

Bumper issue of COVID-19 pandemic studies of relevance to Aotearoa New Zealand

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ABSTRACT

In response to the COVID-19 pandemic, Aotearoa New Zealand adopted a clear 'elimination strategy', which has (up to June 2021) been very successful in both health and economic terms compared to other OECD countries. Nevertheless, the pandemic response has still been a very major shock to the New Zealand health system. This issue of the *New Zealand Medical Journal* has 14 new pandemic-related articles. Some of this work can help inform vaccination prioritisation decisions and inform preparations of primary and secondary care services and social services for any future raising of levels in the pandemic Alert Level system. Particularly strong themes are around the value (and challenges) of telehealth services, and also the need for responses throughout the health system to ensure health equity and support for the most vulnerable citizens.

As with a number of other jurisdictions in the Asia-Pacific region, New Zealand adopted tight border controls and other stringent public health and social measures (PHSMs)¹ to control the COVID-19 pandemic. The country's clearly articulated COVID-19 'elimination strategy'² has been remarkably successful.³⁻⁵ Despite occasional border system failures that have caused outbreaks,⁶ the country has regained its elimination status after each instance (at least up to late June 2021).

Indeed, New Zealand has the lowest COVID-19 cumulative death rate in the OECD (data from the Worldometers website⁷ on 26 June 2021). It has also had the lowest level of 'excess deaths' among OECD countries⁸ and within a grouping of 29 high-income countries.⁹ Similarly, New Zealand was one of only a few high-income countries where life expectancy actually increased between 2018 and 2020, with pandemic-related reductions in the others.¹⁰

New Zealand has also done better than the OECD average in terms of average changes in quarterly GDP (from Q1 2020 to Q1 2021 and with higher growth in the first quarter of 2021).¹¹ It also had relatively lower increases in unemployment than the OECD average.¹² Also, relative to other OECD countries, New

Zealand topped a 'normalcy index' that assessed return to 'pre-pandemic life'.¹³

However, a full and proper analysis of New Zealand's elimination strategy response to the COVID-19 pandemic will need to take account of a multi-year perspective. In particular, it will need to be done after COVID-19 vaccination coverage has stabilised in New Zealand and comparable OECD countries. Indeed, the country is still at risk of large outbreaks until it achieves high vaccination coverage (it was near the bottom of the OECD on 24 June 2021 for people fully vaccinated¹⁴ and equity goals were not being met¹⁵). The Government also needs to upgrade the outdated Alert Level system,¹⁶ integrate mass masking in a systematic manner¹⁷ and enhance border protections, along with other potential upgrades.^{18,6} There are of course numerous lessons for the future in terms of enhancing New Zealand's pandemic response capabilities.¹⁹

What are some of the health impacts of the pandemic response in New Zealand?

Much research relating to COVID-19 and New Zealand has already been reported, including the psychological distress associated with raised Alert Levels.²⁰ There

was also an increase in alcohol-related emergencies involving ambulance staff attendances in 2020,²¹ and increased smoking levels in some groups.²² Potential adverse impacts of increased COVID-19-related unemployment onto cardiovascular disease have been modelled.²³ Publications have also considered equity issues around health service impacts,²⁴ and the perspectives of Māori^{16,25,26} and Pasifika.²⁷ Although it appears that cancer care services were disrupted by the pandemic response, this was relatively minor overall (eg, “an 8% year-to-date decrease in radiation therapy attendances”).²⁴ There was also “little evidence of differential impact of COVID-19 on access to cancer diagnosis and care between ethnic groups,” but for lung cancer there was a decrease in new diagnoses among Māori.²⁴

Identified benefits of the response included that the experience of the raised Alert Levels had positive psycho-social aspects for some people.²⁸ There was also a reduction in 2020 in infectious respiratory diseases.^{29–31} These reductions in infectious diseases may have long-term implications for disease control (eg, the value of staying at home when unwell and mask wearing on public transport in winter months).

What do the new studies in this Journal show?

