PUBLIC HEALTH COMMUNICATION CENTRE AOTEAROA

An upgraded Alert Level 2 is urgently needed to address the Delta Variant threat

3 September 2021

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Aotearoa New Zealand (NZ's) Covid-19 Alert Level system worked well in early 2020, but the Covid-19 landscape has changed, and the system must be updated to address the threat of the highly transmissible Delta variant and future variants. The country is using lockdowns (Auckland currently at Alert Level 4, with the rest of the country at Alert Level 3) to eliminate community transmission. As NZ plans moves down the Alert Levels in coming weeks, now is the time to upgrade Alert Level 2 to ensure it is fit for purpose. Key improvements are mask use in all indoor environments, and creating a Level 2+ that keeps the highest risk indoor environments closed while the risk of virus

circulation is elevated.

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On 17 August 2021, a community case with Delta variant Covid-19 infection was detected in Auckland. Case numbers quickly increased, and a series of super-spreading episodes stretched our contact tracing system, quarantine facilities, and health service capacity. This outbreak required a rapid move to an Alert Level 4 lockdown for the entire nation in an attempt to eliminate the community transmission. In a recent blog, we noted that quickly implemented intense lockdowns (whether regional or nationwide) can be effective in dealing with Delta variant outbreaks when coupled with extensive public health measures such as physical distancing, mass masking, and vaccination.

Even high levels of vaccination may not be as effective as hoped against the Delta variant, as seen in Iceland and Israel. High vaccination uptake will significantly reduce infections, hospitalisations, and deaths [1], but population-level immunity will be limited by the lower efficacy of current vaccines against infection and transmission of the Delta variant. While community spread now seems confined to the Auckland region, the risk of further spread during this outbreak (or from future outbreaks from further border system failures) remains. Therefore, NZ should continue with its intensive efforts to control the current outbreak and strengthen the Alert Levels to account for increased transmissibility of the Delta variant. Here we describe specific improvements to the Alert Levels, with a particular focus on Alert Level 2:

1. NZ SHOULD ADD AN ALERT LEVEL 2+

This proposed change is particularly critical if Auckland remains at Alert Level 4 while the rest of the country moves to Alert Level 2, due to the risk of Covid-19 border control failures for the internal borders around Auckland. The current requirements for Alert Level 2 do not provide substantive enough protection against widespread circulation of the pandemic virus (SARS-CoV-2). While the current Alert Level 2 settings allow people to return to work and children to return to school (which are highly desirable outcomes), currently the only proposed barrier to infection in these settings is physical distancing, which does not adequately address the risk of airborne transmission. Under the proposed Alert Level 2+, people should be required to continue wearing masks in all public indoor settings. Mass masking, in addition to tighter event size limits, and keeping high risk environments closed, would help to reduce the size of an outbreak, even before it was detected.

A new Alert Level 2+ should ideally include:

- Mandatory masking in all indoor settings outside the home, including workplaces, secondary schools (and school buses), shops, and meeting places.
- Mandatory QR code scanning or sign-ins whenever passing into an entranceway with such a sign.
- Keeping the current Alert Level 2 physical distancing requirements.
- Limiting indoor gatherings to a maximum of 25 people and outdoor gatherings to 50 people (since at events such as outdoor concerts, crowds can be very densely packed).
- Closing venues that present a high risk of super-spreading events (eg, bars, night clubs, gyms, churches).
- Introducing a temporary zero-alcohol limit for driving to reduce the demands on emergency services and to help free-up space in hospitals and ICUs (technically, this could actually be at the 0.02% level used in countries such as Norway and Sweden, down from 0.05% for NZ adults aged 20+ at present).

2. NZ SHOULD ALSO ENHANCE ALERT LEVEL 2

A key feature of an enhanced Alert Level 2 would be continued mandatory masking in recognition of airborne transmission of Covid-19. Physical distancing also helps to prevent transmission by both aerosols and larger respiratory droplets, especially when combined with masking [2]. Continuing to require QR code scanning or sign-ins will assist in contact-tracing efforts during an outbreak, and event numbers could be slowly increased, with high-risk venues allowed to reopen, albeit with measures to minimise close contact with others.

A new Alert Level 2 could include:

- Keep the proposed Alert Level 2+ masking, QR code scanning, and physical distancing requirements listed above.
- Limiting gatherings to a maximum of 100 people indoors (with this being the number allowed under the current Alert Level 2), but adding a 200-person limit for outdoor events given the issue with densely packed crowds noted above (eg, for outdoor concerts).
- Allow high risk venues to reopen (eg, bars, nightclubs, gyms, churches), but with a requirement to remain seated, spaced, and with single servers at bars and night clubs, with dancefloors remaining closed (as is currently required under Alert Level 2).

3. NZ SHOULD UPDATE ALL ALERT LEVELS TO REFLECT AIRBORNE TRANSMISSION

Generally, the Alert Level System should be updated to reflect what we know about the importance of airborne transmission of Covid-19. We have seen numerous instances of transmission within MIQ facilities in Australia and NZ, which highlight this risk [3]. Control measures, including mandatory masking and optimisation of ventilation and filtration systems in indoor settings are critical for the prevention of Covid-19 transmission. Simple measures such as opening of windows should be routine in workplaces and schools when weather permits. These measures will also help to prevent the spread of other respiratory pathogens and will have health and productivity benefits that extend well beyond the Covid-19 pandemic [4].

In summary, the Alert Level System should be enhanced to incorporate new scientific knowledge so it is better able to protect population health and accelerate progress to the re-elimination of Covid-19 in NZ. Such changes could be incorporated into the system and signalled to the public in a number of ways (eg, as an additional Alert Level 2+ and an upgraded Alert Level 2 as proposed here, or as a reorganised 6-level system that builds on ideas in a recent paper for the NZ context [5]).

Regardless of how the Alert Levels are labelled, the key logic of the system is that the higher levels prevent transmission by restricting contact between households (ie, lockdown), while the lower levels remove that protection and allow households to mix in public settings. Consequently, in the absence of a high level of protection from vaccines, transitioning to the lower Alert Levels requires measures to prevent airborne transmission. This is the gap that NZ's pandemic response urgently needs to address. An additional Alert Level 2+ allows the system to provide a more nuanced response to Covid-19 risk (ie, Alert Level 2 and Alert Level 2+), reducing the need to move into the more disruptive 'lockdown' levels (ie, Alert Level 3 and Alert Level 4).

An upgraded Alert Level system could provide a foundation for transitioning into the future with an increasingly vaccinated population, and a simple basis for increasing controls to prevent virus transmission if needed. This improved flexibility in the use of public health tools is consistent with the Government's 'Reconnecting New Zealanders to the world' strategy. Such a system could also be an enduring legacy of the Covid-19 response, providing NZ with an improved capacity to respond to future pandemic threats.

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Public Health Expert Briefing (ISSN 2816-1203)
