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Research and analysis

# COVID-19 confirmed deaths in England (to 31 January 2021): report

Updated 10 March 2021

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## COVID-19 deaths

Public Health England (PHE) has published national statistics on deaths in people with laboratory-confirmed COVID-19 since 29 April 2020. In this report we present the latest data on COVID-19 mortality. Further information on the data series can be found here (https://www.gov.uk/government/publications/phe-data-series-on-deaths-in-people-with-covid-19-technical-summary).

## Data sources

Cases of laboratory diagnosed COVID-19 resident in England were identified from the Second Generation Surveillance System (SGSS).

Fact and date of death were derived from combined sources: NHS England hospital deaths, Office for National Statistics death registrations, PHE Health Protection Team direct reporting, Demographic Batch Service tracing of laboratory-confirmed cases.

## Definitions

In this report deaths are defined as a death in a person with a laboratory-confirmed positive COVID-19 test and either:

- died within 60 days of the first specimen date

or

- died more than 60 days after the first specimen date with COVID-19 mentioned on the death certificate

This data does not include deaths in people where COVID-19 is suspected but not confirmed by testing (SARS-CoV-2 PCR either negative or not tested).

This data does not report cause of death, and as such represents all deaths in people with laboratory-confirmed COVID-19, not just those caused by COVID-19.

In this report, data is reported from 29 June 2020 (week 27) to 31 January 2021.

Mortality rates are calculated using 2019 ONS population estimates data.

Age-standardised rates adjust for differences in the age structure of populations. The standard used throughout this report is the European Standard Population 2013.

## Methods

Mortality rates have been calculated with time adjustment applied when presenting data from week 27 onwards and the current month, with the population denominator adjusted for the number of days each time period covers. This method has been applied to mortality rates presented in both tables and time-series figures. This allows rates presented over different time periods to be compared. These rates cannot be compared with rates that do not have this adjustment.

Mortality rates by ethnic group and Index of Multiple Deprivation (IMD) have been age-standardised, to account for the different age distributions within different populations.

# COVID-19 mortality rates

Within the period 29 June 2020 to 31 January 2021, 3,129,283 cases of COVID-19 were detected in England.

In the same period, there have been 66,479 deaths in persons with laboratory-confirmed COVID-19. This represents a crude mortality rate of 118.1 per 100,000 population. From 29 June 2020 onwards, the highest recorded number of daily deaths was 1,342 (2.4 per 100,000 population) deaths on 19 January 2021.
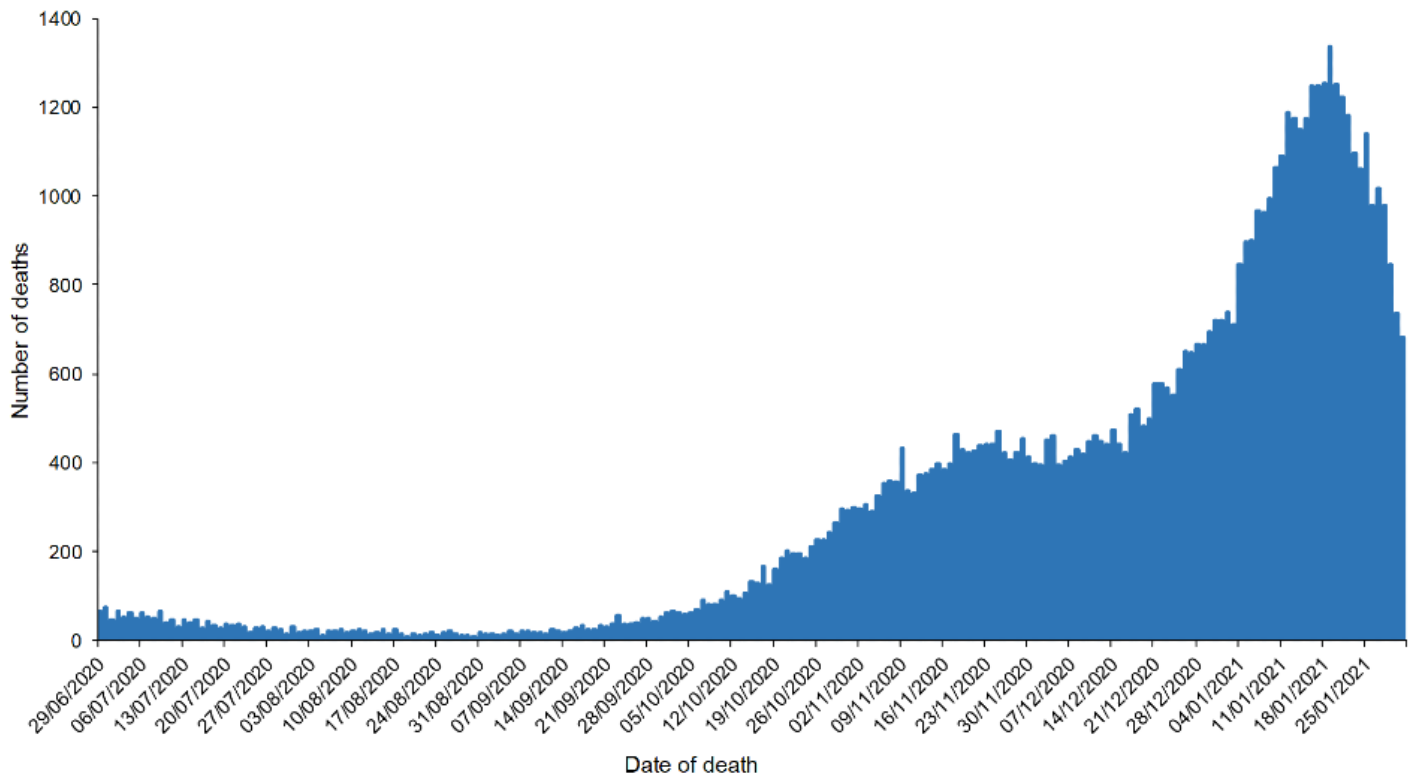
**Table 1. Number of laboratory-confirmed cases, deaths and crude mortality rate (per 100,000 population) in laboratory-confirmed cases of COVID-19, by month\*†**

