



Aide-Memoire

PUBLICATION OF EXCESS MORTALITY STATISTICS

To	Hon Chris Hipkins, Minister for COVID-19 Response	Report No	DPMC-2021/22-2148
CC	Hon Grant Robertson, Deputy Prime Minister		
From	Jeremy Greenbrook-Held (DPMC) Pubudu Senanayake (Stats NZ)	Date	12/05/2022

Background

1. As fatalities related to COVID-19 have increased through 2022, there has become increased interest in the degree to which this is affecting New Zealand's overall mortality rate, and whether more people are dying now than are expected to die over the period. The Department of Internal Affairs (DIA) releases an aggregated dataset of weekly death counts publicly via the Stats NZ (SNZ) COVID-19 data portal.
2. You have previously been briefed on how COVID-19 related mortality is tracking, and specifically about the possible impact on excess mortality (ref: DPMC-2021/22-1914). The Prime Minister and Associate Minister of Health (Minister Verrall) have both expressed a desire for the government to publish an easily interpretable metric on excess mortality as quickly as possible.

Publication of Statistics NZ Mortality rate indicators

3. Using weekly deaths data supplied by DIA, Statistics New Zealand (SNZ) have constructed a data series comparing the mean death rates¹, (and their range²) across the pre-pandemic years (2012 – 2019)³, to how 2020 and 2021 tracked, and 2022 is tracking by various age bands⁴. If fatality rates are tracking significantly higher than typical, it indicates that some external driver may be causing “excess deaths”. This measure is quite timely, with a roughly two week lag in the data.

¹ The death rate is the number of deaths in a given age group divided by the population of that age group during the period of interest. (The population is approximated using SNZ's official quarterly estimated resident population.)

² Stats NZ currently uses 1 standard deviation from the mean rates as the “range”.

³ Data from 2011 is excluded due to the spike in fatalities caused by the Canterbury earthquake in February 2011.

⁴ Age bands are 0 – 4, 5 – 29, 30 – 59, then five year bands up to 90+.

4. While the indicator tracks death rates across the year, it makes no direct estimates of excess (or deficit) mortality. However, the indicator provides a clear way of seeing if death rates are tracking atypically compared to pre-pandemic patterns. An analysis of this death rate is currently being completed, and will be included in a future COVID-19 Modelling Update Aide-Memoire.
5. For expediency, we have chosen the COVID-19 Data portal as the initial vessel for publication with the following considerations:
 - a. This measure does not look at specific causes of death, it is deaths from all causes.
 - b. It will be published as an experimental series – currently under review (“NOT official statistics” will be noted)⁵;
 - c. The series revises frequently, particularly for the most recent weeks, as more deaths are reported to DIA⁶;
 - d. It will be updated weekly.
6. Technical information about the measure, including the code used to construct the measure will be published via SNZ’s public GitHub⁷ for full transparency (the deaths data will not be included here yet – but may be in the future subject to DIA approval). Because of the sensitivity of the measure officials are ensuring that the methods are completely transparent. Publication of technical notes as well as the code ensures this. The technical documentation and code will be updated as we improve the measure, and as reviews are completed.
7. While the initial solution for this measure is through the SNZ COVID-19 data portal (as an experimental series), it will likely become a permanent output over time, as it is a useful measure to track in general.
8. SNZ have produced a version of the chart in their user acceptance testing (or ‘staging’) environment. This is only accessible by SNZ staff, so a screengrab of the chart is included in Appendix 1.
9. The measure will go live once you approve with it. Once live, the public will be able to interact with the charts and download the computed rates (but not the raw death counts underlying the computations). We expect there is likely to be some media attention, and will prepare some reactive questions.

⁵ As SNZ formalise a review internally the “currently under review” tag will be dropped.

⁶ According to DIA an average of 5% of Deaths are registered 2 weeks or more after Date of Death.

⁷ Github is an internet platform for hosting the source code for any software product (including an analytical product like the deaths indicator), along with technical documentation and small datasets if desired in “repositories”. As well as hosting code, it provides “version control”, meaning changes to the code can be tracked and reverted if necessary. For public repositories it allows anyone to download and examine the code, and if desired run the code. SNZ’s code is chiefly written in R – an open source free language. This means that any user can run this code if they so wish.

Appendix 1. Screenshots of Excess Mortality Graph Presented on the Statistics New Zealand COVID-19 Data Portal

