



CMI mortality monitor – data update from week 9 of 2025

Background

The CMI mortality monitor relies on estimates of the England & Wales population by age and gender.

We use ONS population estimates where these are available but also need to make our own estimates for the latest period. We update the population estimates from time to time when the ONS publishes new data, to:

- replace CMI estimates with ONS estimates when these become available; and
- replace existing ONS estimates with revised ONS estimates.

Such updates to population estimates affect the results of the mortality monitor. This document analyses the impact of changes to population estimates with effect from week 9 of 2025 and is in the same format as our previous analysis for changes with effect from week 29 of 2024.

Changes to population estimates from week 9 of 2025

The latest update makes the population estimates used for the mortality monitor consistent with the indicative dataset for the CMI_2024 version of the CMI Mortality Projections Model used in the CMI_2024 consultation published in CMI Working Paper 197 (only available to CMI Subscribers):

- The ONS published provisional data on deaths by single year of age in 2024.
- We used that data to update our estimates of the mid-2024 and mid-2025 populations.
- We make our own estimates of the age distribution of the population at ages 85, as described in Working Paper 106. This causes us to revise our population estimates at individual ages 85 and above, although not the total population, in earlier years.

Impact on results – overall

This section shows the impact on the “headline” results – unisex figures for ages 20-100. We show results for the “previous” dataset (used up to week 8 of 2025), the “new” dataset (used from week 9 of 2025), and the differences between them. Tables 1 and 2 show:

- the cumulative SMR relative to the 2015-2024 average (as in Chart 2 of the summary monitor and Chart D of the quarterly monitor); and
- the cumulative mortality improvement (as in Chart 3 of the summary monitor and Chart E of the quarterly monitor).

In each case, figures for 2015 to 2024 are for the full year and those for 2025 are as at week 9.

Tables 1 and 2 show that the greatest changes in relative SMR and mortality improvement are for 2024.



Table 1: Cumulative standardised mortality rate (cSMR) compared to the 2015-2024 average

Year	Previous	New	Difference
2015	+1.99%	+2.02%	+0.02%
2016	-1.05%	-1.02%	+0.02%
2017	-0.95%	-0.92%	+0.02%
2018	-0.52%	-0.50%	+0.02%
2019	-4.51%	-4.49%	+0.02%
2020	+8.76%	+8.79%	+0.03%
2021	+2.70%	+2.72%	+0.02%
2022	-0.49%	-0.47%	+0.02%
2023	-1.16%	-1.14%	+0.02%
2024	-4.78%	-4.99%	-0.21%
2025 (week 9)	-1.26%	-1.36%	-0.10%

Table 2: Cumulative annual standardised mortality improvement (cSMRI)

Year	Previous	New	Difference
2015	-3.89%	-3.89%	-0.00%
2016	+2.98%	+2.98%	-0.00%
2017	-0.10%	-0.10%	-0.00%
2018	-0.43%	-0.43%	-0.00%
2019	+4.01%	+4.01%	-0.00%
2020	-13.90%	-13.90%	-0.00%
2021	+5.58%	+5.58%	+0.00%
2022	+3.11%	+3.11%	-0.00%
2023	+0.67%	+0.67%	-0.00%
2024	+3.66%	+3.89%	+0.24%
2025 (week 9)	-0.15%	-0.08%	+0.07%



Impact on results – by age and gender

Tables 3 and 4 show how the “difference” items from Tables 1 and 2 respectively vary by age and sex. Tables 3 and 4 show that the differences are greatest for males aged 85+. Note that a value of “-” indicates no difference, while a value of “+0.0%” or “-0.0%” indicates a difference that rounds to zero for the precision shown.

Tables 5 and 6 show the values of cumulative relative mortality and cumulative mortality improvements for the New dataset.

