

# Memo

## Public Health Risk Assessment of COVID-19 Mandated Response Measures – 17 August 2022

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**Date:** 23 August 2022

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**To:** Dr Diana Sarfati, Director-General of Health

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**From:** Dr Andrew Old, Deputy Director-General - Public Health Agency  
Dr Nicholas Jones, Director of Public Health - Public Health Agency

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**For your:** Decision

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### Purpose

1. This memo provides you advice following the 17 August 2022 public health risk assessment (PHRA) which considered whether remaining mandated COVID-19 response measures were still proportionate to the risk of posed by the current outbreak.
2. Your agreement to the PHRA's recommendations is sought to then inform a paper on the future strategy of COVID-19 management that the Minister for COVID-19 Response will take to Cabinet's Social Wellbeing Committee on 31 August 2022.

### The changing outbreak context and the need for reassessment

#### *Current outbreak status and modelling*

3. By all measures New Zealand's current COVID-19 outbreak is waning, with reducing case numbers, hospitalisations, and deaths. Modelling suggests this trend should continue for some time. However, it is still unclear when the outbreak will plateau. Further detail is provided at **Appendix 1**.
4. The most likely medium-term COVID-19 outlook for New Zealand suggests waves of COVID-19 infection and reinfection, as seen internationally. However, the actual trajectory and severity of future outbreaks remains uncertain due to the unknown likelihood or timing of new variants of concern and the duration of protection provided to the population infected during the two Omicron waves. This means that our strategy for managing COVID-19 on an ongoing basis needs to be flexible to optimise Pae Ora and longer-term health, economic and social outcomes.
5. In the longer-term, COVID-19 should be managed on the basis of its impact on the health system and society. It will be important to review the response if (and when) new variants arise to ensure it remains proportionate and equitable approach.

### *Limitations of the COVID Protection Framework*

6. New Zealand's Elimination Strategy, and then the COVID-19 Protection Framework's (CPF) minimisation and protection approach since December 2021, have been successful in limiting the worst impacts of COVID-19. This has been achieved by adapting our response to the specific features of each COVID-19 outbreak and the availability of public health responses (e.g. effective vaccination).
7. As the COVID-19 outbreak evolved in recent months, the CPF has increasingly posed challenges to providing an effective response. This resulted in public health advice to you that the CPF was now of limited utility and should be replaced by a new strategy. These challenges reflected that the CPF:
  - a. was designed for the Delta variant, before Omicron was widespread in the New Zealand community
  - b. was predicated on vaccination protection against transmission and infection
  - c. provides little scope to implement response measures outside the CPF
  - d. a shift to Red would have little impact on limiting transmission
  - e. makes it hard to de-escalate between settings – particularly from Orange to Green.

*At the end of August, the Minister for COVID-19 Response will report back to Cabinet on whether to retire the CPF and move to a new COVID-19 management strategy*

8. In July 2022, reflecting the changing outbreak context and limitation of the CPF, Cabinet agreed to shift to a new strategy for managing COVID-19 after winter 2022 [CAB-22-MIN-0251]. This strategy will be underpinned by:
  - a. *baseline measures* – usually non-legislative/ voluntary measures that can be in place at any time and scaled as required
  - b. *reserve measures* – usually legislative/mandated measures which rely on powers triggered in certain circumstances, e.g. when an Epidemic Preparedness Notice is in force.
9. The new strategy aims to provide greater flexibility for ongoing COVID-19 management, based on PHRAs. It also supports preparedness efforts to respond to new COVID-19 variants, build system resilience using population-level and targeted protection measures, with limiting rights and the economy only where necessary.
10. This PHRA is intended to inform that end of August 2022 Cabinet decision. It may also inform decisions on the Epidemic Preparedness Notice in September 2022.

### **Summary of recommendations**

11. These recommendations represent a step-down from mandatory measures to more voluntary/guidance-based measures better suited to our current outbreak context.
12. This memo's specific recommendations based on the PHRA are to:
  - a. remove the post-arrival testing requirement for all arrivals to New Zealand and replace it with other targeted surveillance and information provision measures for travellers

- b. remove the COVID-19 vaccination requirement for all air and maritime arrivals to New Zealand (including for air crew)
  - c. retain the requirement for air travellers to New Zealand to provide information for contact tracing purposes prior to departure
  - d. remove the requirement for household contacts to quarantine for 7 days, and replace it with guidance to test daily for five days, pending the outcome of wider consultation
  - e. maintain the 7-day case isolation requirement at this time
  - f. revoke the COVID-19 Public Health Response (Vaccinations) Order 2021 and remove the remaining vaccination mandate for health and disability sector workers
  - g. retain mask requirements on public transport and in healthcare settings (including aged residential care) but remove mandates in other settings
  - h. remove the requirement for air travellers to New Zealand to not exhibit symptoms of COVID-19 and not be subject to a public health direction in another country.
13. While both Whaikaha and Manatū Hauora's Māori Health Directorate participated in the PHRA, due to time constraints, wider consultation has not been completed. We propose DPMC consult on the recommendations in this memo with Te Aka Whai Ora, Whaikaha, Te Rōpū Whakakaupao Urutā, the National Māori Pandemic Group, and any other agencies prior to submitting final advice to Cabinet.
14. While this memo is purely focused on public health advice on the basis of the available evidence and public health expertise, we believe further consultation is critical before Cabinet makes its final decisions for the Crown to meet its Tiriti obligations. In particular, the principle of partnership suggests engagement with Māori should occur before public health measures are withdrawn that may have a disproportionate impact on Māori.
15. We also consider further formal consultation should occur with other groups e.g. disabled people or at more risk of severe outcomes (e.g. older people and those with comorbidities) as part of informing Cabinet's decision-making.

## **PHRA recommendations and rationale**

### **1) Air and maritime border requirements**

16. The PHRA considered three aspects of the existing maritime and border requirements:
- a. post-arrival testing
  - b. traveller and aircrew vaccination
  - c. provision of information for contact tracing prior to departure.

#### **a) Post-arrival testing**

17. Post-arrival testing requirements, outside of managed isolation and quarantine (MIQ) arrangements, were first introduced on 28 February 2022, as part of the phased reopening of New Zealand's borders. These include at the:

- a. air border - all arrivals must take a day 0/1 and 5/6 RAT and report the result. If they receive a positive result, they must get a follow-up PCR to enable whole genome sequencing (WGS)
  - b. maritime border – since 2 May 2022, all cargo and fishing vessel crew must undergo post-arrival testing if coming ashore. The provision of tests (RAT and PCR) and reporting of results is managed through the local public health unit.
18. The current rationale for this measure is not designed to prevent COVID-19 cases entering the community, but rather is intended to be one of several surveillance tools for the early detection new COVID-19 variants of concern entering or circulating in New Zealand.
  19. The completion of contact details in the New Zealand Traveller Declaration (NZTD) system (which activates a Health Border Record) is a condition of departure from overseas ports. Once in New Zealand the post-arrival testing requirement is based on a high-trust model with no enforcement. Compliance with reporting RAT results at the air border is high, averaging 90 percent. RAT positivity rates have declined in recent weeks from a high of 4.7 percent to 2.7 percent.
  20. However, the number of people with positive RAT result subsequently obtaining a PCR test is much lower. This is likely due to the inconvenience of leaving isolation; an inability to access a PCR test facility nearby; or some being less motivated to get an invasive PCR test, the result of which has no material impact on their clinical management.
  21. Three-hundred positive PCR border samples are required for WGS each week to reliably detect a variant with one percent prevalence in arrivals that week.<sup>1</sup> There is a two-to-three-week lag from the time of arrival to the sample being WGS. If a highly transmissible variant was identified, it is (highly) likely that community transmission would have already occurred and been detected via other mechanisms e.g. wastewater surveillance, as shown with the most recent variants (BA2.75, 2.10, 4.6).

