

The road to level 4 and back

A review of decision making on the
Covid-19 alert levels

August 2020



About Tailrisk economics

Tailrisk economics is a Wellington economics consultancy. It specialises in the economics of low probability, high impact events including financial crises and natural disasters. Tailrisk economics also provides consulting services on:

- The economics of financial regulation
- Advanced capital adequacy modelling
- Stress testing for large and small financial institutions
- Regulatory compliance for financial institutions
- General economics.

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The road to level 4 and back

Part one: Introduction

This report primarily focuses on the analysis and reasoning behind the decision to move to the Covid-19 alert level 4 on 26 March 2020, and the subsequent moves back through the levels. It is largely based on an examination of the large scale 'proactive' release of official documents, but also considers other relevant sources.

The context, of course, is that the policies were a success. Against most expectations the virus was eliminated, at least until recently. There was an element of luck in this, because this is a 'sneaky' virus, and asymptomatic transmission can see the virus pop back up even when there have been no cases for weeks, and there is always a risk at the border.

However, the outcome is not the only measure of success. The use of sustained, but very costly, brute force against an early stage epidemic should work, but that does not mean it was necessarily the best policy if a similar outcome could have been achieved with a less costly strategy.

The official line is that it was all necessary, and that the hard lockdown saved New Zealand from impending disaster. The following is a RNZ report on what the Prime Minister said at a 5 April 2020 briefing.

She cited scientific modelling by Rodney Jones that had estimated there could be 4000 confirmed cases by this weekend, but measures taken by the government had limited that to just 1000.

"Those 3000 fewer cases shows the difference that cumulative action can make. Three thousand fewer people sick with Covid-19, 3000 fewer people passing the virus onto others and into others," she said.

These numbers proved very little. The Jones projection has not been disclosed, so it is not possible to assess its merits and to see what the counterfactual that generated

the 4000 infections was. It could have been a 'do nothing' scenario, with no contact tracing and isolation, no level two and three restrictions and no spontaneous population behavioural change.

However, the Prime Minister was simply wrong in implying that the lockdown reduced case numbers by 3000 by 5 April. That was impossible because there is a lag between a policy action that reduces infections and the time a case is actually recorded. This gap was thought to be about two weeks on average, though some cases will come through more quickly. By 5 April the lockdown had only been in effect for 9 days, and could only have had a limited effect on the number of recorded cases.

One important purpose of this report is to help provide some ex-post accountability for decisions that were made quickly, with little transparency, and without the consultation and testing that would normally accompany policy measures of the magnitude of moving to alert level 4.

In particular the requirement to complete Regulatory Impact Assessments was dropped on 20 March 2020, just prior to the consideration of the Cabinet paper supporting the move to level 4 on 23 March 2020. The exemption applies to all Covid-19 measures up to 31 August 2020. While there was a logic to dropping the requirement in the heat of the early decision-making process, it is difficult to see why the exemption had to extend to the end of August. To a degree this report attempts to fill the gap in the Treasury's oversight role.

We have tried to be comprehensive and have largely let the relevant official and advisory papers speak for themselves, rather than just providing our summary assessments. This will help readers make their own assessments without having to wade through a mountain of papers.

Where we have been critical of the Ministry of Health, other advisers and decision makers, we have tried to be mindful of the fact that decisions were often being made under time pressure, in a fast-moving situation where there was incomplete information. We have tried to avoid a hindsight wisdom. The main test was how the analysis and judgments stood up against what was known, or should have been known, at the time.

We think that we are reasonably well placed to do that. We first became involved when we checked the Ministry of Health's epidemic modelling on or about the first of April, when we did not have much more information than was available to decision makers when the level 4 decision was made. It was clear to us there was something very wrong with some of the modelling and that there was a significant

element of hype in the public messaging. That analysis was released in the report ‘A look behind the headlines’¹. This report follows and builds on our initial, partial, assessments.

This is a complex story and reasonable people can come to different conclusions about what was, and wasn’t, done. This paper may be helpful to those who want to know what happened before forming a view. However, this is a critical review and comes with our take on the evidence. It also reflects our preference for evidence based policies, informed by modelling, because that is our background. We are less comfortable than some with ‘seat of the pants’ decision making.

As well as the walk through the decision, monitoring and background documents, the report also examines the rationale behind the focus on ‘equity’, which has been identified as the ‘centrepiece’ of the New Zealand Covid-19 strategy in several documents. Other matters, particularly the border control issue and the human rights implications of the lockdown and other restrictions, are also considered. Human rights is not our normal domain, but the restrictions impacted on the human rights of most New Zealanders in significant ways. This would only be lawful if the interventions were both necessary and proportionate, and this involves an assessment of both the costs and the benefits of each intervention. We consider whether these tests were met.

The report is organized as follows:

Part two presents some key conclusions.

Part three reviews analysis presented in documents leading up to the decision to move successively to levels 3 and 4.

Part four discusses, in depth, the key document behind the level 3 and 4 decisions.

Part five examines the documents supporting the moves to alert levels three, two and one.

Part six reviews the mathematical modelling and other background papers that informed the Ministry of Health decision-making.

Part seven reviews the evidence underpinning the ‘equity’ focus of the pandemic strategy. In particular it looks at the relevant part of the Otago Covid-19 Research

¹ Tailrisk Economics The Ministry of Health’s modeling of the impact of the Coronavirus on New Zealand: A look

Group analysis that purports to show that Maori and Pacific death rates would be much higher than the European population. A Te Panaha Matatiki (TPM) report, which came to a similar conclusion, is also reviewed.

Part eight looks at human rights considerations, and the rationale for imposing a state of emergency.

Part nine discusses the border control issue. Recent modeling by TPM on quarantining effectiveness is reviewed.

Part ten comments on the Swedish experience.

Part two: Some key conclusions

Decision to move to level four precipitous

The decision to move to alert level four was made precipitously, without any consideration of the options. The move was made days after the move to level 2, which was intended to be in place for up to 30 days. Work was only just starting on the detail of level 3, and moving to level 4 had not been seriously contemplated. The situation had not changed unexpectedly in the three days between the level two and level four decisions. What had changed was who was calling the shots. Legally it should have been the Director General of Health, but he bent with the political wind.

The decision paper to move to levels three and four was an obvious sham. There was no real evidence, set against objective criteria, to support a level four move. There was a sudden determination to have a lockdown regardless of the evidence and the costs. This may have been caused by a lack of confidence in the Ministry of Health's management of contact tracing and their lack of analytical capacity. As late as March 16 the contact tracing capacity was only 10 per day, with plans to scale it up to 50. (Parts three and four)

No analysis of the costs and benefits of different interventions

No detailed quantitative assessment was ever made, before, during and after the lockdown of the impact of different interventions on virus transmission rates. There was no attempt, at all, to assess the cost of the lockdown before the decision was made to go to alert level 4. The discussion was limited to just a single line to the effect that the costs would be very large.

No decision to move to an elimination strategy

The alert level 4 decision was made to support a suppression strategy, which would have involved containing the virus so the health system was not overwhelmed. The elimination strategy just emerged over the next week or so. There was no formal decision to change the strategy and no assessment of the respective costs and benefits of elimination and suppression strategies. (Part four)

The issue appeared to have been briefly considered by officials some weeks previously. They concluded that the worst economic outcome would be a successful elimination outcome that resulted in New Zealand subsequently being isolated from the rest of the world. (Part three)

Strategic thinking mostly limited to slogans

There was little strategic thinking and analysis beyond a recitation of slogans and mantras: 'Keep it out; stamp it out; manage it'; 'go hard go early', 'break the chains of transmission', were the favorites. Simple slogans have their place in conveying complex ideas, but the slogans were often all that there was.

Ministry of Health analysis often lacked analytical content and a serious consideration of relevant evidence

There is little evidence that the Ministry had the capacity to model Covid-19, or to critically assess other modeling evidence put before them or decision-makers. Not a single model has been developed. The lack of Ministry capacity meant that the gap was filled by chancers and 'influencers'.

Director General made a false and misleading statement on modelling

A press release by the Director General of Health claiming that decision-making was based on robust modelling made multiple false and misleading statements.

(Part six)

Ministry initially bungled the contact tracing programme

The Ministry, initially, did not understand the difference between a flu epidemic, which moves very quickly and will soon overwhelm any contact tracing capability, and the Covid-19 epidemic where contact tracing should have an ongoing role.

Contact tracing worked (just)

While the Ministry apparently lost the confidence of decision-makers on contact tracing, it did get its act together, just in time, and contact tracing probably played a significant role in reducing case numbers.

The epidemic was under control before the lockdown

The case data on the timing of infections suggests that the epidemic was under control (with a reproduction rate of about 1) before the lockdown began. But because of the lag from the point of infection to when cases were reported, that could not have been known at the time.

(Part Six)

Some of the big calls were possibly right

Under the pressure of time, the stress of what was perceived to be a looming health catastrophe and a loss in confidence in the Ministry, decisions had to be made, and were made on gut feel rather than analysis. Sometimes an instinctive decision can be the right one. In our view a decision to move more quickly to level three was a reasonable call, at the time. But while there was little to be gained by waiting for

too long, two or three days to put a more efficient and equitable intervention framework together would have been time well spent. Contrary to some of the more hysterical claims at the time, New Zealand was not on the edge of an impending catastrophe. Border controls were working well and people were already changing their behaviour to reduce their risks.

And some were wrong

The decision to close down all but 'essential' businesses was largely the wrong call. In particular the case for closing down the building and construction industry was particularly weak. Officials suggested that this industry remain open but Cabinet insisted on closing it. Decisions should have been made on the transmission risks posed by businesses, not whether they were 'essential' or not.

In our view the epidemic could have been brought under control with something like the intervention levels adopted in Australia, but without the coercion. There would have been very little difference to the number of cases and deaths. The cost of this mistake was probably in the order of \$7 billion. This may seem like a small number in the current environment, but it is not trivial.

Movements to lower levels were too slow

It quickly became apparent that the epidemic was under control and that some relaxation was in order. However, there was a precommitment to 4 weeks at level four. The basis for the four weeks was never made clear, but it appears to be related to the Director General's misunderstanding of the length of an infection cycle. He seemed to think that it was 14 days and that he needed two cycles to see how infection rates were developing. However the Covid-19 infection cycle is about 5-6 days. The 14 days possibly refers to the quarantine period, which is calculated as the time for 99 percent of infectious cases to emerge.

The reporting during levels 4 and 3 almost willfully seemed to ignore the rapid progress that was being made, and there was no serious analysis of the data. This may have been motivated by a reluctance to admit that the level 4 interventions were an overreaction.

(Part 5)

Cabinet was misled on the human rights implications of the moves to level three and four

In the level 3 and 4 decision paper it was stated that there were no human rights implications. This was a false statement. Prior to the lockdown decision the Director General of Health had discussed at some length the human rights implications of much less intrusive measures, and in subsequent papers intrusions on human rights

were considered to be very serious. The statement in the decision paper appears to have been an attempt to rush the measures though without Cabinet being alerted to, or reminded of, the human rights implications of what they were doing. The lack of any consideration of human rights, in itself, raises the possibility that some of the measures were unlawful. It is not enough to simply assert, after the event, that all of the measures were all demonstrably necessary and proportionate. It has to be demonstrated for each order.

(Part four)

Director General made a false and misleading statement on human rights implications of the 'stay at home' order

To support his decision to issue a 'stay at home' order the Director General implied that this was supported by modelling of the impact of voluntary and mandatory measures. This was false and misleading. There was no such modelling.

(Part seven)

Some measures may have been unlawful breaches of human rights

It can be lawful to derogate from human rights in a health emergency, but only if the measures are demonstrably necessary and proportionate, and if each measure is individually assessed against those tests. It is not a valid test to say that because Covid-19 represents a serious risk to health, all measures taken to combat it are necessarily lawful.

In our view some of the measures taken did not meet the necessary and proportionate tests. These are quite strong tests. Measures have to be 'demonstrably' necessary. If less intrusive options are available they should be preferred. Measures with a trivial impact on transmission rates should not be imposed. Bans on swimming and fishing from the shore, and some restrictions on funeral numbers are amongst the instances where the necessary and proportionate tests were probably not met. (Part seven)

Human Rights Commission ignored human rights implications of the lockdown

The only references to constraints on freedoms in the initial report by the Commission were to constraints on prisoners' freedoms. The Commissioner did however react to the rushed passing of the Covid-19 Public Health Emergency Act

(Part seven)

Maori and Pacific unlikely to be disproportionately affected in an unrestrained epidemic

Contrary to claims made in research papers by the Otago Covid Research Group and Te Punaha Matatiki, Maori and Pacific would be unlikely to have disproportionately high death tolls in an unrestrained covid-19 epidemic. The reason is that the disease disproportionately affects the aged and a smaller proportion of Maori and Pacific are in the most vulnerable age groups. This should balance the increased risk due to the higher rate of comorbidities in Pacific and Maori.

(Part seven)

Scope to ease border controls at low risk

There is scope to ease some border controls, allowing entry to high value visitors from lower-risk countries. There is limited scope to 'save' the tourist industry, in the short run, but parts of the education export industry can be salvaged at very low risk.

(Part eight)

Modelling set up to favour a conservative approach to quarantining

Recent modelling of quarantining by Te Punaha Matatiki, apparently at the behest of the Ministry, was set up to favour the 14 day quarantine period over shorter alternatives, which were described as 'ineffective'. This was misleading. The tail of the 'infectionness' distribution was truncated to make the 14 day quarantine appear less risky, with one transmission though quarantine every 600 days. A more conservative assessment might be more like one every three to six months. There is scope to reduce quarantine requirements for some returnees at a very low risk.

(Part nine)

Part three: Analysis leading up to the lockdown decision

Note that this review is based the documents, made available in the ‘proactive’ releases from 8 May 2020, and on other documents made available on the Covid-19 and the Ministry of Health websites. As such, it provides only a partial understanding of the analysis and thinking that was going on behind the scenes. However, it does give us a sense of the information that was being presented to decision-makers, and how their decision-making was being framed. Assuming that the Ministry of Health had an incentive to disclose the best of its analysis, it is also probably a reasonable representation of the breadth and depth of their thinking.

The relevant documents provided in the ‘proactive’ releases from 8 May 2020 are reviewed in chronological order focusing on their relevance to the eventual decisions. Many do not provide much information and are described only briefly.

The document trail started on 28 January 2020.

28 January 2020

Proposed Amendment to the Health Act 1956 - Novel Coronavirus

The paper sought approval for making covid-19 a notifiable disease. The paper provided a background on the coronavirus and made the following statement:

To date, while cases of human to human transmission have been reported, provisional information suggests the disease does not appear to be spread easily between people. At this stage, the Ministry of Health’s Incident Management Team has assessed the risk of the disease being imported to New Zealand as low. However, the situation globally is changing daily and more needs to be known about the strain of the disease to determine how significant the public health risk is. In addition, symptoms can take up to two weeks from infection to develop.

The statement that the disease did not appear to be spread easily between people was obviously wrong. It should have been evident, from publicly available information at that time, that the disease was relatively contagious. China had just imposed its lockdown. Similarly, the assessment that the risk of being imported into New Zealand was low is difficult to understand. It was reported that cases had

appeared in the US, Korea, Japan, Thailand, Singapore and Australia. It would have only taken one infected visitor for it to be imported into New Zealand.

Under the paper's recommendations, though, it was stated:

that while the risk of spread to New Zealand is low, the current outbreak in China of novel coronavirus is capable of being transmitted between human beings and poses a potentially serious risk to public health;

Which suggests a more serious risk.

Overall, however, the assessment may have reflected, and contributed to, a feeling of complacency. It was 'over there', and not really New Zealand's problem. This was perhaps understandable. It was very early days in the development of the pandemic, and the Ministry was still feeling its way.

There is a description of the Ministry's responses to the potential risks, which began on 6 January with advice to DHBs. Health advice cards were being made available at borders. The Government's Interagency Pandemic Group convened on 24 January. Agreement to make Covid-19 a notifiable disease was obtained.

There was a brief assessment of human rights implications.

There are human rights implications arising from this paper although nothing in it is inconsistent with the New Zealand Bill of Rights Act 1990 due to the limits on the right being reasonable limits justified under section 5 of the Act. Nothing in the paper is inconsistent with the Human Rights Act 1993.

There was no discussion of what human rights could be limited by what potential actions, and why these actions would be 'reasonable'.

1 February 2020

Novel Coronavirus: Update and Enhanced Border Measures

This was a minute of Cabinet decisions to enhance border measures. The paper was not released.

2 February 2020

Phases of the New Zealand Influenza pandemic plan as applied to the 2019 covid response

This is a two page spreadsheet that sets out epidemic response phases and associated actions. The phases were:

- Plan for it;
- Keep it out;
- Stamp it out;
- Manage it.

In the 'stamp it out' phase, which starts when the first case is identified and there are then clusters of cases, the actions are:

Thorough contact tracing; prepare business continuity plans , border surveillance, monitor healthline calls, international reporting and monitoring healthline calls.

In the 'manage It' phase, when there is: *'increased and substantial transmission in the general community'*

The responses were:

consider issuing epidemic notice; activate recovery plans ; ensure staff welfare and move from contact tracing to general welfare.

There was no suggestion that highly intrusive and costly measures could be required to manage an outbreak. The 'plan' pointed to a critical weakness in the Ministry's thinking built around their influenza epidemic plan. In an influenza epidemic the virus spreads very quickly, and there is little role for contact tracing once the virus takes sufficient hold in the 'manage it' phase. Covid-19, on the other hand, moves more slowly and contact tracing can continue to be effective, alongside social distancing measures, as the numbers grow.

Covid-19 requires a different perspective on the role of contact tracing and the resources required to make it effective. It should not be regarded as just a low resource trip wire, to be abandoned soon into the 'manage' it phase. Rather it requires substantial resources to be pre-positioned to give it a significant ongoing role. The successful Asian countries realised this early on. The Taiwanese, Hong Kong and Korean stories of the successful implementation of large scale contact tracing responses are well known. Cambodia was another, little known, success story. It put together a contact tracing force of 2,900 early on. They had 191 cases and no deaths by the end of July. Iceland starting almost from scratch at the end of February put a formidable, old fashioned contact tracing system together. In combination with voluntary social distancing and a few rules it brought the virus under control. Iceland

is better known for its early widespread testing. That only helped a little. It was the contact tracing that did the bulk of the work.

To illustrate the ongoing role of contact tracing, suppose the New Zealand basic reproduction rate (R) is 2.0 (one infection generates two more infections in the absence of behavioural changes), which will result in about 70 percent of the population being infected in three months or so. To bring the epidemic under control R must be reduced to below 1. Now assume that the Government wishes to get R down to 0.7. This target would allow some margin for uncertainty and would make reasonably rapid progress towards an elimination target (if that was the goal). The Government can rely on voluntary changes in social distancing and relatively unintrusive (compared to a full lockdown) social distancing tools. Assume these will only reduce contacts by 40 percent, reducing the effective R to 1.2. Case numbers will steadily grow. Adding an effective and timely testing, contact tracing and isolation system could reduce the reproduction rate by, say, 40 percent to bring the reproduction rate down to about 0.7.

However, this assumes that the contact tracing resources are sufficient and effective. If there are only resources to trace 25 cases and 50 appear, then the effectiveness of the tracing system immediately falls by half. In the next transmission cycle (which could be about 6 days), there are more cases, the effectiveness falls further, and soon contact tracing has little impact on the epidemic trajectory. It then becomes necessary to impose more restrictions to get R down to 0.7.

3 February 2020

2019 Novel Coronavirus Response Update

The focus was primarily on border closure issues. The Office of the Scientific Advisor to the Prime Minister, and the Ministry were to provide to weekly updates on epidemiology of the epidemic to Ministers with the power to act.

The virus was described as having a mortality rate of 2-3 percent, with 20 percent of those affected suffering a major illness. This was an early estimate based on Chinese experience. Later estimates in the literature pointed to mortality rates between 0.5-1 percent, but there was no update of this information in later reports.

4 February 2020

Response issues update

This paper was mainly concerned with issues arising from border restrictions on China affecting the tourism and education export sectors.

4 February 2020

Health advice on checking people are self isolating

This was a technical paper focusing on self isolation requirements.

5 February 2020

Update

This was mainly concerned with supply chain issues relating to the Chinese lockdown.

5 February 2020

Health advice on protocols following first case confirmation of novel coronavirus

This was a preparedness document mainly directed to managing the public relations aspect of just the single initial event. It did not address subsequent actions.

10 February 2020

Cabinet minute on update

No substantive information.

17 February 2020

Cabinet minute on update

No new relevant information.

5 March 2020

Table top exercise

This paper reported on some scenario analysis to test the capability of handling cluster outbreaks in a resthome, a Marae, and an Auckland Pacific community. The main focus was on conducting these exercises sensitively and appropriately. The

session was assessed as productive and further exercises covering a range of issues were planned. Documents on those exercises were not released, and there is no evidence that the work was done before the move to level 4.

The 'table top' exercise appears to have been the only analysis relating to testing, tracing and isolation capabilities. There appears to have been no assessment of the adequacy of contact tracing and isolation capacity. It still appeared that officials regarded widespread transmission as inevitable, with tracing scrapped once the epidemic got underway.

9 March 2020

Request to make COVID-19 a Quarantinable Disease under the Health Act 1956

The quarantinable disease designation would only affect incoming passengers from overseas. It is stated that a 'risk-based' approach was taken and it was claimed that the benefits of the measure outweigh the costs.

While there are limited cases in New Zealand and the priority remains 'keep it out', the additional health risk of domestic importation of the virus outweighs the risk of disruption at disembarking. The risk of disruption can be mitigated to some extent by border agencies working together with health officials, as now, to ensure ease of implementation and clarity of communication to affected groups such as airlines and airports.

There is no evidence that there was any genuine risk-based assessment. It appears that the claim that additional health risks outweighed the costs was just an assertion. A convincing case could have been made, fairly readily, but it appears that the capacity or inclination to do the analysis was lacking.

The Ministry was released by Treasury from the requirement to provide an impact analysis, to back up their assessment that the benefits outweighed the costs. As noted in the introduction, impact analyses were abandoned across the board on 20 March 2020.

No impact analysis has been provided, and on the face of it, none of the existing grounds for exemptions from the regulatory impact analysis requirements apply because this measure could have significant economic and social impacts. Rather than triggering the Supplementary Analysis Requirements at this time, the Regulatory Quality Team (Treasury) recommends that the ongoing monitoring of the costs and benefits of the use of these powers is part of the implementation of this proposal.

The ongoing monitoring does not appear to have been done. As we shall see there is no record of any impact assessments, or more formal cost benefit analyses of

measures subsequently taken. Costs and benefits were never seriously thought about, let alone monitored or assessed.

In our view the release from the impact assessment requirement was a mistake. It released officials from any obligation to think about what they were doing in a structured and disciplined manner. If they were aware that they were subject to the impact assessment discipline then we might have seen something better than what was a woefully inadequate analytical performance.

Human Rights Implications

The proposals in this paper have implications under the New Zealand Bill of Rights Act 1990.:

The Minister attested that the intrusions were reasonable and proportionate.

Having regard to the risks to public health and safety from any potential outbreak, I am satisfied that inclusion of COVID-19 and coronavirus causing severe respiratory illness as quarantinable diseases is reasonable in this case. The limitations on rights are justified in light of the public health risk and are proportionate given the potential likelihood and consequences of the spread of COVID-19 in any outbreak in New Zealand.

There is no record that the Minister was made aware of any assessment of the risks to public health and safety.

10 March 2020

Critical issues Ad hoc Cabinet Committee paper

The overall message was that all was in hand. Border restrictions, for China, had been in place since 2 February. Contact tracing and isolation were ‘intensifying’. However, there was a warning.

Managing and slowing the spread will require making decisions on a menu of interventions- including cancelling mass meetings; closing schools, restricting movements.

But nothing even approaching a hard lockdown was suggested, or even alluded to. There is no evidence that much work was being done on these measures.

There was information on what agencies were doing and what resources were deployed. The resources devoted to the response looked impressive. A summary of the staff numbers involved is presented in table 2. The total is about 480.

Table 1: Covid-19 related staff numbers

Agency	Staff numbers involved
Border	100
Health	70 in the response team. To double in next two weeks. 30-50 more in support
NEMA	29
MBIE	65 Similar number from immigration
Treasury	35

11 March 2020

Public health modelling and scenarios

This was the first sign of any analysis. It was a two page, hard to read, dashboard style schematic overview of a range of information including the following:

- *There is no evidence of transmission occurring in the community. No outbreaks have occurred in particular locations, such as a hospital, aged care facility, a correctional facility, or a community event.*
- *Based on the current situation outside of China and available evidence, ESR assesses the likelihood of widespread outbreaks in New Zealand to be low.*

ESR is a Crown research entity specialising in the science ‘relating to people and communities’. Their report, if there was one, has not been disclosed, so it is not clear how they came to the conclusion that there was a low risk of widespread outbreaks in New Zealand. Their assessment was obviously wrong. The ESR continued to provide reports to the Ministry post the imposition of the lockdown. We have examined these reports in part six. To get ahead of that story, they were very cautious and mostly vacuous.

Information was provided on UK and Australian worst case scenarios. Some of the numbers were frightening, but It was not explained that these were unrestrained epidemic projections, assuming no government actions at all, and no changes in population behaviour. Nor was any apparent attempt made to assess the reasonableness of the assessments driving the results. The sources of these projections were not given.

The information provided was:

UK “reasonable worst case” scenario:

- *Infections: 80% of population*
- *20% of workforce off sick at peak of epidemic*

Two pieces of information were redacted. We suspect that the information came from UK authorities who, from our reading of the UK SAGE (Scientific Advisory Groups for Emergencies) minutes, appeared to be heavily influenced by the now notorious London Imperial College modelling, which we discuss in part six.

Australia “severe” scenario:

- *Infections: 70% of population*
This assumes an unrestrained epidemic.
- *Hospitalisation: 14% of infected;*
- *ICU: 5% of infected*
- *Case fatality rate: 3% of infected*
This death rate was a multiple of the most likely outcome of around 0.5-1.0 percent, given what was known at the time about Australian demographics.
- *Outbreak length: 10 months → 40% of workforce affected by illness or caring for sick at peak.*
The 40 percent figure was an exaggerated number and not consistent with the outbreak length assessment.

Notably, no New Zealand assessment was provided.

On the economic effects there is a schematic and qualitative representation (figure 1 below) of the New Zealand economy up to 2023, with different worldwide and New Zealand pandemic outcomes. The worst outcome for New Zealand is a successful keep it out, stamp it out campaign (the green line), which involves New Zealand isolating itself from the world until the population is vaccinated, while the rest of the world suffers a global pandemic. It was concluded that New Zealand’s ongoing economic isolation would be more economically damaging than a widespread New Zealand epidemic.

This outcome is not backed up by any detailed analysis, but it suggests that at least some officials were thinking that the direct economic consequences of a New Zealand pandemic were not that severe, and that longterm isolation would have more serious economic consequences.

Response strategy

The second page reveals something about the strategic thinking, which is captured by the diagram in figure two. The objective was to ensure that health system capacity was not exceeded. But that was far as it went. There was no attempt to quantify what the health system capacity was, and what that meant in terms of the

number of cases a day that could be handled. Did it mean, for example, that we could handle a peak of 500 cases a day, or 10,000?

Figure one: Officials' Economic scenarios

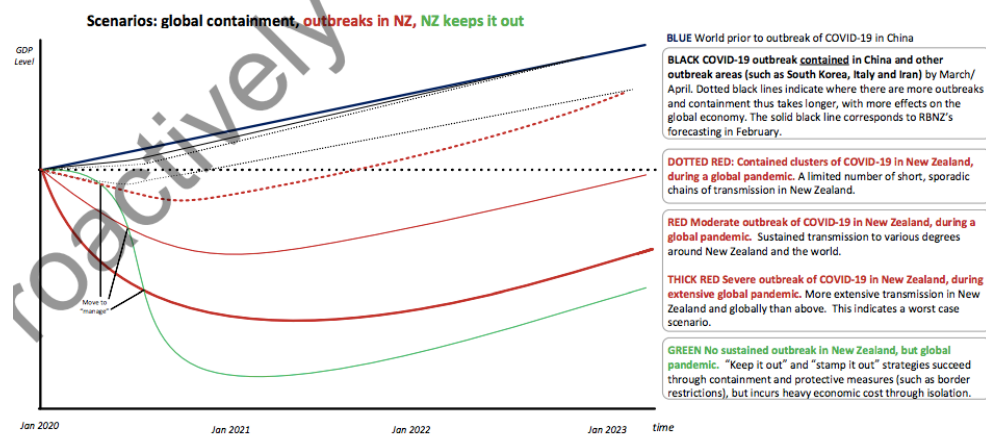
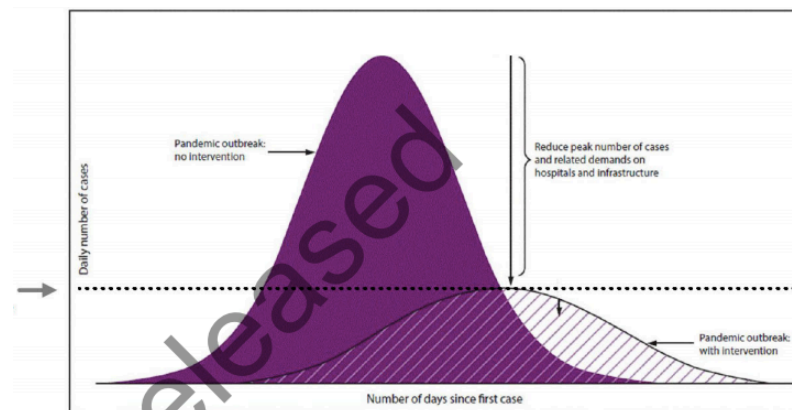


Figure two: Schematic representation of healthcare based strategy



The key points of the strategy are described as:

1. Delay the arrival
2. Flatten the peak and the curve

The best way to support the healthcare system and the economy is to spread the load.

This is summed up with the slogan.

This means go early, go hard, stay the course

Which is pretty vacuous without any information or understanding of what 'go hard' means. But it appears that at this point 'go hard' didn't mean very hard.

With the appearance of multiple clusters the suggested actions were to:

- *encourage employers to consider alternativeways of working*
- *Promote social distancing and consider restricting mass gatherings and closing public venues in affected areas*
- *Consider feasibility of placing restrictions on affected areas*
- *Consider activating community-based assessment centres as appropriate*

And with the start of community or sustained transmission:

- *Consider added legislative measures e.g special powers under the Health Act and Epidemic preparedness act e.g can require cancellation of mass events, workplace closures , impose internal travel restrictions*
- *Consider imposing a state of emergency*
- *Review travel restrictions*
- *Consider advising people at high risk to stay at home*
- *Activate community based assessment centres*
- *DHB defer elective procedures*

There was no mention of across the board 'stay at home' requirements or any clue given as to the extent of the workplace closures.

With sustained and intensive transmission possible measures were:

- *Remove travel restrictions,*

Presumably because they were no longer serving a purpose.

- *Major prioritisation of health services*
- *Promote care in the community. Note a major part of the community likely to be affected by illness or by caring at home.*

The strategy was mainly to live with the consequences, in terms of case numbers, but there was no quantification of the effects in terms of deaths and pressure on health resources.

It is difficult to understand what the large number of public servants devoted to the covid-19 response were doing if this critical information was not available.

11 March 2020

Public Information

This is an information piece to the ad hoc Cabinet Committee piece on the public education measures that were underway.

11 March 2020

All of Government system

This was a short information piece on how the involved agencies fitted together and who was doing what.

March 12 2020

COVID-19 – Advice on Mass Gatherings

Up to this point the Ministry had been providing advice on mass gatherings. No restrictions were recommended in this paper. It was noted however:

When transmission becomes sustained in the community, and the peak of the epidemic is still some weeks away, cancellation of public gathering should be actively considered. Data from seasonal and pandemic influenza models indicate that during the mitigation phase, cancellations of public gatherings before the peak of epidemics or pandemics may reduce virus transmission.

Other social distancing measures may include:

- a. closure of schools/universities*
- b. stopping public gatherings (such as public gatherings, such as sport events, concerts, religious events, large social events (charity functions, University halls) and conferences)*
- c. closing places of work where infection has been identified*
- d. mobility restrictions into and out of towns and cities.*

This was a reiteration of the strategy outline in the 11 March paper.

16 March 2020

COVID-19 Response to Mass Gatherings

This paper sought to provide clarification to organisers of mass gatherings on what events should and should not be cancelled.

The response objectives were also articulated.

Our public health strategy seeks to delay the onset of community transmission of COVID-19, and to limit the infection's spread if community transmission occurs here.

The main significance of this paper was an extensive discussion of human rights implications of possible measures. This advice is presented in part seven .

March 16 2020

Funding of covid-19 response

Money was no object at this point. \$40 million was allocated to contact tracing.

March 17 2020

Systems architecture (Health System preparedness)

This is a three page summary overview. One of the the take-outs from this document was that there was little enthusaism for long-term border restrictions because of their economic costs. An across the board border closure was mentioned, but this was just in passing.

There was a focus on health system capacity. Testing capacity was at 700 a day and would increase to 1500 a day by 22 March.

Contact tracing capacity was estimated at 10 active cases, scaling up to 50. It is not sure whether they meant that the capacity was 10 new cases a day, or whether they could handle just 10 cases in total. Either way there was little capacity to manage a serious upsurge in cases.

The second part of the document set out the strategy. This was labelled 'suppression' as opposed to the 'mitigation' alternative.

The preferred suppression strategy was captured by the slogans:

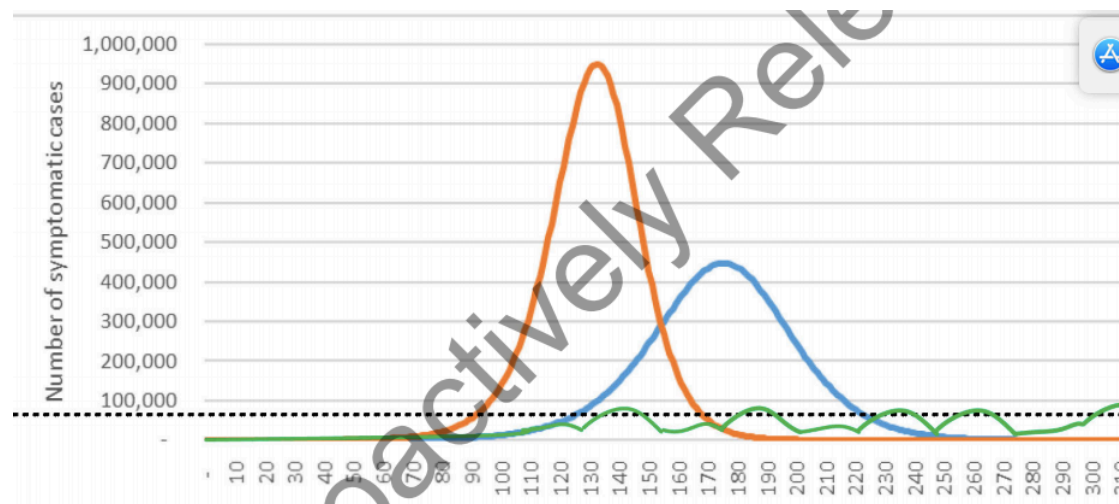
Our strategy is focusing on keeping Covid-19 out , stamping it out and slowing it down.

And

Our strategy is to prevent widespread outbreaks.

The 'analysis' was supported by a figure illustrating two epidemic curves shown in figure three.

Figure three: Epidemic curves



The orange curve is described as an unrestricted epidemic and the blue curve is a 'mitigation' strategy curve. The suppression strategy is the wiggly green line.

The strategy revolves around border restrictions, intense testing, aggressive contact tracing and stringent self isolation and quarantine. Physical distancing will also be required to varying degrees as we proceed along this path.

The distinctive feature is that suppression allows a yo-yo-ing in the strength of policy interventions. The stringent isolation and quarantine refers to individuals, not to a mass quarantine.

Should outbreaks occur a suppression strategy aims to reverse epidemic growth through tougher public health measures eg by strengthening physical distancing. And when case numbers fall the restrictions can be eased slightly.

The basic idea is to keep cases from exceeding the dotted line which is drawn at about 80,000 cases. We are not told about the time period the 80,000 refers to. Is it per day, or per month? As the time periods on the horizontal axis are in segments of 10 days, the 80,000 probably refers to a ten day period, in which case the daily target would be 8,000 cases a day. It is not clear whether they had this number in mind, or whether they had thought about the limit very clearly.

And this is what was said on the costs and benefits of the strategy.

A suppression policy does involve significant economic and social disruption but many lives will be saved and more people will remain well to operate the health system and the economy. This approach is distinct from a mitigation policy which involves focussing on the size of the peak i.e a move from the blue to the orange line.

Except this is not what the blue line was actually showing. The figure, reproduced below, was taken from a modelling report from the Otago Covid Response Group (OCEG). It shows the impact of different assumptions about the reproduction rate generated by an online calculator, Coviidsim. The lower blue line just shows that a lower reproduction rate has a lower peak case rate without any mitigation. It is not a mitigation curve.

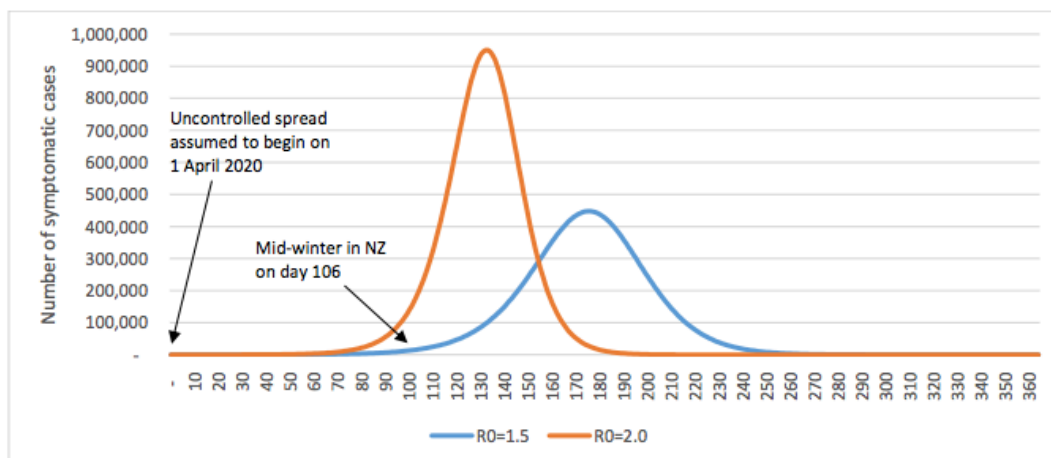
As discussed in our 'A Look Behind the Headlines' report, Coviidsim was not suitable for assessing policy options, because it did not allow the settings to be adjusted over time. The solution was to build a better model. It might have taken a couple of days.

But officials did not do that. Their response was to draw in a wiggly green line. And that was the sum of their analytical effort.

The 'plan', in its entirety, was to 'do some policy intervention stuff' and if that worked, do 'a bit less of some stuff' and then 'do some more stuff' once the case numbers increase again, and so on until a vaccine comes to the rescue.

Figure 3: OCRG epidemic curves

Figure 1: Epidemic curves for the spread of COVID-19 in New Zealand ($R_0 = 1.5$ and $R_0 = 2.0$ and as per parameters in Table 1) assuming no changes in human behaviour or interventions (ie, which is unrealistic but is assumed here to demonstrate uncontrolled epidemic patterns)



18 March 2020

CVD Paper: COVID-19: All of Government Plan for Maximising Compliance with Self-Isolation

This paper sought agreement to an approach to maximising compliance with self isolation. The focus was on the people required to isolate, not on the whole community. An enforcement capacity was required for:

*‘those few people; who chose not to comply with self-isolation requirements’
Where people cannot manage to isolate at home, there will need to be more government intervention to manage and monitor their isolation, including isolation facilities at scale. This is intended for the most vulnerable and higher risk people. In particular those who have direct contact with a confirmed case and/or have needs or have needs or circumstances, that means that self-isolation is not an option.*

The focus was on voluntary compliance – with isolation not being seen as something to be feared and avoided. There was a report on 50 police visits on 17 March. Of the 50 visits, two people were not at home, and one person was non-compliant. It is not clear whether those at home were compliant or not, but the data does not paint a picture of widespread non-compliance.

