Vaccine mandates in the time of Omicron

David C G Skegg, Maia Brewerton, Philip C Hill, Ella Iosua, David R Murdoch, Nikki Turner

Our group was asked to give independent advice to the New Zealand Government on the place of vaccine mandates in the current strategy for minimising harms caused by the COVID-19 pandemic, to health, society and the economy. As we had not previously reported on this subject, we were able to take a fresh view of the evidence, without any temptation to defend previous positions.

There is often confusion about the term "vaccine mandate". In the late 19th and early 20th centuries, vaccination of children against smallpox was compulsory in New Zealand, as in many other countries, but the mandate was not rigorously enforced. Vaccination of citizens against SARS-CoV-2 has been mandated in some parts of China, and a proposal to require this in Germany will be debated in the Bundestag within the next few weeks. In Italy and Greece, vaccination is mandatory for people in older age groups. Compulsory vaccination against SARS-CoV-2 has never been proposed in New Zealand.

In New Zealand the term vaccine mandate has mainly been used, during this pandemic, to describe Government orders for people in certain occupational groups, such as healthcare workers, to be vaccinated in order to continue working in those roles. Apart from the Health and Disability sector, vaccine orders currently apply to at least some workers at the Borders and in Education, Corrections, Fire and Emergency, the Police, and the Defence Force.

Employers can also require vaccination against various diseases as a condition of employment. This has been common for many years in certain sectors, such as healthcare providers and armed forces. Since the advent of COVID-19, some employers have required vaccination against the virus, either to ensure continuity of their business or to protect other staff or customers who may be vulnerable. Government regulations introduced in December 2021 provided an assessment tool that an employer may (but is not required to) use to assess whether it is reasonable to require that workers be vaccinated.

The term "vaccine mandate" is also sometimes used loosely to refer to the requirement that people show a vaccination certificate ("My Vaccine Pass"), in order to attend places such as hospitality venues that are using these. Under the COVID-19 Protection Framework (CPF), limits on the numbers of people who can attend hospitality venues or gatherings, such as church services or marae, depend on whether or not vaccination certificates are used. There is a legal requirement that businesses that have to use vaccine passes to operate, or to operate with fewer restrictions, must ensure that their own employees are vaccinated. The CPF is being revised, so the role of vaccination passes is not discussed here. We will use the term "vaccine mandates" to refer to the occupational mandates imposed by the Government.

Diverse benefits of vaccination

Vaccination against any disease is often seen as a step that people take to protect themselves from illness. Such *individual protection* is important, but there are also other benefits. Vaccination may reduce the risk that a person will infect *other people around them,* who may be particularly vulnerable (and who may not themselves be able to derive as strong protection from vaccination). Vaccination can also provide *community protection*, helping to control the spread of illness in the whole population.

In the case of COVID-19, vaccines have been shown to be especially effective at preventing severe illness and death. This benefits not only the sick person and their family and friends, but also the whole community—because health services are less likely to become overloaded. In places like the United Kingdom, where there have been very large outbreaks of COVID-19 over the last two years, many people with unrelated diseases (such as cancers) have had difficulty in accessing healthcare. Consequently, there are now unprecedented numbers of patients waiting for delayed treatment or elective surgery.

Evidence is mounting about delayed effects of infection with SARS-CoV-2, including the condition known as "long COVID". By reducing the risk

of such complications, vaccination benefits both the individual and the community.

Control of COVID-19 also helps to protect public and private enterprises. In many countries, large outbreaks have led to massive absenteeism and temporary collapse of some public services and commercial businesses. This has been less of a problem in highly vaccinated populations.

Experience has shown that the protection provided by vaccines wanes after a few months, although it lasts for longer against severe disease. For most vaccines against SARS-CoV-2, the primary course for adults involved two doses, but it is now clear that a booster dose is highly desirable—especially for people who are at risk of severe disease. It might be better if we talked about a "vaccination course", as the term "booster" is interpreted by some as implying an optional extra. A full vaccination course now involves three doses for the majority of adults, and two doses for most children. Immunocompromised people need three or four doses, depending on their age and the severity of their condition.

