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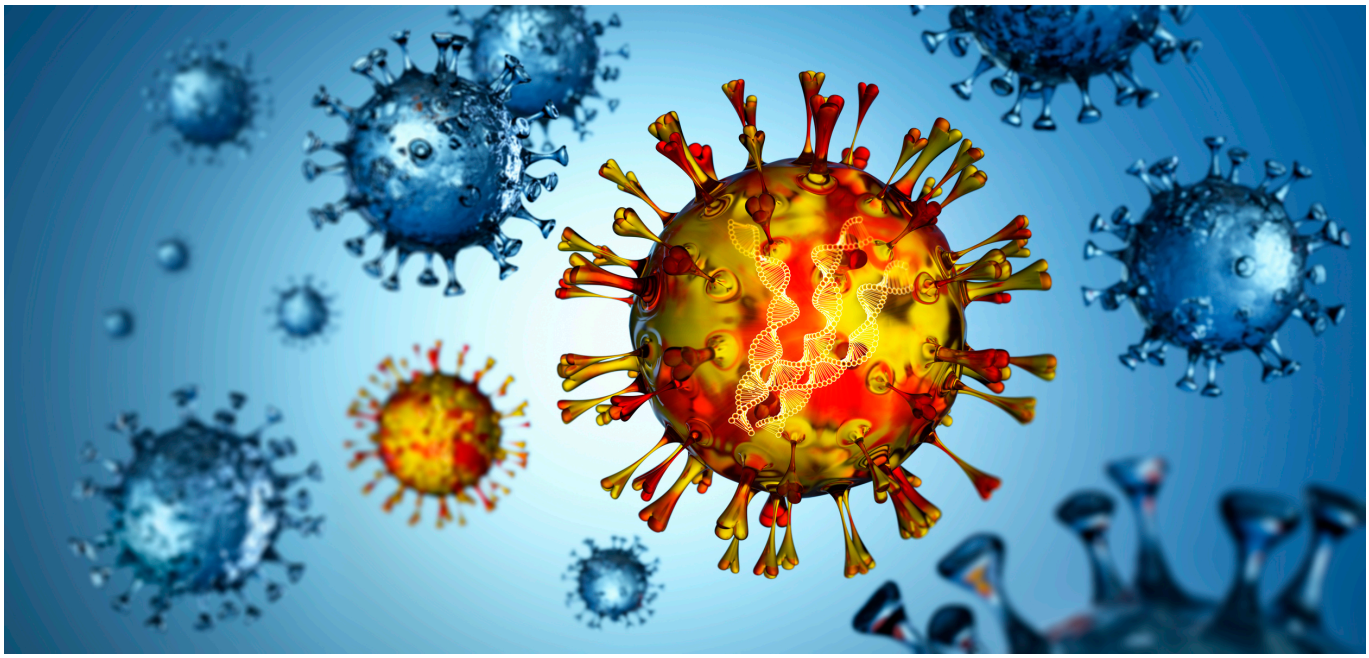

Covid-19 vaccines still protect us: How do we get the best out of them?

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Summary

The Covid-19 pandemic is continuing in Aotearoa New Zealand (NZ) with repeated waves of infection associated with newly evolved Omicron subvariants that flourish by evading established immunity. International evidence shows that even during the Omicron era, Covid-19 vaccines continue to provide protection against infection, hospitalisation, death, and Long Covid, as well as improving outcomes during pregnancy.

NZ could get better public health value from these vaccines by:

- Continuing to ensure vaccines are regularly updated to match the dominant circulating subvariants
- Promoting high vaccine coverage and additional doses, particularly for the most at-risk groups (older people, those with important medical conditions, pregnant people)
- Extending eligibility for additional doses to younger age groups, especially those at occupational risk
- Maintaining and improving infrastructure to track and implement key measures, particularly vaccine coverage and reminder/recall for at-risk groups
- Combining vaccination with other measures as part of a comprehensive prevention strategy for respiratory infections.

This Briefing reviews the continuing need for Covid-19 vaccination in Aotearoa New Zealand (NZ) and strategies to achieve optimal health benefits from this component of prevention. A future Briefing will review vaccine safety.

Continuing Covid-19 pandemic

Covid-19 remains an important cause of illness, hospitalisation, disability, and death in NZ. Baseline rates remain high, with waves of infection peaking approximately every five months (Figure 1).

Figure 1. Covid-19 hospitalisations in NZ, weekly total, from January 2021 to July 2024.

