

Final report summary

COVID-19 and National Immunisation
Programme research

Submitted by
Auckland UniServices Ltd

Project title
PROP-002 Impact of the COVID-19 Delta-
Omicron outbreak on the health and psychosocial
wellbeing of New Zealanders living in aged
residential care

Section 1: Contact information

1.1 Point of Contact for this report

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Section 2: Reporting

2.1 Overview

COVID-19 related restrictions could lead to poorer health outcomes in older adults. This project investigated the health and wellbeing impacts of the Delta-Omicron outbreak (August 2021 to August 2022) amongst older adults living in aged residential care (ARC).

2.2 What is the problem or issue that your research investigated?

The key research questions for this project are:

- 1) How did the Delta-Omicron outbreak impact on the health outcomes of older adults living in ARC?
- 2) Are there any differences in these health outcomes amongst the main ethnic groups in ARC?
- 3) What are the individual factors that increase or decrease the risk of negative health outcomes?

The following describes outcomes of interest, highlighting differences in ethnicity and factors that increase/decrease risk.

Aged residential care: Study period and comparison period

- The study period of interest is the first year of the Delta-Omicron outbreak in Aotearoa (17/8/2021 to 16/8/2022). There are a total of 39,399 ARC residents (female: 64.0%) in the Delta-Omicron cohort.
- The comparison period is a pre-COVID-19 era (17/8/2018 to 16/8/2019). There are a total of 39,450 residents (female: 64.9%) in the pre-COVID-19 cohort.

COVID-19 vaccination

- 86.3% of the Delta-Omicron cohort had at least three doses of COVID-19 vaccine by 16th August 2022. This rate is higher than the 3+ doses COVID-19 vaccination rate in the total New Zealand population (53.7%) in the same period.

COVID-19 infection

- 34.9% of the Delta-Omicron cohort had at least one confirmed COVID-19 infection by 16th August 2022. 80.5% of infections were confirmed by rapid antigen test (RAT), 14.5% by polymerase chain reaction (PCR), and 5.0% by both RAT and PCR. The COVID-19 infection rate in ARC is similar to the infection rate in the total New Zealand population; 33.2% of all New Zealanders had at least one COVID-19 infection by 16th August 2022.

Mortality

- The mortality rate in the Delta-Omicron period was 24.5%, which was higher than the mortality rate of 22.5% in the pre-COVID-19 period.
- Residents aged 80-90 and 90+ years in the Delta-Omicron period had higher mortality rates (23.8% and 31.2%) than their counterparts in the pre-COVID-19 period (22.1% and 27.7%).
- New Zealand European residents in the Delta-Omicron period had a higher mortality rate than their counterparts in the pre-COVID-19 period (25.1% versus 22.9%).
- In statistical modelling, **social visits** in the Delta-Omicron period were associated with a lower mortality risk when compared to no social visit.

Hospitalisation

- Hospitalisation rate was lower in the Delta-Omicron period than in the pre-COVID-19 period: 57.0% of the Delta-Omicron cohort had no hospital admission, compared to 53.4% of the pre-COVID-19 cohort.
- Residents across all age groups (60-69, 70-79, 80-89, 90+) in the Delta-Omicron period had lower rates of multiple (3+) hospitalisations (15.5%, 13.6%, 12.5%, 9.0%) than their counterparts in the pre-COVID-19 period (19.2%, 16.2%, 15.4%, 12.2%).
- Māori and New Zealand European residents in the Delta-Omicron period had lower rates of multiple (3+) hospitalisations (13.0% and 11.8%) than their counterparts in the pre-COVID-19 period (19.7% and 14.6%).
- In statistical modelling, **Māori** residents in the pre-COVID-19 period had a higher risk of hospitalisation when compared to New Zealand Europeans, but this association was not observed in the Delta-Omicron period.

- In statistical modelling, ≥ 1 hour of **exercise** in the last 3 days was associated with a lower risk of hospitalisation in both pre-COVID-19 and Delta-Omicron periods.

Falls

- Residents aged 70-79, 80-89 and 90+ in the Delta-Omicron period had higher falls rates (20.7%, 23.1%, 24.4%) than their counterparts in the pre-COVID-19 period (18.2%, 21.0%, 22.1%).
- Asian and New Zealand European residents in the Delta-Omicron period had higher falls rates (19.2% and 23.2%) than their counterparts in the pre-COVID-19 period (15.2% and 21.0%).
- In statistical modelling, **exercise** was associated with a higher risk of falls in the pre-COVID-19 period. Although < 1 hour of exercise in the last 3 days was still associated with a higher risk of falls in the Delta-Omicron period, there was a statistically discernible decrease in risk from the pre-COVID-19 period. ≥ 1 hour of exercise was not associated with any risk of falls in the Delta-Omicron period.

