



Briefing

UPDATE ON FUTURE COVID-19 DOMESTIC RESPONSE FRAMEWORK

To: Rt Hon Jacinda Ardern
Prime Minister

Date	10/10/2021	Priority	High
Deadline	13/10/2021	Briefing Number	DPM 2021/22-550

Purpose

This report updates you on recent progress and future work required in relation to the development of a new domestic response framework for a highly vaccinated New Zealand.

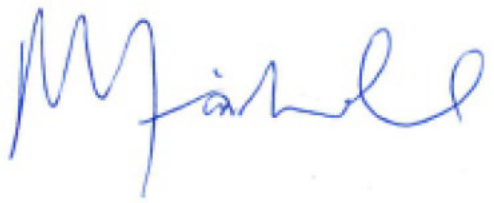
Recommendations

- Note** that you intend to update Cabinet on Monday 11 October on work to develop and transition to a future framework which helps to deliver a strategy for COVID-19 management in a highly vaccinated New Zealand.
- Note** that we have received additional feedback from the Ministry of Health and the Strategic COVID-19 Public Health Advisory Group regarding the development of this future framework
- Note** that the current circumstances of, and prognosis for, the current outbreak are judged to be materially weaker than envisaged earlier in September and that conditions in some other "low-COVID" jurisdictions have deteriorated (even with high rates of vaccination)

4. **Note** that there is considerable work still underway which is critical to development and deployment of a new domestic response framework, in particular:
 - 4.1. detailed development of the measures applicable across the new framework (e.g. when do we use gathering limits, interregional travel restrictions, etc);
 - 4.2. planning and preparation for health system readiness;
 - 4.3. COVID-19 modelling of the framework and future strategies; and
 - 4.4. analysis of social and economic consequences of the new framework and the strategy for its use.

5. **Agree** that, following Cabinet's discussion on 11 October, there is a later meeting between Ministers, officials and the Chairs of the independent advisory groups to provide clarity on the strategic objective that the new framework would be delivering and intentions for how it is used

YES / NO

 Ruth Fairhall Head of Strategy and Policy COVID-19 Response	Rt Hon Jacinda Ardern Prime Minister
10/10/2021/...../2021

Contact for telephone discussion if required:

Name	Position	Telephone	1st contact
Ruth Fairhall	Head of Strategy and Policy, COVID-19 Response	N/A	s9(2)(a) ✓

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Minister's office comments:

- Noted
- Seen
- Approved
- Needs change
- Withdrawn
- Not seen by Minister
- Overtaken by events
- Referred to