The 14 new articles relating to COVID-19 in this issue of the *New Zealand Medical Journal* span epidemiology and public health (n=4), secondary care services (n=3), telehealth services (n=3) and various other COVID-19 issues (n=4) (see Table 1 for brief summary details). Particularly notable is the evidence for increased risk of hospitalisation from COVID-19 for Māori and Pasifika by Steyn et al.³² This work has immediate relevance to prioritisation with the current COVID-19 vaccine rollout, as does the article presenting the case for prioritising those with mental health and addiction issues by Lockett et al.³³ Also of substantial current relevance is thinking around the importance of border controls by Eggleton et al.³⁴ and the health and social support needed for low-income people if raised Alert Levels are required again (the work by Choi et al.³⁵).

The articles relating to secondary care provision can all provide lessons if New Zealand needs to go up levels in the COVID-19

response Alert Level system in response to outbreaks or the threat of outbreaks (Table 1). A particularly strong theme is around the expanded use of telehealth services, with this being the major theme for three articles and also considered in three others. The overall impression given is that telehealth services were very useful when Alert Levels were raised, albeit with various limitations and issues of concern raised (eg, risk of increasing inequities). Some authors consider that increased routine use of telehealth in some areas of healthcare delivery may have long-term efficiency benefits. One study also includes qualitative data on the use of telehealth for contacting Māori patients through a marae clinic.³⁶

A notable feature of this body of new articles is that many consider aspects of equity in terms of ethnic or income inequities,^{32,35,37} those with chronic/underlying conditions,^{32,33} how government funding support for general practices was not consistently pro-equity during the response³⁸ and whether telehealth in primary care exacerbates inequities.³⁶ With regard to the latter it might be that, for well-designed telehealth services (as argued for in one article³⁹), there could be long-term equity benefits if these new services can be used to reduce waiting times and improve service delivery to underserved communities. But to facilitate this, further improvements could be made to internet broadband and mobile phone access across the country (as per some of the difficulties identified in one study³⁶).

Conclusions

In response to the COVID-19 pandemic, Aotearoa New Zealand adopted a clear elimination strategy, which has (up to June 2021) been very successful in both health and economic terms compared to other OECD countries. Nevertheless, the pandemic response has still been a very major shock to the New Zealand health system. This issue of the *Journal* includes work that can help inform vaccination prioritisation decisions and preparations of primary and secondary care and social services for any future raising of levels in the Alert Level system. Particularly strong themes are around the value (and challenges) of telehealth services, and also the need for responses throughout the health system to ensure health equity and support for the most vulnerable citizens.

Table 1: New studies in this issue of this *Journal* on COVID-19 pandemic-related issues in Aotearoa New Zealand.

Topic and authors	Key findings
Epidemiology and public health	
Risk of hospitalisation with COVID-19 in New Zealand (Steyn et al ³²)	This analysis of 1,829 COVID-19 cases in New Zealand reported that Māori had 2.5 times greater odds of hospitalisation and Pacific people 3 times greater odds than non-Māori, non-Pacific people (after controlling for age and pre-existing conditions). The authors concluded that “structural inequities and systemic racism in the healthcare system mean that Māori and Pacific communities face a much greater health burden from COVID-19. Older people and those with pre-existing health conditions are also at greater risk.” The authors state that these findings should inform future decisions around prioritisation for vaccination.
Prioritising people with mental health and addiction issues for vaccination (Lockett et al ³³)	This article reports on the work of an expert advisory group convened as part of the Aotearoa Equally Well collaborative. It found that “evidence indicates an association between mental health and addiction issues and infection risk and worse outcomes.” “The group concluded mental health and addiction issues should be recognised as underlying health conditions that increase COVID-19 vulnerability, and that people with these issues should be prioritised for vaccination.” The authors argue that “addressing these inequities must be integral in modern health policy—including our COVID-19 pandemic response.”
Views on border control and other control strategies (Eggleton et al ³⁴)	From three surveys of primary care practices, this study reported increasing support for “opening a trans-Tasman border but not internationally.” Two broad themes were for making sure that the border is not an Achilles heel and effective strategies to reduce local transmission. Sub-themes included community control, tracing and testing individuals and vaccinating population. An issue raised concerned the need to prevent pandemic spread from New Zealand: “Would be scared of NZ taking it into Pacific Islands after measles problems.”
Handwashing amenities in public toilets (Wilson and Thomson ⁴⁰)	This study concluded that “although handwashing is probably a much less critical COVID-19 control intervention than reducing aerosol transmission, it should still be strongly supported. Yet this survey found multiple deficiencies with handwashing amenities at public toilets and only modest improvements since a previous survey.”

