Do lockdowns and border closures serve the "greater good"?

A cost-benefit analysis of Australia's reaction to COVID-19

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In the past six months we have witnessed a mass worldwide sacrificial event driven by a fear of the unknown and essentially an abandonment of post-Enlightenment thinking. We have been swept up in hysteria and the fanaticism of crowds. Our economy has been stabbed in the stomach.

— *Testimony of Gigi Foster to the PAEC, Victoria, August 2020*

There is no doubt in my mind, that when we come to look back on this, the damage done by lockdown[s] will exceed any saving of lives by a huge factor.

— *Michael Levitt, Nobel Prize winner in Chemistry*

Since lockdowns are now known to have had no clear beneficial effect on the number of Covid cases or deaths, there is no trade-off to be analysed in the area of lockdown policies. There is just loss all around.

— *Paul Frijters et al. in The Great Covid Panic*

It is possible that lockdown[s] will go down as one of the greatest peacetime policy failures in modern history.

— *Douglas Allen, Professor of Economics at Simon Fraser University*

1 August 2022

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Preface

Rational public policymaking considers both sides of any proposed policy: benefits and costs. When the costs of lockdown policy have been raised during the COVID era, people have sometimes assumed that those costs are about: "just the economy", implying that "the economy" is something separable from human health. Yet there are health and longevity costs of lockdowns, apart from their short-run impacts on normal economic and social functioning, quality of life, and general wellbeing.

In the first half of 2020, the costs of locking down economies should have been weighed against the projected benefits. Best guesses needed to be made about the areas of human wellbeing directly and indirectly affected by lockdown policies. Among other things, we needed to consider the loss of happiness due to loneliness from social isolation, the crowding-out of healthcare for problems other than COVID, the long-term costs to our children and university students of disrupted education, and the economic losses of shuttered businesses, increased inequality, and crowded-out government spending in future years.

In August 2020, I prepared a draft cost-benefit analysis (CBA) for consideration by the Victorian State Parliament[1] that was an illustration of how such an exercise could be conducted by the government, whose responsibility it was to provide a rational justification for the Victorian lockdown policies.

This report updates my outline CBA of August 2020. It includes more context about the methods and about how to approach the robust policy deliberation process that Australian governments should have undertaken early in 2020. It is structured like a standard CBA except that I do not analyse multiple options. I consider only one: the actual policies adopted in Australia. The alternative that I consider – the benchmark against which the impact of lockdowns is compared – is for the government to have put in place policies that delivered outcomes similar to what Sweden or other "risk-based-restrictions" countries experienced.

Sourcing the data needed for such a process continues to be a challenge, but this is not new, and it is a challenge that economists are trained to meet. We try, using the best data available, to come up with reasonable estimates. It would have been nice, for example, to have access to more reliable and up-to-date Australian data about various aspects of human wellbeing and suffering. While tools like ANUPoll are useful, we need to build even better tools for the analysis of human welfare in Australia. Using conservative assumptions on many different categories of costs and generous assumptions about the benefits of lockdowns, I have pieced together an estimate.

It is in Australia's interests to provide access to better quality data about its people, activities, and society, so that we can learn more about how to protect and promote welfare. To achieve this, Australia's government departments and research institutions must develop more robust, up-to-date, and relevant data sources and make them accessible not only to policymakers with a duty to evaluate their policies, but also to independent researchers and the broader public.

I use the terms COVID and COVID-19 interchangeably in this document. I do not, however, revise the usage in published sources. The disease is increasingly being shortened in the literature to simply "covid."

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[1] Public Accounts and Estimates Committee (PAEC) of the Victorian Parliament, *Inquiry into the Victorian Government's Response to the Covid-19 Pandemic*, 12 August 2020, https://bit.ly/3MEvwj8.

Gigi Foster

Sydney, 1 August 2022

1. Executive Summary

The world has been shaken by the response of governments to the COVID-19 pandemic in a way unlike what we have seen in any prior global health event. What started as a local health anomaly in one Chinese province quickly became a world-stopping crisis affecting every major nation in 2020. Industries from travel to manufacturing suffered sudden, acute disruptions due to political action to lock down cities and block the free movement of people and goods within and between countries. Was all of this necessary to save lives, or did it on net produce human damage?

This report aims to evaluate whether Australia's COVID lockdown policies – a central feature of our COVID policy response – were on net helpful or harmful. The report is divided into two parts, of which the first is a background discussion that contextualises the analysis, and the second part estimates the costs and benefits of the Australian COVID lockdowns.

1.1 Part 1: Background

I start by discussing the characteristics of good policy processes and summarising the information known early in 2020 that was relevant to responding to COVID. The magnitude of the pandemic is also discussed by reference to history.