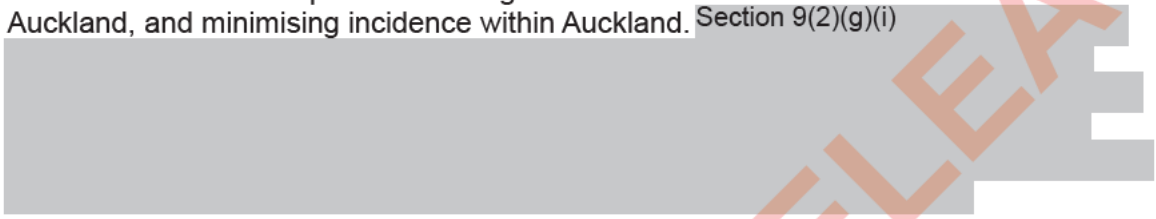

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UPDATE ON FUTURE COVID-19 DOMESTIC RESPONSE FRAMEWORK

Summary

1. This report provides an update on work underway to support the development of a new domestic response framework, and additional feedback received since Cabinet considered the new framework on Monday 4 October [CAB-21-MIN-0406]. You plan to provide an update to Cabinet on 11 October.
2. This report summarises further feedback on the framework from the Strategic COVID-19 Public Health Advisory Group (SPHAG or “the Group”), the Ministry of Health and initial insights from COVID-19 modelling. It addresses three key questions:
 - a) **Is the new framework appropriate and well-conceived?** Feedback suggests that a new framework for a highly vaccinated New Zealand is necessary. Work should continue, at pace, to develop it.
 - b) **Is the new framework sufficiently developed at the current time?** Feedback suggests that further work is required to refine the details of the new framework, and to agree and articulate the strategy for using the different levels of restrictions, including the circumstances in which measures equivalent to Alert Levels 3 and 4 would still be required.
 - c) **When is the right time to transition to the new framework?** Feedback suggests that transition to a new framework should be managed carefully. Consideration of the trajectory of the current outbreak and developments overseas suggests that transition should be later than originally anticipated. We must first achieve higher vaccination rates, greater control of the current outbreak, and more health system readiness. As the new framework explicitly seeks to move away from the broad restrictions of Alert Levels 3 and 4, it would not be possible to implement effectively, without higher vaccination rates, while parts of the country remain at Alert Level 3 with rising case numbers. Additionally, at announcement, the new framework should be clearly positioned within the future COVID-19 strategy for New Zealand.
3. The future domestic response framework is interdependent with other foundations of the COVID-19 strategy: vaccination rates (and the variations in coverage), health system capacity and readiness, and border settings. These other factors will determine:
 - a) The extent to which transmission and severe disease impacts can be mitigated without “lockdown”-like population level controls;
 - b) The acceptable caseload before transmission would need to be proactively limited;
 - c) The stringency of “Red” that is necessary to deliver R_{eff} significantly below 1; and
 - d) The expected duration required at (and geographic breadth of) “Amber” and “Red”.
4. Together, these tools give effect to the strategic objectives for COVID-19 management. As vaccination rates increase, there is growing public pressure to articulate what this future state looks like and a need for clarity around future strategic objectives. The SPHAG advise that this objective is “COVID minimisation and prevention”.
5. Observation of international experiences continues to inform our understanding of the future scenarios for New Zealand. Recent transmission dynamics in Victoria and

Singapore (cases rising exponentially and daily cases greater than 1000) are evidence of the continuing value of a cautious approach. Many other countries demonstrate that high rates of vaccination and naturally acquired immunity are insufficient to avoid ongoing illness and death and restrictions for society and the economy.

6. The transition to a future framework is inseparable from management of the current outbreak. When the future framework was initially conceived, the central expectation was for a steady return to lower case numbers in Auckland. This would have meant a stable domestic platform on which to pivot to a new framework.
7. This scenario has not eventuated. Instead, we are at a critical juncture for the current outbreak. The transmission dynamics over the next few weeks will have a significant bearing on the “starting point” for the future strategy, and this determines which high-level outcomes remain plausible. The goal remains to eliminate COVID-19 outside of Auckland, and minimising incidence within Auckland. Section 9(2)(g)(i)

8. Section 9(2)(g)(i)

9. Engagement with iwi Chairs has indicated general support for the new approach, but with opportunities for ongoing engagement. They have expressed a desire for local communities to support their own people and tailor local responses, while ensuring equity of outcomes for Māori communities and avoiding disadvantage, particularly for young people. In the near term, driving vaccination rates higher is critical.
10. In addition to these strategic considerations, there is also significant work to be done to determine, test and refine the specific details of the framework ahead of implementation. This work should continue with the highest priority and should include focused work between officials, public health practitioners and epidemiologists to refine the details of the framework. A strategic discussion between Ministers, senior officials, and the Chairs of the independent advisory groups, informed by modelling, could ensure clarity on the strategic objective and alignment of intentions for how it is deployed.
11. We may have opportunities to introduce aspects of the future framework in the coming weeks especially those which reduce transmission risk, such as vaccination requirements in more situations, rapid antigen testing and new case management protocols. These things can be introduced, as they are ready, through decisions made about the current outbreak. In some scenarios, these improvements (alongside increased vaccination coverage) may be sufficient to avoid going back up Alert Levels.
12. An announcement on the future framework (and strategy within which it sits) could happen later this month, based on the further work outlined in this report - noting that much of the work required to get there relies on many of the same people working on the current response.

Supporting information

13. Cabinet has discussed a new domestic response framework for a highly vaccinated New Zealand as a necessary and desirable feature of a future COVID-19 strategy. High vaccination rates will afford us lower reliance on the most stringent public health restrictions and enable greater flexibility in management of international travel.
14. There is merit in a framework which provides clarity for people and businesses on life in the future for a highly vaccinated New Zealand. This framework can incorporate greater freedoms for vaccinated people, which will also incentivise uptake.
15. This remainder of this paper comprises four sections relaying critical information for the development and deployment of a future domestic response framework and strategy:
 - a) Feedback from the Strategic COVID-19 Public Health Advisory Group
 - b) Feedback from the Ministry of Health on the proposed “traffic light” framework in light of the current outbreak;
 - c) COVID-19 modelling, relating to the current outbreak and to the future strategy; and
 - d) International developments with implications for future COVID-19 strategy.