Table 1: New studies in this issue of this *Journal* on COVID-19 pandemic-related issues in Aotearoa New Zealand (continued).

Topic and authors	Key findings
Secondary care	
Impact of the raised Alert Levels on patients with Parkinson’s disease (PD) (Blake-more et al ⁴¹)	This study surveyed 134 people with PD and 49 healthy controls, and reported that perceived stress was higher in PD patients than controls and “in those reporting a worsening of tremor, balance/gait, dyskinesia and bradykinesia compared to those indicating no change during the COVID-19 lockdown.” The authors conclude that “Reducing stressors may be an important adjunct treatment strategy to improve motor function in PD.”
Delivery of ophthalmology services and the raised Alert Levels (Scott et al ⁴²)	This study surveyed ophthalmologists nationwide and found that a large majority of respondents (82% and 98% respectively) reduced elective clinic and surgical volumes by at least 75%. National-level information confirmed major reductions in clinics (down to 38.2% of normal) and elective operating volumes (down to 11.5%), with virtual visits increasing 18-fold. However, recovery was rapid with: “Elective clinic and elective operating volumes promptly recovered to usual volumes on the second month post lockdown.” In terms of telehealth, the authors note that “this form of service delivery may have a greater role in our overburdened public health system for the future.”
Impact on a urology service from the raised Alert Levels (Lambracos et al ⁴³)	This study detailed how the raised Alert Levels resulted in “an overall reduction in service delivery and a reorientation to non-contact outpatient consultations.” But this was “mitigated by proactive outsourcing of elective surgery to a private hospital and a dramatic shift to virtual consultations.” The authors report that this experience can inform crisis response management for the future but also the potential benefits of telehealth going forward: “Furthermore, with regard to the virtual consultation platform, the data also suggest ways in which our practice can be adapted on a routine basis in the future, in order to increase efficiency and to provide a service that is both economic to the patient and environmentally prudent.” A notable feature of this study was how the telehealth aspect was estimated to have saved “an average 22.7km of travel per patient,” with benefits for the environment, and out-of-pocket travel costs for patients.

Table 1: New studies in this issue of this *Journal* on COVID-19 pandemic-related issues in Aotearoa New Zealand (continued).

Topic and authors	Key findings
Experiences with telehealth (see also the articles on urology services and ophthalmology services in the two rows directly above, and the study by Choi et al in the next subsection below)	
Experiences with telehealth in primary care (Wilson et al ³⁶)	This study reported on nationwide surveys of New Zealand general practice teams. It reported that telehealth consultations were “most successful where there was a pre-existing relationship between healthcare provider and patient.” But various barriers identified included “technological challenges, communication difficulties for those with hearing impairments, concern regarding the cost and difficulty in making online payments.” The authors noted that the experiences described were “consistent with other international work showing that telehealth risks increasing inequity” (eg, “it can create extra barriers for those who are already disadvantaged, such as those in rural areas, those with hearing impairment or cognitive decline and refugee and migrant populations who may have language barriers”). Of note was that after the Alert Level restrictions there was a “rapid move back to in-person care and ‘business as usual’ was felt by the GP teams to be driven by patient choice. So while telehealth may play an increasing role in the future, it is unlikely to fully replace in-person care.” The authors provide a number of recommendations for improving the use of telehealth in primary care settings.
A nurse practitioner-led telehealth programme for heart failure management (McLachlan et al ³⁷)	This study found that “for most patients, the home monitoring/telephone process resulted in rapid titration and less need for clinic review. Patients found the process acceptable and 60% of clinic visits were able to be held remotely, saving patients both time and money.” Titration rates and markers of improved outcomes improved across cardiac imaging, biochemical and clinical findings and were comparable to most real-world clinical reports.” The authors suggest that this simple and straightforward process could be replicated across District Health Boards.
Telehealth and ophthalmology (March de Ribot et al ³⁹)	This article considers some of the international literature around ‘teleophthalmology’ and the New Zealand situation with respect to service demand and the impact of the raised Alert Levels. The authors argue the case that teleophthalmology could improve the referral process, and if teleophthalmology is properly implemented, they anticipate “a 40% decrease in the number of referrals to public ophthalmology services in New Zealand, which would improve the workflow in ophthalmology departments of public hospitals by about 20%.” Limitations such as cost are discussed but overall the authors argue that “now is the moment to implement innovations so as not to leave anyone behind.”

