Lockdowns only slightly postponed deaths in New Zealand

John Gibson
(jkgibson@waikato.ac.nz)

THE UNIVERSITY OF
WAIKATO
Te Whare Wānanga o Waikato

Background

The Level 4 lockdown imposed on March 25 2020 in New Zealand was the world's most restrictive set of closure and containment policies at the time.[1] While designed to deal with Covid-19, it was soon noted by public health academics that all-cause mortality fell below historical rates about five weeks after the lockdown restrictions began.[2] Deaths stayed below their week-of-the-year averages for most of the next four months, avoiding the usual winter peak due especially to influenza. This effect has been dubbed a "COVID-19 response induced life gain"[3] and some commentators argue that the tools used in 2020 against Covid could be used every year to deal with the winter peak in deaths due to influenza.[4]

A cost-benefit analysis of this proposed recurring use of these public health interventions depends on how costly they are and on how long the effect lasts. For costs, one key analysis suggests an intervention to cut risk of Covid had a 95:1 ratio of costs to benefits (in QALYs).[5] In this study I examine the second question; how long was the postponement of deaths from the interventions in 2020.

Data and Methods

Age-disaggregated weekly deaths for New Zealand were obtained from the *Human Mortality Database*.[6] The data cover date of death of the usual resident population, and are available from week 52 of 2010 to week 8 of 2021. In case of reporting lags, data for the most recent 3 months were cross-checked with Statistics New Zealand data.[7]

Graphical presentation of the deaths data uses 3-week moving averages to smooth volatility. Results are shown on a March-to-February year basis, for highlighting a key summer pattern that would otherwise split between two calendar years. Deaths rather than death rates are used because the rates data rely on population projections for 2020 onwards, adding a source of possible error. The rise in total deaths each year due to population growth and ageing averages 220 (equivalent to just four per week), except in 2017 when there were over 2200 more deaths than 2016, due to an influenza outbreak