A. Feedback from the Strategic COVID-19 Public Health Advisory Group

16. On Friday 8 October, the SPHAG provided advice pertaining to future COVID-19 strategy and a new domestic response framework. They address the following questions:
 - a) What public health objectives or strategy should New Zealand pursue, following the completion of the vaccination campaign?
 - b) What should future case based measures be?
 - c) What is the group’s feedback on the draft “traffic light” framework?
 - d) How do we transition to the new approach described above, noting the possibility of a concurrent community outbreak?
17. The Group advocates for a future strategy based on “COVID minimisation and protection”, which is defined by objectives “to minimise the occurrence of COVID-19 and to protect people as far as possible from the adverse effects of this disease” (*paragraph 8 of the advice*).
18. The advice goes on to suggest that:
 - a) It will be necessary to continue a range of public health and social measures designed to reduce or stop transmission (*para 11*),
 - b) it will be necessary to have zero-tolerance for COVID-19 in high-risk/high-vulnerability settings (*para 11*),

- c) it will continue to be optimal to locally eliminate outbreaks wherever it is practicable to achieve this, and to explore whether targeted limitations on inter-regional travel can mitigate nationwide spread (*para 11*)
 - d) maintaining effective testing, tracing, isolation and quarantine measures will be “an essential adjunct to vaccination” (*para 15*) and that this will require relatively low caseloads (*para 16*).
19. Regarding the proposed “traffic light” framework, the Group “are doubtful [that “Red” restrictions] will be adequate to achieve *COVID minimisation and protection* in every situation”, and therefore there may be some circumstances where broader business and school closures may be necessary (*para 28*).
20. Regarding the transition to this “traffic light” framework, the Group note h critical dependencies with: the evolution of the current outbreak, clarity on the tools available to manage COVID-19 at the different levels and the rates of vaccination achieved in communities (*paras 32 and 33*).

Implications

21. Taken in entirety, the implication of the Group’s advice s that a transition to a new domestic response framework comes with significant risks. The group advises greater clarity on the details of the government’s COVID-19 response under each of the levels and to anchor the framework in a clear strategic objective. The Group recommends that a workshop is convened to work this through drawing on the expertise of public health practitioners, epidemiologists and other key stakeholders. Officials advise that work to address these points, informing strategic decision-making and mitigating the risks associated with a transition, is underway. Some components of this work programme will take several weeks to be complete.

B. Feedback from Ministry of Health and work underway

22. The Ministry of Health has undertaken initial work on the overall logic and specific measures under each “traffic light” of the proposed new framework, s9(2)(g)(i)
23. To mitigate the risks as much as possible, the Ministry supports a transition to the new response model only after reaching 90%+ vaccination in the adult population, 5-11 years olds, and among vulnerable groups (Māori and Pasifika). This national coverage would need all be equitably distributed, with a minimum of 85% in any DHB area and a focus on coverage in populations at risk of the most severe outcomes.
24. The aim of waiting until reaching these targets, and consulting on the strategy broadly in the meantime, would be to minimise hospitalisation and death while allowing as much social and economic activity as possible and retaining social license. s9(2)(g)(i)

25. The Ministry of Health advocates for the timing of transition to a new framework also being conditional on health system readiness, including primary care and community services as well as hospitals and ICUs. s9(2)(g)(i)

At present, case numbers are low enough that every case and their contacts can be identified and worked with closely. s9(2)(g)(i)

26. Ministry of Health officials have also expressed concern that “Red” restrictions (if pitched at Alert Level 2.5) may be insufficient to limit transmission in all situations. The particular concern relates to the most effective public health measures (particularly to combat transmission of the Delta variant) relating to restrictions on activity and movement, which would be absent from the new framework. The Ministry also advises that, even with 90%+ vaccination rates, enhanced restrictions would need to remain in the toolkit for combatting COVID-19. For example, if a new variant arose, to which the vaccine did not offer protection, this would reduce the effective immunity of the population, rendering the overall ‘traffic lights’ risk strategy invalid (i.e. requiring Alert Level 3 or 4 public health controls to regain control).

