

## Actuaries: Australian deaths lower than predicted in 2020, despite COVID-19

Wednesday 30 June 2021

- **Fewer deaths than expected in 2020 despite COVID-19.**
- **Border closures, face masks, social distancing prevented spread of respiratory disease.**
- **Influenza deaths 94% lower than expected.**

Australia recorded fewer doctor-certified deaths than expected throughout 2020, despite the impact of COVID-19, with measures such as border closures, face masks and social distancing helping to limit the number of lives lost.

In a Research Paper for the Actuaries Institute titled *Impact of COVID-19 on Mortality and Morbidity in 2020*, authors Jennifer Lang, Richard Lyon and Karen Cutter found the overall number of deaths was almost three per cent lower than predicted, aided by a sharply lower incidence of respiratory illnesses such as influenza and pneumonia, through winter.

The lower than anticipated mortality was despite 824 doctor-certified deaths arising from COVID-19 during the year. 85 of 909 officially recorded COVID-19 deaths in 2020 have been referred to the coroner.

"Australian mortality has been much lower than our model predicts, demonstrating the effectiveness of border closures and other non-pharmaceutical measures," said Jennifer Lang, Convenor of the Actuaries Institute's COVID-19 Working Group. "This has not been the case in some other countries where the impact of the pandemic on overall mortality has been far greater than the number of reported deaths."

Data used by the authors shows the sharp contrast between Australia's COVID-19 experience and countries such as the US and Chile, both of which recorded deaths more than 20% above average mortality for the period 2015-2019.

The modelling was based on Australian Bureau of Statistics data on doctor-certified deaths. It allowed for changes in Australia's population size and age profile, and the likely emergence of a small number of late reported deaths.

The research paper found that there was a total of 140,750 deaths in Australia during the year to December 29, 2020. This was around 3,900 (or 2.7%) less than predicted.

Actuaries Institute President Jefferson Gibbs said the COVID-19 Working Group, and actuaries broadly, provided significant guidance to business and the community throughout 2020, and continue to assess the implications of the pandemic. The Working Group has produced industry notes on risk management, stress testing, superannuation, modelling, and life and general insurance among other topics.

"This is an excellent example of the way in which actuaries use their skills to advise on a wide range of current issues and work well beyond financial services," he said. "It helps businesses and policymakers prepare for better future outcomes, based on fact."

Actuaries Institute Chief Executive Elayne Grace said more than 80 volunteer actuaries had worked on research papers and information notes for industry in the Institute's pandemic Working Group.

"The Working Group has had four focus areas: tracking and predicting the impact of the pandemic; maintaining a resource centre to help companies manage and mitigate the impacts of the pandemic, providing technical and policy insights to help government, Treasury and regulators and liaising with international bodies to share research and help develop a better understanding of COVID-19," she said.



This paper finds the greatest contributor to the lower number of deaths was a deficit of 3,200 (21%) in the number of lives lost to respiratory diseases. Of the deaths related to respiratory diseases the biggest impacts were:

- influenza deaths were 94% lower at 42 (648 predicted);
- deaths from pneumonia were 30% lower at 2,085 (2,967 predicted); and
- deaths from chronic lower respiratory disease were 16% lower at 6,656 (7,898 predicted).

“Higher than expected deaths from pneumonia at the end of March 2020 (likely undiagnosed COVID-19) have been more than offset by the much lower numbers of all respiratory deaths since mid-April 2020,” the report said. Influenza deaths have been almost non-existent in Australia since mid-April 2020, with only three reported deaths compared to an expected number of around 600 in a normal flu season.

“This will be due to the absence of influenza in Australia in 2020 because of social distancing measures and perhaps also because of the closed international borders,” the report said. “Overall, the various non-pharmaceutical measures to reduce the spread of COVID-19 across Australia (lockdowns, social distancing and wearing facemasks) have almost certainly reduced mortality from other causes across Australia.”

The pattern of deaths from other diseases showed:

- diabetes deaths were higher than expected, largely due to higher deaths during the first wave of COVID-19, some of which may be undiagnosed COVID-19;
- deaths from heart disease and cerebrovascular disease (stroke) were much as predicted. There were higher stroke deaths, may be due to undiagnosed COVID-19, or people delaying treatment;
- dementia and “other” deaths were lower than predicted. This suggests respiratory disease is a significant contributing factor to many of these deaths; and
- cancer deaths were slightly lower than predicted.

The paper also looked at the potential long-term impacts of COVID-19 for those living with the disease and for the broader community.

“In some of the worst affected countries, significant numbers of patients contracting COVID-19 are developing long-term health issues,” Ms Lang said. “This is potentially of real significance to those charged with managing public health and also those involved with measuring risk, particularly as borders eventually open up.”

**Ms Lang is available for interview.**

A copy of the paper is available [here](#).

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