Source: Ministry of Health
Data covers weeks ending 2 Jan 2021 to 7 Jul 2024. Data extracted 19 Jul 2024

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Covid vaccines continue to protect against infection, illness and death

Vaccination continues to protect against SARS-CoV-2 and its consequences, as it has from early in the pandemic.[1] Multiple studies show protection – both earlier (2022) and later (2023-24) in the Omicron wave – against: infection and hospitalisation;[2-11] severe disease and mortality;[12-14] Long Covid;[15-22] and in pregnancy.[23 24] See Appendix for details.

As with all vaccination programmes, achieving optimal population protection depends on ensuring supplies of an effective vaccine and sustaining high vaccine coverage. These goals depend on multiple actions, including comprehensive surveillance, effective communication, and engagement with communities.[25]

Updating vaccines to keep up with SARS-CoV-2 evolution

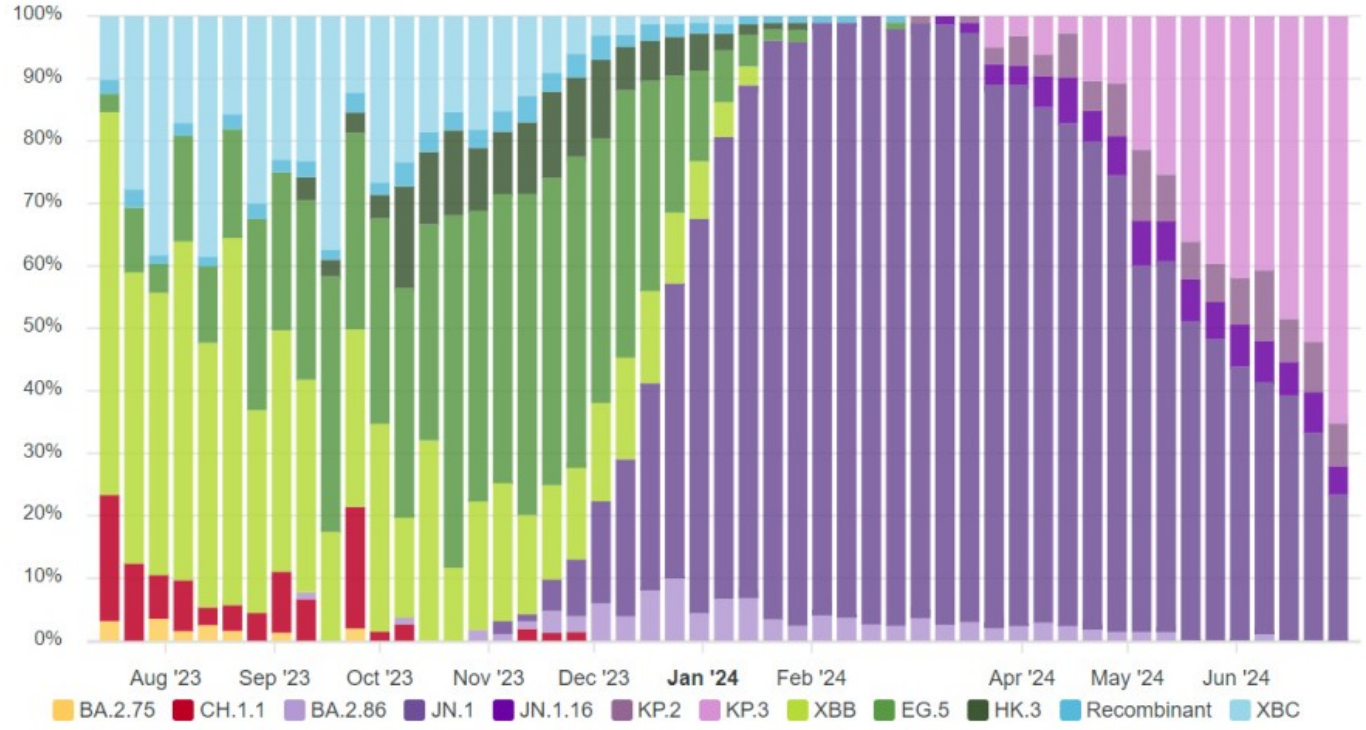
The SARS-CoV-2 virus mutates, with new dominant variants emerging that are better able to evade immunity and infect us, and thus outcompete ancestors and cousins. Effectiveness of vaccine-induced immunity against an earlier variant is reduced against later variants.[7 8 26-29]

The virus evolves so rapidly that it is not possible to match each vaccine update to the current variants. Fortunately, vaccines generally hold up well against new descendant variants that differ only in minor ways, as is currently the case.[30] Problems can arise with a

major evolutionary shift as happened from Delta to Omicron.[31]

The Institute of Environmental Science and Research (ESR) monitors changes in circulating variants in NZ. Current wastewater data show that KP.3 is replacing JN.1, which was dominant from January 2024 (Figure 2).

