What is driving excess deaths in England and Wales?

Why are more people than expected dying? Veena Raleigh unpicks the data

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Since April 2022, deaths in England and Wales have been higher than expected when compared with preceding years, prompting concern and speculation about the causes. From 2 April to 30 September 2022 there were almost 26 000 (11%) more deaths than expected. About half (56%) of the excess deaths involve covid-19, which remains a major cause of death. However, this doesn’t explain the large number of non-covid excess deaths since spring. Why are more people than expected dying? Several factors appear to be contributing to this trend.

Firstly, it’s important to set out some caveats to the numbers. Excess deaths are calculated as the difference between current numbers of deaths and those in a baseline year, and the excess can differ depending on the baseline and methodology used. For example, the method used by the Office for National Statistics (ONS) shows that 152 255 excess deaths have occurred in England and Wales during the covid-19 pandemic thus far (29 February 2020 to 30 September 2022), whereas the method used by the Institute and Faculty of Actuaries (IFoA) shows 123 600 excess deaths for the same period. The numbers for 2022 are 18 349 and 15 400, respectively. Based on different rationales, the ONS and the IFoA use different baselines. And the absolute numbers used by ONS do not take account of changes in population size and structure such as ageing. Therefore, age standardised mortality rates (ASMRs) provide a more reliable basis for assessing trends over time as they take account of both effects.

ONS’s year-to-date January to August 2022 ASMR was lower in 2022 than in any year since 2001, with the exception of 2019 when it was lower by 2.5%—patterns broadly consistent with IFoA. However, while monthly ASMRs in early 2022 were below previous years, since May they’ve generally been higher.

Surprisingly, mortality rates in 2022 for most of the 10 leading “underlying” causes of death such as heart disease, stroke, and lung and colorectal cancer have been similar to previous years, or lower than expected. An exception is the rate for “symptoms, signs, and ill defined conditions” (mostly deaths resulting from old age and frailty) which has consistently been higher than expected and also caused the most excess deaths, but not enough to explain the overall excess.

However, the Office for Health Improvement and Disparities’ (OHID) analysis of deaths by “any mention” on the death certificate—rather than just the “underlying cause” of death—shows a substantial excess, in particular, of deaths from cardiovascular diseases and diabetes since April, prompting an investigation by the Department of Health and Social Care. Growing evidence suggests that covid-19 increases the risk of cardiovascular problems even months after infection, which could in part be driving excess deaths. Covid-19 itself remains the sixth leading cause of death, causing 200-400 deaths weekly—a reminder that this virus remains a threat for the foreseeable future.

Another possibility is that people may not be receiving the care they need from an NHS that was already overstretched pre-pandemic and is now coping with unprecedented backlogs of care and pressures on emergency services. This “crisis” situation has an adverse impact on all patients, but a lack of timely care can be especially life threatening for people with acute cardiovascular problems.

ONS analysis shows about 3300 excess deaths occurred during the heatwaves experienced in England and Wales between June and August, mostly in older people. ONS also notes that excess deaths can occur following periods when deaths were lower than average, ie, “mortality displacement.” Could some of the excess deaths since April reflect the lower ASMRs in early 2022?

Further analyses are needed to understand the unexpected patterns in recent mortality trends, notably the persistence of excess deaths, what’s driving them, and how long they are likely to last. Meanwhile, it’s clear that “living with covid” must not lead to complacency: covid-19 remains a deadly and disabling threat, and measures to control and treat it—and to treat associated risk factors such as cardiovascular disease and diabetes—must be priorities. Most importantly, long overdue measures to redress the chronic capacity deficits in the health and care system are urgently needed to reduce potentially avoidable loss of life.

* ONS uses a pre-pandemic five year average of deaths in 2015 to 2019 as the baseline for calculating excess deaths in 2020 and 2021, and a five year average of deaths in 2016 to 2019 and 2021 as the baseline for 2022, i.e, the latter includes a pandemic year (2021) with higher deaths. The ONS doesn’t standardise for population size and age structure.

The IFoA uses 2019 as the baseline for calculating excess deaths in 2020-2022 because the rates for January to March 2019 were similar to those for the same period in 2020 before the pandemic struck, whereas pre-pandemic mortality rates changed year on year. The IFoA standardises for changes in population size and age structure.

Competing interests: I have read and understood the BMJ policy on declaration of interests and declare I have no competing interests.


Office for Health Improvement and Disparities. Excess mortality in England. OHID, 2022. https://app.powerbi.com/view?r=eyJrIjoiYmUwNmFhMjYtNGZhYS00NDk2LWFlMTAtOTg0OGNmOWRlODY2NiIsImMiOjh9
