



CMI mortality monitor – week 50 of 2023

This update is for week 50 of 2023, ending on 15 December 2023 and published on 4 January 2024. The [CMI website](#) has details of the calculation methods and previous updates.

We note that we intend to make a further revision to population estimates, with effect from the monitor for week 52 of 2023. This will affect our estimates of mortality rates and expected and excess deaths.

Results are based on the date of registration of deaths. Using date of occurrence would give different results, particularly since late 2022. The monitor for week 39 of 2023 discusses this and estimates the impact.

Table 1: Deaths registered in England & Wales in week 50 of 2023

	Male	Female	Total
“Expected” registered deaths (based on week 50 of 2019)	5,803	5,867	11,670
Actual registered deaths, from all causes	6,075	5,885	11,960
Excess deaths (and as a percentage of expected)	272 (5%)	18 (0%)	290 (2%)
Mentions of COVID-19 on the death certificate	134	102	236

Table 2: Cumulative excess deaths

	England & Wales	United Kingdom
From the start of the pandemic (29 Feb 2020 to 15 December 2023)	183,700	205,800
From week 1 of 2023 (31 Dec 2022 to 15 December 2023)	30,300	34,300

Chart 1: Weekly standardised mortality rates in England & Wales for 2011 to 2023

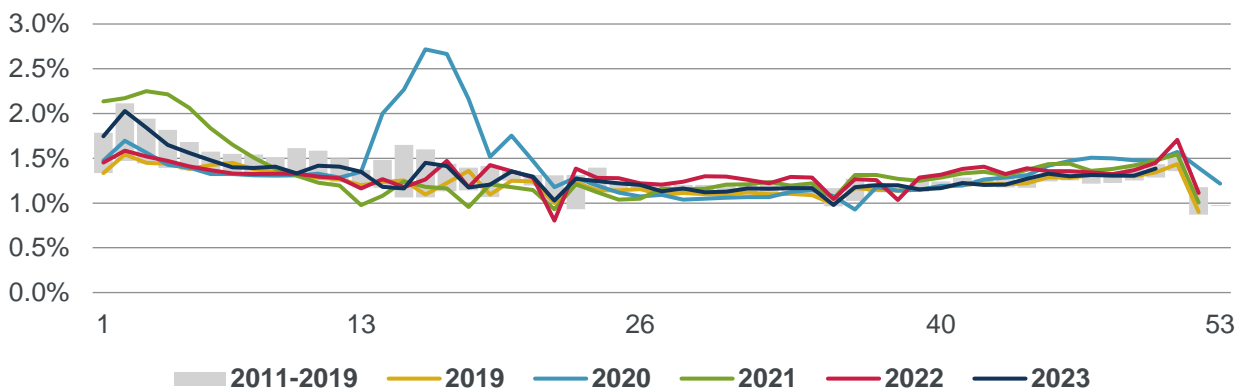


Chart 2: Weekly excess deaths and deaths with COVID on the death certificate – in the past 26 weeks

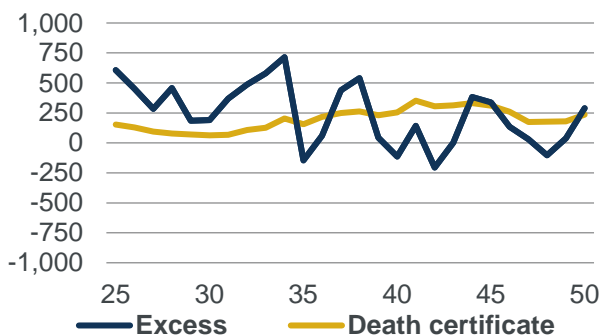


Chart 3: Weekly COVID deaths and Non-COVID excess (Excess minus COVID deaths) – in the past 26 weeks

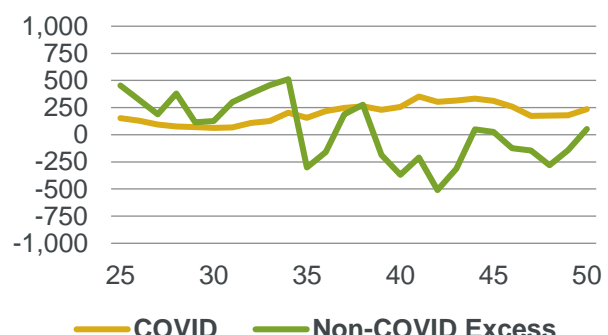




Chart 4 shows cumulative standardised mortality rates relative to cumulative mortality in 2019, as a proportion of mortality for 2019 as a whole. We use 2019 as the comparator as this is consistent with the excess deaths calculation above.

