MANATŪ HAUORA
MINISTRY OF HEALTH

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8 December 2022

s 9(2)(a)

By email: s 9(2)(a)
Ref: H2022014809

Tēnā koe s 9(2)(a)

Response to your request for official information

Thank you for your request under the Official Information Act 1982 (the Act) to Manatū Hauora (the Ministry of Health) on 13 October 2022 for information about the Pfizer Comirnaty COVID-19 vaccine. Each part of your request is responded to below.

> *1) Any analysis undertaken or held by any of you about the safety and/ or effectiveness of the second booster for Covid-19 and/ or whether or when benefits exceed risks. Please include any explanation about what "safe and effective" means in the context it was used to promote the PfizerVax to the public.*
> *2) The evidence relied on for the above assessment/s and any assumptions made*

Information within scope of this part of your request is publicly available at: www.health.govt.nz/system/files/documents/pages/cv_tag_second_boosters_update.pdf.

Detailed information on vaccine effectiveness and the latest evidence is available here: www.health.govt.nz/covid-19-novel-coronavirus/covid-19-resources-and-tools/covid-19-science-news.

> *3) Any communications within Min Health and/ or between any Minister about the safety and/ or effectiveness of the second booster*
> *4) any communications between any Minister, Ministerial advisors and/ or Min Health on the one hand and the medicines regulator "Medsafe" or any representative of Medsafe or any of the committee that advise Medsafe about the safety and/ or effectiveness of the second booster and/ or whether the benefits exceed to risks and/ or any differences between differ groups*
> *6) any information about messaging to be used by any Minister and/ or MinHeath or any other publicly funded organisation in NZ that promotes vaccine use in relation to the second booster for Covid and the circumstances when it is or is not recommended and/ or the reasons for this advice.*

These parts of your request are refused under section 18(e) of the Act, as the information requested does not exist. Please note, no application has been provided to Medsafe regarding the use of a fourth dose (or second booster dose) of the Comirnaty (Pfizer) COVID-19 vaccine. Further information about the approval status of COVID-19 vaccines applications received by Medsafe is available at: www.medsafe.govt.nz/COVID-19/status-of-applications.asp.

However, for your interest I have decided to attach to this letter a briefing titled: '*Advice on Second COVID-19 Boosters'*. Please note, some information has been withheld under section 9(2)(a) of the Act, to protect the privacy of natural persons. Where information is withheld under section 9 of the Act, I have considered the countervailing public interest in releasing information and consider that it does not outweigh the need to withhold at this time.

> *5) any advice from ie to any of you, relevant to the amendment of the Medicines Act to add section 34A to provide for the DG to authorize off label use of Covid medicines including any analysis of the effects s34A would or may have on the integrity of the NZ medicines regime, public confidence in the Medicines regime and who is liable in the event of harm caused by off label use of a medicine in accordance with s34A*

Information within scope of this part of your request is outlined in the Health Select Committee's Medicines Amendment Bill (No 2) report, which is publicly available at: www.parliament.nz/resource/en-NZ/SCR_125230/56e2519170b7611eb4055efd3112901d1054d57f.

In any case, treatment harm caused by COVID-19 vaccination is covered by ACC if the criteria for treatment injury are met. This means that there's a physical injury caused by the vaccination, that's not a necessary part or ordinary consequence of the treatment. Further information is on ACC's website: www.acc.co.nz/covid-19/providers/general-covid-19-provider-information.

> *7) any information to show when and why messaging and claims about safety and effectiveness of the Covid vaccines changed. Please include any internal or external advice about the use of "safe and effective" in relation to the "PfizerVax" or any other Covid vaccine including information to show any concerns raised about the use of the words "safe and effective" in relation to a novel vaccine that had only Provisional Consent from the NZ regulator Medsafe and when stage 3 safety trials were not yet completed and after reports that the vaccine may cause death or serious adverse effects.*
> *8) any analysis about the effectiveness of the PfizerVax or other Covid vaccines to a) prevent infection, b) prevent transmission c) prevent hospitalisation d) to prevent death and/ or e) to prevent reinfection and also any analysis about the effectiveness of Remdisiver and other unapproved and/ or off label "Covid" treatment drugs to affect the outcomes of the above.*

Advice from the COVID-19 Vaccine Technical Advisory Group (CV TAG) on the COVID-19 vaccines and evidence-based recommendations is publicly available at: www.health.govt.nz/about-ministry/leadership-ministry/expert-groups/covid-19-vaccine-technical-advisory-group-cv-tag.

Further information about the effectiveness of the COVID-19 vaccine against specific variants is available at: www.health.govt.nz/covid-19-novel-coronavirus/covid-19-resources-and-tools/covid-19-science-news. This includes information about vaccine effectiveness against infection, transmission, hospitalisation, death, and reinfection.

