



THE UNIVERSITY *of* EDINBURGH

Edinburgh Research Explorer

Distinguishing between direct and indirect consequences of covid-19

Citation for published version:

Figueroa, JD, Brennan, PM, Theodoratou, E, Poon, MTC, Purshouse, K, Din, FVN, Jin, K, Mesa-Eguiagaray, I, Dunlop, MG, Hall, PS, Cameron, D, Wild, SH & Sudlow, CLM 2020, 'Distinguishing between direct and indirect consequences of covid-19', *BMJ (Clinical research ed.)*, vol. 369, pp. m2377. <https://doi.org/10.1136/bmj.m2377>

Digital Object Identifier (DOI):

[10.1136/bmj.m2377](https://doi.org/10.1136/bmj.m2377)

Link:

[Link to publication record in Edinburgh Research Explorer](#)

Document Version:

Publisher's PDF, also known as Version of record

Published In:

BMJ (Clinical research ed.)

General rights

Copyright for the publications made accessible via the Edinburgh Research Explorer is retained by the author(s) and / or other copyright owners and it is a condition of accessing these publications that users recognise and abide by the legal requirements associated with these rights.

Take down policy

The University of Edinburgh has made every reasonable effort to ensure that Edinburgh Research Explorer content complies with UK legislation. If you believe that the public display of this file breaches copyright please contact openaccess@ed.ac.uk providing details, and we will remove access to the work immediately and investigate your claim.





University of Edinburgh, Edinburgh, UK

jonine.figueroa@ed.ac.uk

Cite this as: *BMJ* 2020;369:m2377<http://dx.doi.org/10.1136/bmj.m2377>

Published: 15 June 2020

CANCER MORTALITY DURING COVID-19

Distinguishing between direct and indirect consequences of covid-19

Jonine D Figueroa, Paul M Brennan, Evropi Theodoratou, Michael T C Poon, Karin Purshouse, Farhat V N Din, Kai Jin, Ines Mesa-Eguiagaray, Malcolm G Dunlop, Peter S Hall, David Cameron, Sarah H Wild, Cathie L M Sudlow

Analysing trends in cause specific excess deaths provides useful information on the consequences of the covid-19 pandemic. Lai and colleagues call for real time weekly data on cause specific mortality as these data are currently delayed in England, Wales, and Northern Ireland.^{1,2} In England, over 25% of all deaths are registered more than one week after death, and around 10% registered more than two weeks after death.³ Death registrations including cause of death are reported weekly in Scotland.⁴

Cancer and cardiovascular diseases are common causes of death in the United Kingdom. Using the National Records Scotland report on 27 May 2020, we examined the percentage difference in crude numbers of deaths in 2020 compared with the average for 2015-19 by calendar week for cancer and cardiovascular deaths.⁵ We observed a peak in excess deaths from these causes in week 14 (28% excess for cancer and 36% for cardiovascular disease), about four weeks after the first covid-19 case in Scotland was detected (1 March 2020) and before the 80% peak excess all cause mortality at weeks 15-16. By week 21, numbers of cancer and cardiovascular deaths were similar to previous years, but numbers of deaths from all causes remained around 17% higher.

Given limited testing, a short term increase in deaths due to cancer and cardiovascular disease might have been partly due to undetected covid-19 infection.⁶ In addition, the adverse effects of changes in NHS referral and diagnostic pathways and reductions in healthcare interventions might have contributed to these excesses. Delayed access and presentation to healthcare services with supervening emergencies such as malignant bowel obstruction, myocardial infarction, and stroke might have resulted in suboptimal outcomes. Fewer deaths related to cardiovascular disease earlier in 2020 might be due to a milder influenza season.^{7,8} We need dynamic tracking of mortality along with detailed analyses to assess the effects of changes in health services and health seeking behaviours compared with direct susceptibility to covid-19.

Competing interests: None declared.

Full response at: <https://www.bmj.com/content/369/bmj.m1735/rr>.

- 1 Wise J. Covid-19: Cancer mortality could rise at least 20% because of pandemic, study finds. *BMJ* 2020;369:m1735. doi: 10.1136/bmj.m1735 pmid: 32349991
- 2 Lai A, Pasea L, Banerjee A, et al. Estimating excess mortality in people with cancer and multimorbidity in the COVID-19 emergency. [Preprint]. Apr 2020. https://www.researchgate.net/publication/340984562_Estimating_excess_mortality_in_people_with_cancer_and_multimorbidity_in_the_COVID-19_emergency

- 3 Office for National Statistics. Impact of registration delays on mortality statistics in England and Wales: 2018. <https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/articles/impactofregistrationdelaysonmortalitystatisticsinenglandandwales/latest>
- 4 National Records Scotland. Weekly deaths statistics. <https://www.nrscotland.gov.uk/covid19stats>
- 5 Figueroa, J, Brennan P, Theodoratou E, et al. Trends in excess cancer and cardiovascular deaths in Scotland during the COVID-19 pandemic 30 December 2019 to 20 April 2020. MedRxiv 2020.05.02.20086231 [Preprint]. 2020. <https://www.medrxiv.org/content/10.1101/2020.05.02.20086231v1>
- 6 Docherty AB, Harrison E, Green CA, et al. Features of 16 749 hospitalised UK patients with COVID-19 using the ISARIC WHO Clinical Characterisation Protocol. MedRxiv 2020.04.23.20076042 [Preprint]. 2020. <https://www.medrxiv.org/content/10.1101/2020.04.23.20076042v1>
- 7 UK government. Weekly national flu reports: 2019 to 2020 season. <https://www.gov.uk/government/statistics/weekly-national-flu-reports-2019-to-2020-season>
- 8 Stewart S, Keates AK, Redfern A, McMurray JJV. Seasonal variations in cardiovascular disease. *Nat Rev Cardiol* 2017;14:654-64. doi: 10.1038/nrcardio.2017.76. pmid: 28518176