There was a discussion of ‘plans to develop plans’ for large scale isolation and quarantining facilities.

18 March 2020

Noting paper to ad hoc Cabinet committee COVID-19 Contact Tracing

This paper provided an update on work underway to scale up capacity for contact tracing, and outlined the new model being explored for establishing a central contact tracing coordination hub. The following comment still suggests a lack of urgency about the scale of the testing required beyond the initial phase.

Contract tracing is a critical tool in managing infectious disease breakouts and pandemics. The main purpose of contact tracing is to support the ‘Stamp It Out’ pandemic response phase. The World Health Organization has recommended that the duration of contact tracing be extended for longer over the course of the COVID-19 outbreak.

The problem here is that Ministry had no analytical framework for assessing modelling tracing capacity. If they had, the issue of testing capacity and performance would have become evident much earlier. In the event, the contact tracing capacity, combined with the moderate social distancing measures and the public’s hygiene and voluntary social distancing turned out to work, but that was not known at the

time. The Ministry's perceived inadequacies and lack of urgency on contact tracing opened the door to the proponents of extreme lockdown measures.

March 18 2020

Decision Paper: COVID-19 Mass Gatherings

This paper provided further guidance on mass gatherings.

March 21 2020

Maori response package

This provided information on some funding from the MOF for various Maori Covid-19 spending initiatives.

Moving to level 2

20 March 2020

Current state trajectories and interventions

Signed by Brook Barrington Chief Executive, Department of Prime Minister and Cabinet, John Ombler Covid-19 All of Government Controller

This paper was the alert level 2 decision document.

It started with a review of the current situation:

- *New Zealand is going hard and going early. On 19 March border restrictions were maximised to lessen the risk of New Zealand importing cases of COVID-19. We are ramping up testing, contact tracing and self-isolation requirements.*
- *All confirmed cases are imported or close contacts with them.*
- *We do not know whether community transmission is occurring in New Zealand. Epidemiologists consider it likely there is some 'silent' transmission occurring in the community. However, we have not had any seriously ill patients with COVID-19 pneumonia, which generally develops over 2-3 weeks from infection.*

It then adopted a more strident tone.

The next 2-3 weeks is critical to New Zealand's COVID-19 response. Our ability to stamp it out depends on ramping up testing to identify cases, scaling up contact tracing and enforcing self-isolation. We are acting rapidly on all three fronts.

If community transmission becomes widespread we will have lost the opportunity gained by closing the border. International advice is that for each case we may be missing nine. Even with no further imported cases, if we have missed early cases transmitting silently, we could suddenly face an exponential rise in cases as has happened elsewhere. To minimise the likelihood of this occurring, decisive action is needed immediately.

The public health of New Zealanders is the top priority. Maintaining public health may require us to move up the alert levels.

The economic and social implications of moving up the alert system are very significant. The framework sets these out at a high-level.

We face a stark choice. Iran and Italy show dramatically what happens when action is taken too late

Possible trajectories of new cases were set out in the following figure. Doing less resulted in 500 cases a day by April 17; staying at level one would see about 120; and level 2 would reduce this to 50-60

It is not clear how these numbers were calculated. They could have been just made-up, or generated by a simple epidemic calculator. The low numbers, the lack of detail, and the lack of any explanation of why the alert level 2 interventions were apparently so effective may not have inspired confidence. Other projections, and in particular the Rodney Jones estimates, may have appeared to be more sophisticated and convincing.

Figure four: case trajectories



The only sign of any analysis in the paper was a set of graphs comparing New Zealand's experience from the date of the first case with those from a selection of countries. The Australian example is shown below. The point, we presume, was to

illustrate that New Zealand case numbers could grow. Beyond that, these sorts of comparisons are not very meaningful, as they depend on happenstance on the arrival of overseas cases and the progress of the virus in overseas countries which will impact on the number of imported cases.

For example, New Zealand's epidemic appears to be developing more rapidly than Australia's, in terms of the numbers subsequent to the first case, but that is only because Australia just happened to have a couple of early cases at the beginning of February, which didn't appear to result in community transmission. Its upsurge in imported cases didn't really start until well into March, not too far ahead of the New Zealand imported case upsurge. But this is not readily apparent from the figure, and it looks like New Zealand cases are growing more vigorously than Australia's at the same time in the progression of case numbers. Our new cases at day 22 was about 10, and Australia's was 0.

This reporting data was misleading and may have spooked some decision-makers.

Figure five: New case comparison UK

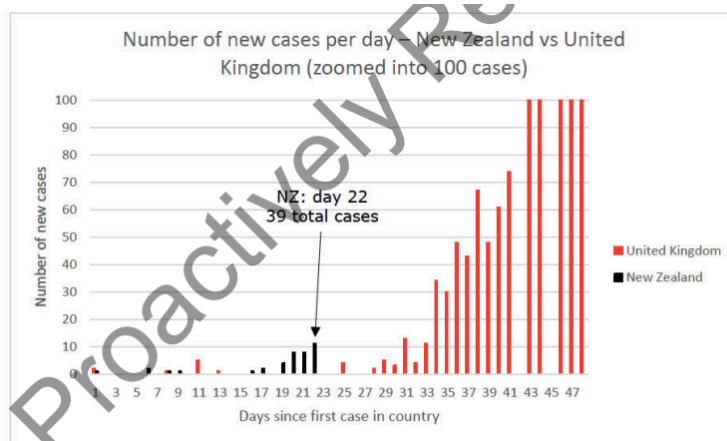


Figure six: New case comparisons Australia

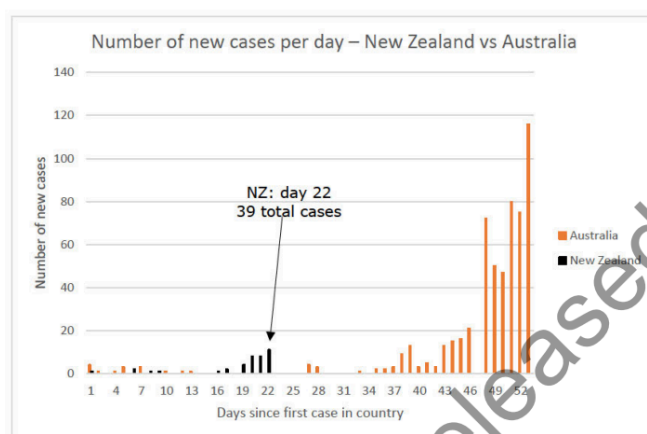
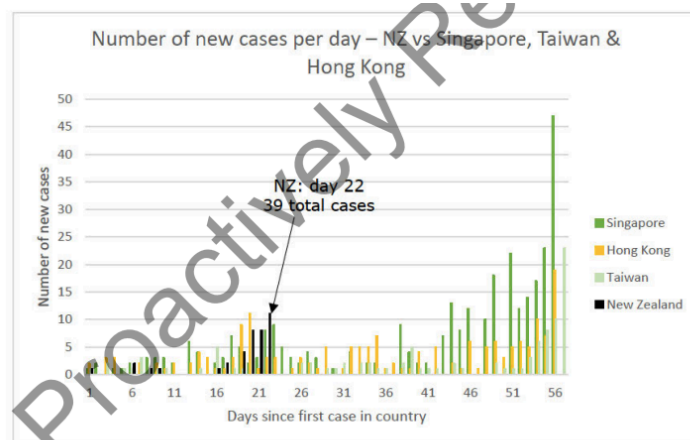


Figure seven: New cases a day Singapore, Taiwan and Hong Kong



Interventions

In the intervention section the right things were said.

Evidence from public health shows that we need a suite of interventions applied together if we are to contain Covid-19. Each support level therefor contains an integrated set of measures which build on the actions of the level below.

It was recommended that New Zealand move completely to level 2 and **remain there for up to 30 days initially** (our emphasis). It was also recommended that schools make the last week of term teacher only days to prepare for teaching remotely.

In practical terms the following was being done:

Guidance is being written for all of the measures in Level 2. It is also time to begin detailing the actions we are planning for level 3. We must offer the public assurance on when they can expect further measures.

This appears to be an admission that there had been no detailed planning for level 3 and a movement to level 4 had not even been thought about.

The appendix set out the triggers for moving to higher alert levels; the measures at each level; and the social and economic consequences. These are set out in their entirety.

Level 3

Triggers

- *Disease increasingly difficult to contain*
- *Community transmission occurring OR*
- *Multiple clusters break out*

Key measures

- *Domestic travel advisories issued to avoid areas with clusters or community transmission*
- *Public transport limited and physical distancing imposed*
- *Educational facilities closed*
- *All mass gatherings cancelled*
- *Public venues closed (eg libraries, museums, cinemas, food courts, gyms, pools, amusement parks)*
- *Restrictions on bars and restaurants (eg operating hours)*
- *Alternative ways of working required and non-essential businesses suggested to consider closing*
- *Non acute (elective) services and procedures in hospitals deferred and healthcare staff reprioritised*

Compared to the level 3 that was eventually adopted (on the way down from level 4) this was a relatively soft level 3. It did not, for example, close shops, bars and restaurants completely. Nevertheless, the impacts were seen as substantial.

Impact on daily life

- *Severe disruption to the economy*
- *Social interactions severely limited*
- *Travel maybe significantly affected*
- *Significant work and school absentism*
- *Options for children of essential workers*

Level 4

Triggers

- *Disease is not contained*
- *Sustained and intensive transmission*

Key measures

- *State of local or national emergency declared*
- *Population instructed to stay at home*
- *Domestic travel restrictions imposed depending on areas of outbreak and risk*
- *Businesses closed except for essential services (supermarkets, pharmacies, clinics) and lifeline utilities*
- *Rationing of supplies and requisitioning of facilities possible*
- *Public transport severely limited*
- *Major reprioritisation of healthcare services*

- *Triaging of patients to “COVID clinics, or home, who otherwise would be hospitalised*

Impact on daily life

- *Extreme economic and social disruption and dislocation*
- *Significant number of deaths*
- *travel movement severely restricted*
- *Options needed for children of essential workers*

There was no signalling that these measures could have legal and human rights implications.

Part four: Alert levels 3 and 4 decision paper

23 March 2020

Covid-19: Moving to alert levels 3 and 4

The arguments and supporting analysis for moving to alert levels 3 and 4 are set out in the document *Covid-19: Moving to alert levels 3 and 4* dated 23 March 2020, three days after the decision to move to alert level 2, and the decision to stay at that level for up to 30 days. The paper was prepared by the All-of-Government COVID-19 Strategy and Policy Group.

In this part we set out all of the relevant arguments for the alert level moves, commenting as we proceed. The story turns out to be consistent with the widespread understanding of what happened. The Prime Minister viewed a case number curve showing a steep increase in cases numbers, got hyped up, and with a small circle of supporters, pushed through a new 'go hard, go early' response - the lockdown. The test was to be the first evidence of community transmission. There was then a mad scramble to figure out what a lockdown meant and how to do it, and to rush out something that might pass for a decision paper.

The content of the paper was as follows:

The New Zealand's approach to responding to COVID-19

The COVID-19 pandemic has dramatically changed the world and New Zealand in a very short time. The world is facing a public health emergency and an economic crisis – a double crisis unprecedented for 100 years. Our geographical distance does not protect New Zealand from this crisis.

The world was, and is, facing an economic crisis but a significant part of that crisis was generated by actions taken by governments to defeat the virus rather than the properties of the virus itself.

COVID-19 poses a unique threat to humans and our way of life. We have no base level of immunity as humans have not previously been exposed to the novel coronavirus. There is no vaccine and no proven effective treatments. Because of this, the risk to the public health of New Zealanders is very high and is likely to remain so until scientists have found a vaccine or effective treatments. While scientific knowledge is increasing day by day, vaccines and treatments may be 12-18 months away

There is no discussion here of the nature and extent of health risks posed by the virus. It is overwhelmingly a risk to the aged. 85-90 percent of deaths have been in

the 70+ age groups, and disproportionately in those with existing medical conditions. There is a much smaller risk to the economically active, and so there would not be a huge impact on the functioning of the economy, beyond a month or so at the peak of the epidemic, even if it were allowed to run completely unimpeded.

In that respect it could be less disruptive than the influenza epidemic of 1918. In its 16 March report the Otago Covid Research Group estimated deaths would be between 9,000 and 11,000 if the virus was allowed to proceed unhindered. However, this did not contain an estimate of the increase in the number of deaths if the health system were overwhelmed. Deaths amongst the economically active could be around 1500, but only if people took no measures to protect themselves and there were no social distancing measures at all.

There was no assessment here or anywhere else of the burden of the disease, which can be measured in terms of years of life lost (YLL). YLL is a metric widely used by health professional economists to assess the relative seriousness of a disease, to assist in making decisions about the amount of resources that should be devoted to combatting it. On a YLL basis a largely unrestrained Covid-19 epidemic is probably only about 10-20 percent as serious as the 1918 flu epidemic.

COVID-19 is rapidly spreading around the world, particularly in Europe and the United States. To date, East Asian countries and territories have been most effective at containing COVID-19 through aggressive and effective containment measures. New Zealand needs to take similar, and urgent, action if we are to avoid exponential growth rates which quickly leads to an overwhelmed health system and higher case fatality rates.

Only China, of the successful East Asian countries, resorted to the 'full lockdown', and that in a restricted area. Several of the East Asian countries that took decisive action put a heavy weight on testing, contact tracing and isolation, together with moderate social distancing measures.

The "flattening the curve" approach would still overwhelm our health system and could lead to high fatality rates as we are witnessing in Italy. We have therefore adopted a "suppression" strategy which focuses on keeping COVID-19 out, stamping it out and slowing it down. Our aim is to prevent widespread outbreaks. Should outbreaks occur, a suppression strategy aims to reverse epidemic growth through tougher public health measures – eg by more intense physical distancing and travel restrictions. Border restrictions, intense testing, aggressive contact tracing, and stringent self-isolation and quarantine are fundamental to the success of the strategy.

It is not clear what was meant by the 'flattening of the curve' approach. Flattening of the curve can mean anything short of doing nothing. The curve can be flattened

enough, to reduce the risk that the health system is overwhelmed. If it is successful then the more extreme measures can be avoided. If they are not successful then a better prepared move, to a sensible higher alert level could still occur.

There is no mention here of the need to take stronger measures to protect the elderly, in particular the 35,000 in rest homes.

Our alert system has been designed with this strategy in mind as it allows us to tighten and loosen measures in response to the spread of COVID-19. The aim is to ensure that health system capacity is not exceeded through strengthening public health measures.

This is a reasonable aim, but there is no analysis here, or anywhere else, of the consequences of the health system being 'overwhelmed' and how long it would take to reach that point under reasonable assumptions. It is not the 'elimination' strategy that appeared later in the lockdown

New Zealand is at a critical moment. If we do not act soon, we risk an exponential growth in cases. We therefore must seize the opportunity to apply tougher containment measures to increase our chances of succeeding at our suppression strategy.

Exponential growth in cases is not necessarily a major issue, foreshadowing a cataclysmic outcome. A two percent growth in case numbers a week is exponential growth, but it would mean that cases had only increased by less than 200 percent, over a year. A doubling each week is a different story, but there is no discussion of what growth rates are likely and what impact the already agreed level two measures would have on the growth rate.

A suppression strategy does incur significant economic and social disruption. Longer periods of physical distancing will be required. However, many lives will be saved and more people remain well so we are able to operate the economy and the health care system.

This is a reiteration of the arguments made in the alert level 2 paper.

From the start, officials' advice and Government decision-making has deliberately taken a precautionary approach to slow the importation and spread of COVID-19 in New Zealand. Measures we have taken to date, such as closing our border, have slowed the arrival and spread of the virus in New Zealand. This has bought us time to:

- Advance our preparations to respond to an outbreak so that we can prevent widespread community transmission in New Zealand*
- understand better the virus' epidemiology, including the prevalence of asymptomatic transmission, and*
- learn lessons from how other countries have managed outbreaks, applied innovative and timely approaches, and in doing so, have controlled case fatality rates.*

The longer we postpone cases in New Zealand, the better the healthcare system can function, the lower the case fatality rate, and the higher the share of the population that will be vaccinated before it gets infected.

This is mostly self-evident, but there is no attempt at a quantification of some of the benefits, such as the lower case fatality rate. The logic here is that if a large number of cases arrive in a short period of time, then hospital facilities will be overwhelmed and death rates will go up.

If community transmission becomes widespread we will have lost the opportunity gained by closing the border. International advice is that for each case we have identified we have missed nine.

The source of the 'international advice' is not disclosed, and it is not clear what relevance it would have had to New Zealand. The number of unidentified cases in a country at the early stage of an epidemic, with some interception of imported cases and contact tracing, will be lower than in countries at a later stage of the epidemic and no contact tracing.

A second piece of 'evidence' on undocumented infections was:

A study based on data of China's COVID-19 infections prior to 23 January found that most COVID-19 infections were undocumented and not identified because the infected persons experienced no or only mild symptoms.

The reporting of the Chinese study was partial, and designed to overstate the extent of unreported infections. The relevant part of the abstract read:

We estimate 86% of all infections were undocumented (95% CI: [82%–90%]) prior to 23 January 2020 travel restrictions. Per person, the transmission rate of undocumented infections was 55% of documented infections ([46%–62%]), yet, due to their greater numbers, undocumented infections were the infection source for 79% of documented cases. These findings explain the rapid geographic spread of SARS-CoV2 and indicate containment of this virus will be particularly challenging.

If you read past the abstract, however, a different picture emerges.

The paper actually reported on two sets of modelling simulations. The first was for the period 10-23 January, reported above. The second was from 24 January to 8 February, when there were travel restrictions and an increase in care seeking behaviour as the public became aware of coronavirus risk. Over this period the estimate of the percentage of cases that were documented increased from 14 percent (a seven to one ratio of unreported to reported) to 65 percent (a ratio of 0.5). This is the result that should have been reported in the Cabinet paper, because

it best reflected the New Zealand situation by 23 March. Travel restrictions were in place; the public was aware of the disease; and reporting protocols should have been more robust.

This misrepresentation of the evidence may have had an important impact on Ministers' and officials' thinking. With 66 reported cases they might have thought there were nearly 600 undiscovered cases, rather than 33 based on the most relevant Chinese evidence.

The conclusion from this discussion heightened the risk.

Even if there were no further imported cases, if we have missed early cases transmitting silently we could suddenly face an exponential rise in cases as has happened elsewhere in the world.

The following section provided the analysis that drove the decisions to move to level 4.

Assessment of COVID-19 in New Zealand

It is highly likely that community transmission is occurring.

That was no surprise. With a large number of imported cases there must have been at least one case of community transmission. But that does not necessarily mean disaster. It just means that contact tracers have been unable to link it to a known case. It is also likely that there would have been community transmission prior to 20 March, when the alert level 2 decision was made, so nothing had really changed over the three days.

As at 22 March there are 66 confirmed cases in New Zealand. There are confirmed cases in 16 out of 20 health districts. Up until 20 March 2020, all cases were connected with a confirmed COVID-19 cases. This is no longer true. Seven cases notified in the last few days and under investigation as at 22 March had no international travel history.

Some of these may have eventually turned out to have a travel history once the investigations were complete.

A conference in Queenstown on 9-13 March is a common event among seven confirmed cases. There may be additional unknown cases connected with this event.

The source of exposure is becoming less clear. It is highly likely that community transmission is already in place or it is soon to become more widespread. It is likely that cases have already been missed due to the mild nature of the disease in many individuals and the early focus on international travel. Last week the case definition was widened to allow for clinical

discretion. This change has led to more testing and greater discovery of COVID-19 cases in New Zealand.

Escalation in the public health response is required if we are to avoid the impact seen in other countries.

The conclusion, that a huge escalation in the public health response was required, was a large leap from some very scanty evidence. The test that seemed to be applied to the move to level three bore little relationship to the tests that were set out in the level 2 decision just three days before. This is discussed further below.

Other countries show what can be achieved when a nation acts quickly and decisively with effective measures and high compliance. We must continue to learn from the experience of other countries' trajectories. The experience of Iran and Italy illustrates what can happen if action is taken too late and health systems become overwhelmed. The experiences of Singapore and Taiwan, by contrast, illustrate what can be achieved by an island nation which acts quickly and decisively with effective measures and high compliance.

Experience overseas demonstrates that there is no single approach that is effective in reducing COVID-19. A severe lockdown to reduce physical contact managed to contain and control the spread in China. Implementing extensive "track trace and treat" measures have been effective in Singapore, Taiwan and South Korea.

The paper did not discuss why New Zealand should go with the Chinese model rather than the less intrusive and costly approaches of the other Asian countries. China is an authoritarian, sometimes vicious regime, which places no weight on human rights and the harm a severe lockdown may inflict on its citizens.

We consider New Zealand and Australia good comparators due to similar health and social systems. Our containment strategies to date have been similar to those in Australia. If we look at the number of cases in New South Wales we are near the same place they were on 11 March 2020. It appears that we are on a similar trajectory to New South Wales. If this continues we could have approximately 350 cases in about 10 days time.

The New South Wales case numbers did not necessarily show that their situation was out of control. Cases were growing in Australia because an increasing number of Australians were returning from international hotspots at the time. Providing most of these were being picked up relatively quickly, and not too many infections were passed on to the wider community, then the situation was controllable.

Responding to the current situation and outlook

Cabinet has consistently responded to official advice on measures for COVID-19 containment to date. The situation is rapidly changing and officials have accordingly adapted their advice.

As noted above nothing of substance had really changed in just three days. What had changed was how the situation was being perceived, and who was in control of the narrative.

Moving to higher levels

Officials recommend escalating to a higher level initially with the potential to de-escalate at the regional level based on evolving epidemiology.

There are a number of considerations for moving between levels at a national level. Not all conditions would have to be met to justify a move.

The level three tests were amended from the tests set three days earlier so they were easier to meet:

1. *Disease increasingly difficult to contain* became *increasing numbers of new cases each day*.
With the high number of returning New Zealanders there would naturally be an increase in cases, so this was not a very relevant test.
2. *Community transmission occurring* became *high likelihood of community transmission*,
Which is a lower test.
3. *Multiple cluster outbreaks* became *confirmed clusters outside households*.
Which is also a lower test.

The level 4 tests were now described as:

- A. *Rapidly increasing rate of new cases*
Again this took no account of the inevitable rise in cases from returning New Zealanders which was being managed by quarantine or isolation requirements. There was no suggestion that this approach was not working.
- B. *Community transmission confirmed in multiple locations*
This does not address what constitutes community transmission in multiple locations. Is it a single case or many? How many locations do you need for there to be multiple locations? According to the appendix there were four cases of community transmission in three locations.
- C. *Health sector concerns about data timeliness and accuracy*
Data is never fully accurate or timely, but it was not explained why this matter could be of such importance that it could play a material role in the alert level decision. And whose concerns in the health sector should count in this evaluation? One disgruntled doctor, or many?
- D. *Contact tracing becomes less feasible*

There is no analysis of whether contact tracing was becoming less feasible and what was meant by 'less feasible'. This did however point to a lack of confidence in the contact tracing system.

E. Health sector capacity under pressure

Clearly by March 23 there was no pressure on the system.

F. Public non-compliance with existing containment measures

Compliance was always good, and there was no opportunity to assess compliance under level 3.

These preconditions were a fairly fundamental move from the triggers set just three days earlier. They were that the 'disease is not contained' and there was 'sustained and intensive transmission'.

Setting up the decision is the warning:

If community transmission becomes widespread we will have lost this opportunity gained by closing the border. Once community transmission is established the number of cases will double every 5 days.

There is no indication of where the 5 days doubling period came from and what policy and behavioural actions it took into account. A five day doubling is an unconstrained rate of growth, ignoring the impact of spontaneous behavioural changes, level 2 and 3 measures, and testing tracing and isolation. The statement gave the impression that unless there was an immediate move to level 4 a runaway situation was inevitable.

It is critical that New Zealand acts decisively. Early action will increase our chances of preventing exponential growth in case numbers and multiple clusters of case numbers.

It is true that early action increases your chances. The issue is by how much. If you have a 95 percent chance of avoiding sustained (high) exponential growth at level 3, with the option of moving to level 4 should it prove necessary, is it worth moving to level four, for a sustained period of time immediately, to improve those odds to, say, 97 percent?

Officials believe that the conditions for moving to level 3 have been met.

The grounds were:

- *Increasing number of imported cases and an increased geographical dispersion*

Geographical dispersion was not set out as a criterion so the goalposts appeared to have shifted again, just in the space of a few pages.

- *Cases over previous days suggest that community transmission is higher likely*
Which is impossible to disprove.

Alert level 4

The case for level 4 was

- *New Zealand has seen a rapid rise in imported cases and an increase in geographical spread of COVID-19*
- *Cases over recent days suggest that community spread of COVID-19 is highly likely.*

Which was identical to the level three tests. They did not bother actually applying the level four tests set out earlier in the document because:

A move to Level 4 is inevitable in the near term

It was inevitable because the decision had obviously been made to move to level 4, regardless of the evidence.

The public health objective

Apparently there was a change in the policy objective

The primary public health objective right now is to break the train of community transmission, rather than simply slowing the spread of COVID-19.

‘Breaking the train of community transmission’ could mean anything. It depends how much of the community transmission you want to break, and how quickly you want to do it. An objective of reducing the reproduction rate to below one will involve breaking community transmission rates gradually over time. It can be achieved with less intrusive interventions. But an objective of extinguishing the disease as soon as practicably possible, and at all costs, is a different proposition and requires stronger control measures. The tone of the paper is that the officials were leaning towards the latter approach, but it was not clear how this ‘new’ approach was meant to fit with the suppression strategy set out at the beginning of the document, and whether there had been a move to an elimination strategy.

Given the bare statement on the public health objective, and the lack of any supporting discussion, it is not clear that Ministers would have been aware of what they were signing up to.

Our assessment is that the impact of moving to level 3 is unlikely to be sufficient to achieve the break in community transmission, and that the conditions for moving from level 3 to level 4 may be met now or in a few days.

There is little evidence that officials ever did any analysis of the relative effectiveness of level 3 versus level 4, or even thought very seriously about the issue. If the objective was to get the rate of transmission below one, then there were good arguments that a level 3 intervention would suffice. There is no evidence that closing down all 'non-essential' workplaces was necessary to get the transmission rate below one.

Critically, there was no discussion of the costs of level 4 (other than an admission that it would be very costly) and no assessment of the marginal effectiveness of each of measure relative to its costs.

Officials wanted to exclude building and construction from the lockdown

However, even in the apparently hyped atmosphere of the day officials knew that closing the building and construction industry would achieve little, but at a significant cost. The reasons are obvious. Builders tend to work in small groups; can more easily socially distance; are often working outside; and do not often rely on public transport. In the appendix to the decision document, which set out the essential and nonessential businesses, building and construction and supporting activities were defined as essential activities. This 'advice', was overturned by Cabinet.

The time on level 4

The only statement of the time of the level 4 lockdown was:

We consider that any move to Level 4 would be for a minimum of 4 weeks.

There is no discussion of why a minimum of 4 weeks was required, nor is there any evidence that the issue has been analysed in any other paper.

A scramble to implementation

It is clear that a level 4 intervention had not been seriously thought about until a few days before the decision, and that little preparation had been done.

We are not ready to move to Level 4 today, but over the next 24-48 hours, we are working through a number of critical questions around how Level 4 would get implemented if a quick decision was taken. These include;

The legislative powers and enforcement and compliance regime, including the possibility of new legislation

Implementation issues, such as further defining essential services and

establishing an operational regime and clear communications to make this work well

Economic and social support and other mitigations, required.

The costs

The public health case for moving to Level 3 is clear. However, many of the measures that Level 3 requires are expensive, disruptive and inconvenient. They will mean real harm and have extremely significant social and economic implications for New Zealanders: people will become unemployed, be unable to pay their bills, go out of business, and there will be psychosocial impacts.

There is no attempt at an assessment of the magnitude of these impacts, though fair warning was given that the effects would be large. The lack of information points to the lack of preparation and the lack of an analytical framework.

And this is what was said about the additional impact of level 4 in its entirety.

The most important economic intervention we can make is to ensure that the health system is operating at maximum capacity. Work is underway across multiple fronts on this aspect and investment here gives the highest benefit of all interventions.

This was simply an evasion. The issue was the marginal economic consequences of the decision to move to level 4, not what the health system can do to ‘help’ the economy.

Even in its own terms, ‘ensuring that the health system is operating at ‘maximum capacity’ doesn’t make much sense. We presume that what they were trying to say here, is that if workers get sick, a health system working at maximum capacity will get more workers back to work sooner. This impact would be minor. Only a very small proportion of those in the work force would need hospital care and so could benefit from a more efficient system.

The paper goes on to discuss some of the mitigations for some of those affected by the lockdown. But this mostly addressed the distributional effects of the policies. It does not go to the underlying economic costs.

It was agreed that declaring a state of emergency under the Civil Defence Emergency Management Act 2002 is the preferred approach to allow the measures in Level 4.

Human Rights, Gender Implications and Disability Perspectives

It was stated that there are no human rights, gender, or disability implications.

This statement on human rights was, put bluntly, a lie. The human rights implications of the measures were well understood. It appears that the paper's sponsors did not want Cabinet to think about the human rights implications of what they were doing.

Summing up the case for moving to level 4.

The evidence base was

- A single Chinese paper on the prevalence of silent transmission of the disease. The content of the paper was either not read or misrepresented.
- The fact that four or (seven) cases could not be traced.

There was no assessment of the economic costs.

It is obvious that the alert level assessment was a sham. The decision to move level four had already been made.

March 23 2020

Cabinet minute of Decision

The minute of the Cabinet Decision provides further information on the decision making process.

It was noted that Cabinet:

has sought constant reassurance that New Zealand's testing regime is adequate, and that the government's expectations in this regard are being met.

And under note 18 it was further noted:

that testing, contact tracing, and oversight of self-isolation and quarantine are fundamental workstreams to the strategy at any level, and Ministers will need to be especially confident about the delivery of these aspects;

These notes probably reflected a lack of confidence in the contact tracing system.

24 March 2020

Briefing on essential services to Ad hoc cabinet committee on Covid -19 response

The decision to close down all but 'essential' services was rushed and left several decisions, on what was an essential service, up in the air. The Cabinet paper did set

out the following set of ‘principles’ for the identification of essential services but these were not very instructive.

In deciding which services need to continue, we have been guided by the following principles:

81.1 Public health is paramount, so we need to minimise risks to public health.

81.2 We must continue our response to COVID-19.

81.3 We must ensure the necessities of life for everyone in New Zealand.

81.4 We must also maintain public health, safety and security.

The 24 March paper provided information for more decisions on what was essential and what was not. It also articulated the logic behind the framework.

New Zealand moves to Level 4 (the highest of the alert levels) from 11.59 pm on Wednesday, 25 March 2020. At this level, the objective is to limit movement and interaction of people, so that we can break chains of transmission. Moving to Level 4 is an opportunity to control the spread of COVID-19, meaning we need to make sure any movement of people for work is absolutely necessary, and accept the consequent economic impacts.

While there is an obvious logic in reducing the interaction of people to control the virus the case for reducing the movement of people is less clear. Travelling without interacting with people is not a risk factor, but the thinking behind many of the controls that were imposed suggests the Government thought that it was. This may have reflected the kind of thinking from overseas jurisdictions that relied on mass transit for going to work, and where high population densities meant that even going for a stroll on the street could mean close interactions. In New Zealand, with its high reliance on private transport, and low population density, restricting movement, as such, should have been less important.

The statement that we would ‘accept the economic consequences’ is a fair summary of the approach. Do not attempt to balance the costs against the impact on the spread of the virus. But allow ‘essential’ activities. The critical test moved from, what impact an activity has on viral spread, to what was ‘essential’.

The first recommendation was that dairies were essential because:

Dairies are a key avenue through which we can continue to provide food to people in New Zealand while at Level 4. There will be people for whom accessing a dairy is easier than accessing a supermarket, and also reduces load on supermarkets (which we may eventually need to manage through measures such as staggered entry to supermarkets, with people waiting in their own vehicles). It will support people to stay closer to their household and reduce the need for travel across/beyond suburbs and towns if the alternative is a

supermarket. In addition dairies will reduce the number of exposure points with other members of the public than will occur in supermarkets.

Someone, apparently had a soft spot for dairies because the case for them being 'essential' was a bit thin. Dairies mainly sell cigarettes, drinks and snacks. They are not a key avenue for the distribution of 'essential foods', except for a few rural communities.

It was argued that the health risks were low:

The public health risk associated with operating dairies is not greater than operating supermarkets, which also sell fast-moving consumer goods. It is possible to operate a dairy with appropriate health measures in place:

But butchers, bakers and green-grocers did not make the cut.

We do not think butchers, bakeries or similar retailers of specialised food need to remain open to the public at Level 4. Supermarkets and dairies should be able to supply basic food needs for four weeks. Allowing a large number of small food outlets to remain open at Level 4 would create health risks that we do not think are justified given there are alternative avenues through which the same or similar food can be obtained.

The logic here escapes us. If dairies could operate with appropriate health measures in place, then so could these businesses, which were providing more 'essential' products. Supermarkets sell all sorts of 'non-essential' goods which remained on sale. The small business competitors of supermarkets were disproportionately affected, not just because of the loss of income during the lockdown (while their supermarket competitors prospered), but because they were at risk of longer term damage if consumers changed their buying habits towards supermarkets.

It was also recommended that liquor outlets and food delivery services could operate but these were knocked back by the Ad Hoc Committee.

Sometimes the excessive economic cost of applying the 'essential service' metric was explicitly acknowledged. The Tiwai smelter was allowed to continue to operate.

The smelter would incur significant and irreversible costs if it were to shut and it would be a people intensive and long process. It is recommended the smelter be exempt from closure.NZ

But only very partial production was allowed in the pulp and paper industry.

All production should cease except to maintain the minimum production needed to deliver essentials (eg toilet paper). For non-essential services, plants should be safely shut down but only in a way that allows for production to recommence easily.

Methanex was allowed to operate but only at a level sufficient to maintain domestic gas supply. The marginal risk of maintaining full production did not appear to have been considered.

Primary industry was largely exempt, but only grudgingly and at a cost.

Minister O'Connor made it clear to the sector and industry leaders that, at a time when many other businesses are not able to operate, their being able to continue is a privilege, not a right.

They were lucky. Processing could have been limited to just supplying the domestic market. The export output could have been shuttered.

Other than those businesses involved in essential services or as discussed under large industrial plants, exporters should be shutting down. Exporting by itself should not be a relevant criterion. The emphasis must be on achieving the health outcomes for Level 4.

The idea that other industries, which on the face of it posed a lowered level of risk (meat processing is a particularly high risk industry) could provide safety assurances, was not entertained.

In part this was because the rushed implementation meant that the detailed work had not been done and in part it was attitude. Economic harm was almost a good thing because it demonstrated that we were the toughest in the world.

The following papers were a further 'tidyup' following the rushed implementation of level 4. They were however significant because they addressed the human rights implications of the lockdown.

1 April 2020

COVID-19: Section 70(1)(f) Health Act 1956 notice to give effect to Level 4 restrictions on self-isolation at home

MOH to Minister of Health

The purpose of this report was to provide talking points to the Minister on the Director General of Health's proposed notice under section 70(1)(f) the Health Act 1956. The notice would require persons to be quarantined, giving legal effect to the Alert Level 4 requirement to self-isolate at home.

The self-isolation requirement had been represented as a legal mandatory requirement, when it was not. It is not clear what happened here. Was the Director General reluctant to issue a general stay at home notice, because he did not think he had the legal power to do so? Or had the intent been to impose a mandatory requirement and he had mistakenly failed to do so? If there was just a mistake it was not acknowledged. Rather the new order was represented as a necessary further step.

The key points were:

- *Central to New Zealand's four-level COVID-19 Alert system is a requirement that all people in New Zealand self-isolate at home unless they are essential workers*
- *Initial reports from the Police and Healthline suggest that while there have been good levels of self-isolation, there continue to be people who are not adequately self-isolating, or who are unclear about the self-isolation requirements.*
- *The Prime Minister has previously reassured the public that they need not "police" their neighbours' adherence to the lockdown and that the government will play that role.*
- *There is a significant risk that non-compliance will result in the continued transmission of COVID-19, frustrating the objectives of mass isolation i.e. to break the chain of transmission and eliminate COVID-19 in New Zealand, leading to continued public health risk and the need to extend Alert Level 4.*
- *The Director-General of Health assesses that these risks warrant issuing a notice under section 70(1)(f) of the Health Act 1956 to require persons to be quarantined, giving effect to the Alert Level 4 restrictions on self-isolation.*

The New Zealand Government's approach to date has focused on community-endorsed compliance, supported with strong communications and clear guidance, backed up by regulators who are willing and able to enforce using strong sanctions. This notice will not fundamentally change that approach.

The notice did fundamentally change the approach. It was a move from voluntary compliance to one backed by coercion. There was no acknowledgement here that shifting from 'voluntary' compliance to coercion raised human rights issues.

2 April 2020

Noting paper: covid -19 Self:isolation order under s70(1)(F) health Act To Ad Hoc Committee on Covid-19 Response.

From David Clark

This noting paper repeated the above arguments for the self isolation order. The following appears to be Director General's full risk analysis supporting the notice.

In the absence of a vaccine the only effective strategies are to reduce mixing of susceptible and infectious people through early ascertainment of cases (testing and contact tracing) and reduction of contact.

Modelling of the epidemic in New Zealand has analysed the extent of contact reduction over various timelines, accounting for different reproduction numbers that New Zealand would need to achieve in order to 'flatten the epidemic curve' and indeed eliminate the virus which is the current objective under level 4.

This modelling justifies taking a stringent approach towards physical distancing for the entire population on the basis that if the current eradication strategy fails then the health outcomes for New Zealand could be very severe.

Director General's false and misleading statement on modelling

The Director General's statements on the modelling were misleading, if not outright false. The statements were almost certainly based on the Otago Covid Research Group (OCRG's) modelling that we criticised in 'A look behind the headlines'. The OCRG did no modelling of the relative impact of voluntary versus mandatory social distancing, as is implied. Indeed, they made no assessments of any of the alert level measures. The OCRG assumed that there was no contact tracing which is meant to be the centre of the policy response, so that any conclusions that could be drawn from the modelling on the required amount of contact tracing would have been overstated.

The Director General and/or his staff either did not understand the modelling or deliberately misled the Minister.

The Director General did not show that the order was demonstrably necessary as required by law.

Part five: From level 4 to level 1

This part is divided into three sections.

- A. Update and monitoring reports. These give a sense of how progress towards ‘breaking the chains of transmission’ was being assessed.
- B. MSP reports. MSP is the crown entity that collected case information and made risk assessments.
- C. Decision papers.

A: Updates and monitoring

30 March 2020

Situation update

This was a dashboard style two page report.

Current state

Modelling of the unmitigated progression of COVID-19 shows the peak is 5/6 months away. The impact of our current mitigations, if successful, shows we can flatten the peak, and avoid reaching it entirely, if we can keep up reasonable controls. These controls would not necessarily be the full level 4 measures. This model assumes ending the control measures after nine months, which pushes the peak into March 2021.

This shows that they were still relying on the inadequate OCRG modelling, which might have said that the peak would be 5/6 months away if there were limited interventions and no contact tracing. If they had actually run covid.sim at level 4 settings then they would have found that case numbers would have quickly dropped to low single figures in a little more than a month. The problem is that officials simply did not understand the modelling.

The only statistical information on the progress of the epidemic was a single graph showing daily and total cases. There was no interpretation of the data.

Other topics briefly summarised were:

- ICU capacity: Sufficient but working to meet anticipated demand
- PPS resources
- Healthcare workforce supply
- Lab testing
- Health Budget: \$261.3 m allocated

- Contact tracing: Some numbers on activity

9 April 2020

Situation update

Covid-19 strategy

New Zealand is pursuing an elimination strategy to manage COVID-19. Success under this strategy means that COVID-19 is fully eliminated or reduced to a small number of cases, the large majority of which are “imported” and linked to international travel. The level of COVID-19 will be manageable by the health system until a vaccine becomes available.

