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Reflecting upon the Costs of Lockdown

REX AHDAR*

ABSTRACT

This article endeavours to show that the indirect, downstream and long-term costs of a mandated lockdown in response to severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) producing coronavirus disease 2019 (Covid-19) are too often ignored. The New Zealand Government did not much talk about them at the time it implemented a strict lockdown based upon its elimination strategy. Yet these costs need to be taken into account and weighed against the benefits of the strict lockdown approach that New Zealand adopted. Furthermore, the costs and benefits of a milder mitigation strategy (of the kind Sweden adopted) also need to be estimated and compared to the strict lockdown approach. I argue the mitigation strategy was and is a preferable one once the indirect and long-term costs and benefits are taken into account.

I INTRODUCTION

In April this year I wrote an opinion piece on the costs of the coronavirus lockdown for New Zealand.¹ I sought to show that the indirect and longer term costs of the mandated lockdown in response to severe

* Professor, Faculty of Law, University of Otago; Adjunct Professor, School of Law, University of Notre Dame Australia, Sydney.

¹ My thanks to Tony Binns, Bruce Logan and Noel Carroll for comments on a draft of this article. Rex Ahdar, 'The Costs of Lockdown: Lives Now versus Lives Later', *Pundit.co.nz*, 16 April 2020 <<https://www.pundit.co.nz/content/the-cost-of-lockdown-lives-now-vs-lives-later>>. *Pundit* is a popular blog devoted to political and social issues in New Zealand.

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acute respiratory syndrome coronavirus 2 (SARS-CoV-2) producing coronavirus disease 2019 (Covid-19), were being ignored. The New Zealand Government did not much talk about them at the time. It was difficult to find any media commentators doing so either.² Yet these costs, I argued, needed to be taken into account and weighed against the benefits of the strict lockdown approach that New Zealand adopted. This strict regime was called, in our classification,³ a Level 4 ('L4') approach. It aimed at the elimination⁴ of the virus not just "flattening the curve". It proved to be effective.

If New Zealand adopted a milder mitigation strategy that did not entail a (near) complete closing down of businesses, schools, travel, and so on (as well as the closing of borders), then it would have, in all probability, resulted in a greater number of immediate deaths from Covid-19, but saved many more lives downstream, so to speak. The gravamen of my short piece was to argue that each strategy – strict closure of all social and commercial activity versus complete abstention, as well as everything in between – has its costs. Most importantly, it was, I contended, never a stark choice between saving lives versus protecting the economy, as many were wont to erroneously characterise it. It was never a matter of "lives versus the economy", but always, I maintained, "lives v lives".⁵

² As I finish writing this article, criticism by New Zealand media pundits is belatedly appearing: see eg, Damien Grant, 'The Price of Our Vain Belief in Covid-19 Exceptionalism', *Stuff.co.nz*, 16 August 2020, <<https://www.stuff.co.nz/opinion/300082155/coronavirus-the-price-of-our-vain-belief-in-covid19-exceptionalism>> ; Ryan Bridge, 'The Team of Five Million is Splintering', *Newsroom.co.nz*, 15 August 2020 <<https://www.newsroom.co.nz/ryan-bridge>>.

³ The New Zealand four-level Covid-19 alert classification is in Appendix 1.

⁴ "Elimination" turns out to be a medical term of art. It does not mean eradication or 100 percent purging, but negligible cases that can be swiftly managed. 'Elimination does not mean eradicating the virus permanently from New Zealand; rather it is being confident we have eliminated chains of transmission in our community for at least 28 days and can effectively contain any future imported cases from overseas.' Ministry of Health, 'COVID-19: Elimination Strategy for New Zealand', *health.govt.nz*, 8 May 2020 <<https://www.health.govt.nz/our-work/diseases-and-conditions/covid-19-novel-coronavirus/covid-19-current-situation/covid-19-elimination-strategy-aotearoa-new-zealand>>.

⁵ Jayanta Bhattacharya and Mikko Packalen, 'Lives vs Lives—The Global Cost of

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How is this so? It is not, admittedly, immediately obvious. Here we have to place ourselves again in the fevered environment that was the early days of the Covid-19 pandemic. It was the fervent hope that many lives would be saved in the immediate and short term if strict and decisive measures were taken. The ghastly nightly pictures on TV of mass graves in New York, Italy and so on, understandably triggered fear and alarm. The need to do some *now*, and something comprehensive, became the almost complete focus of the mainstream media and governments globally. A government must, it was said, err on the side of caution: ‘better safe than sorry’ and ‘safety-first’ were the catch-cries. ‘On the evidence available’, observed Prof Grant Guilford, ‘to the [New Zealand] Government at the time it made its decision, the lockdown was a sensible step and one that aligned with the prevailing public sentiment.’⁶

Yet, this focus, as natural as it was at the time, ignores the lives that may, indeed will, be lost in the medium to longer term from the consequences of the severe lockdown. The lives lost in the future might conceivably outweigh the lives saved now, and thus, as some put it (most infamously President Donald Trump), the cure might be worse than the disease.⁷

Lockdown’, *The Spectator*, 16 May 2020, < <https://www.spectator.co.uk/article/lives-vs-lives-the-global-cost-of-lockdown>>. Grant (n 1), observes: ‘Commentators dismiss such concerns [about the enormous costs of lockdown] as placing the economy ahead of lives but they fail to understand that the ‘economy’ is a word we use describe the aggregation of all our lives. It is the means by which we feed, clothe and educate ourselves.’ In a similar vein, Dr Vovek Goel, a professor at the University of Toronto Dalla Lana School of Public Health, observed: ‘So often the shutdown gets framed as a debate between health and the economy, but the economy is health too.’ Laurie Monsebraaten, ‘Ontario’s COVID-19 Lockdown is Now Harming Health More Than Its Helping, Some Experts Say’, *Our Windsor. Ca*, 4 June 2020 <<https://www.thestar.com/news/gta/2020/06/04/ontarios-covid-19-lockdown-is-now-harming-health-more-than-its-helping-some-experts-say.html>>.

⁶ Grant Guilford, ‘Will An Extended Lockdown Cost More Lives Than It Saves?’, *Newsroom.co.nz*, 9 April 2020. <<https://www.newsroom.co.nz/ideasroom/will-an-extended-lockdown-cost-more-lives-than-it-saves>>

⁷ Maggie Haberman and David Sanger, ‘Trump Says Coronavirus Cure Cannot ‘Be Worse Than the Problem Itself’’, *New York Times*, 23 March 2020. <<https://www.nytimes.com/2020/03/23/us/politics/trump-coronavirus-restrictions.html>>. The actual words, con-

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Some economists who attempted to answer this thorny question are confident that strict lockdown is, or has been, worth it.

The overall cost of letting Covid-19 run through the entire population could add up to around 30% of GDP, or over E300 billion for the EU. On this metric, the economic cost of the great lockdown (7-8% of GDP) would seem to be much lower than that of the unchecked spread of the virus. One could of course argue that measures other than a lockdown, less damaging for economic activity, might have achieved a similar reduction in infections. But the real world question is whether choosing lockdown meant that the (imperfect) cure was worse than the disease. Our results suggest a resounding no.⁸

There are two points to note about this conclusion. First, the economist dismisses strategies other than a strict lockdown (of the L4 variety). Yet, one ought, rationally, to have endeavoured to compare the lives saved (and lost) from a strict L4 lockdown versus the lives saved (and lost) from a milder, less pervasive, mitigation approach. Sweden most famously took this approach, but that was just one version. In New Zealand, a milder approach would correspond to Level 2 ('L2').

Second, he compares lockdown to abstention. But unlike some nations, for example, the United Kingdom, that flirted initially with the notion of abstention and letting the virus run its course – so that, in time, the population would develop so-called “herd immunity” – abstention was never an option for New Zealand, or indeed, most countries. I do not recall anyone arguing for this. I did not. The hands-off, do-nothing option was never a serious contender. To compare strict lockdown to abstention is something of a straw man and simply loads the policy dice in favour of the former.

There are, broadly speaking, three main approaches—suppression (which includes as a major strand, elimination), mitigation or absten-

tained in a tweet, were: ‘We cannot let the cure be worse than the problem itself.’

⁸ Daniel Gros, *The Great Lockdown: Was It Worth it?*, (CEPS Policy Insights, No 2020-11, May 2020).

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tion.⁹ The only real contest in the New Zealand context, and even then it was decidedly muted, was between the suppression (or elimination) advocates and those very few proposing a milder mitigation strategy à la Sweden or, closer to home, the less stringent lockdown measures taken by the Australia states.