C. Mathematical modelling of COVID-19 transmission and impacts

Modelling suggests that we are at a critical juncture of the current outbreak

27. Multiple estimates derived from transmission over the past couple of weeks indicate that that is very likely that the effective reproduction number is now above 1 and that cases are exponentially growing. The central estimates for R_{eff} are typically between 1.2 and 1.3.
28. How much greater R_{eff} is than 1 dictates how quickly the number of cases will grow. The nature of this exponential growth is that subtle differences can have significant impacts on the time taken for the situation to deteriorate. Currently, the 7-day average for daily new cases is around 30. Modelling results suggest that a R_{eff} of 1.1 would lead to a doubling of this number, to 60, in around a month. Modelling for a R_{eff} of 1.5 indicates that case numbers double in just one week. If sustained, this would result in a 16-fold increase in cases over a month.
29. There are negative feedback loops associated with this growth in cases which would all be expected to weaken the response and increase transmission. For instance: contact tracing performance will weaken, the frequency of cases travelling inter-regionally would increase in proportion with cases (likely generating a non-linear increase in the complexity of decision making and response operationalisation), and a possible reduction in social licence and compliance with transmission-reducing regulations in the near-term.
30. Figures 1 and 2 depict Te Pūnaha Matatini simulations for the current outbreak under “medium” and “high” transmission assumptions. Both assume $R_{eff} > 1$ in the near-term. These simulations were produced on the basis of case data up to Tuesday 5 October.

Figure 1: Simulated outcomes for cases and hospitalisations assuming continuing Alert Level 3 and “medium” transmission. Red circles show actual cases/hospitalisations up to 5 October. The solid blue line is the median simulated outcome.

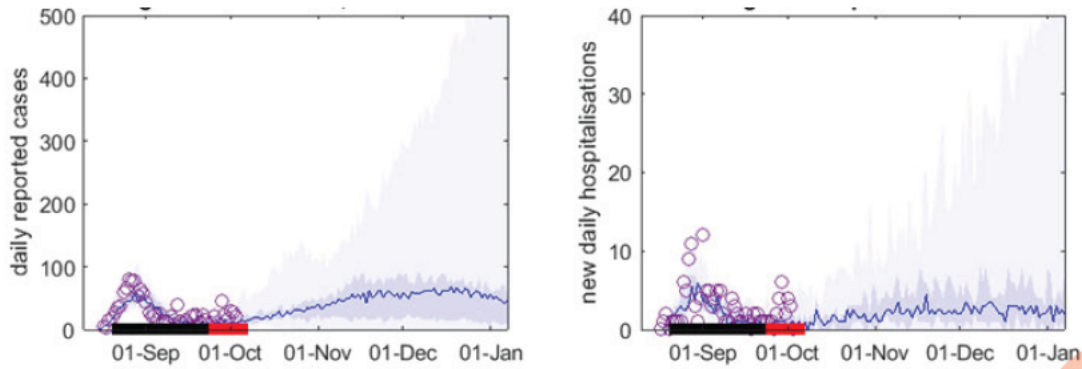
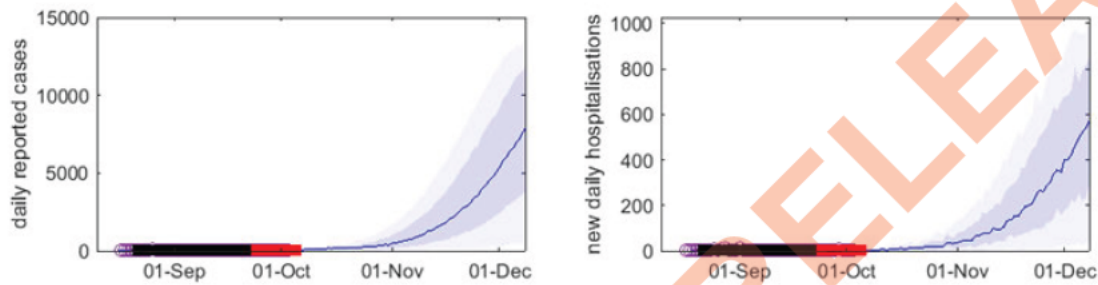


Figure 2: As Figure 1, but assuming “high” transmission (note: different scales on axes)



31. The pessimistic path is not inevitable. If the R_{eff} returns to below 1 then cases will reduce in the near-term. And as the “medium” transmission scenarios shows, if the R_{eff} averages approximately 1 in the near-term, then the vaccination campaign can be expected to reduce transmission (and ‘bend the curve’) in the medium-term (November). Both of these scenarios require ongoing restrictions, but would keep the burden of infection low over the next two to three months.