The elimination strategy was now cemented in.

Summary of progress

At present, we are progressing well against this strategy. Despite broadening the case definition for testing and increasing testing volumes, we have not observed an acceleration in the rate of new cases. The majority of cases have been acquired overseas or are close contacts of someone who acquired COVID-19 overseas. Approximately 2% of cases are potential community transmission. Cases are anticipated to grow over coming weeks; however we remain well behind other countries in the expected progress of COVID-19.

This summary and the rest of the report was almost bereft of any serious analysis of the data and their significance. By this stage it seemed clear that the virus was already under control with the reproduction rate below one, which was the critical decision-making metric. However, officials did not seem to realise this.

Control measures

Achieving and maintaining an elimination strategy requires the deployment of a range of control measures to stop transmission from occurring, detect transmission where it does occur, and track and control outbreaks. These control measures include:

- *Border measures and restrictions on travel*
- *Self-isolation and quarantine of confirmed and suspected cases*
- *Physical distancing for the whole population*
- *Rigorous testing and community surveillance*
- *Intensive contact tracing.*

This was just a recitation of the high level policy description with no new information.

Current State

A dashboard information set showed just: Total cases, Maori cases and Pacific cases

Change in cases over time

The rate of new cases as at 9 April is the lowest since March 21. We are now on day 4 of consecutive declines in new cases.

That was the full extent of the information provided, with no attempt to look behind the headline numbers and assess their significance.

Measures to achieve elimination

Border measures Status

Self isolation and quarantining working well.

New arrivals in New Zealand continue to be only New Zealand citizens and permanent residents. These people are closely monitored and screened during disembarkation. Those who are asymptomatic can travel domestically only if they can outline self isolation plans that meet strict criteria. If they do not meet these criteria they are required to stay in monitored self-isolation accommodation. Those who are symptomatic on their return are required to be tested and quarantined in a specialised facility for 14 days.

These statements were significant. On 9 April self isolation was 'working well'. A few days later there was a switch to managed isolation for all returnees.

The assessment of self isolation was based on police checks that showed that only one of 50 were definitely non-compliant and two were not at home. There appears to have been no attempt to assess the extent that home isolation was leading to community spread. This could have been done by matching contact traces.

12 April 2020

Situation Update

The summary of progress in this report was almost word for word identical to the 9 April report. Managed isolation and quarantine for new arrivals was still assessed as 'working well'

April 15 2020

Weekly monitoring report

This was the first weekly monitoring report, following a directive from COVID-19 Ministerial Group's to All-of-Government officials:

to develop a set of measures and regular reporting that will inform future decisions on changing Alert Levels or the overall strategy, and to report them regularly.

The matters to be reported were:

1. Cases, tests and sources of transmission;

2. Sufficient capacity in testing and contact tracing;
3. Whether self isolation is being adhered to;
4. Whether there is capacity in the health system;
5. Effects on the economy or society more generally;
6. Public attitudes towards the measures and extent to which people accept and abide by them.

The report explained the approach taken.

The approach taken to how future decisions about alert levels should reflect the broader approach to decision-making to date. That is a risk based approach that applies judgement looking across a range of factors.

There was no broad risk-based approach. The decision to move to level 4 was made regardless of the consequences and of the evidence.

This approach is more appropriate to a complex situation than alternatives such as quantitative cost benefit analysis. A cost benefit style approach may not fully capture the dynamic nature of the information and choices available at any point of time. For instance some options will be become unavailable) such as going back to get health benefits if the economic benefits have been prioritized.

Cost benefit analyses might vary in the their quality, but in principle they can capture the ‘dynamic nature’ of decision-making. Once an appropriate model is built it can generate new results in seconds, if new information is inputted. Some form of cost benefit should have been an essential input in decision-making. At the least it requires more disciplined thinking than the instinctive reaction that drove the lockdown decision.

The argument that this ‘approach’ to decision-making somehow preserved options is spurious. If health benefits are preferred over economic benefits then the option to spend the money that it costs, on something else in the future, is forgone.

Covid-19 cases and confidence in testing and sources of transmission

The number of new cases has flattened. Time taken to double has slowed down. If there was uncontrolled spread we would expect to see a doubling approximately every three days.

The number of new cases had not flattened, they had fallen substantially. It is not explained how much the time taken to double had slowed down. Nor was it explained where the 3 day doubling time for an uncontrolled spread came from, and why it is lower than the 5 days cited in previous documents. A sustained 3 day doubling rate is highly unlikely in New Zealand because it would suggest that we have one of the highest reproduction rates in the world.

Analysis suggests that 2-3 weeks ago there was undetected community transmission but we did not know how wide it was. Our high number of test and low proportion of positive test together with the low number of hospital presentation increasingly suggests that there is not widespread community transmission at this time.

The outcomes clearly showed that there was no widespread community transmission when the level 4 decision was made. Widespread community transmission can be difficult to root out and does not almost disappear in a few weeks.

There are gaps in the data –significant numbers have missing information, some have been under investigation for a long time. This somewhat reduces our confidence in the data on community transmission.

This is an attempt to put a negative spin on what was a good news story. The missing information actually biased the assessment in a negative way. If a link has been missed then this is represented as an unexplained case, which was viewed as a bad sign.

19 April 2020

Update

The summary of progress report was word for word identical to the previous update.

23 April 2020

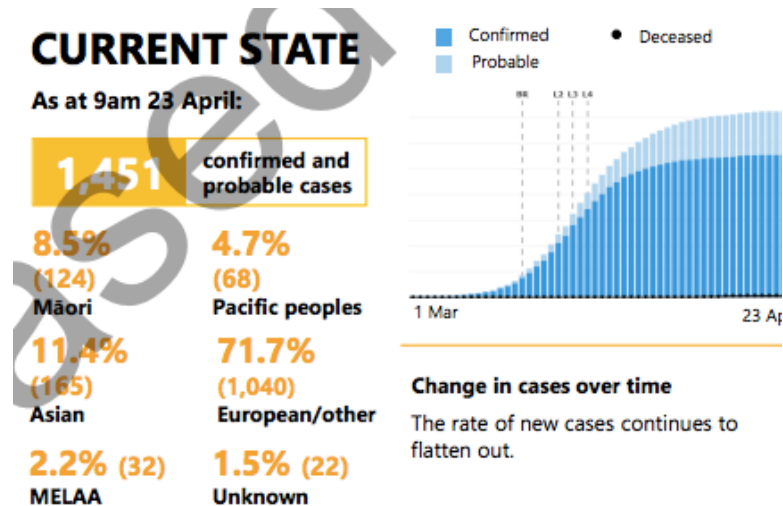
Update

The summary of progress report was almost identical to the previous ones, except that the proportion of potential community transmission cases was increased from 2 percent to 5 percent. It had actually been steadily increasing over the previous weeks, but no one had noticed, or bothered to amend the figure. And, after weeks of saying that '*cases are expected to grow over coming weeks*', which was entirely uninformative as long as there was the prospect of a single new case, this was amended to '*new cases are expected to flatten over the coming weeks*'. Which presumably meant that there would be no reduction in daily case numbers.

Under the heading '*Change in cases over time*' we are told '*The rate of new cases continues to flatten out*'. it is not immediately clear what they meant by this. New cases had been falling, not, as suggested, remaining relatively stable. The source of

the muddle appears to be that they were looking at the total of cases, which is apparent in the screen shot from the report, not new cases.

Figure eight: Case reporting



23 April 2020

Weekly monitoring report

Under the heading COVID-19 in New Zealand there is just some general information with little analysis, though confidence was expressed about limited community transmission.

New case numbers have declined further over the past week. We continue to have relatively few serious cases, and relatively low incidence of cases amongst the particularly vulnerable elderly population. We have increasing confidence that we have limited community transmission and that we have not had a large number of cases that have not been tested. There have been small numbers of cases of community transmission (locally acquired from an unknown source) each day (0–4 daily cases).

Data has become more comprehensive over the past week. Our high number of tests (see page on testing and tracing), low proportion of positive tests and negative sentinel testing results, together with our low number of hospital presentations, increasingly suggests that there is not widespread community transmission of the virus at this time.

There were international comparisons of case numbers with Singapore, Israel, Denmark, Finland, Norway, Australia and South Korea provided. There was no comparative analysis.

26 April 2020

Situation Update

The summary of progress was identical to the previous update (though the percentage of community cases was updated on this occasion).

30 April 2020

Update

An identical summary of progress again.

3 May 2020

Update

Identical again

6 May 2020

Weekly monitoring report

On the case numbers it was reported:

cases were consistently fewer than five per day. The last recorded cases were on 1 May.

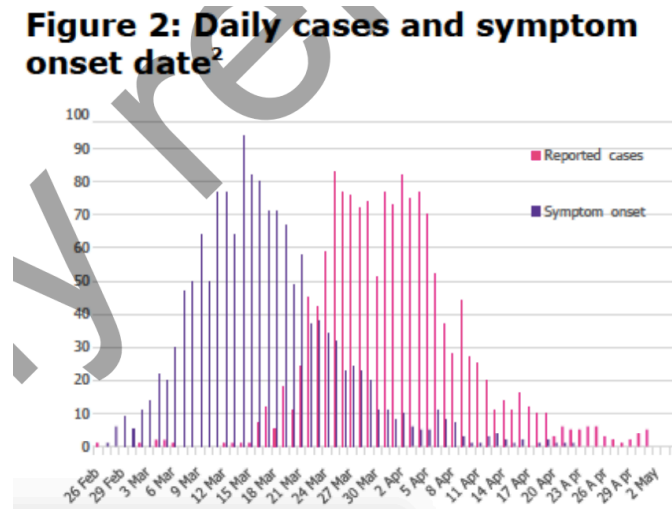
Levels of undetected community transmission have further reduced. A case on 25 April was listed as under investigation. We understand this investigation has not been completed with a link to another case identified. There are cases of potential community transmission reported on 29 April and 30 April.

A new, potentially informative, data set was presented in their figure two (our figure nine) which showed the case data by the date of first onset of symptoms, and by the date the case was reported. It suggested that the average lag was about 10 days. It was accompanied by a footnote that says symptoms appear 2-12 days after infection with an average lag of 6 days.

The significance of the table is that it provides a better measure of the effectiveness of policy interventions than recorded case numbers, which are dated when they are recorded. However, the aggregate data presented in this report is not the most informative because it does not distinguish between overseas and domestic cases. Overseas infections obviously cannot respond to New Zealand policy or behavioural changes. Fortunately this data was collected and is available on the ESR website and is presented in the figure below. The figure shows the data by date of the appearance of symptoms, for domestic infections represented by the orange and

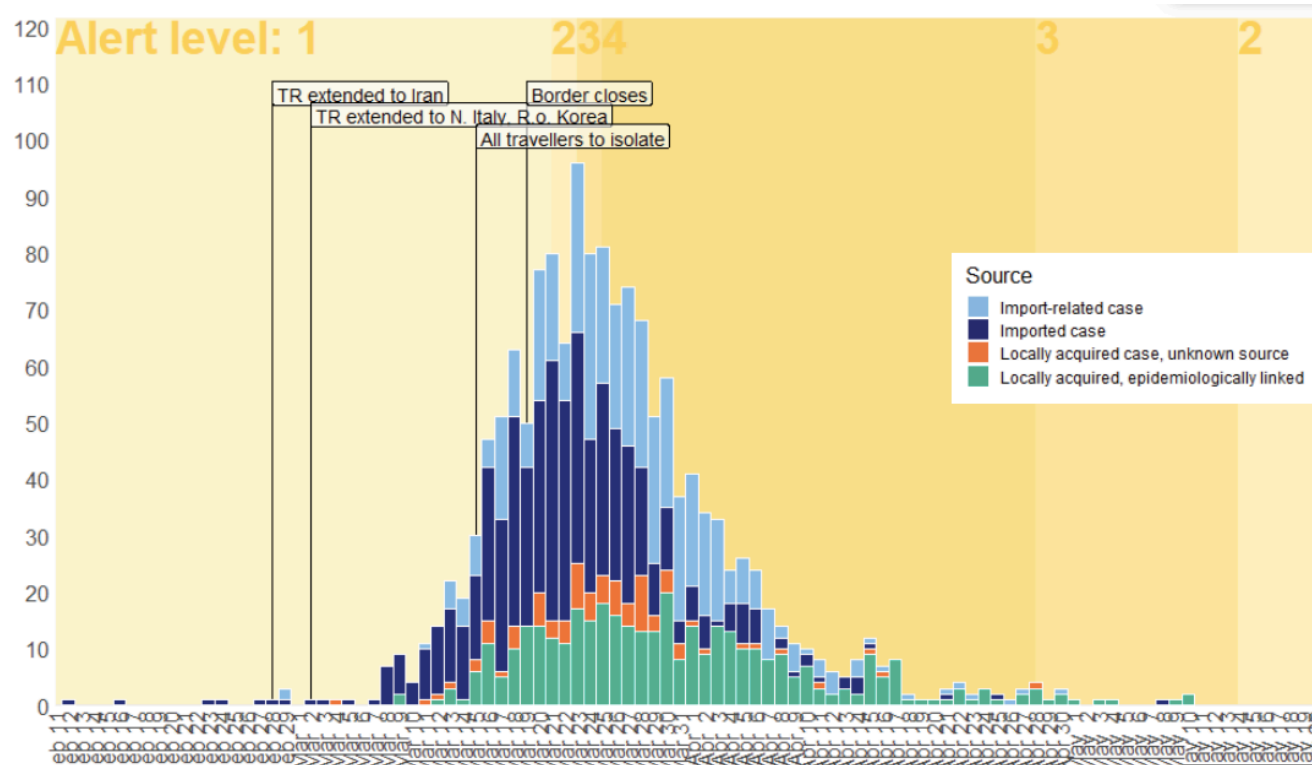
green bars. The important points to note is that these cases are relatively few, but reduced more slowly than overseas-related infections.

Figure nine: Daily cases reported and symptom onset dates



We can use this figure to ascertain when the infections occurred by assuming the average time between the infection and the appearance of symptoms is about 6 days. Unfortunately it is difficult to read the dates on the figure, but the peak day for occurrence of symptoms was 23 March. Taking 6 days off that takes us to 17 March for the peak. The numbers then basically went sideways until 22 March. This suggests that contact tracing and voluntary behavioural changes, with possibly a contribution from the level two measures, brought the epidemic under control before the level 4 measures took effect. Level three restrictions would have made a subsequent contribution to the reductions, though enhanced contact tracing would also have helped. It is not possible to ascertain what marginal contribution the level 4 restrictions would have made – it was probably small. Once the level 4 restrictions (and level 3 also) were removed there was no upward movement in case numbers.

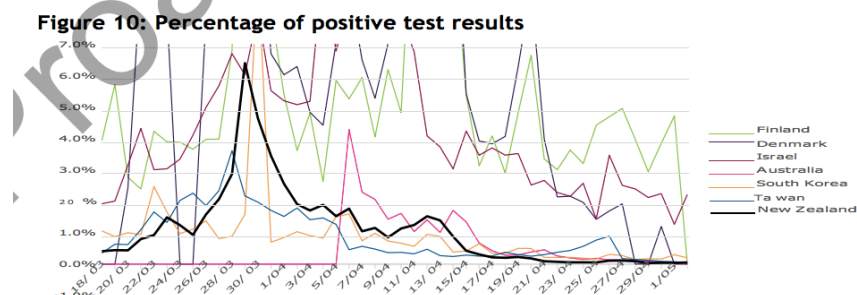
Figure ten: Daily domestic and foreign case reporting and symptom onsets



What is noteworthy here is that while the first figure was presented there was no comment on its significance. Further, the ESR figure was not presented at all. Perhaps it did not sit well with the narrative, that level 4 'saved' New Zealand. Or officials were simply incapable of interpreting the data.

There was a comparative graph, shown below, on the percentage of cases per test, which confirmed that New Zealand was matching the successful Taiwanese, Australian and Korean experiences at an early date.

Figure eleven: Percentage of positive test results



10 May 2020

Situation update

Unchanged from the previous report.

There is some information on testing and contact tracing, particularly on the performance against the tracing performance targets.

12 May 2020

Situation update

There is reporting on asymptomatic targeted testing in sectors most at risk – frontline health and police. There was one positive case where the source could not be identified. There were seven positive cases amongst Auckland airport workers

13 May 2020

Weekly monitoring report

After 14 days at level 3, we have not seen any cases attributable to relaxed restrictions or non-compliance. Only three non-imported cases have symptom onset dates in May and these are health care staff or household contacts connected with rest home clusters.

There is detail of cases over the previous 14 days by source of transmission. The date of the onset of symptoms is provided for the most recent case in each category. There is also a breakdown by DHB and by source of transmission. As the aggregate numbers were close to zero this was not informative.

14 May 2020

Situation update

New Zealand continues to progress well against the strategy.

The number of active cases has continued to steadily decline, with daily new cases at zero or remaining in the low single digits.

Wider testing by DHBs has not found unknown cases, giving confidence that cases are confined to households, and known and managed clusters. We are well placed as we move into Level 2, while continuing to closely monitor new cases, and emphasizing the need for continuing hygiene and physical distancing measures.

17 May 2020

Monitoring report

New Zealand continues to progress well against the strategy. The number of active cases has continued to steadily decline, with daily new cases at zero or remaining in the low single digits.

Bars will be permitted to open from 21 May. By then we will be in a position to be confident that COVID-19 cases continue to be contained since the move to Level 3. We continue to emphasise the need for hygiene and physical distancing measures.

By this point there was little to say.

21 May 2020

Monitoring report

New Zealand continues to progress well against the strategy. The number of active cases has continued to steadily decline, with daily new cases at zero or remaining in the low single digits, and all new current cases are linked to known clusters.

Wider asymptomatic testing by DHBs continues to return negative results, giving increased confidence that cases are confined to known clusters.

24 May 2020

Monitoring report

This is identical to the above.

26 May 2020

Monitoring report

Delay from the appearance of symptoms to case confirmation appears to be down to a couple of days.

27 May 2020

Monitoring report

Twenty-eight days after the shift to Alert Level 3, we are not aware of any cases attributable to relaxed restrictions or non-compliance under Level 3 or 2.

B: ESR Reports

ESR is a Crown research entity that provided national and international Covid-19 intelligence to the Ministry. This was the body that advised the Ministry in late February 2020 that the risk of an outbreak in New Zealand was low.

It continued to provide the Ministry with risk assessments through the lockdown period. These reports were used by the Ministry in its risk assessments and apparently made available to the Director of Civil Defence to aid her assessments of the need for extensions to the state of emergency. The first report made publicly available is dated 3 April 2020. At that date the assessment of the risk of transmission in New Zealand was:

Risk of transmission

Most cases in New Zealand to date are linked to international travel and subsequent close contact, there is accumulating evidence of limited community transmission but at this time no evidence of widespread sustained community transmission in New Zealand.

Based on the current domestic situation, the global situation, the available evidence, including limited evidence of pre-symptomatic spread and super spreader events the likelihood of limited transmission in New Zealand is VERY HIGH, the likelihood of sustained transmission is MODERATE-HIGH and the likelihood of widespread outbreaks is LOW-MODERATE.

This assessment assumes that cases are detected in a timely manner and that infection prevention and control measures are implemented promptly.

However, if the virus is not rapidly detected, infection control measures are not in place, or if there is significant transmission from asymptomatic or mild cases, the likelihood of further transmission in community settings would be considered VERY HIGH.

Public health risk

Given the assessment of the likelihood of importation, the likelihood of transmission in New Zealand and the public health impact, the overall public health risk from this event is considered HIGH.

Overall the assessment was not very informative. There is no analysis of the actual outcomes up to 3 April 2020, and the ESR were mostly just stating the obvious. If there was a prospect of further imported cases, and some domestic cases, then of course the likelihood of further limited transmission (at least one case) was very high.

And while the likelihood of widespread outbreak was rated as low to moderate, this was sufficiently caveated to give them an out if their assessment turned out to be wrong, or if the Ministry wanted to paint a gloomier picture

Importation risk

There was also an assessment of importation risk, which was significant in light of the subsequent move to impose a quarantine on all returning New Zealanders.

Even with the containment measures in place in other countries and the border measures and containment measures currently in place in New Zealand, the likelihood of cases having been imported into New Zealand remains HIGH.

Which is a true, but also a vacuous statement. Of course the likelihood of cases having been imported into New Zealand was high. How else could there have been covid-19 in New Zealand?.

There also remains a HIGH likelihood of further importations from any further returning travellers, due to high rates of infection worldwide.

Which is another trite statement. If there are a large number of returning passengers then the likelihood that at least one would be infected will be high. But there is no evidence of any assessment of the control issues designed to mitigate the risk of onward transmission due to failure of self isolation or quarantine protections.

The report gave us the impression that the ESR was just manufacturing quotable 'high risk' assessments to order for the Ministry. The most useful part of the report was a description of a study on the Chinese experience

A pre-peer reviewed study in which 4950 close contacts of cases in Guangzhou were followed up and tested every second day until a positive result was obtained or quarantine was complete, found 126 (2.9%) were confirmed to be infected.

Probability of infection in contacts increased with both age of contacts and severity of infection in cases, from 1.8% (0-17 years) to 4.2% (60 or over years), and from 0.33% for asymptomatic, 3.3% for mild, to 6.2% for severe or critical infection

The evidence that transmission by asymptomatic cases was possible, but that the likelihood is low is an important piece of evidence, particularly relevant to the border control issue.

30 April 2020

ESR Assessment

There was a second, two page, assessment on 30 April 2020. There was no discussion of the New Zealand data at all. A 'precautionary' approach was taken, which we assumed meant a heavy bias to negative assessments. The assessment, was just a repetition of their 3 April 2020 assessment.

Importation risk

Even with the containment measures in place in other countries and the border measures and containment measures currently in place in New Zealand, the likelihood of cases having been imported into New Zealand remains HIGH. There also remains a HIGH likelihood of further importations from any further returning travellers, due to high rates of infection worldwide.

There is no discussion of how they came to this ‘high risk’ conclusion on further importations. And there was no explanation of what was meant by ‘further importation’. If they mean that someone in quarantine will develop the virus sometime in the future, then the odds were obviously high. But if they meant that there is a risk some cases will get through the quarantine and in sufficient numbers to present a material risk, then this is a different story.

Transmission in New Zealand

There was another assessment of risk of transmission in New Zealand, which was word for word identical to the one in the 3 April document, despite the marked change in the number of new cases over that period (from 75 to just 3).

But again there is no discussion of the numbers and how they came to the conclusion that the risks had not changed from 3 April 2020. The interpretation of their assessments becomes foggier because the ESR never explain what they mean by their qualitative assessments. Does risk of limited transmission in New Zealand, for example, refer to one case, or ten, and over what time period? Over the next week or next year? And does low-moderate risk mean a 10 percent chance or a 50 percent chance?

Without the necessary precision in these definitions these assessments were largely meaningless, but open to abuse by those wanting to overstate the risks, and downplay the progress that was being made.

Public health impact

The assessment of the public health impact was as follows:

The public health impact is considered HIGH both for public health staff, the wider health sector and the community.

As an assessment of what was happening at the end of April this was obviously wrong. There were few cases and the hospitals were operating well below capacity. It is difficult to understand what they could have been talking about.

Public health risk

Given the assessment of the likelihood of importation, the likelihood of transmission in New Zealand and the public health impact, the overall public health risk from this event is considered HIGH.

Again this is the same as the 3 April report and there is not a shred of evidence to support the assessments.

Requirements for reducing the public health risk assessment

Then we are told what was required for the public health risk to reduce.

For the overall public health risk to reduce, there would need to be a demonstrable reduction in either or both the probability and impact of COVID-19 on the NZ population. In the event of any doubt, for example due to insufficient evidence, the higher-risk option is selected according to precautionary principles. The probability of infection, including sustained and widespread transmission, depends on exposure from further importation events, and from within the community, susceptibility of the community to infection and infectiousness. Impact depends on the number and severity of infections, and the capacity and capability of the health system to respond to manage cases and suppress outbreaks.

This ignores the actual evidence, is mostly vacuous, and hides behind the 'precautionary' principle to avoid making a more positive assessment.

There is the standard recitation of risk reduction requirements.

The key requirements for risk reduction are::

- *Robust sustainable border control measures to reduce importation of new cases and prevent onward transmission from any importation*
- *Capacity for widespread diagnostic testing, rapid contact tracing and isolation across all DHBs*
- *Implementation of an epidemiologically robust surveillance plan including syndromic surveillance, sentinel surveillance and a community sampling strategy to enable rapid detection of changes in disease, and understand community prevalence, susceptibility and transmission, including the contribution of asymptomatic and presymptomatic infections*
- *Health sector capacity for management of cases across the spectrum of severity including requirement for intensive care, with appropriate protection of staff.*

But with the exception of the rather meaningless border control assessment, no assessments are made of progress towards these 'key' requirements.

Reviews a sham

These reviews were an obvious sham. The Ministry just commissioned reports with some 'helpful' high risk assessments. They probably did not want, and did not get, an actual review of the evidence. The ERM duly obliged.

C: Moving to levels three and two- policy papers

12 April 2020

Establishing a Contact tracing assurance committee

This reflected the government's ongoing concern that contact tracing needed to be robust.

15 April 2020

Alert Level Framework for Levels 1, 2, and 3: Details

This paper sought agreement to an implementation framework for moving from alert Level 4 to lower alert levels.

There was an awareness of the economic and social costs of the alert levels.

It is critical to mitigate the social and economic impacts of the Alert Levels, to the extent permissible within an elimination strategy, and given extant public health risks. We know these restrictions are causing severe economic disruption and hardship, and threaten social wellbeing as well as public acceptability of the measures if they are not seen as proportionate.

But it was argued:

A successful elimination strategy, if quickly achieved, is the best way to limit the economic impact of COVID-19. Of all the economic scenarios in officials' forecast analysis, this strategy involves nominal GDP recovering the fastest and strongest over the next four years. This is primarily because it assumes a long period at Alert Levels 1 and 2 from June 2020. This reinforces the objectives of this paper – to de-escalate Alert Levels in a way that minimises the chances of a future re-escalation.

If minimising of the chances of a future re-escalation is indeed the objective, then the way ahead would be clear. Stay on level four for the foreseeable future. Reducing the chances to an acceptable level would have been a more sensible way to describe the objective.

A quick elimination of the virus would be the best immediate outcome, but it would depend on how quick. There was no analysis of different strategies over different time horizons. It also depends on the impact of a successful outcome on subsequent actions. If this prompts a response to separate from the rest of the world, then officials' previous assessment was this could be a worst case outcome.

The reference to the Treasury Scenarios was misleading. The Treasury forecasts were not finely tuned enough to differentiate between relatively short periods in lockdown 4. But if they were they would have shown that shorter is better, and the lower the alert level the better. Treasury did not know how long the lockdowns and other restrictions would last so they simply guessed at different time periods and assessed the economic consequences.

The paper goes on.

The overall principle of the controls under each Alert Level is that we adopt the least restrictive measures commensurate with managing the public health risk, as expressed in the current Alert Level framework:

This 'principle' does get us very far. It all depends on what is meant by managing the public health risk, which is never spelt out. It is just assumed that the current alert level is the correct response to the risk.

We want to allow for more social and economic activity when moving from Alert Level 4 to 3, because there are lower public health risks. However, we cannot loosen all restrictions or loosen them too far in Level 3, because there is still a heightened risk the disease is not contained

There was no explanation of what this 'heightened risk' meant and how this assessment was made.

Operationalising the 'framework'

The principal matters to be taken into consideration in determining whether the government could step down from Alert Level 4 were explained to the Covid-19 Ministerial Group on 9 April. The considerations were repeated in this document, but the report to the Ministerial Group was not released.

While there is a list of considerations, there is no analytical content, or any clue given as to how the considerations are to be balanced.

The critical determinant was the health risk perspective, which in the end comes down to the Director General of Health being 'satisfied'. And the Director General has no incentive to be 'satisfied'. If cases pick up, then he might be shouldered with the blame. Better to stall as long as possible.

Health risk criterion

There is sufficient data from a range of sources including testing and surveillance that public health experts, statisticians and modellers can have reasonable certainty that undetected community transmission is unlikely,

This sets a very high bar. There is always a risk of undetected community transmission, unless the disease has been eradicated. If this test was actually followed it could have meant months in level four. No document setting out how the test would be applied has ever been disclosed.

It appears that the tardiness of the move from level 4, when it should have been clear that case numbers had fallen abruptly, and when Australia had shown that widespread workplace lockdowns were unnecessary to bring the epidemic under control, was driven by this 'undetected community transmission' mantra.

There is sufficient rigorous and rapid case identification and contact tracing, with surge capacity available in the case of an outbreak.

Again no document has been disclosed on how this consideration would be assessed. Nor has any consideration ever been given to how it maps with the low risk of community transmission. If the lockdown is to be maintained until new case numbers were very low, then there is less need for a high contact tracing capacity.

Our self-isolation, quarantine and border measures are robust and adhered to,
and

There is capacity in the health system more generally, including the workforce and ICU capacity (plus the availability of PPE for those for whom it is recommended),

It would have been self-evident that this was an easy test to meet.

Then there is the broader range of considerations for the Government to weigh:

- *Evidence of the effects of the measures on economy and society more broadly,*
- *Public attitudes towards the measures and the extent to which people and businesses understand, accept and abide by them, and*
- *consider fairness, equity and public acceptance of any restrictions on activities, and*

justify all measures from a scientific perspective, but balance the overriding priority of managing the public health risk with enabling as much social and economic activity as possible, and reduce the impact on the economy's long-term recovery.

We have seen no scientific justification for most of the measures taken and our assessment of the various monitoring reports shows that there was no serious interest in analysing the relevant data.

Then there is an argument for retaining geographic travel restrictions.

These extended bubbles must be within the local area to minimise the risk of spreading person to person transmission between geographic areas. People will need to be ready to revert back to their household bubbles if we have to return to Level 4.

This doesn't really explain the need for geographic restrictions. Cases were already geographically dispersed in New Zealand, so it was not a matter of keeping the virus out of certain areas, so they could have more permissive rules. Providing people kept to the social distancing rules, then the geographical spread of the extended bubble shouldn't have mattered materially. The contact tracing system was by then set up on a national basis and so geographic location of a new case shouldn't have mattered too much.

Recreational restrictions

For recreational activities, at Level 3, the proposed settings are similar to Level 4. This reflects the continued restrictions on personal contact needed to manage the high public health risk. Limited safe (low injury risk) sport and recreational activities can be undertaken, where they are close to home and do not involve additional 'bubbles' (ie no contact sport or mixing with others outside extended bubbles), or which risk requiring search and rescue. Fishing off a local wharf, for example, is permitted if physical distancing can be maintained.

The initial restrictions on recreational activities such as fishing off wharves that did not involve an extension of bubbles or breached physical distancing requirements was one of the less comprehensible parts of the regime.

The restriction on 'risky' activities was at first explained by the need to clear hospital capacity for an influx of coronavirus patients. It very quickly became evident that that influx wasn't going to eventuate, but it took quite some time for the story to change. Then it became the pressure it would place on search and rescue resources. It is not obvious why this would be a significant issue, given the low number of search and rescue events, and why this would have an impact on Covid-19 risk. One explanation is that it would tie up police resources, which would otherwise be projecting the coercive threat behind the social distancing restrictions. In our view reducing the degree of intimidation in the regime was a good not a bad thing

Population implications

The impact of COVID-19 on population groups is not yet clear. However, we do know that some groups have a higher incidence of the risk factors that lead to severe illness from contracting the disease, especially Māori and Pacific people, older people and the disability community.

The major impact on population groups, in terms of the seriousness of the outcomes was overwhelmingly clear at the point the report was written. It primarily affects the aged. The impact, in terms of death rates, on the working population, and especially on children is very low. The Maori case incidence was about half the rate of the European and other population.

One large 'disadvantaged' group was missed. On an age-adjusted basis male mortality is about twice the female rate.

The lockdown at Level 4 and the restrictions at Levels 2 and 3 will also disproportionately impact on single parent households, and therefore women, in an economic and social sense. It is also likely that family and sexual violence will increase, under the lockdown and also in light of the economic downturn with more joblessness expected, with a disproportionate impact on women and children.

There is no mention here of the impact on small business owners who have disproportionately borne the cost of the lockdown. Many have lost their incomes, and would be running at a loss, and risk the demise of their business.

Human rights

There was a discussion of human rights implications of the measures. Rather than there being no human rights concerns, as was the pretence on 23 March, they turn out to be very significant.

The restrictions imposed at Levels 3 and 4 of the Alert system involve the most significant and widespread interference with human rights in New Zealand in living memory.

There is a discussion of the legality of the restrictions, that we discuss in detail in Part seven.

20 April 2020

Review of Covid-19 alert level 4

Cabinet paper from OPM

The paper begins with a review of progress towards elimination.

We have learned that our Level 4 restrictions are very effective. They have slowed the spread of the virus to a greater extent than the most optimistic scenario in the modelling from Professor Shaun Hendy's team that we have been using. This is good evidence that our systems for control work well

Professor Shaun Hendry's team was Te Punaha Matatiki (TPM). We were extremely critical of their modelling in 'A look behind the headlines'. The modelling was

designed to promote the case for a hard lockdown and other options were simply calibrated to fail, or were not reported if they looked too favourable. There was little analytical support for the key reproduction rate assumptions and the modelling did not explicitly account for testing, contact tracing and isolation.

When the modelling was publicly released it was already apparent that it was over-estimating case growth outcomes, and that it should have been recalibrated to produce lower outcomes for the lower alert levels. Hendry's response to our criticisms was just that 'we did not understand the model'. He did not engage with the specific criticisms.

It did not occur to the OPM, in their assessment, that if the outcomes were better than the most optimistic modelling, then the modelling was flawed and the level 4 measures had been too conservative.

We have also defined what Level 3 looks like. We have explained that it means that we are in a situation where there is a high risk that the disease is not contained, where community transmission might be happening, and where new clusters may emerge but can be controlled through testing and contact tracing.

This definition bore a limited relationship to the reality, and was so elastic as to justify almost anything. The disease was obviously being contained. On 20 April daily case numbers were down to about 10 and there had been a clear downward trajectory. At least one case of community transmission could occur at anytime unless the disease had been eradicated, so this possibility does not usefully define level three.

To that high level description, we have now added a set of detailed controls that are principled, science-based, proportionate and more equitable than the emergency requirements of Level 4.

Which is something of an admission that the emergency requirements were not principled, science-based, or proportionate.

Timing options

Three timing options were proposed.

- 22nd April in line with initial lockdown announcement
- Extend lockdown for five more days.

The extra five days at Level 4 will increase our confidence in the positive trends we see in the data.

There was no assessment of how much confidence would be increased with an additional five days of data.

Also it would moderate concerns of a sudden increase in movements in the community over Anzac weekend.

This argument was largely spurious. As households would still be largely in lockdown, there would not be a holiday-driven increase in movements. If anything the holiday would reduce the increase in travel.

There was no assessment of the marginal cost of extending the lockdown. Taking the Treasury's rough estimates, the cost was about \$150 million a day. \$600 million is a significant sum to pay for the Director General to contemplate just how much more comfortable he was feeling.

- *Extend the Level 4 controls for a further two weeks.*
In this scenario, there would be still further confidence in terms of the trajectory of cases and the chances of unexpected outbreaks, but it would come at significant additional cost to our economy, our businesses and workers, and their families.
Further, with such low numbers of cases now being reported, this option runs the risk of eroding the support of the community that we presently enjoy.

The assessment process

There was a perfunctory review of some outcomes.

The number of new cases has fallen sharply, and the number of patients who have recovered now outnumbers new cases. Cases of community transmission, i.e. where the transmission path is unknown, account for three per cent of cases overall.

The best available estimates are that under our Level 4 restrictions, each infected person infects 0.48 others (this measure is known as R_0), indicating that the restrictions reduce the spread of the virus by about 80 per cent relative to an average R_0 seen overseas of 2.5.

This is a further indication that the response was disproportionately strong. A higher R_0 , would still have brought the epidemic under control.

Benefits of the easing

Overall, at Level 3, we expect that about 400,000 people who have been unable to work during the lockdown will be able to go back to work, leaving about one million (40 per cent of the workforce) still unable to work. Businesses that cannot operate remotely will be able to open where they can operate within public health guidelines. With very limited exceptions, customers may not enter business premises

Our Level 3 restrictions are still constraining, reflecting the fact that it is wise for us to err on the side of caution. I view them overall as being proportionate to the challenges we face at this stage of the response. They were built from the best available public health advice.

This 'best available' public health advice was presumably reflected in the Director General's 'satisfaction'. There was no evidence of any supporting analysis.

In line with the requirements set by Cabinet last week, the Director-General of Health has confirmed he is satisfied that:

- a. There is a low but residual risk of community transmission. The number of new cases continues to drop even with high levels of testing; all but a small number can be linked to existing cases. There is confidence that such cases are being identified effectively and therefore reasonable certainty that there is little undetected community transmission.*
- b. There is sufficient capacity in testing and contact tracing to respond to a surge in demand; contact tracing meets the WHO's guidelines for responsiveness.*
- c. There is strong support and compliance for control measures among New Zealanders, and no reason to believe this will change significantly as a result of moving Alert Level.*
- d. The health system has sufficient capacity to respond to COVID-19 and has identified surge capacity and contingency plans; however, the wider impacts on health outcomes for non-COVID patients is an increasing concern.*

The assessment

This review of our situation can support either a cautious relaxation of controls nationwide (the potential for regional controls is discussed further below), or a continuation of Level 4 for an additional period to firm up our confidence in the data and particularly in places where we have relatively less information. Either path is consistent with our elimination strategy, so long as we maintain the flexibility to go back to Level 4 if required

It is uncertain how effective our Level 3 measures will be in slowing the spread of the virus

The uncertainty around level 3 is because there had been no analysis of the impacts of the level 4 restrictions by the Ministry.

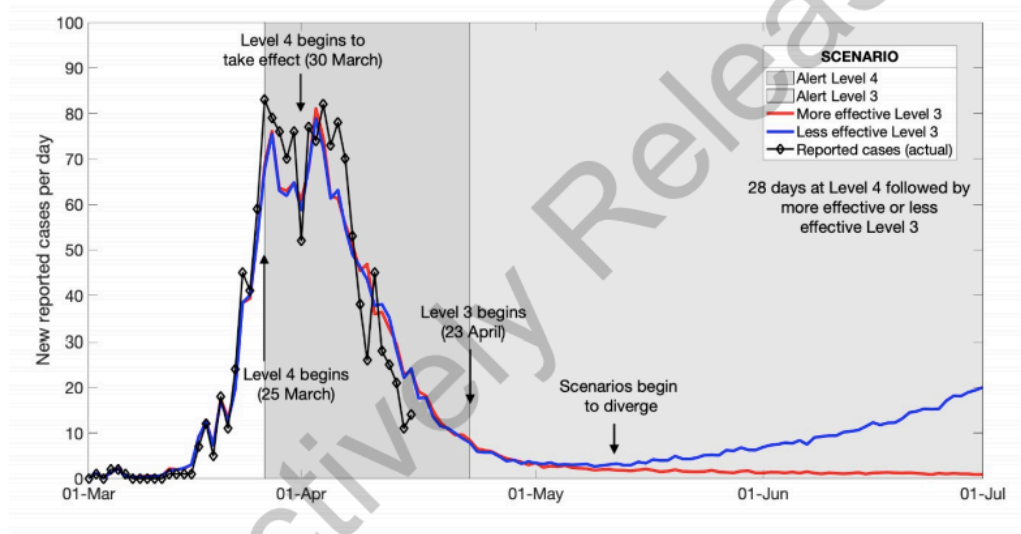
The best available estimates suggest that if our control measures are not sufficiently effective, we will need to return to Level 4 on several occasions for short periods over the rest of this year, and until there is a vaccine or a treatment that renders the virus less deadly. On the other hand, if our Level 3 measures plus our public health measures continue to be as effective as they have been, then we can continue with our elimination strategy without going back to Level 4.

This 'best available' evidence appears to have been the TPM modelling discussed below.

This is illustrated in the graph below that shows two scenarios from Professor Shaun Hendy's modelling team for what might happen if we moved to Level 3 from April 23.