Sweden took a mitigation strategy from the outset. It relied upon the public's voluntary co-operation to curtail the virus in terms of practising physical-distancing, hand-washing, self-isolation at home if one was exhibiting symptoms, and so on. Public gatherings of more than 50 people were prohibited, but cafes, bars, restaurants, barbers, gyms, shops – with social distancing – and schools (for children under 16) were allowed to stay open.¹⁰

While each Australian state government took a slightly different approach, the general pattern was similar:

Australia's lockdown approach substantially reduced activities which involve large number of random interactions between individuals (in bars, restaurants, entertainment and sports venues) but largely left the economy free to operate subject to compliance with guidance about workers keeping social distance. This means businesses can still function, even if in a low-level holding pattern. For example, even if

⁹ See eg Alister Heath, 'Sweden's Success Shows The True Cost Of Our Arrogant, Failed Establishment', *Daily Telegraph*, 12 August 2020. There are, he observes, three ways politicians can react: do nothing and 'allow the disease to rip until herd immunity is reached', impose 'proportionate restrictions to facilitate social distancing' etc, and enact a 'full-on statist approach...with a legally-binding lockdown'. A more formal taxonomy is that by the NZ Ministry of Health, 'Background and Overview of Approaches to COVID-19 Pandemic Control in Aotearoa/New Zealand', *health.govt.nz*, 30 March 2020. It lists five strategies (which are not mutually exclusive): 'Elimination; Sustained stamp it out, Sequestration [which I have called 'abstention'], Mitigation and Suppression.'

¹⁰ Heba Habib, 'Has Sweden's Controversial Covid-19 Strategy Been Successful?', *British Medical Journal*, 12 June 2020: doi.org/10.1136/bmj.m2376; Maddy Savage, 'Did Sweden's Coronavirus Strategy Succeed or Fail?' *BBC News*, 24 July 2020; Kristina Flore, 'How Did Sweden Flatten Its Curve Without a Lockdown?', *MedPage Today*, 29 July 2020; Ian Birrell, 'Will Sweden Get the Last Laugh?', *Daily Mail*, 10 August 2020; Heath (n 9).

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a business is closed (for example, a pub) business owners can visit the premises to maintain equipment or catch up on paperwork. Employees can go to work, unless they are able to work from home.¹¹

By contrast, New Zealand's L4 lockdown was stricter. New Zealand households were confined to their own "bubble". Only "essential" businesses, narrowly defined, were allowed to continue and all non-essential business that could not be carried on from home ceased. All retailers except supermarkets, dairies (convenience stores), petrol stations and pharmacies closed.

In New Zealand, the most prominent dissenters were a cross-disciplinary group of six academics¹² who put forward an "alternative Plan B" as they called it.¹³ They summarised it thus:

The government and its advisors have articulated a strategy of ongoing lockdowns of New Zealand society for the foreseeable future in an attempt to eradicate the virus. We believe that holding out for vaccine development or pursuing an aggressive eradication policy are not realistic.

We are a group of academics who are concerned that such a strategy is not proportional to the threat posed by Covid-19 to New Zealanders' health and that it is likely to substantially harm the nation's long-term health and well-being, social fabric, economy, and education. . . .

¹¹ Andreas Heuser and Alex Sundakov, 'Comparing the New Zealand and Australian States' Responses to COVID-19', *Castalia-advisors.com*, 14 April 2020.

¹² Dr Simon Thornley, Senior Lecturer of Epidemiology and Biostatistics, University of Auckland; Dr Grant Schofield, Professor of Public Health, Auckland University of Technology; Dr Gerhard Sundborn, Senior Lecturer of Population and Pacific Health, University of Auckland; Dr Grant Morris, Associate Professor of Law, Victoria University of Wellington; Dr Ananish Chaudhuri, Professor of Experimental Economics, University of Auckland and Visiting Professor of Public Policy and Decision Making, Harvard University; Dr Michael Jackson, Postdoctoral researcher with expertise in biostatistics and biodiscovery, Victoria University of Wellington.

¹³ Marc Daalder, 'Contrarian Academics Oppose Lockdown', *Newsroom*, 14 April 2020; Madison Reidy, 'Coronavirus: Health Experts Feel Censored Over Alternative Lockdown Plan', *News Hub*, 19 April 2020.

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We believe that it is in the best interests of the country to rapidly transition to a situation similar to the government's alert level 2, while closely monitoring the spread of the virus and its impact on the health system. This would enable the majority of businesses to continue to operate and schools and universities to open. It would also allow essential domestic travel to resume.¹⁴

I also advocated this approach and I shall say more about that later.

It is now a matter of history that the strict lockdown supporters won the day and so on 25 March 2020, New Zealand began a five-week period of L4 lockdown.¹⁵ This was relaxed to a L3 alert on 27 April which lasted for another 17 days. On 13 May, New Zealand eased into a L2 status and finally, on 8 June 2020, we moved to L1. This lowest alert phase, which prevailed for over three months, represented a return to normal, with untrammelled commercial activity, restaurants, pubs, shops, schools and universities open, churches, sports events and other mass gatherings underway, domestic travel permitted. On 9 August 2020, New Zealand marked 100 days since the last confirmed case of Covid-19 acquired locally (from an unknown source) via community transmission.¹⁶ Ironically, two days later any lingering celebrations were to be dispelled as four cases of locally-contracted coronavirus in South Auckland were confirmed.¹⁷ This unwelcome

¹⁴ Simon Thornley et al, 'A Balanced Response to Covid-19', 12 April 2020. <<https://www.covidplanb.co.nz>> They reaffirmed this stance when the partial lockdown was imposed in August: Ananish Chaudiri and Simon Thornley, 'Do We Really Need Yet Another Lockdown?', *Covidplanb.co.nz*, 13 August 2020, <<https://www.covidplanb.co.nz/our-posts/do-we-really-need-yet-another-lockdown/>>.

¹⁵ Appendix 2 sets out a brief chronology of the major milestones in New Zealand's response to Covid-19.

¹⁶ Hannah Martin and Torika Tokalau, 'NZ Marks 100 Days Since Last Community Transmission Covid-19 Case', *Stuff.co.nz*, 9 August 2020 <<https://www.stuff.co.nz/national/health/coronavirus/300073831/nz-marks-100-days-since-last-community-transmission-covid19-case>>.

¹⁷ Ameila Wade and Derek Cheng, 'Auckland in lockdown, rest of country in level 2: Four cases of community transmission', *NZ Herald*, 11 August 2020. The move to L3 (Auckland) and L2 (the rest of NZ) occurred at noon on 12 August, with these alert

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discovery plunged greater Auckland into L3 lockdown and the rest of the country into L2.

The only difference from the pre-Covid 19 world for level L1, should New Zealand recover quickly from that latest coronavirus “hiccup”, is that the borders remain closed to visitors from overseas. There are two exceptions to the border closure. First, there has been a limited number of exemptions of “significant economic value” granted by the Minister of Economic Development, most notably an exemption for a US film-making company led by James Cameron (working on a sequel to *Avatar*) to establish itself in New Zealand.¹⁸ Second, and far more significantly in terms of scale, New Zealand citizens and permanent residents are allowed to return subject to a testing and a mandatory 14-day quarantine-like period.¹⁹

II THE DARK-SIDE OF STRICT LOCKDOWN

There is no doubt that strict lockdown curtailed the spread of the virus and saved lives along with reducing Covid-19’s various non-fatal disease effects (eg, time spent sick, ongoing residual pernicious symptoms) in New Zealand. The total number of fatalities was mercifully low, just 22 deaths at the time of writing.²⁰ This is one of the lowest

levels initially scheduled to stay in place for 3 days until midnight 14 August. On 14 August 2020, the government extended the respective alert levels (in the same areas) for another 12 days, with the expiry set for midnight on 26 August (albeit Cabinet will review the developments on 21 August).

¹⁸ Amelia Wade, ‘Access Hollywood: Hundreds of foreigners slip through border as *Avatar* production resumes’, *NZ Herald*, 26 May 2020; Collette Devlin and Tom Hunt, ‘Coronavirus: Film workers among 150 exemptions to enter NZ amid border lockdown’, *Stuff.co.nz*, 27 May 2020 < <https://www.stuff.co.nz/entertainment/film/121643649/coronavirus-film-workers-among-150-given-exemptions-to-enter-nz-amid-border-lockdown>>.

¹⁹ NZ Ministry of Health, ‘Covid-19: Border Controls’, 29 July 2020. According to the Ministry: ‘Only New Zealand residents and citizens (and their children and partners) are permitted to enter New Zealand.’ Thereafter they ‘must stay in managed isolation or quarantine for at least 14 days and complete a health assessment and return a negative COVID-19 test before they can go into the community.’