<p><b>PHRA recommendation</b></p>	<p>Mandatory post-arrival testing at the New Zealand air and maritime border should be removed and replaced with targeted surveillance and information provision measures for travellers, as it is no longer proportionate, is not currently enforced, and cannot be done quickly enough to prevent new variants entering New Zealand.</p>
<p><b>Summary of rationale</b></p>	<p>The current post-arrival testing requirements are no longer proportionate, nor able to be processed fast enough to prevent new variants entering the country.</p> <p>This is because a high and increasing volume of arrivals subject to the requirement and the number of WGS samples required for effective border WGS. There have been around 70,000 arrivals at the air border per week recently, estimating to increase to around 100,000 per week by the end of 2022.</p> <p>Furthermore, post-arrival testing is not the only available mechanism to detect new variants. Several other COVID-19 variant surveillance methods exist including:</p>

<sup>1</sup> Detection of the first incursions of one or two individuals is not possible.

	<p>a. PCR samples collected via community and hospital cases for WGS<sup>2</sup></p> <p>b. wastewater surveillance for community transmission, predicting trajectory of cases, potential healthcare burden and social/business/community disruption. This has shown to be reliable for characterising trends in variants (i.e., monitoring dominance)</p> <p>c. prevalence estimates via wastewater has also correlated very well with individual WGS testing in the community</p> <p>d. aircraft and airport toilet wastewater testing is being explored for COVID-19 surveillance (and potentially other pathogens) at the border. Pending validation, airport wastewater testing can begin in the coming weeks.<sup>3</sup> ESR is working with Christchurch Airport to start sampling there in the next few weeks. Auckland Airport testing should soon follow. Discussions with Wellington Airport start next week, and testing would start in a month.</p> <p>The current post-arrival testing requirement does not offer substantially greater benefit than other variant surveillance methods</p> <p><b>S9(2)(g)(i)</b> <span style="background-color: black; color: black;">[REDACTED]</span><sup>4</sup></p>
<p><b>Comment</b></p>	<p>Instead of the mandatory post-arrival testing regime, clear messaging and proactive support can be provided to enable arrivals with ready access to RATs if they are symptomatic and advice on where to obtain a free PCR test if they test positive. This would also include messaging on New Zealand’s requirements to isolate if positive. Digital solutions can also help the prioritisation WGS of positive PCR border samples.</p>

**b) Traveller and air crew vaccination requirements**

- 22. Currently all air arrivals, including air crew aged 17 years and over, and travellers who are not New Zealand citizens, residents, or Australians ordinarily resident in New Zealand, are required to have completed a primary course of vaccination with any COVID-19 vaccine approved by at least one government or approval authority. In May 2022, Ministers agreed to extend vaccination requirements until September 2022, as a measure to reduce the potential impact on the health system, with an earlier review.
- 23. Air crew and arrivals vaccination requirements were initially introduced in November 2021, in the context of the Delta variant. At that time, all arrivals entered MIQ, and the vaccination mandate was an additional tool to reduce transmission and the risk of COVID-19 being introduced into the community. Maritime border vaccination requirements for cruise ship passengers and crew and recreational vessels were introduced on 31 July 2022.

<sup>2</sup> Community WGS can help predict the trajectory of a more transmissible variant to estimate the potential burden on the healthcare system. Hospital case WGS helps determine if a variant is associated with severity in the New Zealand context and can assist with predictions on the potential impact on the healthcare system.

<sup>3</sup> Because of the different chemical treatment that airline and airport wastewater undergo, the sensitivity of this wastewater testing may not be the same as community wastewater testing.

<sup>4</sup> The cost of RAT kits for 70,000 air arrivals per week is just over \$2 million per week, while the full end to end cost to the Crown of the post-arrival testing regime has not yet been quantified.

<b>PHRA recommendation</b>	That vaccination requirements at the air and maritime border be removed as it is no longer justifiable.
<b>Summary of rationale</b>	<p>With Omicron, and the recognition that available vaccines are far less effective in reducing transmission, the current rationale is more about reducing the risk of severe illness, and the potential impact on the health system.</p> <p>This requirement now has limited public health benefit in reducing the burden on the health system and is therefore no longer considered proportionate in the current context.</p> <p>Most arrivals are not subject to this requirement (though this could change as more tourists visit New Zealand), and as there is widespread COVID-19 in the community, the context is substantially different from when the vaccination requirement was introduced.</p>
<b>Comment</b>	Air carriers and maritime vessels can still require evidence of vaccination as a requirement of carriage if they so choose.

**c) Provision of information for contact tracing prior to departure**

24. Prior to departure for New Zealand all air arrivals must complete the online NZTD.<sup>5</sup> This includes phone and email contact details while in New Zealand (including emergency contacts), and a travel history of countries visited in the past 14 days. If travellers do not complete the NZTD (and comply with other requirements under the COVID-19 Public Health Response (Air Border) Order 2021 (the ABO), such as evidence of vaccination) they cannot be issued with a Traveller Pass and cannot depart for New Zealand.
25. Traveller health information is sent via NZTD to the National Border Solution electronic register at Te Whatu Ora which creates a Border Health Record for each traveller. This information is primarily used to activate the post-arrival testing system including text and email alerts and for the monitoring and reporting of traveller post-arrival test results. However, if needed it could be used for COVID-19 contact tracing purposes.

<b>PHRA recommendation</b>	That the requirement to provide contact details and travel history information as a condition of being able to depart for New Zealand should be retained.
<b>Summary of rationale</b>	<p>No routine COVID-19 contacting tracing of arrivals currently occurs. In our current context, the requirement to provide contact details and travel history information prior to departure as a condition of being issued with a traveller pass and being able to depart for New Zealand, for the purposes of contact tracing, is not currently necessary when this information is also being collected upon arrival.</p> <p>However, as part of our ability to respond quickly to the potential need to contact trace any new variant, on balance the maintenance of this provision is deemed warranted.</p>

<sup>5</sup> If they are unable to complete an online declaration, they can complete a paper declaration which scanned upon arrival and the information is sent to the National Border Solution.

<b>Comment</b>	<p>If a highly concerning variant was detected overseas, contact tracing of recent arrivals may need to be put in place rapidly alongside other measures (i.e. border restrictions). Passenger data collected via NZTD could be used immediately to assist contract tracing efforts. If removed, Customs estimate it would take around one week to reinstate which represents a significant amount of lost time.</p> <p>S9(2)(f)(iv)</p>
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## 2) Isolation and quarantine for COVID-19 cases and household contacts

26. Since March 2022, the COVID-19 case isolation and household contacts quarantine period has been 7 days. Isolation of cases and quarantine of household contacts has reduced ongoing transmission by preventing infectious (or potentially infectious) people from having contact with others within the community.
27. The proportionality of quarantine of contacts is heavily dependent upon the probability that a contact will become a case. Currently the risk is reported to be approximately 80 percent, which underpins the efficacy of quarantine for contacts in modelling to reduce the rate of infectious individuals in the community.
28. Conversely, requiring household contacts to quarantine in the same household as a case for up to 7 days may increase their risk of becoming infected, particularly for those that live in crowded conditions. However, considering that the current variants are highly infectious it is probable that all household members will be exposed to the risk of infection unless strict isolation within the household is put in place.
29. There is ongoing concern regarding the pressure that isolation/quarantine places on workforces, education, health, and other critical services, and on wider society. But as case numbers decrease, the number of household contacts required to quarantine also decreases, which arguably lessens the impact of household contact quarantine. Conversely, isolation of infectious individuals may prevent widespread transmission through a workplace, resulting in critical shortages in staff.