Figure 2. Covid-19 variants and subvariants obtained from wastewater specimens by week, July 2023 to July 2024



Source: ESR Wastewater testing dashboard.

The current Covid-19 vaccine is a monovalent mRNA vaccine targeting XBB.1.5. It is effective against JN.1[26] and likely to be effective against its dominant subvariants, KP.2 and KP.3.[12]

Internationally, work is underway to update this vaccine. The US FDA determined that the preferred lineage for the 2024-2025 vaccines is KP.2 (subvariant of JN.1), to better match circulating strains.[32] In April 2024, the European Medicines Agency chose not to focus on KP.2. and issued a recommendation that 2024-2025 vaccines target the JN.1 family of Omicron subvariants,[33] a position in line with WHO.[34] The UK has followed suit.[35]

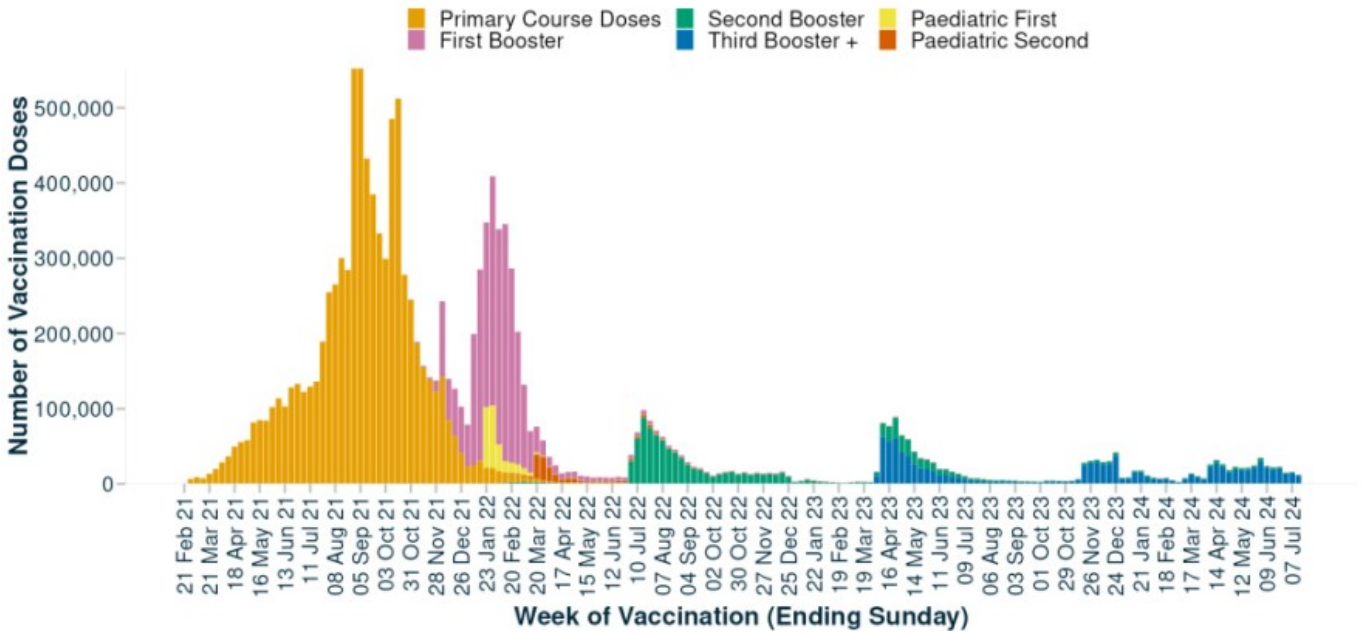
For NZ to ensure that vaccines continue to be effective against emerging variants, we need ESR's continued tracking of circulating variants and timely vaccine assessment and procurement – see Appendix for NZ's process.

Improving vaccination coverage and eligibility in NZ

More than 13 million Covid-19 vaccine doses have been administered since 20 February 2021[36] (Figure 3) with 86% of the population 12 years and older receiving the primary course.[37] However, uptake of subsequent doses has dropped markedly: just over 1 million have received a third or later additional (booster) dose.