1.1.1 *What was known pre-COVID*

On 24 January 2020, at the beginning of the Wuhan lockdowns, Gauden Galea – the World Health Organisation (WHO)'s representative in China – said that "trying to contain a city of 11 million people is new to science. The lockdown of 11 million people is unprecedented in public health history, so it is certainly not a recommendation the WHO has made."[2] This statement summarises the WHO's known position on the wisdom of lockdowns in 2019, including its official guidance on managing flu-like pandemics, and was also reflected in official policy positions of the developed world before the arrival of COVID-19.

Years before COVID's arrival, the late Donald Henderson, a major figure in epidemiology who was instrumental in eradicating smallpox from the planet, opined that it is impossible to stop most viruses through border control.[3] Henderson contended that the spread of most viruses cannot be stopped unless the first case (the "index case") in a country is stopped, and the next such "first" case is stopped, and every additional index case is stopped as it erupts. He noted that some viruses can indeed be controlled through quarantines of the sick, and successful attempts have been made to do so (e.g., for Ebola). For most viruses, including the flu, he argued that if even a single person who may not have obvious symptoms slips through the net of control, then the battle is lost. It is far more sensible in such cases, Henderson argued, not to implement hard border controls but rather to manage the disease in order to minimise harm. In his words: "this idea that in this day and age one is going to intercept people coming across the border and you're going to stop the spread of the disease is a concept that was antiquated a very long time ago."[4]

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[2] Senger, Michael P. (2020). "China's Global Lockdown Propaganda Campaign" in *Tablet*, 16 September 2020. https://bit.ly/3yS93eD.

[3] See Donald Henderson's comments on this topic from timestamp 32:35 on a panel at the 5 March 2010 conference on "The 2009 H1N1 experience: policy implications for future infectious disease emergencies" at http://youtu.be/8rEV857R0LE (Role of Disease Containment in Control of Epidemics (Panel)).

[4] See from timestamp 33:55 onwards at http://youtu.be/8rEV857R0LE.

Extended lockdowns of whole populations had never been used in the history of pre-COVID disease control and were regarded as unwise by eminent epidemiological experts. They were known to cause significant negative effects on many other dimensions of society, including our ability to continue to control the target disease.[5]

Further, counterintuitive though it may seem, there are arguably great public health benefits from human inter-mingling. Some of these may derive directly from our interaction with pathogens, including when we travel internationally. Since at least her "Princeton in Europe" lecture of 2013, Dr Sunetra Gupta of Oxford University has argued that global immunity to viruses is strengthened from international travel:

> Virulent pathogens cannot be the only things we bring back from countries where they've originated. It is more likely that we're constantly importing less virulent forms which go undetected because they're asymptomatic and these may well have the effect of attenuating the severity of infection with their more virulent cousins.

> After all, the oldest trick up our sleeves is, as vaccination goes, is to use a milder species to protect against a more virulent species. Perhaps this is something we're inadvertently achieving by mixing more widely with a variety of international pathogens.[6]

According to Dr Gupta, the same principle applies to children, who "benefit from being exposed to this (COVID) and other seasonal coronaviruses."[7] The logic is that getting a less harmful infection protects children against more serious infections in the future. Therefore, Dr Gupta contends, "the best way to [safeguard against pandemics] is to build up a global wall of immunity. And it may be that we're unwittingly achieving this through our current patterns of international travel." As part of our response to COVID-19, we have paused this potential mechanism of building group-level immunity to pathogens.

The WHO's position on pandemic management prior to COVID-19 included recommending some voluntary preventative measures for a virus like COVID, such as handwashing and avoiding crowds, but no border closures and quarantines, and no mandated restrictions on the movement of healthy people under any circumstances.[8] If such restrictions had been favoured by pre-COVID scientific consensus, this would have been reflected in many scientific contributions prior to 2020, and governments' official pandemic plans, advocating policies like lockdowns after evaluating their costs and benefits. In fact, to my knowledge, virtually no scholarly works published after WWII and prior to 2020 argue that restrictions on the movements of healthy populations would result or ever have resulted in positive net benefits in terms of human welfare, wellbeing, or lives.[9]

1.1.2 COVID in historical context

A key element of contextualising a cost-benefit analysis of any policy is to understand the magnitude of the problem that the policy purports to address. It has been known since early 2020 that the threat posed by COVID is not severe by historical or pathogenic comparison. Victoria's pandemic plan of 10 March 2020 contained the statement that (the original strain of) "COVID-19 is assessed as being of moderate clinical severity."[10] It has also been clear since 17 February 2020 that COVID is largely a non-event in children but can be severe in the elderly

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[5] See the discussion of Donald Henderson's position and the history of the use of lockdowns provided by Jay Bhattacharya here: https://youtu.be/Cfjcr55XgC0 ("Unscientific over-reaction to COVID & the correct way to deal with it - Jay Bhattacharya of Stanford"), and the following analysis and re-print of a paper by Henderson (Disease Mitigation Measures in the Control of Pandemic Influenza, in *Biosecurity and Bioterrorism: Biodefense Strategy, Practice, and Science*; Volume 4, Number 4, 2006) here: https://archive.ph/0SQx9.