Table 1: New studies in this issue of this *Journal* on COVID-19 pandemic-related issues in Aotearoa New Zealand (continued).

Topic and authors	Key findings
Other	
A qualitative study of low-income New Zealanders' experiences with raised Alert Levels (Choi et al ³⁵)	This qualitative study used 27 interviews with low-income people in June–July 2020 (immediately after 'lockdown' was lifted). It reported that life during lockdown was challenging for study participants. "They were fearful of the virus and experienced mental distress and isolation. Most participants felt safe at home and reported coping financially while still experiencing financial stress. Participants were resourceful and resilient. They coped with lockdown by using technology, self-help techniques and support from others." The study found that, although participants had access to health services and welfare payments, "welfare payments did not fully meet participants' needs, and support from charitable organisations was critical." Nevertheless, participants were "overwhelmingly positive about the Government's response and advised the Government to take the same approach in the future." The study authors concluded that "An early and hard lockdown, the welfare state, compassion and clearly communicated leadership were keys to a successful lockdown for the low-income people in this study." They also note that capturing the experience of low-income people during pandemics "is critical to ensuring inequities in pandemic impact are mitigated."
Ministry of Health (MOH) funding of general practices (Selak et al ³⁸)	This study reported that initial emergency financial support in March 2020 for general practices was higher for those with more high-needs patients. But this was not the case for the funding in April 2020. The authors argue that "in the future, the MOH should apply pro-equity resource allocation in all emergencies, as with other circumstances." The article provides valuable context in terms of the inequitable burden of COVID-19 according to ethnicity and also evidence for the wider problem of inadequate New Zealand Government funding of health services according to need.
Review of COVID-19 serology in the New Zealand context (McAuliffe and Blackmore ⁴⁴)	This article provides a review of the use of COVID-19 serology in the New Zealand context. "Testing may provide useful information in public health investigations or select cases of post-infectious complications and is necessary for overseas travel to some destinations." But the authors note that "test reliability varies substantially according to the testing scenario." Importantly they note that "the role of post-vaccination serology testing as a correlate of immunity has not yet been determined," and make an argument for clinical microbiologist advice for interpretation in "high-consequence cases."
Medical student contribution to the COVID-19 response (Cowie et al ⁴⁵)	This article describes how a group of New Zealand medical students were involved in a local COVID-19 response. It identified both the helpful contribution the students made to the response, alongside the "valuable clinical and public health experience" gained. They reported that "we found our involvement rewarding, whether it was on the frontline or not, and the level of risk balanced well with learning opportunities." Home visits for COVID-19 testing were also considered valuable from a learning perspective: "These visits let us view living situations from the centre of a patient's home. This left a lasting impact on many of us and cemented a strong reminder of how risk factors and living conditions can impact upon health."

Competing interests:

One of these 14 COVID-19 related articles described here involved the first author of this Editorial (ie, the survey by Wilson and Thomson). He is also the sibling of the third author in the survey by Scott et al. The last author of this editorial was also a contributor to the article by Choi et al.

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