<b>COVID-19 household contact quarantine</b>	
<b>PHRA recommendation</b>	The public health advice is that the requirement for household contacts to quarantine for up to 7 days should be replaced with guidance to test daily for 5 days.
<b>Summary of rationale</b>	<p>On the basis of proportionality, the current outbreak context, and overseas experience, daily testing of household contacts provides a sufficient risk mitigation if quarantine is removed. Daily testing rather than a 'test-to-leave' approach was favoured to support efforts to identify cases early.</p> <p>Daily testing should commence from when the first case in the household tests positive. In doing so, a household contact would no longer be required to stay home while they continued to test negative.</p>

	<p>Existing mechanisms and wide availability of rapid antigen tests across New Zealand will ensure there are minimal logistical issues.</p> <p>Australia’s approach was discussed. It involved removing the quarantine requirement for household contacts but retained additional precautions such as mask wearing outside the home, working from home, and avoiding vulnerable settings.</p> <p><b>S9(2)(g)(i)</b></p> <p>Therefore, noting lead times and the outcome of consultation, we consider that now is the right time to remove the requirement.</p> <p>Any household contacts who become symptomatic or sick must stay at home until they have had two negative RATs at least 24 hours apart and until 24 hours after symptoms resolve.</p>
<p><b>Comment</b></p>	<p>Modelling of the impact in the first month of implementation of removing household quarantine and replacing it with 5 days testing on infections, cases, and hospitalisations (relative to baseline) suggested the following impacts</p> <ul style="list-style-type: none"> <li>• Infections: increase from 297,000 to 372,000 (+25%)</li> <li>• Confirmed cases: increase from 188,000 to 248,000 (+32%)</li> <li>• Hospitalisations: increase from 4,050 to 4,940 (+22%)</li> </ul> <p>The modelling above assumed that 100% of household contacts would follow the recommended testing requirements, that RAT sensitivity is 75% for symptomatic cases, 60% for asymptomatic cases, and that no additional precautions are taken by household contacts.</p> <p>Further clinical consideration is needed regarding advice for those household contacts who are unable or unwilling to test. Potentially they should be encouraged or required to stay at home for 7-days (noting there would likely no longer be financial support available to enable this). It is acknowledged that the modelled increases in case numbers and hospitalisations are expected to have a disproportionate impact on Māori, Pacific and other vulnerable communities who experience a higher burden of severe disease and may be more likely to work in jobs where they cannot work from home when unwell.</p> <p>As household contacts who are critical workers can work if they are well enough, changes to household contact quarantine may not have a significant impact on these workforces.<sup>6</sup></p>
<p><b>COVID-19 case isolation</b></p>	
<p><b>PHRA recommendation</b></p>	<p>Maintain the 7-day COVID-19 case isolation requirement at this time.</p>

<sup>6</sup> However, anecdotally healthcare workers in hospitals and aged residential care who are caregivers of children are not utilising the essential worker household contact exemption if children are cases or contacts required to quarantine so there is likely to be some workforce benefit.



<p><b>Summary of rationale</b></p>	<p>Isolation of infectious cases to reduce community transmission remains an important way to suppress transmission of COVID-19 and subsequently higher numbers of cases, hospitalisations, and deaths.</p> <p>Removing 7-day case isolation while there is still a high degree of COVID-19 circulating around society risks prolonging the current COVID-19 outbreak, so that it is longer or more severe than necessary in its impact.</p> <p>There remains widespread support for retaining case isolation requirements from Medical Officers of Health and public health units throughout the country.</p>
<p><b>Comment</b></p>	<p>Case isolation requirements should be reviewed again four to six weeks after Cabinet decides on the other proposals in this package.</p> <p>Pathways also exist for healthcare workers who are COVID-19 positive to return to work during their isolation period. However, approximately 40% of healthcare workers are not well enough to return to work at the end of their isolation period.</p> <p>Certain communities are likely to be disproportionately impacted by any decision to remove 7-day case isolation. In particular, before removing this measure it will be important to engage with these communities, including representatives of older people, Māori, Pasifika, and disability communities.</p> <p>Any changes to isolation and quarantine settings need to be supported with clear guidance, technology changes, data monitoring and communications in multiple languages.</p>

### 3) Vaccination mandates (for health and disability sector workers)

30. The COVID-19 Public Health Response (Vaccinations) Order 2021 (the Vaccinations Order) requires certain health and disability sector workers to be vaccinated and boosted to work. It also places duties on persons conducting a business or undertaking (PCBUs) to remind workers of these requirements, prevent them working if they do not and to keep records of whether their workers are vaccinated.
31. This mandate was enacted to provide personal protection to workers in high-risk settings against COVID-19. It was also to help prevent transmission between workers and vulnerable people to whom they have a duty of care, or to those in public facing roles. Although there is limited data, two dose and first booster vaccination rates among mandated workers are estimated to be greater than 95 percent.
32. Population immunity is currently substantially more complex than when the vaccination mandate was introduced, when there was a clear demarcation in risk of infection between vaccinated and unvaccinated individuals. The range of different vaccination schedules, the time since vaccination, immunity due to infection and the role of new variants are now important variables in the risk of COVID-19 infection.

<p><b>PHRA recommendation</b></p>	<p>Revoke the Vaccinations Order and remaining vaccination mandates for health and disability sector workers as soon as possible.</p>
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<b>Summary of rationale</b>	The public health rationale for this measure no longer exists. This reflects the very high vaccination rate among the affected workforce and the overall reduced efficacy of vaccination against COVID-19 transmission. Focus has also now shifted from population level measures (e.g. mandate) to more individual measures (e.g. that it is more important that patients are vaccinated in the first place).
<b>Comment</b>	<p>The PHRA noted that it is important that any removal of this mandate be supported by strong communications. This reflects how contentious this has been for some in the affected workforce and how the removal could be interpreted by the public.</p> <p>Further, workers may still benefit from vaccinations where PCBUs consider they are required to comply with Health and Safety at Work Act 2015 obligations. It was also noted that continued vaccination mandates may also increase legal risk given the limited effectiveness of COVID-19 vaccines at preventing transmission and that COVID-19 infection has been so widespread in New Zealand.</p> <p>Depending on the timing of the revocation there may need to be an extension to the temporary exemption currently applied to healthcare workers who were exempt due to recent infection to avoid standing down or discontinuing employment of affected workers in the interim.</p>
<b>Next steps</b>	Separate advice from Manatū Hauora to the Minister for COVID-19 Response recommending the Vaccination Order be revoked will be provided early next week.

#### 4) Mask mandates

33. Mask requirements are set out in both the ABO for arrivals to New Zealand and in the CPF. Current masking requirements at Orange, and for arrivals on aircraft to New Zealand are set out in **Appendix 2**.
34. Comprehensive advice on the public health value of mask mandates was provided to the Minister for COVID-19 Response on 11 August 2022 [HR20221311].

<b>PHRA recommendation</b>	Retain mask requirements on public transport and in healthcare settings (including aged residential care) but remove mandates in other settings. Develop guidance to encourage ongoing use in other essential settings (e.g. supermarkets) like the approach with schools.
<b>Summary of rationale</b>	<p>This was considered an appropriate step-down option as we come out of winter and are reducing other requirements (e.g. household quarantine).</p> <p>Retaining mask requirements in essential close contact (e.g. public transport) and healthcare settings is commensurate with the changing risk profile. Other essential services (e.g. supermarkets) have shown to be lower risk settings. Modelling provided after the PHRA suggests that removing mask mandates and quarantine requirements for household contacts at the same time could increase infections and hospitalisations by 50-55% in the short-term, compared with only a</p>

	<p>22-25% increase if household quarantine were removed and mask mandates were maintained.</p> <p>Ongoing mask use is a highly useful "COVID legacy" but will require time to become a behavioural norm. Removal of all mandates at this time could decrease the ongoing adoption of mask use.</p> <p>It was noted that while reducing or removing mask mandates may provide individuals with greater freedom to make their own decisions in relation to risk, it may have the opposite effect for some as:</p> <ol style="list-style-type: none"> <li>people at higher risk of poor outcomes may feel less comfortable, and be at greater health risk taking part in everyday activities</li> <li>mandates take the onus off the person or organisation responsible to determine and enforce a policy</li> <li>mandates can also help people to feel comfortable to wear masks – it can be socially very challenging to be the only masked person in a room, or one of only a few people.</li> </ol> <p>The PHRA also noted that:</p> <ol style="list-style-type: none"> <li>survey respondents indicated a willingness to mask<sup>7</sup> but social norms to masking were variable with signs of waning adherence<sup>8</sup></li> <li>there was a question whether staff at health service facilities should be covered by the Order (currently only visitors are covered), or if it was more appropriate for each facility to put in place their own policy</li> <li>there would be an interaction between the removal of the household contact quarantine and any move to reduce mask requirements, which could have equity impacts.</li> </ol> <p>While there was not support for removing all current mask mandates, there was support for considering options to reduce requirements further over time if supported from a public health perspective.</p>
<p><b>Comment</b></p>	<p>Masks reduce transmission, but there is difference between the value of masks as a tool and mask mandates. The key between having a mask mandate and strongly recommending mask use is that evidence suggests adherence is higher when there is a mandate.<sup>9</sup> There is also evidence that the effectiveness of mask mandates, as with any repetitive health messaging, wanes over time.</p> <p>Key public health risks if mask mandates were removed include:</p> <ol style="list-style-type: none"> <li>risk of reduced adherence leading to increased transmission,</li> <li>risk that the outcomes would become more inequitable, as transmission to those most vulnerable could increase,<sup>10</sup></li> </ol>

<sup>7</sup> Attitudes and behaviours to CPF measures in the post-Omicron peak, prewinter context, June 2022 Report.