Figure 1: Weekly Deaths in New Zealand: 2011-2021
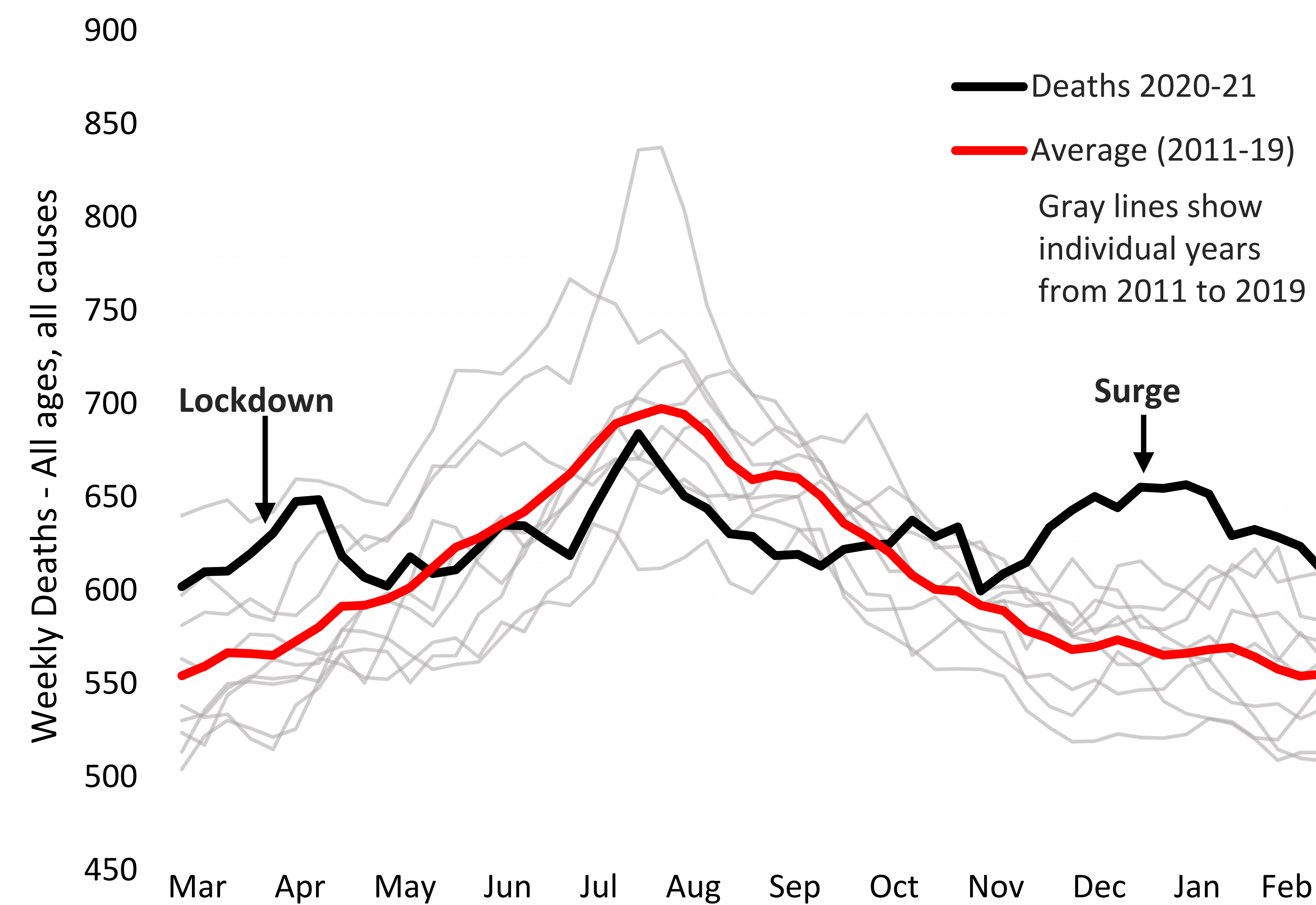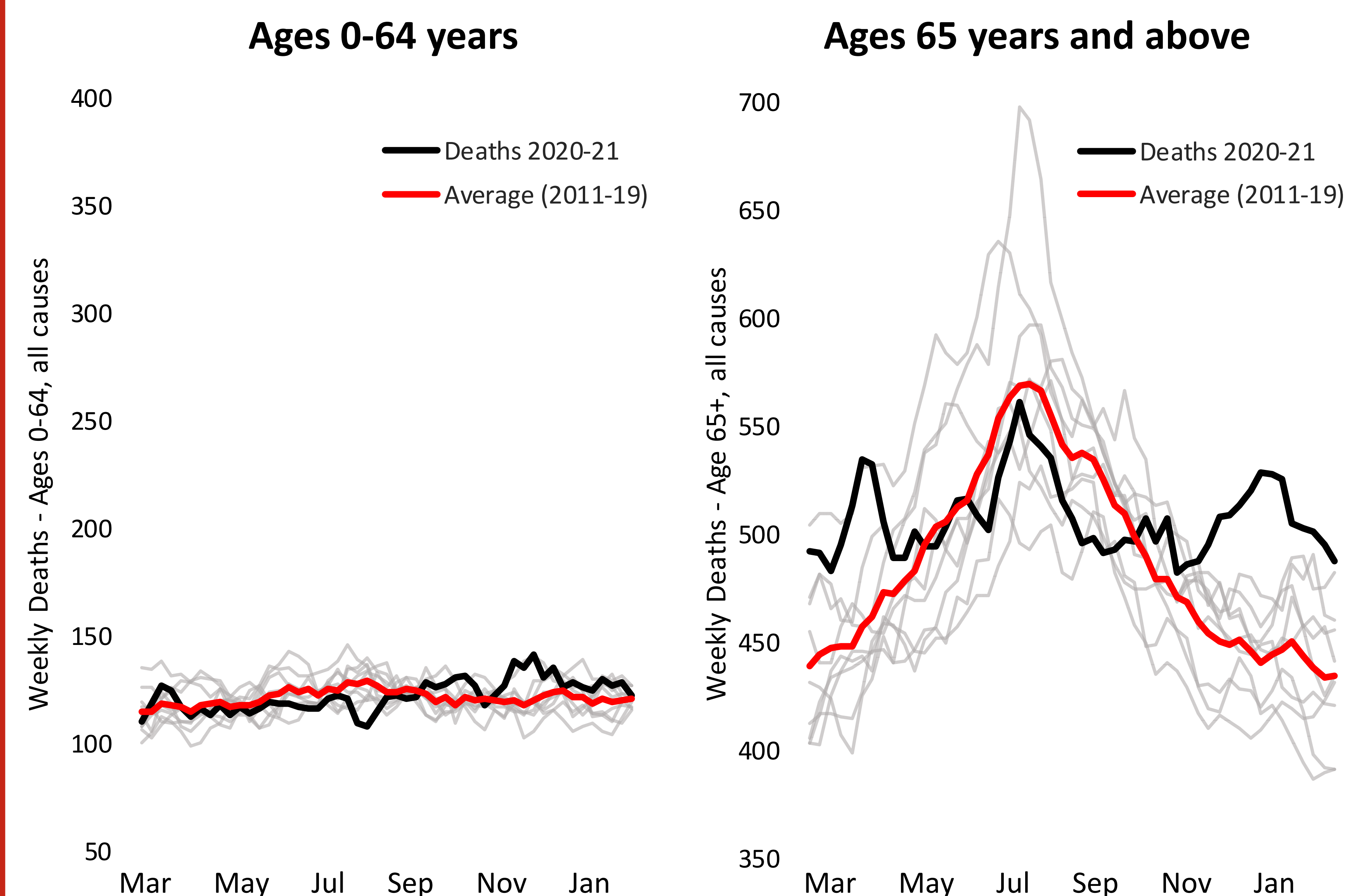

Figure 2: Surge in Deaths Was Mainly Experienced by the Elderly

Results

The weekly pattern of deaths in 2020-21 and the average number of deaths in the same weeks from 2011 to 2019 are shown in Figure 1. The number of deaths fell in late April and by mid-May was below the 2011-19 average. A below average number of deaths persisted for the next four months, with almost 500 fewer deaths in this period than would be expected from the 2011-19 average. Note however that weekly deaths in this period were always in the range of individual year experiences since 2011.

What was outside the range of prior experience was the surge in deaths starting in November and persisting past the end of February, 2021. In this period, up to 100 more people died per week than would be expected from the historical patterns, totaling almost 1200 excess deaths. Ironically, the surge is especially apparent from week 51, when *The Lancet* published a letter from NZ authors that suggested that any "potential late adverse effects on mortality, resulting from reduced access to health care [during lockdowns], have not become apparent".[2,8]

Age-disaggregated data show the surge in deaths from November onwards is concentrated amongst the elderly (Figure 2). Evidently, there is just a short postponement of death, by about four months, from strict containment and closure policies imposed to deal with Covid in 2020.

Conclusions

The fall in all-causes mortality after lockdowns in 2020 is only a short-term effect. A winter of no excess mortality was followed by four months of excess mortality totaling about 1200 deaths (ca. four percent of annual deaths). The surge in deaths was concentrated on the elderly so public health interventions only slightly postponed death. Repeating Covid control measures in future to deal with seasonal influenza may provide just short-term benefits.

ⓘ References

References and links to data sources are available through the QR code in the top right corner.