This declining coverage presents a problem as immunity from the primary course fades over time.[38] In addition, this immunity will eventually become less effective at protecting individuals against illness and serious outcomes caused by later more markedly divergent variants.[7 8 26-29]

Figure 3: Count of vaccinations administered by week from the Covid-19 Immunisation Register



Source: Te Whatu Ora COVID-19 vaccine data. Note: Third Booster+ is defined as any booster dose received after a person's second booster.

Benefits of vaccination are likely to be greatest in people at highest risk of severe outcomes. A recent cost-benefit analysis in the USA showed the greatest benefit in those 65 years.[39]

Long Covid can affect people of all ages and vaccination provides protection,[14 17 18 40] including for children and adolescents[20 21] although sometimes that is only modest.[41] It makes sense to extend eligibility for regular additional doses to age groups below the current (age 30) cut off,[42] particularly those whose occupations put them at increased risk of exposure. Routine Covid-19 vaccination of children under 5 years remains contentious: recommended in some countries[43] but not in NZ (except for children at higher risk of severe illness).[44]

Vaccination surveillance systems[37] need to be able to track and report on key vaccine measures, notably coverage of at-risk groups and key disease outcomes, including Long

Covid.

Need for a respiratory infection prevention strategy

NZ continues to see surges of Covid-19 (Figure 1). It is unclear whether these are the result of more immune-evasive subvariants (partly due to increasing mismatch between variants and vaccines), more transmissible subvariants (partly due to greater ability to bind to receptors), or declining population-wide immunity (partly due to waning immunity itself and the low uptake of additional doses), but probably a mix of all three.

The single most important measure is to promote regular additional vaccine doses to counter the effects of waning immunity, particularly among older individuals, the immune-compromised, pregnant people, and healthcare workers; these additional doses (boosters) should be given 6-12 months after the last dose.[42 45] Doing this will also allow the public to take advantage of updated vaccines when they become available but it is important not to delay additional doses while waiting for the next update.

Sustaining high vaccine coverage requires multiple measures, including a clear national strategy, effective communication, and active partnership with Māori and Pacific communities. It needs to be supported with a high-performing immunisation infrastructure that monitors coverage and reminds and recalls at-risk people when their vaccine is due. These capacities are also needed for other vaccine-preventable diseases, particularly measles[46] and pertussis.[47]

The continuing impact of Covid-19,[48] seasonal respiratory infections, and the growing threat from pandemics,[49] which are likely to be respiratory infections, raises the need for a national prevention strategy for respiratory infections.[25]

Achieving an optimal response to Covid-19 and respiratory infections in general, requires a strong strategy and leadership from government.

What this Briefing adds

- Surveillance data show the continuing persistence and high impact of the Covid-19 pandemic in NZ
- Vaccines against SARS-CoV-2 remain effective at preventing multiple adverse consequences during the Omicron era

Implications for policy and practice

NZ needs to review and enhance our Covid-19 vaccination programme to ensure that it is optimally effective, including the need to:

- Update Covid-19 vaccines in a timely manner to provide optimal protection, including against Long Covid
- Promote high and equitable vaccine coverage, including awareness of the need for updated vaccines and additional doses to maintain protection
- Review vaccination recommendations for people under 30 years particularly those whose occupations put them at increased risk of exposure and to protect them against Long Covid
- Actively track and report vaccine coverage, particularly for critical groups: older individuals, Māori, Pasifika, pregnant people, and those with conditions that increase their risk of severe illness
- Develop a national respiratory infection prevention strategy to manage the continuing Covid-19 pandemic, seasonal and endemic respiratory infections, and other pandemics that may be looming.

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The authors of this Briefing do not work for, consult, own shares in, or receive funding from any company or organisation that would benefit financially from this article. They disclosed no relevant affiliations beyond their academic and advisory appointments.

Appendix – Covid-19 vaccines, immunity, effectiveness, assessment

and procurement

Vaccines and Immunity

Immunity, induced by vaccines or infection, can be either protective immunity (the replication of the relevant pathogen is limited so subsequent disease is mild) or sterilising immunity (the pathogen is eliminated before replication, disease is avoided, and transmission is prevented).[50]

To date, SARS-CoV-2 vaccines induce protective immunity. Active infection with the virus in vaccinated individuals produces hybrid immunity,[28] now the norm for most people. Effectiveness of the immune response declines over time, more rapidly among older people. The immunisation strategy against SARS-CoV-2 originally involved two (now one) initial vaccine dose(s) followed by additional doses that boost immunity.

