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The Burnet Institute's response to The Commonwealth Government COVID-19 Response Inquiry

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Executive summary

In this submission we focus on high-level outcomes of the COVID-19 pandemic in Australia and identify lessons to assist planning for the next pandemic and ending those we currently have. We conclude that Australia's COVID-19 mitigation strategy in 2020-21 was remarkably successful; tens of thousands of lives were saved, and these savings were sustained over subsequent years. This approach provides key guidance to address future pandemic threats. But we should also aim to achieve this goal without harsh restrictions on movements at both the local (stay-at-home) and macro (border closure) levels. The dual goals of 1) preserving health of the community and 2) maintaining open societies (often wrongly presented as mutually exclusive) should form the backbone of future responses. We suggest ways this can be achieved based on the principles of strong preparation, leaving no one behind, and engaging communities. This Burnet Institute response is informed by preliminary results from a program of work being undertaken to examine the comparative health, social, and economic cost of COVID to Australia.

Burnet Institute

Burnet made interdisciplinary, global, national, and state-level contributions supporting evidence-based COVID-19 policy, including in:

- Modelling: The COVASIM model informed Victorian, NSW and Commonwealth public health policy, including supporting *Victoria's Roadmap: Delivering the National Plan* and *National Framework for Managing COVID-19 in Schools and Early Childhood Education and Care (1, 2).*
- Public Health and Epidemiological Research and Capacity: Burnet capabilities delivered technical capacity into governments and provided timely and high-quality data to inform and impactful policies. For example, the Optimise Study – a partnership between the Burnet and Doherty Institutes – rapidly reported longitudinal cohort data to government and community and parametised models.
- Laboratory Research: Burnet laboratories informed COVID-19 vaccine, antiviral, and diagnostics development.
- International response: The Burnet supported large health program adaptations in Myanmar and PNG to respond to COVID-19, and contributed to multilateral mechanisms of support, such as the COVAX mechanism in a number of ways.

The Burnet Institute, the Doherty Institute, and the University of Melbourne are foundation partners of the Australian Institute for Infectious Disease (AIID), supported by the Victorian Government. Housing the largest critical mass of public health professionals in the Southern Hemisphere, the AIID will be well positioned to work with governments to prevent, prepare and respond to current and future pandemics and health emergencies.

Global context of the health impacts (excess mortality) of COVID-19 in Australia

The COVID-19 pandemic created unprecedented global health, scientific, social and political challenges. With 7 million confirmed COVID-19 deaths and 25 million related excess deaths so far, for the first time in 70 years, life expectancy in all regions has decreased (3, 4, 5). COVID-19 was the 3rd leading cause of death in Australia in 2022 (6). While the emergency phase is over, COVID-19 remains the major infectious disease of concern, including through the significant negative impacts of long COVID. The IMF projected the pandemic will cost the global economy US$13.8 trillion by 2024 (7). COVID has directly and indirectly impacted health systems and halted or reversed progress on other global and domestic health priorities.

Country-level excess mortality per person, the best comparative COVID health impact indicator, is provided in Attachment 1.1. Comparisons of excess death show the quality of Australia's response in 2020-2021 (pre-vaccine and pre-Omicron) compared to other countries, and the marked difference in comparative effectiveness of Australia's response in 2022-2023 (post-vaccine and post-Omicron). In 2020-21, Australia's excess deaths per person was 33 times lower than the UK, 46 times lower than the USA, and 61 times lower than South Africa. In 2022-23, Australia's excess death per person became more closely aligned with countries like the UK, USA, and South Africa (1.2, 0.9, and 0.7 times that of Australia, respectively).

Insights on Australia's response to the COVID-19 pandemic

Below we reflect of the relative success of COVID-19 phases that correspond to the National Plan to Transition Australia's COVID-19 Response.

2020-2021 - Acting fast, decisively, and equitably led to large and sustained comparative health gains

Australia's rapid deployment of public health COVID mitigation strategies, including border closures and quarantine[1], resulted in zero community transmissions across significant parts of the country over significant periods, preventing the substantial morbidity and mortality seen in other countries. Public health responses worked to contain several outbreaks across three successive COVID waves (L, Delta, first Omicron outbreak in Nov 2021) (Attachment 1.2) and protected Australia's health system.

[1] The three pillars of the response included Test, Trace, Isolate and Quarantine (TTIQ), Public Health and Social Measures (PHSM), and Vaccination. Pillars missing, but crucial, included community-centric approach and 'care and support'.