The extent of transmission over the coming weeks will have a significant bearing on which strategic options remain available to decision-makers for a highly vaccinated population

32. On 23 September, Te Pūaha Matatini researchers published “Modelling to support a future COVID-19 strategy”. This work makes clear the value of a highly effective system of contact tracing, testing, isolation and quarantine (TTIQ) measures for managing cases.
33. Highly effective TTIQ is considered incompatible with high caseloads. When the rates of full vaccination begin to flatten later this year, the inability to deploy highly effective TTIQ limits the outcomes to which New Zealand could reasonably aspire, and/or reduce opportunities for the government to allow greater freedoms, both in communities and at the international border.

the strategy modelling is underway which will provide additional information about the efficacy of the proposed framework and the likely outcomes under different strategies for 2022

34. Further work is underway that will support detailed development of a new domestic response framework and the strategies for its use. Key pieces of work are highlighted below:

- a) Over the next 1-2 weeks:
 - i) Assessment of transmission reduction effectiveness of proposed “Amber” and “Red” restrictions and inter-dependency with caseloads and TTIQ effectiveness;
 - ii) Comparing outbreak simulations between communities with the highest and lowest rates of vaccination, beneath a high national average.
- b) Over the next 3-4 weeks:
 - i) Final results of modelling dynamic strategies, exploring different rules for applying “Red” restrictions and the resulting duration (and breadth) of time at “Amber” and “Red”. This work will also indicate the conditions under which “Red” would be insufficient to avoid health system overwhelm;
 - ii) Sensitivity of outcomes under these domestic strategies to the volume of new cases being imported through international travel (i.e. which scenarios for *Reconnecting New Zealand* are consistent with which domestic management scenarios).

D. Update on international context

- 35. Developments and outcomes in other jurisdictions continue to offer valuable insights for a future COVID-19 strategy with a highly vaccinated population. International experience enables triangulation on modelling, which depicts hypothetical scenarios most of which, by definition, will never be realised. Modelling should not be expected to accurately predict outcomes in other countries as there are many structural differences regarding transmission and health impacts across countries, but we can investigate whether outcomes are broadly consistent with modelling results.
- 36. Recent experiences in previously “low-COVID” countries would suggest caution in adopting an approach which tolerates (or is seen to tolerate) new cases.
 - a) Over recent weeks, the R_{eff} in Victoria, Australia, has been estimated at between 1.3 and 1.6. At the beginning of September, the 5-day average for new daily cases was around 80. Five weeks later, Victoria is experiencing around 1,500 cases per day.
 - b) In Singapore (78% of the total population are now vaccinated) the R_{eff} has been estimated between 1.5 and 2 since early September. Then, the 7-day average for daily new cases was 150. In early October, the 7-day average now exceeds 3,000 cases per day. There are over 1,000 cases currently in hospital and over the past two weeks around 5 new deaths per day.
 - c) In New South Wales, daily case numbers have been brought back under control after earlier exponential increase in July and August. This control has been attributed to increasing rates of vaccination, and regaining performance levels in the TTIQ system as active case numbers reduce. Efforts to regain control have been made more effective by the ongoing stringent public health and social measures.
- 37. These negative outcomes are despite high and increasing rates of vaccination, and public health and social measures that are broadly similar to Alert Level 3 controls (with some variations). All these examples have greater health system capacity, suggesting that similar

trajectories in New Zealand may lead to more severe outcomes for the worst affected and unvaccinated, and with greater risk of displacing other health services.

38. Experience in countries that have *not* been “low COVID” through 2020 and 2021 is mixed:
 - a) The recent SPHAG advice highlights Scotland as a comparator country, noting that they continue to have serious adverse health impacts (165 deaths in week ending 26 September, ~4 deaths per million per day) despite over 95% of the 40+ population being vaccinated.
 - b) On the other hand, Norway, Denmark, and Portugal offer more hope: they currently each experience <1 death per million per day, with high rates of vaccination (67%, 75 and 86% of total population, respectively) but diminishing domestic restrictions.
39. It is worth noting that these countries have had significant levels of reported infection over the course of the pandemic: In Norway 4%, in Denmark 6% and in Scotland and Portugal around 10% of the population, respectively, and noting that this is only reported, and not undocumented, infections. By way of comparison, Australia has had cumulative reported cases <0.5% of population, and New Zealand <0.1% of population.
40. Attachment B includes greater detail on recent epidemiological trends, vaccination rates and public health and social measures in these and other countries.