Figure twelve: TPM case modelling

Figure 1: A simulation of Level 3 controls after four week lockdown



- The red line simulates more effective Level 3 controls. Each infected person in turn infects less than one other ($R_0 = 0.94$). You can see that reported case numbers stay low and continue to decline. This would be similar to what we have seen in recent days, ie, a small number of cases that are swiftly isolated and traced.
- The blue line simulates less effective Level 3 controls. Each infected person in turn infects up to 1.22 others. These short term results foreshadow the start of the familiar and unwelcome spike of exponential growth.

This 'analysis' was based on some implausible estimates, from a modelling team with a track record in overestimating case numbers. If R_0 had fallen to about 0.5, and only 400,000 are returning to work, under controlled conditions; while the other measures are only marginally reduced; and while contact tracing is becoming increasingly effective, then it was highly implausible that a movement to level 3 would increase R_0 to 1.22, or to 0.92. More likely it would increase to 0.6 or 0.7. How TPM arrived at their estimates has not been disclosed. It is likely that they were made up to generate the desired conservative results.

The conclusion that should have been drawn from the table is that the consequences of 'getting it wrong' were not very serious. If the reproduction rate was indeed 1.22 then there would only be a slow divergence in the case numbers, and the reproduction number could be bought back to under one with a tweak in the business lockdown requirement.

Every aspect of our controls goes into reducing the spread of the virus in the

community. Work is ongoing to better understand which interventions reduce the spread at the lowest social and economic cost. In the modelling, the most important influences on the rate of spread are the speed of testing, contact tracing, and isolation of those exposed to the virus and their close contacts.

This appears to be a reference to the TPM modelling again. This modelling has not been disclosed. They did appear to upgrade their online calculator to take account of contact tracing, but the linkages were subjective.

Because of the lag between infection and the development of symptoms, it will take about two weeks under Level 3 to start seeing what the new track of case numbers will be.

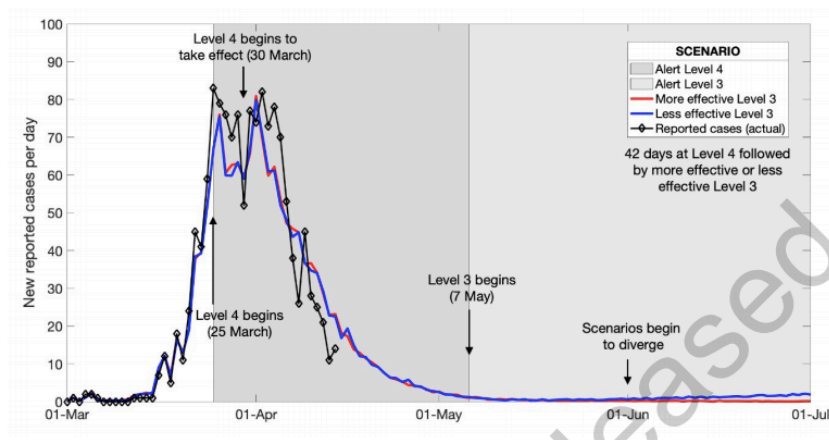
But the modelling illustrates that the longer we are in lockdown, the more confidence we can have that we are really on top of the spread of the disease and it won't make a comeback so that we have to return to Level 4 to get it back under control.

This is illustrated in the chart below, with a long extension to lockdown for two further weeks buying us more time even if Level 3 controls plus our public health measures turn out to be less effective than we hope. A two week extension would be a very precautionary approach, based on a concern that, despite the evidence, there may be undetected community transmission.

The figure actually showed that even if you believed the TPM replication numbers, the extension of the lockdown would not be consequential. By 1 July there would be about 3 cases rather than about 1. The difference could easily be handled by testing and tracing.

Figure thirteen: TPM six week lockdown

Figure 2: A simulation of Level 3 controls with a lockdown that ends after six weeks



There was a review of how some countries were coming out of lockdown, emphasising their cautious approach. But as the case numbers when they started

easing were not shown this was not helpful. It is one thing to be cautious when you still have dozens or hundreds of cases a day and a reproduction rate just below 1, and another when you have just a handful and a reproduction number of 0.5

Australia is mentioned as having an experience that is broadly equivalent to New Zealand but there was no mention that this was achieved without a level 4 lockdown.

Human Rights

There was the recitation of the impact on human rights seen in previous documents.

But there is an extension of the discussion to international human rights.

As for international human rights obligations, the rights protected by the International Covenant on Civil and Political Rights are fully reflected in BORA. Several rights affirmed in the International Covenant on Economic, Social and Cultural Rights are also engaged by measures discussed in this paper. These include: a. The right to work (article 6). b. The right to the highest attainable standard of physical and mental health (article 12) which requires states to prevent, treat and control epidemic illnesses, and also access to elective procedures. c. The right to education (article 13).

The justification for the imposition of human rights interventions is that the outcomes:

could not be achieved in a manner that allows for greater liberty and enjoyment of movement, association and assembly rights. Public health advice is that the Level 3 measures, and the associated restrictions, are necessary to prevent the spread of COVID-19.

The fact that the measures were being eased from level 4 was argued to be evidence of a proportionate response.

As a protection against overreach:

The relevant government departments will keep all restrictive measures under constant review to ensure they have a firm legal basis, are sufficiently well-defined, can be demonstrably justified in the circumstances, and remain proportionate to the threat posed by COVID-19. The Solicitor-General, supported by an inter-agency process, will ensure that ongoing reviews take place and report back to Cabinet on a regular basis.

There is little evidence that these human rights based reviews occurred as is evident in the next paper.

Human rights are discussed further in Part 9.

24 April 2020

Hunting under alert level 3

This document considered restraints on hunting. The analysis was as follows:

5 For it to be allowed, any hunting under Alert Level 3 would have to be consistent with the general principles for recreational activity under Alert Level 3:

5.1 having a low-risk of injury

5.2 undertaken alone or within your extended bubble

5.3 involving no motorised recreation (only applied in the context of water recreation to date)

5.4 involving no travel outside your region.

The Department of Conservation does not believe it is possible to allow hunting on public lands in way that fits with the rules and intent of Alert Level 3. For many people the 'most local' hunting opportunity on public lands will still be hours away. Facilities such as public toilets will not be available.

Limits on time of access to public land and closure of huts, intended to reduce risk and need for search and rescue would need to apply to hunting, would severely reduce the scope for hunting. DOC expects that were hunting allowed there would be significant non-compliance with these limits, for which enforcement would be impossible.

The rationale was a concern over accidents and search and rescue.

There are averages of 1,030 hunting injuries, 116 hunters involved in search and rescue incidents, and 4.7 deaths per year. Although these incidents occur consistently throughout the year, there is a concentration between March and June, correlating with the peak hunting season.

No consideration was given to the fact that the hospitals were quiet, and that hunters' deaths were not a relevant consideration, for a covid-related decision.

Game bird shooting also didn't pass muster.

Officials believe that there is no way to undertake game bird shooting in a way that fits with the principle of Level 3. It is an inherently social activity that involves close human contact. It is also not typically used to meet subsistence needs.

The implication that it is impossible to do duck shooting while maintaining social distance is obviously absurd. It doesn't take two people to pull a trigger.

Human rights

On human rights there was the following statement:

The human rights implications of restricting recreational activity were previously considered through previous advice on the Alert Level framework.

The Minister of Sport and Recreation simply thumbed his nose at the Prime Minister's promise to keep restrictions under constant review. There was no ongoing consideration of the Bill of Rights and international human rights law.

4 May

COVID-19: Preparing to review New Zealand's level 3 status

This paper provided the Minister of Health's view on how the factors for moving to alert level two should be assessed. It repeated what where by then a standard set of criteria.

A move to Level 2 should be contingent on confidence that:

- *there has been no significant community transmission of COVID-19 within the preceding 28 days (two infection cycles);*
- *public health surveillance, including testing, is robust and can provide assurance that community transmission will be rapidly detected;*
- *any cases or clusters are contained and controlled;*
- *contact tracing meets the standard of 80 percent of contacts traced within three days of a positive test being confirmed; and*
- *public confidence in the Government's approach remains high, as measured by surveys and complaints to the COVID-19 Compliance Centre*

6 May 2020

Preparing for Alert Level 2

OPMC

This paper sought final agreement to the overall guidance and restrictions that would apply at Alert Level 2, to support a public release of a revised Alert Level table on 7 May. The paper set out changes to proposed alert level 2 restrictions and messaging that had been agreed to on April 15.

Amongst the changes was some encouragement to travel based on economic considerations.

There are significant economic impacts of continuing to discourage recreation and tourism travel. For the year ended March 2019, total tourism expenditure was \$40.9 billion, of which domestic tourism expenditure made up \$23.7 billion. As a whole, tourism contributed \$16.2 billion, or 5.8 per cent of GDP. The tourism and aviation sectors have been some of the hardest hit as a result of COVID-19. Air passenger volumes have reduced by around 97 per cent. I am proposing that we remove the 'minimise non-essential travel' advisory and instead advise people to 'travel safely'.

8 May 2020

Covid-19 Elimination strategy for Aotearoa New Zealand

On 8 May 2020 this document was released on the Ministry's website under the Director General's signature, articulating the strategy. It read:

The Government's overall strategy ...is elimination. That is to apply a range of control measures in order to stop the transmission of COVID -19 in Aotearoa new Zealand;

Elimination does not mean eradicating the virus permanently from New Zealand rather it means 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.

It was still not clear what was meant by elimination. Does eliminating chains of transmission mean that there hasn't been a single domestic case (outside border quarantine) for 28 days? Or does the plural 'chains' mean that small sporadic outbreaks could still occur but the virus will still be eliminated?

He identified the pillars of the policy.

Border controls are a key tool for stopping the introduction and spread of new cases from overseas. We anticipate border controls being progressively relaxed as it becomes safe to do so, for example if we are confident that other countries have a low rate of community transmission. Further work will be needed to establish criteria for this.

Robust case detection and transmission.

Successful contact tracing means that 80 percent of the contacts of a person are traced and quarantined.

Strong community support of control measures

The most important measures to restrict the spread will remain physical distancing, good hygiene; staying home if sick, and PPE if required.

There is no mention of the mandatory measures, still in place at the time, that were ultimately based on coercion. There was no mention of the 'equity being at the centre of the response' slogan that appeared in several Ministry documents.

10 May 2020

Assessment of factors for moving to COVID-19 Alert Level 2: updated final advice

This is the report from the Director General to the Minister. The Director General initially said that the criteria for moving to level 2 have been met but he still recommended a delay on some of the easings.

My interim assessment based on the available evidence at 8 May is that on balance we have met the criteria above and New Zealand is on track to move nationally to Level 2 on the COVID19 Alert scale, beginning 13 May (two weeks after entering Level 3).

However, the step from Level 3 to Level 2 is a substantial one and there are risks from the move towards Level 3 that need to be considered, and my interim view is subject to the following:

Level 2 creates a substantial cumulative public health risk from the aggregate effect of relaxation of multiple control measures. We should also be cognisant that the latest case numbers, while encouraging, only relate to a limited amount of time spent at Level 3.

Therefore, the transition to Level 2 should not take place all at once but should delay the most risky activities for at least two and possibly four weeks, to ensure we are able to monitor the effects of the first set of changes, and that the cumulative increased risk is managed appropriately.

The reality was that the move from level 4 to 3 was an easy decision. Most of the level 4 measures were unnecessary and it should have come as no surprise that there was no impact on case numbers when they were eased. The move to level 2, however, was a bigger step and the Director General's nervousness was understandable.

There was a lengthy discussion of the reasoning behind the Director General's assessment, but the reality is that with the very low case numbers, the short run outcomes were essentially random. From an epidemiological perspective more time is always better, but only a little, and that has to be weighed against known high costs of retaining restrictions.

There is a further description of elimination.

It is important to be clear that elimination does not mean eradicating the virus from New Zealand, but rather eliminating community transmission under each of the Alert Levels, with any cases or clusters rapidly contained and controlled.

We will know we have achieved this aim for a particular level when we have 28 days with no significant unexplained cases of community transmission (i.e. two consecutive incubation periods) and any cases and clusters are well controlled.

This confirms that there was no rigid rule that community transmission must be zero. A few, but not a significant number, of unexplained cases are permissible. The significant part of the definition is that the target must be achieved at each alert level, and then over 28 days. If New Zealand were to revert to higher alert levels again then this suggests that there would be a long time in lockdown. It might take, say, a month to get back down to a small number of cases in a level 4 lockdown; then 28 days would have to be spent at level four to meet the 28 day rule before moving to level three; then another 28 days would have to be spent at level three; a total of three months, if all went well.

It was never very clear where the 28 day test came from. It is not two consecutive incubating periods as the Director General seemed to think. It is two quarantine periods. The average incubation period is about 5-6 days. The quarantine period of 14 days is the time by which symptoms will have emerged in 99 percent of cases.

Contact tracing

There is a discussion of progress in meeting contact tracing targets.

The most recent data from the period 13 April - 4 May shows that we are well on the way to achieving the targets for the time from onset of symptoms to a swab being taken, and the time from receipt of a swab to notification of a test result (48 hour and 24 hours respectively). Encouragingly, we are already meeting the target for contact tracing, with just over 80% of close contacts of new cases traced within two days.

However, there was still no analysis of whether the target is meaningful and no hint that a model had been developed to help assess the effectiveness of the contact tracing effort in an outbreak. It is easy to meet the 80 percent target when there are one or two cases a day (and when the number of contacts per case had fallen from 15- 20 to 4). But it could be a different story if there were three or four superspreader events in quick succession, and there were two hundred cases to deal with.

‘Wargaming’ a severe outbreak could also provide a valuable test of capacity, but there was no hint that this was ever considered.

25 May 2020

Review of Covid-19 alert level controls

This paper set out broad paths to level 1 in the context of reviewing the staged approach to the introduction of level 2. There were three possible timings for the level one move: June 22, July 6, and July 20. The Director General’s recommendation

was that there should be at least 28 days at the full version of level 2 before considering moving to level 1.

He confirmed that the move to level 3 had not led to a spike in cases and that he had 'increased confidence' that undetected community transmission was highly unlikely, so it was appropriate to move more quickly to fully implement level 2.

With respect to the move to level 1 the tone of the paper was towards a less conservative approach, with an emphasis on the economic costs and the strain on the social licence.

Option C (the most conservative) would be more economically costly than an easing of restrictions, and would place greater strain on our social licence. As noted in previous review, our restrictions are being seen as mismatched with our low case numbers, rather than their cause. Sticking with our current controls would require us to continue to make this case, and it runs the risk of eroding the strong levels of buy-in we see from the public if the restrictions come to be seen as unnecessary. Maintaining the more intricate controls of Option C also creates complexities in enforcement and communication.

It is apparent that we should move as quickly as we safely can since Alert Level 2 is significantly more costly than Alert Level 1. Physical distancing on public transport networks and in workplaces in particular continues to depress economic activity by limiting workforce participation and productivity, as well as social, cultural and community activities. A rough estimate from the Treasury is that the economic costs of three weeks at Alert Level 2 compared with Alert Level 1 amount to around \$1.4b in lost output. Those costs don't include the pressure on business balance sheets, particularly tourism-related and hospitality businesses that are most affected by physical distancing rules.

There was discussion on how many days to spend at level 2:

At the more risk averse end, we could require a period of 28 days since the last locally acquired case was infectious. This implies zero new locally acquired cases for about a month, and is likely to mean we also have zero or near zero active cases. We had our last locally acquired case on May 22, an infection within one of our clusters.

A less constraining guide would be spending 28 days at the full Level 2, with continuing low case numbers, all acquired overseas or linked to known domestic cases, before a move to Level 1. This is the recommended approach of the Director-General of Health. It does not require zero case numbers (although we expect case numbers to be consistently low). It does require that we stop the transmission of COVID-19 in our community, and to be confident that we can effectively contain any future imported cases.

There was a brief review of border measures:

Global conditions continue to be such that current border restrictions and exceptions should remain in place until further decisions are taken by Cabinet.

We are continuing to look at the pre-conditions for developing a safe travel zone initially between New Zealand and Australia, and with an eye towards the Pacific, once that can be done safely and those countries are ready to do so. This is of course only part of our approach to re-opening to the world. In due course, safe travel zones could be extended to other COVID-free countries as conditions allow. We will continue to work with other partners and with international aviation bodies to be as ready as we can be to move as public health considerations allow.

By themselves, whether we are at Alert Level 1 or 2 does not determine whether or not a safe travel zone would be possible. However, the particular restrictions that apply at each Level will be relevant to implementation. For example, the physical distancing requirements at Level 2 would make flights a less viable commercial prospect and airport management more challenging.

Human Rights

As always human rights considerations were an afterthought. They did not play a role in the consideration of the speed of the move to level 1.

28 May 2020

Covid -19: Public health control measures at alert level 1

Director General to Minister

The advice from the Director General was that New Zealand should move to level one, with no limits on gatherings and social distancing, after 28 days of no community transmission in a fully implemented level 2. That is, no earlier than 26 June.

3 June 2020

Covid-19 alert level 1

Office of the Prime Minister

This paper set up a different test for moving to level 1. It was no new cases for 28 days, not 28 days of no cases in the full level 2. There was no mention in this paper of the Director General's advice.

The permissive nature of the Alert Level 1 controls reflect it is predicated upon having eliminated chains of transmission and there having been no new cases from community transmission for at least 28 days. If that has been achieved, and we have confidence in our

border controls, there is theoretically no need for restrictions on people's movements, interactions or activities.

8 June 2020

Review of Alert level 2

Office of Prime Minister to Cabinet

In this Cabinet decision paper the Prime Minister was determined to move more quickly than previously anticipated. This may have been prompted by the black lives matter protests that ignored the restrictions on crowd numbers. The problem was how to deal with the Director General's advice to delay the move by two more weeks.

When we last considered these issues two weeks ago, we chose the fastest option for liberalising Alert Level 2 controls. As part of that decision, we indicated that we would consider a move to Level 1 no later than June 22, and set the expectation that our review today may not involve substantial change.

However, the situation has progressed more positively than we expected. With ongoing zero case numbers and our growing confidence in the situation as time passes since we last significantly loosened controls, it is prudent to bring forward a decision on Level 1 to mitigate the economic and social impacts of our Alert Level controls.

The Director-General's previous advice was that a move to Level 1 should not be considered until at least Friday June 26, 28 days after fully implementing Level 2 controls. However, the data now available shows that our situation is more positive than previously thought.

It takes about two weeks for changes in controls to start showing up in case numbers. So we can be confident now that the effects of the move to Level 2 on May 14 and the reopening of bars on May 21 are reflected in the zero case numbers. In the next few days, any impacts of our move to lift gathering limits to 100 people on May 29 will begin to be seen.

Confidence about impact of the opening of bars was a bit of a stretch. With the two week data lag from the bar openings there were only a few days of experience of the new situation.

However, there was 'additional' information in the form of epidemiological modelling.

In recent days two different academic groups using different methodologies have independently estimated the probability that New Zealand has eliminated COVID-19. Both suggest around 95 per cent or higher confidence that we have now achieved elimination, which in this context means that there are at present no contagious people in New Zealand.

The modelling by a group of Otago researchers was first published on 20 May and would have been known to the Director General when he gave his advice. It was not new. The Prime Minister's advice on that point was misleading.

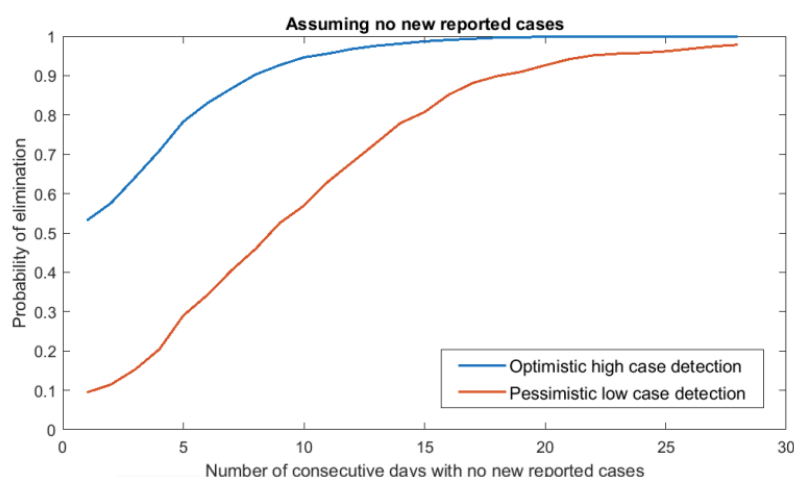
The Otago modelling relied on two assumptions: that there are no new external cases, and that the reproduction rate does not go above 1. Given the uncertainties around these assumptions, it was possibly a stretch to claim with 95 percent certainty that there would not be a single case in New Zealand by a specified date.

The modelling by Te Punaha Matatiki, which came out on 5 June, appears to have been commissioned for the occasion. The Prime Minister's Office may have been frustrated with the lack of analytical substance behind the Director General's advice and came up with their own 'helpful' analysis.

The key output in the paper was the following graph that showed the relationship between the number of days without a case and the probability of elimination, with an optimistic and a pessimistic scenario. The optimistic scenario was very optimistic, assuming a 75 percent detection rate. The 'pessimistic' detection rate of 20 percent, was arguably not that pessimistic, given a high prevalence of asymptomatic cases. The model also assumed no external cases.

However, the customer didn't want a pessimistic story, so there was no sensitivity testing of lower detection rate.

Figure fourteen: TPM time to elimination



In light of the 'new' evidence, the Director General dutifully came into line.

Overall, the Director-General's interim advice is that New Zealand has met the identified public health criteria agreed by Cabinet on May 4 for decisions on moving Alert Levels, and is on track to move to Alert Level 1 in the week beginning June 8.

Part Six: Other documents influencing decision-making

The Ministry references a number of documents that it says assisted it in its deliberations. They are reviewed in three groups:

- A Modelling commissioned by the Ministry
- B Public Health Strategy Team documents
- C Other documents

A: Commissioned mathematical modelling

On 30 March the Ministry released four reports on the mathematical modelling of the Covid-19 epidemic all by the Otago Covid-19 Research Group (OCRG). The release was accompanied by a lengthy press release that purported to show the role that this modelling and other information played in the decision to move to level 4.

In this part we first briefly described the modelling, before moving to an assessment of the statements made in the press release.

27 February 2020

Modelled Estimates for the Spread and Health Impact of Covid-19 in New Zealand: Revised Preliminary Report for the NZ Ministry of Health

The first report was an attempt to estimate death rates in an unrestrained epidemic, based on understandings of death rates from China, and by ‘eye-balling’ a figure in an unpublished Australian paper. This produced a range of death estimates, over a year, of between 5800 and 37,000 depending on the assumptions on the death rates and the reproduction number if no policy actions were taken, and the population did not change its behavior. The high numbers assumed a 2 percent death rate (based on an earlier WHO estimate), while their own estimate of 0.75 percent was the more credible number. An important part of this report was the estimates of deaths by ethnic group. As discussed in part eight, these estimates appear to have been manipulated to produce exaggerated death outcomes for Maori and Pacific populations.

March 16 2020

Potential Age-Specific Health Impacts from Uncontrolled Spread of the COVID-19 Pandemic on the New Zealand Population Using the CovidSIM Model:

This report presented results from simulation of the online Coviesim model that we discussed in “A look behind the Headlines”. It reported death rates and a number of other health system outcomes, assuming an unrestrained epidemic, reproduction numbers of 1.5 and 2, and an overall death rate of 0.25 percent. These assumptions were provided by the Ministry. The lower death rate assumption suggests, that at this point, the Ministry was interested in calming down more alarmist claims about the impact of the epidemic. The results show that the lower reproduction rate doesn’t impact on overall deaths very much, but spreads them more evenly over the year. There are 8200 deaths with a RO of 1.5, and 11,000 with a RO of 2. Nearly 90 percent of deaths would be in the 65+ age group.

There is no information in this model on the effect of spontaneous changes in behavior, but there was an awareness that containment measures well short of a lockdown could be successful.

The potentially high health burden suggested by this modelling work may support very intensive control measures, especially given the Chinese evidence that these can be successful. While it is an open question around the generalisability of all of these approaches to other countries, there is also evidence outside of mainland China from Singapore, Hong Kong and Taiwan that intensive containment against the spread of SARS-Cov-2 can be successful.

March 20 2020

Supporting the COVID-19 pandemic response: Surveillance and Outbreak Analytics

This paper provided an overview of the subject area and useful checklists. It was probably something that could and should have been commissioned several weeks earlier. It reference a modeling report “*Modelling of the Potential Health Impact from COVID-19 on the New Zealand Population Using the COVIDSIM Model: Confidential Preliminary Report to the NZ Ministry of Health*” that has not been disclosed.

The modelling applications suggested in that report were listed:

- *The investment in, and timing of, “keep it out” interventions eg, travel restrictions and other border control measures (which are particularly relevant to island nations such as New Zealand)*

- *The investment in, and timing of, “stamp it out” interventions eg, contact tracing, isolation of imported cases and quarantine for those potentially exposed.*
- *The investment in, and timing of, “manage it” interventions eg, hygiene and social distancing interventions as well as adapting health services to the increased demand*
- *The investment in research on treatments and vaccinations. The latter is particularly relevant if the disease is likely to become seasonal (eg, as per past pandemic strains of influenza).*

As the Ministry did not appear to commission any reports after March 24, then either:

- It placed little weight on epidemic modelling, or
- It worked out that they could run the covidsim model without the expense of going through the OCRG, or
- It discovered that covidsim was not fit for purpose as we argued in “A look behind the headlines.

Either way no further work was done. The Ministry’s Public Health Response Strategy Team Group never even referred to the OCRG modelling, or made any subsequent use of Covidsim. The team never produced any modelling of their own

March 23 2020

Potential Health Impacts from the COVID-19 Pandemic for New Zealand if Eradication Fails:

This is the report we critiqued in our ‘A look behind the headlines’ report. As this report was produced on 23 March, when the decision to move to level 4 had effectively been made, it played no part in the decision-making. It was a backfilling and a public relations exercise designed to support the decision. It was designed to show that a failed response would have potentially calamitous results with over 14000 deaths in the most extreme example. The most moderate outcome, with just 7 deaths, was never reported. The modelling did not take into account contact tracing, testing and isolation and there was no attempt to model the impact of various interventions and voluntary social distancing. It did not attempt to realistically model a failed eradication.

March 24 2020

Potential Worst Case Health Impacts from the COVID-19 Pandemic for New Zealand if Eradication Fails

This report was another public relations effort, designed to produce bigger numbers than the March 23 report. A number of assumptions were changed, including

increasing infections from offshore by a factor of 10, increasing death rates substantially, and assuming that the whole containment effort would be reduced to lowering contacts by 25 percent for just two months (less than a plausible spontaneous reduction), before giving up completely. Any references to other successful containment options were dropped from the discussion. 27600 were now expected to die.

OCRG supplanted by Te Punaha Matatiki

It appears that the OCRG was supplanted by Te Punaha Matatiki for modelling support. The COVID-19 surveillance plan dated 19 May 2020 states.

The principal quantitative modelling is being conducted by Te Pūnaha Matatini (TPM), with data provided from a range of government agencies to allow modelling of networks, and the analysis of scenarios for the effectiveness of Alert Levels as well as different characteristics of the underlying disease. Case information is provided to TPM researchers to support this work.

This role was not clearly disclosed and any modelling done for the Ministry has not been disclosed, except when TPM has chosen to make a public release of selective modelling exercises.

The earlier, publicly released version of TPM's modeling was opaque, clearly biased to produce a favoured outcome and not fit for purpose for policy intervention modelling. They do have an online calculator 'Take Control', that has now been modified to address the concerns we raised.

30 March 2020

Modelling Press release

The 30 March modelling press release was in many respects, inaccurate, misleading and mostly outright false. It was designed to give the impression that much relevant and soundly-based modelling had been done, when this was at odds with the reality. The following reviews the statements in the release.

A series of mathematical models warning of the consequences for the lack of early action to prevent the spread of COVID-19 reinforce the importance of the current lockdown and other government measures.

The modelling shows that without the actions currently being taken, the uncontrolled spread of COVID-19 would exact a high price in New Zealand in terms of its impact on our health services, including our intensive care units, and deaths" says Dr Ashley Bloomfield.

These statements were misleading and in some respects false. The models mostly warned of the consequences of taking no actions. There was no modelling that compared the effects of a lockdown with less intrusive measures. There was no modelling of the consequences of delays in taking specific actions.

The Ministry of Health today published a series of modelling - all looking at how a range of measures can help reduce the impact of COVID-19.

This statement was false. Three of the reports looked at outcomes that were unrestrained by any policy measure or voluntary reductions in contacts. The 23 March report looked at voluntary and mandatory measures that reduced contacts by 25 percent and 50 percent. These assumptions were not linked to any specific policy measures.

The modelling was continually updated as more real world evidence could be incorporated and the impact of different interventions could be considered. What is consistent across all the models is that we had a stark choice – let the virus spread unchecked and see large numbers of New Zealanders get sick, our health system overrun and many people dying, or taking firm measures to save lives.

This statement was at least misleading. The knowledge of key parameters did not change materially from the initial analysis. What did change was the MOH's need for big scary numbers. The number of deaths increased from 8,000-10,000 in the March 16 model to 27,000 on April 24 without any change in what was known about the virus.

All of the scenarios show an unacceptable level of deaths in New Zealand without strong action.

This was false. One of the scenarios in the March 23 paper showed just 7 deaths.

Even with the sorts of strong measures we have in place to stamp out the virus the modelling is still predicting there could be a heavy toll on our health system and loss of life.

This statement was false. There was no attempt to model the impact of a level four lockdown.

There is more on the the content of the modelling, which makes it reasonably clear that the Ministry didn't understand the technical limitations of the on-line calculator modelling that was done.

The modelling and advice produced from it is in line with the international scientific consensus on COVID-19 and the sorts of responses most countries are now taking to fight the virus.

It was in line with the often uninformed reactive approach taken by many governments. Official modelling of specific policy interventions appears to be thin on the ground. We have yet to see a model with robust and plausible data, but they may exist. The Swedish authorities did a comprehensive search, and they didn't find anything either.

Most countries were driven by circumstances that had got away from them and a follow the leader approach. More careful consideration of the evidence seems to be more prevalent in countries that have not taken the draconian lockdown approaches. Lockdown is just a slogan which can cover a range of policy intensities. Many countries did not shutdown workplaces and they were generally successful in controlling their outbreaks. Only about half of the EU countries even went as far as imposing stay at home orders.

Conclusion

All of the substantive statements in the press release were false or misleading. The press release was an obvious effort to prop up the Government's level four lockdown decision, with some analytical support.

B: Public Health Response Strategy team documents

The Ministry's COVID-19 Public Health Response Strategy Team, was presumably charged with providing the intellectual 'grunt' behind the Ministry's response to Covid-19. Five of the eight members were from the Otago Public Health School.

30 March 2020

Overview of approaches to COVID-19 pandemic control in Aotearoa/New Zealand

The stated aim of this report was to provide input into strategic decision making. As the document was dated well after the decision to move to alert level 4, it appears that one of the purposes was to provide ex-post support for that decision.

In addition to some general background material, which should have been well known by 30 March, the report provided:

- an overview of the different strategies for controlling the pandemic in the next 12 months that were theoretically available at the time
- potential options for how we might decide to move between strategies.

Most of this was surpassed by events.

The most relevant part of the paper was the discussion on the relationship between alert levels, control levels and outcomes. The full discussion was as follows.

Control measures are currently enacted in Aotearoa/New Zealand through the 4-level COVID-19 Alert System. We are confident that the cumulative impact of all the control measures enacted at Alert Level 4 brings the reproduction number under 1, and this is supported by international experience and evidence.^{28,29}

The first reference² was to a study on the Wuhan experience in the epidemic. The responses were divided into 5 periods with varying degrees of severity. They appeared to show a relationship between severity and the reproduction rates. However the authors of that report did not draw strong conclusions.

The study has several limitations. First, the Chinese government implemented multiple interventions at the same time or in a short timeframe to control the outbreak, and thus individual strategies could not be evaluated.

While Wuhan showed that extremely hard lockdowns (harder than New Zealand's alert level 4) work, the paper does not have much to say about the possible effectiveness of more moderate responses in New Zealand circumstances.

The second paper, also using Wuhan data, appeared to show that the reproduction rate fell to near one before the hard lockdown measures were imposed.

The strategy team paper went on:

However, it is currently not clear how much each of the specific control measures impact on the reproduction number of COVID-19. Ideally we would have data on this and would be able to identify and apply the least restrictive combination of measures that were needed to reduce the reproduction number.

² Pan A, Liu L, Wang C, Guo H, Hao X, Wang Q, Huang J, He N, et al. Association of Public Health Interventions With the Epidemiology of the COVID-19 Outbreak in Wuhan, China

For example, if we knew that case isolation reduced the reproduction number from $R_{2.5}$ to $R_{2.0}$ and contact tracing resulted in a further $R_{0.5}$ reduction etc then we could make choices about measures that balanced the benefits of specific control measures with the harms of them.

Finally, the impact of other COVID-19 Alert Levels (eg, Level 3 and Level 2) on the reproduction number of COVID-19 is unknown at this point. This means that reducing alert levels comes with risks of increasing transmission of COVID-19 and needs to be done with high quality surveillance, case management and contact systems in place. A precautionary approach with slow graduated reduction, with a focus on minimising inequities, would be most appropriate in the face of these uncertainties.

In other words they didn't know anything about the impact of possible strategies. Only that a level four lockdown would work. The possible conclusion from the second Wuhan paper that a full lockdown might be unnecessary was ignored. Evidence that lower level interventions had worked in a number of Asian countries was not considered. Nor was modelling based on social networking studies (which was in the references), which suggested less extreme interventions would work, considered.

Under 'Next steps' there is the following:

Further work is needed to detail all the strategies including control measures to implement them, transitions between strategies and levels of control measures, risks and benefits, and equity implications.

There is no evidence that this work was ever done. Instead the follow-up was yet another overview document.

7 April 2020

Aotearoa/New Zealand's COVID-19 elimination strategy: an overview

This paper was mainly concerned with establishing principles for an elimination strategy based around the Treaty and 'equity' concerns. There was almost no analysis of what was happening in New Zealand, or the world, and not else much that would guide policy interventions.

The following section on decision-making principles gives a flavour for most the content of the report:

Part 1: Decision-making principles for the COVID-19 response

Planning and coordination of the COVID-19 response must begin by recognising the roles and responsibilities of the health system and the Crown, for and with Māori. These are affirmed

through Te Tiriti o Waitangi and the Declaration on the Rights of Indigenous Peoples as well as more recently in the Wai 2575 Inquiry and the initial findings of the New Zealand Health and Disability Systems Review.

These foundational and health systems documents recognise Māori sovereignty, the right of Māori to monitor and evaluate the decisions and actions of government, the primacy of Māori aspirations for ethical decision making and practice, the rights to protection of Māori health and wellbeing, and the system responsibilities for the elimination of health inequity. Recognising the fundamental principles and obligations provided by Te Tiriti o Waitangi, we recommend that the equity principle is prioritised consistently across all levels of the strategic response to COVID-19. We also consider the importance of maximising wellbeing benefits while minimising harm.

Equity principle

The equity principle requires: equitable access to the determinants of health; access to health care; and quality of care received. Equitable outcomes also require equitable processes, and timely evaluation, measuring and monitoring.

Current and persistent health inequities in Aotearoa/New Zealand are most stark for Māori and Pacific peoples and those that have access to fewer socioeconomic resources. The COVID-19 pandemic can create new health inequities (systematic and unintended) and exacerbate existing health inequities, particularly for Māori and Pacific communities. These inequities can occur directly through COVID-19 disease impacts as well as from non-COVID-19 adverse health impacts that are exacerbated or created by the pandemic through health system and health determinant disruption. COVID-19 disease is also likely to have a differential (and potentially inequitable) impact on other subpopulations in Aotearoa/New Zealand. This includes those defined by age group, gender, migration and labour-force status, the presence of underlying chronic health conditions and disability.

We prioritise the equity principle in our analysis of the COVID-19 control measures and mitigation responses.

Wellbeing principle

The wellbeing principle considers the opportunity to maximise health benefits (the protection of population health and wellbeing) and minimise health risks.

Weighting of principles

The relative weighting of these principles may vary at different stages of the strategy. However, where principles are in conflict, the equity principle is prioritised in our control measures.

In terms of the actual epidemic there is a high level discussion on getting the reproduction rate to below 1 to achieve elimination, without any recognition that by April 6, the reproduction rate was already below 1.

There is a short section, in an appendix, on the international evidence. It is limited to China because it that is the only country that had achieved 'elimination.'

The experiences of a number countries, particularly that were on their way to achieving low case numbers, consistent with elimination, were ignored.

The practical advice from the Chinese experience is the following.

It is important to note that in an elimination strategy, lifting/relaxing control measures follows, rather than coincides with, zero cases. For example, Wuhan started to lift lockdowns on 29 March 2020, 11 days after their first day with no new confirmed cases.

Basing a timing strategy on happenstance in a single Chinese city was hardly a comprehensive analysis

On next steps we have:

The elimination strategy has been activated very rapidly, without the detailed policy and technical scrutiny that would normally precede such a major initiative. Further work is needed to: examine the specific control measures needed to deliver the strategy in detail including any evidence of effectiveness and the equity impacts of them. It may be possible to enhance measures to address equity and alter current levels of control measures without endangering elimination.

We need to plan a risk-based approach to lifting control measures assuming success, or allow for increased intensity of control measures if needed.

Again this work was never done. Instead the Strategic Group must have spent weeks muddling around with high level papers, often centred on vague equity concerns.

This paper was adapted under the same title into the Ministry's Elimination Strategy document that appears on its website. It is dated 7 April but it is not clear when it first appeared on the site. The first part of the paper repeats the principles presented above. The second part describes the strategy and sets out the rationale for elimination.

Motivating reasons for elimination in New Zealand have several benefits and risks .

1. *Elimination is a well-recognised outbreak strategy that has successfully ended other epidemics in Aotearoa/New Zealand. As an example, Aotearoa/New Zealand had previously eliminated measles (this was defined by WHO as no new cases having originated here for three years).*

Covid-19 is not the same as measles.

There is early evidence that intensive control measures have been effective in achieving COVID-19 elimination-level containment in other countries - particularly China, as described in the appendix of this document.

2. Elimination is possible in Aotearoa/New Zealand because of the early entry into Alert Level 4.

Elimination is also possible with lower levels of intervention as evidenced by several East Asian experiences.

However, this does provide risks to population wellbeing and health equity through inequitable access to primary and preventative care, as well as an impact on health determinants, particularly economic.

3. Elimination is a high-effort strategy, but it gives Aotearoa/New Zealand the potential to avoid additional health inequities from COVID-19 specific health impacts for Māori and Pacific peoples, and those living in socioeconomic deprivation. This aligns with the equity principle. With most cases coming from overseas, COVID-19 cases in Māori and Pacific peoples is currently low (compared to European). Other strategies would likely mean inequities are seen in COVID-19 specific outcomes as well as the important equity impacts of a strained health system and the determinants of health.

There is no evidence that a strong suppression strategy would have a markedly different 'equity' outcome.

It is important to recognise implementing elimination has a different set of equity challenges to manage. This includes economic impacts and the potential for delayed management of other health conditions.

4. The consequences of uncontrolled spread of COVID-19 are severe, with potential deaths in the tens of thousands. Elimination (at this stage of the Aotearoa/New Zealand response) has the potential to prevent substantial permanent COVID-19 related disability and death. It can also protect those that support and deliver our health care system and allow other health care activities to resume.

This rationale is irrelevant. The alternative to elimination was not uncontrolled spread.

5. Elimination (if successful) has the potential for strict transmission control measures within Aotearoa/New Zealand to be lifted earlier. This means health care and access to the broader determinants of health can resume, leading to enhanced equity and wellbeing. (Note disruption to the economy and health services while responding to the pandemic, as well as ongoing challenges of new cases from overseas present an equity challenge until a COVID-19 vaccine is available.)

A strong suppression policy would have allowed strict transmission control measures to have been lifted earlier.

6. Most components of an elimination strategy are needed in other COVID-19 strategies. Some, such as surveillance and contact tracing, are universal. The elimination strategy has the potential for substantial health benefits for wellbeing and equity gained by implementing all strategy components early.