The virus mutates and a new variant takes over from an earlier one because it is more infectious, which means that either its capacity to bind to the ACE2 receptor (present in cells throughout the body and the entry point of the virus) is stronger or its ability to evade our immune response is greater or both. JN.1 has inherited the high immune-escape capacity of BA.2.86 but probably has a lower affinity for the ACE2 receptor. Nonetheless, it has a growth advantage over its ancestor (BA.2.86) and its cousins.[51]

Effectiveness of vaccine-induced immunity against an earlier variant is reduced against later variants.[7 8 26-29] This situation creates the need for 'updated' vaccines. Both the original monovalent and the subsequent bivalent vaccine (aimed at BA.4 and BA.5 Omicron subvariants and the original SARS-CoV-2 virus) are no longer available in NZ.

The current Covid-19 vaccine is a monovalent mRNA vaccine that targets XBB.1.5, rolled out for those ≥12 years[52] on 7 March 2024, with paediatric versions[53 54] somewhat later. This vaccine is effective against the subsequent dominant variant, JN.1[26] and is likely to be effective[12] against its dominant subvariants, KP.2 and KP.3. An adjuvanted recombinant SARS-CoV-2 spike-protein vaccine, Nuvaxovid (Novavax)[55] was available till 30 April 2024 for those who did not wish to receive mRNA vaccines.

Internationally, work is underway to update the XBB vaccine. WHO noted the importance of JN.1 for vaccine development on 26 April, 2024. On 6 June 2024, the FDA advised that vaccines for use in the US from Autumn 2024 would be monovalent JN.1 vaccines. Subsequently, they determined that the preferred lineage for the 2024-2025 vaccines is KP.2 (subvariant of JN.1), to better match circulating strains.[32] CDC's recommendation of updated Covid-19 vaccines will take effect when new vaccines become available.[56]

The solution to protection against Covid-19 is not a routine regular vaccine in the way that we do annual influenza vaccines; that is always something of a guessing game because this year's virus may be vastly different from last year's. There is much less need to guess with SARS-CoV-2 because, unlike other RNA viruses, it has some sequence-repair capacity. As a

result, there is overlap across variants and hence some protection persists from both earlier vaccination and hybrid immunity (stronger than vaccine-induced immunity alone).

Nonetheless, there is a need for updated vaccines, preferably based on the current variant because as we noted above, the existing vaccine is always less effective against a new variant. Although we are likely to always lag behind the evolution of the virus, provided there is no abrupt major change, regular updates will probably suffice until the development of effective pan-variant or pan-coronavirus vaccines.[57]

Who should receive updated vaccines? The answer seems to be, minimally, those at risk of severe disease, namely older individuals, those who are immune compromised, those with multiple existing chronic conditions and pregnant people.

Current NZ policy does not allow healthy adults <30 years of age access to regular additional (booster) doses of Covid-19 vaccines, which is out of line with other countries. The US recommends access for everyone ≥6 months of age.[58 59] The UK has restrictions but includes health and care workers and allows private purchase.[60] Australia allows adults aged 18–64 years to be assessed for further doses every 12 months but makes no mention of healthcare workers.[61] Canada's most recent recommendations include people who provide essential community services and all other previously vaccinated and unvaccinated individuals ≥6 months even if they are not at increased risk for SARS-CoV-2 infection or severe Covid-19.[62] WHO recommends vaccination approximately 12 months after a previous dose for health and care workers.[63]

There is a further problem: Long Covid is not related to severity of the acute disease and susceptibility to Long Covid is not confined to the same groups as are susceptible to severe disease. Further, there is good evidence that the risk of Long Covid is directly related to the number of acute episodes.[15] Thus we also need to pay attention to the need for vaccines to prevent Long Covid.

Consequently, vaccines should be considered in NZ for younger age groups especially those whose occupations put them at increased risk of exposure, including school teachers (identified as the occupation most at risk in 2022[64]), early-childhood educators, first responders, and workers in healthcare and correctional facilities,

For now, we need to scramble to keep up with the evolution of the virus and produce vaccines and deliver them effectively. Another key step may be employing the social and public health measures that were so effective in the early part of the pandemic but implementing them now with the specific aim of protecting ourselves against repeat infection to reduce our risk of Long Covid. Finally, we need a universal sterilising vaccine against SARS-CoV-2. Vaccines delivered intranasally are being investigated and offer hope.[65]

Recent studies of Covid vaccine effectiveness against multiple outcomes

Vaccine effectiveness (VE) is the incremental benefit derived from vaccination in a population which, now, has a high prevalence of immunity from both vaccines and infection. A VE of 70% does not say that the vaccine works 70% of the time but, rather, that 70% fewer people will develop disease after contact with the virus. It is estimated as VE = (1 – OR) x 100%, where OR=odds of immunisation among cases divided by odds of immunisation among controls.