Under this measure, cumulative standardised mortality to week 50 of 2023 is 5.6% above 2019.

Chart 4: Cumulative standardised mortality rate compared to 2019

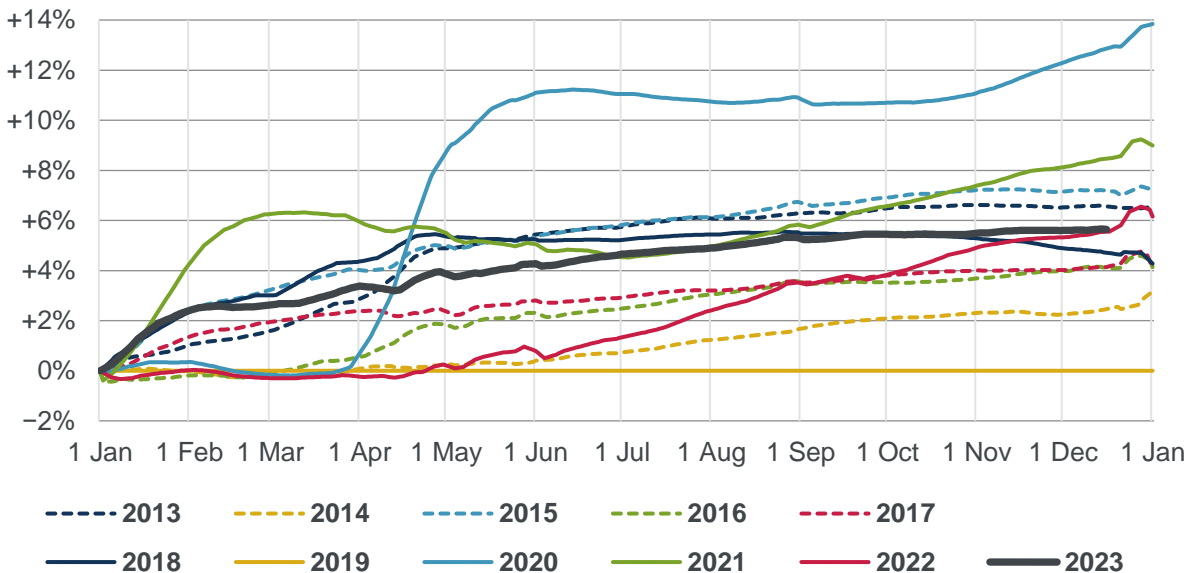
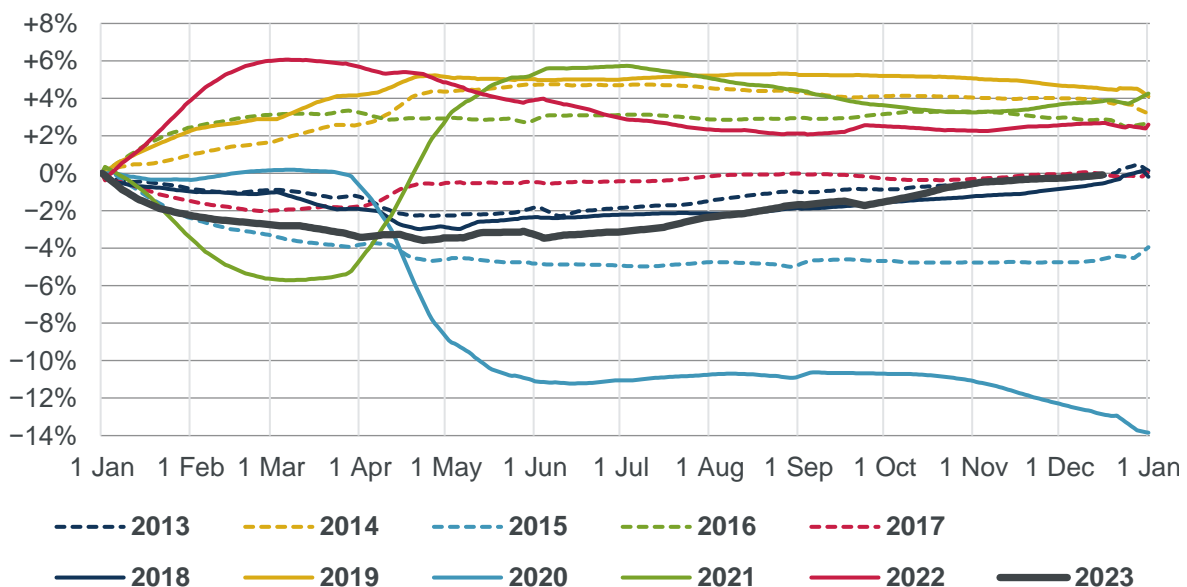


Chart 5 shows the cumulative annual standardised mortality improvement for 2023 and the previous ten years. The cumulative improvement for year N is the reduction in cumulative mortality from year N-1 to year N, as a proportion of full-year mortality for year N-1.