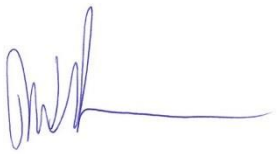
> *9) Minister Verrall appears to have adopted a more measured approach to claims than former Minister Hipkins. Please provide information to show the views held by Minister Verrall and/ or shared by Minister Verrall to Min Health, Medsafe, other individual Ministers, to Cabinet, and/ or to communications teams on claims about the safety and effectiveness of the PfizerVax, which were based in any way on her personal expertise in microbiology and / or immunology. Please include any such information when Minister Verrall was Associate Minister and/or Minister.*

I have been advised that you have made the same request to the Minister for COVID-19 Response, Hon Dr Ayesha Verrall (AVOIA126 refers). I refer you to the Minister's response for this part of your request.

Under section 28(3) of the Act, you have the right to ask the Ombudsman to review any decisions made under this request. The Ombudsman may be contacted by email at: info@ombudsman.parliament.nz or by calling 0800 802 602

Please note that this response, with your personal details removed, may be published on the Manatū Hauora website at: www.health.govt.nz/about-ministry/information-releases/responses-official-information-act-requests.

Nāku noa, nā



Dave Henderson
Interim Group Leader, Intelligence, Surveillance and Knowledge
Public Health Agency | Te Pou Hauora Tūmatanui

MINISTRY OF HEALTH

Briefing

Advice on Second COVID-19 Boosters

Date due to MO:	9 September 2022	**Action required by:**	N/A
Security level:	IN CONFIDENCE	**Health Report number:**	HR20221432

To: Hon Dr Ayesha Verrall, Minister for COVID-19 Response

Consulted: Health New Zealand: ☒ Māori Health Authority: ☐

Contact for telephone discussion

Name	Position	Telephone
Dr Diana Sarfati	Director General of Health	S9(2)(a) [redacted]
Dave Henderson	Lead Intelligence Surveillance & Knowledge, Public Health Agency	

Minister's office to complete:

☐ Approved	☐ Decline	☐ Noted
☐ Needs change	☐ Seen	☐ Overtaken by events
☐ See Minister's Notes	☐ Withdrawn	

Comment:

Advice on Second COVID-19 Boosters

Security level:	IN CONFIDENCE	**Date:**	8 September 2022
To:	Hon Dr Ayesha Verrall, Minister for COVID-19 Response		

Purpose of report

1 This briefing responds to your request for further advice on second COVID-19 booster vaccinations. Specifically, this briefing provides information on:

1.1 What would good look like for second booster uptake rates?

1.2 What is Manatū Hauora (the Ministry) understanding of the impact of COVID-19 infections on second booster uptake?

1.3 What is currently occurring internationally in terms of uptake? And,

1.4 What would give Aotearoa confidence as to the level of preparedness in case of a subsequent outbreak and/or a new variant of concern?

2 This report discloses all relevant information.

Summary

3 The Government announced on 27 May 2022, that a second COVID-19 booster would be available by prescription for the most vulnerable populations, at a spacing of six months post first booster.

4 While the rate of uptake for the second booster was initially quite high in July 2022 more recently uptake tracking of the second booster has shown a downwards trend, with uptake decreasing quicker than anticipated. This aligns with the general trend of lower uptake of subsequent doses after the primary course.

5 The uptake of the second booster has been inequitable to date, particularly for Māori and Pacific communities. The inequities appear to be grounded in structural and systemic factors rather than attitudinal differences. Māori have particular concerns expressed in the urgent Wai 2575 hearings on the COVID-19 response that the Crown will not meet its obligations under te Tiriti o Waitangi in the booster rollouts.

6 The World Health Organization (WHO) updated its goals for the 'Global Covid-19 Vaccine Strategy in a Changing World' to encompass two recommended targets. First is to progress towards reaching an aspirational target of 100% of health care workers and 100% of older populations (60+) and other groups with primary series and booster doses, and second is working towards broader population immunity, measured as progress against 70% of total population target for international benchmarking, and against context-specific country targets.

7 Available data on uptake indicate that for older age groups, past infections (longer than 2 months ago) haven't impacted second booster uptake in the initial stages of roll out.

However, eligible populations that have more recently been infected with COVID-19 (within the last 2 months) are delaying second booster vaccination, which is broadly in alignment with current guidelines.

8 The Evaluation and Behavioural Science team at the Ministry recently completed data analysis for their latest survey on second boosters. The results suggest that while 19% of the population have reported having their second booster, an additional 42% reported they were likely or definitely intending to get a second booster if it is recommended and available. However, about 29% reported being unlikely or definitely against getting a second booster, while 11% reported being neutral. Based on these data, getting to around 60% uptake for the general population is likely, whereas achieving above 70% is possible by shifting the opinions of those currently on the fence. It will, however, be very difficult to encourage uptake among the remaining population.

