PUBLIC HEALTH COMMUNICATION CENTRE AOTEAROA

Long Covid Update – a threat that continues to demand a strong response

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Summary

Long Covid (LC) remains a risk following any Covid-19 infection or reinfection. It includes a syndrome of long-term symptoms, a substantially increased risk of sudden death, and silent cell and organ damage that may predispose to later illness. Consequently, it produces a large burden of illness for our communities, healthcare system, and economy. Covid-19 vaccination reduces the risk of LC following Omicron infection, but there is still around a 10% risk of LC among vaccinated individuals.

Aotearoa New Zealand (NZ) needs a coordinated response from Government to minimise LC incidence and impact. In addition to funding treatment and support services, this strategy must include public health and social measures to protect individuals and populations from exposure to Covid-19. We also need a programme to maximise vaccine coverage across all age groups, including young people and pregnant women. These interventions must be supported by a concerted and clear information campaign, targeted surveillance, and research.

Five years of experience with Covid-19 has provided substantial evolving evidence on Long Covid (LC), which we review here to assess risk and the necessary proportionate prevention-and-management response. Aotearoa New Zealand (NZ) has had three years of intense exposure to this infection.[1] The pandemic persists, albeit in more muted fashion, with recurring waves and persistently high baseline levels of infection year-round, raising concerns about the impact of recurrent infection.[2]

Updating a Briefing from almost a year ago,[3] we focus on recent evidence. An Appendix (available as a downloadable PDF) provides additional background information.

Impact of Long Covid

LC is defined by the UK National Institute for Health and Care Excellence, as: “Signs and symptoms that develop during or after an infection consistent with COVID-19, continue for more than 12 weeks and are not explained by an alternative diagnosis. It usually presents with clusters of symptoms, often overlapping, which can fluctuate and change over time and can affect any system in the body...”.[4] LC is also seen as “the constellation of post-acute and long-term health effects caused by SARS-CoV-2 infection”.[5]

These definitions fall short of considering the whole spectrum of SARS-CoV-2 consequences. Indeed, later health consequences of acute infection include both symptomatic Covid and asymptomatic changes at cellular and organ-system level that predispose to a range of delayed outcomes and involve multiple pathophysiologic processes (see Appendix). These delayed outcomes include sudden death,[6-10] as well as ‘silent’ cell and organ damage that may predispose to later illness, particularly among children and young people,[11-13] (see Appendix). Here, we consider all these downstream consequences as aspects of LC.

Essentially every organ system can be involved in clinical LC, including cardiovascular,[14-16] musculo-skeletal,[17] nervous,[18-24] immune,[25-29] gastrointestinal,[30-33] endocrine,[34-38] renal,[39] and reproductive systems.[40] It impacts individuals of all ages, all ethnicities, both sexes and all genders, but is more common in biological females. LC reduces quality of life, and can cause loss of ability to work and, sometimes, severe disability. Signature manifestations

include: cognitive dysfunction ("brain fog"),[41-43] reported in Aotearoa even among young people (see Appendix),[43] fatigue,[44 45] post-exertional malaise,[17 46] and postural orthostatic tachycardia syndrome as a consequence of autonomic nervous system dysfunction.[46-48] Long-term consequences include myocardial infarction,[14 16 49] stroke,[14 16] and new-onset diabetes.[34 37 38 50] LC is part of a family of infection-associated chronic conditions.[45 46 51-59]

Risk of LC

Estimates of the initial incidence of LC after acute infection are 50–85% among those both unvaccinated and hospitalised, 10–35% among the unvaccinated but not hospitalised, and 8–12% among those vaccinated.[60] A meta-analysis of 194 studies with 735,006 participants reports that ≥45% of Covid-19 survivors, regardless of hospitalisation status, experience at least one unresolved symptom at 126 days.[61] The cumulative global incidence of LC is estimated across a range of 65 million[62] to 400 million.[5] (see also the Appendix for a discussion of the marked variability of risk estimates).

The Omicron variant has been associated with a lower per-infection risk of LC than Delta and pre-Delta variants.[63] In both children and adults, vaccination[23 38 63-76] and, in adults, antivirals as treatment for acute Covid,[77 78] reduce risk of LC. Reinfection is a risk factor[64 79] and each infection carries risk irrespective of whether an earlier infection was followed by LC,[64 79 80] including in children and young people.[81] Each reinfection can result in new LC or exacerbate the severity of existing symptoms.[64 79] Cumulatively, two infections are associated with a greater risk of LC than one, and three increase risk more than two.[64 79]

One positive development in NZ is that the incidence of Covid-19 decreased in 2024 compared with the previous two years, partly driven by the lack of an expected wave over the 2024-25 summer. It is too soon to know if this pattern will continue. However, risk of LC remains high and results in a large burden of illness for our communities, healthcare system, and economy.[82]

Responding to LC

The best protection against LC is avoiding infection using proven public health and social measures to reduce exposure to the virus, notably: testing and case isolation; improved indoor ventilation; and masking in high-risk indoor environments. Other measures are vaccination to reduce the risk of infection and LC, and antiviral treatment to reduce progression to LC. A coordinated, evidence-informed governmental response is essential. This strategy needs to include coverage of key indoor environments such as schools,[83] healthcare facilities, and public transport.[84]

The NZ Government response to LC has been markedly inadequate. A Long COVID Expert Advisory Group was established in May 2022 to assess the evidence on LC and provide recommendations for clinical practice.[85] It lacked specialists in key areas, including infectious disease, neurology, cardiology, and immunology. Their (revised) guidelines were published in December 2022 [86] and work concluded in November 2022; they have not been reactivated or replaced.

The Report of the Royal Commission of Inquiry into Covid-19,[87] like our previous report on LC,[3] disappeared like a rock in a lake of indifference.[88] Health organisations attempting to provide LC services to staff and communities are hampered by lack of funding.[89 90] If only 5% of the population of Aotearoa (a low-end estimate) have LC, that involves >250,000

people; our only LC registry includes about 1200.[91 92] A NZ extrapolation of Australian data suggests that LC will result in a GDP loss around NZ$2 billion per year.[82] (also see Appendix)

What this Briefing adds

- LC remains a risk following any Covid-19 infection or reinfection. This risk includes an increased probability of sudden death and 'silent' cell and organ damage
- Covid-19 vaccination reduces the risk of LC following Omicron infection but there is still around a 10% risk of LC among vaccinated individuals
- Consequently, LC results in a large burden of illness for our communities, healthcare system and economy
- There is growing international evidence of the economic burden of LC: Australian data suggest a GDP loss for NZ of around NZ$2 billion per year

Implications for policy and practice

- Develop a coordinated NZ Government response to LC with input from a suitably broad-based advisory group
- Implement a prevention strategy to protect individuals and populations from Covid-19 infection, including key settings such as schools, healthcare, workplaces, and public transport
- Promote continuing high Covid-19 vaccine coverage across all age groups, including young people and pregnant women (which provides added protection of the newborn)
- Implement effective surveillance for LC and research to investigate important NZ questions
- Require Te Whata Ora/Health New Zealand to develop and regularly evaluate accessible specialist LC services and treatment pathways

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Appendix

An appendix for this article is available as a separate PDF.

Appendix - Long Covid Update – a threat that continues to demand a strong response (PDF)

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