<sup>8</sup> TRA July 2022 Behaviour & Sentiment Topline Report.

<sup>9</sup> For example, one US study found that having a local mask mandate increased the odds of wearing a mask by nearly 3-fold (OR = 2.99, P = .0003) compared to no requirement to wear a mask and by 2-fold compared to a recommendation only.

<sup>10</sup> Māori, Pasifika, people with disabilities, and people living in areas of high deprivation are likely to be disproportionately affected if mask mandates were removed and replaced with strong recommendations. People in this groups are more likely to not be able to work from

	<p>c. the public may misinterpret the change as being a sign that ‘the danger has passed’.</p> <p>On the other hand, from a public health perspective, strongly recommending (rather than requiring) masks would have value in,</p> <ul style="list-style-type: none"> <li>a. supporting a stronger focus on ensuring that the interventions to encourage and support mask use were in place</li> <li>b. less stigmatising for disabled people unable to wear a mask</li> <li>c. responding to mask fatigue.</li> </ul>
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## Other matters

35. The PHRA did not consider the below but these reflect ongoing work or related matters.

### Point-of-care testing regulation

36. Separate advice for the Minister for COVID-19 Response is being prepared on the future regulation of point-of-care tests (POCTs) and was provided as context for the PHRA. The PHRA was not asked and did not take a decision in respect of POCT.

37. Currently, POCTs are regulated on an exceptional basis by the COVID-19 Public Health Response (Point-of-Care Tests) Order 2021. This regulation is out of step with other medical devices in New Zealand generally. Despite that, the ongoing regulation of POCT may be desirable from a public health perspective because:

- a. where measures rely on, and rights are limited by, a positive result from a POCT (e.g. 7 days isolation), it is desirable to ensure that POCT are safe and reliable, and
- b. as the primary method of testing at present, POCTs provide useful information on the broader incidence and transmission of COVID-19 in the community, informing our public health advice on other response measures.

38. There may be ways, other than formal regulation, to achieve the desired public health outcomes and these are being considered.

#### Next steps

39. Advice on the future regulation of POCT will be provided to the Minister for COVID-19 Response by the end of August 2022.

### Travellers to New Zealand not to exhibit symptoms or be under a public health direction

40. Under the ABO, travellers to New Zealand via air must not:

- a. exhibit COVID-19 symptoms (clause 16)
- b. be subject to a public health direction in another country (clause 17).

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home, to live in crowded households or multi-generational households, rely on public transport, to have underlying health conditions, less likely to access health services, or to have high level of health literacy. Those factors mean these people will often have both greater exposure to risk and a higher likelihood of poor outcomes if infected.

41. The purpose of clause 16 is to prevent further seeding of infection into the New Zealand community and to protect the New Zealand healthcare system. The purpose of clause 17 is to ensure that a person under a public health direction, that requires them to isolate or quarantine for example, does not breach that direction, and thereby increase the risk of seeding COVID-19 infection into New Zealand.

<p><b>ODPH Recommendation</b></p>	<p>The Office of the Director of Public Health (ODPH) recommends that the requirement for travellers to New Zealand to not exhibit symptoms of COVID-19 and not be subject to a public health direction in another country is now removed.</p>
<p><b>Summary of rationale</b></p>	<p>Given the current level of COVID-19 cases and hospitalisations in New Zealand, the decreasing strain on the health system, and that people may be pre-symptomatic or asymptomatic with COVID-19, there is no strong rationale for maintaining this requirement.</p> <p>We can instead revert to the previous (pre-COVID-19) processes for dealing with passengers who display symptoms of being unwell.</p> <p>In our current high trust-model, we would expect all people to follow any public health direction they may be under whether this is from another country or New Zealand. As there is no systematic way of verifying if a traveller is under a public health direction, this requirement is likely to be of little benefit. Airlines are also required to check the passenger compliance with all COVID-19 provisions, which may be undertaken at check-in, but is not systematic.<sup>11</sup></p>

### Re-escalation of measures in the future if required

*While we should shift away from the CPF we must remain prepared to dial up responses if needed*

42. Noting previous advice to you, we are well placed for a shift away from the CPF after winter as the COVID-19 risk and proportionality of mandatory measures wanes. However, with any shift to more voluntary measures, we must remain prepared to re-escalate public health measures should the context change significantly (e.g. if there is a new severe variant of concern).
43. This shift will require carefully balanced public health advice and targeted communications to maintain social licence. Providing communications particularly to those that experience inequitable COVID-19 outcomes (including that our mandatory measures can be reinstated if required) needs to be balanced with assurance that those measures would only be reinstated if there is a significant increase in public health risk.

*Any re-escalation of measures must be underpinned by a PHRA*

44. If required, a package of effective 'medium' or 'high' risk measures we know exists eg for another seasonal surge. Measures will be informed by PHRA and tailored at the time to respond to the specific variant and risk and. Messaging will require carefully balanced public and targeted communications to maintain social licence, including that measures

<sup>11</sup> For example, prior to submitting their NZTD online, travellers must tick a box that states: "I understand that, under the ABO, at the time of travel to New Zealand I must not be subject to a public health direction in any country (for example, directed to isolate or be tested for COVID-19); or have prematurely ended a period of isolation or quarantine in any country, except where they are exempt from a requirement".

can be escalated if required, but only where there is a significant increase in public health risk based on a PHRA.

*PHRAs ensure the COVID-19 response remains effective, proportionate, and justifiable*

45. Since the start of the pandemic, New Zealand’s COVID-19 response has been informed by PHRAs based on current outbreak alongside the latest evidence. PHRAs recommend an optimal calibration of public health measures to best manage the outbreak that:
  - a. are effective, proportionate, and justifiable from a public health and New Zealand Bill of Rights Act 1990 (NZBORA) perspective, especially mandatory measures
  - b. remain subject to regular and robust public health review
  - c. are not retained for longer than necessary (helping to maintain social licence).
46. Noting that, future PHRAs should continue to be guided by the following principles:

<i>Proportionality</i>	Where requirements have human rights, economic or social impacts, the least restrictive measures should be applied to achieve an outcome, and rights should be restored as soon as possible.
<i>Relativity</i>	We should treat COVID-19 relative to other infectious diseases that pose a threat to the health and wellbeing of New Zealanders.
<i>Te Tiriti o Waitangi</i>	Consideration must include the Crown’s obligation to actively protect Māori health, interests and tino rangatiratanga.
<i>Maintaining social licence</i>	Public support for the overall response and compliance with any measures is essential for a successful ongoing strategy. Measures are most effective people when understand them (and rationale).
<i>Protecting vulnerable populations</i>	We need to ensure equity and protecting vulnerable populations remain a priority throughout the response.
<i>Risk mitigation</i>	Requirements must materially contribute to response objectives, with the benefits and risks of measures clearly understood.
<i>Strategic alignment</i>	How, when, and why measures are put in place, or removed needs to consider the impact on the integrity of the response overall and alignment with other measures.
<i>Future-focused and adaptive</i>	We must continuously assess the COVID-19 situation and adapt, based on the best science and evidence available, while also remaining attuned to the developments in other jurisdictions, mindful of new variants that may require bespoke responses.