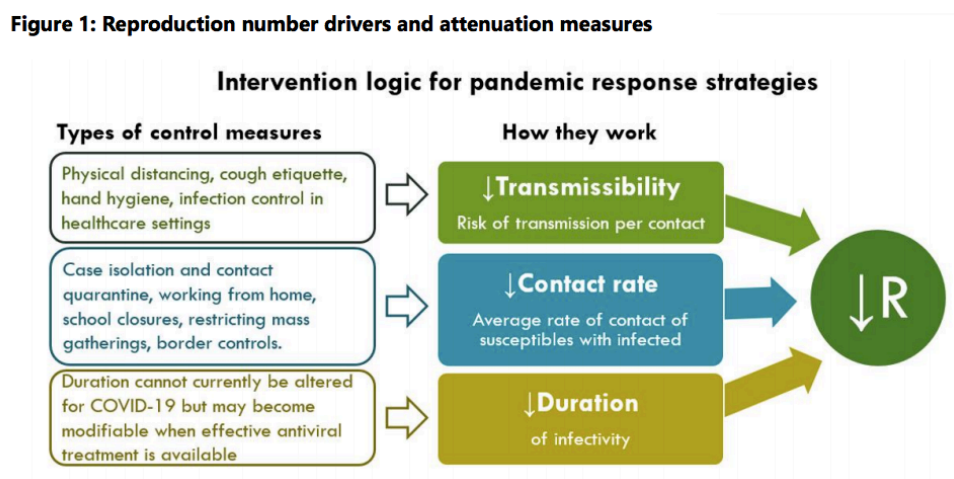
7. There are important potential co-benefits that result from successful elimination. These include recognition of the special relationship between Aotearoa/New Zealand and Pacific nations and territories. Elimination of COVID-19 in Aotearoa/New Zealand supports protection of these Pacific nations and territories from COVID-19 impacts and related determinants of health (in addition to other in-Pacific strategies such as border control and community protection).

These co-benefits only work if the elimination is complete and sustained

Intervention logic

The intervention logic for elimination of COVID-19 was described as reducing the reproduction rate below 1, and the following schematic overview was provided on how this could be achieved.

Figure fifteen: Intervention logic for elimination



There was no mention of the hard lockdown measures under alert level 4.

Additional considerations

Under Additional Considerations for elimination of COVID-19 in Aotearoa/New Zealand there is the following:

Elimination is different from other strategies. Not because of the specific control measures used, but in the timing and intensity of these measures. There are further considerations for implementing the elimination strategy.

- This strategy requires multiple and comprehensive control measures implemented at high intensity, as no single control measure can be completely effective.*
 - An advantage of this comprehensive approach is that control measures have the potential to amplify one another when used in combination: for example, prohibition of mass gatherings enhances the feasibility of tracing all contacts of a case.*
 - An unusual feature of this strategy is that maximal control measure intensity is initiated at a time when there are still very few cases. Other strategies such as mitigation have maximal control measure intensity during the time period with the most cases. This is because of the different aims of each strategy.*
-
- After the initial phase, these control measures may not need to be applied uniformly across the country. Depending on circumstances, regional or local variation may be appropriate, (ie, for isolated communities). However, travel restrictions will need to continue for an extended period to prevent cases coming into the country.*

Transitions

There are a number of potential pathways out of elimination depending on the success or otherwise of the strategy. The transition if COVID-19 containment is successful (defined in Table 1) is to a maintenance phase. This would involve:

- ongoing intensive surveillance and monitoring to detect any breaches, linked to capability and capacity to respond in a timely way that limits transmission*
- staged lifting of control measures within Aotearoa/New Zealand - ideally from the least risky transitioning through to the most risky (this sequencing would need to be determined as part of further work)*
- intense and sustained border restrictions, as these would now be our primary defence*
- the ultimate end of this strategy, allowing lifting of border controls, would be through population vaccination to obtain herd immunity. If elimination does not appear to work the transitions are more complex, and context specific. Some possible pathways are in Figure 2 below. These may change depending on specific circumstances. Further work is required to determine specific criteria for the decisions in these pathways, particularly the assessment of equity.*

In short it was a pretty lightweight strategy. A collection of some muddled thinking and high level statements with little analytical content and very short on the specifics. The only overseas comparator was Wuhan in China.

Control measures to deliver COVID-19 strategies: Education sector evidence review

13 April 2020

This working paper presents a review of evidence relating to COVID-19 and education settings.

The key message was:

Recently emerging evidence suggests closure of education institutions has a limited role in reducing COVID-19 morbidity and mortality. Best case scenario modelling, which may not apply to Aotearoa/New Zealand, suggests it may reduce COVID-19 by 2-4 percent. Real world evidence from previous coronavirus outbreaks (SARS) and one evaluation of the impact of closing schools in Japan on COVID-19 do not suggest a large impact of closing schools on reducing coronavirus infections.

The paper may have provided useful input on school closure measures

15 April 2020

Consequences and mitigation strategies for COVID-19 control measures

This paper synthesises the evidence for and equity implications of a selection of control measures needed to deliver a COVID-19 pandemic strategy in Aotearoa/New Zealand.

It considers the risks associated with control measures at their current settings (mainly closures related to the Level 4 COVID-19 Alert level) and options (including risks and benefits) for lifting each measure, as well as high-level recommendations for the overall package of control measures.

What followed were largely just statements of the obvious, or unsupported assertions, with no attempt to engage with the specifics of the lockdown situation, or to quantify any of the effects. The focus was almost entirely on 'disadvantaged' groups with the presumption that they would be further disadvantaged by the lockdown. There were several recommendations on measures to deal with these 'issues' but mostly they related to social policies outside the Ministry's purview. There was nothing that would be of much value in making an evidence-based assessment of the costs and benefits of opening up.

Case and contact management: monitoring and reporting to achieve and sustain elimination of COVID-19

9 May 2020

This topic was one of the most important addressed by the strategy team as case management and contact tracing was at the centre of the elimination effort.

But while the document was dated 9 May it had little to say that wasn't already said in the Verrall report, or couldn't be readily downloaded from any number of online publications. It was mainly a collection of high level statements. There was no reference at all to New Zealand data and it did not address key issues such as: how much capacity do you need; what are the critical performance indicators and how they should be calibrated; how New Zealand had performed against those indicators; and what more needed to be done. There was no review of case management experiences in other countries.

There was no modelling of the case intervention process, or a suggestion that a model should be developed. There were only six references.

There was a list of 11 recommendations prior to de-escalation but none of these were quantified and there was no guidance on how they could be aggregated.

The report would not have been very useful other than as a high level primer, and to emphasise the need for speed in the contact tracing process.

2 May 2020

COVID-19 in children

This was a review of the literature on the susceptibility of children to the infection; the severity of infections; and their contagiousness. It was a useful contribution in terms of building a background understanding.

C: Other information sources

Other key information sources were the 16-24 Feb WHO joint mission to China, the University of Auckland report, and the 18 March publication from Imperial College, London, (a WHO Collaborating Centre for Infectious Disease Modelling), which was particularly significant in

informing the development of New Zealand's Alert levels and the decision to move quickly from Alert level 3 to Alert level 4.

The Imperial College report of '18' March 2020

There was no Imperial College report dated 18 March 2020. We assume that the Ministry was referring to the 16 March Report 9 - Impact of non-pharmaceutical interventions (NPIs) to reduce COVID-19 mortality and healthcare demand

This was the report that modelled 510,000 UK and 2.2 million US deaths without any intervention (or changes in behaviour), and is credited to pushing UK Government thinking towards a lockdown, and changing President Trump's mind.

The Imperial College modelling team modelled two sets of interventions, combining different sets of five policy interventions: isolation of cases; quarantine; closure of schools and universities; social distancing of the over 70s; and general social distancing policies. A very moderate set of interventions, building herd immunity over time, were described as 'mitigation'. It reduced deaths by half. A stronger set of policies, described as 'suppression' showed that an 'optimal' subset of the five policies could reduce deaths to relatively low levels (5000-10,000). A 'suppression' policy was recommended.

Suppression did not require workplace lockdowns

While these Imperial College results are associated with a hard lockdown with the closure of all workplaces, the social distancing assumptions did not actually require workplace shutdowns. The assumption was that workplace interactions would only have to be reduced by 25 percent. A 25 percent reduction, or more, could easily have been accommodated by voluntary working at home and social distancing rules in the workplace. Further, the model did not provide for testing and contact tracing. Other modelling assumptions, such as compliance with isolation requirements (only 50 percent) were admittedly pessimistic. More positive assumptions could have affected the results significantly, reducing the need for more severe interventions. One of the shortcomings of the paper is it did not report on any sensitivity analysis that would show the impact of the change in key assumptions.

If the Ministry had actually read and understood the report, they would not have cited it as providing support for workplace lockdowns, and would have realised that it did not provide for contact tracing which was meant to be at the centre of the new Zealand effort.

The Imperial College model has now been largely discredited. It was a 13 year old influenza model, not structured to address some critical Covid-19 modelling issues, and had significant flaws in the model code.

The WHO joint report on China

The Ministry no doubt did read the WHO report, which came out on 28 February 2020. but they did not quickly grasp one of the key lessons. If you were serious about contact tracing then you needed to devote substantial resources to the task. Some take-outs from the report are:

Contact Tracing

China has a policy of meticulous case and contact identification for COVID-19. For example, in Wuhan more than 1800 teams of epidemiologists, with a minimum of 5 people/team, are tracing tens of thousands of contacts a day. Contact follow up is painstaking, with a high percentage of identified close contacts completing medical observation.

The WHO recommended for other countries:

Prioritize active, exhaustive case finding and immediate testing and isolation, painstaking contact tracing and rigorous quarantine of close contacts;

Rapidly test national preparedness plans in light of new knowledge on the effectiveness of non-pharmaceutical measures against COVID-19; incorporate rapid detection, large scale case isolation and respiratory support capacities, and rigorous contact tracing and management in national COVID-19 readiness and response plans and capacities

As discussed above, as late as 16 March New Zealand had the capacity to deal with ten cases a day, and were 'scaling up' to a capacity of 50.

This rather gushing section of the report may have impressed.

Achieving China's exceptional coverage with and adherence to these containment measures has only been possible due to the deep commitment of the Chinese people to collective action in the face of this common threat. At a community level this is reflected in the remarkable solidarity of provinces and cities in support of the most vulnerable populations and communities.

At the individual level, the Chinese people have reacted to this outbreak with courage and conviction. They have accepted and adhered to the starkest of containment measures – whether the suspension of public gatherings, the month-long 'stay at home' advisories or prohibitions on travel.

Of course the Chinese people did not have much choice. China is an authoritarian and sometimes vicious regime.

Nor was the Chinese response consistent with the New Zealand approach to authoritarianism recognized in the New Zealand influenza planning document

Only as a last resort can human rights be interfered with to achieve a public health goal. Such interference can only be justified when all of the narrowly defined circumstances set out in human rights law, known as the Siracusa Principles, are met.

It was not clear what conclusions were drawn from the WHO report. It had been out for four weeks before the sudden conclusion that something approaching a Chinese style lockdown was necessary. Our take is that initially the Ministry was reluctant to go down the Chinese route because of Bill of Rights Act concerns. Their actions had to be compatible with those acceptable in a free and democratic society and China is not free and democratic.

The University of Auckland Report

It is not clear what University of Auckland report the Ministry was referring to.

Part seven: Human Rights Implications

As this report was being finalised the High Court released its judgment on the Borrowdale case. That case addressed a separate issue from that considered in this part: whether there was a legal basis for the commands to 'lock down'. The case did not address the issues of whether the measures were all necessary, reasonable and proportionate responses to the Covid-19 public health emergency. Borrowdale simply accepted that they were and the matter was not argued. This did not mean that the issue of whether some measures may have been excessive and an unlawful intrusion on human rights has been settled by a New Zealand Court. So the reader should read on.

In our discussion of the 23 March levels 3 and 4 decision paper above we noted that it was stated that there were no human rights implications from the lockdown measures to be taken. That was simply false and was known to be false.

The human rights implications had already been discussed at length in the 16 March paper and in the 15 April paper 'Alert Level Framework for Levels 1, 2, and 3' it was stated that:

The restrictions imposed at Levels 3 and 4 of the Alert system involve the most significant and widespread interference with human rights in New Zealand in living memory.

New Zealand Bill of Rights Act

A limited capacity to limit human rights in response to a health emergency is provided for in the New Zealand Bill of Rights Act in section 5:

The rights and freedoms contained in this Bill of Rights may be subject only to such reasonable limits prescribed by law as can be demonstrably justified in a free and democratic society.

‘Demonstrably justified’, is of course, open to a wide range of interpretations. However, there are constraints, requirements and guidance under international law, which are also directly relevant to an assessment of the New Zealand measures. These are set out in the Siracusa Principles on the Limitation and Derogation Provisions in the International Covenant on Civil and Political Rights. While these principles are never mentioned in any of the assessments of human rights issues it is obvious from the language and tests applied that the drafters were aware of the principles, and to some extent took account of them.

While most of the discussions of human rights impacts have been framed in terms of their legality under the Bill of Rights Act, it was also acknowledged that there were protections under international human rights law that needed to be considered. In the 20 April paper ‘Review of Covid-19 alert level 4’ to Cabinet from OPMC it was stated:

Several rights affirmed in the International Covenant on Economic, Social and Cultural Rights are also engaged by measures discussed in this paper. These include: a. The right to work (article 6). b. The right to the highest attainable standard of physical and mental health (article 12) which requires states to prevent, treat and control epidemic illnesses, and also access to elective procedures. c. The right to education (article 13).

In this part we raise some of the questions that arise when assessing the legality of impositions. When the successor legislation, the Covid-19 Public Health Response Act was passed, the Attorney General released the legal advice that argued that the legislation was consistent with the Bill of Rights Act. We pay particular attention to the arguments in this paper, as it is the first time that actual legal advice was made public; it presents the legal situation going forward, and it represented the most mature version of the defence of some of the actions.

We proceed as follows:

Sub-part A. sets out the most relevant parts of the Siracusa Principles.

Sub-part B reviews the human rights assessments made in various papers up to the introduction of the Covid-19 Public Health Response Act.

Sub-part C reviews the opinion on the legality of the Covid-19 Public Health Response Act

Sub-part D addresses the imposition of the State of Emergency.

Sub-part E considers the responses from the Human Rights Commissioner.

Sub-part F discusses the Finance and Expenditure Committee report on the Covid-19 Public Health Response Act.

Sub-part G looks at the decision to suspend regulatory impact assessments. There is a connection with human rights assessments because it is not possible to make a meaningful assessment of proportionality without some form of impact assessment.

A: The Siracusa Principles on the Limitation and Derogation of Provisions in the International Covenant on Civil and Political rights

The following are the relevant tests.

General Interpretative Principles Relating to the Justification of Limitations

2. The scope of a limitation referred to in the Covenant shall not be interpreted so as to jeopardize the essence of the right concerned.

3. All limitation clauses shall be interpreted strictly and in favor of the rights at issue.

7. No limitation shall be applied in an arbitrary manner.

8. Every limitation imposed shall be subject to the possibility of challenge to and remedy against its abusive application.

10. Whenever a limitation is required in the terms of the Covenant to be "necessary," this term implies that the limitation: (a) is based on one of the grounds justifying limitations recognized by the relevant article of the Covenant, (b) responds to a pressing public or social need, (c) pursues a legitimate aim, and (d) is proportionate to that aim. Any assessment as to the necessity of a limitation shall be made on objective considerations.

11. In applying a limitation, a state shall use no more restrictive means than are required for the achievement of the purpose of the limitation.

12. The burden of justifying a limitation upon a right guaranteed under the Covenant lies with the state.

17. Legal rules limiting the exercise of human rights shall be clear and accessible to everyone.

18. Adequate safeguards and effective remedies shall be provided by law against illegal or abusive imposition or application of limitations on human rights.

19. The expression "in a democratic society" shall be interpreted as imposing a further restriction on the limitation clauses it qualifies.

25. Public health may be invoked as a ground for limiting certain rights in order to allow a state to take measures dealing with a serious threat to the health of the population or individual members of the population. These measures must be specifically aimed at preventing disease or injury or providing care for the sick and injured.

Derogations in a Public Emergency

39. A state party may take measures derogating from its obligations under the International Covenant on Civil and Political Rights pursuant to Article 4 (hereinafter called "derogation measures") only when faced with a situation of exceptional and actual or imminent danger which threatens the life of the nation.

41. Economic difficulties per se cannot justify derogation measures.

44. A state party derogating from its obligations under the Covenant shall immediately notify the other states parties to the Covenant, which it has derogated;

48. A state party availing itself of the right of derogation pursuant to Article 4 shall terminate such derogation in the shortest time required to bring to an end the public emergency which threatens the life of the nation.

50. On the termination of a derogation pursuant to Article 4 all rights and freedoms protected by the Covenant shall be restored in full. A review of the continuing consequences of derogation measures shall be made as soon as possible.

Steps shall be taken to correct injustices and to compensate those who have suffered injustice during or in consequence of the derogation measures.

Strictly Required by the Exigencies of the Situation

51. The severity, duration, and geographic scope of any derogation measure shall be such only as are strictly necessary to deal with the threat to the life of the nation and are **proportionate** to its nature and extent.

52. The competent national authorities shall be under a duty to assess individually the necessity of any derogation measure taken or proposed to deal with the specific dangers posed by the emergency.

53. A measure is not strictly required by the exigencies of the situation where ordinary measures permissible under the specific limitations clauses of the Covenant would be adequate to deal with the threat to the life of the nation.

54. The principle of strict necessity shall be applied in an objective manner. Each measure shall be directed to an actual, clear, present, or imminent danger and may not be imposed merely because of an apprehension of potential danger.

56. Effective remedies shall be available to persons claiming that derogation measures affecting them are not strictly required by the exigencies of the situation.

57. In determining whether derogation measures are strictly required by the exigencies of the situation the judgment of the national authorities cannot be accepted as conclusive.

Some General Principles on the Introduction and Application of a Public Emergency and Consequent Derogation Measures

62. A proclamation of a public emergency shall be made in good faith based upon an objective assessment of the situation in order to determine to what extent, if any, it poses a threat to the life of the nation. A proclamation of a public emergency, and consequent derogations from Covenant obligations, that are not made in good faith are violations of international law.

Taken together these principles represent a more demanding set of constraints than a mere insistence that an imposition be ‘demonstrably necessary’. The latter slides easily from the tongue or text. A reading of the principles, on the other hand, is more likely to prompt serious thought and more robust assessments.

Some of the key principles are:

- The onus of proof lies with the government to demonstrate the necessity and proportionality of the measures.
- Remedies must be available when measures have been excessive.
- Assessments must be objective.
- Limitations should not be arbitrary
- Each measure shall be assessed individually.

B: Discussions of Human Rights in policy papers

16 March 2020

COVID-19 Response to Mass Gatherings

The following is the discussion on human rights in this paper.

If there is an epidemic notice issued and the government decides to cancel a mass gathering, the decision maker will also need to turn their mind to the New Zealand Bill of Rights Act 1990. Under that Act everyone has the right to freedom of peaceful assembly, and the right to freedom of association. Those rights will be significantly limited by any government decision to cancel mass gatherings. The limitations will affect New Zealanders and disrupt daily life. It will be necessary to be satisfied that any such limitations are necessary and

proportionate, such that they can be demonstrably justified in a free and democratic society. In particular, the limitations should impair those rights to no greater extent than is reasonably necessary in order to achieve the objective.

This proposal around mass gatherings complies with the rights and freedoms contained in the New Zealand Bill of Rights Act 1990 and the Human Rights Act 1993. The advice appended to this paper about issuing an epidemic notice raises significant rights issues that are set out in that appendix.

The appendix discussed the processes for issuing an epidemic notice which activates the powers available to the Director General of Health to cancel mass meetings. The range of powers under different legislation was also set out. The test for issuing a notice is that:

the Prime Minister is satisfied that the effects of an outbreak of a quarantinable disease (as defined in the Health Act 1956) are likely to disrupt essential government and business activity in New Zealand.

Before issuing an epidemic notice (which is done with the agreement of the Minister of Health), the Prime Minister must consider the Director General's advice. The Director General's advice on the disruptions to essential government and business activity was:

A full outbreak in New Zealand has the potential to disrupt government business and impact the effective operation of the judiciary, executive and legislature through the impact of the disease and the application of measures to contain its spread. The continued effective operation of Government is best served if the health impacts of COVID-19 are managed and minimised.

The economic consequences of COVID-19 and the management of it are, and will be, considerable. A full outbreak in New Zealand has the potential to have a devastating impact on our economy through disruption to internal and external markets, supply chains and workers.

These are sweeping and unsubstantiated assertions that were not backed by any analysis that we have seen. Importantly, the assessment does not distinguish between the economic impact of the virus itself, both in New Zealand and overseas and the impact of the measures taken in New Zealand to control it.

The economic impact of a New Zealand epidemic was likely to be less than 'devastating'. The reason is that the virus very disproportionately affects the aged. It would have only a moderate impact on the working age population (in terms of deaths and serious illness), and virtually none at all on the young. There would be

loss in production due to some sicknesses, (many would have only mild symptoms and would stay at home for two weeks to protect fellow workers, and others would get over a flu-like bout in a couple of weeks), and some absenteeism due to fear of its consequences (though this could be mitigated by providing accurate information of the risks posed by the virus), and by allowing older employees to work at home.

By contrast the 1918 New Zealand flu epidemic primarily affected the younger (20-40 year olds) and killed 0.7 percent of the population. While there was some short term disruption it did not appear to have had much of a sustained impact on the economy.

The potential implications of the broad sweep of powers were understood:

The powers are vast and broad ranging and limit rights and freedoms in the New Zealand Bill of Rights Act 1990. The powers to search and seize, detain and require treatment to be taken are some of the most powerful that a state can exert over its people.

The significant nature of the powers can only be justified when the seriousness of the harm that could flow from an outbreak of the quarantinable disease spreading in an outbreak in New Zealand. For a public health emergency to justify derogating from human rights, the situation should be of an exceptional and temporary nature.

These powers must be exercised in a way that is consistent with the New Zealand Bill of Rights Act. This means that individual decisions that limit fundamental rights must be necessary and proportionate to the objective (of limiting the spread of COVID-19).

It is recommended that the notice be promptly revoked when the Prime Minister is satisfied that the effects of the outbreak are no longer likely to disrupt essential governmental and business activity.

It was obvious, at an early point, that the outbreak itself was no longer likely to disrupt government and business activity. The notice was not promptly revoked.

Safeguards

There was a discussion of safeguards and processes in place for the Prime Minister to issue the epidemic notice.

There are important safeguards and forms of Parliamentary scrutiny, particularly the following:

The Prime Minister is required to notify the House of Representatives as soon as reasonably practicable that an epidemic notice has been issued or extended.

The House of Representatives has the opportunity to scrutinise orders made during an epidemic. This provides a layer of swift scrutiny, which enhances the legitimacy of the orders without imposing impractical requirements.

These are just procedural safeguards which will not constrain a government determined to pursue a course of action.

In addition, while the issuing of an epidemic notice would allow the modification or relaxation of laws, laws that protect fundamental rights and freedoms are prevented from being modified in this way.

This argument was disingenuous. The primary point of the epidemic notice is that it allows the Director General to override fundamental rights and freedoms. The law may not be modified (because it allows for exceptions), but it is effectively placed in abeyance, which is equivalent to a modification.

Constraints on the Director General

Decisions will be made consistent with the Ministry of Health's Guidance on the use of Special Powers developed as part of the contingency planning for COVID-19.

This is a critical document but it has not been made publicly available. It should have been.

There was no mention of the Siracusa Principles that constrain limitations on human rights in a public health emergency.

2 April 2020

**Noting paper: Covid-19 Self-isolation order under s70(1)(F) health Act
To Ad Hoc Committee on Covid-19 Response.**

From David Clark

This noting paper repeated the above arguments for the self isolation order. The following appears to be the Director General's full risk analysis supporting the notice.

In the absence of a vaccine the only effective strategies are to reduce mixing of susceptible and infectious people through early ascertainment of cases (testing and contact tracing) and reduction of contact.

Modelling of the epidemic in New Zealand has analysed the extent of contact reduction over various timelines, accounting for different reproduction numbers that New Zealand would need to achieve in order to 'flatten the epidemic curve' and indeed eliminate the virus which is the current objective under level 4.

This modelling justifies taking a stringent approach towards physical distancing for the entire population on the basis that if the current eradication strategy fails then the health outcomes for New Zealand could be very severe.

The Director General's statements were misleading, if not outright false. The statements were almost certainly based on the Otago Covid Research Group's (OCRG) modelling that we criticised in 'A look behind the Headlines'. The OCRG did no modelling of the relative impact of voluntary versus mandatory social distancing, as is implied. Indeed, they made no assessments of any of the alert level measures. The OCRG assumed that there was no contact tracing which is meant to be the centre of the policy response, so that any conclusions that could be drawn from the modelling on the required amount of contact tracing would have been overstated.

The Director General and/or his staff either did not understand the modelling or deliberately misled the Minister.

The Director General did not show that the order was demonstrably necessary as required by law.

15 April 2020

Alert Level Framework for Levels 1, 2, and 3

The discussion on human rights starts with the proposition that limitations on rights are unlawful unless they can be demonstrably justified.

It notes the measures that raise human rights issues:

- *Restrictions on gatherings could limit the right to manifest religion or belief in worship, observance, practice or teaching, particularly in community with others, affirmed in section 15 of the Bill of Rights Act 1990 (BORA).*
- *Restrictions on gatherings limit the right to peaceful assembly affirmed in section 16 of BORA and potentially freedom of association in s 17.*
- *Travel restrictions, both domestically and at the border and the nationwide enforced quarantine order (generally confining people to their homes, with limitations on people's freedom to swim, surf, hunt, tramp etc) all limit freedom of movement affirmed in section 18 of BORA (and freedom of assembly and association).*
- *All measures have the potential to limit the right to be free from discrimination affirmed in section 19(1) of BORA, due to their potential disproportionate impact on*

some groups (particularly people of faith, Māori, Pacific peoples, older people, people with disabilities and women).

- *Restrictions on gatherings could limit the rights of ethnic, religious or linguistic minorities to enjoy the culture, to profess and practice the religion, or to use the language, of that minority affirmed in section 20 of BORA.*
- *The enforced quarantine of new arrivals in specified managed facilities may amount to an arbitrary detention contrary to section 22 of BORA and/or limits the rights to freedom of assembly, association and movement. The manner in which controls are implemented in places of detention for public health reasons could affect the right of persons deprived of liberty to be treated with humanity and respect for the inherent dignity of the person.*

The further possible impositions on human rights identified in the 20 April paper, (the right to work, to an education and to health) were not considered at all.

Also, there is no mention of possible limitations on the right to choose where to live protected under article 12(1) of the Covenant

Everyone lawfully within the territory of a State shall, within that territory, have the right to liberty of movement and freedom to choose his residence.

Many New Zealanders have a second home but they were forbidden to shift their residence there during the lockdown. Others were not allowed to move to a new house.

Solicitor General's advice

The Attorney General came to the view that the test in the Bill of Rights Act on the limitations on the above rights had been met. His assessment relied on advice from the Solicitor-General.

The Solicitor-General provided general advice on human rights issues stemming from the nationwide quarantine order, and the quarantine of all new arrivals in specified managed facilities.

On the former, she advised that if health experts assessed that voluntary compliance with stay-home guidance was not sufficient to control the spread of the virus, because universal compliance is required, then the necessity for the order would have a proper evidential foundation and the order would probably not breach rights in the Bill of Rights Act. The existence of exceptions and exclusions within the nationwide order was important to the analysis.

The use of the Solicitors General's general advice (if it was accurately conveyed) was disingenuous. The wording was '*if health experts assessed that voluntary compliance with stay at home guidance was not sufficient to control the spread of the virus*', not

that the 'health experts' **had** assessed that voluntary compliance was insufficient. We know that the Director General did not do an assessment of voluntary versus mandatory 'stay at home' regimes. We know that he tried to fake an assessment, by referring to some modelling that was on a different topic.

As it seems clear that no objective assessment was made, as required under the Siracusa principles it follows that the stay-at-home order was unlawful.

The Solicitor-General said that the existence of exceptions and exclusions was important to the analysis, but it is not explained how. Presumably the argument was that if the orders were not as draconian as they could have been, then this sufficiently mitigated human rights concerns. If a measure is not grossly disproportionate, that does not mean it is proportionate.

Necessary and proportionate to the objective

The issue of whether the measures were necessary and proportionate depends on the objective. This was loosely described in the paper as:

preventing widespread outbreaks, and should they occur, to reverse epidemic growth

In more precise terms the objective could be defined as reducing the reproduction rate to under one in a sustained manner. So certain measures would be necessary if they were required to reduce the reproduction rate below one. But additional, or more restrictive measures, which reduced the reproduction rate to 0.5 would not be necessary to secure that objective.

It might be argued that there was a public health rationale to a faster path to elimination, because it would mean fewer cases, serious illnesses and deaths. This possibility is illustrated in table two. From a starting point of 100 infections it shows the aggregate number of cases to elimination with different effective reproduction rates. A reproduction rate of 0.5 represents the hard lockdown and a more targeted approach with a much more limited impact on human rights could have an effective reproduction rate of 0.7. A level 4 intervention takes 7 cycles (about six weeks)

A level 2 to 3 intervention takes 13 cycles and an additional 231 cases. The difference is 133 cases, which might result in one or two additional deaths. It is difficult to argue that the level 4 intervention is necessary and proportionate.

Table two: Reproduction rate and change in cases

R-eff.	Infection multiplier 5 cycles	Infection Multiplier 10 cycles	Cycles to elimination	Aggregate Number of cases to elimination or 13 cycles
2	32	1024	NA	1638200
1.25	3.1	9.3	NA	8595
0.7	0.17	.03	13	231
0.6	.08	.006	9	148
0.5	.03	.0009	7	98

Shock and awe

One factor that may have been on officials' minds is a 'shock and awe' effect. A disproportionate response was 'necessary' to impress on the public the seriousness of the situation, the strong behavioural changes required to address it, and so help secure the necessary voluntary compliance. We will leave it to lawyers to ponder whether this is a legitimate argument that justified the widespread intrusion on rights.

The decision-making process

To assess whether the measures were necessary and proportionate it is appropriate to consider the actual decision-making process. If it was based on a careful and objective weighting of the evidence, the measures might be lawful, even if they subsequently turned out to be something of an overreaction. But if they were the result of a last minute politically driven panic, where relevant evidence was ignored, or had not been produced, then the measures probably would not be lawful. Recall, as demonstrated in part four, official advice that the building construction industry should be excluded from the lockdown was overturned by Cabinet. That action, or rather the Director General's action, would not have been lawful.

On quarantining

The Solicitor-General was mindful of advice from health officials that the previous arrivals regime (which involved mandatory quarantine but generally at people's homes), did not meet the heightened objective of preventing new vectors of transmission and maintaining complete control over the main pathway through which COVID-19 cases have emerged.

It did not therefore fully or adequately stop the spread of the virus. Giving weight to the Director General's expert assessment as to what is necessary to protect public health in the

current circumstances, she concluded that a direction for quarantine within managed facilities could lawfully be made.

There is no evidence that the Director General of Health ever turned his mind to what quarantining requirements were 'necessary'. There was no analysis at all in the 10 April paper that recommended supervised quarantine. Just days before (see part five) the existing measures were described as working well. What had changed was that 'at home' quarantining had become a media story, and there was a political imperative to look tough. By 10 April the virus had already been brought under control with the existing policy, that did provide for the quarantining of high risk individuals. There was no evidence that home quarantining presented a material risk to the public.

Again, the Solicitor-General did not ask for documentation that might support 'health official's' assertions.

Compulsory examinations

She was also satisfied that the provisions for compulsory medical examination would authorise reasonable searches, so would not constitute a breach of s 21 of BORA (right to be free from unreasonable searches).

There was no argument to support this view. The issue is considered in more detail in the opinion on the lawfulness of the Covid-19 Public Health Response Bill.

Assurances going forward

The relevant government departments will keep all restrictive measures under constant review to ensure they have a firm legal basis, are sufficiently well-defined, can be demonstrably justified in the circumstances, and remain proportionate to the threat posed by COVID-19. It is important for the Solicitor-General, supported by an inter-agency process, to ensure that such ongoing review takes place and reports back to Cabinet on a regular basis.

In our review of the documents we did not see a single case where the individual measures were reviewed. If there were any concerns they all had to wait until there was a political decision to move alert levels.

22 April 2020

Office of the Attorney-General to Cabinet Business Committee Powers and authorisations to give effect to Alert Level 3

The following is the discussion about human rights relating to the move to alert level 3.

The risks of COVID-19 continue at a high level which means that while we can allow some relaxation of controls there are choices to be made and there is a rationing exercise to be done to assist those choices. The rationing exercise is primarily based on public health considerations but it is also relevant and permitted to include other considerations such as the least impact on civil liberties and reducing economic impacts.

This suggests that at least human rights were being considered in the mix. The substantive impact of the movement to level 3 was on the right to work. This was restored to 400,000 workers.

There was a brief word on public scrutiny and accountability.

As time passes it is important to employ, as much as possible, the usual measures of public scrutiny and accountability. Throughout this emergency the Government has employed multiple mechanisms to maintain transparency and legitimacy. Publication of decisions and notices through various communication channels, daily press conferences and guidance material have all contributed.

There was very little opportunity for public scrutiny, and little accountability. The relevant documents were only released with long lags. Public messaging is not the same as accountability and scrutiny. There was still no requirement to produce regulatory impact assessments.

Limits on rights or freedoms are permissible if they are reasonable, prescribed by law, and demonstrably justified in a free and democratic society. The limits must be in proportion to the objective of the order, namely preventing the spread of COVID-19 and protecting the public health and lives of New Zealanders.

Under level three the human rights issues were similar to those under level 4 and there was a re-run of the arguments in the 15 April paper. However, the language differs in some (possibly key) respects.

This is a legitimate objective, which could not be achieved in a manner that allows for greater liberty and enjoyment of movement, association and assembly rights (and/or the minority rights or manifestation of religion/belief rights). Public health advice is that the Level Three measures, and therefore the restrictions imposed by the order, are necessary to

prevent the spread of COVID-19. The measures have been tailored to allow businesses, services, and schools to operate to the greatest extent that they can, without significant contact with the public and the accompanying risk of transmission.

The objective has changed from preventing widespread outbreaks and reversing growth, to preventing ‘the spread of COVID-19’. This sets a lower bar. If a measure could conceivably stop one transmission then it could be ‘justified’

There was a focus on the improvements compared to level 4:

Additional exceptions and exclusions to the requirement to stay at home allow people to move outside their homes to access services they need (beyond those simply providing the necessities of life), obtain fresh air and exercise, and have further contact with others, including for one-off life events; all assessed within the necessary public health framework and appropriately balanced against risk to public health. This demonstrates a proportionate and lawful response, which allows for movement and association and activities that have a sufficiently low risk of contact and transmission of the virus.

The Government was obviously sensitive to complaints that its measures were disproportionate, but the claim that all of the measures were ‘*all assessed within a framework and appropriately balanced against risks to public health*’ does not ring true. The framework and assessments have not been released, but we doubt that any meaningful framework and individual policy assessments that balanced human rights against health outcomes existed. If it did the Government could, for example, have defended its decision to restrict funerals to just 10, by reference to the Ministry’s risk assessment. Instead it rapidly caved, when it was apparent that the restriction made little sense and was obviously disproportionate. In the interests of transparency and accountability the relevant documents should have been released with the level 3 decisions.

There was a discussion on a continuing ban on religious services.

I would have concluded also that allowing small gatherings for commonly held religious services (which would need definition) could be justified under the Bill of Rights Act at Alert Level 3, if for a short period of time. However, that has not been necessary because the policy intention at Alert Level 3 is to confine permitted small gatherings to big life moments (such as funerals) which could not wait or be done online and to limit social gatherings which can lead to clusters of the virus.

The logic here appears to be that there is a ‘budget’ for interactions, that was used up by the ‘funeral allowance’, so small religious services missed out.

Any prima facie discrimination that may potentially be established would be indirect. While indirect discrimination turns very much on its facts, we anticipate it would be justified, given the strong public health imperative against which the discrimination would be analysed.

Several rights affirmed in the International Covenant on Economic, Social and Cultural Rights may also be engaged. The limitations on these rights can be justified for the same reasons put forward above. The Covenant rights engaged include:

The right to work, as a significant number of people are unable to engage in their normal employment (article 6). 90.2. The right to the highest attainable standard of physical and mental health (article 12), for example through limitations on access to elective procedures and other health care not directly related to Covid-19 (although article 12 also requires states to prevent, treat and control epidemic illnesses, and so also provides some basis for the measures in the order under section.

There was no further discussion of the limitations on these rights and whether they were necessary and proportionate.

C: Covid-19 Public Health Response Act Legal Advice

The most relevant and detailed consideration of the human rights implications of Covid-19 measures is the legal advice, dated 11 May 2020, which assessed the broad-reaching powers conferred under the Covid-19 Public Health Response Bill. The advice was written by Jeff Orr, Chief Legal Counsel, Office of Legal Counsel

The advice starts with the content of the Act, which is set out here for ease of reference.

The content of the Act

Purpose

The Purpose of the Act is to support a public health response to COVID-19 that—
(a) prevents, and limits the risk of, the outbreak or spread of COVID-19 (taking into account the infectious nature and potential for asymptomatic transmission of COVID-19); and
(b) avoids, mitigates, or remedies the actual or potential adverse effects of the COVID-19 outbreak (whether direct or indirect); and
(c) is co-ordinated, orderly, and proportionate; and
(d) has enforceable measures, in addition to the relevant voluntary measures and public health and other guidance that also support that response.

Section 8 provides the prerequisites for making orders:

A section 11 order may be made under this Act only—

- (a) while an epidemic notice under [section 5](#) of the Epidemic Preparedness Act 2006 is in force for COVID-19; or*
- (b) while a state of emergency or transition period in respect of COVID-19 under the Civil Defense Emergency Management Act 2002 is in force; or*
- (c) if the Prime Minister, by notice in the Gazette, after being satisfied that there is a risk of an outbreak or the spread of COVID-19, has authorised the use of section 11 orders (either generally or specifically) and the authorisation is in force.*

Section 9 provides that the Minister may make a section 11 order with the following requirements:

- (1)(a) the Minister must have had regard to advice from the Director-General about—*
 - (i) the risks of the outbreak or spread of COVID-19; and*
 - (ii) the nature and extent of measures (whether voluntary or enforceable) that are appropriate to address those risks; and*
- (b) the Minister may have had regard to any decision by the Government on the level of public health measures appropriate to respond to those risks and avoid, mitigate, or remedy the effects of the outbreak or spread of COVID-19 (which decision may have taken into account any social, economic, or other factors); and*
- (c) the Minister must have consulted the Prime Minister and the Minister of Justice, and may have consulted any other Minister that the Minister of Health thinks fit; and*
- (d) before making the order, the Minister must be satisfied that the order is appropriate to achieve the purpose of this Act.*
- (2) Nothing in this section requires the Minister to receive specific advice from the Director-General about the content of a proposed order or proposal to amend, extend, or revoke an order.*

The Act allows the Director General to make an order in a single territorial authority but only if it is urgently needed.