9 Various international jurisdictions recommend the administration of a second booster dose, this is particularly so for people at increased risk of severe illness, such as those who are older or are immunocompromised. Many countries have observed slow and slowing booster rollouts, with declining case numbers and perceptions that Omicron is not as severe, being possible reasons for the low uptake. In Australia, nationally as of 08 September 2022 over 4.75 million people have had a second booster dose - this represents 40.3% of people 30 years and over who are eligible for a second booster dose.

10 As it relates to future planning and preparedness, it is difficult to anticipate what efficacy current or future vaccines (or prior infection) may have against new variants. While ongoing Aotearoa surveillance through a combination of Whole Genome Sequencing and wastewater surveillance will be vital to assessing the impacts of future variants on the population. Ensuring adequate vaccine availability, high rates of vaccine uptake (particularly first booster coverage) together with horizon scanning of new and emerging vaccines and technologies (platforms, antigens and delivery routes) and evaluation of these for efficacy against emerging variants) will be key to preparedness.

Recommendations

We recommend you:

a) **Note** the information provided in this report in response to your request for further advice on second COVID-19 booster vaccinations.

Noted

b) **Indicate** if you would like further information with regards to the current actions targeting Māori and Pacific Peoples' immunisation rates.

Dr Diana Sarfati
Te Tumu Whakarae mō te Hauora
Director-General of Health
Date:

Hon Dr Ayesha Verrall
Minister for COVID-19 Response
Date: 9/9/22

Advice on COVID-19 Second Boosters

Background

1. On 27 May 2022, the Government announced that a second COVID-19 booster would be available by prescription for the most vulnerable populations, at a spacing of six months post first booster. Subsequently, a legislative change to enable the rollout via the national immunisation programme, without individual prescriptions, was enacted in mid-June.

2. This announcement followed a recommendation from the COVID-19 Vaccine Technical Advisory Group (CV-TAG) that a second booster dose may be beneficial for those most at-risk of series illness.

3. Members of the population who are recommended to receive a second booster include:

   3.1 People aged 65 years and over

   3.2 Māori and Pacific peoples aged 50 years and over

   3.3 Residents of aged care and disability care facilities

   3.4 severely immunocompromised people who received a three-dose primary course and a fourth dose as a first booster (noting this would be a fifth dose for these people)

   3.5 people aged 16 years and over who have a medical condition that increases the risk of severe breakthrough COVID-19 illness, and

   3.6 people aged 16 years and over who live with disability with significant or complex health needs or multiple comorbidities.

4. Note there is a difference between those eligible to receive the second booster versus those who were recommended to receive it, namely that those who are eligible also includes people aged 50 years and over, and healthcare professionals aged 30 years and over. While this is not apparent within the gazetting of the vaccine, it is knowledge available through the proactive release of the CV TAG memos, something which health professionals have requested in order to support provider-to-patient informed consent discussions. As such, this may have an impact on uptake across various sub-groups of those eligible. This has been considered within the approach taken to the analysis here.

5. Uptake of second COVID-19 boosters by the eligible population is addressed in this paper and the impacts of previous infection and comparison to international counterparts outlined.

Evidence for Vaccine Uptake Targets

6 Data as of 5 September 2022 on COVID-19 vaccine uptake, shows that primary course vaccination in those aged 12 years and over is high at 90% of the population vaccinated to date. Primary course vaccination in Māori and Pacific peoples is also high at 84% and 90% respectively. However, coverage of first booster doses is lower (particularly among Māori and Pacific Peoples, where 56% and 61% aged 18+ respectively have had a first booster). CV TAG has recommended that improving first booster coverage needs to be the top priority of the National Immunisation Programme.

7. The rate of second booster uptake was initially quite high in July 2022, likely due to a backlog of individuals being eligible when it was first rolled out. Additionally, people who received their first booster early, were more likely to get their second booster and it is likely the timing of the BA.5 wave motivated individuals to receive a second booster when it was rolled out. Uptake tracking of the second booster has shown a downwards trend since then, with uptake decreasing quicker than anticipated. This aligns with the general trend of lower uptake of subsequent doses after the primary course.

8 Currently, the average uptake for those who are eligible for a second booster dose is just 36% across the population, with both Māori and Pacific peoples having lower uptake rates of this booster dose of 30% and 26% respectively. (1)

9 The World Health Organization (WHO) updated its goals for the 'Global Covid-19 Vaccination Strategy in a Changing World' (2) to encompass two recommended vaccination targets:

9.1 Progress towards reaching an aspirational target of 100% of health care workers and 100% of older populations (60+) and other priority risk groups with primary series and booster doses, recognising that:

i. the highest and high-priority use groups specified in the WHO Roadmap represent various groups for which population and coverage data availability is weak and requires strengthening; and

ii. data limitations on delivery of booster doses are widespread; booster doses are of utmost importance for optimal protection and must be delivered, with considerations of local epidemiology for appropriate timing.