Experience with vaccine mandates in New Zealand

Most of the occupational vaccine mandates in New Zealand were introduced in the latter part of 2021, as the country was battling with the Delta outbreak. The main purpose of these mandates has been to reduce the risk of workers becoming infected and transmitting the virus to groups of people who may be either unable to be vaccinated themselves (eg young children), particularly vulnerable to infection (eg sick patients or residents in aged care), or at risk of large outbreaks (eg inmates in prisons).

Encouraging vaccination in the general population was not one of the specific objectives of vaccine mandates. Nevertheless, the fairly wide application of mandates probably was one of the factors contributing to the achievement of New Zealand's excellent overall vaccination coverage. Along with other public health measures, this averted what could have been a disastrous wave of disease caused by the Delta variant. As we now deal with a large Omicron outbreak, vaccination is undoubtedly reducing the numbers of people who are becoming seriously ill and requiring hospital treatment.

As in other countries, people are becoming fed up with restrictions needed to control a pandemic that has gone on for longer than anyone envisaged. Vaccine mandates have attracted particular criticism. A small minority of the population harbour strong objections to vaccination, and some have been prepared to accept redeployment or redundancy, rather than agree to be vaccinated. Some others feel that the imposition of occupational mandates, even for sound public health reasons, involves an unjustified infringement of personal liberty. There are also legal debates about the relevance of the New Zealand Bill of Rights Act.

Clearly, we are not qualified to comment on the legal issues. As public health and medical professionals, however, we are vitally concerned about the wider effects of preventive measures on societal wellbeing—and not just on numbers of illnesses and deaths. In developing our recommendations, we have taken account of the particular challenges associated with the use of vaccine mandates.

An evolving pandemic

Vaccine mandates were never intended to be permanent, and it was assumed they would be reviewed periodically. Such a review is appropriate now, for several reasons. First, there is high overall vaccination coverage in the community, although it is disappointing that the uptake of the third (booster) dose of the vaccine has not been higher. Second, the proportion of people with some immunity from natural infection will be increasing greatly during the current outbreak. Third, although some infections with the Delta variant are probably still occurring (and we need better surveillance), there has been a shift to the Omicron variant which now accounts for the vast majority of infections.

Individuals infected with the Omicron variant are less likely to require hospitalisation, and especially intensive care, than people infected with Delta. Nevertheless, Omicron is so infectious that in many countries it has caused more hospital admissions and deaths than those which occurred during Delta outbreaks. That will also be the case in New Zealand.

One of the reasons why Omicron is so infectious is that it is more capable than Delta of evading immunity conferred by vaccination or previous infection. Evidence about the effectiveness of vaccination against Omicron is still accruing, but we summarise here what is known at present.

While current vaccines provide less protection against symptomatic infection with Omicron than with Delta, there is good protection against severe illness, particularly after a third (booster) dose. It is unclear how quickly the immunity provided by the third dose against symptomatic infection will wane, but protection against severe disease will last longer. Key observations for the current discussion are that adults who have received three vaccine doses are (1) less likely than unvaccinated people to get infected with Omicron, and (2) less likely to pass the infection on to others. The differences are smaller than in the case of Delta, but still appreciable.

It must be remembered that a new variant of the virus may displace Omicron in the months ahead. Such a new variant could be more or less virulent in causing human disease. Experience with previous variants suggests that current vaccines would be likely to retain at least some of their effectiveness. It is also possible that new vaccine formulations would be developed that further reduce the risk of infection and transmission, particularly in the case of a dangerous new variant.

Use of mandates in other countries

Internationally, there has been wide variation in the use of occupational vaccine mandates. It is perhaps most instructive to consider experience in countries with which we share a similar constitutional background. The United Kingdom requires aged care workers to be vaccinated. Legislation was amended, with the intention to extend the mandate to frontline health and social care workers, but in January 2022 this decision was reversed at the last moment. It is believed that this was because of a fear that the National Health Service, already critically overloaded, would not be able to cope with the withdrawal of large numbers of workers. Vaccine hesitancy among such groups appears to be much commoner than in New Zealand.

The United States Government introduced vaccine mandates for federal employees and contractors in July 2021, but this has been challenged in the courts. Most measures for controlling COVID-19 are the responsibility of state and local governments. There is wide variation in the use of vaccine mandates in different states. Some states have imposed no occupational mandates, while others require vaccination of public employees, as well as health workers and other groups.