| Month | Cases | Deaths | Crude mortality rate (95% CI) |
|---|---|---|---|
| July 2020 | 19,300 | 1,198 | 2.1 (2.0-2.3) |
| August 2020 | 29,808 | 518 | 0.9 (0.8-1.0) |
| September 2020 | 127,787 | 824 | 1.5 (1.4-1.6) |
| October 2020 | 483,117 | 4,546 | 8.1 (7.8-8.3) |
| November 2020 | 526,756 | 11,621 | 20.6 (20.3-21.0) |
| December 2020 | 862,557 | 15,806 | 28.1 (27.6-28.5) |
| January 2021 | 1,079,624 | 32,049 | 56.9 (56.3 - 57.6) |

\*Data is presented from 29 June 2020 to 31 January 2021. Due to continuous data quality improvements number of cases and deaths may be subject to fluctuations.

†Deaths within 60 days of a positive COVID-19 test or where COVID-19 is mentioned on the death certificate.
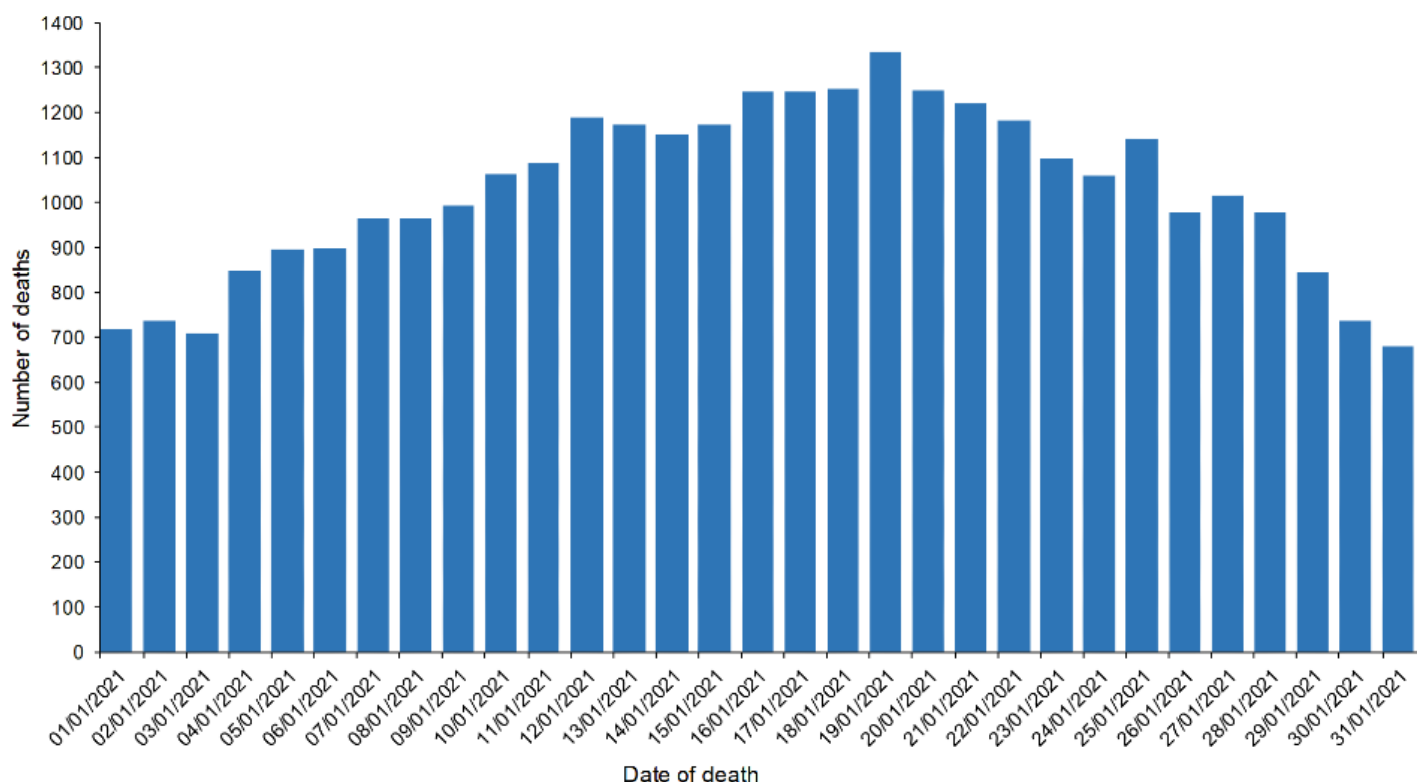
**Figure 1.a. Number of deaths in laboratory-confirmed cases of COVID-19 by date of death, from week 27 onwards\*†**

