

The case for New Zealand to have its own COVID-19 vaccine programme

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With the early success of the measures taken under COVID-19 Alert Level 4 becoming apparent over the past few days, New Zealand is well on the way to suppressing SARS-CoV-2, the virus that causes COVID-19, or even eliminating it from the population. If this happens, New Zealand will be able to manage, over the short term at least, any outbreaks through border control, aggressive contact tracing, case isolation and contact quarantine.

However, this is not a viable long-term position for New Zealand's economic future or the health of its people. New Zealand is a trading nation; cross-border trade involves not only the flow of product but also of services, people, investment and ideas. Our tourism, hospitality and education sectors are heavily dependent on the flow of people. Annual international tourism expenditure is \$17.2 billion and 229,566 people are directly and another 163,713 indirectly employed in tourism, equating to 14.4% of the total number of people employed in New Zealand.¹ Furthermore, international education contributes \$5.1 billion annually to the New Zealand economy.² Therefore, the economic cost of maintaining the current border restrictions will be in excess of \$22 billion per year (\$63.8 million per day).

It is clear that New Zealand needs a vaccine to prevent COVID-19 to protect ourselves and restore our economic health. Currently, the vast majority of New Zealand's population is immunologically naive and remains susceptible to SARS-CoV-2, which is likely to continue circulating in the human population indefinitely. To safely reduce the current border controls, we need to achieve

a level of immunity to protect us when travelling overseas and from those arriving into New Zealand. A vaccine is the only clear exit strategy that will allow New Zealand to return to normality.³

In response to the pandemic, over 78 vaccines are in early-stage development.⁴ Most will not reach the market and given the time it takes to develop, assess and manufacture a vaccine, it is unlikely that New Zealand will be able to access the required number of vaccine doses within the short to medium term.

CureVac, a German company which is developing an RNA vaccine, has stated that its facilities would only be able to produce up to 400 million doses a year.⁵ Johnson and Johnson, who are collaborating with the US government to develop a recombinant adenoviral vector vaccine, are expecting "hundreds of millions of people, that is, a broad population, to have access to the vaccine by the end of 2021 and in the course of 2022".⁶ Once developed, it will take several years to manufacture enough doses of vaccine to meet global demand.

Furthermore, experience with the last pandemic vaccine for influenza virus H1N1 in 2009, suggests that countries will almost certainly require vaccine manufacturers to meet their own requirements before allowing export to other countries.^{5,7} Indeed, there was a recent report that the President of the US may have sought to buy the German company CureVac with the stipulation that any vaccine produced would be "only for the USA".⁷ This risk was also evident in June 2019, when Pharmac advised that it could not source additional influenza

vaccines as “there’s no way of buying more doses of flu vaccine for this winter because supplies are simply not available”. Global manufacturers were starting to make stock for the northern hemisphere, and there were no more supplies of the southern hemisphere vaccine.⁸

Not surprisingly, given the global nature of pandemics, the World Health Organization has in the past⁹ and once again raised concerns about the global capacity to manufacture and equitably distribute sufficient quantities of an effective vaccine.⁵ There is a high risk that New Zealand will be unable to access an internationally developed vaccine in sufficient quantities to relax border restrictions, once a vaccine is approved for public use.

New Zealand is well recognised for its ability to produce outstanding scientific discoveries and technological innovation and on a global scale punches well above its weight.^{10–12} It has the organisations and infrastructure capable of manufacturing vaccine at scale, once the appropriate vaccine formulation has been decided, it has world class vaccine safety and monitoring agencies, and internationally recognised scientific capabilities in its universities and medical research institutes in the design and development of leading edge therapies.^{13,14} Funding and focusing this uniquely New Zealand capability will substantially reduce the timelines for having a vaccine widely available in New Zealand.

Given that the costs of vaccine development, clinical trials and manufacturing are so high, it could be reasoned that it is better for New Zealand to “wait out” the global pandemic and rely on sourcing a safe and effective vaccine from the global market in the future. The challenge with this strategy is that we do not know when that future will be, what a safe and effective vaccine against COVID-19 should look like, and whether countries will hoard vaccines behind a single supplier and close key pharmaceutical exports. This is what drove the Canadian Government’s decision to secure its local vaccine supply for influenza as it had already seen its access to the limited global supply of vaccines dry up during

two previous pandemic scares.¹⁵ Establishing more depth in New Zealand’s vaccine industry would improve our ability and preparedness to rapidly respond to future emerging threats, such as another variant of SARS-CoV.

The current border restrictions are costing New Zealand hundreds of millions of dollars per week. It is prudent for New Zealand to invest in a COVID-19 vaccine development programme that will provide New Zealand with the option to develop and produce its own vaccine or to produce a vaccine developed offshore. In addition, it builds the capability for the country to respond more quickly should another global pandemic emerge in the future.

This capability also facilitates New Zealand to provide vaccine access to its Pacific partners such as Samoa, Tonga, Fiji and the Cook Islands (among others), whose economies are largely dependent on tourism and trade.¹⁶ New Zealand has key partnerships, shared national identity and critical aid relationships¹⁷ with the Pacific Nations and with developed vaccine production capability, can play a key role in the wider region’s rapid economic recovery. Ensuring the protection, health and economic viability of New Zealand can be achieved through:

1. Initiating a programme to evaluate the best vaccines being developed internationally with scalable potential in New Zealand, to be accessible to the entire population.
2. In parallel, progressing COVID-19 vaccine development programmes nationally and through global partnerships (in particular with Australia), involving leading research institutions, government and industry.
3. Building capability for vaccine production sufficient to rapidly vaccinate everyone in New Zealand when a vaccine becomes approved either nationally or internationally for public use.
4. Developing a plan for how a vaccine will be rolled out and who should receive it first.

In summary, we strongly believe New Zealand has the capability to make a significant contribution to the global COVID-19 vaccine development and manufacturing efforts. Furthermore, having its own COVID-19 vaccine programme will ensure New Zealand is well placed to access an

effective vaccine at the earliest possible opportunity.

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