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Commentary

Expansion of a national Covid-19 alert level system to improve population health and uphold the values of Indigenous peoples

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Introduction

Aotearoa New Zealand's (NZ) Alert Level system for Covid-19 pandemic control appears to have been a highly effective instrument for pandemic response communication and implementation and has contributed to successful elimination of Covid-19 [1,2]. The system was designed for the policy settings of NZ's first outbreak (February to May 2020), but it no longer aligns well with new evidence and the much more sophisticated response to recent outbreaks, where the aim is to maximise health benefits while minimising social and economic harm. Importantly, several aspects of the Alert Level design and implementation have not worked adequately for Māori, the Indigenous people of Aotearoa NZ. In this proposed revision we consider the evolving requirements for the system to address outbreaks before the population is substantially vaccinated and to establish a more sustainable future role in protecting population health.

A revised Covid-19 Alert Level system as valuable legacy infrastructure

The Alert Level system is well-positioned to become an enduring legacy of the Covid-19 pandemic. With some revision this system could provide a flexible infection control framework to manage the next phase of the pandemic and to address NZ's longstanding burden of infectious disease incidence and inequities [3] by building in prevention synergies with other endemic, epidemic, and pandemic diseases. There is also potential for benchmarking infection control to support mutual travel agreements with other countries, particularly in the Western Pacific.

The past year has amply demonstrated the value of Indigenous models of health for responding to public health emergencies [4]. This new version aims to be explicitly equity-promoting and to uphold Te Tiriti o Waitangi/the Treaty of Waitangi, the founding document of NZ's constitution.

Key aspects of the Alert Level revision

The proposed changes are summarised in the points below and in Table 1; we present a more detailed discussion in the online Supplement. Benefits of the revised system include:

- **Upholding Te Tiriti and implementing a more equitable response:** The current system has made several assumptions that do not necessarily hold for Māori [4], for example, that 'households' are small nuclear families. In many regards the current system is rules-focused rather than building on the known effectiveness of a strengths-based, mana-enhancing (self-empowering) approach. Māori knowledge and capability can ensure that the system is more responsive to populations at risk [5] and more effective at protecting community wellbeing in a public health emergency.
- **Better calibrating controls to the level of risk:** A more fine-grained set of response options is required to retain a safe level of outbreak control when lifting stay-at-home requirements, and to ensure that when there is an outbreak in one region, control measures in the rest of the country appropriately reflect

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Table 1
Summary of the proposed revised Alert Levels for future management of the Covid-19 pandemic and other infectious disease outbreaks. This system is optimised for infections with similar transmission characteristics to SARS-CoV-2 and may need to be adapted to respond to other infections, including those transmitted by other routes (eg, direct contact as in Ebola).

Risk band	Alert Level	Overview	Key features	When it would be used
Red: Stay-at-home	6	**Lockdown**	Adds increased requirements to stay at home	There is an **uncontrolled outbreak*** (eg, community transmission and the health system is approaching or exceeding surge capacity)
	5	**Circuit-breaker**	Adds requirement to stay at home	There is an **emerging outbreak of unknown extent*** (eg, cases of community transmission not clearly linked to imported cases)
Amber: Stop the spread	4	**Stop regional spread**	Adds regional travel restrictions	Community transmission risk is high but there is no evidence of uncontrolled spread (eg, **large or prolonged outbreak where cases are linked*** and testing and contact tracing systems are still within the limits of operational capacity)
	3	**Limit local outbreaks**	Adds masks for a wide range of indoor settings and limits gatherings	Community transmission risk is moderate (eg, **medium sized outbreak where cases are linked*** and testing and contact tracing systems are well within operational capacity)
	2	**Keep public spaces safe**	Adds masks for specific public settings	Community transmission risk is elevated above baseline (eg, a **small, well contained outbreak***, **or winter respiratory infection*** season)
Green: Prepare	1	**Keep it out**	Adds border controls	There is an **international outbreak** of concern but **no known transmission within NZ**
	0	**Normal activity**	No restrictions	No public health threat

* Of Covid-19 or another pathogen that is highly transmissible and has moderate to high illness severity[10]

heightened risk. A much clearer approach to regional travel is required to avoid seeding of outbreaks into other regions.

- **Responding to new knowledge**: Recent experience needs to be translated into improved outbreak control [6], eg, increased emphasis on measures to prevent spread via inhalation (face masks, ventilation, filtration) [7,8], particularly in high-risk settings for superspreading events. Another key lesson is the need for support to mitigate severe and inequitable hardships, in particular food insecurity, incurred by the pandemic response.
- **Signalling improvements and innovation:** The proposed revised Alert Levels (organised into three bands) can facilitate effective communication that links required actions to a more intuitively recognisable level of risk. Aligning revision of Alert Levels to vaccine rollout provides an opportunity to communicate to the public that the pandemic response is changing in several important ways, enabling a smooth transition to a post-pandemic future.
- **Supporting harmonisation with Australia (and the wider world)**: New Zealand has an arrangement with Australia for quarantine-free travel between the two countries and this 'green zone' is likely to be expanded in future. This process would be supported by harmonisation of systems and approaches for Covid-19 management, including ways of assessing and managing outbreak risk. A more rational and evidence-informed Alert Level system provides an ideal opportunity to develop a consistent approach to Covid-19 management across multiple countries.
- **Establishing protective measures for a safer future**: In 2020 the Covid-19 response in NZ effectively prevented, and in some cases even eliminated, transmission of non-Covid infectious diseases [9]. Over the next one to two years lifting some Covid-19 restrictions (in particular border controls) will generate a more complex infectious diseases environment that will include other epidemic, endemic, and pandemic infectious disease threats. There is an opportunity now to strengthen the Alert Level system to improve and protect population health on a timescale that extends far beyond the Covid-19 pandemic.

Declaration of Competing Interest

There are no conflicts of interest.

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Contributors

All authors contributed to conceptualisation of the policy. Dr Kvalsvig prepared the original draft and all authors edited and reviewed subsequent versions. All authors accept responsibility to submit for publication. We confirm that all tables are original and have not been published previously.

Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.lanwpc.2021.100206.

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