Section 11 sets out the orders that may be made:

- (a) 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, or require persons to take any specified actions, or comply with any specified measures, that contribute or are likely to contribute to preventing the risk of the outbreak or spread of COVID-19, including (without limitation) requiring persons to do any of the following:*
 - (i) stay in any specified place or refrain from going to any specified place:*
 - (ii) refrain from associating with specified persons:*
 - (iii) stay physically distant from any persons in any specified way:*

- (iv) refrain from travelling to or from any specified area:*
 - (v) refrain from carrying out specified activities (for example, business activities involving close personal contact) or require specified activities to be carried out only in any specified way or in compliance with specified measures:*
 - (vi) be isolated or quarantined in any specified place or in any specified way:*
 - (vii) refrain from participating in gatherings of any specified kind, in any specified place, or in specified circumstances:*
 - (viii) report for medical examination or testing in any specified way or in any specified circumstances:*
 - (ix) provide, in specified circumstances or in any specified way, any information necessary for the purpose of contact tracing:*
- (b) in relation to any places, premises, crafts, vehicles, animals, or other things, to require specified actions to be taken, require compliance with any specified measures, or impose specified prohibitions that contribute or are likely to contribute to preventing the risk of the outbreak or spread of COVID-19, including (without limitation) any of the following:*
- (i) require things to be closed or only open if specified measures are complied with:*
 - (ii) prohibit things from entering any port or place, or permit the entry of things into any port or place only if specified measures are complied with:*
 - (iii) prohibit gatherings of any specified kind in any specified places or premises, or in any specified circumstances:*
 - (iv) require things to be isolated, quarantined, or disinfected in any specified way or specified circumstances:*
 - (v) require the testing of things in any specified way or specified circumstances.*

These are very sweeping powers. As long as there is some connection with the risk of spread of Covid-19 the Government can stop everyone from doing anything, or require them to do anything. All that is required is the Prime Minister's and the Minister of Health's wishes to take an action.

The advice

After a consideration of the freedoms and rights impacted by the orders that had been imposed it concluded that:

'the Bill appears to be consistent with the rights and freedoms affirmed in the Bill of Rights Act.'

The starting point is a summary of the purposes of the Bill.

The Bill empowers the Crown to continue its precautionary approach to preventing and limiting the risk of the outbreak of COVID-19 in New Zealand, particularly at lower alert levels and as the risk of transmission reduces over time. In doing so, the Bill recognises the

highly contagious nature of COVID-19, along with the potential for asymptomatic transmission, and provides for continued applicability of necessary public health measures.

This description, arguably, allows a more expansive interpretation of the power to intrude on human rights, because the purpose is to empower a 'precautionary' approach to limiting the risk of the outbreak of Covid-19. A 'precautionary' approach, is vague and can be used to justify almost anything. The Act itself makes no mention of this 'precautionary' approach which sways the advice. Further a 'precautionary', approach, if overused, may not be consistent with the Siracusa Principles. Principle 54 provides:

The principle of strict necessity shall be applied in an objective manner. Each measure shall be directed to an actual, clear, present, or imminent danger and may not be imposed merely because of an apprehension of potential danger.

Human rights implications

It is acknowledged that the powers could have significant human rights implications.

It is important to acknowledge at the outset that the powers in the Bill allow for the making of orders that may impose serious limitations on the rights and freedoms enshrined in the Bill of Rights Act.

The backdrop to this Bill is an unprecedented public health emergency that requires a number of exceptional powers that would be unlikely to be justified in ordinary circumstances. In this context, it remains important to scrutinise each limit on a right or freedom carefully to ensure that it is justified in the circumstances.

To justify these limitations it is first argued that the triggers for the use of the powers in themselves provide protection against disproportionate measures. A fairly strong test is proposed:

In our view, for a public health crisis to justify significant intrusions on protected rights and freedoms the situation must: a. be of an exceptional and temporary nature; b. pose an actual or imminent threat; and c. affect all branches of the life of the community.

We consider that the provisions in the Bill that trigger the use of order making powers incorporate each of these factors. Most importantly, under cl 8 it will only be possible to use these powers in relation to COVID-19. There is no question that the global COVID19 pandemic constitutes an exceptional situation that poses an actual or imminent threat affecting all branches of the life of the New Zealand community.

Advice as protection

A further protection is the need to receive advice.

With respect to reasonableness and proportionality, we note that before making an order the Minister of Health must receive the advice of the Director-General of Health, have regard to the factors set out in cl 8A(2)(b), and consult with other Ministerial colleagues.

The critical point here is that the protection afforded by the role of the Director General of Health had been substantially diluted. Under the Health Act the agreement of the Director and the Minister of Health are required. A principled Director could stand up to an overly excited Minister, or the Minister could rein in a rogue Director. Now the Minister simply has to receive advice.

And of course, under 9(2), the Minister does not even need to seek the Director's advice. For this protection to be effective the Director General would have to have some backbone and be prepared to advise the Minister against taking a disproportionate action. The advice would also need to be immediately published. There is no such requirement.

Appropriate

There is an express requirement for the Minister to be satisfied that any order is appropriate to achieve the purposes of the Bill.

Appropriate is a weaker test than proportionate. Proportionate should lead to a consideration of costs and benefits. Appropriate could mean anything.

Further safeguards

The Bill also includes several safeguards to ensure that orders are reasonable and will go no further than necessary in the circumstances.

There is no express provision in the Bill that orders must be reasonable and go no further than necessary. There could have been.

The Bill contains an express requirement for the Minister of Health and Director-General to keep any orders under review (cl 13(5)).

This does not mean that they will. There was no ongoing review process when the level 4 lockdown was imposed. And there is no standard to guide the review.

Orders made under the Bill are also temporary in nature

They can be extended at will. Our analysis of the extensions of the State of Emergency showed that it was extended continually when there was obviously no justification for doing so.

Key features ignored

The analysis did not consider two key features of the Bill.

First, is the completely general and sweeping capacity to make orders. This power is similar to that in the Civil Defence Emergency Act. The general powers are more understandable here, because this Act had to be crafted to meet a wide range of emergency events. With Covid-19, however, the kinds of interventions that might be necessary are now well understood, so it is not clear why a general power is required.

Second, the constraints and remedies in the Civil Defence Emergency Act against overreach are lacking. The provisions in that Act are:

In achieving the purpose of this Act, before proposing, recommending, or adopting any provisions or regulations in relation to any function described in subsection (2), any person described in that subsection must—

(a) have regard to—

(i) the extent, if any, to which the provisions or regulations are necessary to achieve the purpose of this Act; and

(ii) other means in addition to or in place of the provisions or regulations that, under this Act or any other enactment, may be used in achieving the purpose of this Act, including the provision of information, services, or incentives; and

(iii) the reasons for and against proposing, recommending, or adopting the proposed provisions or regulations and the principal alternative means available, or of taking no action if this Act does not require otherwise; and

(b) carry out an evaluation, which the Minister or the Civil Defence Emergency Management Group is satisfied is appropriate to the circumstances, of the likely benefits and costs of the principal alternative means;

If there is overreach there is the prospect of compensation.

A person who has suffered loss or damage, as a result of any action or measure..., may recover compensation from the Crown if the action or measure was such that the good done, or likely to be done, by the action or measure for that person was disproportionately less than the loss or damage suffered by that person as a result of that action or that measure.

The above provision appears to be a response to the Siracusa Principles. The lack of similar provision in the Covid-19 Act raises the possibility that the Act is not lawful.

Making orders

The opinion then goes on to consider whether there are appropriate safeguards in the process for making the orders. It is considered whether particular, selected, orders are lawful.

There is no discussion of the lack of safeguards in the Act designed to ensure that there is a serious consideration of the necessity and proportionality tests.

Section 11 - Right to refuse to undergo medical treatment

Section 11 of the Bill of Rights Act affirms that everyone has the right to refuse to undergo medical treatment.

Clause 10(a)(viii) of the Bill allows for orders to be made requiring people to report for medical examination or testing in any specified way or in any specified circumstances.

We consider that the right to refuse medical treatment is engaged by certain forms of medical examination, and particularly, a test for COVID-19

Clause 10(a)(vii) prima facie limits the right to refuse to undergo medical treatment. Where a provision proposes a limit on a right or freedom, it may nevertheless be consistent with the Bills of Rights Act if the limit is reasonable and justifiable in terms of s 5 of that Act.

The tests Orr applies are as follows:

- a. does the provision serve an objective sufficiently important to justify some limitation of the right or freedom? if so, then:*
 - i. is the limit rationally connected with the objective?*
 - ii. does the limit impair the right or freedom no more than is reasonably necessary for sufficient achievement of the objective?*
 - iii. is the limit in due proportion to the importance of the objective?*

The purpose of cl 10(a)(viii) is to ensure that appropriate public health control measures can be applied in respect of people who may have COVID-19, and also that public health authorities can collect information about potentially unknown vectors of transmission in the community.

The collection of this information is clearly necessary and rationally connected to the wider objective of protecting against future outbreaks of COVID-19.

This argument is mostly wrong on the facts. It is not necessary to test everyone to get a statistical picture of the progress of the virus. There is a high level of voluntary test taking and a few omissions do not matter from a statistical accuracy

perspective. In many cases the key statistics, such as the number of cases, do not rely solely on testing, but also on clinical history and background factors.

Public health concerns, particularly as it relates to infectious diseases, have explicitly been held to be a sufficiently important objective to justify a limit on the right to refuse medical treatment.³

The case reference is a case involving the fluoridation of water, and did not have an obvious connection to the issue of forcing a medical intervention when there is an infectious disease.

With regard to the proportionality of the limit on the right, we note that an outbreak of COVID-19 would have extreme consequences for public health and wellbeing.

This does not address the issue of whether mandatory testing would have an impact on the course of the pandemic. Tests are not wholly accurate (possibly at least 20 percent of tests are false negatives), and decisions to isolate and quarantine are still made, notwithstanding the results of a test.

While the Bill empowers orders to be issued in respect of medical examination and testing, it does not require a person to undertake any particular ongoing form of treatment. In this way, the Bill continues to preserve the scope of personal autonomy and bodily integrity as far as is possible while maintaining public health.

This irrelevant. The issue is whether they can be compelled to take a test. In practice it is probably not possible to force somebody to take a test.

Sections 16, 17 and 18 – Freedom of peaceful assembly, freedom of association and freedom of movement

These rights are closely connected, and together they protect core aspects of civil life in New Zealand, enabling people to freely go about their daily lives. In relation to these rights (as they are affected by the Bill) we note the following:

- the choice of method, place, and time of peaceful assembly is integral to the free exercise of that right;*
- the ambit of freedom of association is “broad and encompasses a wide range of associational activities...” It has been held to include the right of an individual to associate with any other individual. Freedom of association protects informal assemblies and participation in community life generally;*

³ New Health New Zealand Inc v South Taranaki District Council [2014] NZHC 395 at [86].

- *freedom of movement includes the right to use roads and move through public places.*

Clause 10 of the Bill sets out the range of matters and kinds of requirements that can be imposed by an order issued under cl 8A or 9 of the Bill. A number of these requirements (and corresponding powers of enforcement) appear to prima facie limit the above civil and democratic rights.

Particularly by:

- *requiring persons to stay in a specified place or refrain from going to any specified place;*
- *requiring persons to refrain from travelling to or from any specified area;*
- *requiring persons to be isolated or quarantined in any specified place;*
- *requiring persons to refrain from participating in gatherings;*
- *requiring premises or other things to be closed or only open if specified measures are complied with; and*
- *prohibiting gatherings of any specified kind, in any specified place or in any specified circumstances.*

Assessment approach is not valid

This is not a valid way to test the legality of requirements that can be made under the Act. Each order has to be assessed individually, as to their necessity and proportionality. It is not appropriate to say that they have similar kinds of human rights impacts and hence can be assessed as a group.

The standard recitation of the seriousness of the impositions follows:

Together, the potential requirements that can be imposed via orders under cl 10 of the Bill could, if applied to their fullest extent, impose arguably the most extreme and significant limitations on New Zealanders' ability to freely go about our daily lives as has occurred in modern New Zealand history. Their broad scale and scope have the potential to significantly impact on people's ability to socialise, do business, and move freely.

Nevertheless, and despite the potential degree of these restrictions, the Bill may be consistent with the Bill of Rights Act if the limitations are necessary and can be justified in a free and democratic society.

Orr poses the justification in terms of the importance of the objective.

The purpose of these provisions is to prevent, reduce, or eliminate the risks of an outbreak of COVID-19. This occurs in the context of an extraordinary global pandemic and in respect of a virus that has been shown to have extreme impacts on public health and wellbeing. The full extent of the characteristics of the virus are not yet fully known but what we do know is:

- a. the virus is highly contagious;*
- b. it has an incubation period of up to 14 days;*
- c. asymptomatic people may be carriers; and*

d. although the effect of contraction by any individual varies, in the worst cases the effect is very serious requiring hospital, and sometimes ICU, level care.

These factors mean the utmost caution must be taken to protect public health.

This smattering of information about the nature of the virus does not have much direct bearing on the question of proportionality, or even of necessity. Orr is perhaps just trying to show that he knows something about the subject matter.

Are the limits rationally connected to the objective?

The restrictions on people's ability to assemble, associate and move freely is rationally connected to the purpose of the Bill: preventing, reducing, and eliminating the risks of COVID-19.

The virus is transmitted through physical proximity. The restrictions target physical association and movement, and thereby limit the ability of the virus to spread between people and throughout the country.

The constraints on movement were not always rationally connected to reducing the risks of covid-19. Limits on movement make sense when one area has the virus and another does not. If the virus is spread throughout the country, however, the case for limits on movement, as such, makes less sense. If the movement is by crowded public transport then it may be necessary to close down this transport. However, if the movement is by private vehicle and social distancing is observed during the journey and at the destination, then there is no additional risk, and there is no rational connection. The former Minister of Health obviously thought so when he used a car to go to exercise.

The next question is:

Do the limits impair the rights or freedoms no more than is reasonably necessary for sufficient achievement of the objective?

The discussion starts with the statement that:

'Parliament is entitled to appropriate latitude to achieve its objectives.(Canada v JTI-MacDonald [2007] 2 SCR 610 at [42]–[45])

The cited case related to constraints on tobacco advertising, which does not seem that relevant to measures that impact on covid-19. The important point here is that with human rights protections, Parliament or the executive are not automatically entitled to a 'certain latitude'. The burden of proof of necessity sits squarely with those imposing the constraint. If there are alternatives, with fewer human rights implications, that will secure most of the benefits, then they should be taken. And

we are not talking about just a 'certain latitude' here. The Act provides untrammelled power to impose anything on the citizenry.

The issue here is whether the means are minimally impairing of the rights, and whether the means proposed are carefully tailored to the objective.

The Bill is designed to enable the Crown to carry on with its precautionary elimination strategy. This requires the careful ongoing management of latent risks, even as the virus reaches lower levels of presence or transmission in New Zealand, due to the high risk that the virus poses to public health.

By this we think it is meant that the Bill was effectively designed to impose no constraints, because any consideration of proportionality and necessity have to be viewed against the 'precautionary elimination strategy'. On this metric all actions are necessary and proportionate, and by construction have the minimum impact on human rights. This interpretative approach is almost certainly inconsistent with the Siracusa principle No.2.

2.The scope of a limitation referred to in the Covenant shall not be interpreted so as to jeopardize the essence of the right concerned.

And as noted above the Act makes no mention of a precautionary approach.

Notably, embedded within the Bill are several significant procedural and substantive safeguards. These together provide a high degree of assurance that orders will be imposed only

a. where a risk of transmission remains;

This just ducks the issue of whether the measures are proportionate. As it is highly unlikely that transmission will be eradicated worldwide, there will always be a risk of transmission, so the absolute power can be exercised for the foreseeable future.

b. in consideration of the various public health concerns, rights affected, and wider social interests at stake;

This is just going around in circles. The impositions must necessarily be the minimum necessary and proportionate, because the rights affected have been 'considered'.

There is no evidence, through level 4 and level 3, that human rights considerations were balanced against epidemiological considerations in a systematic way. The levels 3 and 4 decision paper did not even acknowledge that there were any human rights issues. In other papers human rights considerations were an obligatory

afterthought, rather than being at the centre of decision-making. This does not provide confidence that rights will be given sufficient consideration, or indeed any consideration, in the future.

- c. through means that provide significant public and Parliamentary oversight of any order promulgated;*

The Bill's legislative process gives the lie to that claim. The suspension of the Regulatory Impact assessments and the late release of documents do likewise.

and d. for a period of time no longer than 2 years after the commencement of the Act, unless repealed earlier.

Two years is a long time, which the government conceded when it was reduced to three months.

Notably also, the Bill does not allow orders to be made in respect of core civil and democratic institutions. No order requiring premises to close may be made in respect of a private dwelling house, Parliament, the courts, judge's chambers, or prisons.

This is largely irrelevant to a consideration of restrictions on movement. However, second dwelling houses were effectively required to close. Once locked down in their initial dwelling house people were banned from moving to their second house.

Finally, the discretionary power that the Bill gives to the Minister of Health (and Director General of Health in limited circumstances) to issue orders must be exercised consistently with the Bill of Rights Act.

This is another circular argument. The point of the opinion is to assess whether the derogations from the Bill of Rights Act are justifiable, not to assume that they are, just because there is a consistency requirement in the Act.

Overall, are the limits in due proportion to the importance of the objective?

The Bill provides for unprecedented limits on freedom of association and movement. However, this is in the context of a global pandemic and highly transmissible virus that in some of the worst cases can have very serious effects requiring ICU level care. The powers enabled under the Bill therefore reflect the significant risk that COVID-19 poses to public health and wellbeing and any orders made would need to be proportionate to that risk.

As noted above an 'overall' test is not the correct test. Every imposition has to be justified in terms of its contribution to the objective and its impact on human

rights. Because some measures may be justified does not mean that all measures are justified.

If the 'overall' approach is taken then this could justify practically every order. The South Africans, for example, went 'hard' taking a precautionary approach. Amongst other things they banned the sale of cigarettes and alcohol, and banned dog walking, cycling and jogging.

We are of the view that, for these reasons, the limits that these orders may place on the rights to freedom of movement, peaceful assembly and association are justified under s 5 of the Bill of Rights Act.

Freedom from discrimination

We note that there is scope for orders under this Bill to have disproportionate impacts on certain groups protected from discrimination under s 21 of the Human Rights Act 1993 (for example, the elderly, or people in one person households).

We consider that the power to make orders that might apply differently to different groups is clearly justifiable on public health grounds; however we would expect decision-makers under the Bill to take these impacts into account when considering whether an order is a necessary and proportionate measure to further the public health response.

This was just an assertion without even the pretence of any supporting argument.

Section 21 – Right to be free from unreasonable search and seizure

Section 21 of the Bill of Rights Act affirms that everyone has the right to be secure against unreasonable search or seizure, whether of the person, their property or correspondence, or otherwise. The right protects a number of values including personal privacy, dignity, and property.

The following is the argument on the contentious warrantless powers of entry provision.

The purpose of the search authorised at cl 17(3) is to ensure that any risks posed by gatherings (in breach of the requirements of an order) that are taking place in private dwelling houses or marae can be identified and enforcement action taken to mitigate the risk. There is an extremely high public interest in limiting and preventing the outbreak of COVID-19 in New Zealand, which can be readily spread by large private social gatherings.

It is unusual for a constable to have a warrantless power of entry to a private dwelling house or marae. This is because of the high expectation of privacy that citizens place on these places. However, the exceptional nature of the risk posed by COVID-19 does justify some limits on this expectation.

This simply doesn't address the key issue. Why can't the constable get a warrant? There might be a good answer to this question, but the advice does not provide it.

The other issue is whether warrantless entry is truly necessary. In a low risk environment the odds that an individual transgression will add to transmission risk are extremely remote and only partial compliance is necessary to secure an appropriate outcome. Further, the purpose of the entry is just to issue a direction. In most cases this could be issued at the door. Entry would not be required.

Social gatherings in particular pose a high risk of widespread transmission (irrespective of whether they occur in a private or public place) and require careful management in the public interest. This is in contrast to other breaches of an order that might occur in a private dwelling or marae, which have less significant social consequences, and where warrantless entry is not permitted.

It is not explained what other breaches could occur in a dwelling or Marae. It would seem that the permissible number is either being exceeded, or it is not.

Clause 20 – power to direct people to provide information

The powers under cl 20 for an enforcement officer to require a person to provide identifying information supports them to efficiently carry out their enforcement functions under the Act, such as issue infringement notices in respect of breaches or to give effective directions.

There is only a negligible privacy interest in revealing identifying information. For these reasons, the Police power to direct a person to provide information is not an unreasonable search under s 21 of the bill of Rights Act. Section 22 –

This is not unreasonable.

Liberty of the person

Section 22 of the Bill of Rights Act affirms that everyone has the right not to be arbitrarily arrested or detained. The purpose of the right not to be arbitrarily detained is the protection of human dignity, autonomy and liberty. To trigger the concept of detention there must be a "substantial intrusion on personal liberty", whether a physical deprivation or a statutory constraint. The Court of Appeal has held that: "An arrest or detention is arbitrary if it is capricious, unreasoned, without reasonable cause: if it is made without reference to an adequate determining principle or without following proper procedures."

For this reason, arbitrariness should not be equated with "against the law", but should be interpreted more broadly to include elements of inappropriateness, injustice and lack of predictability.

The notable omission from this discussion is any consideration of clause 11(a)(i), which purportedly allows the mass detention of the entire population, for a potentially unlimited period. Instead the analysis is restricted to just the quarantining and isolation provisions.

In part 4 we considered the Director General's justification of the lockdown. He gave the impression that voluntary and compulsory compliance had been modelled, showing the necessity of the compulsory approach. That was deceptive. There was no such modelling.

Clause 10(a)(vi) authorises that orders under the Bill can require that any person be isolated or quarantined in any specific place in any specific way.

Where an enactment is inconsistent with s 22, there can be no role for justification under s 5. The term "arbitrarily" is intended to provide a measure of the reasonableness of statutory powers, as well as the exercise of those powers. At issue is whether there is sufficient justification for detention and whether the Bill carefully circumscribes who may detain a person, for how long, and under what conditions.

In our view, cl 10(a)(vi) is not "arbitrary" for the purposes of s 22 of the Bill of Rights Act. In reaching this view, we have taken account of a ruling of the European Court of Human Rights regarding the detention of individuals suffering from an infectious disease.

In Enhorn v Sweden, 21 the Court held that such detentions will only be justified if:

- a. the response is proportionate to the threat the disease poses to the general public;*
- b. the measure is a measure of last resort; and*
- c. the detention must be lifted as soon as possible as the person no longer poses a threat to the public.*

We consider that these factors are met in the present case. Requiring a person who has been exposed to COVID-19 (for example through travelling to countries where there is a high outbreak of the virus, or who is waiting for results of a test) is reasonable and necessary as it will ensure that the person is kept apart from other persons during the period that they would be capable of passing on the virus. Similarly, it is reasonable to remove a person suffering from COVID-19 to hospital where the person can be isolated from other persons and receive appropriate medical treatment (where consented to).

The support for this is the Ministry's advice:

The Ministry of Health has advised that a person who may be exposed to COVID-19 (for example through international travel) needs to be self-isolated for up to 14 days which is the known incubation period of the virus

The Ministry's advice only justified home isolation. It does not address the issue of requiring isolation in a managed isolation facility, which is compulsory for

international travellers. It is disturbing that Orr was not aware of the nature of the isolation order, that he was advising was legal.

If the advice had addressed the issue, it would have had to explain why it was rational and proportionate to allow home isolation for those with the virus (ninety five percent of those infected were allowed to recover at home) while those coming from overseas with a small chance of being infected are placed in managed isolation. Currently no attempt is made to distinguish between travellers from high risk and low risk countries. The risk of a traveller coming from China having the virus might be 1:10,000,000, but the risk from the US 1:200. In the former case the risk to the public is close to nil, so a 14 day quarantine is not proportionate.

We therefore consider the Bill appears to be consistent with the right not to be arbitrarily arrested or detained affirmed in s 22 of the Bill of Rights Act.

Compulsory managed isolation for positive cases

With the latest outbreak all positive cases were required to go into managed isolation. This is a much greater intrusion on human rights than self isolation. The Director General explained that the change was to show just how serious the government was about combatting the virus. Public messaging is not a valid justification of a derogation from human rights. The Director General attempted to walk this back by explaining that it would reduce the possibility that close contacts in a family would be subject to multiple home isolation periods as other members of the household became positive cases. This may explain why some cases may prefer managed isolation if they were offered it but does not explain why it is necessary in all cases.

Section 27(3) - rights to justice in proceedings against the Crown

Section 27(3) of the Bill of Rights Act protects the ability of an individual to bring a proceeding against, or to defend civil proceedings brought by, the Crown and to have those proceedings heard in the same manner in which civil proceedings between individuals can be heard.

Clause 33 of the Bill imports from the Health Act 1956 the existing protection from liability for persons acting under the provisions of that enactment and applies them to the Bill. Under these provisions, an individual acting in pursuance of any of the provisions of the Act is protected from civil or criminal liability unless they have acted in bad faith or without reasonable care. We note that this means that liability can still lie against an individual, and accordingly the Crown, in cases of bad faith or negligence. We consider this immunity to be consistent with s 27(3) of the Bill of Rights Act.

Notably no attempt is made to argue the consistency of the immunity with the Bill of Rights Act. Almost certainly that is because Orr couldn't think of an argument. The

advice has ignored the Siracusa principles, which allow for effective remedies for disproportionate actions made in good faith.

56. Effective remedies shall be available to persons claiming that derogation measures affecting them are not strictly required by the exigencies of the situation.

As noted above the provision in the Act contrasts with the provision in the Civil Defence Emergency Act, which provides:

A person who has suffered loss or damage, as a result of any action or measure..., may recover compensation from the Crown if the action or measure was such that the good done, or likely to be done, by the action or measure for that person was disproportionately less than the loss or damage suffered by that person as a result of that action or that measure.

Departmental Disclosure statement

The Departmental Disclosure Statement that accompanied the Bill gave the following responses to the standard questions:

Are there any publicly available inquiry, review or evaluation reports that have informed, or are relevant to, the policy to be given effect by this Bill?

NO

Are there aspects of the policy to be given effect by this Bill that were not addressed by, or that now vary materially from, the policy options analysed in these regulatory impact statements

NO

Are there aspects of the policy to be given effect by this Bill that were not addressed by, or that now vary materially from, the policy options analysed in these regulatory impact statements?

NO

Has further impact analysis become available for any aspects of the policy to be given effect by this Bill?

NO

For the policy to be affected by this bill, is there analysis available on:

(a) the size of the costs and benefits

NO

(b) the potential for any group to suffer a substantial unavoidable loss of income or wealth

NO

The succession of 'nos' is telling.

D: The State of Emergency

A state of national emergency was declared on 26 March 2020. This activated sweeping emergency powers. Because the powers are potentially so sweeping they are only be in place for 7 days, and any extension must be justified. A declaration or extension of a state of emergency is made on the advice of the Director of Civil Defence and Emergency Management .

The rationale for the declaration on 26 March was:

The effect of the declaration is that the control of the response to COVID-19 will be managed at the national level and will ensure local and regional level compliance with instructions issued. The aim is to ensure the health system capacity is not exceeded through strengthening public health measures and supporting the enforcement of COVID19 interventions to reduce and eliminate sustained and intensive transmission of the disease.

The aim was to support a suppression, not an elimination strategy.

The Director of Civil Defence and Emergency management made the following declaration.

I, as Director Civil Defence Emergency Management, advise that the emergency is, or is likely to be, of such extent, magnitude, or severity that the civil defence emergency management necessity or desirable in respect of it is, or is likely to be, beyond the resources of the Civil Defence Emergency Management Groups whose areas may be affected by COVID-19.

This assessment assumed that the epidemic could spin out of control necessitating emergency powers to requisition resources, assist in the provision of necessities, and so on. Given the early and hard measures imposed this was not a likely outcome, but in the circumstances, with so many unknowns, a 'precautionary' response, to ensure that resources were in place in a timely manner, was understandable.

The emergency powers could also be used to support social distancing measures, though it was not clear what support was needed in addition to those available under the Health Act. Unless, possibly, because there were doubts about the powers the Director General of Health was purporting to have under that Health Act.

On 23 March 2020, the Prime Minister announced the New Zealand threat level for COVID-19 is now level 3, and will move to Level 4 at 11.59pm on Wednesday 25 March.

A COVID-19 Level 4 threat level means, the best advice we have at the moment is that, it is likely that the disease is not contained and there is sustained and intensive transmission in New Zealand. I, as Director Civil Defence Emergency Management, and my officials consider declaring a National State of Emergency is an appropriate action to take in response to COVID-19. It will enable us to respond by all means necessary as the situation develops and have full access to the resources available to preserve human health, society and the economy.

The statement that the disease was not contained and that there was 'sustained and intensive transmission' was an overstatement to say the least. The advice that there was 'sustained and intensive transmission' went well beyond the advice that supported the move to level 4. The evidence was that there were four cases of community transmission. The source of the 'best' advice was not disclosed, and it appears that the Director did not make an enquiry as to the true state of affairs, or was deliberately misled.

As a State of Emergency lasts for seven days it was successively amended.

31 March 2020

First extension

The following provides the justification for the first extension.

New Zealand is currently at COVID-19 alert level 4. Cases of COVID-19 continue to rise in New Zealand, with 589 confirmed and probable cases as at 0900 hours on 30 March 2020, and evidence of some cases of community transmission. The range of interventions required under alert level 4 may require immediate access to powers made available under the Civil Defence Emergency Management Act (CDEM Act) during a state of national emergency

With the following caveat

The powers available in a state of emergency are significant, and must only be used when reasonably necessary.

And this is what they had done:

Since the state of national emergency was declared, CDEM Act powers have been used to requisition a car park for COVID-19 testing in Canterbury and to ensure CDEM Groups have their Emergency Operation Centres and welfare structures activated to the appropriate standard. Constables have also had access to the CDEM Act powers to reinforce the Government's self-isolation requirements.

And the outlook was:

As the COVID-19 pandemic continues, the likelihood of needing to use emergency powers increases. For example, the powers may be used to ensure the appropriate management of fuel and food so that communities, particularly vulnerable groups, have what they need. There may also be ongoing and heightened demand and competition for resources at a regional level that require management/intervention at a national level.

This somewhat overstated the likelihood of a big epidemic that would require the use of emergency powers. The number of new cases had not increased greatly since March 26, though there was still considerable uncertainty about how the epidemic would evolve.

On the need for a state of emergency:

The nuanced relationship between the alert level 4 and the state of national emergency will not likely be clear to New Zealanders. If the state of national emergency is not extended, it will likely cause public confusion and possibly send a signal that the situation is not as serious as it is. This could undermine the Government's response and compromise the outcomes the Government is trying to achieve (i.e. cause people to follow the interventions more loosely, or not follow them). Maintaining a state of national emergency would clearly signal to New Zealanders that there remains a high risk of further sustained and intensive transmission of COVID-19.

It is not clear that a wish to support the Government's messaging is a valid reason for extending the state of emergency. Probably not.

6 April 2020

2nd extension

Cases of COVID-19 have continued to rise in New Zealand, with 1,039 combined confirmed and probable cases as at 0900 hours on 5 April 2020, and evidence of community transmission.

The data was showing that by 6 April there were few signs of community transmission. The focus just on the rise in cases misses the rate of change in cases, which is what was important. It appears that the Director was reluctant to acknowledge any good news.

What was being done:.

On 29 March 2020, I directed all CDEM Groups to activate their CDEM arrangements in support of the response to COVID-19. Since the State of National Emergency was first declared, CDEM Groups have used CDEM Act powers to direct non-essential businesses to close, direct freedom campers to relocate, requisition a carpark for COVID-19 testing, and close some roads.

There were 11 petty interventions, mostly against freedom campers. One rural road was closed, cutting off access to a forest park to hunters. One business trading non-essential products was directed to stop trading. The rationale on the latter case was:

To stop an activity which may substantially contribute to the emergency (COVID-19)) To cease members of the public making non-essential trips by closing a non-essential activity. Therefore, minimised risk of infection of others .

A single trader could not have ‘substantially contributed’ to the emergency.

The discussion on the justification for the extension was:

Each week, officials consider a wide range of factors when formulating advice on whether it is necessary to extend the State of National Emergency.

a) whether the statutory tests have been met;(these are)

- an emergency has occurred or may occur; and
- the emergency is, or is likely to be, of such extent, magnitude, or severity that the civil defense emergency management necessary or desirable in respect of it is, or is likely to be, beyond the resources of the Civil Defense Emergency Management Groups whose areas may be affected by the emergency.

b) the severity and impact/consequences of the current situation/emergency;

c) the degree of complexity of the necessary response (including the need for coordination at the national level);

d) the potential need for powers under the CDEM Act to manage the response; and

e) the effectiveness of measures in place to manage and eliminate COVID-19.

While the number of cases of COVID-19 continue to rise in New Zealand, and there is evidence of community transmission, I acknowledge the number of new confirmed and probable cases detected each day appears to be slowing. On Sunday 12 April, a total of 18 new confirmed and probable cases were reported, down from 29 cases the previous day. Despite this, we need to maintain current restrictions on movement supported by the powers under the Civil Defence Emergency Management (CDEM) Act if we are to fully realise the benefits of the measures in place.

It was getting reasonably clear, especially on the case numbers, that the tests for an extension of the state of emergency were not being met, but the Director appeared loathe to draw that conclusion.

20 April 2020

3rd Extension

The justification for this extension was:

While the number of new confirmed and probable cases appears to be slowing, maintaining a State of National Emergency will enable us to respond as necessary should the situation change, and ensure we continue to have full access to the resources available to preserve human health, society and the economy.

By this stage the new case numbers had dropped to less than ten a day and there had been no case of an unlinked domestic transmission for more than two weeks. The prospects of an outbreak serious enough to require a state of emergency were extremely low. It would take a couple of months for the case load to grow to that level.

However, they appeared to be busy. The intervention for the week was:

Noise Control Officers able to respond to noise complaints in order to maintain law and order and ensure that there is compliance with national Alert Level 4 measures (physical distancing/isolation) during State of National Emergency.

27 April 2020

4th extension

The justification:

As Director, Civil Defence Emergency Management, I consider extending the State of National Emergency is an appropriate action in response to the ongoing and serious impact of COVID-19. Whilst the number of new confirmed and probable cases is continuing to slow and decline, the risk COVID-19 poses to New Zealand remains high, and community transmission may still be occurring.

There had been no use of powers by civil defence groups in the previous 7 days.

The State of National Emergency expires on Wednesday 29 April at 12.21pm. An extension to a State of National Emergency should only be made if the situation remains an emergency and the emergency is, or is likely to be, of such extent, magnitude, or severity that the civil defence emergency management necessary or desirable in respect of it is, or is likely to be, beyond the resources of Civil Defence Emergency Management Groups whose areas are affected by the emergency

This plainly wasn't true at least two weeks before, and wasn't true when this extension was recommended.

May 2020

5th extension

The justification

The public health risk posed by COVID-19 remains an emergency as defined by the CDEM Act, to which we must respond. Whilst the number of new confirmed and probable COVID-19 cases is continuing to slow and decline, the Ministry of Health assesses that the overall public health risk for New Zealand remains 'high' and the World Health Organisation risk assessment of the global situation remains at 'very high'.

The reference to a high risk in New Zealand is probably a reference to one of the vacuous ESM reports discussed in Part 5.

The WHO's assessment of the world situation was irrelevant to a consideration of risk for New Zealand and the necessity to extend the state of emergency. New Zealand was effectively closed off from the rest of the world.

In addition, the restrictions required to reduce the spread of COVID-19 are resulting in significant and complex consequences across a range of sectors. Managing these consequences requires careful national coordination and application of CDEM knowledge, measures and practices to help guard against, prevent and reduce any harms or loss that may be associated with COVID-19, and which are at a level beyond that of individual CDEM Groups to manage.

There had been no use of powers by civil defence groups in the previous 7 days. Obviously it is beyond the capacity of individual Civil Defence managers to do nothing.

The overall COVID-19 response strategy is elimination. Elimination does not mean eradicating the virus from New Zealand, but rather eliminating community level transmission whilst containing/controlling those cases which do occur in a way which ensures any further community level transmission is prevented until a vaccine is available. The continued occurrence of/or potential for uncontrolled community level spread of COVID-19 is one factor for consideration on whether the state of emergency needs to remain in force. Remarkable efforts have been undertaken to control the spread of COVID-19. The Director General of Health has now stated that on the evidence currently available he is confident that, there is no widespread, undetected, community transmission of COVID-19 occurring in New Zealand – a principle requirement to allow the move from Alert Level 4 to 3.

This was little more than cheerleading. It was obvious that the near and medium term potential for uncontrolled spread was extremely remote.

The sole reported action over the week was to require a person to stop camping in a public park and to move to a local motor camp for emergency shelter.

6 May 2020

6th extension

The justification

the possibility that community transmission may re-emerge remains, particularly due to the relaxation of the public health measures between Alert Levels 4 and 3, and the public's level of compliance with the new measures.

The need for such public health measures indicates that the emergency remains.

The next week the Director gave up the charade.

If a State of Emergency was ever necessary, it was extended well beyond the date it should have expired. This was not consistent with the following Siracusa principles on states of emergency.

- *A state party availing itself of the right of derogation pursuant to Article 4 shall terminate such derogation in the shortest time required to bring to an end the public emergency which threatens the life of the nation.*
- *The principle of strict necessity shall be applied in an objective manner. Each measure shall be directed to an actual, clear, present, or imminent danger and may not be imposed merely because of an apprehension of potential danger.*

E: Inquiry into the operation of the COVID-19 Public Health Response Act 2020 Report of the Finance and Expenditure Committee July 2020

This enquiry into the Covid-19 Public Health Response Act was conducted by the Finance and Expenditure Committee rather than the logical body, the Epidemic Response Committee. The obvious reason is that the Government wanted a tame report. It had a majority on the Finance and Expenditure Committee and that is what it got.

The Finance and Expenditure Select Committee report was mainly concerned with procedural and enforcement considerations and only focused on issues that would arise in alert levels 1 and 2. Despite the large number of submissions concerning the sweeping and unconstrained powers under the Act, the report did not seriously consider this issue. Instead it just relied on an assurance from the Attorney-General.

The Attorney-General assured us that the Health Act 1956 was sufficient to provide a legal basis for the Government's response when New Zealand was in alert levels 3 and 4. However, the existing mechanisms in the Health Act were unsuited to responding to COVID-19 at alert level 2 or lower.

There was a lengthy discussion on the Government's strategy on compliance:

The Government's strategy was informed by a large body of academic research.

This was an overstatement. There were three references to academic research. The only analysis relevant to covid-19 was an empirical piece on self-reported compliance with social distancing requirements in the Netherlands. It wasn't very clear how it connected with the content of the New Zealand Act.

New Zealand adopted an approach to compliance known as "responsive regulation". The central notion of responsive regulation is that regulators should seek compliance through the least intrusive response possible and acceptable. Instead of aiming for compliance through deterrence-based strategies, academic research supports the adoption of less punitive and less restrictive strategies.

New Zealand did not use 'responsive regulation'. Instead the potentially highly coercive level 4 measures were used almost immediately. There was no discussion of the relative effectiveness of voluntary versus coercive measures drawing from the experiences in other countries

The National party minority on the Committee thought that the process was something of a sham. This is their minority report.

The National Party does not believe this inquiry was necessary, and could have been avoided if the Government had used the period between level 4 lockdown and early May to more proactively frame the legislation it believed was necessary to manage the COVID-19 response at lower levels.

Instead, the Government chose to ram through legislation under urgency without any public scrutiny despite the resulting significant curtailment of New Zealanders' fundamental freedoms. While we acknowledge the need for a framework to reduce the spread of the virus, there were already significant questions about whether the actions the Government had taken under the Health Act 1956 were legal and the Government refused to release the advice it had received on this matter.

We also believe that the best committee to undertake this inquiry was the Epidemic Response Committee, a committee specifically set up as the oversight committee for COVID-related matters. National believes the selection of the Finance and Expenditure Committee to undertake the inquiry and the subsequent closing down of the Epidemic Response Committee

was designed to ensure that Government members had a majority on the committee conducting this inquiry.

F: Human Rights Commission Responses

The Human Rights Commission's initial response to the human rights issues raised by the lock-down was a report '*Human Rights and Te Tiriti o Waitangi: COVID-19 and Alert Level 4 in Aotearoa New Zealand*', released on 20 April.

The focus was not on intrusions on individual human rights, but rather on responsibilities to the community, together with some pet grizzles about the state of society. It was more of a cheerleading, than a critical, document.

Human rights and Te Tiriti o Waitangi are not only about rights, they are also about responsibilities. They place responsibilities on government and others holding public power, and they also place responsibilities on individuals to their communities. As the Universal Declaration of Human Rights puts it, everyone has duties to the community in which the free and full development of their personality is possible. This human rights responsibility of individuals to their communities – staying in our bubbles, social distancing, getting tested, protecting iwi, hapū and whānau, looking out for each other – was one of the strongest features of Level 4.