[6] http://youtu.be/kclL0F985DY ("Sunetra Gupta showed in 2013 how international travel eliminates the prospect of A major pandemic").

[7] *Evening Standard* (2020). "The Londoner: Let children be exposed to viruses, says Professor Gupta," 2 September 2020, https://bit.ly/3MB2vVy.

[8] See the WHO's pre-COVID (October 2019) report ("Non-pharmaceutical public health measures for mitigating the risk and impact of epidemic and pandemic influenza"), together with the annexure that provides detailed scientific backing for the WHO's recommendations: https://bit.ly/3yO2No9 (Report); https://bit.ly/3yQVETX (Annexure).

[9] The sole exception of which I am aware is the following work, which envisions a pathogenic threat far worse than COVID: Boyd, Matt et al (2018). "Economic evaluation of border closure for a generic severe pandemic threat using New Zealand Treasury methods" in *Australian and New Zealand Journal of Public Health*, vol. 42 no. 5, https://bit.ly/3NvMMaj.

[10] The Victorian Government's "COVID-19 Pandemic Plan for the Victorian Health Sector," dated 10 March 2020, is no longer available from the Victorian Government's original website (https://bit.ly/3G61X7C), but a copy of the report is available at https://bit.ly/3wJEnti.

and those with comorbidities.[11] Accordingly, the Victorian pandemic plan of early March 2020 "[f]ocused on protecting vulnerable Victorians, including with underlying health conditions, compromised immune systems, the elderly, Aboriginal and Torres Strait Islanders, and those from culturally and linguistically diverse communities." This statement bears a striking resemblance to the advice of the much-maligned Great Barrington Declaration of October 2020.[12]

According to the United States Centers for Disease Control and Prevention (the CDC), there were at least 50 million global deaths[13] in 1918-1919 from the Spanish flu, when the world's population was 1.8 billion. The current world population is 7.9 billion, meaning that around 219 million people would need to die of COVID if the COVID pandemic were in the league of the Spanish flu in terms of raw numbers of deaths. As displayed in Figure 1.1, about 6.3 million COVID deaths were reported by Worldometer[14] by 27 May 2022, or more than 30 times fewer than 219 million.

Comparing four pandemics
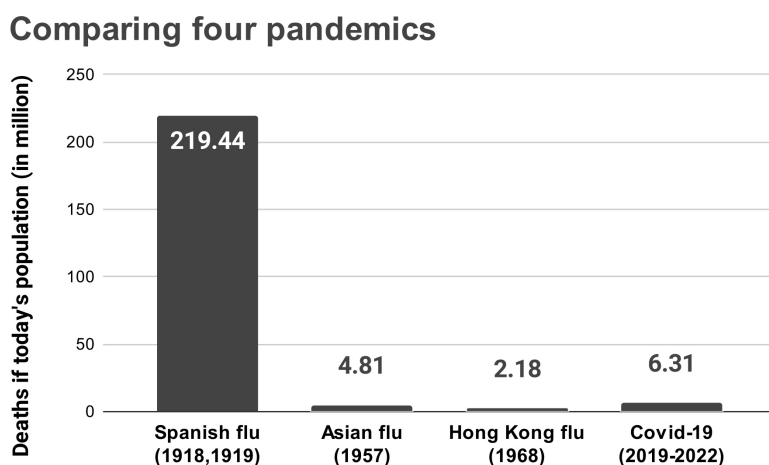
Figure 1.1: A comparison of the relative magnitude of four pandemics[15]

On 9 April 2022, John Ioannidis of Stanford, one of the world's most highly citied epidemiologists today, wrote to Sanjeev Sabhlok: "You are correct, the 1918 flu was 50-500 times worse than COVID-19 once you adjust for population size and for age distribution. I have highlighted this recently in a paper on the end of the pandemic that includes a detailed table comparing the impact of pandemics versus the seasonal flu. Deaths from SARS-CoV-2 COVID-19 was just 1.5-4 times the equivalent of three seasons of seasonal flu (most likely closer to the 1.5 number actually). Spanish flu was 100-1000 times bigger than 3 seasons of seasonal flu. https://onlinelibrary.wiley.com/doi/10.1111/eci.13782".[16] Augmenting this conclusion is that fact that since the Spanish flu severely impacted the young, while COVID's victims are mainly elderly, the Spanish flu was even more lethal in terms of potential life years lost.