*Escalation of measures in a high-risk situation (e.g. for a new severe variant of concern*

47. As part of our preparedness planning, the COVID-19 Variants of Concern Strategic Framework considered a response to a ‘worst case’ scenario with a variant of concern that has high clinical severity and high immune escape.
48. A package of measures has been identified that could be used in that scenario, such as lockdowns, border or movement restrictions and other measures, but there will be a

high threshold for using these. Our starting position will be targeted measures aimed to protect the most vulnerable while minimising wider societal disruption.

49. Work is currently underway with DPMC and other agencies to ensure that we have the legal framework, and we are operationally prepared to enable the implementation of those mandatory measures, such as lockdowns, should they be required in the future.

## Equity

50. COVID-19 continues to worsen pre-existing health inequities for many groups, particularly those underserved by the existing system. This is often due to overlapping social, clinical, or occupational risk determinants.
51. The recommendations in this memo will have a disproportionate effect on those more at-risk populations, including Māori, Pacific Peoples, disabled and older people. Therefore, effective communication of the changes must occur to ensure that vulnerable groups understand the nature of the changes and how they can take steps to protect themselves e.g. through vaccination or mask use.
52. As shown in Appendix 1, older people are more likely to be hospitalised and this is reflected in the latest data. As the virus takes longer to move through this population due to this group having fewer social interactions it may lead to a higher hospitalisation burden over a longer period beyond winter.
53. Pacific Peoples continue to be disproportionately affected by COVID-19. Moreover, they continue to experience long-standing inequitable health outcomes and service use. Recent data shows Pacific Peoples are the demographic most hospitalised for COVID-19 and their COVID-19 mortality rate is four times greater than European or Other ethnicities. This is further compounded by the severity of the 2022 flu season. Others who have high deprivation have a COVID-19 mortality rate 3.1 times higher than those with low deprivation.<sup>12</sup>
54. Disabled people and those with underlying medical conditions are more likely to be hospitalised or require medical intervention/support if they test positive with COVID-19. While the PHRA supported removing the requirement that household contacts quarantine and instead complete daily RATs for 5 days, this may present an equity risk for disabled people, who have difficulty in accessing testing resources. Whaikaha advise that extra support and strong communication is needed to ensure disabled people can meet this new requirement.
55. Due to time constraints, further comprehensive consultation has not been completed with Māori and Pasifika. It is important that consultation on these changes is carried out because of the potential impacts they may have on these groups. Given that, any stepping down of mandatory measures will need to be accompanied by close monitoring of how the changes impact vulnerable populations.

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<sup>12</sup> Age-standardized and controlled for vaccination status but is affected by lower case reporting in highly deprived areas.

## Te Tiriti o Waitangi Analysis

56. Demonstrating a commitment to and embedding the Te Tiriti and achieving Māori health equity remain a key COVID-19 health response priority. The COVID-19 outbreak has worsened the already inequitable health outcomes for Māori.
57. In December 2021, the Waitangi Tribunal's Haumarū: COVID-19 Priority Report found that the Government's rapid transition into the CPF breached Te Tiriti principles of active protection, equity, tino rangatiratanga, partnership and options. The Crown would remain in active breach until the Waitangi Tribunal recommendations were addressed or if a similar rapid shift from the CPF's mandated measures occur.
58. Given that the PHRA recommends stepping down several mandated measures such as, the Māori Protection Plan's two key drivers are critical. Related response initiatives should continue to have a positive impact for Māori, including the ongoing Winter Package measures. This includes as free medical and N95 masks, greater access to antivirals for those that are eligible<sup>13</sup>, and COVID-19 and flu vaccinations. However, a future PHRA may need to further consider measures to assist Māori if infection rates and hospitalisations do not improve in the interim.
59. As noted earlier, comprehensive consultation with Māori groups on the proposed changes to quarantine settings have not yet occurred. The PHRA emphasised the need to consult with Māori on changes before approving them, to uphold Te Tiriti obligations and understand how the changes may impact Māori people, whānau, and communities.
60. Effectively communicating and monitoring the impacts of any changes to the outbreak response on Māori is essential to ensure that the ongoing response of the health system gives effect to the principles of Te Tiriti. Manatū Hauora continues to monitor the impact of COVID-19 on Māori, and this will be formally reported on in the next COVID-19 Māori Health Protection Plan Monitoring Report in late 2022.

## New Zealand Bill of Rights Act 1990 (Crown Law Office Advice)

61. S9(2)(h) [Redacted]
62. S9(2)(h) [Redacted]
63. S9(2)(h) [Redacted]

<sup>13</sup> In the week ending 24 July 2022, nine percent of antiviral courses went to Māori while they accounted for 10 percent of reported COVID-19 cases.



S9(2)(h)

64. S9(2)(h)

65. S9(2)(h)

66. S9(2)(h)

S9(2)(h)

67. S9(2)(h)

68. S9(2)(h)

69. S9(2)(h)

S9(2)(h)

70. S9(2)(h)

## Next Steps

71. Pending your approval, this memo will be provided to the Department of the Prime Minister and Cabinet to inform the overarching paper Minister Verrall will take to Cabinet’s Social Wellbeing Committee on 31 August 2022.

## Recommendations

It is recommended that you:

1.	<p><b>Note</b> that on 17 August 2022, Manatū Hauora conducted a Public Health Risk Assessment (PHRA) to consider:</p> <ul style="list-style-type: none"> <li>i. air and maritime border requirements (post-arrival testing, vaccination requirement for travellers and aircrew, provision of information)</li> <li>ii. isolation and quarantine periods for cases and household contacts</li> <li>iii. vaccination mandates for health and disability sector workers</li> <li>iv. mask mandates.</li> </ul>	<b>Noted</b>
2.	<p><b>Note</b> that the PHRA considered evidence that showed that:</p> <ul style="list-style-type: none"> <li>i. by all measures New Zealand’s current COVID-19 outbreak is waning, with reducing case numbers, hospitalisations, and deaths</li> <li>ii. modelling suggests this trend should continue for some time</li> <li>iii. the proportionality of many mandated response measures had significantly reduced due to the changing outbreak context.</li> </ul>	<b>Noted</b>
3.	<p><b>Agree</b> to recommend that Ministers:</p>	
	<ul style="list-style-type: none"> <li>i. remove the post-arrival testing requirement for all arrivals to New Zealand, replacing it with targeted surveillance and information provision measures for travellers</li> </ul>	<b>Yes</b>
	<ul style="list-style-type: none"> <li>ii. remove the COVID-19 vaccination requirement for all air and maritime arrivals to New Zealand, including air crew</li> </ul>	<b>Yes</b>
	<ul style="list-style-type: none"> <li>iii. retain the requirement for air travellers to New Zealand to provide information for contact tracing purposes prior to departure</li> </ul>	<b>Yes</b>
	<ul style="list-style-type: none"> <li>iv. remove the requirement for air travellers to New Zealand to not exhibit symptoms of COVID-19 and not be subject to a public health direction in another country.</li> </ul>	<b>Yes</b>
	<ul style="list-style-type: none"> <li>v. remove the requirement for household contacts to quarantine for up to 7 days, and replace with guidance to test daily for 5-days</li> </ul>	<b>Yes</b>
	<ul style="list-style-type: none"> <li>vi. maintain the 7-day case isolation requirement at this time</li> </ul>	<b>Yes</b>

	vii. revoke the COVID-19 Public Health Response (Vaccinations) Order 2021 and remove of the remaining vaccination mandates for health and disability sector workers	<b>Yes</b>
	viii. retain mask requirements on public transport and in healthcare settings (including aged residential care) but remove mandates in other settings.	<b>Yes</b>
5.	<b>Note</b> that the advice contained in this memo may inform work to change COVID-19 policy settings, such as the amendment of COVID-19 orders.	<b>Noted</b>
6.	<b>Agree</b> that a further PHRA will be held approximately a month after Cabinet decisions on the matters above to again review remaining mandatory measures (e.g. case isolation, mask mandates, provision of information for contact tracing prior to departure to New Zealand).	<b>Yes</b>
7.	<b>Agree</b> to forward this memo to the Department of the Prime Minister and Cabinet (DPMC) inform its overarching paper to Cabinet's Social Wellbeing Committee on 31 August 2022.	<b>Yes</b>
8.	<b>Note</b> that once you approve this memo, we will provide it to Te Whatu Ora, Te Aka Whai Ora, and Whaikaha and suggest they provide any feedback to DPMC for its Cabinet paper noted above.	<b>Noted</b>