Depression

- Residents aged 80-89 and 90+ in the Delta-Omicron period experienced higher rates of moderate depressive symptoms (17.8% and 16.1%) than their counterparts in the pre-COVID-19 period (16.3% and 14.1%).
- New Zealand European residents in the Delta-Omicron period experienced a higher rate of moderate depressive symptoms (18.0%) than their counterparts in the pre-COVID-19 period (16.4%).
- In statistical modelling, **poor self-rated health, cognitive impairment, highly unstable health, loneliness, pain, and aggressive behaviour** were the strongest risk factors for depression in both pre-COVID-19 and Delta-Omicron periods; and there was no statistically discernible change to these risks between the two periods.

Aggressive Behaviour

- Residents aged 80-89 in the Delta-Omicron period experienced higher rates of mild aggressive behaviour (28.5%) than their counterparts in the pre-COVID-19 period (27.2%).
- New Zealand European residents in the Delta-Omicron period experienced a higher rate of mild aggressive behaviour (27.8%) than their counterparts in the pre-COVID-19 period (26.6%).
- In statistical modelling, exercise was associated with a higher risk of aggressive behaviour in the pre-COVID-19 period. Although < 1 hour and 3-4 hours of exercise were still associated with a higher risk of aggressive behaviour in the Delta-Omicron period, there was a statistically discernible decrease in risk from the pre-COVID-19 period. 1-2 hours of exercise was not associated with any risk of aggressive behaviour in the Delta-Omicron period.
- In statistical modelling, **social participation and social visits** were associated with a lower risk for aggressive behaviour in both pre-COVID-19 and Delta-Omicron periods.

2.3 What are the practical solutions and implementation options that you recommend?

We invited key ARC stakeholders involved in the COVID-19 response to a workshop in Wellington hosted by interRAI New Zealand in August 2023. A total of 40 people attended in-person or online. Our statistical modelling suggests exercise, social visits and social participation can have a positive impact on mortality, hospitalisation, falls and aggressive behaviour in ARC during the Delta-Omicron outbreak. We asked the stakeholders how to address exercise, social visits, and social participation in future pandemics/lockdowns. They suggested the following practical solutions:

1. Social visits and social participation during a pandemic

- Supporting digital literacy: Encouraging digital literacy among residents was seen as crucial to enable better communication during a crisis and increase options for interventions such as tele-physiotherapy.
- Physical contact assessments: Consideration was given to incorporating questions about physical contact and telecommunication options within assessment tools like interRAI.
- Targeted support: To ensure all residents benefit from activities, more targeted support personalised for the resident's level of risk and needs was suggested.

2. Exercise promotion during a pandemic

- Tele-physiotherapy: The feasibility of conducting physiotherapy sessions via platforms like Zoom was suggested to continue exercise routines during lockdowns.
- Learning and adapting: Participants highlighted the importance of learning from newly established processes during the pandemic, emphasising adaptability.

- Engaging wider support networks for exercise: Family members assistance with exercise routine was proposed as an innovative way to encourage exercise.

2.4 What considerations need to be taken into account when implementing the solutions?

Our workshop participants suggested the following issues be considered when implementing the above solutions:

1. Structural weaknesses: Representation and trust

- Concerns about insufficient consultation with and representation in the long-term care system.
- Disconnect between District Health Boards/Te Whatu Ora and ARC facilities.
- Trust issues, especially in procuring personal protective equipment (PPE).

2. Policy changes implemented: Challenges and burdens

- Challenges in adapting policies to the unique needs of individual ARC facilities.
- Some policies were not suitable for residents with dementia.
- Burdensome auditing and financial challenges, especially for independently owned ARC facilities.
- Practical challenges in implementing isolation policies.

3. Ongoing policy changes/reforms: Learning and national policy

- Need for adaptable pandemic planning based on lessons learned.
- Learning from other countries or facilities while addressing uncertainties.
- Balancing resident social connections with protective measures.

4. Factors affecting policy adoption: Staff turnover and training

- High staff turnover disrupts policy implementation.
- Importance of staff understanding and training.
- Manager-staff relationships influence policy adoption.

5. interRAI data and policy impact: Simplification and partnership

- Tailoring interRAI data use for policymaking.
- Enhanced collaboration between interRAI New Zealand and ARC to improve data quality and utility.

6. Flexible policies for local/regional needs: Adaptation and nuance

- Adapting policies to local conditions and prevalence rates/presence of infection in the community.
- Considering regional forecasts for context-specific responses.

7. Consideration for Māori, Pacific and Asian ARC residents and their whānau

- The ethnicity composition in ARC does not reflect the general population in New Zealand, with lower proportions of ethnic minorities. Results based on interRAI data alone may have limitations due to the following:
 - Low number in ethnic minority groups means there is not enough statistical power to examine associations, effects, or variations appropriately.
 - Assessment tools, such as interRAI, are often designed with broad populations in mind and may not take into account the specific cultural, linguistic, or social nuances of ethnic minority groups. Additionally, the validity of these tools can be influenced by education levels. For instance, questions or scenarios presented within such tools might be interpreted differently by individuals with varying educational backgrounds or those unfamiliar with certain cultural references. This potential disparity raises concerns about the reliability of the results when applied to diverse populations. Ethnicity data within the Asian and Pacific populations are diverse, and language barriers, especially for those with English as a second language, can further complicate care.