Next Steps

41. Suggested talking points for a Cabinet discussion on the future framework are in Attachment A.
42. Officials suggest that a meeting between Ministers, senior officials, the Chairs of independent advisory group will generate clarity on the strategic objective that the new framework would be delivering and align expectations for how it is deployed. Officials can provide support material for the meeting, building on the themes in this briefing: feedback from delivery agencies and key stakeholders; insights from COVID-19 modelling; and the latest international assessments.
43. Officials will continue to develop the details of the future domestic response framework and the strategy for its use, working with public health practitioners, epidemiologists, modellers and other key stakeholders.
44. We will take opportunities to advance aspects of the new framework as it is appropriate to do so. This includes continuous improvement around surveillance testing, the introduction of vaccination certification and the development of models for care in the community. As vaccination rates increase, deployment of these new approaches may be sufficient to avoid going back up Alert Levels.
45. We are also happy to discuss the implications for the timing of the planned Cabinet papers and associated public announcements.

Consultation

46. The briefing draws on advice of the Strategic COVID-19 Public Health Advisory Group and draft materials from the Ministry of Health relating to health system readiness and the development of a new domestic response framework for a future strategy.
47. The Department of the Prime Minister and Cabinet COVID-19 Group consulted with senior Ministry of Health officials on the content of this briefing. The COVID-19 Group has sought and received feedback from other agencies on the proposed framework but they were not consulted on the content of this briefing.

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ATTACHMENT A – TALKING POINTS FOR CABINET

s9(2)(b)(ii) [REDACTED]

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ATTACHMENT B – REFERENCE MATERIAL ON KEY INTERNATIONAL COMPARISONS

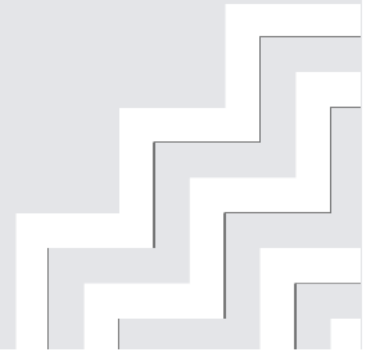
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COVID-19: international experiences reference material

DRAFT - An updated document with country case studies will be completed early next week

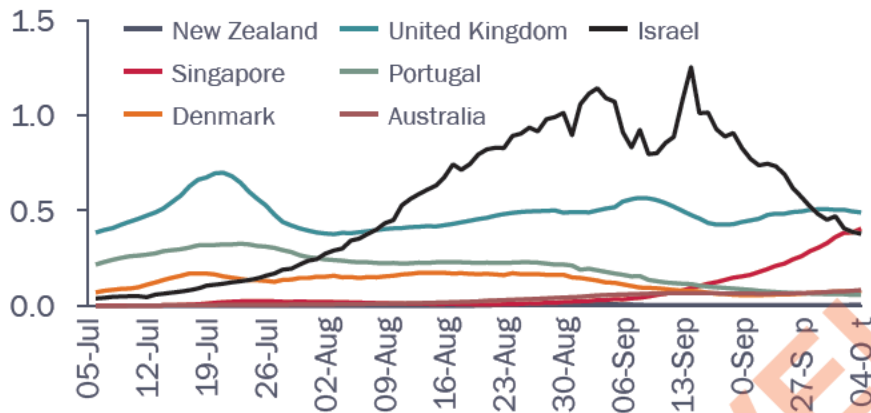
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All countries: cases, testing, deaths, and reproduction rate over time