Table 3: Difference in cumulative standardised mortality rate (cSMR) compared to the 2015-2024 average between Previous and New datasets, by age and sex

Year	M 20-44	M 45-64	M 65-74	M 75-84	M 85+	F 20-44	F 45-64	F 65-74	F 75-84	F 85+
2015	+0.0%	+0.0%	+0.0%	+0.0%	+0.1%	+0.0%	-0.0%	-0.0%	+0.0%	+0.0%
2016	+0.0%	+0.0%	+0.0%	+0.0%	+0.1%	+0.0%	-0.0%	-0.0%	+0.0%	+0.0%
2017	+0.0%	+0.0%	+0.0%	+0.0%	+0.1%	+0.0%	-0.0%	-0.0%	+0.0%	+0.0%
2018	+0.0%	+0.0%	+0.0%	+0.0%	+0.1%	+0.0%	-0.0%	-0.0%	+0.0%	+0.0%
2019	+0.0%	+0.0%	+0.0%	+0.0%	+0.1%	+0.0%	-0.0%	-0.0%	+0.0%	+0.0%
2020	+0.0%	+0.0%	+0.0%	+0.0%	+0.1%	+0.0%	-0.0%	-0.0%	+0.0%	+0.0%
2021	+0.0%	+0.0%	+0.0%	+0.0%	+0.1%	+0.0%	-0.0%	-0.0%	+0.0%	+0.0%
2022	+0.0%	+0.0%	+0.0%	+0.0%	+0.1%	+0.0%	-0.0%	-0.0%	+0.0%	+0.0%
2023	+0.0%	+0.0%	+0.0%	+0.0%	+0.1%	+0.0%	-0.0%	-0.0%	+0.0%	+0.0%
2024	-0.0%	-0.0%	-0.0%	-0.2%	-0.6%	-0.0%	+0.0%	+0.0%	-0.1%	-0.2%
2025 (week 9)	-0.0%	-0.0%	-0.0%	-0.1%	-0.2%	+0.0%	-0.0%	+0.0%	-0.1%	-0.2%

Table 4: Difference in cumulative annual standardised mortality improvement (cSMRI) between Previous and New datasets, by age and sex

Year	M 20-44	M 45-64	M 65-74	M 75-84	M 85+	F 20-44	F 45-64	F 65-74	F 75-84	F 85+
2015	-	-	-	-	-0.0%	-	-	-	-	+0.0%
2016	-	-	-	-	-0.0%	-	-	-	-	+0.0%
2017	-	-	-	-	-0.0%	-	-	-	-	-0.0%
2018	-	-	-	-	-0.0%	-	-	-	-	-0.0%
2019	-	-	-	-	-0.0%	-	-	-	-	+0.0%
2020	-	-	-	-	-0.0%	-	-	-	-	+0.0%
2021	-	-	-	-	-0.0%	-	-	-	-	+0.0%
2022	-	-	-	-	-0.0%	-	-	-	-	+0.0%
2023	-	-	-	-	-0.0%	-	-	-	-	+0.0%
2024	+0.0%	+0.0%	+0.0%	+0.3%	+0.6%	+0.0%	-0.0%	-0.0%	+0.1%	+0.2%
2025 (week 9)	-0.0%	+0.0%	+0.0%	+0.0%	+0.1%	-0.0%	+0.0%	-0.0%	+0.0%	+0.2%



Table 5: Cumulative standardised mortality rate (cSMR) compared to the 2015-2024 average for the New dataset, by age and sex

Year	M 20-44	M 45-64	M 65-74	M 75-84	M 85+	F 20-44	F 45-64	F 65-74	F 75-84	F 85+
2015	-4.8%	-3.1%	+0.1%	+3.1%	+2.5%	-3.6%	-1.5%	+1.8%	+4.1%	+3.8%
2016	-1.4%	-3.7%	-1.2%	+0.6%	-2.0%	-2.8%	+0.2%	+0.5%	+0.3%	-1.7%
2017	-5.7%	-4.3%	-2.0%	+0.2%	-1.0%	-5.4%	-3.4%	-1.6%	+0.7%	+0.5%
2018	+0.3%	-3.5%	-1.5%	-0.8%	-0.1%	-3.1%	-1.5%	-0.9%	+0.1%	+1.0%
2019	-4.6%	-5.5%	-4.8%	-4.3%	-4.4%	-4.2%	-4.2%	-4.1%	-4.1%	-4.7%
2020	+0.9%	+8.1%	+7.9%	+10.9%	+10.8%	+2.0%	+5.4%	+4.9%	+7.9%	+8.8%
2021	+9.0%	+10.6%	+4.7%	+2.9%	+0.1%	+7.6%	+7.2%	+3.9%	+1.6%	+0.2%
2022	+1.2%	+0.8%	+0.2%	-2.0%	+0.2%	+3.5%	+0.6%	+0.2%	-1.2%	-1.1%
2023	+4.5%	+2.1%	-0.3%	-3.1%	-1.0%	+3.8%	-0.1%	-0.6%	-2.6%	-1.4%
2024	+0.6%	-1.3%	-3.1%	-7.6%	-5.2%	+2.2%	-2.7%	-4.0%	-6.8%	-5.4%
2025 (week 9)	-0.6%	+0.0%	-1.0%	-1.7%	-1.4%	-0.1%	-1.0%	-1.2%	-1.8%	-1.6%