The cumulative mortality improvement to week 50 of 2023 (relative to 2022) is -0.1%.

The cumulative mortality improvement between 2019 and 2023 is -5.6% to week 50 of 2023.

Chart 5: Cumulative annual standardised mortality improvement





Data sources

The provisional weekly deaths are available from:

- ONS (England & Wales)
<https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/datasets/weeklyprovisionalfiguresondeathsregisteredinenglandandwales>
- NRS (Scotland)
<https://www.nrscotland.gov.uk/covid19stats>
- NISRA (Northern Ireland)
<https://www.nisra.gov.uk/statistics/death-statistics/weekly-death-registrations-northern-ireland>

Notes on method and data

Full details of the methods used for results based on the ONS data are included in [Working Paper 111](#). Our analysis is based on Standardised Mortality Rates (SMRs). These adjust the provisional weekly deaths data published by the ONS to control for changes in the size, age and gender distribution of the population over time. We note that mortality rates and mortality improvements vary by age, and the results shown are sensitive to the age distribution of the chosen standard population (the 2013 European Standard Population).

On 11 July 2023, we revised the population data used to produce the mortality monitor to reflect results of the 2021 census. The monitor for week of 26 of 2023 has details of the change and the impact on results. We note that the ONS published its own estimate of revised population data in November 2023, using a more detailed method and data. We intend to allow for this further revision in population estimates with effect from the monitor for week 52 of 2023.

Our calculations rely on data for registered deaths, and we are conscious that during the pandemic deaths may have been registered earlier or later than in previous years. Consequently, comparisons of mortality between years during the pandemic and earlier years may not be on a like-for-like basis. Also, results for individual weeks may not be consistent between years due to the timing of public holidays.

In addition, we noted in the mortality monitor for week 26 of 2023 that the difference between occurrences and registrations of deaths was particularly great around the end of 2022. We discuss this, and further evidence that the pattern of registrations in 2023 differs from earlier years, in the appendix to the mortality monitor for week 39 of 2023.

Our calculations of excess and expected deaths are based on mortality in 2019. The monitor for week 1 of 2023 has further information on our choice of 2019.

Use of this document

The CMI disclaims any liability from use of or reliance on these calculations, including in relation to financial transactions such as longevity swaps; and the CMI does not guarantee that it will continue to publish updates. Please also see the reliances and limitations, disclaimer, and copyright notice on the final page of this document.

TAS compliance

This paper is intended to translate publicly available demographic information published by the Office for National Statistics and similar bodies into indicative mortality measures to illustrate recent mortality experience primarily in England & Wales. The paper is intended for use by actuaries and other parties interested in detailed mortality statistics and is for information only.

The paper complies with the principles in the Financial Reporting Council's Technical Actuarial Standard "TAS 100: General Actuarial Standards". Any person using this paper should exercise judgement over its suitability and relevance for their purpose.

Reliances and limitations

The purpose of the weekly mortality monitor is to provide regular updates on standardised mortality in England & Wales during the coronavirus pandemic, adjusting ONS data to allowing for changes in the size and age of the population.



The mortality monitor reports on all-cause and COVID-19 mortality. It does not offer any view on other causes of death or reasons for changes in mortality rates.

The CMI aims to produce high-quality outputs and takes considerable care to ensure that the mortality monitor and the accompanying spreadsheet of results are accurate. However:

- We cannot guarantee their accuracy (see the Disclaimer).
- There is a reliance on the data published by third parties, particularly the ONS data which is described as “provisional”. We are unable to quantify the impact on the results of the monitor of any future revisions to provisional data.
- We have also applied judgement and assumptions in deciding on the calculation methods and the presentation of results.
- Anyone using the results of the mortality monitor should ensure that it is appropriate for their particular use and note that care is needed when estimating full year experience from partial year experience. This is particularly true during the coronavirus pandemic.
- While the results allow for the 2021 census data published to date by the ONS, populations for years after 2011 are our own estimates. The final revised estimates published by the ONS were published in November 2023 and we intend to allow for these latest population estimates with effect from the monitor for week 52 of 2023. This will affect our estimates of mortality rates and expected and excess deaths.

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