Large parts of Australia experienced a predominately COVID-free and lock-down free 2020-2021, with the exception of Melbourne and parts of Sydney (Attachment 1.2). Internal border controls and pre-emptive containment strategies were largely concentrated in Melbourne and 12 LGAs in Sydney, corresponding with areas vulnerable to ports of entry into Australia, Hotel Quarantine networks, and population density. This globally unique federated response was largely effective, but resulted in inequitable health, economic, and social burden across Australia. Alleviation of this burden was delayed by Australia's late COVID-19 vaccine rollout (commencing Feb 2021) relative to other developed countries. Vaccine coverage was lower than other countries in early 2021, due predominately to limitations in the vaccine acquisition program and supply constraints (see Halton review). Once widely available, vaccine intention increased rapidly (8). High coverage was further facilitated public health education and messaging, by vaccination blitzes, expanded Vaxzervia eligibility, and mandatory vaccination requirements.

2022-2023 - A reversal in Australia's relative global advantage in protecting lives

Towards the end of 2021, Australia was progressing along a phased exit plan (National Transition Plan), with gradual reopening aligned to vaccine coverage targets. The emergence of the highly transmissible Omicron variant in Nov/Dec 2021 precipitated a strategy change, accelerating opening and policies oriented to a 'living with COVID-19'. In just a few months a large proportion of Australia were infected for the first time, the rapid spread of Omicron overwhelmed surveillance systems (9), and previous public health strategies, such as TTIQ, became obsolete. Some adaptive public health strategies were introduced, in particular changes those centred on rapid antigen testing (e.g., COVID testing policies in schools to maximise in person learning (1)).

During transition, there was a perception that allowing Omicron to spread through a vaccinated population (strengthened hybrid immunity), would not result in the same risk of severe disease and death as Delta if high-risk individuals were protected. Between January 2022 and July 2023, Australia has had over 28,000 excess deaths (Attachment 1.1).

After the first Omicron wave, the COVID-19 response strategy became unclear. Despite the release of the COVID-19 Health Management Plan for 2023, no clear consensus emerged on balancing strategies to reduce transmission versus managing COVID-19 "like the flu". In July 2022, in response to BA.4/BA.5 variants, the winter update AHPPC statement emphasised a need for collective action to reduce transmission to save lives, the health system and the economy, but resulted in little action by governments. Australia does not yet have a clear strategic framework, targets, or public health program for managing COVID-19 into the future.

A lack of clear government response during this phase appeared based on assumptions that a social or political licence to enact COVID-19 public health responses was no longer present among a weary and fatigued population. While likely true for restrictive measures adopted in the first phase, which would not be appropriate nor proportionate to the public health risk posed in 2022-2023, a middle ground was largely not pursued. The short-term and least disruptive strategies to dampen transmission proposed in the winter update AHPPC statement (e.g., wearing masks in crowded indoor environments) would have helped preserve health and health systems. But despite these strategies also aligning with the policy position of the National Cabinet and Australian Government that emphasised "personal responsibility" for COVID prevention, widespread COVID-91 health promotion or related government communication did not occur.

2023 and onwards - Ongoing management of COVID-19 in Australia

A community-centred response: Community must be at the centre of sustainable COVID management. While an emphasis on "personal responsibility" remains key, governments must subsidise access and promote the tools necessary to help individuals reduce risk for themselves and others (10). Cohort data from 2021-22 showed most Victorians voluntarily adopted personal risk reduction strategies perceived as proportional (11), demonstrating that emphasising individual responsibility can be effective and sustainable if public health messaging effectively communicates the benefits. However, a reliance on personal responsibility must also consider the potentially disproportionate affect this may have on vulnerable communities (12).

Community-centred responses must balance interventions that are effective at preventing health impacts and those that least disrupt and are most acceptable, in order to ensure high coverage/uptake and minimise social and economic burden. The focus should be on: 1) sustaining vaccine uptake; 2) sustaining testing; 3) a clean indoor air strategy to reduce systemic risk; and 4) effective strategies to address Long-COVID (as identified in the National Inquiry into Long-COVID and Repeated Infection).

Sustaining vaccination: Similar death rates between countries in the Omicron era suggests cross-variant, infection-based immunity is not sufficiently protective without vaccination. COVID-19 vaccine intention reached 99% in mid-2021 (8), but by mid-2022 this had reduced to 60% intention to seek a booster (Attachment 1.3). Research is crucial to gain a nuanced understanding of gaps in current vaccine uptake intent (beyond demographics and considering socio-cultural and structural factors) to inform renewed and targeted health promotion and systems interventions to improve and maintain vaccine coverage.