Table 6: Cumulative annual standardised mortality improvement (cSMRI) for the New dataset, by age and sex

Year	M 20-44	M 45-64	M 65-74	M 75-84	M 85+	F 20-44	F 45-64	F 65-74	F 75-84	F 85+
2015	-0.2%	-0.9%	-0.1%	-3.0%	-5.4%	+3.1%	-0.9%	-2.0%	-4.4%	-7.8%
2016	-3.6%	+0.7%	+1.3%	+2.4%	+4.5%	-0.8%	-1.8%	+1.3%	+3.7%	+5.3%
2017	+4.3%	+0.6%	+0.7%	+0.4%	-1.0%	+2.6%	+3.6%	+2.1%	-0.4%	-2.2%
2018	-6.4%	-0.8%	-0.4%	+1.1%	-1.0%	-2.5%	-2.0%	-0.7%	+0.5%	-0.6%
2019	+4.9%	+2.1%	+3.3%	+3.4%	+4.3%	+1.2%	+2.7%	+3.2%	+4.3%	+5.7%
2020	-5.7%	-14.4%	-13.2%	-15.9%	-15.9%	-6.5%	-10.0%	-9.4%	-12.6%	-14.3%
2021	-8.1%	-2.3%	+2.9%	+7.2%	+9.7%	-5.4%	-1.7%	+0.9%	+5.9%	+8.0%
2022	+7.1%	+8.9%	+4.3%	+4.8%	-0.1%	+3.7%	+6.1%	+3.6%	+2.7%	+1.2%
2023	-3.2%	-1.2%	+0.5%	+1.1%	+1.2%	-0.3%	+0.6%	+0.8%	+1.5%	+0.3%
2024	+3.7%	+3.3%	+2.9%	+4.6%	+4.2%	+1.5%	+2.6%	+3.4%	+4.3%	+4.1%
2025 (week 9)	+1.1%	-0.5%	+0.1%	-0.1%	-0.3%	+0.1%	+0.4%	+0.2%	+0.1%	-0.1%



Data sources

The provisional weekly deaths are available from:

- <https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/datasets/weeklyprovisionalfiguresondeathsregisteredinenglandandwales>

The population estimates are available from:

- <https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/datasets/estimatesofthepopulationforenglandandwales>

Full details of the methods used 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).

We have revised the population data used to produce the mortality monitor from time to time, primarily to reflect results of the 2021 census. The mortality monitor webpage includes a note setting out the most recent changes, which were implemented in the week 29 of 2024 monitor.

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 have noted that the difference between occurrences and registrations of deaths was particularly noticeable around the end of 2022. We discuss this, and further evidence that the pattern of registrations in the first half of 2023 differed from earlier years, in Appendix 2 to the mortality monitor for week 1 of 2024. Please note that the ONS has not published updated monthly occurrences data since July 2023.

Since 9 September 2024 death certification reforms means that the five-day period for registering a death starts on the date that the registrar receives a signed medical certificate of cause of death from the medical examiner, or relevant notification from the coroner. Previously, deaths should legally have been registered within five days of the death occurring or the date on which a body was found (including weekends and bank holidays), unless a coroner was involved.

Our [analysis](#) suggested that weekly figures were only materially affected in the weeks shortly after that date, but the cumulative standardised mortality rate for 2024 may be around 0.25% lower than if the reforms had not been implemented. That would lead to the mortality improvement for 2024 being around 0.25% higher and the eventual mortality improvement for 2025 being around 0.25% lower than if the reforms had not been implemented.

On 5 February 2025 the ONS started to publish deaths for 2025 for 90-94, 95-99 and 100+ age bands rather than using a combined 90+ age band as it had done previously. For the time being, we have grouped the 2025 data into a 90+ age band for consistency with earlier years.

Use of this document

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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 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, COVID-19, and influenza and pneumonia 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 the ONS 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.
- Population estimates for the latest years reflect our own estimates and are less certain than published ONS figures for earlier years.

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