9.2 **Countries' trajectory towards broader population immunity, measured as progress against a 70% of total population target for international benchmarking, and against context-specific country targets.** This acknowledges that countries will determine the breadth of their COVID-19 national vaccination programmes considering factors such as: local COVID-19 epidemiology, demographics, opportunities to leverage COVID-19 to strengthen primary health care systems, other health priorities, socio-economic risks from future waves of disease, population demand for breadth of vaccination, and sustainability of vaccination efforts.

10 For Aotearoa, this implies we need to prioritise the population, with a particular focus on priority risk groups and the older population (60+), receiving at least a primary course and one booster dose, if we are to have as a high an uptake of second booster doses as possible. The 100% target is aspirational as it is unlikely Aotearoa will reach 100% vaccination uptake, and the uptake rate is likely to fall with subsequent doses.

11 The Evaluation and Behavioural Science team at the Ministry recently completed data analysis for their latest survey on second boosters conducted by Horizon. It was an online survey of people living in Aotearoa aged 18 and older. The survey was in the field for 8 days (8-15 August 2022) and a total of 1,539 people completed the survey, of which 364 were Māori. The sample was weighted on age, gender, ethnicity, education, personal income, and region to match the Aotearoa adult (18+) population.

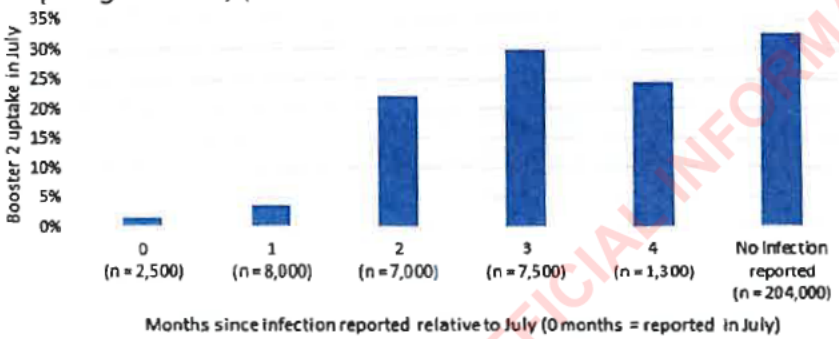
12 The results suggest that while 19% of the population have reported having their second booster, an additional 42% reported they were likely or definitely intending to get a second booster if it is recommended and available. However, about 29% reported being unlikely or definitely against getting a second booster, while 11% reported being neutral. Based on

these data, getting to around 60% uptake for the general population is likely, whereas achieving above 70% is possible by shifting the opinions of those currently on the fence. It will however be very difficult to encourage uptake among the remaining population. We did not find a statistically significant difference between the proportions of those who intended to get vaccinated in the general population and amongst Māori reported within this survey. This indicates that equity differences in uptake in priority populations are unlikely to be related to attitude. However, higher levels of vaccine coverage have occurred later in Māori and Pacific peoples than for other groups throughout COVID-19 vaccine rollout.

13 It should be noted that the uptake of further doses may suffer from 'vaccine fatigue' and one possibility in the future would be to align vaccination schedules to that for influenza, with use of a combination influenza/COVID-19 vaccine (such vaccines are currently in development and are likely to be deployed in 2023) to encourage uptake of those in high-risk groups and reduce the number of total vaccinations required each year.

Impact of COVID-19 Infections on Second Booster uptake

14 An analysis of second booster uptake among those who became eligible in July 2022 (people aged 65-74) (



15 **Figure** 1) has found a higher rate of uptake among those with either no infection, or those who reported a positive test 2 or more months ago.

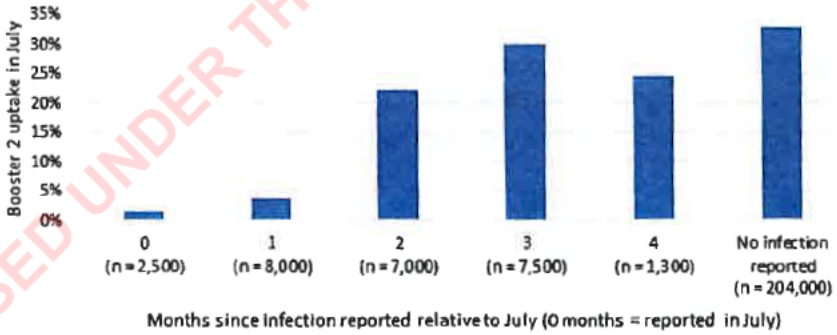


Figure 1: Second booster uptake in July 2022 for 65-74 year olds that became eligible in July 2022, by number of months since prior infection

16 When examining uptake beyond July, second booster uptake (**Figure 2**) was higher among the eligible population that have had an infection prior to June 2022 (2 or more months since last infection) as compared to those with more recent COVID-19 infection (0-2 months since last infection).