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[11] *China CDC Weekly* (2020). "Vital Surveillances: The Epidemiological Characteristics of an Outbreak of 2019 Novel Coronavirus Diseases (COVID-19) — China, 2020", 2(8): 113-122, https://bit.ly/3cSQCNY, 17 February 2020. For example, the paper reports that "The ≥80 age group had the highest case fatality rate of all age groups at 14.8%." This information was widely known by March 2020 in expert circles, which led to the recognition in the Victorian pandemic plan of the age distribution of COVID risk, along with the overall moderate clinical severity of the disease.

[12] Great Barrington Declaration, 4 October 2020, https://archive.ph/CrP2z.

[13] Centers for Disease Control and Prevention, "1918 Pandemic (H1N1 virus)" – website as at 20 May 2022 (https://bit.ly/3Lvztp2).

[14] https://www.worldometers.info/coronavirus/.

[15] Data as at 10 May 2022. Source spreadsheet: https://archive.ph/wAh2Q. Data for the spreadsheet drawn from sources described here: https://bit.ly/3sKGyvt.

[16] Email from John Ioannidis to Sanjeev Sabhlok dated 9 April 2022: https://bit.ly/3NAhK1h.

Even if the many legitimate questions about COVID death reporting are ignored, the severity of the COVID pandemic is in the range of the Asian flu of 1957 (also shown in Figure 1.1), in response to which healthy populations were not locked down.

1.1.3 *Providing a cost-benefit analysis is the responsibility of the government*

It is incumbent upon a democratic government pursuing sound policy-making principles to conduct and provide for public examination a cost-benefit analysis (CBA) of major policies that transparently estimates and weighs all known or expected benefits and all known or expected harms of the policies. Prior to COVID, there was bipartisan support for the following tests to be satisfied in order for a policy to pass: (a) a test of liberty (i.e., the government must not interfere in people's life without a strong justification); and (b) a test of reason (i.e., the justification so provided must be evidence-based and transparent). These two tests are operationalised through conducting a CBA, an approach to policy evaluation that is deeply embedded within Australia's policy processes. However, no such analysis has been released to justify COVID lockdowns.

On 12 August 2020, in light of the government's failure to discharge its responsibility in this regard, I presented a preliminary CBA of Victoria's lockdowns to the Public Accounts and Estimates Committee of Victoria's State Parliament.[17] My analysis was intended as a demonstration of approach and offered a generous estimate of the benefits and only a partial accounting of the costs of lockdowns. I noted that a comprehensive CBA would need to factor in a wide variety of additional costs, many of which I enumerated but did not fully cost out in the document.

No level of Australian government has yet provided a CBA justifying COVID lockdowns. The present report expands my August 2020 draft CBA by providing estimates for more cost and benefit categories, and updates it to cover the costs and plausible benefits of COVID lockdown policies implemented through the end of 2021.

1.2 Part II: The cost-benefit analysis

This expanded CBA confirms that the costs of wholesale lockdowns for Australia are far greater than their benefits in a COVID world, even using the most conservative assumptions in favour of the government's lockdown policies.

1.2.1 *Methodological observations*

A few methodological observations are in order.[18]

This CBA is retrospective, not prospective.

A proper policy analysis using a CBA approach considers not just one policy alternative (lockdowns, in this case) but a wide range of options. A scenario analysis is also usually included to accommodate the inevitable uncertainty about projected costs and benefits. Only then is the appropriate policy selected. While this report alludes to a range of potential options that were available to the government at the outset of the pandemic, it is retrospective and looks only at the effects of the actual policies that have been implemented in Australia, relative to a default policy of managing COVID in what would have been considered the best-practice manner before March 2020: i.e., compliance of Australian governments with their own risk-based pandemic plans which preclude wholesale lockdowns or border closures, but include targeted restrictions and voluntary social distancing. Such an approach is proxied in this paper by taking actions that would have delivered outcomes similar to what was seen in countries with policy settings akin to Sweden's in 2020 and 2021.

CBAs are about social welfare, not money.

There is a prevalent misconception that CBAs are about money. They are in fact about social welfare. The approach taken in this report considers statistical lives lost now and in the future, and also counts, for example, the mental health suffering that people endure when they are locked inside their homes. In the CBA presented

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[17] Public Accounts and Estimates Committee (PAEC) of the Victorian Parliament, *Inquiry into the Victorian Government's Response to the Covid-19 Pandemic*, 12 August 2020, https://bit.ly/3MEvwj8.