Australia, like the United States, has a range of public health measures because of its federal system. The country is now well past its peak of Omicron cases. Yet while most public health restrictions have been lifted, Australian states have largely maintained occupational vaccine mandates. In New South Wales, employees in education, health, and aged care services are required to be vaccinated. In Victoria, vaccine mandates, requiring two doses, apply to a very wide range of public and private sector employees. Third doses are required for those in health care, education, aged care, custodial settings, emergency services, food processing and distribution, and quarantine accommodation.

Conclusions

The case for or against retaining occupational vaccine mandates is now more finely balanced, because of our relatively high vaccination coverage and increasing natural immunity, as well as the apparent lowering of vaccine effectiveness against transmission of the Omicron variant. We also recognise that the Government needs to consider factors other than those discussed here, such as legal considerations and political assessment of the "social licence" for retaining this component of our public health strategy.

For a few occupational groups, we believe that vaccine mandates should be retained for the time being. These groups are: healthcare workers, care givers in the disability sector, aged care workers, workers in Corrections, and border workers along with those in managed isolation and quarantine (MIQ) facilities.

Health workers are more likely to be exposed to COVID-19, and are also liable to transmit the virus to highly vulnerable patients in their care. Aged care facilities and prisons are also places where vulnerable people may be exposed to large outbreaks.

Border and MIQ workers are likely to be the first people in our community to be exposed to new variants of SARS-CoV-2. It is important to minimise their risk of becoming infected, and passing the infection on to others.

Most of these groups have already been required to obtain a full vaccination course (including a booster dose), and this requirement for a booster dose should be extended to any who have not yet been included.

While vaccination remains critically important in protecting New Zealanders from COVID-19, we believe that several of the vaccine mandates could

be dropped once the Omicron peak has passed. These include the mandates for workers in Education, Fire and Emergency, the Police, and the Defence Force. Mandates for these occupational groups need to be replaced by national advice as to how the leaders of the services should protect their staff and reduce the spread of disease to others. Such measures should include clear recommendations for vaccinations and other public health measures that reduce the transmission of respiratory infections. In some cases, it would be appropriate for vaccination to be a condition for new employment. New Zealand has been slow to develop occupational vaccination policies for a whole variety of infectious diseases, and we hope that experience of the current pandemic will lead to new initiatives in this area.

Although vaccination is now available for children over 4 years of age, this is not the case for those in early childhood education centres and kōhanga reo. We are also conscious that, while COVID-19 is generally less severe in children than in adults, some children suffer serious early and longer-term effects. Outbreaks of COVID-19 in schools also have significant social consequences for many children. Hence there needs to be a comprehensive plan for protecting children from COVID-19. This could be incorporated into a broader plan for protection against respiratory disease, recognising the importance of influenza and other respiratory illnesses such as RSV.

Occupational vaccine mandates should be reviewed within six months. It is possible that a review will be needed earlier, if there is a new surge of Omicron cases or emergence of a dangerous new variant. In such circumstances, administration of a fourth vaccine dose might need to be considered. It is always possible that some vaccine mandates might need to be reinstated in the future.

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COMPETING INTERESTS
Nil.

AUTHOR INFORMATION
David CG Skegg: Emeritus Professor, Department of Preventive and Social Medicine, University of Otago, Dunedin.
Maia Brewerton: Clinical Immunologist, Department of Clinical Immunology and Allergy, Auckland City Hospital, Auckland.
Philip C Hill: Professor of International Health, Centre for International Health, University of Otago, Dunedin
Ella Iosua: Senior Research Fellow, Biostatistics Centre, Division of Health Sciences, University of Otago, Dunedin.
David R Murdoch: Vice-Chancellor, University of Otago, Dunedin.
Nikki Turner: Immunisation Advisory Centre, Department of General Practice and Primary Health Care, University of Auckland, Auckland.

CORRESPONDING AUTHOR
Professor David Skegg: Emeritus Professor, Department of Preventive and Social Medicine, University of Otago, Dunedin. david.skegg@otago.ac.nz.

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