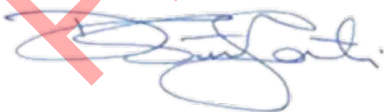
Dr Andrew Old  
**Deputy Director-General**  
Public Health Agency  
Manatū Hauora

Date: 23 August 2022



Dr Nicholas Jones  
**Director of Public Health**  
Public Health Agency  
Manatū Hauora

Date: 23 August 2022



Dr Diana Sarfati  
**Director-General of Health**  
Manatū Hauora

Date: 23 August 2022

## Appendix 1: Outbreak analysis and modelling

### Community cases in all regions continue to taper off

1. Nationally, the 7-day rolling average of reported case rates was 0.9 per 1,000 population for the week ending 14 August. This is a 20 percent decrease from the previous week, which was 1.1 per 1,000. This continues to suggest that we have passed the peak of the current outbreak wave.
2. In the past week, all Districts experienced a decrease in reported case rates. The highest rate was in the South Canterbury District (1.1 per 1,000) and the lowest rate was in Tairāwhiti District (0.7 per 1,000). In the past week, the Northern region rate (0.9 per 1,000) decreased by 11 percent, Te Manawa Taki (0.8 per 1,000) decreased by 17 percent, Central region (0.8 per 1,000) decreased by 29 percent and Te Waipounamu (0.9 per 1,000) decreased by 29 percent.
3. For the week ending 14 August, estimates suggest that 12 per 1000 (416/34,628) of healthcare workers (HCW) tested positive a decreased from the 14 per 1000 HCWs the week prior.

### Wastewater trends in the past week are mixed but have tapered off like cases

4. Nationally, wastewater viral levels correlate with reported cases (Epi curve), both trending downwards, **Figure 1** below, in the week to 14 August 2022. Some mixed results across the regions Levels of viral RNA in wastewater have plateaued overall. Compared to the previous week, 33 percent of sites have increased SARS-CoV-2 levels, and 38 percent decreased levels.

Figure 1 - National SARS-CoV-2 wastewater trends during the weeks from 6 February – 14 August 2022

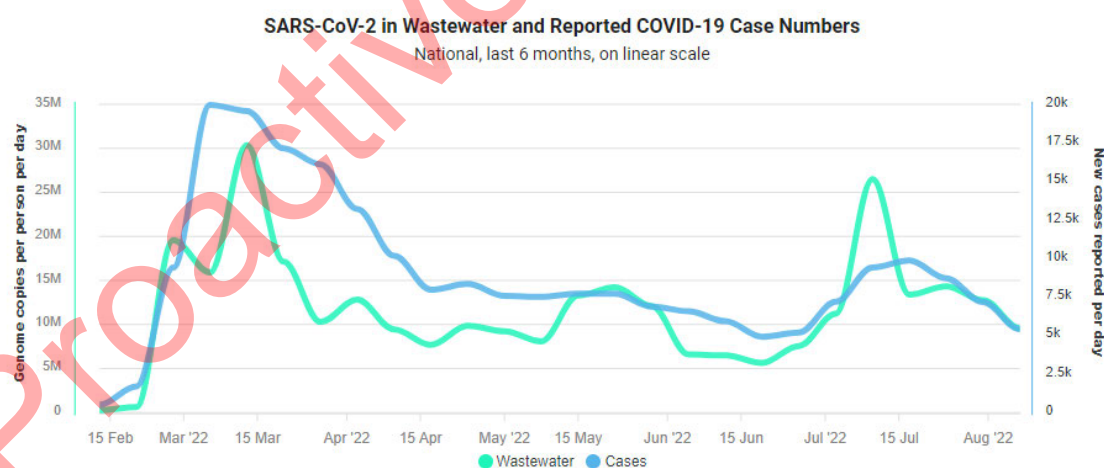


Figure 1: The average SARS-CoV-2 genome copies detected per person per day in wastewater for Aotearoa, along with the reported case numbers.

### Hospital admission rates have slightly decreased

5. In the week ending 7 August 2022, the COVID-19 hospital admissions rate decreased.<sup>14</sup> In that period it was 0.015 per 1,000 population, while in early March 2022 it was just over 0.020 per 1,000 population.

<sup>14</sup> New hospital admissions who had COVID-19 at the time of admission or while in hospital; excluding hospitalisations that were admitted and discharged within 24 hours. This data is from districts with tertiary hospitals.

6. Older populations continue to account for the most hospital admissions. Admission rates by age was highest for those who are 90 years and older, followed by those who are between 80-89 years old and those who are 70-79 years old. However, admission rates among these age groups decreased slightly after reaching the highest they have been this year in the week prior.
7. For the week ending 14 August 2022, tertiary hospital admission positivity has tapered with a 7-day rolling average of 2.8 percent (442/15,982). Preliminary analysis indicates a large majority of cases who are admitted to hospital, test positive and are confirmed as a case on the day of their hospitalisation.
8. Pacific Peoples had the highest cumulative incidence rate of hospitalisation with COVID-19, which was 1.4 times higher than Māori, 3.4 times higher than European or Other ethnicity and 3.6 times higher than Asian Peoples.

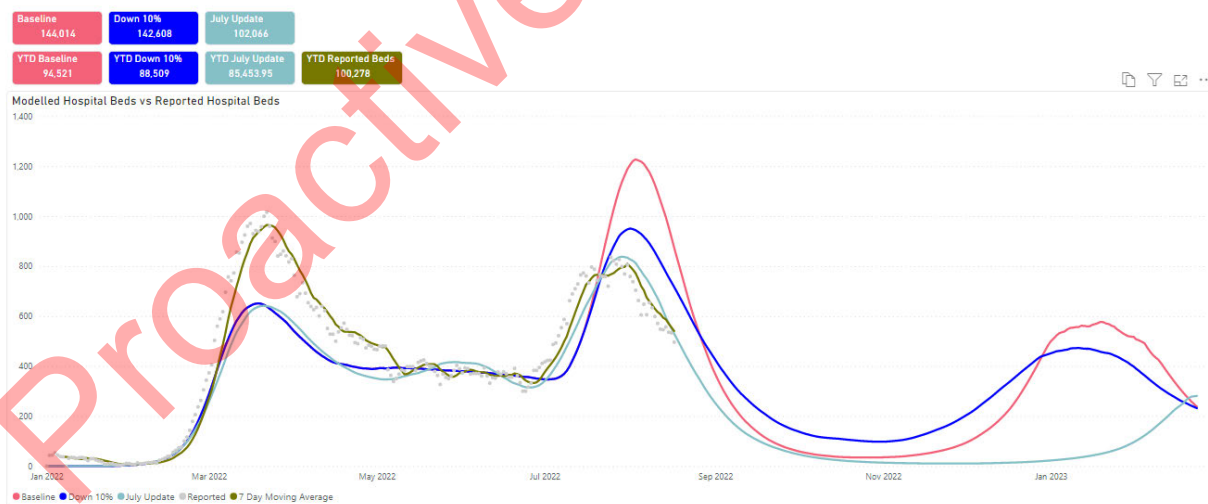
*Daily hospital occupancy has also decreased*

9. For the week ending 14 August 2022, the national daily hospital occupancy averaged per week decreased by 11 percent from the previous week to 11.9 per 100,000. In the past week, daily hospital occupancy averaged per week decreased across all regions. Northern decreased by 8 percent (11.3 per 100,000), Te Manawa Taki decreased by 23 percent (11.5 per 100,000), Central increased by 5 percent (11.3 per 100,000) in the past week, and Te Waipounamu decreased by 15 percent. (13.5 per 100,000).