²⁰ NZ Ministry of Health, ‘Covid-19: Current Cases’, *health.govt.nz* (6 August 2020).

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totals globally, albeit not quite the lowest.²¹ Precisely how many lives were saved by the stringent approach is unknown and unknowable, but some estimates put it in the thousands. Modelling provided to the government put the figure at 14,400 fatalities if the coronavirus spiralled out of control under an abstention approach.²²

There were sufficiently few deaths that the government concluded that its elimination strategy had worked and thus it moved from L4 after 5 weeks and to L1 after 11 weeks. The elimination strategy has been met with continuing overwhelming public approval.²³ It has also earned New Zealand many plaudits overseas.²⁴ The WHO's Director

²¹ See 'WHO Coronavirus Disease (COVID-19) Situation Report 190, *World Health Organization*, 28 July 2020. Singapore, at the same date, had 27 deaths; Sri Lanka 23, Australia 161. Taiwan is not included in the WHO data. As at 29 June 2020, Taiwan (population 23.8 m) had just 7 deaths from Covid-19 and, at the same date, Iceland had 10 deaths: 'What Coronavirus Success of Taiwan and Iceland Has in Common', *The Conversation*, 29 June 2020 <<https://theconversation.com/what-coronavirus-success-of-taiwan-and-iceland-has-in-common-140455>>.

²² Jamie Morton, 'Covid-19: Uncontrolled Spread Could Kill 14,000 in NZ', *NZ Herald*, 5 April 2020. The modelling was provided by University of Otago researchers whose work predicted that 'uncontrolled spread in the country could see up to 64 per cent of the population infected, 32,000 people hospitalised, and up to 14,400 deaths.' An alternative model by the same team predicted an even more grim scenario: 'A total of 3.32 million New Zealanders would be expected to get symptomatic illness; 146,000 would be sick enough to require hospital admission; 36,600 would be sick enough to require critical care (in an ICU); and 27,600 would be expected to die.' See further Ministry of Health, 'COVID19 Modelling and Other Commissioned Reports', *health.govt.nz*, 31 March 2020.

²³ Thomas Coughlan, 'Coronavirus: The Government's Covid-19 lockdown measures have overwhelming public support, according to a poll', *Stuff.co.nz*, 23 April 2020 <<https://www.stuff.co.nz/national/121231591/coronavirus-the-governments-covid19-lockdown-measures-have-overwhelming-public-support-according-to-a-poll>> (87 percent of New Zealanders approve the Government strict lockdown measures).

²⁴ See eg 'Coronavirus: How New Zealand Relied on Science and Empathy', *BBC News*, 20 April 2020. For a contrary view, see eg Australian economics journalist, Adam Creighton: 'New Zealand is held out as a role model, but it's a small, remote country. Its biggest industry, tourism, has been ruined, and at some point its citizens may want to come and go. . . Observing a decline in death or case number after a government took a sledgehammer to its economy says nothing about the effectiveness. Pointing to New Zealand in rapture proves nothing.' Lane Andelane, 'Coronavirus: New Zealand's COVID-19 Response Criticised by Australian Economics Journalist', *Newshub*, 6 August 2020.

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General Dr Tedros Adhanom Ghebreyesus enthused that, by following the WHO's advice, 'the people and government of New Zealand, led by Jacinda Ardern, have shown Covid-19 can be overcome through commitment, action and vigilance.'²⁵

The L4 approach, however, is not without its costs. Aside from the immediate economic expenditure by the government (the massive NZ\$12.1 billion rescue package)²⁶ and the drop in economic activity and GDP, it will cost lives in the future.

A useful overseas instance of this argument occurred in the United States where 600 doctors wrote a much-publicised letter to President Trump on 19 May, 2020 to 'express our alarm over the exponentially growing negative health consequences of the national shutdown.'²⁷ The physicians likened the pandemic shutdown to a "mass casualty incident" in which standard triage techniques ought to be applied. The first group, triage level black, require too many resources to be saved in a crisis. The next in priority, the red group, has injuries that are survivable if treated. Thereafter, the yellow group (sustaining serious injuries that are not life-threatening) and green group (minor injuries) are attended to. The red band merits top priority and then the next step is to ensure the other two groups do not deteriorate. Extensive experience has, continued the letter, 'shown that by strictly following this algorithm, we save the maximum number of lives.'²⁸ It continued:

²⁵ 'Coronavirus: World Health Organisation Praises NZ's Covid-19 Response', *Stuff.co.nz*, 8 July 2020 <<https://www.stuff.co.nz/national/health/coronavirus/122074593/coronavirus-world-health-organisation-praises-nzs-covid19-response>>.

²⁶ Grant Robertson [Minister of Finance], '\$12.1 Billion Support for New Zealanders and Business', *Beehive.govt.nz*, 17 March 2020 <<https://www.beehive.govt.nz/release/121-billion-support-new-zealanders-and-business>>. According to the Minister of Finance, the package was 'one of the largest in the world on a per capita basis [and] it represents 4.0% of GDP'.

²⁷ See eg Grace-Marie Turner, '600 physicians say lockdown are a "mass casualty incident"', *Forbes*, 22 May 2020; Matthew Wright, 'More Than 500 Trump-backing Doctors Sign Letter Asking Him to End Shutdown', *Daily Mail*, 21 May 2020 <<https://www.dailymail.co.uk/news/article-8342497/More-500-doctors-sign-letter-Trump-pushing-end-shutdown.html>>. The link to full letter, whose lead signer was Dr Simone Gold, an emergency medicine specialist in Los Angeles, is set out in both these articles.

²⁸ Letter by Simone Gold et al, *ibid*.

Millions of Americans are already at triage level red. These include 150,000 Americans per month who would have had a new cancer detected through routine screening that hasn't happened, millions who have missed routine dental care to fix problems strongly linked to heart disease/death, and preventable cases of stroke, heart attack, and child abuse. Suicide hotline phone calls have increased 600%.²⁹

The letter concluded:

The millions of casualties of a continued shutdown will be hiding in plain sight, but they will be called alcoholism, homelessness, suicide, heart attack, stroke, or kidney failure. In youths it will be called financial instability, unemployment, despair, drug addiction, unplanned pregnancies, poverty, and abuse. Because the harm is diffuse, there are those who hold that it does not exist. We, the undersigned, know otherwise.³⁰

The following are, as I see it, the major causes of likely future fatalities attributable (in whole or in part) to the strict lockdown:

- **Suicides**

Social isolation, loneliness, bankrupt businesses, ruined livelihoods and mass unemployment, induce depression, despair and other psychosocial malaises and thereafter may lead to suicide.³¹ For example, some studies point to an increase in suicides for every one percentage point in unemployment.³²

²⁹ Ibid.

³⁰ Ibid.

³¹ Malcom Kendrick, 'Asa GP, I Fear Our Covid-19 Lockdown Will Result In Significantly More Deaths Than We Are Trying To Prevent', *RT.com*, 6 April 2020 <<https://www.rt.com/op-ed/485110-covid-19-lockdown-deaths/>>.

³² Gigi Foster, 'Covid Lockdowns Have Human Costs As Well As Benefits', *The Conversation*, 30 April 2020 <<https://theconversation.com/covid-lockdowns-have-human-costs-as-well-as-benefits-its-time-to-consider-both-137233>>. Aside from suicide per se, Monsebraaten (n 4), quotes Dr Goel who explained that studies on past economic downturns had shown that unemployment increased a person's risk of death by about 1.7 per cent.

- **Deaths due to domestic violence**

With confinement indoors for long periods in often cramped houses or flats, exacerbated by the loss of recreational activities, social mingling at pubs and clubs and so on, domestic violence is likely to increase. In the UK it appears deaths from domestic violence more than doubled during Covid-19 restrictions.³³

- **Deaths through delayed treatment or non-treatment**

Non-urgent or non-essential operations, treatments and tests were postponed and the importune candidates deteriorated, and some died. ‘Thousands of elective procedures have been cancelled, jeopardising the health of many patients.’³⁴ ‘Cancer Research UK has warned that the [Covid-19] crisis could mean an extra 18,000 deaths from cancer this year alone as urgent referrals across England dropped by 62 per cent, while chemotherapy treatments have been running at just 70 per cent of normal levels.’³⁵ Turning to the initial hotspot in the United States, New York City, a *New England Journal of Medicine* study reported that

we investigated the striking *X-curve* of ICU utilization: a surge in Covid-19 patients accompanied with dramatic drop in non-Covid-19 patients. We found there was an 88% drop in non-Covid-19 ICU volume within the period from February 15 to April 15, 2020. The changing distribution of ICU patients’ diagnoses across the study period raises the spectre of illness hidden and illness deferred.