Testing and treatment: Sustaining testing and ensuring equitable access to affordable tests is vital. Supporting access to tests and encouraging their use will help prevent cases by informing individual-level preventive behaviours (e.g., isolation, mask-wearing) and enable timely treatment with effective antivirals for those at high-risk (19).

Clean indoor air: Enhancing indoor air quality via effective and scalable interventions like ventilation is a minimally disruptive strategy. This approach supports respiratory health, lowers infection risk, including COVID-19, and protects against airborne pollutants. Governments should support the public and private sector to implement clean air strategies and promote the role clean air in supporting a healthier environment and general well-being. These strategies will mitigate risk in future pandemics.

Addressing the accruing long-COVID burden: Long COVID has wide-ranging effects on personal wellbeing, the healthcare system, and the economy, but the magnitude of its long-term impact is not fully understood (13). Ongoing acute COVID-19 infections will increase cases of long COVID and contribute to future health, social, and economic burden. Thus, managing long COVID should focus on minimising transmission through the strategies listed above and promoting community awareness to reduce risk, while also investing in research and clinical management.

Pandemic preparedness – community centred, sub-national, and global pandemic governance, and research-government partnership

The key principles for pandemic preparedness that COVID-19 has highlighted include: 1) being "passively ready" by investing in improved indoor air standards and investing in science to have countermeasures ready and adaptive; 2) equity-based financing and delivery mechanisms to ensure equitable sub-national and international access to countermeasures; and 3) investing in social science and community engagement to ensure tools are appropriate, acceptable, and adopted when they are needed.

Community at the centre and a focus on equity

During the COVID-19 pandemic, disparities emerged in both policy impacts and transmission risks among different cohorts and future pandemic policies must address the underlying socio-ecological drivers of this disparity. For example, culturally and linguistically diverse communities experienced disproportionate mental health impacts, financial hardships (14), and stigma and racism, including through the enforcement of COVID-19 policies (15). In addition, social, cultural, or financial conditions influenced ecological risk through increased contact exposures due to factors like residing in lower-cost, densely populated, or shared built environments, or in larger household sizes. Targeted policy adjustments and broader societal changes to tackle structural inequities will minimise of the negative impacts of future pandemics and pandemic responses. Increased research and practice emphasis needs to be placed on social science and community engagement to better understand and address the social and behavioural drivers of transmission. Burnet Institute's Optimise study is an example; maintenance of a longitudinal cohort to capture changes in pandemic attitudes and impacts, alongside qualitative community engagement research, informed policies that aligned to dynamic public health challenges (16, 17).

National governance must balance an evidence-informed unified approach with tailored and local responsiveness

COVID-19 crossed Commonwealth and State/Territory areas of responsibility, requiring increased inter-governmental cooperation. Our federated system of government had advantages; circumstances varied between geographies, justifying bespoke local responses (e.g., *National Framework for Managing COVID-19 in Schools and Early Childhood Education and Care* guidelines allowed states to adopt different screening strategies, as recommended by Burnet and Doherty Institutes in Commonwealth-commissioned modelling (1)). But divergent government priorities also blurred lines of responsibility and led to divisive practices (e.g., different border control policies). A future pandemic governance model must ensure an evidence-informed and unified national approach, with a framework for local responsiveness. Here, while a future Australian Centre for Disease Control (ACDC) is an important development, its ability to provide advice independent of government will be crucial.

Future pandemics need a science-based and coordinated global response

Limited international coordination during the COVID-19 pandemic delayed information and data sharing and led to inequities in response capabilities (e.g., vaccine distribution) and impacts. Aligning with interconnected global health challenges, effective pandemic governance in Australia should promote a response that transcends borders (see Burnet submission to the Department of Health and Department of Foreign Affairs and Trade Pandemic Accord consultation). This is not just because, as a global citizen, we have responsibilities to contribute to the safety and protection of our region, but because pandemics transcend borders; control strategies and capabilities in one country affects others. Averting future pandemic risks requires early detection and intervention and requires a global approach to surveillance and preparedness.

Collaboration between government and research institutions is crucial

A hallmark of the Australia evidence-informed COVID-19 response was cooperation between government and public health, clinical, and laboratory research experts, and the trust of governments to enact policy based on the expert advice received. Epidemic modelling played a key role in shaping the COVID-19 response, particularly in the initial phases of the pandemic when empirical data was absent or emerging. Maintaining and enhancing research and inter-governmental cooperation, including a commitment to share data, expertise, and resources, will be crucial to underpinning future preparedness and effective, consistent, and equitable pandemic responses. The AIID initiative, and the way it will work with government and its partners, such as the ACDC, will play a vital role in enhancing coordination and response capacity for future pandemics.

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