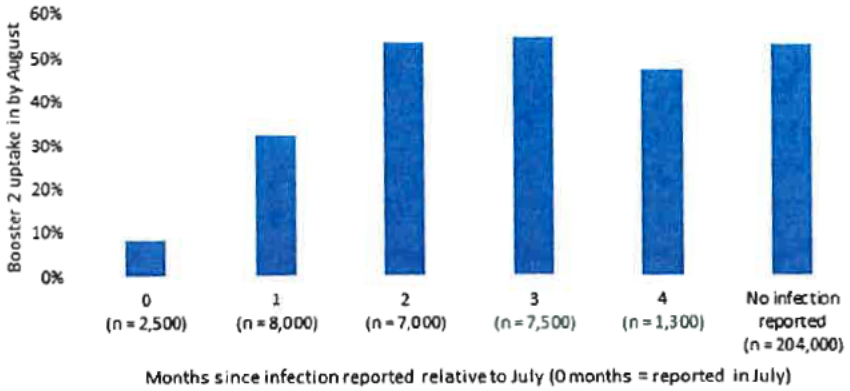


Figure 2: Second booster uptake in August 2022 for 65-74 year olds that became eligible in July 2022, by number of months since prior infection

17 These data indicate that in the initial second booster roll out for older age groups, past infections (longer than 2 months ago), haven't impacted second booster uptake. However, eligible populations that have more recently been infected with COVID-19 (within the last 2 months) are delaying second booster vaccination, which is in alignment with current guidelines (although they seem to be waiting 2 months as opposed to the recommended 3 months). It is important however to note that this is a relatively small group, largely because infection rates have been more prominent among younger populations than older population groups.

18 Previous analysis conducted in mid-July comparing first booster eligibility, to eligibility after adjustment for a positive COVID-19 test in the last 3 months, found no significant ethnic differences in booster eligibility. This implies that infection in the last 3 months, did not disproportionately affect eligibility of first boosters for Māori and Pacific Peoples as compared to the general population.

19 It is important to note that the second booster uptake is affected by more than just COVID-19 infections. The planned theory of behaviour (a validated behaviour model) suggests that individual attitudes towards vaccination, individual belief about the social norms, and their perceived behavioural control to getting vaccinated influence the intention and ultimately the behaviour of getting vaccinated. For example, from the same survey mentioned above, we found:

19.1 Attitudes towards vaccination is generally positive and altering attitudes may not have a proportionate effect on second booster uptake.

19.2 A sizeable proportion (~25%) of the population are influenced by the actions of their friends and family.

19.3 Social norms might be the factor that can impact uptake substantially as 14% and 27% don't feel supported / aren't sure of the support from their friends and family if they chose to get the second booster respectively.

20 The Ministry is currently analysing additional results from the Horizon Survey on motivations behind vaccination, which should be available in the coming weeks.

International Uptake of COVID-19 Second Boosters

21 Similar to Aotearoa, many international jurisdictions recommend the administration of an additional booster or second booster dose of the COVID-19 vaccine. This particularly so for people at increased risk of severe illness, such as those who are older or are immunocompromised (see **Appendix 1** for further detail).

22 In Australia, the United Kingdom and United States a second booster dose is recommended for people aged 50 years and over. While Singapore, South Korea and the European Centre for Disease Prevention and Control (ECDC) and the European Medicines Agency (EMA) recommend second boosters for people 60 years and over. Ireland and Taiwan recommend second booster doses for those 65 years and older.

23 While a second booster is not yet recommended for younger people aged 30 years and over who are generally healthy and do not have underlying health conditions, the Australian Technical Advisory Group (ATAGI) has however advised that people aged 30-49 years old can receive a second booster dose is they choose to (meaning that they are not actively encouraged to do so).

24 In Aotearoa a second booster is recommended a minimum of 6 months after the first booster dose. The recommended time for the administration of the second booster dose varies between jurisdictions, with countries such as the United States and Ireland recommending the second booster shot four months after receiving the first booster. However, Singapore and Taiwan recommend five months after the first booster and Australia recommend the second booster be given three months after the first booster dose.

25 In Australia, nationally as of 08 September 2022 over 4.75 million people have had a second booster dose - this represents 40.3% of people 30 years and over who are eligible for a second booster dose. Looking at the different states, the uptake of the second booster dose is highest in Tasmania at around 46.7% (128,827), while the Northern Territory has the lowest uptake of the second booster at 23.0% (132,645). In addition, uptake of the second booster in New South Wales is around 41.9% (1,531,200), while in Victoria uptake is around 37.9% (1,179,715).

26 In the United States, as of 5 August 2022, among the 58.8 million persons aged 50 years and over who are eligible to receive a second booster dose, 20.0 million (34%) have received a second booster. Second booster dose coverage increases with age, ranging from 26.1% among people aged 50-64 years to 41.4% among those aged over 75 years of age. Second booster dose coverage has been found lowest among males, Hispanic and Black persons and persons living in rural counties.