A more tragic dimension of illness hidden to our hospitals is the possibility that patients who would have otherwise been hospitalized in an ICU were instead dying at home. There was some evidence that this was happening. A preliminary estimate of excess deaths (number of deaths above expected seasonal baseline levels) in New York City during March 11–

³³ Foster, *ibid.*

³⁴ Guilford, (n 6).

³⁵ Sarah Knapton, ‘Why Lockdown Could Cost More Lives Than It Saves’, *Daily Telegraph*, 7 June 2020.

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May 2, 2020 found 5,293 deaths that were not identified as either laboratory-confirmed or probable Covid-19–associated deaths.³⁶

They concluded that there was a need to ‘pay attention to the pandemic’s reverberating effects, including illness hidden and illness deferred, which are more likely to cause suffering among low incomes and marginalized patient populations.’³⁷

- **Deaths due to decreased funding of health services**

Economic decline reduces the wealth of the nation and reduces the tax revenue to fund hospitals, medicines, medical research and so on. The diminished economic prosperity leads to reduced governmental (and private sector) ability to sustain life.

The tax dollars needed to invest in highly trained professionals, pharmaceuticals and facilities required by a high performing health sector are rapidly evaporating. The resulting impoverishment will compromise our progress in reducing deaths from cancer, heart disease and the other major diseases that afflict our population.³⁸

Some of the gloomier predictions are that any lives saved by the lockdown will be wiped out by those lost from the impact of the recession. British economist Prof Philip Thomas of Bristol University estimated that more people (675,000) could die from the “collateral damage” from the lockdown measures ‘than the 577,000 [sic: 510,000] deaths predicted by Imperial College if corona virus had been allowed to run through the population unchecked.’³⁹ Interestingly, it should be noted that the Imperial College modelling, led by Prof Neil Ferguson⁴⁰ –

³⁶ Spriha Gogia et al, ‘Covid-19 X-Curves: Illness Hidden, Illness Deferred’, *New England Journal of Medicine*, 26 May 2020.

³⁷ Ibid.

³⁸ Guilford (n 6).

³⁹ Knapton, (n 35).

⁴⁰ Neil M Ferguson et al, ‘Impact of Non-Pharmaceutical Interventions (NPIs) to Reduce COVID-19 Mortality and Healthcare Demand’, *Imperial College Covid-19 Response Team*, 16 March 2020 <<https://doi.org/10.25561/77482>>. In their report, at

which appears to have been the primary basis for the UK and US Governments' decisions to jettison their then rather laissez-faire stance and instead adopt, at least in Britain's case, a strict lockdown⁴¹ – itself received trenchant criticism.⁴² Other researchers maintained that the Imperial College findings were unreliable and inaccurate having yielded estimated fatalities that were greatly overstated.⁴³

III THE MITIGATION STRATEGY

We may grant, on the one hand, that a mitigation strategy (say L2 in the New Zealand schema) would result in immediate deaths and these would be a greater number, one presumes, than for the L4 approach. How many more people would have died under a less strict regime is again unknowable. It would depend, of course, on the details of the mitigation strategy, for there are many variants besides the Swedish one.

While the present deaths total would be higher, on the other hand we may speculate that there would be a much lower number of future deaths than under the elimination approach, due to the less restrictive effects upon the economy and the improved mental health of society. So, the future lives lost under the mitigation approach would be less than the future lives lost under the strict lockdown. I have set out the

7, they state: 'In total, in an unmitigated epidemic, we would predict approximately 510,000 deaths in GB and 2.2 million in the US, not accounting for the potential negative effects of health systems being overwhelmed on mortality.'

⁴¹ Katherine Rushton and Daniel Foggo, 'Neil Ferguson, The Scientist Who Convinced Boris Johnson of UK coronavirus Lockdown, Criticised in Past for Flawed Research', *Daily Telegraph*, 28 March 2020; Mark Landler and Stephen Castle, 'Behind the Virus Report That Jarred the U.S. and the U.K. to Action', *New York Times*, 2 April 2020.

⁴² See eg Tom Morgan, 'Lockdown Saved No Lives And May Have Cost Them, Nobel Prize Winner Believes', *Daily Telegraph*, 23 May 2020 (criticism by Prof Michael Levitt of Stanford University that Prof Ferguson's predictions of the trajectory of the pandemic were over-estimated by 10 to 12 times).

⁴³ See, most notably, David Richards and Konstantin Boudnik, 'Neil Ferguson's Imperial model could be the most devastating software mistake of all time', *Daily Telegraph*, 16 May 2020. For a similar critique, see 'Questions Over Virus Models That Prompted Lockdowns', *Medical Press*, 12 June 2020.

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broad outcomes of the alternative approaches in the table below and, for the sake of completeness, I have included the abstention strategy (herd immunity):

	Elimination approach	Mitigation approach	Abstention approach
<i>Lives saved (present)</i>	very high; maximised	medium	minimal
<i>Deaths (present)</i>	very low	medium	very high; maximised
<i>Deaths (future)</i>	high	medium	low

These are estimates expressed as generalities. All this is very difficult, if not impossible, to assess with any accuracy since the variables are unknown and can only be estimated.⁴⁴

The only figure that is quantified is the number of deaths from Covid-19. Even there, however, at least in some countries (not New Zealand), controversy surrounds whether this is an accurate total and has not been inflated. There is a suspicion (not unaccompanied by evidence) that the cause of death was being consistently attributed to the coronavirus despite the presence of operative co-morbidities.⁴⁵ Take the United Kingdom. In July 2020, the Health Secretary, Matt Hancock, asked for a review of the collation of Covid-19 death figures:

⁴⁴ For one attempt, see eg Dr Martin Lally who estimated some 1500 deaths if New Zealand had followed under a Swedish style mitigation approach: Martin Lally, 'The Costs and Benefits of a Covid-19 Lockdown', original version: 20 March 2020, revised version: 11 August 2020 <<https://croakingcassandra.files.wordpress.com/2020/08/martin-lally-cost-benefit-assessment-of-covid-lockdown-august-2020.pdf>>.

⁴⁵ Jessica Priest, 'One In 3 Death Certificates Were Wrong Before Coronavirus. It's About To Get Even Worse', *USA Today*, 25 April 2020. David Adam, 'It's So Hard To Know Who's Dying of Covid-19—And When', *The Scientist*, 18 May 2020.

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The Secretary of State has asked PHE [Public Health England] to urgently review their estimation of daily health statistics. . . . Currently the daily measure counts all people who have tested positive for coronavirus and since died, with no cut-off between time of testing and date of death.⁴⁶

It appears that in England the fatalities include anyone who has ever tested positive for Covid-19 regardless of whether they died for another reason – say ‘they had a heart attack or were run over by a bus three months later’⁴⁷ – thus leading some to question whether the (then) total of 45,000 coronavirus deaths may be exaggerated. Profs Carl Heneghan of Oxford University and Yoon Loke of the University of East Anglia observed: ‘By this PHE definition, no one with Covid in England is allowed to ever recover from their illness.’⁴⁸ Hence, in August, 5,377 deaths were deducted from the official Covid-19 death toll after it was revealed that thousands of people may have recovered from the virus before they died.⁴⁹

Answers to key questions remain elusive. Just how deadly is the coronavirus and what is the death rate or Case Fatality Rate (‘CFR’), the proportion of deaths from those who have tested-positive for Covid-19?⁵⁰ At the early stage of the pandemic, the WHO speculated that

⁴⁶ ‘UK Reviews Covid-19 Death Toll Figure Amid Fear of Inaccuracy’, *Times of India*, 18 July 2020 (quoting the Government website). See also Matta Busby and Heather Stewart, ‘Daily Updates on English Covid-19 Deaths Paused Amid Accuracy Concerns’, *Guardian*, 18 July 2020.

⁴⁷ The examples given by Profs Heneghan and Loke in their paper, ‘Why No One Can Ever Recover From Covid-19 in England—A Statistical Anomaly’, *Centre for Evidence-Based Medicine*, 16 July 2020.

⁴⁸ ‘UK Reviews Covid-19 Death Toll’ (n 46). See similarly Sarah Knapton, ‘No Reliable Way to Track Covid Pandemic in UK After PHE Data Row, Says Expert’, *Daily Telegraph*, 19 July 2020 (quoting Prof Carl Heneghan and Prof Yoon K Loke of the University of East Anglia who jointly discovered the “statistical anomaly”).

