

Three weeks or three months: the gap between Covid doses matters

By Wendy McGuinness

Experience from the UK's Covid-19 vaccination rollout suggests 12 weeks may be the optimum gap between first and second doses, giving a better immune response than when the doses are closer together. So why are so many New Zealanders being offered their vaccines three weeks apart?

When the British Government launched its vaccination programme, the big gap between first and second doses was more a function of necessity than science.

The strategy was primarily focused on getting one dose in the arm of as many citizens as possible, with the second dose coming later, when supply ramped up.

That gap between doses mostly ended up being two to three months apart.

But as researchers looked at the results, they found that the delay turned out to have another major benefit.

“The bigger the gap you can leave between vaccines the better the immune response”, UK scientist Dr Chris Smith told RNZ’s Kim Hill in a 26 June interview – “Twelve weeks was de rigueur.”¹

Same message from the June 2021 guidance from Public Health England.

“Evidence shows that delaying the second dose to 12 weeks after the first improves the boosting effect. Data from clinical trials shows that the efficacy of the AstraZeneca vaccine was higher when the second dose was given at, or after 12 weeks and a recent study of people aged over 80 years found that extending the second dose interval to 12 weeks for the Pfizer BioNTech vaccine markedly increased the peak spike-specific antibody response by three and a half times compared to those who had their second vaccine at three weeks.”

Only in certain specific cases was it best to give the second dose earlier, the guidance says.

“An interval of 28 days may be observed when rapid protection is required (for example for those about to receive immunosuppressive treatment). It may also be recommended that the interval between the two doses be shortened to less than 12 weeks in periods of high or increased disease incidence.”²

The WHO recommends 21 to 28-day intervals between Pfizer doses, and that the second dose can be extended to 12 weeks to gain coverage for high priority populations.³ Importantly, not all the science is in and the extent of the level of improved immunity, particularly in response to the Delta variant, is not yet well understood.⁴

What we do know is that New Zealand is a country with zero-community cases, and as Associate Professor Nathan Bartlett, School of Biomedical Sciences and Pharmacy, University of Newcastle, put so clearly: “So the improved immunity conferred from waiting longer must be weighed against the risk of contracting COVID in the meantime.”⁵ As there is little to no risk of contracting COVID-19 in New Zealand, it seems logical that New Zealand should focus on improving immunity over the longer term– and that currently suggests a longer gap between doses.

The New Zealand way

In contrast to the UK, New Zealand has adopted a different strategy, focusing on optimising two doses for our most vulnerable citizens and minimising the gap between doses, in some cases, to as little as three weeks (see the resulting strategy in Figure 2).

The UK research tells us that a more successful rollout strategy for New Zealand should look like the UK in March 2021 than New Zealand in June 2021 (see Figures 2 and 3).

Success for New Zealand in, say, September 2021, would show a graph with more people having had “one dose only” than “fully vaccinated”. New Zealand’s rollout strategy, at a time when community cases are zero, should follow the UK’s double-barrel approach. We need to:

- Get as many first doses of the vaccine in New Zealanders’ arms as quickly as possible so we can maximise impact if/when an outbreak occurs; and
- Increase the gap between doses from three to 12 weeks (unless people are vulnerable, in which case the gap should be reduced to eight weeks). This approach provides maximum immunity and therefore better value for money.

Inadequate vaccination certificates

A related issue is around vaccination certificates.

New Zealand must improve its vaccination certificate, see Figure 4. It is currently a piece of card that could easily be photocopied. Importantly, there is no photo, address or individual NHI number. There is also no signature or number to identify the person that provided the vaccination.

A certified vaccination card will be essential when we travel or when a few of us apply for a new job.

No doubt there is work happening behind the scenes to remedy this, but a photo could have been collected at the time of the first vaccination and a verifiable certificate could have been posted out after the second dose.

This is a missed opportunity.

Lastly, the booking system needs to be reviewed. It is very technology-dependent and many older New Zealanders or those in country areas may not have access to the internet or the latest iPhone or iPad. The local medical centre seems a fairer and more robust solution than a newly set-up vaccination centre. It is also difficult to ask vulnerable people to attend a vaccination centre which shares a lift with an MIQ hotel - as was my mother’s experience.

More work is needed in this area as well.