Consistent with these human rights obligations, the government has responded to the pandemic with vigour and determination. The Human Rights Commission strongly commends the government for protecting the health and lives of so many tangata whenua and New Zealanders. Overall, the country's systems of health protection and health care have performed very well.

However, there were 'significant shortcomings' illustrated by 10 'snapshots' on how the level 4 lockdown impacted on 'human rights'; and the Treaty.

The 10 snapshots were

- Access to PPS for the people most vulnerable to Covid-19, such as disabled people, older people and those with underlying health conditions.
- Access to justice. This was a complaint that the Human Rights Review Tribunal closed for the duration of alert level 4.
- Contact tracing, surveillance and data. There was a concern that new technology to enhance contact tracing could be used 'repressively'.

- Deprivation of liberty

The only concern here was that:

people held in prisons, police cells, secure mental health and dementia units, youth justice facilities and care and protection residences were effectively locked down from the outside world.

Research shows that such people are vulnerable to cruel, inhuman and degrading treatment. This risk is heightened when they are cut off from full interactions with independent monitoring agencies, statutory visitors and their whānau.

There was an obliviousness to the fact that most of the population was, to varying degrees, cut off from the rest of the world and had been placed in home detention.

- *Racism*

This had something to do with reported cases of ‘racism’ and xenophobia in the early stages of the pandemic, leading on to concerns about racism in society more generally.

- *Disability*

This was related to some delays in providing Covid-19 information in accessible formats, and the lack of disaggregated data.

- *Older people*

Older people are at risk when their daily lives and support systems are disrupted. Numerous human rights are implicated, including the rights to health care, food, an adequate standard of living, and accessible information.

- *Women*

In the era of COVID-19, women have been disproportionately impacted by job losses in retail, hospitality and tourism. This will lead to a rise in poverty for women, particularly Māori, Pacific and women from ethnic minority groups, who worked in large numbers in those industries.

- *Employment*

This covered all of the possible ills, from a Commission perspective, in the post lockdown world.

There was no mention in the document of the New Zealand Bill of Rights, the content of the Universal Declaration of Human rights, and the Siracusa Principles. There was no discussion of the tensions between the need to manage the epidemic and the rights protected by those documents. Rather the document reflected the Commission’s view that human rights are not about individual liberty and rights at all, but mostly about the rights to collectively provided services.

An about face?

When the Covid-19 Public Health Act was rushed through Parliament the Human Rights Commissioner apparently then saw the threat of unrestrained coercive power and released a press statement on May 13 2020.

The Human Rights Commission is deeply concerned about the lack of scrutiny and rushed process for the COVID-19 Public Health Response Bill.

“For weeks the Government has known that we would be moving to alert level 2. It has not allowed enough time for careful public democratic consideration of this level 2 legislation. There has been no input from ordinary New Zealanders which is deeply regrettable

given that the legislation encroaches on the civil liberties of New Zealanders we have serious concerns about whether the powers are proportionate”(our emphasis).

“In times of national emergency sweeping powers are granted. There is a risk of overreach. Mistakes are made and later regretted.

G: Regulatory impact assessments

An important part of the Covid-19 response was the decision to suspend the requirement to make regulatory impact assessments of Covid-19 related measures until August 31 2020. This suspension may have been partially responsible for the low quality of the analysis and documentation supporting many of the measures. This part reviews the documents on the suspension decision. The connection to human rights concerns is that the requirement to assess the necessity and proportionality of the measures taken was weakened.

20 March 2020

Oral item for Cabinet 23 March 2020: Temporary suspension of Regulatory Impact Analysis requirements for direct Covid-19 responses Treasury to MOF

This paper provided talking points for an oral presentation to the Cabinet meeting that approved the move to alert levels 3 and 4.

The rationale for the suspension was:

We have developed this proposal to address the costs and uncertainties created by Covid-19 proposals being developed at pace with no time for regulatory impact analysis, and no exemption in the RIA requirements for proposals to respond to emergencies.

The Regulatory Quality Team (RQT) has so far dealt with four Covid-19 responses that under normal circumstances should be accompanied by regulatory impact analysis. There may also have been others we were not made aware of, and we expect more to come. Regulatory proposals proceeding without RIA would normally be subject to procedures for inadequate RIA as set out in Cabinet Office Circular (17)3, including considering whether a Supplementary Analysis Report (SAR) is required.

We have been considering these proposals on a case-by-case basis, and have generally not recommended SARs, as these are unlikely to serve any useful purpose when the Cabinet decisions and implementation are proceeding at such pace.

We have, however, generally advised that the interventions should be monitored, so that they can be adjusted as necessary and inform future emergencies.

Safeguards on the proposed RIA suspension and implementation arrangements

The proposal we have developed to suspend RIA requirements for direct Covid-19 responses includes measures to mitigate the risks of suspending RIA:

- it is time-limited and tightly focussed on direct Covid-19 responses.*
- RQT and the Treasury Covid-19 team will work with departments to get available relevant analysis included in Cabinet papers, and*
- we will monitor use of the suspension to identify and address issues that arise.*

The draft Cabinet paper added the following:

The RIA requirements support and inform the government's decisions on proposals for regulatory change. They are a process and an analytical framework that encourages a systematic and evidence-informed approach to policy development. Routine publication of Regulatory Impact Assessments contributes to the transparency and accountability of government.

This case-by-case approach creates high costs in time and uncertainty for departments and the Treasury, while adding little or no value at a time when departmental resources are already stretched. There is also a risk that the approach undermines the integrity of the RIA process.

There are risks in removing the RIA requirements in these circumstances. When we are asked to make Cabinet decisions, including decisions that may be significant, we will not have the benefit of departments' analysis to help us determine whether the proposal is the best and most feasible in the circumstances. However, the risks of not making decisions are considerable.

There was no discussion of why regulatory impact assessments had to be suspended until the end of August, or why past the initial flurry of decision-making, suspensions could not apply on a case by case basis for urgent proposals. The decisions to ease the alert levels were not urgent.

On human rights it was stated:

There are no Human Rights implications from this paper.

This was not necessarily correct. As noted above derogations from human rights protections require an assessment that they are necessary and proportionate and that these assessments must be evidence-based. Without the discipline of the regulatory impact assessment process it was less likely that these requirements would be met.

30 March 2020

Agency guidance

This informed agencies of the cabinet decision and set out the rules for deciding whether a proposal was covid-19 related. It also included the following:

*RIA is still valuable if it can be done, so even if the RIA suspension applies, you may choose to do regulatory impact analysis to help inform Ministers' decisions
If the proposal is particularly significant and you have the opportunity, doing at least some impact analysis would help inform Ministers' decision-making, and provide a platform for free and frank advice.*

We did not find a single case where an agency produced a Regulatory Impact Assessment .

Part eight: Equity at the centre of the national response

Through many of the documents released by the Prime Ministers' office and the Ministry there is a recurring theme that 'equity' and the Treaty of Waitangi obligations should be at the centre of the national response.

The 23 March alert level 4 decision document made the following case.

As a Department of the Public Service, the Ministry of Health and other government agencies have a responsibility to contribute to the Crown meeting its obligations under Te Tiriti o Waitangi/Treaty of Waitangi.

Māori as a population group have fared worst in every pandemic New Zealand has seen, namely the 1918 influenza pandemic and the 2009 influenza A (H1N1) pandemic. The 1918 pandemic resulted in a death rate for Māori of 4%, approximately seven times higher than the non-Māori death rate. Rates of hospitalisation and deaths for H1N1 were also much higher for Māori than for other ethnic groups.

It is evident from previous pandemic responses that the business-as-usual model previously used - preferentially benefited non-Māori and failed to protect whānau, hapū, iwi and Māori communities from the worst outcomes. Consideration of the specific needs of Māori, particularly equity and active protection, should be integral to the Governments response to COVID-19.

Māori are at greater risk from pandemics than many other ethnic groups in New Zealand. There are many different factors at play, including underlying social and economic disadvantage, a greater burden of chronic diseases that increase risk of more serious outcomes from infections, such as influenza, and poorer access to and quality of health care.

The thinking here, and in other papers, was that: this is a pandemic. Maori (and Pacific) have been disproportionately affected by past pandemics. Hence they will be disproportionately, and inequitably, affected by the Covid-19 epidemic.

What this misses is that the Covid-19 epidemic is not the same as the earlier epidemics. Negative outcomes, and in particular deaths, are heavily concentrated amongst the elderly, with the over 70s accounting for 85-90 percent of deaths in countries like New Zealand.

As the Maori and Pacific populations have a younger age structure than the European/other population, and a much smaller proportion in the vulnerable 70+ age group, the expectation is that the Maori and Pacific would not be disproportionately affected in terms of deaths. There is also evidence that underlying health issues, with obesity being a good marker for risk, are also a factor in explaining death rates, but it is unlikely that this will outweigh the age effect for Maori and Pacific.

There are two studies that come to a different view, one by the OCRG and one by TPM. Both are obviously flawed, and in the former case it might not be going too far to suggest that the results were manipulated to produce a desired outcome.

In this part we first briefly discuss what happened in the 1918 epidemic and then turn to the OCRG and TPM papers.

The 1918 epidemic

The following is some pertinent information on the epidemic, largely taken from Rice⁴, the authority on the subject.

- The epidemic disproportionately affected the young and fit, with the highest death rates in the 20-40 age group.
- The epidemic came on very quickly and was largely over in most places in a month or so, though the timing differed in different places.
- There was no effective treatment for the disease. The most that could be offered in most cases was nursing care.
- Communities often looked after themselves, organising temporary hospitals and supporting the ill in their homes, with volunteer assistance.
- Socio-economic status was not a driver of death rates. Better off suburbs performed no better than poorer suburbs. The most important driver was population density.
- Rural death rates were half the urban rate, reflecting the lower population density. Less access to central hospital care did not seem to make much of a difference.
- Maori death rates were seven times European death rates. It is not entirely clear why. The main possibilities are:

Genetic disposition

⁴ G.W. Rice Black November Cambridge University Press 2005

Maori were generally more vulnerable to respiratory diseases. Evidence from death rates amongst soldiers suggested that Maori in the same situation as Europeans had a death rate that was two to two and a half times as high.

Different rates of infection

There is little evidence on infection rates, with an average of 40 percent being suggested, while rates in different localities ranged from 10 to 90 percent. It is likely that Maori communal living and customs (the hongi was almost optimized to spread the virus) generated higher infection rates amongst Maori.

Different treatment

It is difficult to assess what effect different standards of care made, and by implication what more the government could reasonably have done given: the lack of effective pharmaceutical treatment options; its limited resources; and the speed of the epidemic. Some Maori communities were simply overwhelmed by the virus and there were few able-bodied to care for the sick, which may account for some of the adverse effect. Some European communities responded to assist them, but after they had dealt with their own issues.

Overall, the impression given was that a 'business as usual' model that was at fault in 1918, and that Maori could have been protected, is misleading. The government really didn't have much of a model, by modern standards, for dealing with pandemics and probably could only have had a moderate impact on outcomes.

The lessons, for the covid-19 epidemic, if any, are probably limited.

OCRG on health inequalities

It is possible that an early report to the Ministry from the Otago Covid Research Group (OCRG) may have driven the 'equity' concerns. The report was primarily concerned with providing an estimate of deaths in an unrestrained epidemic, but there was an appendix that looked at Maori and Pacific deaths and hospitalisations.

The key messages were presented in the main text of the report.

- *If Covid-19 follows the same patterns as previous pandemics, there may be a relatively high and heavily unequal hospitalisation and mortality burden on Māori and Pacific populations.*
- *Elderly are particularly at risk, and Māori and Pacific elderly even more so, and from younger ages.*

The supporting discussion in the appendix was as follows:

Ethnic distribution of hospitalisations and deaths

We assume ethnic inequalities in mortality will be similar to those in the 2009 Influenza A(H1N1) pandemic, ie, that the risk of hospitalisation was 5 times higher for Māori and 7 times higher for Pacific peoples, while the risk of death was 2.6 times higher for Māori (95%CI: 1.3 – 5.3) and 4.6 times higher for Pacific peoples (95%CI: 2.0 – 7.2) than for NZ European/Other. The estimated ethnic distribution of the hospitalisation and mortality burden under the “plan for” scenario is shown in our Table A3-1.

Table three: Deaths and hospitalisations by ethnicity

	Hospitalisation	% pop	Deaths	% pop
Maori	138,230	16.4	9240	1.2
Pacific	92,130	23.1	8360	2.1
NZ European other	115,580	3.3	16000	0.5
Total	336000	6.8	33600	0.7

The numbers of deaths do look shocking. Maori and Pacific account for more than half of total deaths and about two thirds of hospitalisations. The Maori death rate is 2.4 times the NZ European rate and the Pacific 4.2 times. To simplify the discussion we focus on death rates, but the hospitalisation rates are even more misleading.

However, the numbers are based on unreasonable assumptions and/or what appears to be manipulation of the results. To explain why, we examine their analysis.

The first issue is the assumption that the 2009 influenza pandemic provided a reasonable basis for assessing the impact of the Covid-19 epidemic. The numbers of deaths in that pandemic were small, raising issues with the robustness of any statistical analysis.

The Report for the Minister of Health from the Pandemic Influenza Mortality and Morbidity Review Group (2010) came to the following conclusion.

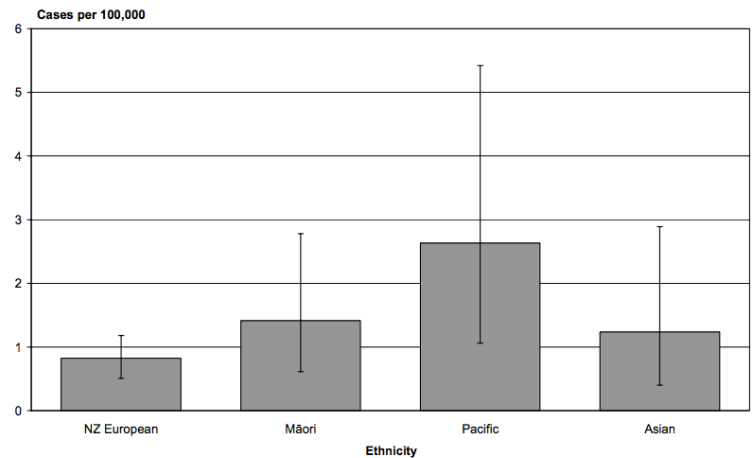
Although Pacific peoples had the highest number of pandemic deaths per 100,000 among the four main ethnic groups (Figure 2), because of the small number of cases involved there was no evidence of a statistically significant difference between any of the ethnic groups.

Their figure for death rates and the confidence bands are presented below. While their conclusion might be statistically sound, the Pacific results were on the edge of

significance so there might be a reasonable argument that Pacific were disproportionately affected. Not so for Maori though.

Figure sixteen: Flu deaths by ethnicity

Figure 2: Pandemic influenza A(H1N1) 2009 deaths by prioritised ethnicity for 2009

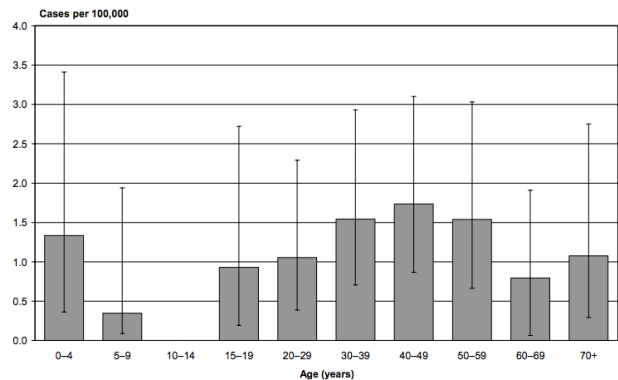


The OCG comes to a different view on statistical significance, based on the analysis in a paper⁵ that adjusted the data for age.

The Maori death rate was 2.6 times the European rate. The confidence band (1.3-5.3) is above 1 indicating statistical significance. The age distribution from the official report is shown below. There is a dip in death rate in the 5 to 14 brackets and as the Maori population is more heavily concentrated in that bracket this may account for the age adjusted results.

Figure seventeen: Flu deaths by age

Figure 4: Age distribution for pandemic influenza A(H1N1) 2009 deaths in New Zealand in 2009



⁵ Wilson N, Barnard LT, Summers JA, et al. Differential mortality rates by ethnicity in 3 influenza pandemics over a century, New Zealand. Emerg Infect Dis 2012;18(1):71-77.

However, given the small total number of deaths, which were differentiated by ethnicity and by age, and the wide confidence bands, it is possible that their result is an artifact of the statistical method. A different researcher may have reached a different conclusion.

The second issue is that Covid-19 is a different disease from the flu. Maori and Pacific death rates in the flu can be higher because they do not have the same acquired resilience as the European population. Covid-19 is a new disease and there can be no presumption that any ethnic group will fare better or worse than others.

However, there is evidence that obesity (and associated health issues) is a mortality risk factor for both the flu⁶ and Covid-19. As both Maori and in particular Pacific have higher obesity rates than Europeans, they will be at higher risk, all other things being equal, in a Covid-19 epidemic.

This does not mean that the Maori and Pacific death rates will be higher in a covid-19 epidemic. The significant difference between the flu epidemic and Covid-19 is in the age distribution of the death rate. For the flu epidemic death rates are somewhat higher in middle age and there is a spike in the youngest age group. By contrast about 90 percent of coronavirus deaths are in the 70+ age group. Most of the remainder are aged 60-69, and deaths of those under 40 are rare.

The age distribution of Maori and Pacific is younger than the European population with a much lower proportion in the vulnerable 70 plus age group, so the starting point is that European population will disproportionately bear the brunt of the disease, before adjusting for comorbidities.

From death rates to total number of deaths

Even if we accept that the Maori and Pacific age adjusted death rate estimates of 2.6 and 4.6 times the European death rate are reasonable estimates of relative risk it is difficult to see how the aggregate numbers were produced, given the difference in the population structures. We multiplied the death rates for each age group by those factors and applied them to the Maori, Pacific and European/other population structures. We found that the overall Maori death rate was about the same as the European death rate and the Pacific 50 percent higher.

⁶ Impact of Obesity on Influenza A Virus Pathogenesis, Immune Response, and Evolution

[Rebekah Honce](#) and [Stacey Schultz-Cherry](#) Frontiers in immunity 2019 10:1071

Table four illustrates the process for Maori and Europeans, using a simplified example with high and low risk population groups, and with Maori death rates multiplied by 2.6.

Table four: Simple example of population death rates calculations

	Low risk population share %	High risk population share %	Death rate low risk %	Death rate high risk %	Population death rate%
Maori	96	4	0.26	7.8	0.56
European	85	15	0.1	3	0.54

The issue is why OCRG came up with population death rates that were nearly identical to their age adjusted rates. They explain their methodology as follows:

The age and ethnic disaggregated figures which follow are based on multiple interpolations and extrapolations. As these numbers are a number of steps removed from their bases, they can only be very rough estimates.

Which does not tell us much about what should have been a reasonably mechanical exercise.

Since Covid-19 mortality appears to heavily reflect age-related vulnerability, we have calibrated Māori and Pacific age-specific mortalities to NZ European/Other age-specific mortality when calculating estimated ethnic-group specific age-related mortality.

Yes, but how?

Calibrating age bands reduces the starting age of the upper “80+ years” age band to 74 years for Māori and 73 years for Pacific peoples.

That explains part of what was done with one age band , but does not tell us the rest of the story.

Following this calibration, estimates for age-related mortality for Māori and Pacific peoples under the “plan for” scenario are shown in Tables A3-4 and A3-5. In Table A3-5 the 60+ and 73+ age bands were combined, as low population numbers in the top band resulted in an unstable estimate..

Their results are shown in table five.

Table Five: OCRG death rates by age, Maori and European

Age group	Death rate % European	Death rate Maori	Death rate Pacific
0-9	0	0	0
10-19	0	0	0
20-29	0	0.1	0
30-39	0	0.2	0.3
40-49	0.0	0.7	1.4
50-59	0.2	2.3	4.6
60-69	0.7	5.0 (60-73)	14.1 (60+)
70-79	1.4	19.9 (74+)	
80+	5.7		
Total	0.5	1.2	1.2

It is not easy to interpret their table because of roundings and the different age categories. We reverse engineered their numbers to get a clearer sight on the differences. The death rate ratios were all above 2.6.

Table six: Ratio of Maori to European death rates by age group

Age group	Ratio of Maori/European
0-9	0
10-19	3.5
20-29	6
30-39	6.2
40-49	15.1
50-59	11.3
60-73 M/60-69E	7.5
74+ M/70-79 E	11.8

We think that what was basically done here was that the aggregate European death percentage of 0.5 percent was multiplied by the factor of 2.6 to get an aggregate death rate of 1.3 percent, ignoring the difference in age structures. The age specific death rates were then manipulated to generate the desired aggregate number, which at 1.2 percent was close to the 1.3 percent.

The manipulation was careless. They even forgot to alter the aggregate Pacific death rate to the desired 2.6, and put it at the Maori rate of 1.2 in the results table.

Whether the OCRG were simply muddled or whether they were deliberately manipulating the numbers to play up the ethnic inequality narrative we will leave to the reader.

We note that not long after the report was written Michael Baker, a member of the OCRG received a \$500,000 grant from the 2020 COVID-19 and Emerging Infectious Diseases Grant Fund, which required that:

Research proposals should align with the New Zealand Health Research Prioritisation Framework and demonstrate the local relevance of the work, as well as its benefits for advancing the health of Māori and Pacific peoples and reducing health inequities.

14 April 2020

Estimated inequities in COVID-19 infection fatality rates by ethnicity for Aotearoa New Zealand

A second report on ethnicity inequities was produced by Te Punaha Matatiki (TPM).

The starting point is the New Zealand age distributions by ethnic group and infection fatality rates taken from research on the Chinese Covid-19 epidemic. This data is reproduced below.

Figure eighteen: TPM base data

Age group	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80+
IFR	0.0016%	0.007%	0.031%	0.084%	0.16%	0.60%	1.90%	4.30%	7.80%
Age distribution									
Māori	21.79%	19.44%	15.73%	11.66%	11.42%	10.18%	6.19%	2.69%	0.90%
Pacific	23.00%	20.60%	17.16%	12.14%	10.51%	8.46%	4.94%	2.33%	0.85%
NZ Euro	12.59%	12.51%	12.39%	11.42%	13.07%	13.80%	11.63%	8.07%	4.53%

Table 1. International data on age-specific IFR (central estimate of Verity et al 2020) and age distribution of Māori Pacific and New Zealand European/other ethnicity groups in New Zealand (StatsNZ, 2020).

As discussed above, because Maori and Pacific have a smaller share in the most vulnerable 70+ age group (3.6 percent of Maori and 3.2 percent for Pacific compared to 12.6 percent for NZ European) Maori and Pacific would experience lower death rates than the European population if their underlying health status was the same. Maori and Pacific deaths rates would be about 40 percent and 35 percent respectively of the New Zealand European death rate.

TPM make three adjustments for health inequalities to adjust these base line figures.

1. An adjustment for life expectancy.

Māori typically experience adverse health outcomes at an earlier age than nonMāori (Ministry of Health NZ, 2019b). To reflect this, we adjusted the age-specific IFR

estimates of Verity et al (2020) by the most recent (2012-14) estimates of life expectancy for each ethnicity (StatsNZ 2020).

It was assumed that the infection fatality rates for Maori and Pacific are 8.6 percent older, than their actual age, when applying the fatality rates.

2. Adjusting for unmet healthcare needs

We obtained data on unmet needs for primary healthcare for each ethnicity (Ministry of Health NZ, 2019a). The proportion of people who self-reported that they were unable to see a GP when needed was 41.4% for Māori, 35.9% for Pacific people and 30.1% for NZ European people. We took these data as a rough proxy for potential under-reporting of comorbid conditions and other inequities and racism within the healthcare system. To account for these differences, we weighted the IFRs for each ethnicity group by these values.

The effect of this adjustment, as we understand it, is to increase the Maori/European relative death rate by 41.4/30.1 or 38 percent, and the Pacific relative death rates by 19 percent.

3. Adjusting for comorbidity (reflecting higher risk from underlying health issues)

To adjust IFRs for comorbidity, we obtained data on relative CFRs from (China CDC, 2020) for four underlying health conditions known to affect COVID-19 mortality rate, broadly defined as: (1) asthma; (2) diabetes; (3) heart disease; (4) cancer. In addition, we adjusted for comorbidity associated with smoking in the same way (Guan et al, 2020). We obtained age-stratified data on the prevalence of these conditions for each of the three ethnicity groups in New Zealand.

The basic idea was to further adjust the death rates to reflect the different incidence of underlying health problems in New Zealand ethnic groups.

The problem for this analysis was that the Chinese data did not separately identify the effects of age and comorbidities. Comorbidities are a strong function of age, so death rates will be overstated if both risks are simply added. The approach taken was not to solve the problem but to apply two different methodologies, which depended on whether age (method i) or comorbidities (ii), are assumed to be the more important driver of deaths. The results are shown in figure nineteen. Despite the more favourable age structure the aggregate Maori and Pacific death rates are up to 2.7 times, and 1.9 times, the European (using model ii). With model (i) they are 1.53 and 0.96 times, respectively, the European rate

Figure nineteen:TPM death rates by ethnicity

Method (i)	Māori	Pacific	NZ Euro./ other	Overall
0-19 years	0.01%	0.01%	0.00%	0.01%
20-39 years	0.12%	0.09%	0.04%	0.06%
40-59 years	1.33%	1.00%	0.28%	0.45%
60-79 years	7.88%	5.52%	2.22%	2.78%
80+ years	13.87%	11.75%	6.76%	7.14%
Overall	1.15%	0.72%	0.75%	0.81%
Method (ii)	Māori	Pacific	NZ Euro./ other	Overall
Overall	1.66%	1.17%	0.62%	0.81%

Critique of the approach

Age adjustment

The age adjustment approach is a simple and plausible way to account for differences in fatality risk.

Unmet health care adjustment

This adjustment is not credible. To begin with the description of the 41.4 percent of Maori were not 'able to see a GP when needed' was misleading. The 41.4 percent was largely the figure for those who self-reported that over the last year they were not able to see their normal provider within 24 hours of making contact. The 24 hour test does not necessarily mean that the quality of the care received was much poorer. GPs can be full (but will push an emergency in when required), so making an appointment for the following day generally will not be too consequential. And there may be a demographic reason for part of the difference. Maori and Pacific have more small children, and will more frequently go to the doctor, so the odds that they can't be seen in 24 hours in the course of one year are higher. Childless Europeans are unlikely to be disappointed if they seldom go to the doctor. Even if there was less access to medical care in normal times this would not tell us anything about access to life-saving care in an epidemic when treatment will be free.

Importantly, even it were accepted that this data was a good proxy for unmet health needs, which will have death rate consequences, then this will already be captured within the life expectancy adjustment. So to adjust for it is double counting.

Comorbidities

Similarly there is double counting for comorbidities. There are a reasons why Maori and Pacific have a lower life expectancy and that is, in part, because they have a higher prevalence of the comorbidities associated with higher Covid-19 death rates.

Conclusion

Our conclusion is TPM's higher population death rates for Maori and Pacific are due to a double or triple counting of the factors that generate higher age specific death rates. They have not provided evidence that their population deaths rates would be higher than European death rates in a covid-19 pandemic.

Te Punaha Matahini A structured model for COVID-19 spread: modelling age and healthcare inequities

A second model, which also focused on ethnic 'inequalities', was released by TPM on 15 May 2020. The relevant takeouts in the executive summary were:

We also consider scenarios where outbreaks occur undetected in sectors of the community with less access to healthcare. We find that the lower the contact rate between groups with differing access to healthcare, the longer it will take before any outbreaks are detected in any groups who experience unequitable access to healthcare, which in Aotearoa New Zealand includes Māori and Pacific peoples

Well-established evidence for health inequities, particularly in accessing primary healthcare and testing, indicates that Māori and Pacific communities in Aotearoa New Zealand are at higher risk of undetected outbreaks.

The contribution here is that there could be a risk that ethnic communities, and in particular Pacific, could be harbouring covid-19 cases because they have 'unequal access' to health care, and because they have limited interactions with the rest of the community. Transmissions in this community could go undetected, eventually resulting in a wider outbreak. A model is constructed to illustrate this. It is an attempt to replicate the Singaporean situation when there was a large outbreak in dormitories, where foreign workers are crammed 10 or more in a room.

No attempt was made to calibrate the model on any relevant evidence. Instead the model is calibrated to generate the desired outcome.

The problem is that the calibrations were set so they bore no resemblance to reality. It was assumed that only 5 percent of infections are picked up because they are not being monitored, compare to 75 percent in the non-Pacific community, and that only

1 percent of Pacific interactions are with the rest of the community. The last assumption is obviously inaccurate. Pacific are not an almost completely closed community.

On testing, we know from the Ministry testing data that Pacific are, if anything overtested, not severely undertested as in the TPM modelling.

Table seven : Testing rates by ethnicity

Ethnicity	Test rate per 1,000	% positive
Maori	38	0.3
Pacific	46	0.4
Other	35	0.8
Asian	22	0.6
Total	35	0.7

This information was readily available. TPM would have known about it, and should have reported it. But if they had, that would have scuttled the analysis and the headline results. So they ignored it. The report was released and reported in the media.

The NZHerald story was:

Health inequity could pose a major risk to poorer communities if Covid-19 surged in New Zealand, according to new modelling.

In New Zealand, statistics showed that Māori and Pacific people had less access to healthcare and were much more likely to have unmet health needs.

"This not only puts Māori and Pacific people at higher risk if they do get infected, it means that they may not be able to get a test if they need one," Hendy explained.

Part nine: The border control issue

Introduction

Recently Sir Peter Gluckman, Helen Clark and Rob Fyfe issued a Centre for Informed Futures pamphlet 'Re-engaging New Zealand with the World' which argued for the start of a 'conversation' on the border control issue and set out some of the considerations and arguments.

The context was the Prime Minister's apparent unwillingness to even contemplate the most minor easing of border restrictions. On 30 June she said .

I've seen today and across the past week, calls for our borders to be opened to the world. A world where the virus is escalating, not slowing, and not even peaking in some countries yet. Where cases exceed 10 million globally, and deaths - half a million."

"The idea that we should open our border in this environment has a price, and that price could be a second wave of Covid-19 in our country at worst. At best, added restrictions for the rest of us."

"There is a time in the future where we will be opening our borders, but to suggest that time is now, when the virus is getting worse, is frankly, dangerous."

This was alarmist. The virus was not 'raging' though all of the world. In many of the countries of most interest to New Zealand, the level of new infections was extremely low. If the time is 'not now' to consider even minor easings then there will never be a time. It is likely that the virus will become endemic in the world, and future vaccines are unlikely to be fully effective.

The current context is the Victoria situation, which went from a situation of apparently almost eliminating the virus, to what appears to be an explosive outbreak over a period of weeks. Until we see how this new attempt at suppression pans out and we have a better understanding of why it occurred, it will be difficult to discuss border easing in a dispassionate manner. This discussion looks past just this particular situation, though we are mindful of its lessons and its impact on public opinion. As this report was being completed the Auckland outbreak has emerged, which has put the Government and most people in less of a mind to contemplate border easings.

Re-engaging with the world

'Re-engaging with the World' raises the big issue of relaxing border controls from the perspective that isolation is not a good thing and raises some of the issues around some limited openings.

Can we afford to wait out another year, two years, or even more in almost total physical isolation? And at what cost? This is not just affecting tourism and export education, but also the many ways in which New Zealand projects and leverages its place in the world.

And raises the critical question.

At what point will New Zealand accept less than absolute elimination? Such a goal is likely unrealistic over a long term. Even if a highly protective vaccination is developed, it may not provide absolute protection and coverage will not be absolute, so cases will always occur

This country needs its global connectivity. We have gained significant advantage through our stringent lockdown and early elimination of the virus allowing the domestic economy to reactivate. But we will rapidly progress to a position of relative disadvantage if our trading competitors are able to engage with our customers and suppliers in ways that are not possible for us.

Geof Bertram's response

These thoughts prompted a rather shrill response from Geof Bertram reported in Ideas Room on July 7.

For pamphleteers, lobbyists and opposition politicians to insist on getting such promises now, while being unwilling to put in the hard yards on economic analysis to show they understand the complexity and consequences of what they are asking for, is not a great conversation starter

He raised the distribution issue – who would benefit and who would lose, which was not addressed in the re-engaging paper, and paints a picture of a minority with vested interests willing to put the wider population at risk.

When individuals accustomed to global hyper mobility demand an early return to easy travel in the name of ordinary New Zealanders, the rest of us are entitled to demand better arguments than this pamphlet's vague generalities.

Each additional degree of openness at the border exposes the mass of the population to increased risk of a new outbreak, with associated major costs for ordinary people. Those costs for the many, and the probability of their occurrence, need to be properly weighed against the benefits for the few of reducing border protections.

And he takes issue with the presumption that business isolation is necessarily seriously economically damaging, beyond the impact on the travel industry, arguing that physical exports have not stopped and that virtual communication can keep exporters connected to their markets.

the pamphlet lacks any substantial analysis of what the overall balance of costs and benefits of long term border restrictions would be. It is easy to find anguished declarations of pain from vested interests suffering direct pain, especially in the tourism and hospitality sectors. But the pamphlet's image of a New Zealand existing in "near total isolation" from the rest of the world is ridiculously overblown.

Bertram's starting position seems to be that the costs of isolation are worth any reduction in risk, but no thought is given to how much more risk any easing would generate. On the distribution question the benefits of some easing will be more widely shared than he suggests. The economic benefits spread beyond the immediately affected sectors, and large numbers of New Zealanders do like to travel overseas. And only a minority directly benefit from a complete border closure. Covid-19 impacts mostly on the aged. Those under 60 account for only 1 or 2 percent of deaths.

Public opinion

Public opinion appears to be solidly behind border closures. An IPSOS survey at the beginning of July found that most respondents were in favour of keeping the borders closed.

In response to the question:

Do you think that keeping our borders closed to the following countries or regions the government is overreacting or correct given the risk

80 percent thought that the policy was correct. 85 percent agreed with an Australian closure, 75 percent with the Pacific Islands, and 92 percent with the rest of the world.

However, the responses were not as cut and dried as these numbers suggest. In response to the question 'Which would be the one thing that would give you enough confidence that it is safe to open our borders to other countries?' the answers were:

- 35 percent focused on elimination or no community transmission in the country they come from.

- 44 percent would accept some form of mitigation. 26 percent would accept a two week quarantine and only two percent were in favour of managed isolation. 16 percent would accept a negative test.
- Only 16 percent wanted to keep the borders closed regardless.

For the most part the answers appear to be risk-related, suggesting that an evidence-based discussion might, eventually, get some traction.

The purpose of this part is to contribute to an evidence, risk-based, conversation. We start a review of the decisions behind the current rules. Next there is a review of a discussion by the Prime Minister's Chief Scientific Adviser which raised some of the pertinent issues when a risk-based approach to border openings was still on the table. It gives an insight into the content and quality of official thinking at the time.

Next there is a brief discussion of what some other countries are doing, with a focus on Iceland.

Fourth, we provide our analysis. While the border control issue is sometimes presented as a single yes or no decision, in reality there are a number of decision points with different benefits and risks.

Fifth, we present and critique two analytical studies of quarantining options.

The current situation

Foreigners

The status quo is that there is a near total ban on foreign visitors, dating from 19 March. Initially the border controls were seen as a temporary measure to buy time.

Strengthening the border will buy time....

In 30 days time ministers may need to be ready to lift border controls on the basis that New Zealand may be prepared as it needs to be. Continuing beyond that point may increase hardship in NZ without commensurate benefits.

Managed isolation mandatory

The minimum 14 day quarantine, or managed isolation, for returning citizens and permanent residents, came into effect on 10 April 2020. Prior, to that returnees could self isolate if they were not high risk, and they had the capacity to effectively self isolate. Just prior to the decision, 1150 were in managed isolation and quarantine, and 4000 were in self isolation. The regime was described as being high trust, but was assessed as 'working well'.

The policy shift seems to have been driven by political response to a media furore over non-compliance with the self isolation requirement rather than any assessment of the risk. The arguments for the change in the Cabinet paper were:

- *As at 7 April 45 percent of cases had a history of recent international travel. Most of the remaining cases had a history of close contact with those cases.*

The 45 percent was the share of the aggregate number of cases, which was not relevant to what was happening at the time. The number of imported cases would have dropped sharply by 7 April. There was no analysis of the relevant data, which is the number of close contacts who had been infected from an imported case in home quarantine.

- *Returning New Zealanders pose a high health risk as the disease spreads offshore.*

There was no assessment of the risk posed by returnees in home quarantine

- *Any imported case would risk reintroducing imported transmission*

This is logically true, but the issue is whether managed isolation would make much difference.

- *Although it has been proposed that police do a compliance check within 24 hours of arrival this has proved difficult to operationalise.*

It would not be rocket-science to operationalise some form of compliance check if that were necessary. The police did not have to be involved. The only compliance assessment reported by the police suggested that the compliance rate could have been as high as 98 percent.

- *it would be more targeted than prioritising compliance monitoring.*

This is an odd argument. Rather than check on people periodically, it is more 'targeted' to check on them all the time by locking them up.

What should have been done is: identify the number of returnees who became positive in isolation; the number of members of the household who were also infected; and critically, measure the number of community infections that could be linked back to those isolating households through contact tracing information. The information should also have been differentiated by the country source of the infection. This information would have allowed an assessment of whether there was a problem, and if necessary, how to address it.

The Director General of Health, who was responsible for the order, should also have considered why 95 percent of cases who tested positive were allowed to recover at home, when there was a near 100 percent chance that they were infectious, when a returnee with, say, a 1:1000 chance of being infected had to go into managed isolation.

No regulatory impact statement had been prepared due to the 'urgency of the situation' but the following statement was made:

The impacts will fall primarily on the New Zealanders arriving each day and on the Government. The benefits of responding faster by reducing the primary vector of transmission within New Zealand are expected to outweigh the costs.

The benefit assessment was meaningless without a risk assessment. If an assessment had been done properly it might have resulted in a few additional cases outside the household. The higher risk cases were already required to go into managed isolation.

Human rights

The DGH will issue a notice if satisfied that there is sufficient public health rationale and it is compliant with the New Zealand BORA.

There is no evidence that the Director General ever made an assessment of the public health rationale. What appears to be a failure to do so, raises the presumption that the managed isolation order breached human rights.

17 April 2020

Managed Arrivals in New Zealand

This paper outlined the financial and operation considerations of the managed isolation scheme. With 200 people a day the cost was put at \$195 million over 6 months.

5 May 2020

Joint paper on Managed Arrivals

To the Minister of health

This was mainly a discussion of the financial risks relating to the number of returnees.

8 June 2020

Border measures review in the 8 June cabinet paper

Global conditions continue to be such that we cannot reopen the border in an unrestricted way. But the same border restrictions that protect public health and our economy also have negative economic and social effects. Flows of people generate export revenue, inward investment and knowledge transfers for New Zealand firms. New Zealand earns \$17b from tourism and \$5b from incoming foreign students annually, while 390,000 business trips abroad and 340,000 business trips into New Zealand play an important role in facilitating trade in goods and other services as well as transferring knowledge and ideas. Overseas workers also fill specialised roles in our labour markets, meet skills shortages and undertake seasonal work.

A paper on exemptions to the border regime is being considered by Cabinet today (this paper does not appear to have been released) Maintaining strict controls while exploring ways to increase flows through the border where it can be done safely should be a goal for the near future. This will require coordination between agencies, airports and airlines to ensure that the necessary arrangements for managed isolation can be made, with appropriate testing and contact tracing arrangements to ensure the health risks are well managed. All of this will make our border controls more complex.

15 June 2020

Paper: A Sustainable Quarantine and Managed Isolation System

Two companion papers provided context for the issues covered in the paper:

3.1 The paper 'Future Border Settings: People Movement and Reconnection with International Markets' provides the overarching framework for future border policy.

3.2 The paper 'Developing COVID-Safe Travel Zones' seeks agreement to core principles for Safe Travel Zones and sets direction for negotiations with Australia.

These papers have not been released. The second paper would have been sensitive. There is a bullet point summary of the first.