⁴⁹ Pamela Duncan et al, ‘Coronavirus Death Toll in England Revised Down by More Than 5,000’, *Guardian*, 12 August 2020. The official UK total from Public Health England, was decreased from 46,706 to 41,329—a reduction of 11.5%. From now on the official government death toll will only include people who died within 28 days of testing positive for the virus.

⁵⁰ See eg Smriti Mallapaty ‘How Deadly Is The Coronavirus? Scientists Are Close To An Answer’, *Nature*, 16 June 2020.

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it was above 3%,⁵¹ but this was a rather high estimate and ignored undetected infections in asymptomatic people.⁵² It appears that the Infection Fatality Rate ('IFR'), yet another measure of the death rate,⁵³ is in the vicinity of half of one per cent.⁵⁴

When deaths from COVID-19 are divided by the total number of cases – not just reported cases [ie, CFR] – you get a statistic called the infection fatality rate (IFR), or colloquially, the death rate. The [United States] Centers for Disease Control and Prevention currently has a best guess of 0.65 % for the IFR. But current estimates fall anywhere between 0.2% and 1%, a surprisingly large range when calculating the infection fatality rate should be as simple as dividing the number of deaths by total infections. And these estimates are changing all the time. In fact, in the time it took to write this article, the CDC changed its best estimate of the fatality rate from 0.26% to 0.65%.⁵⁵

What is the R number, the reproduction rate or average number of secondary cases generated by primary cases?⁵⁶ Is it below the critical

⁵¹ Report of the WHO-China Joint Mission on Coronavirus Disease 2019 (COVID-19) (16-24 February 2020) 12 (as at 20 February the crude fatality rate was 3.8 %, viz, 2114 of 55,924 laboratory confirmed cases had died in China). On 3 March 2020, WHO reported that 'Globally, about 3.4% of reported cases have died.': WHO Director-General's opening remarks at the media briefing on COVID-19 — 3 March 2020 <<https://www.who.int/dg/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19-3-march-2020>>.

⁵² Thornley et al (n 14).

⁵³ See 'Estimating mortality from COVID-19: Scientific Brief', WHO, 4 August 2020. <<https://www.who.int/news-room/commentaries/detail/estimating-mortality-from-covid-19>>.

⁵⁴ See eg John Ioannidis, 'The Infection Fatality Rate of COVID-19 Inferred From Seroprevalence Data' *Medrxiv.org*, 14 July 2020. <<https://doi.org/10.1101/2020.05.13.20101253>>

⁵⁵ Justin Silverman and Alex Washburne, 'How Deadly Is The Coronavirus? The True Fatality Rate Is Tricky To Find, But Researchers Are Getting Closer', *The Conversation*, 15 July 2020.

⁵⁶ See Roy Anderson et al, 'COVID-19 Spread in the UK: The End of the Beginning?', *The Lancet*, 3 August 2020: doi.org/10.1016/ S0140-6736(20)31689-5.

figure of 1.0?⁵⁷ How many “excess deaths” (the number of deaths in a given period and region less the usual average number for that period and region) have resulted?⁵⁸ Putting aside the deaths from Covid-19 for a moment, what are the non-fatal disease effects and how serious are they?⁵⁹ There is disquieting emerging evidence that the legacy of a bout of Covid-19 for those (the vast majority) who survive may be severe, ranging from chronic fatigue to micro-structural changes to the brain.⁶⁰

The kinds of technical questions that are staple fare for epidemiologists, immunologists and virologists became part of the public discourse in the way that the language of economics has done over the years. Suddenly many people became, at least by their own lights, amateur epidemiologists. Perhaps the author can be accused of being one.

More testing is needed. Even some eight or so months out from the initial outbreak and extensive testing we do not have sufficient data yet, although, obviously, the picture is becoming somewhat clearer.

⁵⁷ Ibid: “ $R < 1$ is the goal for stopping transmission over a long decay period”.

⁵⁸ See Charles Tallack, ‘Understanding Excess Mortality: Comparing COVID-19’s Impact in the UK to Other European Countries’, *The Health Foundation*, 30 June 2020. Excess deaths are “a more comparable measure across countries than deaths from COVID-19, because different countries count COVID-19 deaths in different ways.” From this article we learn that the UK had 64, 451 excess deaths in the 11-week worst pandemic period chosen for investigation. The risk of death in the UK increased by 52%. This equated to an additional 965 deaths per million of the population (or just under one in a thousand).

⁵⁹ See Megan McArdle, ‘Don’t Just Look at Covid-19 Fatality Rates. Look at People Who Survive—But Don’t Entirely Recover’, *Washington Post*, 17 August 2020; Margot Witvliet, ‘I’m a COVID-19 Long-Hauler and an Epidemiologist—Here’s How It Feels When Symptoms Last For Months’, *The Conversation*, 11 August 2020 <<https://theconversation.com/im-a-covid-19-long-hauler-and-an-epidemiologist-heres-how-it-feels-when-symptoms-last-for-months-143676>>.

⁶⁰ See Ryan Prior, ‘Chronic fatigue syndrome a possible long-term effect of Covid-19, experts say’, *CNN*, 7 August 2020; Jennifer Couzin-Frankel, ‘From “Brain Fog” to Heart Damage, COVID-19’s Lingering Problems Alarm Scientists’, *Science*, 31 July 2020; Nicole Lyn Pesce, ‘55% of Coronavirus Patients Still Have Neurological Problems Three Months Later: Study’, *Marketwatch.com*, 9 August 2020 <<https://www.marketwatch.com/story/55-of-coronavirus-patients-still-have-neurological-problems-three-months-later-study-2020-08-07>>; Yiping Lu et al, ‘Cerebral Micro-Structural Changes in COVID-19 Patients’, *The Lancet*, 3 August 2020 <<https://doi.org/10.1016/j.eclinm.2020.100484>>.

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The broad point is that the L4 lockdown cost in the future needs to be weighed against the benefits of this strict lockdown.⁶¹ Secondly, the L4 lockdown cost-benefit calculus needs to be compared to the costs and benefits of a more focused L2-type mitigation strategy, a path which, to reiterate, New Zealand did not take.

It is hard (especially for politicians) to pause and momentarily ignore the present deaths to consider the need to prevent an unknown number of future deaths, or to consider an alternative approach. Perhaps, mused Prof Michael Levitt, ‘the real virus was the panic virus.’⁶² Perhaps. Every instinct at the time cried out to take an immediate hard-line strategy. But rational public policy required us to consider the alternatives.

Epidemiologists gave their prognoses about the rate of spread of the disease and the measures necessary to curtail it. But, as one critic put it, they ‘remained firmly enclosed in their own silos of expertise, unable or unwilling to see the broader picture.’⁶³ That is perhaps a little unfair. It is, after-all, the job of the politicians to see the bigger picture and make the sorts of difficult trade-offs called for. ‘Trade-offs between alternatives have always been central to our economic policy and political debate. Lockdown is no different to any other policy. It has both benefits and costs.’⁶⁴

IV ANALYTICAL ATTEMPTS: QALYS AND ALL THAT

For decades governments in the West have been making calculations about the rational use of the public purse to maximise the provision of health services. They most commonly use something called a cost per QALY (Quality Adjusted Life Year) approach.

The Quality Adjusted Life Year (QALY) is a recognised metric used by health economists, governments and healthcare

⁶¹ Foster (n 32).

⁶² Quoted in Morgan (n 42).

⁶³ Paul Ormerod, ‘The Costs of Lockdown Could Far Outweigh the Benefits’, *Cityam.com*, 8 July 2021 <<https://www.cityam.com/the-costs-of-lockdown-could-far-outweigh-the-benefits/>>.

⁶⁴ *Ibid.*

specialists, amongst others, to evaluate new and innovative healthcare treatments. It enables optimisation of resource allocation via rational and explicit methodologies. The QALY, which was popularised in the 1970s in response to a need for improved decision-making around healthcare expenditure. . . Globally, governments are employing QALY calculations to rationalise multi-billion dollar healthcare investments...⁶⁵

How much should we spend to gain one year of completely healthy life, namely, one QALY?⁶⁶ For spending \$1b dollars how many QALYs could we gain?

For some, this kind of analysis is a cold-hearted, callous, almost inhumane approach. Paul Nuki blasted:

Was it worth it? If you take a very narrow view and weigh human life only in terms of economic value, then the answer is probably not. Lockdown has saved hundreds of thousands of British lives but you could argue that most are old, unwell or otherwise unproductive in economic terms. It's also true that lockdown will, for decades to come, cause many thousands of indirect deaths as a result of the economic storm to come. Deaths caused by unemployment, crime, mental health issues and a withered NHS.