Outbreak and/or New Variant of Concern Preparedness

27 It is difficult to anticipate what efficacy current or future vaccines (or prior infection) may have against new variants. Two scenarios need to be considered. The first being the gradual evolution of the dominant Omicron variant into progressively more transmissible variants, without a large change from one variant to the next. The second being the development of an immunologically different variant against which current vaccines have very limited effectiveness. The second scenario will inevitably result in major challenges which would be

difficult to predict. However, the first scenario is much more likely especially in the short to medium term.

28 Based on evidence presented to the Vaccines and Related Biological Products Advisory Committee (VRBPAC), the advisory committee to the US FDA for vaccines, it is thought the most likely evolution of the virus will be from the Omicron family. There is always a chance (as in the case of Omicron) that a new variant will emerge outside of the current predominant variant, but it is unknown whether this is a 'once every 1-2 year' event or a 'once in 10-year event'. As time passes, the risk of a particularly novel variant outside of Omicron, is thought to decrease. (3)

29 Monitoring of national case numbers and hospitalisation rates will be key to assessing the future risk of a novel variant. Ongoing Aotearoa surveillance through a combination of Whole Genome Sequencing of positive samples from the border, community and from hospitalised patients alongside wastewater surveillance will be vital to assessing the impacts of future variants on the population.

30 Ensuring adequate vaccine availability, as well as having high rates of vaccination uptake (particularly first booster coverage) is key to preparedness. Although vaccines have in general become less effective against newer variants and may not have a major effect on case numbers, the vaccine effectiveness (VE) of mRNA vaccines (such as Pfizer) against severe disease remains high, and does not seem to be as greatly affected by either new variants or waning, compared to VE against infection. (4)

31 Vaccines that use a more closely related strain (i.e., Omicron) may have a slower waning rate due to inducing a more potent immune response against the variant in question, however evidence to support vaccine effectiveness of variant-modified vaccines is still emerging. A recent pre-print study predicting the efficacy of variant-modified COVID-19 mRNA vaccine boosters, has suggested there will only be marginal benefits in protection from severe disease by variant-modified boosters against the variant they were developed against. (5) It is important to note that current mRNA vaccines continue to offer significantly high protection against severe disease.

32 Key benefits from emerging vaccine technologies that need to be considered include broader range of protection, longer duration of protection against severe disease and platforms that encourage uptake (e.g., combination vaccines and intranasal vaccines).

33 Any future decisions on vaccines, particularly on preferred vaccine or timing of further doses need to consider the unique immune landscape of Aotearoa, which has a high degree of hybrid-immunity (conferred by relatively high vaccination rates and large proportion of Omicron infections). As compared to many international countries, Omicron represents Aotearoa's first major exposure to a SARS-CoV-2 variant, and this has implications for potential immune imprinting of the immune response. Research into immune imprinting indicate that exposure to a virus (either by infection or vaccination) affect an individual's level of protection both against subsequent infection and/or severe disease.

34 An additional study into triple-vaccinated healthcare workers in the UK that were previously uninfected found that Omicron infection produced a broad immune response against multiple variants compared to those that were previously infected by other variants. (6) This suggests that immune response to Omicron could expand the breadth of SARS-CoV-2 immunity. Furthermore, there is evidence to suggest that the combination of vaccination and infection, produces a significantly higher mucosal antibody response that likely aids

protection against severe disease and potentially prevents infection and reduces transmission. (7)

35 More consideration is needed into having rapid development and access to vaccines. As already seen with the BA.5 wave globally, development of a BA.5 variant-modified vaccine has been slower that what is required to be able to proactively implement. Many peak bodies have now started endorsing vaccines based on immuno-bridging data (e.g. WHO recommending Valneva vaccine). Onshore vaccine development and research also needs to be considered moving forward.

36 Continued horizon scanning of new and emerging vaccines and technologies (e.g. platforms, antigens and delivery routes) and evaluation of these for efficacy against emerging variants, will allow the Ministry to identify significant developments in vaccines for COVID-19. This, in consultation with CV TAG, may lead to advice that could be used for changing either the choice of preferred vaccine or how and when COVID-19 vaccines are administered. At the current point in time, the horizon scanning supports the current approach in Aotearoa to continue with the original Pfizer mRNA vaccine.

Equity

37. Inequities exist in vaccine delivery of the first booster dose to Māori and Pacific peoples and therefore ensuring these groups receive their first booster should be prioritised over encouraging uptake of the second booster in eligible but not recommended groups.