- *putting health considerations at the centre of decisions on border measures, by designing the health preconditions to be met and the health measures necessary to support safe cross-border people movement;*
- *establishing new health entry and exit policy and measures, to allow increasing people movement at the border, increasing volumes as conditions allow and laying the groundwork for a full border re-opening;*
- *taking the opportunities and managing the risks around reconnection with global markets, to secure the connectivity benefits that support social and economic*

recovery, strengthen relationships with key trading hubs, attract investment, enable business travel, and reposition our export sectors;

- *operationalising the world's smartest and safest border, to put in place the people, technology, processes, and systems necessary for safe reconnection;*

In the interests of transparency and informed public debate this paper should be released.

The executive summary of the Cabinet paper was:

Since 9 April 2020, all people arriving in New Zealand are required to enter quarantine or managed isolation for 14 days, prior to onward domestic travel. These arrangements are a critical pillar of our ongoing COVID-19 response and our best line of defence against further outbreaks in New Zealand. Until a vaccine is widely available or testing technology advances significantly, 14-day quarantine or managed isolation for arrivals will need to be an enduring feature of our border response to help realise the public health strategy of eliminating COVID-19.

Some measures to reduce the strain on isolation facilities were apparently being worked on, but possible information on them was redacted. The sense, however, was that any relief was a long way off.

It is also possible that waves of illness continue and immunity is not obtained. Work is underway globally and in New Zealand to develop fast and reliable screening and testing measures to manage the COVID-19 risk at the border which could impact on the 14 day isolation requirement. This will also take time, and we will also need to put in place the domestic systems and processes, and secure the international protocols, reciprocal arrangements, and assurances necessary to support this approach. Until that time, our best line of defence against further outbreaks in New Zealand are robust and sustainable quarantine and managed isolation arrangements for all arrivals.

The transtasman travel zone was mentioned:

A Trans-Tasman Travel Zone that allows us to safely exempt some arrivals from quarantine and managed isolation requirements could help mitigate this pressure, but will not negate the need for facilities to manage arrivals from higher risk countries.

But no numbers were given and it was not explained why an unilateral easing of requirements on returnees from Australia was not possible.

There was no assessment of whether the 14 day managed isolation requirement was necessary in all cases, or of its efficacy compared to other options.

The paper was primarily about the financial and operational consequences of maintaining the status quo. \$298 million was being sought to fund 298 arrivals a day up to the end of 2020. The estimated cost was \$5700 per stay.

There was no regulatory impact statement. *“noting the urgency required for the governments response to COVID-19, a regulatory impact statement has not been prepared*

There had been many weeks to prepare an impact statement.

There was no mention of human rights implications.

Some overseas experiences

Many countries have loosened their border restrictions. In Europe the Schengen area countries are now allowing access to others in the group with varying degrees of ease. As most of the countries now have relatively low new case rates (compared to their respective peaks, but not compared to New Zealand's) this will not add materially to most country's risks. While they might import some cases, they will export some too, so the net effect for comparable countries will be a wash. However, some countries with lower case rates are prepared to take a risk to rescue their tourist industries. Access is also allowed for 16 low risk countries outside the area, including New Zealand

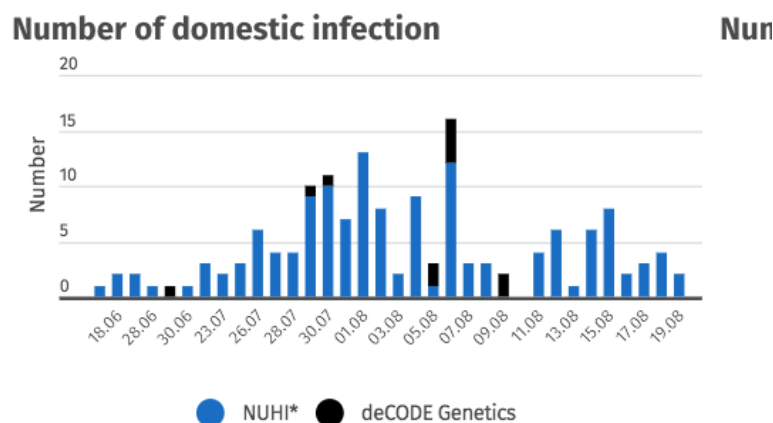
The United Kingdom imposed quarantine restrictions on 2 June 2020, allowing access up to then. The new restrictions made no epidemiological sense, and appeared to be politically motivated, because border controls were popular. The Government claimed the move was evidence-based, but the evidence was never forthcoming. The United Kingdom dropped the policy in early July allowing entry for 60 lower risk countries (including New Zealand). The UK has recently upset the European arrangements by unilaterally imposing home isolation requirements on returnees from several countries. Several other countries have now reintroduced quarantine requirements as case numbers have slowly crept up around Europe. Norway, for example requires a 10 day self-quarantine for travellers from countries with an aggregate of 20 cases per 100,000 of population over the previous 14 days. For New Zealand that would be equivalent to an average of about 70 cases a day.

Some East Asian countries are easing some restrictions on business travel having regard to the risks in the traveller's home country.

A relevant comparator for New Zealand is Iceland, which at one point nearly eliminated the virus, largely by effective contact tracing. It has been accepting visitors, including tourists, from the Schengen area since June 15 2020. Visitors have to take a test (initially free but then at their own expense) at the border, and can then proceed to their accommodation. Children under 15 are exempt, reflecting their low infection and infectivity rates. If the test is positive they are informed the next day and are then placed in quarantine. Close contacts may also be quarantined.

From 15 June to 18 August there were 108,000 border tests,⁷ and 75 active cases have been identified (a positive test rate of about 1:1300) but the positive rate has increased towards the end of the period reflecting an increase in European infection rates. Towards the end of July there was a spike in domestic cases. Some have been traced to returning Icelanders, and a failure in their border testing (two tests are required, but this didn't necessarily happen). There was one instance of a tourist infecting a guide who infected some others. Visitors staying more than 10 days now have to take a second test. The spike in domestic cases seems to have been brought under control.

Figure twenty: Iceland domestic infections



Iceland's willingness to take a risk to support their tourist industry reflected their experience with imported case transmission to the community when the border was still open, and tourists did not have to quarantine (up to April 21). None of their 1900 cases could be traced back to tourists. All could be traced to returning Icelanders. As Iceland was able to trace the source of all but seven of its 1900 cases, this was a reasonable assessment. A possible reason for the lack of tourist-related

⁷ covid.is

cases is that tourists have relatively few close contacts with the local community. Returnees, on the other hand may increase their contact rates after a trip abroad.

Chief Science Advisor's analysis

On May 31 2020 an opinion piece by the Prime Minister's Chief Science Advisor, Juliet Gerrard, and research analyst Rachel Chiaroni-Clarke appeared in the NZHerald. Loosening control of our borders was described as a:

critical part of our economic recovery and enable individuals to reunite with friends and family.

But then the risks were emphasised.

We all know now that even a single imported Covid-19 case can create a cluster that quickly spawns hundreds more.

This is somewhat overstated. New Zealand had hundreds of imported cases, only 13 clusters (above 10) and the largest was 103. The current thinking is that only about one in four people infected pass it on, with 'superspreaders' pulling up the average.

The discussion then addressed the central question of risk management and turns to which countries should be considered, for an opening up to large scale tourism.

So how do we decide to reopen our borders and what constitutes an acceptable level of risk?

Most New Zealanders would probably agree that opening the border for quarantine-free travel to all countries would be too high a risk to take in the near future.

But the Covid-19 pandemic is playing out in very different ways in different countries around the globe, which may enable us to make some smart choices. At the moment, some places – like Taiwan, Hong Kong, Vietnam and Australia - are managing to stamp out the virus and have, like us, trustworthy testing data that reveals very few known cases.

This poses many questions: What level of risk are we prepared to take in the face of a potential second wave? When should we allow travel from countries that have avoided any cases altogether? What about those that only had a few sporadic cases and contained them? Or countries that had larger outbreaks but managed to contain and eliminate the virus like we have?

And how might we mitigate the remaining risk with appropriate border measures? The exact criteria for allowing quarantine-free travel to our country are yet to be determined, but some obvious factors to include are:

- *The prevalence of active cases.*
- *Confidence in the testing and the data.*
- *Sustained or undetected community transmission.*
- *Confidence in control measures.*

We also need to think about the probability that a case would actually be imported into Aotearoa New Zealand. We can do some simple estimates of how many predicted infected passengers we would introduce if we reopened the border to different countries and pre-COVID traveller numbers returned.

As an example, the US has over 1 million reported active cases. Based on these current statistics, we would expect around one in 300 people from US to have Covid-19. If 1000 people were to arrive on our shores each day, we would roughly estimate that there could be three infected passengers from the US every day.

By contrast, China currently reports around 70 cases daily, or roughly one in 20 million people. If these numbers are stable and accurate, it would be highly unlikely for an infected passenger to arrive this year if 1000 visitors arrived daily.

Then some issues with a case-by-case approach to country assessment are considered.

The need for a nuanced case-by-case solution will need to be offset with the logistical and administrative burden of constant country-by-country risk assessment – in a rapidly changing landscape.

This would not be too onerous a burden. Only a small number countries would be initial candidates and be worth the effort.

We also need an honest assessment of our as-yet-untested response systems to manage a new outbreak.

From our assessment of the documents this does not appear to have been done. However, there is the tracing capacity. Apparently it is now 350 a day with a surge capacity of a further 500.

Another issue is that requirements might have to be changed quickly.

How do we manage this possibility of rapid change, while still giving as much certainty to travellers as possible?

The answer is probably that certainty cannot be given to passengers. They (and the airlines) would have to make their own risk assessment. But the prospect of

uncertain travel will be better for some than the prospect of no travel at all. The uncertainty would probably have a significant impact on demand.

The discussion then turned to mitigation by testing and screening at the border and it was suggested that a combination of methods short of a quarantine would be effective:

testing for fever, interviews at the border, and the standard PCR test either prior to departure or on arrival would go a considerable way to reducing the risk of importing cases, but not provide a full guarantee.

Our Risk Analysis

We consider:

- The need to impose a 14 day quarantine requirement on all returning New Zealanders.
- The case for almost totally excluding non-residents.
- The case for more flexible treatment of business and educational visitors.
- Travel bubbles more generally.

Returning New Zealanders

The 14 day quarantine

The problem with the 14 day quarantine for returning New Zealanders is that it is expensive and there is a limited capacity. The cost to government is about \$5700 per person. To that we need to add the cost to those in quarantine. They are locked up for two weeks with a range of opportunity costs. Some might not be too bothered, but for others it will be a material imposition. Assuming a cost of \$1000 a week the cost for a single quarantine is about \$7700. There are capacity constraints, which limits arrivals to about 2000 a week, effectively excluding high value visitors, because returning New Zealanders get priority.

The issue is whether the full 14 day quarantine is necessary for everyone. If that could be reduced, or replaced by self isolation, then that would free up capacity and reduce costs. Non-New Zealanders would pay their way, and could be treated differently.

The 14 day quarantine rule

The 14 days is the WHO's recommended quarantine period and has been around since the early days of the pandemic. It is an estimate of the time for symptoms to emerge after an infection. It is based on Chinese case evidence that showed by day

14 symptoms had emerged in 99 percent of cases. A 14 day quarantine will miss one percent of cases. However, this assumes that the infection occurred immediately before travel, whereas there will be a spread in the days before. Accounting for this lag might reduce the 'miss' rate to one in several hundred.

Then there is a further risk reduction from testing for the virus at day 3 and day 12. But because there is the risk of false negatives (a negative result when the case really is infectious) testing is not fully effective and there is still a residual risk. We discuss these risks further in our assessment of the Te Punaha Matatiki modelling below.

The most important risk driver is the odds that a returnee will be infectious. These odds will vary widely depending on where the returnees are coming from. The odds, based on an assessment of country case numbers, could be 1:100 coming from the high risk US, or 1:1 million coming from China. Other low risk Asian countries, and Australia (ex-Victoria) could have (conservative) odds of 1:100,000, with Europe, based on the Icelandic experience, odds of perhaps 1:2000.

Combined with the odds that a positive case will slip through, this gives odds of an infectious traveller being released ranging from, say, 1:10,000 to 1:3 billion.

Relying on testing alone

Table eight works through some illustrative risk numbers, for the largest visitor source countries. The daily case count at around the beginning of July is multiplied by 50 to roughly account for: cases in the pipeline; undertesting and a margin for future growth (as case counts are recorded with up to a two week lag after infection). The multiplier of 50 is somewhat arbitrary and a higher number could be adopted to give a more cautious assessment of the risks.

Dividing by the population gives an estimate of the probability that an individual traveller will be infected. Multiplying by the historical average daily visitor flow and assuming border testing that picks up 80 percent of infections generates the number of cases per day. These numbers are very low for most countries

Table eight: Risk of new infectious cases by country

Country	Visitor numbers 2018 '000	Daily visitors	Daily Cases Early July	Implied cases	Pop 'm	Risk infected	Number of daily 'misses' with testing 80% effective
Australia	1457	4030	2 (ex Victoria)	100	25	1:250000	.003
China	449	1230	20	1000	1439	1:143900	.00017
Japan	101	236	250	12500	126	1:16,800	.003
Korea	93	255	50	2500	51	1:34,000	.0015
Taiwan	42	115	2	100	26	1:450,000	.00005
Hongkong	58	159	20	1000	7	1:46,667	.0007
Malaysia	53	145	10	500	32	1:71,111	.004
Singapore	60	164	5 (citizens)	250	6	1:4000	.008
India	67	183	30000	1500000	1358	1:905	
USA	338	930	40000	2000000	330	1:132	1.40
Canada	69	186	250	12500	38	1:4222	.009
UK	232	636	600	30000	68	1:2267	0.06
Germany	102	280	400	20000	82	1:6074	0.009

Country case numbers are only a starting point in a risk assessment and would need to be supplemented by actual experience at the border. Some data is released on this, but the public data has its limitations, because they refer to the departure country before entry to New Zealand. Over June/July 14 cases came from Australia, but as Australia was a transit point this doesn't necessarily tell us much about the risk in Australia. Three came from the US and 22 from a series of humanitarian flights from India. This suggests that the true rate of infection in the subcontinent is much higher than the official numbers, which is not a surprise given the low rate of testing. It also suggests that the virus is more prevalent amongst people connected to travellers than amongst the general population

In practice a risk-based system would not attempt to finely tune the numbers by country but might lump them into three broad categories. Low risk:some East Asian

countries including China, and Australia (ex Victoria) and the Pacific. Medium risk: Western Europe and Canada. And the rest.

However, quarantining is required regardless of where the returning New Zealanders are coming from. A risk assessment would suggest that there is a strong case for, at least, reducing the quarantine period for some returnees. A reduction to 7 days, with two tests would free up hotel capacity. The other option would be home isolation, with appropriate safeguards and testing in the home. As discussed above the additional risks of home versus managed isolation were never considered when the managed isolation regime was introduced.

While non-compliance presents some additional risk, even making some allowance for this would still mean that the risk of onward transmission would be low.

The mentality behind an apparent refusal to even consider these options, is two-fold. First, even a single case getting through will lead, if not to disaster, to the reimposition of harsh higher alert level restrictions. The latter reaction is of course in the Government's hands.

The second driver is political. The Government has so talked up the benefits and successes of New Zealand's elimination strategy that it is fearful of the political consequences of even a single case of a community infection. Even with the current restrictions there is a chance of community infection. Restrictions on ships and airline crews are not watertight and quarantining does not reduce the risk to zero. However, if there is just one case of community transmission, the easing of restrictions will be blamed.

Opening up to foreigners

At present foreigners are, with a few exceptions, prohibited from entry. This might be motivated by a lack of capacity, which could be mitigated by reducing the demand as suggested above, but there seems to be a lack of interest in opening up, no matter how small the risk.

The borders could be opened up to foreigners with and without some form of quarantine. Testing would always be a sensible option.

There are four main groups of foreign visitors.

Business:	312,000
Holiday:	1,077,000
Visting friends and relatives:	1,050,000
Education:	65,000.

A 14 day requirement would choke off most of the business, holiday and visiting friends and relative markets, because of the expense and time in quarantine. This will have a significant impact on the foreign visitor market which accounts for 5.8 percent of GDP and 20 percent of foreign earnings. Allowing for flow-on effects to the rest of the economy the impact on the rest of the economy would be significantly higher than 5.8 percent.

However, the avoidable costs of the restrictions are much less than this.

- The peak tourist season is a few months off so the current consequences are lower.
- Even with free entry the demand for travel will be significantly reduced because of the fear of travel in a coronavirus world; fears around being caught by a sudden change in the rules; and rules imposed by the traveller's home country.
- The effective restrictions on New Zealanders' overseas travel will increase the demand for domestic travel.
- Some overseas travel will be diverted to other domestic expenditures such as home improvements.

Business entrants

Allowing entry, with the current quarantine and entry rules, would facilitate some connectivity to the world, without the current cumbersome and uncertain case by case process. A 14 day quarantine would choke back the numbers severely but would still allow the entry of a limited number of high value cases, and a shorter period for lower risk countries would reduce the costs. Much of the current business market has a 'nice to have' or a recreational element to it so the demand for necessary travel is probably quite low.

Education visitors

The only material market that would be viable with a lengthy quarantine requirement is education visitors. According to Education New Zealand aggregate 'education export' earnings amount to \$5 billion a year, and the earnings per person is about \$40,000. Because of the long stays of most education this is viable even with a 14 day quarantine,

The most positive feature of the market is that it is heavily concentrated in low risk Asian countries. Even without quarantining the risk from China, which accounts for one third of the market, is extremely low,

Table nine: Low risk educational export markets

Country	\$m
China	1920
Japan	340
Korea	300
Thailand	120
Malaysia	100
Vietnam	90
Total	2870

Source: ICEF 28 Nov 2018

However, the Government has signalled that it will not be opening up to foreign students for the rest of this year and is making \$51 million available to ‘support’ the sector. Given the very low risks posed by a large number of potential entrants it is unlikely that the situation will be any better next year. So if the Government persists with its strategy the sector could possibly have no international students next year. Much of the private training sector, which is heavily dependent on foreign students will close down. Its \$10 million assistance package will not go far. Many polytechnics will come under strain and there will be significant job losses. \$10 million devoted to developing ‘future focused’ products may keep a few IT workers in jobs for a while but probably won’t be a significant revenue generator.

Assessing costs and benefits

A full assessment of likely outcomes from border easing is both complex and uncertain and obviously depends on how far down the risk spectrum the easing. If a cautious approach is taken the benefits might be in the order of 10 percent of the past earnings from visitors, say, \$2 billion a year.

On the costs side these would be moderate. There will be an increase in the number of cases that get by the border but the impact on health outcomes and government reactions may not be material. We may well be living in a world where there will be a case of community transmission every three months or four months or so. The Government appears to be relying on TPM modelling that put the odds of an infectious case getting through at 1;1000 but this depended on the border control processes being absolutely robust and ignored the possibility of relatively less infectious cases getting through. It understated the inherent risks with the status quo. If a conservative border easing increased this frequency to every ten or eleven weeks or so, this will not change matters very much. It is not a case where

there is a choice between no cases, and no lockdown or other social distancing measures, and a border easing that introduces these risks.

Modelling analysis

The effect of border controls on the risk of COVID-19 reincursion from international arrivals 16 July 2020

Nicholas Steyn , Rachelle N. Binny, Shaun C. Hendy , Alex James , Audrey Lustig , Michael J. Plank

Recently, results from a modelling exercise on the risks of border controls were released by Te Punahi Matatiki (TPM). As TPM's modelling has had a material impact on the Government's coronavirus policy thinking, we expect that this paper will be used to justify a continued restrictive approach to border openings.

The release of the paper was accompanied by a media release under the heading:

How New Zealand could keep eliminating Covid-19 at the border for months to come, even as the coronavirus pandemic worsens

Famous last words.

Provided people are well separated at quarantine facilities and have regular symptom checks, our modelling suggests the risk of an infectious person being released into the community is around 0.1 per cent - which means for every 1000 infected people who arrive at the border, one person will be released from quarantine while still infectious.

Covid-19 is exploding outside our borders and every country that we have sought to either replicate or draw experiences from in the fight against Covid-19 has now experienced further community outbreaks. We need only look to the experience of Victoria, Hong Kong, Singapore or Korea to see examples of other places that, like us, had the virus under control at a point in time only to see it emerge again.

A shorter quarantine period would significantly increase the risk of an infectious person being released. The swab tests for Covid-19 have quite high rates of false negative results, so even with multiple tests, a shorter quarantine period could miss too many cases.

How many arrivals could New Zealand cope with? Pre-Covid-19, there were [around 20,000 international arrivals](#) on a typical day — 50 times the current number of arrivals. There's obviously no way we could quarantine this number of people. On current trends, this would mean up to 600 infected people passing through at the border per week.

We disagree with the recent claim by former chief science advisor Sir Peter Gluckman, former prime minister Helen Clark and ex-Air New Zealand chief executive Rob Fyfe that new cases of community transmission are "logically inevitable" and New Zealand should therefore reopen borders more quickly.

The two main conclusions in the executive summary of the main report were:

- *A 14-day period of managed isolation or quarantine (MIQ) with day 3 and day 12 testing reduces the risk of an infectious case being released into the community to a very low level.*
- *A five-day quarantine period is ineffective and would present a much greater risk to the community.*

Analysis manipulated to generate favoured conclusions

The report was obviously written with a political motivation. Both of these main conclusions were misleading. The risks of an infectious case being released after 14 days were understated and the relative risks of shorter quarantine periods were overstated.

Model structure

At a technical level the model is reasonably sound. It:

- takes account of the likely time of infection prior to arrival;
- accounts for false negative tests;
- accounts for infections passed between passengers in managed isolation;
- assumes the standard WHO distribution of the time from infection until symptoms emerge.
- Assumes that infectious symptoms are picked up with a lag.

However it is also assumed that there is no risk of transmission to quarantining and hotel staff, so one of the main conduits to community infection is missed.

Seven scenarios are run with different quarantining and isolation options.

Two rely just on testing, with a holding period waiting for the test. The first on arrival, and the second on departure and on arrival.

Three examine different quarantine periods (5, 10 and 14 days), with two tests. Two look at the impact of making limited exemptions on humanitarian grounds. These scenarios do not add much to risk because only a small percentage of passengers are assumed to be released.

The key outputs are

- The percentage of infectious cases not detected
- The percentage of infected arrivals that are released while ‘significantly infectious’.
- The odds that an infectious person is released into the environment.

The results

The first set of results are presented in their table presented below. The key result here are:

- Relying on testing alone results in a large percentage of missed cases (47 percent for one test at arrival and 37 percent for tests before and after arrival). This is largely a function of the assumptions on false negatives from testing immediately after infection. Testing is assumed to be almost completely ineffective for the first three days after infection, so passengers infected shortly before returning will be missed.
- The time in quarantine (assuming that there is some transmission in quarantine), does not have a large impact on the percentage of misses. 12 percent are missed at 5 days, 8.9 percent at 10 days, and 10 percent at 14 days. Beyond a point, a longer quarantine period is counterproductive because quarantine infections outweigh the value of time in uncovering infections. Results are not recorded for a 7 day quarantine, but the results would probably be similar to a 14 day quarantine.

Table ten: Internal transmission with full accounting for missed infections

Scenario	Transmission in MIQ	% of All Cases	Median Value	First Quartile Value	Third Quartile Value
Test on Arrival Only	None	47%	47%	39%	54%
	Moderate	47%	48%	39%	55%
Test Departure & Arrival	None	36%	36%	29%	43%
	Moderate	37%	37%	30%	45%
Five Day Quarantine	None	9.4%	8.7%	4.8%	14%
	Moderate	12%	11%	7.4%	17%
10-Day Quarantine	None	6.0%	5.3%	0.0%	9.1%
	Moderate	8.9%	8.3%	4.5%	13%
14-Day Quarantine	None	7.7%	6.9%	4.0%	11%
	Moderate	10%	10%	5.3%	14%
Exemptions Allowed	None	8.4%	7.7%	4.3%	12%
	Moderate	11%	11%	5.9%	15%
Late Exemptions Allowed	None	7.9%	7.1%	3.8%	12%
	Moderate	11%	10%	5.0%	14%

Table 3. Number of undetected cases as a percentage of infected arrivals. The numerator includes undetected cases that acquired their infection during their stay. Median and quartiles are estimated from fortnightly windows.

The second set of results, which is based on the misses of ‘highly infectious’ cases, presents a different picture of the effect of the time in quarantine. The median miss rate of highly infectious cases after 5 days is 10 percent , 3.3 percent at 10 days, and 2.2 percent at 14 days, when there is some cross infection. If there is absolutely no risk of cross infection, and no transmission through staff the miss rates fall to 5.9 percent for 5 days, 0.5 for 10 days, and 0.1 percent for 14 days.

Table eleven: No internal transmission, partial accounting for missed infections

Scenario	Transmission in MIQ	% of All Cases	Median Value	First Quartile Value	Third Quartile Value
Test on Arrival Only	None	45%	45%	38%	52%
	Moderate	46%	45%	38%	54%
Test Departure & Arrival	None	35%	35%	29%	42%
	Moderate	37%	36%	29%	44%
Five Day Quarantine	None	6.8%	5.9%	3.3%	10%
	Moderate	10%	9.1%	4.8%	13%
10-Day Quarantine	None	0.5%	0.0%	0.0%	0.0%
	Moderate	3.3%	3.3%	0.0%	5.3%
14-Day Quarantine	None	0.1%	0.0%	0.0%	0.0%
	Moderate	2.2%	0.0%	0.0%	4.5%
Exemptions Allowed	None	0.5%	0.0%	0.0%	0.0%
	Moderate	3.0%	0.0%	0.0%	5.0%
Late Exemptions Allowed	None	0.1%	0.0%	0.0%	0.0%
	Moderate	2.4%	0.0%	0.0%	4.3%

Table 4. Number of significantly infectious cases released into the community as a percentage of the number of infected arrivals. The numerator includes undetected cases that acquired their infection during their stay. Median and quartiles are estimated from fortnightly windows.

These results illustrate how selective the executive summary and media reporting was. Only the most favourable 14 day quarantine result was reported, and the least favourable (5 days) risk. The 10 day results which showed a similarly low risk on certain assumptions was ignored.

The third set of outputs is a measure of the likelihood of cases being released while ‘significantly infectious’. It is calculated from: the probability that a case is infectious in the first place; the probability that the case is missed; and the number of returnees. This is the output that gets the most attention, but only a few of these results are presented in the text, and only then to blow up the contrast between quarantine periods.

Under a 5-day quarantine period, around 6.8% of infected arrivals are released while highly infectious. With recent arrival rates (assuming no transmission in MIQ) this equates to an infectious case being released into the community every 9 days on average. The 10-day period reduces this to an infectious case being released every 100 days on average, and the 14-day period (the current scenario) reduces this even further to approximately 600 days

The difference between a five day quarantine, and a 14 day quarantine looks stark. A case released every nine days, versus one every 600 days. The 10 day quarantine is 6 times riskier than the 14 day quarantine. However, as we explain below these results were partially a contrivance, designed to favour the more conservative quarantine policy, and to overstate its effectiveness. These assessments assumed that there is no transmission within the quarantine facility, and that cases are not infectious after three days from the onset of the infection. Adjusting for these over-optimistic assumptions increases the numbers of possibly infectious cases released and reduces the relative differences between quarantine periods.

Problems with the modelling

Small sample

The modelling relied on just two weeks of data from 23 June to 4 July, with just 21 positive cases, to help calibrate the theoretical model. While it may have been appropriate to circulate the model and the results to a specialist audience, it was premature to release it to the media. The motivation appears to have been a desire to rush into print to counter the Gluckman arguments.

Source of returnees not considered

The main source of risk from returnees is the probability that the returnee is infectious. This risk will obviously depend on where the returnee is coming from, because infection rates vary very significantly from country to country. The average risk was estimated at 0.5 percent, based on the observed numbers, but this was driven by the country source composition of the returnees. 12 were from flights from India, 3 from the US, and from Australia. The Australian numbers are not informative because many returnees from higher risk countries will have transited through Australia. However, the Indian flight numbers indicate high infection rates in India, Pakistan and Afghanistan (at least in the social groups the returnees are more likely to mix with).

In the two weeks to 15 August, 9 cases were identified in quarantine. If that data period had been used the infection rate would have been 0.2 percent, not 0.5 percent.

It is obviously inappropriate to draw conclusions about the general risk from returnees from such a small and skewed sample. Returnees from China pose almost no risk (possibly 1:10,000,000) and many East Asian countries present a very low risk (certainly no worse than 1:10,000). The model results should not be used for an

assessment of quarantining requirements for foreign entrants, where we can be selective about the country source.

Risk of False Positives not considered

Of the 21 cases, 14 were detected by the day 3 test, and just one in the day 12 test. It is likely that the single case missed in the day three test would have been picked earlier if there had been an earlier test. Six cases were picked up by symptoms/other tests. The modelled results are lower than the actuals for the day three testing (12.2), and higher for symptoms (8.6 with internal transmission).

It is assumed that all cases picked up by symptoms are accurate and that there are no false positives. As covid-19 symptoms are similar to those from a cold or flu there is a risk that a proportion of the symptom detections were false positives. There was no discussion of subsequent testing of cases originally diagnosed by symptoms to confirm the diagnosis.

False positives would have the effect of skewing the model to favour longer quarantine times, because cases with those symptoms are picked up later in the quarantine period. The model was already overstating the value of symptom identification.

Asymptomatic cases

The modelled share of asymptomatic cases (45 percent) was less than the observed share (60 percent). The lower the share of asymptomatic cases the lower the risk of community transmission because they are less infectious. The higher observed share should have been used because the New Zealand returnees have different characteristics (being younger) than the demographic of the international literature-based 45 percent estimate.

A critical assumption is the infectiousness of asymptomatic cases. The model assumes they are 50 percent as infectious as symptomatic cases. This is based on an estimate used in one model of the overall incidence of deaths and illnesses, which in turn, was based on the results of a single Chinese study⁸, which looks to be an outlier in the literature. The World Health Organisation's view, after considering all of the evidence, is that the infectiousness of asymptomatic cases is relatively low. In our discussion of the ESM reporting we noted their report of a study (not cited by

⁸ Chen Y Wang A Yi B et al. The epidemiological characteristics of infection in close contacts of COVID-19 in Ningbo city. *Chin J Epidemiol.* 2020; 41: 668-672

them) that asymptomatic infectiousness was about 10 percent of symptomatic infectiousness.

In view of the WHO advice, TKM should have used a lower assumption, say 10 or 20 percent, for relative asymptomatic infectiousness.

Definition of ‘significantly’ infectious biases results

Shorter quarantine period so as not to have a major impact on the probability of a case being detected, but a much more significant impact on ‘significantly infectious’ (sometimes referred to as ‘highly’ infectious in the text) cases being released.

Significantly infectious is defined as:

‘being within the first three days since symptom onset (or equivalent time for asymptomatic cases). This is when individuals are assumed to have passed 93% of their total infectiousness.

This is an arbitrary assumption that was not based on any evidence or literature review on relative infectiousness at different points of the illness. From the relevant WHO discussion it appears that cases can be infectious for up to 8 or 9 days after symptom onset, with infectiousness gradually tailing off to that point. However, TPM have simply cut off the tail of the distribution, assuming the tail not to be infectious at all. Infectiousness at different time points should have been weighted to give better risk assessment. Removing the ‘inconvenient’ tail from the distribution significantly biases the analysis to relatively favour longer, over shorter, quarantine periods.

A better calibration of the model would probably show that a 14 day quarantine only has a moderate impact on relative risk, compared to a 10 day period and possibly a 7 day period.

Summary

TPM have both overstated and understated the risks of different quarantining options.

- The absolute risk of a case being released re their 14 day preferred quarantine period, estimated at 0.1 percent has probably been understated. This ignored any possibility of cross infections between passengers and in particular staff infections, and 7 percent of infectiousness. It is difficult to say what the ‘true’ number is, but probably it is a multiple of the 0.1 percent.
- The relative risk of shorter quarantine periods has been overstated. It is possible that a 10 or even a 7 day period would not materially increase the risk for most returnees.

- The risk of community infections from returnees, and other entrants from low risk countries has been hugely over-stated.

Estimating the impact of control measures to prevent outbreaks of COVID-19 associated with air travel into a COVID-19- free country: A simulation years modelling study.

Michael Baker and others

17 June 2020

This is a complex model that estimates the risk of an outbreak (a domestic case) in New Zealand, from importing a case from Australia. The risk of an Australian imported case appears to have been assessed before the Victorian outbreak, so can be considered an Australian, ex-Victoria, risk assessment. While only Australia is assessed, the methodology can be applied to any country. The model takes account of the risk of an Australian infection, the risk of transmission in flight, and the risk that the infection is transmitted domestically.

The results are expressed in terms of the years, on average, it would take for an outbreak to occur in New Zealand per 100,000 incoming tourists. As the number increases the average time to an infection decreases linearly.

With no mitigation the average time is 1.7 years This time period is increased by :

- Exit screening in Australia: 2.2 years
- Adding face masks on aircraft: 3.3 years
- Adding entry screening: 3.5 years
- PCP tests with other mitigants can increase the average time from 4.4 to 28.6 years.

There is a comparison of a 7 day quarantine with a 14 day quarantine, but it is assumed that there is no testing in these scenarios. The 7 day quarantine results in a outbreak every 5.8 years, and 14 days increases it to 34.1 years. Both figures would be significantly higher with two PCP tests. No transmission in quarantine is accounted for, which would reduce the advantage of a longer quarantine period.

An effective option, without quarantining, is wearing a mask for 14 days after arrival combined with: symptom reporting, contact tracing and a final test. This increases the average time to 29.4 years. This result depends on an assumption that facemasks

are very effective in reducing transmission and there is full compliance. The assumptions on effectiveness of facemasks and compliance were optimistic.

Part ten : A note on Sweden

The Swedish approach to managing the pandemic, based largely on voluntary compliance with social distancing, has received a lot of international attention, most of it negative. The Swedes were accused of running a 'mad' experiment risking tens of thousands of lives in pursuit of a 'herd immunity' objective. The Swedish experience was a cautionary tale against not implementing a hard lockdown.

In early April an open letter from many Swedish academics, demanding a change in direction, received international media attention. And a group of researchers released the results of modelling, adapted from the London Imperial College model. It projected that the number of deaths would pass 40,000 by early May and rise to almost almost 100,000 by June. A hard lockdown would reduce the latter number to 30,000.

The Swedish approach was based on the judgment that it was impossible to eradicate the virus, and that while a hard lockdown would suppress the virus for a time, it would inevitably re-emerge as the lockdown was eased. They went for a policy that was sustainable over the longer haul, relying primarily on voluntary measures. They trusted the population to 'do the right thing', avoiding the economic and social costs of a hard lockdown. Herd immunity was not the objective of the policy but a natural consequence of allowing a level of spread in the community, while holding cases at a level that would not overwhelm the health system.

The Swedish 'model' has been part of the New Zealand debate. There was an opinion piece by Rod Jackson from Auckland University in the NZ Herald on 27 May 2020 titled *'Has Sweden made a fatal mistake with covid-19?'*

The argument was that if Sweden was pursuing a herd immunity strategy the consequences could be disastrous. At the time the article was written, the total number of deaths in Sweden was 4,000. Based on Jackson's assessment of the proportion of the population that had already been infected (about four percent), and death rate of 1 percent of infections, 56,000 more people would have to die, before herd immunity was attained (when 60 percent of the population had been infected).

Which, Jackson argued, validates the New Zealand approach.

If New Zealand, with half the population of Sweden, had taken a Swedish-style approach to Covid-19, as has been suggested by some, just divide the Swedish numbers by about two to work out the implications.

As stated above, instead of 21 deaths there would already have been 2000 deaths. Of even greater concern, this would possibly rise to 30,000 before herd immunity would be achieved, sometime in 2022.

The piece went on to consider new information.

After completing this article, a new study has reported that the proportion of people in Stockholm with antibodies to Covid-19 is only 7.3 per 100 people, despite a much higher death rate than the rest of Sweden.

This is unfortunately consistent with the worst-case scenario estimates presented here. The conclusion should now read: "Sweden has made a fatal mistake".

And it concludes:

In light of this new evidence, Aotearoa New Zealand has clearly taken the only sensible route in the absence of a vaccine or effective treatment. Australia and other countries need to refocus efforts on the same elimination strategy.

Much of Jackson's discussion was partial and some was misleading. In particular, Jackson did not go beyond the negative headlines when discussing the Swedish infection rate results.

This is what the New York Times reported.

The findings were roughly in line with models predicting a third of the Swedish capital's population would have had the virus by now and where at least limited herd immunity could have set in, the Swedish Health Agency said on Wednesday.

"It is a little bit lower (than expected) but not remarkably lower, maybe one or a couple of percent," Tegnell told a Stockholm news conference. "It squares pretty well with the models we have."

The numbers reflect the state of the epidemic earlier in April, as it takes a few weeks for the body's immune system to develop antibodies."

More recently, studies of t-test incidence (which provide a more accurate assessment of past infections) provided supporting evidence that Sweden was starting to develop herd immunity.

What happened on deaths

The following figures were taken from Worldometer. The number of cases initially increased over May and early June as the Swedes re-embraced testing and contact tracing, in an effort to slow the progression of the virus. But then there was a substantial reduction. The death rate fell dramatically to low single figures, reflecting the Swede's success in reducing deaths in elderly care situations, that previously accounted for 75 percent of the deaths, and probably some herd immunity effect. The number of deaths by the middle of August was less than 5,800, a long way from 60,000.

Figure twenty one: Sweden daily cases

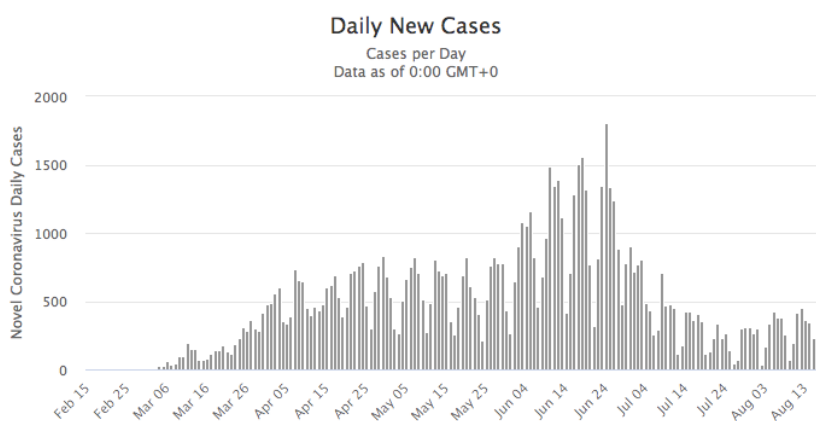
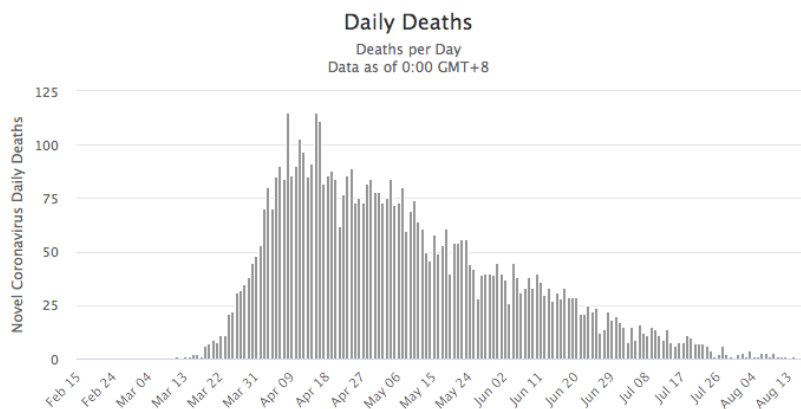


Figure twenty two: Sweden daily deaths



While the Swedish experience is not now directly relevant to New Zealand it does reflect the power of voluntary measures. The epidemic was brought under control at an early stage (a reproduction rate of about 1) and the health system was not overwhelmed. That is not to say that the Swedes would not have done things differently if they had their time again. They would have taken stronger measures to

protect the elderly in rest homes and might have leaned against the spread with contact tracing earlier.