experts, including MIT Professor Kevin Esvelt, assess that the technologies necessary to design, create and release dangerous and novel pathogens may become widely available by 2025.

A technology enabling millions of potential casualties in the wrong hands is clearly unacceptable. Recognizing this danger, President Biden ordered new rules on October 30th, 2023. His executive order mandates developing a framework within 180 days to effectively screen risky DNA orders, institute access controls, provide technical screening guidance, and oversight. Currently, about 20% of DNA requests go unvetted. The order also threatens to cut funds to any provider not following the forthcoming best practices after the 180-day deadline.

Australia already regulates importing synthetic DNA. This investigation should advise the government to urgently update that system to align with the US rules. That means requiring Australian labs importing DNA to check all orders under the new American procedures.

Following the US DNA regulations would largely address the most pressing risks experts like Professors Esvelt and Schmidt raise. But it is not a permanent fix. Ongoing biotechnology advances and more sophisticated AI could help bad actors circumvent these regulations unless rules keep pace. Safety measures for AI must also advance.

Thus, this inquiry should recommend the Industry Department collaborate with Health and the CDC. Together they can develop minimum safety standards for frontier AI models deployed in Australia. The goal is to identify and restrict models that pose biosafety dangers. We should clearly tell developers and users that AI with potential "dual-use" catastrophes risks is unwelcome here. Finally, we must closely track progress in biotechnology to prevent engineering pathogens from becoming widely feasible.

Lab leak will probably be the source of the next pandemic

High incident rates in labs handling hazardous pathogens shocked me. A Manheim and Lewis study found 71 reported cases of risky human-created pathogen exposures from 1975-2016, likely underreported. An anonymous Belgian survey uncovered nearly 100 lab-acquired infections over 5 years. A lab leak also may have sparked the 1977 flu pandemic. (https://www.zotero.org/google-docs/?aBE8dI)

Given pandemics can destroy millions of lives and trillions in wealth, current safety measures seem inadequate. While science drives progress fighting pandemics, responsibility matters.

As an outsider, oversight of Australian containment facilities seems opaque. The Gene Technology Regulator focuses largely on GMOs, revealing little about facilities.

Available data shows the Regulator certified a record 132 facilities last fiscal year, reaching 1,874 "high-level" labs now operating. Yet only 49 inspections occurred, none examining the highest-tier PC4 facilities. Reviews show no PC4 inspections for the past 3 years, with just one in 2020-2021. Despite so few reviews, 26 certified facilities showed noncompliance. The report called this a “cooperative approach”, finding no fault.

Additionally, facility guidelines seem outdated. PC4 rules date back to 2007, referencing air filter and lab safety standards untouched since the early 2000s. One filter standard drew HVAC industry criticism for relying on inaccurate 1950s research, now superseded.

While an unflattering portrait, this may simply reflect limited resources. The Regulator has just 51 staff across diverse oversight duties. Overall though, regulation seems to fall short of public expectations. I would have assumed facilities meet cutting-edge global standards, with multiple yearly inspections.

I think that this Inquiry should recommend a thorough review of biosafety – including the suitability of requirements, degree of adherence, and adequacy of oversight – for all research that involves human or animal pathogens. The review should include a risk

assessment that takes into account the potentially catastrophic global consequences of errors, and ensures that our approach to mitigation is proportionate to that risk.

Preventing social collapse

Modern society depends on electricity from interconnected grids powering water, communications, transport, healthcare, and more. Today's grids need endless diligence, where health crises limiting staff could spur catastrophic collapse. Addressing this jeopardy satisfies Inquiry priorities one, two, and six.

A paper by Wormuth et al note COVID-19 differed from past outbreaks with higher elderly mortality. Younger employees predominantly staff essential grid operations. Future pandemics impacting younger groups more severely might devastate infrastructure in ways impossible without tightly optimized, fragile systems. Thus, they contend safeguarding the power network amid contagions is critical.

Accordingly, I advise this investigation recommend Supply Chain Resilience, Home Affairs Critical Infrastructure, and Emergency Management collaborate. They can devise preparation and response plans for pandemics disrupting supply chains and provoking staff scarcities in vital sectors.

Wormuth et al and Gopal et al's paper "Securing Civilization Against Catastrophic Pandemics" offer specifics. That includes robust contingency schemes for generators, transmitters, and distributors - plus capacity to provide high-grade protective equipment and other safeguards for workers during crises. Given the importance of reaffirming confidence, industry engagement and public transparency seem key across governmental plans and simulations.

Throughout the annals of history, the domain of public health has undergone a profound expansion. An observer from bygone eras might have dismissed the significance of innovations like the advent of microscope lenses, the intricacies of sewer infrastructure, the introduction of citrus fruits aboard seafaring vessels, or myriad other advancements as unrelated to the realm of public health. However, this relentless broadening of the public health purview, embracing emerging challenges and novel technologies, has unequivocally yielded significantly improved outcomes.

The present inquiry presents a unique opportunity to elevate nascent and contemporary issues to the forefront of our considerations regarding pandemics. Whether it entails harnessing the potential of metagenomic sequencing or addressing the perils associated with artificial intelligence, I firmly believe that this investigation must delve into the forthcoming risks and prospects that lie on the horizon of the 21st century.