Age group	Ethnicity	Population size (eligible & non-eligible)	Booster 1 uptake %	Booster 2 uptake % to date
12 to 49	All	2,522,000	48%	1%
50 to 64	Māori	110,000	68%	15%
50 to 64	Pacific Peoples	52,000	72%	14%
50 to 64	Non-Māori and Non-Pacific	775,000	77%	16%
65+	Māori	51,000	83%	33%
65+	Pacific Peoples	27,000	77%	26%
65+	Non-Māori and Non-Pacific	718,000	87%	45%

Table 1: Rate of booster uptake % by age and ethnicity, as a % of total population, to 7 September 2022

38 Comparison of uptake ethnicity across the older population age groups (50 to 64 and 65+ years old) as a % of the total population (**Table 1**), shows both a decrease of uptake of the first booster in both Māori and Pacific peoples compared to Non-Māori and Non-Pacific ethnic groups. For ages of 50-64, this is a decrease of -9% and -5% for Māori and Pacific peoples respectively. For ages 65+, this is a decrease of -4% and -10% for Māori and Pacific peoples respectively.

39 The largest differences in second booster uptake can be seen across Māori and Pacific peoples compared to Non-Māori and Non-Pacific ethnicity in the 65+ age group (**Table 1**).

The decrease of -12% and -19% for Māori and Pacific peoples respectively, put people within these age groups at significant risk for severe disease and/or death from COVID-19, noting that both Māori and Pacific people are at higher risk regardless of age, compared to other ethnicities.

40 From the behaviour survey discussed in earlier sections, we noted that the proportion of Māori intending to get the second booster was similar to the total population. This suggests that the reason for the difference in uptake is not due to differences in attitudes and intentions but may possibly be attributable to other structural factors.

41 Both Māori and Pacific peoples are at a higher risk for poor health outcomes from COVID-19 and encouraging and increasing uptake of both first and second boosters in these groups will decrease healthcare-related inequities.

Te Tiriti o Waitangi

42 For Māori, *Haumaru: The COVID-19 Priority Report* (Wai 2575) provides significant insights into the structural and systemic elements of the existing inequities in the vaccine rollout. The report asserts that the Crown has failed to provide an equitable vaccine rollout and that this constitutes a breach of the Articles of te Tiriti o Waitangi. The report recommends the Crown partner with Māori to design and implement an equitable paediatric and booster vaccine sequencing framework for Māori.

43 The rollout of the second booster should be designed in partnership with the Māori clinical expertise in Te Aka Whai Ora informed by the expertise and views of Iwi Māori Partnership Boards. Kaupapa Māori, iwi and Whānau Ora providers views and leadership should also be sought, both in response to our Tiriti obligations and in recognition of their success in reaching iwi and Māori communities.

Next steps

44 The Ministry has provided the above intelligence and evidence regarding COVID-19 second boosters to colleagues in the National Immunisation Programme at Te Whatu Ora – Health New Zealand. The Ministry will continue to provide this to ensure decisions and actions by operational agencies are informed by evidence.

ENDS.

References

1. Ministry of Health. Daily COVID-19 Vaccine and Immunisation Programme Report: Report for 6 September 2022. 2022.

2. World Health Organisation (WHO). Global Covid-19 Vaccination Strategy in a Changing World 2022 [Available from: https://www.who.int/docs/default-source/coronaviruse/global-covid-19-vaccination-strategy-in-a-changing-world---july-2022-update.pdf?sfvrsn=15adccf3_1&download=true.

3. Bedford T. Continuing SARS-CoV-2 evolution under population immune pressure 2022 [updated 6 April 2022. Available from: https://www.fda.gov/media/157471/download.

4. UK health Security Agency. COVID-19 vaccine surveillance report: Week 35 2022 [updated 1 September 2022. Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1101870/vaccine-surveillance-report-week-35.pdf.

5. Khoury DS, Docken SS, Subbarao K, Kent SJ, Davenport MP, Cromer D. Predicting the efficacy of variant-modified COVID-19 vaccine boosters. medRxiv. 2022:2022.08.25.22279237.

6. Reynolds CJ, Pade C, Gibbons JM, Otter AD, Lin K-M, Sandoval DM, et al. Immune boosting by B.1.1.529 (Omicron) depends on previous SARS-CoV-2 exposure [Available from: https://www.science.org/doi/abs/10.1126/science.abq1841.

7. Sano K, Bhavsar D, Singh G, Floda D, Srivastava K, Gleason C, et al. SARS-CoV-2 vaccination induces mucosal antibody responses in previously infected individuals. Nat Commun. 2022;13(1):5135.

Appendix 1: International recommendations from peak bodies and rollout of second booster doses

Given the potential for waning immunity following a first booster, particularly against severe disease (as measured by hospitalisation), some countries have recommended the administration of a second booster dose to elderly populations or individuals at increased risk of severe disease or exposure.

Australia: The Australian Technical Advisory Group on Immunisation (ATAGI) issued recommendations about second booster doses on 25 March 2022. ATAGI recommended an additional booster dose of COVID-19 vaccine to increase vaccine protection before winter for selected population groups who are at greatest risk of severe illness from COVID-19 and who have received their primary vaccination and first booster dose (link). These groups are:

a) Adults aged 65 years and older
b) Residents of aged care or disability care facilities
c) People aged 16 years and older with severe immunocompromise (as defined in the ATAGI statement on the use of a 3rd primary dose of COVID-19 vaccine in individuals who are severely immunocompromised)
d) Aboriginal and Torres Strait Islander people aged 50 years and older.