VE studies were conducted from early in the pandemic through to the current wave due to Omicron and its subvariants. The following studies were selected to explore the effectiveness of Covid-19 vaccines on the risk of a wide range of outcomes associated with SARS-CoV-2 infection. These studies are restricted to those conducted during the Omicron period; i.e., from late 2021 onwards and separated into earlier (2022) and later (2023-24) in the Omicron-dominant period. Consequently, the findings are likely to be relevant to current decision-making about the value of vaccines for individuals and population health.

Infection and hospitalisation

Earlier Omicron Wave
In a study of over one million individuals in England during the early Omicron wave (11 December 2021 to 31 March 2022, with follow-up to 30 June 2022), risk of hospitalisation related to Covid-19 was lower, in a dose-response manner, among those who had been vaccinated: adjusted hazard ratios for 1 dose: 0.67 in women and 0.66 in men; 2 doses: 0.39 and 0.40; 3 doses: 0.25 and 0.24; ≥4 doses: 0.41 and 0.27.[5]

A US study of children and adolescents involved 1,185 case patients (88% unvaccinated) and 1,627 controls. From 19 December 2021 to 17 February 2022 (the Omicron-predominant period of this study; median interval since vaccination, 162 days) VE among adolescents 12-18 years of age was 40% against hospitalisation and 79% against critical Covid-19. VE against hospitalisation among children 5-11 years of age (median interval since vaccination, 34 days), was 68%; vaccination prevented critical illness.[10]

Later Omicron wave
In the US, overall VE of Monovalent XBB.1.5 vaccine against symptomatic SARS-CoV-2 infection (XBB and JN.1) among >9,000 total eligible tests (adults aged ≥18 years) was 54% at a median of 52 days after vaccination. Among >2,000 tests, VE 60–119 days after vaccination was 49% for JN.1.[8]

A Nebraska study of approximately 2 million people linking disease surveillance and immunization records, estimated the VE of the updated XBB.1.5 vaccines (both Pfizer and Moderna) against the dominant circulating Omicron subvariants (which changed across this period from EG.5, XBB.2.3, and XBB.1.16 to HV.1 and JN.1, while the prevalence of XBB.1.5 declined from 10% to 1%). The VE against SARS-CoV-2 infection was 63.0% 4 weeks after vaccination and 67.1% 6 weeks after vaccination and began to decline after that time. VE was broadly similar by age, sex, race and ethnicity, socioeconomic status, and previous immunity status. Only 12 deaths were verified and none occurred after receiving XBB.1.5 vaccines.[7]

A test-negative, case-control study used data from two CDC networks to evaluate VE of the

updated Covid-19 vaccine against Covid-19-associated emergency department (ED) or urgent care (UC) encounters and hospitalisation among immunocompetent adults ≥18 years from September 2023 to January 2024. VE against ED/UC encounters was 51% during the first 7-59 days and 39% 60-119 days after an updated dose. VE estimates against Covid-19-associated hospitalisation (median interval: 42 and 47 days after vaccination) were 52% and 43% respectively.[3]

Of the 7,581 people in Denmark aged 65 years or older who were PCR-positive for SARS-CoV-2 1 October to 31 December 2023, 3,862 had the subvariant identified. 2,184 (57%) were infected with BA.2.86, including 1,615 with JN.1. Participants with BA.2.86 and JN.1 had a higher risk (1·5-fold and 1·6-fold respectively) of disease following XBB.1.5 vaccine than participants with a non-BA.2.86 variant. There was, however, no higher risk of Covid-19 hospitalisation and no evidence of differences across variants in self-reported symptoms. Hence, the XBB.1.5 updated vaccine was less protective against infection with BA.2.86 and its JN.1 sub-lineage but there was no greater risk of disease severity.[9]

A cohort study of over 1 million people across Denmark at the same period showed a high level of protection via the XBB.1.5 vaccine, at least in the short term with a VE of 76·1% against hospitalisation in a population that had previously also been vaccinated with a vaccine dose (largely the bivalent BA.1 (46%) or BA.4–5 (52%) vaccine) the previous season.[4]