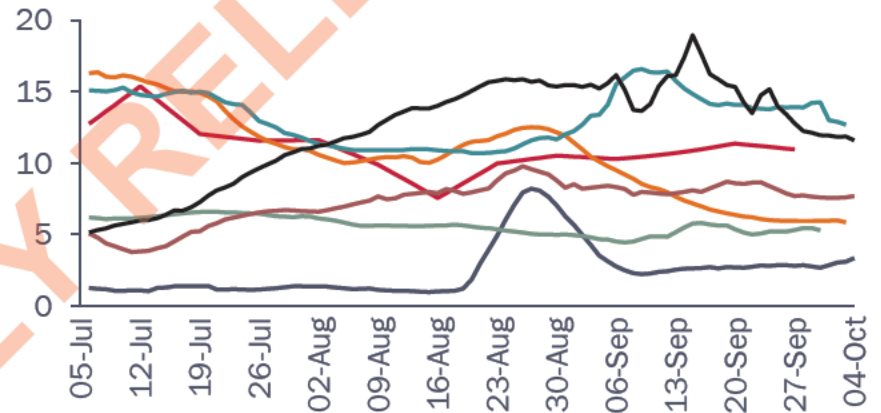
Cases per million

Cases in thousands, daily, timeline is 2021



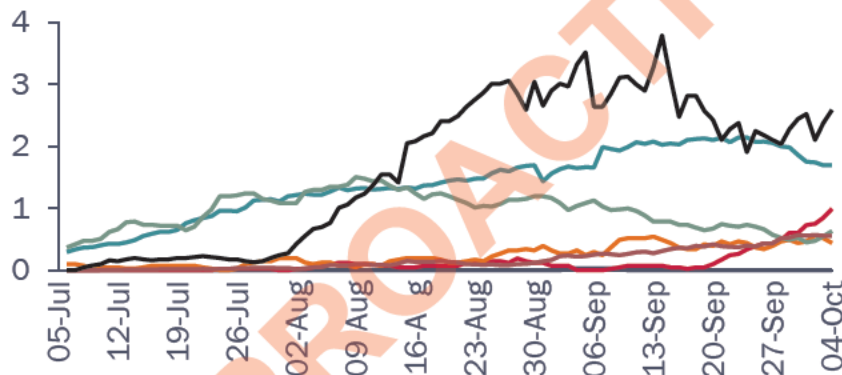
Testing rate per thousand

Daily, timeline is 2021



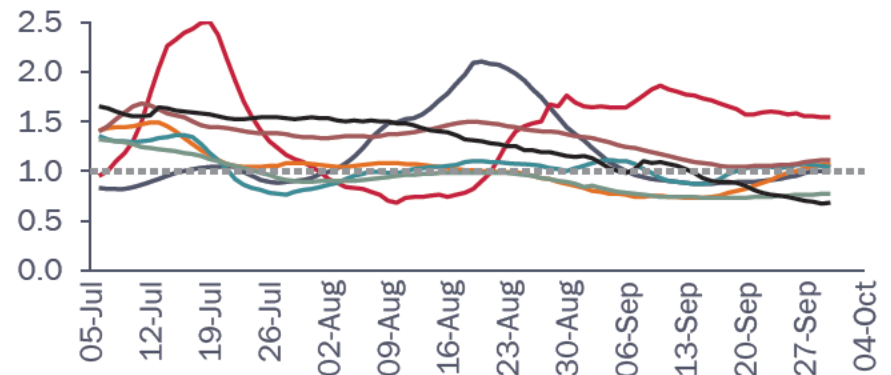
Deaths per million

Daily, timeline is 2021



Reproduction rate

Daily (observed), timeline is 2021, dotted line = 1



Background statistics for countries included in analysis

Country	Population	Weighted population density ¹	Median age	Proportion of population >65 years	GDP per capita ²
New Zealand	4.9M	1,996	38	15%	\$36k
Singapore	5.9M	19,171	42	30%	\$86k
Denmark	5.8M	1,068	42	20%	\$47k
United Kingdom	68.2M	3,611	41	19%	\$40k
Portugal	10.2M	1,571	46	22%	\$28k
Australia	25.8M	2,058	38	16%	\$45k
Israel	8.8M	3,150	31	12%	\$33k

Source: All data from Our World in Data (Oxford University), ourworldindata.org, except 1) weighted population density from worldpop.org (University of Southampton). This measure indicates the median value of the population density, taking into account the population weights of the observations. It is more functional than simply dividing land mass by population, as it considers uninhabited areas. 2) GDP per capita is shown at purchasing power parity, in constant 2011 international dollars

COVID-19 cumulative statistics: all numbers date from January 1st 2020 until the most recent available date

Country	Cumulative (total) cases per million population	Cumulative (total) deaths per million population	Proportion of population vaccinated ¹
New Zealand	907	6	42% Double, 26% Single, 68%
Singapore	18,030	21	77% Double, 3% Single, 80%
Denmark	62,309	459	75% Double, 1% Single, 76%
United Kingdom	116,884	2,014	66% Double, 6% Single, 72%
Portugal	105,361	1,770	85% Double, 3% Single, 88%
Australia	4,490	53	46% Double, 20% Single, 66%
Israel	147,159	892	64% Double, 6% Single, 70%

Double Single