[18] I am indebted to Sanjeev Sabhlok, former Victorian Treasury economist, for providing much of the information in this report to do with the typical usage of CBA within Australian governments.

here, the human welfare costs of lockdowns are put into a currency (quality-adjusted life years, or QALYs) that is used to enumerate estimates for both the costs and the benefits of lockdowns. I also use the newly created WELLBY (wellbeing year) measure to capture some lockdown costs. Since one year of average healthy life (1 QALY) equates to 6 WELLBYs experienced by a person for one year, this allows suffering across the society to be compared with benefits in the same welfare "currency."

A conservative approach is adopted.

Every assumption about the costs of lockdowns that I make in this CBA is supported directly or indirectly by research literature and evidence[19]. The only assumptions I make that have scant backing are my conservative assumptions in favour of lockdowns – i.e., in favour of finding that lockdowns are helpful. I assume in particular that COVID deaths would be avoided (or, more accurately, postponed) by lockdowns. This is an assumption not borne out in other countries' experiences,[20] but arguably true to a small extent in Australia, at least insofar as blocking international travel will have reduced the amount of virus circulating within Australia for a period of time.

Sweden and other countries with targeted restrictions serve as counterfactuals.

To estimate the losses avoided by lockdowns, I consider two alternative counterfactuals: the outcomes achieved by Sweden, and those achieved by a set of six nations with low levels of COVID restrictions. In the final analysis I count the higher of these two estimates – using population-adjusted data from Sweden as the counterfactual – to be the upper-end amount of loss potentially avoided because of Australia's lockdown policies.

Worldometer[21] shows that more than 50 countries with harsh lockdowns have experienced more COVID deaths per million than Sweden which had no lockdowns, mandatory masks, quarantines or border closures. If the Worldometer data is adjusted for Sweden's high latitude (with likely low vitamin D levels), age structure (20% of Sweden's population is over 65 and hence more vulnerable to the virus, compared with 18.9% in the UK and 9.3% across the world), the "dry tinder" effect (a low mortality rate from flu in the December 2019 through March 2020 flu season in Sweden[22] meant that more vulnerable people were around to be attacked by COVID or other respiratory diseases in 2020), higher-density nursing and aged care homes, and likely over-reporting of COVID deaths in Sweden,[23] then the COVID death rate in Sweden would look even more modest. Hence, the choice to use Sweden as a counterfactual likely yields an over-estimate of the benefits of the Australian COVID lockdowns.

1.2.2   Benefits of lockdowns

In this paper I calculate **12,304 deaths** as the upper-end estimate for the number of COVID deaths that could have occurred in Australia during 2020 and 2021 without lockdowns. There were in fact 2,353 COVID deaths in Australia in these two years, even in the presence of lockdowns, so at most **9,951 COVID deaths were avoided**

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[19] To ensure that the short form/archival URLs can be traced back by future researchers to their original sources even if the archival websites were to shut down, most of them are listed at: https://bit.ly/3cB1507.

[20] E.g., as examined in Herby et al (2022), "A Literature Review and Meta-Analysis of the Effects of Lockdowns on Covid-19 Mortality", SAE/No.200/January 2022, https://bit.ly/3wHaNEP.

[21] https://www.worldometers.info/coronavirus/#countries. As at 3 July 2022, when sorted by COVID deaths per million, 55 countries had a higher COVID death rate than Sweden, including the UK, France, Italy, and the US.

[22] The Public Health Agency of Sweden (2020). "Influenza in Sweden – Season 2019–2020," Article 20137, 2 October 2020. https://bit.ly/3lvQnJx.

[23] A 3 August 2021 paper, "Excess mortality due to Covid-19? A comparison of total mortality in 2020 with total mortality in 2016 to 2019 in Germany, Sweden and Spain" by Bernd Kowall et al, in *PLoS ONE* (https://bit.ly/3LC5v2D) found that in 2020 Sweden experienced excess mortality of 3%, or around 3,000 extra deaths, which is strikingly low given what one might expect due to the dry tinder effect, but consistent with the estimate by Nobel laureate Michael Levitt of 3%, available at https://bit.ly/38BA0sk. Since 10,000 deaths were reported in Sweden in 2020 as COVID deaths, I deduce that the reported COVID deaths figure is likely a significant over-estimation.

by lockdown policies. On average a COVID death represents a loss of around 5 QALYs,[24] since on average such a death occurs in someone already significantly advanced in age and not in good health.