The VE of the XBB.1.5 vaccine against self-reported infection between 9 October 2023 and 9 January 2024 was investigated in the Netherlands among 23,895 adults who had previously received at least one additional dose. VE was 41% in 18–59-year-olds and 50% in 60–85-year-olds. Slightly lower protection was reported against BA.2.86 and JN.1 (than against XBB.1.5) from recent previous infection and from XBB.1.5 vaccination.[6]

A population-based cohort study of more than three million “boosted” Singaporeans aged ≥18 years the Covid-19 during the wave predominantly driven by JN.1, from 26 November 2023 to 13 January 2024 reported that 28,160 SARS-CoV-2 infections were recorded, with 2,926 hospitalizations and 3,747 ED-visits. Compared with individuals last boosted ≥1 year prior with ancestral monovalent vaccines, receipt of an updated XBB.1.5 additional dose 8-120 days prior was associated with lower risk of JN.1 infection (adjusted-hazard-ratio, aHR = 0.59), Covid-19 associated ED-visits (aHR = 0.50) and hospitalisations (aHR = 0.58). Recent receipt of updated additional doses conferred protection in both previously infected and uninfected individuals.[2]

Transmission of infection

Earlier Omicron wave

In a study in a prison population during the early Omicron-dominated era, any vaccination, prior infection alone, and both vaccination and prior infection reduced the risk of transmitting infection by an index case by 22% (6–36%), 23% (3–39%) and 40% (20–55%), respectively. Additional doses and more recent vaccination further reduced infectiousness.[11]

Need for ICU and ventilation and mortality

Earlier Omicron wave

A case-control study of VE against Covid-19-associated invasive mechanical ventilation (IMV) and in-hospital death was conducted among adults aged ≥18 years hospitalised at 21 U.S. medical centers 11 March 2021 to 24 January 2022, a period characterised by B.1.1.7 (Alpha), B.1.617.2 (Delta), and B.1.1.529 (Omicron) as the most common variants. Among 1,440 Covid-19 case-patients who received IMV or died, 307 (21%) had received 2 or 3 vaccine doses before illness onset. Among 6,104 control-patients, 4,020 (66%) had received 2 or 3 vaccine doses. VE against IMV or in-hospital death was 90% (88-91%) overall, including 88% for 2 doses and 94% for 3 doses, including 94% for 3 doses during the Omicron-dominant period.[13]

In a study of almost one million people in Hong Kong, there was a lower risk of both cardiovascular disease and all-cause mortality in vaccinated Covid-19 patients (≥16 years) versus those who were unvaccinated from February 2021 to May 2022, which includes the Omicron-dominant wave. The lowest risk for both acute-phase cardiovascular disease and post-acute cardiovascular disease was seen among those who had at least three vaccine doses.[14]

In a linkage study of over one million individuals in England during the early Omicron wave (11 December 2021 to 31 March 2022, with follow-up to 30 June 2022), risk of death related to Covid-19 was lower, in a dose-response manner, among those who had been vaccinated: adjusted hazard ratios for 1 dose: 0.64 in women and 0.58 in men; 2 doses: 0.49 and 0.50; 3 doses: 0.20 and 0.19; ≥4 doses: 0.14 and 0.08.[5]

Later Omicron wave

CDC data and a test-negative case-control design were used to establish the VE of the updated 2023-2024 vaccine against critical illness (admission to ICU or death ≤28 days after admission). VE was 58% overall but declined with time: 69% for vaccination 7-59 days earlier; 57% for 60-119 days; and 32% for 120-179 days.[12]

Long Covid

Earlier Omicron wave

A study was conducted in Sweden of a total of 589,722 individuals (≥18 years) with Covid-19, first registered between December 2020 and February 2022, of whom 224,330 were infected during the Omicron-dominant period. They reported a VE against Long Covid of 21% for one dose, 59% for two doses, and 73% for ≥3 doses.[19]

A study in the United States using electronic health records 1 August 2021 to 31 January 2022, which included patients infected early in the Omicron-dominant period showed consistently lower odds and rates for Long Covid in vaccinated versus unvaccinated individuals.[16]

Health records of the US Department of Veterans Affairs were used to study >400,000 veterans with SARS-CoV-2 infection between 1 March 2020 and 31 January 31 2022 and