*Modelling scenarios currently and future projections*

10. Currently the actual hospital occupancy rate is tracking very close to July update scenario (the light blue line) in **Figure 2**. CMA projected a peak between late July and early August 2022 approximately 800 daily hospitalisations a day.

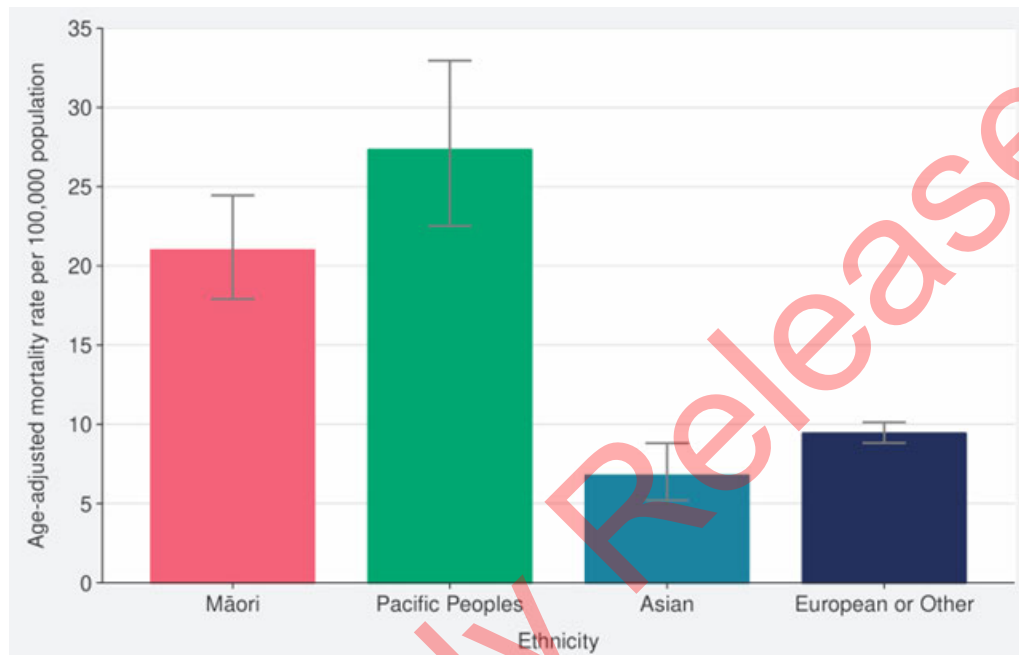
Figure 2 – Modelled National Hospital Occupancy Compared with Observed Nationally 17 August 2022



11. Longer term, modelling anticipates a wave in the coming summer primarily due to waning immunity, assuming a new, more transmissible variant does not emerge (see **Figure 2** above of modelling projected out to February 2023).
12. In general, rates are expected to increase and decrease over time. Another consideration is that cases and hospitalisations may not decline at the same rate they increased, and we should consider the possibility of a 'plateau' as experienced following the recent BA.2 wave, that was not anticipated by the modelling.

13. Analysis undertaken to assess hospitalisation risk from COVID-19 has found that disparities in hospitalisation risk by ethnicity, deprivation and vaccination are clearly observed after adjusting (age-standardising) for differences in age demographics. Pacific Peoples had the highest cumulative incidence rate of hospitalisation with COVID-19, which was 1.4 times higher than Māori ethnicity, 3.4 times higher than European or Other ethnicity and 3.6 times higher than Asian Peoples (see **Figure 3** below).

Figure 3 - Age-standardised cumulative incidence (and 95% confidence intervals) of hospitalisation with COVID-19 by ethnicity, March 2020 to 14 August 2022

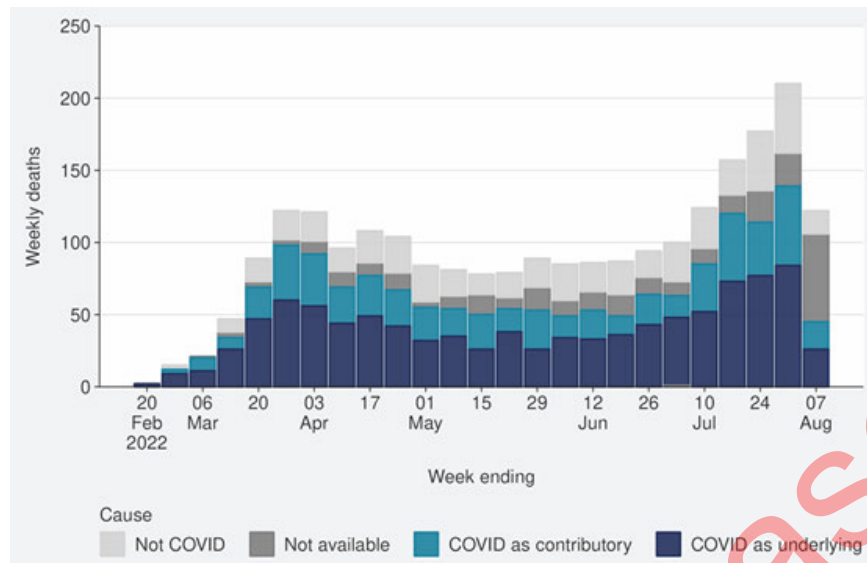


14. Similarly, for total COVID-19 attributed mortality rates by ethnicity, Pacific Peoples had the highest rate which was 1.4 times higher than Māori ethnicity, 3.1 times higher than European or Other ethnicity and 4.2 times higher than Asian ethnicity.
15. Confidence intervals overlapped between Māori and Pacific People; and between Asian and European or Other, which suggests that the difference in mortality rates between those groups is not significant. Mortality rates for Asian and European or Other are significantly lower than mortality rates for Māori and Pacific Peoples.

*Mortality rates are at their highest level this year but show signs of tapering off*

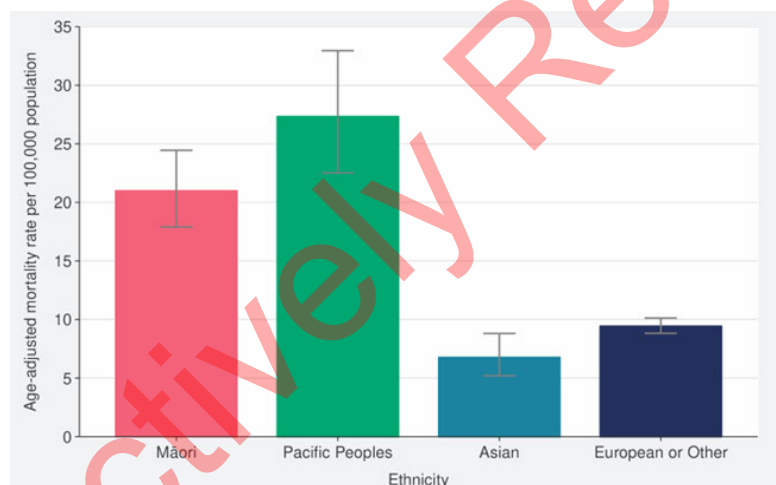
16. Mortality rates are likely to decrease slowly in the coming weeks due to mortality rates trending behind case rates.
17. From March 2020 to 14 August 2022, there were 2,497 deaths with COVID-19 infection who died within 28 days of being reported as a case and/or with the cause being attributable to COVID-19 (that is an underlying or contributory cause).
18. A review of some of these cases indicated COVID-19 was the underlying cause of 1,108 (49 percent) of deaths and a contributing factor to a further 618 deaths (23 percent).

Figure 4 – Weekly death attributable to COVID-19 or not



19. Total COVID-19 attributed mortality rates by ethnicity, Pacific Peoples had the highest rate which was 2.9 times higher than European or Other and 4 times higher than Asian.