After continuing to review evidence on the need for other population groups, ATAGI recommended on 25 May 2022, a second booster dose for people at higher risk of severe illness from COVID-19, who have already had their first booster dose 4 months ago. (link)

The second booster is additionally recommended for people aged 16-64 of increased risk who have:

a) A medical condition that increases the risk of severe breakthrough COVID-19 illness
b) People with disability with significant or complex health needs or multiple comorbidities which increases risk of poor outcomes from COVID-19.

The following groups are currently **not recommended** to receive an additional booster dose:

a) Healthy people aged 16 to 64 years, who do not have a risk factor for severe COVID-19, as their risk of severe illness after their first booster dose is likely to remain very low.
b) People from occupational groups, such as healthcare workers, who do not have any other comorbidity that increases their risk of severe COVID-19
c) People who are pregnant without any other comorbidity that increases their risk of severe COVID-19.

Australia: Victorian Premier Daniel Andrews has signalled his intention to push the federal government to supply a fourth dose for all healthcare workers in hospitals across Victoria, following a recent spate of COVID-19 outbreaks in hospitals by infected staff. (link)

Israel: In January 2022, Israel began administering a fourth dose of the Pfizer vaccine to people aged over 60 years and at-risk populations who had received a third dose at least 4 months earlier. An Israeli hospital is also conducting a trial of the second booster dose in healthcare workers. (link) Early data from Israel's rollout of a second booster dose is presented below. On 22 January 2022, Israel's vaccine advisory committee recommended that those aged 18 and over be offered a fourth vaccine dose at least five months after their third dose or after recovering from the disease. (link). Israel's Ministry of Health has since approved use of a fourth dose in healthcare workers and those who are at high risk of exposure to COVID-19 in their line of work. (link)

UK: The Joint Committee on Vaccination and Immunisation (JCVI) has advised an additional spring booster dose be given for the most vulnerable individuals in the population. (link) As a precaution, a further booster dose is advised 6 months after the last vaccine dose for adults aged 75 years and over, older residents in a care home, and individuals aged 12 years and over who are immunosuppressed. On 5 September 2022 millions of people were invited for their autumn COVID-10 booster. (link) The groups who qualify for an autumn booster are:

a) Adults aged 50 and over
b) People aged five – 49 with health conditions that put them at higher risk – including pregnant women
c) Care-home staff
d) Frontline health and social care workers
e) Carers aged 16 to 49
f) Household contacts of people with weakened immune systems

Ireland: Media reports have mentioned that the National Immunisation Advisory Committee (NIAC) is currently considering a second booster for those aged 65 and under, after advising in April that people aged over 65 and those who are immunocompromised should get their second booster dose. (link)

US: Pfizer applied for authorisation to the US FDA on 15 March 2022 for adults 65 years and over, (link) and the US FDA has been reviewing data to authorise a second booster dose of vaccines from Pfizer and Moderna. (link) On 29 March 2022, the FDA authorised second boosters for peopled aged 50 and over, and immunocompromised people. (link)

Europe: According to a joint statement released by the European Medicines Agency (EMA) and the European Center for Disease Prevention and Control (ECDC), people over the age of 80 should receive a fourth booster dose of mRNA vaccine due to their weakened immune system, decreased response to vaccination, and increased risk of serious disease. (link) On 11 July 2022, the ECDC and EMA recommended that second booster doses be considered for people between 60-79 years and people with medical conditions putting them at high risk of severe disease. (link)

Spain: Spain will offer a fourth dose of a COVID-19 vaccine to its entire population, most likely at the end of the year, Health Minister Carolina Darias said on June 16th 2022. (link)

Chile: Media reports have stated that from 7 February 2022, eligibility for a fourth dose will be extended to people aged over 55 years who had a third vaccine dose at least 6 months prior. (link) The fourth vaccine regimen has not been specified.

Colombia: Colombia's vaccine advisory committee recommended a second COVID-19 booster dose for people aged 12-49, but only under medical order. The second booster shot, or a fourth vaccine dose, is currently available for immunocompromised people, those with transplants and comorbidity, as well as seniors over 50 years old. (link)

Hungary: In January 2022, Hungary made a fourth COVID-19 vaccine shot available to people who ask for it, after a consultation with a doctor, to combat growing Omicron infections. (link)

South Korea: In February 2022, populations that are at increased risk of severe disease (the elderly and immunocompromised) or at increased risk of exposure (healthcare workers) became eligible for a fourth dose, however authorities are not currently considering expanding it more widely. (link)

South Africa: On 03 June 2022 the national health department announced that from 07 June 2022 all people over the age of 50 years are eligible to receive a second booster dose of Pfizer. (link)