To this, based on estimates of the incidence and severity of long COVID,[25] one can add 2% of the estimated losses in the form of COVID deaths to account for the human cost of long-COVID effects. One can also add an estimated 131 deaths by homicide and traffic accidents, often of significantly younger age than the average COVID victim, that would have occurred in a no-lockdown regime.

One therefore arrives at the following upper-end estimate for the total benefit of lockdowns:

9,951 (total COVID deaths averted) x 5 (healthy years lost per COVID death) x 6 (WELLBYs per QALY) x 1.02 (accommodating losses to long COVID) + 131 (non-COVID deaths averted) x 50 (healthy years lost per each such death) x 6 (WELLBYs per QALY) = **343,800** WELLBYs, or **57,300** QALYs, in all.

A further methodological remark: The chronology of restrictions, and monthly cost and benefit accounting

The objective in this report is to consider the incremental benefits and incremental costs of the lockdowns and border closures. To do this I draw on data from the start of lockdowns until the end of December 2021. Full border closures came into effect from 20 March 2020 (https://archive.ph/vYhcs) and lockdowns (stay-at-home orders) from 2 April 2020 in some states.[26] By the end of March 2020 there were around 20 reported COVID deaths in Australia. This figure being negligible, I do not separate out these 20 deaths in the overall analysis. I also assume that border closures and lockdowns impacted any costs and benefits immediately (from 1 April 2020), even though in actuality there would have been some lags. Lockdowns ended in October 2021 in Australia while border closures continued.

An exact approach to estimating the monthly costs and benefits of Australia's lockdown policies would be to divide annual costs and benefits across 9 months in 2020 (April 2020 to December 2020) and an appropriate number of months in 2021. For the sake of simplicity, however, the estimates of monthly costs and benefits that I provide in this report assume that there were 12 months of lockdowns/border closures in each of 2020 and 2021. This does not affect the calculations of total costs and benefits, and so any refinements in the future by those inspired to construct more exact monthly costs and benefits would not change the overall conclusion of the analysis.

Dividing the total benefit of 343,800 WELLBYs by 24, we get approximately **14,325 WELLBYs saved per month** during 2020 and 2021 by Australia's stop-start lockdowns and related policies.

How much would Australian society be willing to pay to avoid this quantity of loss?

Taking a high estimate of AU$100,000 as the amount Australian society would be willing to pay to save one QALY – which is an upper-bound estimate based on what the TGA pays in normal years to buy medical interventions that save QALYs[27] – it follows that Australian society would be willing to pay a total of 57,300 (i.e., total QALYs saved) x 100,000 = **AU$5.73 billion** over the course of two years to avoid this magnitude of loss.

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[24] This estimate is based on life tables showing expected QALYs remaining for people with co-morbidities (e.g., https://bit.ly/3wJUyGO) combined with the observation that about 30% of Australia's COVID deaths have occurred in aged care homes, where on entry a resident is expected to have 1 healthy year of life still to live (https://bit.ly/3wKoGll), with the remaining 70% on average still quite old and with 95% probability suffering from one or more co-morbidities (https://bit.ly/3G97oTh). Assuming a generous 6 years of healthy life remaining on average for the 70% of Australian COVID victims residing outside aged care homes, we arrive at 4.5 years of healthy life remaining per average COVID victim, which I then round up to 5 in this report, being generous again.

[25] As detailed in section 8.3.4, in *The Great Covid Panic* my co-authors and I estimated long COVID losses at 5%, but for Australia I use an updated figure of 2%. One reason for this downward adjustment is that we have now had more time to observe the recovery patterns of long COVID cases. The most updated evidence indicates that most of those who do get long COVID are not significantly handicapped in their normal productive activities, and that most cases that would measurably impact life satisfaction resolve within three months and the great majority of the remainder within a year (Hensher, Martin et al (2021), "We calculated the impact of 'long COVID' as Australia opens up. Even without Omicron, we're worried", Deakin University, 16 December 2021, https://bit.ly/39JeQs5; Swiss Policy Research, Post Covid Syndrome ("Long Covid"), https://bit.ly/3yVGOeS).

[26] From C6 in the Oxford Covid-19 Government Response Tracker (OxCGRT) database, https://bit.ly/3Bq2ot9.

[27] Estimates taken from: Lally, M. (2022). "A cost–benefit analysis of COVID-19 lockdowns in Australia" in *Monash Bioeth. Rev.,* https://doi.org/10.1007/s40592-021-00148-y.

The maximum that Australia would normally be willing to spend to prevent an additional **9,951** COVID deaths plus **131** traffic/homicide deaths – even using very conservative assumptions in favour of the government's policies – is therefore around six billion dollars.