Figure 5 – Age-adjusted mortality rate per 100,000 population by ethnicity



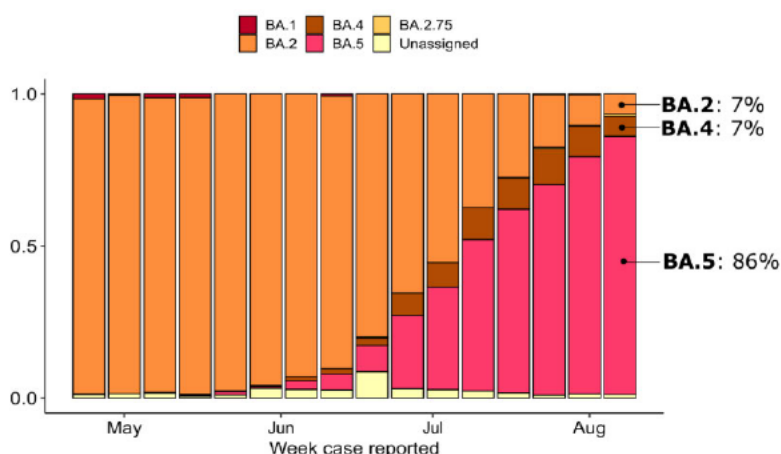
Case rates across all age groups have declined over the past week

20. Reported case rates decreased across all age groups in the past week. Nationally in the week ending 14 August, reported case rates in the 65+ age group (those most risk of severe outcomes) decreased 24 percent to 0.8 per 1,000 from the previous week. Rates in Asian (1.0 per 1,000) and European or Other (0.9 per 1,000) ethnicities remained higher than those for Māori (0.7 per 1,000) and Pacific Peoples (0.6 per 1,000).

BA.5 continues to increase its dominance

21. The frequency of BA.5 in community samples over the past few weeks continues to increase. As shown in **Figure 6** below, BA.5 now accounts for 86 percent of sequenced community cases in the past week, up 16 percent from the time of the 27 July 2022 CPF colour review, while BA.4 cases reduced five percent from 12 percent to seven percent.
22. A continued (relative) growth advantage of BA.5 over other variants remains. This shows BA.5's ongoing dominance may be due to it having a greater rate of reinfecting individuals who have already had earlier variants.

Figure 6 - Frequency of Variants of Concern in community cases ESR COVID-19 Genomics Insights Report 10 August 2022



### Sequenced border cases are largely reflecting community cases

23. In the period 23 July to 5 August 2022, WGS of 751 border samples showed that BA.2 accounted for six percent, BA.4 accounted for 10 percent, and BA.5 accounted for 83 percent. Fewer than two percent of border WGS were BA.2.75.
24. A very small number of recent subvariant BA.2.75 continue to be detected in the community and border with fifteen cases reported in the two weeks since 23 July 2022. It is probable that small numbers of BA.2.75 are transmitting within the New Zealand community, but it is unlikely to have a substantial growth advantage compared to BA.5.
25. Since mid-June 2022, ESR have detected a total of 46 BA.4.6 cases in New Zealand, with 25 detected in the previous fortnight (eight in the community, 17 at the border).

### Modelling of the impact of mandates

26. Preliminary modelling has considered the impact of mandates relating to masks, contact quarantine and case isolation. Four scenarios modelled are described below in **Table 1**.<sup>15</sup>
  - a. Removal of mask mandates is modelled as significantly reducing mask usage, resulting in a 20 percent increase in the risk of transmission in most settings.
  - b. Modelling assumes 100 percent of household contacts comply with testing recommendations, that contacts do not follow precautions when not quarantining and that RAT sensitivity is 75 percent for symptomatic cases and 60 percent for asymptomatic cases.
  - c. Removal of mandated case isolation is assumed to result in a 50 percent of people no longer isolating, reflecting some adherence to guidance and incomplete compliance with the current isolation mandate.

Table 1 – Modelling scenarios related to masks, contact quarantine and case isolation

	Mask mandates	Contact quarantine	Case isolation
<b>Status quo</b>	CPF Orange	7-days, two tests	Mandated 7-days
<b>Scenario 1</b>	Guidance only	No quarantine, daily tests for 5-days	Mandated 7-days

<sup>15</sup> Please note, these results use updated modelling which is not consistent with the modelling used for household quarantine changes. This updated modelling takes into account that we are likely to expect lower case and hospitalisation numbers following the BA.5 wave.



<b>Scenario 2</b>	Guidance only	No quarantine, test if symptomatic	Mandated 7-days
<b>Scenario 3</b>	Guidance only	No quarantine, test if symptomatic	Guidance 7-days with 50% uptake

27. **Table 2** below shows the impact of these modelled changes for each scenario.
- All result in an increase in the effective reproductive number and a large short-term increase in infections, cases, and hospitalisations.
  - Relative increases in long-term infections, cases and hospitalisations are significantly lower, due to infection-induced immunity slowing the rate of transmission.
  - Across the three mandates, case isolation has the largest impact on impact, followed by mask mandates and contact quarantine.

Table 2 - Impact of modelled changes on infections, cases, and hospitalisations

	Short-term impact (cumulative from 15 days after implementation to 45 days after implementation)			Long-term impact (cumulative for a year after implementation)		
	Cumulative infections	Cumulative cases	Cumulative hospital admissions	Cumulative infections	Cumulative cases	Cumulative hospital admissions
<b>Status quo (0%)</b>	77,864	31,840	297	1,817,500	748,430	6,967
<b>Scenario 1 (8.5%)</b>	119,869 (+54%)	47,477 (+49%)	440 (+48%)	2,001,402 (+10%)	825,000 (+10%)	7,836 (+12%)
<b>Scenario 2 (11%)</b>	136,261 (+75%)	53,477 (+68%)	495 (+67%)	2,051,091 (+13%)	845,420 (+13%)	8,077 (+16%)
<b>Scenario 3 (18.5%)</b>	200,294 (+157%)	76,478 (+140%)	707 (+138%)	2,190,426 (+21%)	903,270 (+21%)	8,763 (+26%)

## Appendix 2: Summary of mask requirements

### At the Orange setting of the CPF

Orange	
<b>Face masks</b>	<p><i>Face masks</i> - required for any person over 12 years of age:</p> <ul style="list-style-type: none"> <li>on public transport, school transport, arrival, and departure points for public transport service</li> <li>parts of premises that are open to the public at: retail business or service, public facilities (excluding swimming pools), pharmacies, veterinary services or animal health and welfare services, court or tribunal, specified social service, NZ Post premises, premises operated by a central government agency, a local authority, or the New Zealand Police</li> <li>at the premises of a health service, but only if the person is not a patient or worker of the health service.</li> </ul> <p>Medical-grade face masks required for workers (when working with the public) at:</p> <ul style="list-style-type: none"> <li>hospitality businesses</li> <li>close-proximity businesses</li> <li>election workers at a voting place</li> <li>workers at an event</li> <li>border workers.</li> </ul>
<b>Exceptions</b>	The same set of face mask exceptions (eg where exempt, eating, outdoors, emergencies, exercising etc) apply.

### For arrivals to New Zealand (under the Air Border Order)

<b>Face masks</b>	<p><i>A person must wear a face covering throughout the period that a person is:</i></p> <ul style="list-style-type: none"> <li>on board any aircraft that carries the person on their direct flight or connecting flights to New Zealand; and</li> <li>at their port of arrival (ie at an airport)</li> </ul>
<b>Exceptions</b>	<p>This requirement does not apply to:</p> <ul style="list-style-type: none"> <li>a person is under the age of 12 year or has a physical or mental illness or condition or disability that makes wearing a face covering unsuitable, or</li> <li>when taking medicine, when eating or drinking, or</li> <li>when in a defined and enclosed space that is separate from the passenger area of a craft, or communicating with a person who is deaf and visibility of the mouth is essential for communication, or</li> <li>when asked to remove the face covering to ascertain a person's identity, or</li> <li>when wearing a face covering is not safe, or</li> <li>in an emergency or when the removing of the face covering is required by law.</li> </ul>