

COVID-19: estimated number of deaths if Australia had experienced a similar outbreak to England and Wales

TO THE EDITOR: Australia has had a remarkably successful response to coronavirus disease 2019 (COVID-19), even considering the second wave experienced in Victoria. The Australian rate of COVID-19-related deaths of 35 per million population is 15–20 times lower than that observed in countries across Europe and the Americas.¹ However, as the second wave in Melbourne has shown, it is important not to become complacent. Using all-cause mortality data in England and Wales over the peak of the COVID-19 outbreak in March and April 2020, we directly estimated the number of excess deaths that might have occurred if the outbreak in Australia had been of a similar extent to that in England and Wales.

We estimated the relative risk of all-cause mortality in England and Wales from the COVID-19 outbreak by dividing the total

deaths from all causes for weeks 11–21 in 2020 (9 March – 24 May) by the mean number of deaths for the weeks 11–21 averaged over 5 years (2014–2018) (limited to years when comparable Australian data were available). We calculated age and sex stratified relative risks as there are well documented differences in COVID-19 fatality by age and sex.² To estimate the baseline risk of all-cause mortality in the Australian population, we estimated the mean number of deaths by age and sex for weeks 11–21 over the period 2014–2018. Finally, to estimate the total deaths that might have occurred if Australia had experienced a similar outbreak to England and Wales, we multiplied the baseline expected number of deaths by the age-specific relative risks for men and women (Box). This resulted in an estimated additional 16 313 deaths in Australia: 9295 men and 7018 women. In contrast, by 26 May 2020 there had been 102 COVID-19-attributed deaths in Australia and 1365 excess total deaths from weeks 11 to 21 according to provisional mortality statistics.³ This enormous difference underlies the importance of Australia's response using a combination of extensive

testing and contact tracing, mandatory quarantine of people returning from overseas, and shutdowns to control community transmission. While acknowledging that these measures carry with them substantial social and economic harms, we wish to highlight the scale of the loss of life avoided. Further details of our methods and results are available in *InSight+*.⁴

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Fiona Stanaway 
Les M Irwig
Armando Teixeira-Pinto
Katy JL Bell 

University of Sydney, Sydney, NSW.

fiona.stanaway@sydney.edu.au

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Estimating the relative risk (RR) for death in England and Wales during weeks 11–21 in 2020¹ and applying it to the Australian² population (Stanaway et al)

Age group (years)	RR for death in England and Wales*	Mean total deaths [†] in Australia, 2014–2018	Total expected deaths in similar outbreak [‡]	Estimated absolute increase in number of deaths [§]
Males				
0–14	0.86	167.2	144.3	-22.9
15–44	1.06	864.0	916.7	52.7
45–64	1.46	2629.4	3844.7	1215.3
65–74	1.47	3111.6	4573.3	1461.7
75–84	1.62	4589.4	7461.7	2872.3
≥ 85	1.73	5118.2	8834.2	3716.0
Total	1.57	16 429.8	25 774.8	9295.0
Females				
0–14	0.92	127.2	116.8	-10.3
15–44	1.10	440.2	482.4	42.2
45–64	1.36	1670.0	2265.8	595.8
65–74	1.35	1960.6	2640.8	680.2
75–84	1.48	3714.8	5493.0	1778.2
≥ 85	1.52	7591.6	11 523.9	3932.3
Total	1.46	15 504.4	22 522.7	7018.3

* Calculated as deaths in 2020 (weeks 11–21)/average deaths in the same period 2014–2018. † Weeks 11–21. ‡ Average deaths in Australia × RR. § If outbreak in Australia had been similar to the United Kingdom. Calculated as expected deaths minus average deaths. Data source: Office of National Statistics website. Deaths registered weekly in England and Wales, provisional. <https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/datasets/weeklyprovisionalfiguresondeathsregisteredinenglandandwales> (viewed July 2020). The number of deaths for weeks 11–21 in the period 2014–2018 by age and sex were provided on request from the Australian Bureau of Statistics. ♦

- 1 Worldometer. Coronavirus. <https://www.worldometers.info/coronavirus/> (viewed Dec 2020).
- 2 Guilhoto CZZ. COVID-19 death rates by age and sex and the resulting mortality vulnerability of countries and regions in the world [preprint]. *medRxiv* 2020.05.17.20097410. 20 May 2020.
- 3 Australian Bureau of Statistics. Provisional mortality statistics. <https://www.abs.gov.au/statistics/health/causes-death/provisional-mortality-statistics/latest-release> (viewed Dec 2020).
- 4 Stanaway F, Irwig L, Teixeira-Pinto A, Bell K. Australian COVID-19 response may have saved 16 000 lives. *InSight+* 2020; 5 Oct. <https://insightplus.mja.com.au/2020/39/covid-19-australian-response-may-have-saved-15-000-lives/> (viewed Dec 2020). ■