But such arguments are as unworkable as they are contemptible. They are the arguments of First World War generals and nineteenth-century colonialists – people who regarded others as little more than a herdable commodity. They are not fit for a modern democracy.⁶⁷

⁶⁵ D A Pettit et al, 'The Limitations of QALY: A Literature Review' (2016) 6(4) *Journal of Stem Cell Research & Therapy* 334.

⁶⁶ Under this model, 1 represents ideal health and 0 equals death and thus, for example, patients having to undergo regular kidney dialysis might have a QALY of 0.75, signifying a 25 percent reduction in the value of life relative to being in optimal health: Chris Conover, 'How economists calculate the costs and benefits of Covid-19 lockdowns', *The Apothecary*, 27 March 2020.

⁶⁷ Global Health Security Editor of the *Daily Telegraph* (UK) in Russell Lynch, 'Was lockdown really worth it? Telegraph writers and experts give their verdict', *Daily Telegraph*, 5 July 2020.

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I suggest such charges are misplaced. First, economic analysis is being used all the time to determine the most rational deployment of scarce resources when it comes to spending on medical treatments, hospital care, pharmaceuticals and so on. Ethical objections to the QALY approach have been levelled from the very start,⁶⁸ but this has not led to the QALY method being jettisoned. Second, a hard-nosed assessment involving difficult trade-offs (economic, moral, political) is what government is about. As the Economics Editor of the Daily Telegraph explained:

Weighing human lives in cash terms is an unpalatable task when families are losing loved ones, but it is the responsibility of being in government. Judged by standards that the National Institute of Clinical Excellence applies to other health treatments, which put a £30,000 limit on the price of extending life by a year, the lockdown has been massively expensive compared to the benefits gained.⁶⁹

A cost-benefit study of the our Covid-19 L4 strategy by a NZ economist, Dr Martin Lally, utilizes this concept.⁷⁰ Lally noted that in New Zealand the cost per QALY is put at approximately NZ\$45,000.⁷¹ This compares, for example, as we just saw above, with £30,000 per QALY in the UK or between US\$50,000 to \$150,000 in the United States.⁷² Lally concluded:

⁶⁸ The standard ethical objections – the appropriateness of valuing one individual’s life over another’s, the adoption of an overly utilitarian method, and so on— are discussed in Pettit et al (n 65). There are also, needless to say, numerous methodological limitations that critics have levelled against the QALY approach (eg, diverse populations may have difference preferences and evaluate medical conditions differently): again, see Pettit et al.

⁶⁹ Lynch (n 66).

⁷⁰ Lally (n 43) .

⁷¹ Ibid. See also Bryce Wilkinson, ‘Research Note: Quantifying the Wellbeing Costs of COVID-19’, *The New Zealand Initiative*, 9 April 2020 <<https://nzinitiative.org.nz/reports-and-media/reports/research-note-quantifying-the-wellbeing-costs-of-covid-19/>>.

⁷² Conover (n 66). Stephen Archer, ‘Providing Care for the 99.9% During the COVID-19 Pandemic: How Ethics, Equity, Epidemiology, and Cost Per QALY Inform Healthcare Policy’, *Health Management Forum*, 8 July 2020, states it is US\$50,000 for the United States.

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World-wide, many governments have implemented substantial curtailments of normal economic activity in order to reduce the expected death toll from Covid-19. This paper considers the effect of the New Zealand government adopting a suppression policy versus a milder mitigation policy, with the actions of other governments taken as given. The cost per QALY saved from doing so would seem to have been vastly in excess of the currently used value for a QALY of \$45,000. Consideration of alternative parameter values and recognition of factors omitted from the analysis would not likely reverse this imbalance in cost per QALY saved versus currently accepted figures for the value of a QALY. The suppression policy was therefore dramatically inconsistent with long-established views about the value of a QALY.⁷³

Let us delve into his reasoning. New Zealand's GDP in 2019 was approximately NZ\$331b. The loss in GDP from the pandemic is estimated by Lally to be 28 percent or \$87b. Next, one needs to estimate the GDP losses from adopting a strict L4 lockdown approach instead of a mitigation strategy. Lally put this difference at about 25 percent; thus, 25 percent of \$87b is \$21.75b. The QALYs saved by a strict lockdown rather than a mitigation approach were calculated by him to be 2,500. Put this all together and the cost per QALY saved would be \$21b divided by 2,500 which equals \$8.5m per QALY saved. Recall, that the pre-Covid-19 value of a QALY in New Zealand was about \$45,000. Thus, 'with Covid-19, the costs of adopting a suppression rather than a mitigation policy per additional QALY saved would be at least 190 times the pre-Covid-19 values for a QALY [$190 \times \$45,000 = \8.55m]. This is an extraordinary difference.' Lally admits, quite rightly, that 'the parameters used in [his] analysis are debateable.'⁷⁴ He went on then to vary the estimates lest his initial calculations be extreme. If the death rate under a mitigation strategy were larger, say double, then the cost per QALY saved would halve to \$4.25m, but that would, he calculated, still be 94 times the usually accepted figure

⁷³ Lally (n 44).

⁷⁴ Ibid.

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(\$4.25m divided by 94 equals \$45,000). Next, if the GDP loss from the pandemic was smaller and one halved it (in addition to the death rate being doubled as before), then the cost per QALY saved would fall further to \$2.12m, but this would still represent about 47 times the usual figure accepted ($\$2.12\text{m} / 47 = \$45,000$).

All this number crunching is perhaps headache inducing, but the broad point is, I trust, clear. New Zealand would be spending many times what we would spend for health improvements for other long-standing diseases to cure this disease (and thus give the Covid-19 patients additional QALYs). Is this too much?⁷⁵ Dr Malcolm Kendrick, an English GP, put it this way in the context of the UK's response to the pandemic:

Are we paying too much to lock-down Covid? The answer from most people may well be that 'I don't care, we need to spend as much as it takes.' My fear is that, if we are not very careful, the actions we are taking will result in significantly more deaths than we are trying to prevent. Even if we restrict the analysis purely to the cost per QALY and narrow the 'health' analysis purely to Covid, and deaths from Covid, it remains difficult to justify spending £350 billion [the sum set aside by the UK Government to deal with the crisis] to control a single disease.⁷⁶

There was a need, he contended, to 'normalise'⁷⁷ how COVID-19 is viewed and assess its costs and risks alongside the more familiar health problems such as cancer, cardiac disease, diabetes and so on.

Dr Stephen Archer, Head of the Department of Medicine at Queen's University, Ontario, makes a similar point: 'policy focused on [Covid-19] pandemic management can inadvertently lead to excess morbidity and mortality from other diseases' and that '4 months into the epidemic, the consequences of an initial laser focus on Covid-19 at

⁷⁵ In the words of one critic (Grant (n 1): 'We have built our political and economic infrastructure around a single metric: Covid. Nothing else matters.'

⁷⁶ Kendrick (n 31) (*italics in original*).

⁷⁷ Ormerod (n 63).

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the expense of all other care are emerging.’⁷⁸ He noted that cancer and cardiovascular disease accounted for more than 54 percent of all Canadian deaths and it was likely that the ‘excessive focus on Covid-19’ would engender delayed care for those endemic conditions would lead to a significant increase in excess deaths in the near future.⁷⁹

The NZ Prime Minister repeatedly urged: eliminate Covid-19 for that is the best economic strategy; ensure the coronavirus is squashed and we can then revive the economy.⁸⁰ But, as I have endeavoured to explain, it is not that simple. ‘Locking down hard, while costly initially, is – these champions [of the government] conveniently claim—its own reward; initial losses [are] more than outweighed by the subsequent gains (faster sustained recovery etc).’⁸¹ That is the theory, ‘but there is no actual evidence for these claims – at best such an outcome could be considered as one scenario.’⁸² Furthermore, there is little evidence of serious analysis having been given to a credible exit strategy.⁸³ If the virus does not die out or it mutates or an effective vaccine is many years away, then the worth of an elimination strategy, with repeated lockdowns, becomes highly suspect, if not untenable.

V CONCLUDING THOUGHTS

There are few certainties in this whole vexed subject. Nonetheless, one is that all assessments are premature and we need to wait considerably longer, perhaps years,⁸⁴ to make a sound judgment on what was

⁷⁸ Archer (n 72).

⁷⁹ Ibid.

