King's Fund, London, UK
V.Raleigh@kingsfund.org.uk
Cite this as: *BMJ* 2020;369:m2295
http://dx.doi.org/10.1136/bmj.m2295
Published: 11 June 2020

Tackling UK's mortality problem: covid-19 and other causes

We cannot reduce excess deaths unless we know what's causing them

Veena S Raleigh *senior fellow*

The number of deaths from covid-19 in the UK is among the highest reported internationally, second only to the US.[1] This covid-19 related mortality surge comes on the heels of the historical legacy of stalling improvements in life expectancy in UK.[2] The development of evidence based policies and interventions for tackling both covid-19 and other causes of death is imperative if the UK's mortality problem is to improve. This requires a clear understanding of what's driving mortality.

In under three months, SARS-CoV-2 has claimed at least 46 000 lives in England and Wales,[3] overtaking the annual death toll from major conditions such as lung cancer and stroke to become the third leading cause of death in 2020.[4] The death toll from covid-19 is still rising, and even these grim statistics don't fully capture the effect of covid-19 since deaths from other causes also increased (by over 12 000) during the same period.

Under-reporting

An analysis by the Office for National Statistics (ONS) of non-covid deaths and excess deaths over the 2015-19 average provides strong evidence that covid-19 deaths are under-recorded in death certification. For example, there has been a sharp rise in deaths from dementia and ill defined conditions, and in deaths among care home residents with comorbidities.[5] Although the analysis also suggests that some deaths may have resulted from people not receiving healthcare for other conditions—such as asthma and diabetes—ONS notes that some of the increased deaths from these causes could result from undiagnosed covid-19 exacerbating a pre-existing condition. So, the bulk of the 12 000 excess non-covid deaths seem in fact to be covid-19 related, making the UK's death toll from this virus even worse.

Concerns about under-reporting of covid-19 deaths, and the need to capture the indirect death toll inflicted by covid-19 (for example, by people not receiving healthcare for other conditions), have led to the widespread use of "excess" deaths as a measure of the overall effect of the pandemic. Compared with the 2015-19 average, there were 58 000 excess deaths in England and Wales from 5 March to 29 May 2020. A caveat to this measure is that the choice of baseline affects the number of excess deaths. For example, a baseline of 2015-19 results in 8% fewer excess deaths than a baseline of 2019, a justifiable alternative because it takes account of mortality improvements and because death rates in the first 12 weeks of 2019 and 2020 were similar.[6] The ONS acknowledges that its baseline of 2015-19 could therefore underestimate excess deaths.[5]

Excess deaths can be a useful comparative measure of the overall effect of the covid-19 pandemic but are of limited practical value in informing how the NHS and other public services should respond. Accurate estimates of the deaths associated with covid-19 are essential for monitoring the pandemic and mitigating its effect on those most affected. Public health surveillance, critical intelligence, and insight to inform control strategies and planning of health services will be severely compromised without accurate estimates of cause specific morbidity and mortality.

Influenza provides a good parallel since it can cause substantial morbidity and hospital admissions, and influenza related deaths are also greatly under-recorded in vital statistics—some of the reasons for which apply also to covid-19.[5,7] Hence, alternative approaches using mortality and surveillance data are commonly used to estimate influenza related deaths (eg, by the US Centers for Disease Control and Prevention,[7] EuroMOMO,[8] and Public Health England[9]).

Public health considerations warrant similarly robust, coordinated systems of mortality surveillance nationally and internationally for covid-19, a deadlier virus than influenza. This entails UK public health agencies working with relevant national and international agencies, using their combined skills and expertise and building on existing systems for disease and mortality surveillance.

Statistical data

The timely availability of vital statistics is also critical for informing a swift response to rapidly changing disease patterns. The ONS's speedy analysis of mortality data relating to covid-19, including secondary analyses—for example, of inequalities and other causes of death—is commendable and compares favourably with the lengthier process of data release in many other countries. However, improvements to the underlying data are also called for. In particular, the feasibility of recording ethnicity on death certificates (adopted by Scotland in 2012) should be revisited as a priority given the evidence about ethnic differences in morbidity and mortality, now so greatly amplified in relation to covid-19.[13]

Even before covid-19, the UK's life expectancy was lower than in other western European countries and showed the least improvement between 2011 and 2018.[12] Its relatively high mortality in 2020 from all causes risks a further slide down life expectancy league tables.[10-12] Female life expectancy in particular, already among the lowest among European peers, is likely to slide even further behind, given the ONS finding that the increase in deaths has

disproportionately affected older women.[5] Although the UK's mortality trends relative to other countries will partly depend on how the covid-19 pandemic plays out in the UK and elsewhere, 2020 has not been an auspicious start to turning the tide. We must ensure our monitoring systems are fit for purpose for supporting improvements in both.

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

Provenance and peer review: Not commissioned; not externally peer reviewed.

1 Johns Hopkins University. Coronavirus resource centre. https://coronavirus.jhu.edu/data/mortality
2 Raleigh VS. Stalling life expectancy in the UK. *BMJ* 2018;362:k4050. doi: 10.1136/bmj.k4050 pmid: 30262572
3 Office for National Statistics. Deaths registered weekly in England and Wales, provisional: week ending 29 May 2020. 9 June 2020. https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/bulletins/deathsregisteredweeklyinenglandandwalesprovisional/weekending29may2020
4 Office for National Statistics. Deaths registered in England and Wales: 2018. ONS, 2019. https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/causesofdeath/datasets/leadingcausesofdeathuk
5 Office for National Statistics. Analysis of death registrations not involving coronavirus (COVID-19), England and Wales: 28 December 2019 to 1 May 2020. 5 Jun 2020. https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/articles/analysisofdeathregistrationsnotinvolvingcoronaviruscovid19englandandwales28december2019to1may2020/technicalannex
6 Institute and Faculty of Actuaries. Continuous mortality investigation: England and Wales mortality monitor—COVID-19 update—week 22 of 2020. https://www.actuaries.org.uk/system/files/field/document/Mortality%20monitor%20Week%2022%202020%20v01%202020-06-09.pdf
7 Centers for Disease Control and Prevention. How CDC estimates the burden of seasonal influenza in the US. https://www.cdc.gov/flu/about/burden/how-cdc-estimates.htm
8 European Mortality Monitoring Project. FluMOMO. https://www.euromomo.eu/how-it-works/flumomo
9 Public Health England. Surveillance of influenza and other respiratory viruses in the UK Winter 2018 to 2019. 2019. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/839350/Surveillance_of_influenza_and_other_respiratory_viruses_in_the_UK_2018_to_2019-FINAL.pdf
10 Muellbauer AJ. Measuring excess mortality: the case of England during the covid-19 pandemic. Oxford working paper No 2020-11. Institute for New Economic Thinking, 2020. https://www.inet.ox.ac.uk/files/6-May-20-Muellbauer-Aron-Excess-mortality-in-England-vs.-Europe-and-the-COVID-pandemic.pdf
11 European Mortality Monitoring Project. EuroMOMO bulletin, week 22, 2020. https://www.euromomo.eu/2020-22
12 Raleigh V. Trends in life expectancy in EU and other OECD countries: Why are improvements slowing? OECD health working paper No 108. 2019. doi: 10.1787/223159ab-en
13 Public Health England. Disparities in the risk and outcomes of covid-19. PHE, 2020. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/891116/disparities_review.pdf