In fact, hundreds of billions of dollars have been spent. This itself instantly suggests that alternative policy options should have been considered. This implication is also consistent with the findings of a dollars-and-QALYs-based cost-benefit analysis of Australia's lockdowns published in January 2022 by Martin T. Lally, who finds that at least 11 times more has been spent by the government allegedly to prevent COVID deaths than would have been spent in a normal policy regime, in which Australia would have been willing to spend a maximum of $100,000 per QALY saved.[28]

Have lockdowns avoided 40,000 deaths?

In the lead-up to the election in May 2022, the Prime Minister of Australia is reported to have claimed that 40,000 deaths have been avoided by his "regime" (of lockdowns and border closures).[29] Earlier, he had sent letters to many Australians in which he made a slightly more modest claim of having prevented 30,000 deaths.[30] No substantiating evidence was provided for these assertions, but it is possible that the Prime Minister used estimates based on epidemiological models.

Even if Mr Morrison's most extreme claim were correct and 40,000 COVID deaths had been prevented by lockdowns, that would still bound at **AU$20 billion** the amount Australia would have been willing to pay to pursue the lockdown strategy, using the observation above that Australia is willing to pay at most AU$100,000 per QALY saved. Spending more than that would have diverted scarce resources from other competing priorities that, from a human wellbeing perspective, also matter.

In fact, we have spent hundreds of billions of dollars pursuing lockdowns and cushioning their economic fallout.

1.2.3 *Costs of lockdowns*

Imposing untargeted crippling restrictions on the vast majority of the population which is not at significant risk from COVID will necessarily cause significant overall harm. Evidence from numerous CBAs undertaken across the world has already indicated, for many countries, that lockdowns are damaging and even that they do not on net save lives.[31] Lockdowns and social-distancing measures inflict unemployment, business collapse, education neglect, health neglect and loneliness. The virus does not do these things. Government directives do these things.

Summing the costs

Table 15.1 below summarises the costs of lockdowns in **WELLBYs per month** for Australia, with data sourced from the foregoing chapters of this report.

Category	Disrupted area	Costs in original units on average per month for 2020, 2021	Costs in WELLBYs on average per month for 2020, 2021	Costs beyond 2021
Lost GDP and increased expenditure	Economic loss	$8.045 billion per month	482,700 WELLBYs per month	

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[28] *Ibid.*

[29] The Guardian (2022). "Scott Morrison takes credit for saving 40,000 lives from Covid in social media pitch for re-election", 9 April 2022, https://bit.ly/3wCrn9K.

[30] This letter is available in scanned form here: https://bit.ly/3wzQgBW.

[31] E.g., CBAs for the UK (my co-authored book, *The Great Covid Panic*), Australia (Lally, M. (2022). "A cost–benefit analysis of COVID-19 lockdowns in Australia" in *Monash Bioeth. Rev.*, https://doi.org/10.1007/s40592-021-00148-y); and Canada (Allen, Douglas W. (2021). "Covid-19 Lockdown Cost/Benefits: A Critical Assessment of the Literature" in *International Journal of the Economics of Business*, DOI: 10.1080/13571516.2021.1976051, https://www.tandfonline.com/doi/abs/10.1080/13571516.2021.1976051).

Lost Wellbeing	Lost wellbeing (life satisfaction)	Drop in life satisfaction of 0.2 on a 0-10 scale on average per year of stop-start lockdowns	428,334 WELLBYs per month	
	Non-COVID excess deaths in 2020 and 2021	7,940 additional non-COVID deaths from lockdowns in the first two years of the pandemic	9,937 WELLBYs per month	
Future costs	Reduction in the general lifespan of all Australians	Loss of one week of life for the average Australian		59,304 WELLBYs per year for the next 50 years
	Lost future productivity of children born during lockdowns	Lifetime earnings of 600,000 children born during 2020 and 2021 drops by $18 billion (or $30,000 per child) over a 35-year working life due to reduced IQ; a total WELLBY loss of 1,080,000 WELLBYs		30,857 WELLBYs per year starting in 20 years and continuing for the ensuing 35 years
	Lost future productivity of children of school age during lockdowns	$465 million in lost lifetime earnings of schoolchildren (27,900 WELLBYs over 35 years of working life)		797 WELLBYs per year (27900/35) starting in 10 years and continuing for the ensuing 35 years

Table 15.1: Summary of the estimated short-term and longer-term costs of Australia's lockdowns and border closures

The first three rows, showing estimates of costs paid during the lockdown period, average out to 920,971 WELLBYs per month, or 920,971 x 24 = **22.10 million WELLBYs in all over two years.**

The next three rows present the tally of future costs of the lockdowns implemented in 2020 and 2021 and are discounted in order to be comparable with other lockdown costs which are expressed in "2021 well-being currency." The present value of these future costs at a 5% yearly discount rate is **1.31 million WELLBYs**.