⁸⁰ A repeated refrain at the daily afternoon live media conferences broadcasting on radio and television. These were usually headed by the Prime Minister (or at least a senior Cabinet minister) and the Director General of Health, Dr Ashley Bloomfield. See eg Derek Cheng, ‘NZ not “Out of the woods”—Prime Minister Jacinda Ardern’, *NZ Herald*, 28 April 2020 (PM maintains continuing to stamp out Covid-19 was the best economic response)

⁸¹ Michael Reddell, ‘Evaluating Choices’, *Croaking Cassandra*, 14 August 2020<<https://croakingcassandra.com/2020/08/14/evaluating-choices/>>.

⁸² Ibid.

⁸³ Ibid.

⁸⁴ Telegraph Editors, above (n 67).

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the preferable approach to have taken. As Dr Anders Tegnell, the chief epidemiologist for Sweden put it, we are, “shooting in the dark” when confronting this new virulent disease.⁸⁵ The Swedes also emphasized that the pandemic was better described as “a marathon rather than a sprint”.⁸⁶ Dr Tegnell admitted that Sweden could have done some things much better (for example, taken stricter measures to protect the elderly in retirement homes) but, overall, at this relatively early point, he was satisfied with the approach Sweden did take.⁸⁷

I have ruminated upon about the cost of a L4 lockdown in terms of lives lost. We needed, I argued, to consider the future costs of the L4 approach in terms of lives lost in the months and years to come.⁸⁸ Moreover, it was also, I submit, salutary and necessary to consider whether a mitigation L2-type approach would have been preferable. It appears that the policy-makers in the New Zealand government were remiss in that respect.⁸⁹

In this article, I did not consider a raft of losses outside of fatalities, such as people whose health deteriorated due to delayed or non-treatment, the lost educational opportunities for children who missed

⁸⁵ Birrell (n 10).

⁸⁶ Savage (n 10).

⁸⁷ See Savage, (n 10). See also ‘Swedish Epidemiology Boss Says Questioned COVID-19 Strategy Seems To Be Working’, *Reuters*, 22 July 2020. Sweden’s fatality rate (5,770 deaths at a rate of 571 deaths per million is much higher than its Scandinavian neighbours (Norway, 47/m [deaths per million]; Finland, 60/m]; Denmark, 107/m) but lower than several European nations such as Italy, Spain, Britain and Belgium (583 p/m; 611/m; 686/m; and 852/m, respectively) which pursued strict lockdown strategies. The figures quoted are from *Worldometer Covid-19 Coronavirus Pandemic*, 12 August 2020.

⁸⁸ I am cognisant that one would also need to take into account the nascent non-fatal disease effects in any overall calculus.

⁸⁹ One economist, Reddell, (n 81), castigates: ‘What was striking, even at the time, was that there was no sign that the [NZ] government had commissioned from officials, or officials had undertaken anyway, any sort of serious cost-benefit analysis of the sorts of intervention they were looking at and imposed. . . when the government finally got round to publishing the relevant documents, sure enough there was no serious structured attempt to cost and evaluate alternative policy options. (It is not, I hasten to add, that any cost-benefit analysis can give one “the” answers, but it provides a disciplined framework to analyse the options, assumptions and sensitivities.)’

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out on school, and so on. I have not talked about the severe restriction upon our civil liberties and fundamental freedoms, nor the effective abdication of political decision-making to scientists, especially, medical experts, epidemiologists, virologists, and so on. As for the former, emergency restrictions have a habit of stubbornly remaining and the level of civic freedoms often does not return to what it was.⁹⁰ As for government by unelected medical experts and bureaucrats, this is a myopic and anti-democratic way of governing. These concerns have been traversed by others.

Yet another issue of significance, worthy of separate article, was whether the NZ Government's initial imposition of strict lockdown measures in late March was lawful. In April, two citizens argued that the lockdown was unlawful and thus their 'detention', or at least, the manifold restrictions upon their movement, was illegal. They failed in their action to be granted the remedy of habeas corpus in both the High Court and Court of Appeal.⁹¹ Next, an action for judicial review in the High Court was brought in July to further evaluate the legality of the lockdown.⁹² The result of this high-powered suit, brought by a former Parliamentary Counsel and law lecturer, Dr Andrew Borrowdale, has yet to be handed down at the time of writing.

I have spoken of New Zealand's *initial* lockdown. The Government sought to counter any lingering doubts about the legal basis for

⁹⁰ See eg Kenan Malik, 'Yes, Expect More Surveillance During A Crisis, But Beware It Once The Danger Has Passed', *Guardian*, 12 April 2020.

⁹¹ *Nottingham v Arden* [2020] NZHC 796 (HC)(writ of habeas corpus declined); [2020] NZCA 144 (CA)(appeal by applicants seeking the writ denied).

⁹² Hamish Cardwell, 'High Court Case Begins To Determine Whether Level 4 Lockdown Was Lawful', *RNZ*, 27 July 2020; Prof Andrew Geddis, 'Today The Legality Of The Lockdown Will Be Sternly Challenged. And So It Should Be', *The Spinoff*, 27 July 2020; Dean Knight, 'Lockdown's Legality and The Rule of Law', *Newsroom*, 4 August 2020. The judicial review proceedings were brought by Dr Borrowdale against the Director-General of Health, Dr Ashley Bloomfield. *Borrowdale v Director-General of Health* was heard in the Wellington High Court, unusually before a bench of three judges (not the usual single High Court justice). Following an invitation by the High Court, the New Zealand Law Society was granted leave to intervene: *Borrowdale v Director-General of Health* [2020] NZHC 1379 (NZ Law Society granted leave).

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its comprehensive anti-Covid-19 public restrictions and, accordingly, on the same day New Zealand went into L2, 13 May 2020, it passed the *COVID-19 Public Health Response Act 2020*.⁹³ The Act came into force that same day. The passage of the Bill was rushed to say the least. It was introduced on the 12 May and the Opposition had received less than three days to study it.⁹⁴ Furthermore, the Bill did not go through a Select Committee vetting, the usual mandatory step. This was, instead, to occur *ex post facto*. Parliament required the Select Committee to review it before the end of July, in time for the House to decide whether to renew the Act in accordance with the 90-day review specified in the Act.⁹⁵ In brief, the key provision is s 11 which gives the Minister or Director-General of Health sweeping powers to make orders ‘to require persons to refrain from taking any specified actions that contribute or are likely to contribute to the risk of the outbreak or spread of COVID-19’.⁹⁶ Intentional non-compliance with a s 11 order renders the transgressor liable to a fine not exceeding \$4,000 or imprisonment of up to 6 months.⁹⁷

⁹³ See Collette Devlin, ‘Parliament Sends Controversial New Covid-19 Level 2 Law to be Reviewed at Select Committee’, 15 May 2020; Amelia Wade, ‘Controversial Bill Passed to Enforce Alert Level 2 Powers’, *NZ Herald*, 13 May 2020. The Chief Human Rights Commissioner, Paul Hunt, stated the Commission was ‘deeply concerned’ about the lack of scrutiny and rushed process for the Covid-19 Public Health Response Bill despite the Government knowing for weeks that New Zealand would be moving to Alert Level 2: Kurt Bayer, ‘Human Rights Commission “Deeply concerned” About Public Health Response Bill’, *NZ Herald*, 13 May 2020.

⁹⁴ My colleague at Otago Law Faculty, Professor Andrew Geddis, noted that he was given (along with others) an advance copy of the bill on late Monday afternoon at 5.30pm (11 May), with the Bill being introduced the next afternoon (Tuesday) and passed under urgency the day after (Wednesday): Geddis, ‘The Level Two Law Is Necessary—And Full of Flaws’, *The Spinoff*, 14 May 2020 <<https://thespinoff.co.nz/politics/14-05-2020/andrew-geddis-the-level-two-law-is-necessary-and-full-of-flaws/>>.

⁹⁵ The Act is repealed at the end of the period of 90 days after its commencement if no resolution by the House is passed to continue its operation: *COVID-19 Public Health Response Act 2020* s 3(1)(2).

⁹⁶ The section goes on to list 9 non-exhaustive instances of the types of order that might be made. Additionally, s 12 provides that different kinds of orders may be made, that may, for example, differentiate between classes of persons upon whom the orders are to be imposed or between regions of New Zealand to which they may apply.

⁹⁷ *COVID-19 Public Health Response Act 2020* s 26.

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In conclusion, there are costs in every path we take, whether as an individual, community or as a nation. We look through a glass darkly⁹⁸, and in the case of a new widespread fatal disease we work under conditions of urgency and incomplete information. As we gain greater experience with a novel disease and accumulate more scientific data on the nitty-gritty of the origins, transmission, long-term effects, recovery and fatality rates of Covid-19 we see where we may have done better. With the wondrous clarity of hindsight, we may learn that some of the earliest steps were unwise, or at least in need of greater refinement. As New Zealand, and the world, continue to learn more about this infernal disease, let us hope that the costs of the strict lockdown experiment prove to be ones that we can bear.