>4.7 million noninfected contemporaneous controls. In the earlier Omicron era, among vaccinated people, cumulative incidence of Long Covid at 1 year was 3.50 events per 100 persons (4.26 per 100 fewer than among the unvaccinated). There were 5.23 fewer cases of Long Covid per 100 persons at 1 year during the Omicron era than during the pre-Delta and Delta eras combined. The researchers attributed 28.1% of that decrease to era-related effects, including changes in the virus, and 71.9% to vaccines.[22]

In a US study of 622 children aged 5-17 years, enrolled between July 2021 to September 2022 and followed until May 2023 5% (n=28) developed post-Covid conditions. mRNA vaccination was associated with a statistically significantly decreased likelihood of ≥1 symptom (adjusted OR=0.66) ≥2 symptoms (aOR=0.52), and respiratory symptoms (OR 0.53).[21]

A retrospective cohort study of more than one million children, 5-17 years enrolled Dec 2020 to Nov 2022 (hence including the early Omicron period) used electronic health records from 17 health systems. Adjusted VE within 12 months was 35.4% against probable (symptom-based) Long Covid and 41.7% against diagnosed Long Covid. VE was higher for adolescents (50.3%) than children aged 5 to 11 (23.8%). VE was 61.4% at 6 months but decreased to 10.6% at 18 months.[20]

Earlier and later Omicron wave

A meta-analysis covering papers from December 2019 to June 2023 showed that immunisation against SARS-CoV-2 had a VE against Long Covid of 36.9% (23.1-48.2%) for two doses and 68.7% (64.7-72.2%) for three doses.[40] Two subsequent reviews, including another meta-analysis, reported lower risks of Long Covid among those receiving one or more doses, showed some evidence of greater protection from a higher number of doses, and reported protection even from post-infection vaccination.[17 18]

Evidence for the benefit (after initial immunisation) of additional vaccine doses against Long Covid is indirect but compelling. Firstly, there is evidence that additional doses, even of an off-target vaccine, reduce the risk of reinfection.[29] Secondly, the US Department of Veterans Affairs' study of Long Covid involved more than five million people. Compared to those who were uninfected, reinfection was associated with increased risk of all-cause mortality, hospitalisation, and at least one symptom of Long Covid. Compared with the uninfected, those with one infection had a 1.4-fold increased risk of at least one long-term sequela. Those with two infections experienced a 2.1-fold and those with three or more infections, a 2.4-fold increase in risk.[15] Results were consistent when organ-specific sequelae were examined.

Pregnancy and neonatal health

Earlier Omicron wave

In a large, prospective, observational study, involving 41 hospitals across 18 countries undertaken from 27 Nov 2021 (the day after WHO declared Omicron a variant of concern) to 30 June 2022, unvaccinated pregnant people experienced increased maternal mortality and morbidity. VE against severe complications was 48% (22-65) after a primary series and 76% (47-89) after an additional dose.[24]

Earlier and Later Omicron wave
A US modelling study using data from >300,000 pregnant people from December 2020 to October 2023 found lower rates of preterm birth (adjusted incidence rate ratio [aIRR] range: 0.42 to 0.85) and lower rates of stillbirth (IRR range: 0.53 to 1.82) among those who were vaccinated before or during pregnancy compared to those who were vaccinated after pregnancy or not vaccinated.[23]

Vaccine assessment and procurement in NZ

There are two organisations involved in vaccine-policy and procurement: Medsafe and Pharmac. The Ministry of Health previously convened the Covid-19 Vaccine Technical Advisory Group (CV-TAG) to provide science advice and recommendations to Te Whatu Ora (Health New Zealand) on Covid-19 vaccination. They last met in March 2023 and ceased to exist 25 March 2023.

Medsafe is the regulator[66] and "evaluates applications for all new medicines, including vaccines, to ensure that they comply with international standards and local requirements for quality, safety and efficacy". There have been no new approvals of SARS-CoV-2 vaccines since Comirnaty XBB.1.5 (Pfizer-BioNTech) 20 December 2023.

Management of Covid-19 vaccines was transferred to Pharmac from 1 July 2023. Pharmac is responsible for the management of Covid-19 vaccines, including funding, procurement, and supply.[67] The Immunisation Advisory Committee (current membership overlaps with the defunct CV-TAG) provide Pharmac with "objective specialist knowledge and expertise" across the field of immunisation.[68] Pharmac has sought funding applications for vaccines that provide protection against Covid-19 with applications closing at the end of 2023; they used their usual assessment process, including "seeking clinical advice on the applications in the first half of 2024."[67] Pharmac plans to assess products at the same time as Medsafe rather than waiting for approval in the future.

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