The sum of these two cost estimates, **23.41 million WELLBYs,** is the total estimated cost of lockdowns in 2021 well-being currency.

The spreadsheet containing the net present value calculations underpinning these figures is available on the internet for public perusal.[32]

1.2.4   *Cost-benefit ratio*

Choosing conservatively to exclude or under-estimate many costs, and to make generous estimates of benefits, I estimate the maximum benefits from Australia's lockdown policies to be **343,800** WELLBYs, and the minimum costs from lockdowns to be **23.41** million WELLBYs.

This indicates that **the costs of Australia's COVID lockdowns have been at least 68 times greater than the benefits they delivered.** Because I make assumptions in this CBA that are extremely favourable to the government's choice to pursue a lockdown strategy, the true ratio of costs to benefits of the Australian COVID lockdowns is likely to be greater than this.

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[32] http://sanjeev.sabhlokcity.com/Misc/Final-cost-table-CBA.xlsx

1.3 Opportunity costs: Deaths that could have been avoided with dollars spent on COVID

Another way to evaluate the effectiveness of policies to minimise harm from COVID starts with the following question: what is the opportunity cost of the dollars we have spent on our COVID response?

According to the Australian Institute of Health and Welfare:

> Potentially avoidable deaths are deaths among people younger than 75 that are potentially avoidable within the present health care system. They include deaths from conditions that are potentially preventable through individualised care and/or treatable through existing primary or hospital care. In 2019, there were 28,000 potentially avoidable deaths: half (48%) of all deaths for people aged less than 75. Of these deaths, 64% were male and 36% were female.[33]

One could estimate quite easily how many lives could have been saved if the hundreds of billions of dollars spent by the government on lockdowns, and policies associated with the disruption they caused, had instead been spent on other health priorities. Such an exercise leads to the conclusion that if hundreds of billions of dollars had been invested in non-COVID-related health care during 2020 and 2021, instead of being used to pursue lockdowns and cushion their fallout, Australia could have avoided tens of thousands of (non-COVID) deaths. Spending some of this money on research into early treatment and/or prophylaxis of those infected with or at serious risk from COVID, respectively, could have prevented some COVID deaths.[34] Estimating how many lives could have been saved by pursuing a "best-practice" prophylaxis and treatment regime in place of lockdowns would be of high social value but is beyond the scope of this report.

1.4 Limitations of this study

Like any cost-benefit analysis, this document is not definitive. I expect many of the costs imposed by lockdowns, particularly through the unintended consequences of these policies, to become clearer and more measurable over time. Individual line items will need to be updated, but more broadly, future researchers bear the responsibility to attempt the difficult task of valuing the intangible costs of the Australian lockdowns to Australians' stance towards their government and society. Such costs arise from the loss of individual liberty, the fracture of communities, and the abandonment of principles of good governance and public health stewardship as our governments became propagandists. I hope that future research will deliver estimates of the cost of the marginal changes to trust and belief in government, in our institutions (including public health), and in one another, that lockdowns have wrought.

While the list and magnitude of costs is expected to expand with time, few new benefits of lockdowns are likely to emerge. This is because the plausible benefits of lockdowns, and those on the basis of which they were originally defended, are mainly those occurring in the short run (i.e., during the lockdowns themselves). Consequently, I do not expect my conclusion that net damage was done to Australia by lockdowns to be reversed by future information. I suspect, instead, that the adverse assessment of lockdowns illustrated in this CBA is likely to worsen. I have characterised the COVID lockdowns of this era as a mass sacrificial event,[35] and I sadly expect future data and research merely to re-confirm this assessment.

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[33] Australian Institute of Health and Welfare (2021). "Deaths in Australia - Web report," last updated: 25 Jun 2021, https://bit.ly/3wzA2tG.

[34] Early treatments have been identified by various experts since 2020. For example (a) https://bit.ly/3NvfDLT: "COVID-19 early treatment: real-time analysis of 1,811 studies," in which the authors note: "Denying efficacy increases mortality, morbidity, and collateral damage"; (b) Alexander, P.E (2022): "Early Outpatient Treatment for COVID-19: The Evidence," Brownstone Institute, 22 January 2022, https://archive.ph/B6VlY . Also see c19early.com.

[35] Patrick, Aaron (2021). "COVID-19 lockdowns a 'mass sacrificial event'" in *Financial Review*, 16 July 2021. https://archive.ph/mD38o