APPENDIX 1: THE NEW ZEALAND COVID-19 ALERT FRAMEWORK

<i>Level</i>	<i>Risk assessment</i>	<i>Range of measures that can be applied locally or nationally</i>
<p>Level 4: Lockdown</p> <p>Likely that disease is not contained.</p>	<p>Sustained and intensive transmission is occurring.</p> <p>Widespread outbreaks</p>	<p>People instructed to stay at home in their bubble other than for essential personal movement.</p> <p>Educational facilities closed.</p> <p>Safe recreational activity is allowed in the local area.</p> <p>All gatherings cancelled and all public venues closed.</p> <p>Rationing of supplies and requisitioning of facilities possible.</p> <p>Businesses closed except for essential services (e.g. supermarkets, pharmacies, clinics, petrol stations) and lifeline utilities.</p> <p>Travel is severely limited.</p> <p>Reprioritisation of healthcare services.</p>
<p>Level 3: Restrict</p> <p>High risk the disease is not contained.</p>	<p>Multiple cases of community transmission occurring.</p>	<p>People instructed to stay home in their bubble other than for essential personal movement—including to shop, go to work or school if they have to, local recreation, or to seek medical care.</p>

⁹⁸ 1 Corinthians 13:12 (KJV).

REFLECTING UPON THE COSTS OF LOCKDOWN

	<p>Multiple active clusters in multiple regions</p>	<p>Physical distancing of 2 metres outside home, or 1 metre in controlled environments like schools and workplaces.</p> <p>Wearing a face covering is strongly encouraged when outside of the home for people 7 years of age and older.</p> <p>People must stay within their immediate household bubble, but can expand this to reconnect with close family/whānau, or bring in caregivers or support isolated people. This extended bubble must remain exclusive.</p> <p>Early learning centres and schools are open for children whose parents have to go to work and have no care giver arrangements, particularly essential workers.</p> <p>People must work from home unless that is not possible.</p> <p>Businesses can open premises, but cannot physically interact with customers.</p> <p>Workers should be kept at least 1 metre apart where possible, and face coverings are strongly recommended.</p> <p>All businesses must display a government issued QR code for use with the NZ COVID Tracer App by 19 August 2020</p> <p>Low-risk local recreation activities are allowed.</p> <p>Public venues are closed (e.g. libraries, museums, cinemas, food courts, gyms, pools, playgrounds, markets).</p> <p>Gatherings of up to 10 people are allowed but only for wedding services, funerals and tangihanga. Physical distancing and public health measures must be maintained.</p> <p>Inter-regional travel is highly limited (e.g. essential workers, people returning to their primary residence, with limited exemptions for others).</p> <p>People at high risk of severe illness (older people and those with existing medical conditions) are encouraged to stay at home where possible, and take additional precautions when leaving home. They may choose to work.</p>
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FUNDAMENTAL RIGHTS IN THE AGE OF COVID-19

<p>Level 2: Reduce</p> <p>The disease is contained, but the risk of community transmission remains.</p>	<p>Limited community transmission could be occurring.</p> <p>Active clusters in more than one region.</p>	<p>People can connect with friends and family, and socialise in groups of up to 100, go shopping or travel domestically if following public health guidance.</p> <p>Keep physical distancing of 2 metres from people you don't know when out in public or in retail stores. Keep 1 metre physical distancing in controlled environments like workplaces, where practicable.</p> <p>No more than 100 people at gatherings, including weddings, birthdays and funerals and tangihanga.</p> <p>Businesses can open to the public if following public health guidance including physical distancing and record keeping. Alternative ways of working encouraged where possible.</p> <p>Hospitality businesses must keep groups of customers separated, seated and served by a single person. Maximum of 100 people at a time.</p> <p>Sport and recreation activities are allowed, subject to conditions on gatherings, record keeping, and—where practicable—physical distancing.</p> <p>Public venues such as museums, libraries and pools can open if they comply with public health measures and ensure 1 metre physical distancing and record keeping.</p> <p>Event facilities, including cinemas, stadiums, concert venues and casinos can have more than 100 people at a time, provided there are no more than 100 in a defined space, and the groups do not mix.</p> <p>It is safe to send your children to schools, early learning services and tertiary education. There will be appropriate measures in place.</p> <p>People at higher risk of severe illness from COVID-19 (e.g. those with underlying medical conditions, especially if not well-controlled, and seniors), are encouraged to take additional precautions when leaving home. They may work if they agree with their employer that they can do so safely.</p>
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REFLECTING UPON THE COSTS OF LOCKDOWN

<p>Level 1: Prepare</p> <p>The disease is contained in New Zealand</p>	<p>COVID-19 is uncontrolled overseas.</p> <p>Sporadic imported cases.</p> <p>Isolated local transmission could be occurring in New Zealand.</p>	<p>Border entry measures to minimise risk of importing COVID-19 cases.</p> <p>Intensive testing for COVID-19.</p> <p>Rapid contact tracing of any positive case.</p> <p>Self-isolation and quarantine required.</p> <p>Schools and workplaces open, and must operate safely.</p> <p>No restrictions on personal movement but people are encouraged to maintain a record of where they have been.</p> <p>No restrictions on gatherings but organisers encouraged to maintain records to enable contact tracing.</p> <p>Stay home if you're sick, report flu-like symptoms.</p> <p>Wash and dry your hands, cough into your elbow, don't touch your face.</p> <p>No restrictions on domestic transport — avoid public transport or travel if you're sick.</p> <p>No restrictions on workplaces or services but they are encouraged to maintain records to enable contact tracing.</p>
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Source: New Zealand Government, Unite Against Covid-19: Alert System Overview (as at 15 August 2020) < <https://covid19.govt.nz/covid-19/alert-system/alert-system-overview/>>

APPENDIX 2: A CHRONOLOGY OF NEW ZEALAND'S COVID-19 PANDEMIC RESPONSE

- 28 January National Health Coordination Centre activated to coordinate and manage the response to Covid-19
- 30 January Covid-19 becomes a notifiable disease.
- 3 February Entry restrictions for foreign nationals entering from, or transiting through mainland China. Those who enter must self-isolate for 14 days.
- 5 February Evacuation of 190 New Zealanders from Wuhan and managed isolation in Whanagaparoa Reception Centre.
- 7 February Ministry of Health advice: people who have travelled from or via China should self-isolate for 14 days on arrival in New Zealand.
- 28 February First case of Covid-19 in New Zealand (recent returnee from Iran). Contact tracing initiated, close contacts in monitored self-isolation.
- 4 March Second case of Covid-19 confirmed.
- 14 March Border restrictions start, anyone entering New Zealand must self isolate for 14 days.
- 19 March Indoor gatherings of more than 100 people banned. Border closed to all but New Zealand citizens and permanent residents.
- 21 March First community transmission suspected. Government announces a four-level alert system. New Zealand is at Alert Level 2.
- 23 March New Zealand moves to Alert Level 3.

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- 24 March Epidemic notice issued and National notice to activate s 70 of the Health Act 1956.
Schools and educational facilities closed.
- 25 March State of Emergency declared. At 11.59pm, New Zealand moves to Alert Level 4.
- 29 March First Covid-19 death recorded.
- 2 April Biggest increase of cases diagnosed in one day recorded: 89 cases.
- 17 April New cases are all linked to confirmed cases—no evidence of community transmission.
- 27 April 11.59 pm New Zealand moves to Alert Level 3.
- 4 May No new cases of Covid-19 reported. Over the next 10 days, 0-3 cases per day are confirmed.
- 13 May 11.59 pm New Zealand moves to Alert Level 2.
Covid-19 Public Health Response Act 2020 enacted and immediately comes into force.
- 27 May Last death (to date) due to Covid-19. Total of 22 deaths.
- 8 June No active cases of Covid-19 in the country. New Zealand moves to Alert Level 1.
Border controls, with restricted entry to non-residents remain in place. All arrivals subject to mandatory 14 days of managed isolation /quarantine.
- 16 June First case of Covid-19 reported in returning citizen (held in managed isolation or quarantine). Since then there have been more cases diagnosed in returning citizens whilst they are held in managed isolation.

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- 27 July High Court hears judicial review on the legality of the March L4 lockdown.
- 9 August 100 days since last community transmission Covid-19 case (that date being 1 May 2020).
- 11 August First new cases of community transmission detected in Auckland (102 days after the last one).
- 12 August Greater Auckland placed in L3 lockdown and the rest of NZ moved to L2 for 14 days.