*Data is presented from 29 June 2020 to 31 January 2021.

†Deaths within 60 days of a positive COVID-19 test or where COVID-19 is mentioned on the death certificate.

**Figure 1.b. Number of deaths in laboratory-confirmed cases of COVID-19 by date of death, January 2021*†**

*Data is presented from 1 January to 31 January 2021.

†Deaths within 60 days of a positive COVID-19 test or where COVID-19 is mentioned on the death certificate.

## Age and sex distribution

Since 29 June 2020, the mortality rate was highest among those aged over 80 (2,376 per 100,000 population). The mortality rate in each age group in January 2021 was higher than the adjusted rate for the total period 29 June 2020 to 31 January 2021.

**Table 2. Number of deaths and mortality rate\*\* (per 100,000 population) in laboratory-confirmed cases of COVID-19, by age group†**

| Age group | Deaths (week 27 onwards*) | Mortality rate** (95% CI) (week 27 onwards*) | Deaths (January 2021) | Mortality rate** (95% CI) (January 2021) |
|---|---|---|---|---|
| <5 | <10 | 0.3 (0.1-0.6) | <10 | 0.7 (0.1-2.6) |
| 5-9 | <10 | 0.1 (0.0-0.4) | <10 | 0.3 (0.0-1.9) |
| 10-19 | 18 | 0.5 (0.3-0.7) | <10 | 0.9 (0.3-2.1) |
| 20-29 | 89 | 2.1 (1.7-2.5) | 39 | 6.3 (4.5-8.6) |

| Age group | Deaths (week 27 onwards*) | Mortality rate** (95% CI) (week 27 onwards*) | Deaths (January 2021) | Mortality rate** (95% CI) (January 2021) |
|---|---|---|---|---|
| 30-39 | 331 | 7.4 (6.6-8.3) | 185 | 28.9 (24.9-33.4) |
| 40-49 | 962 | 22.8 (21.4-24.3) | 507 | 83.7 (76.6-91.3) |
| 50-59 | 2,955 | 65.9 (63.5-68.3) | 1,574 | 244.6 (232.6-256.9) |
| 60-69 | 6,746 | 192.9 (188.4-197.6) | 3,354 | 668.4 (645.9-691.4) |
| 70-79 | 15,473 | 553.9 (545.3-562.7) | 7,231 | 1,803.8 (1,762.5-1,845.9) |
| 80+ | 39,897 | 2,376.4 (2,353.2-2,399.9) | 18,931 | 7,856.9 (7,745.4-7,969.6) |

*Data is presented from 29 June 2020 to 31 January 2021.

**Rates are time-adjusted: the population denominator used to calculate the mortality rate is adjusted for the number of days each time period covers.

†Deaths within 60 days of a positive COVID-19 test or where COVID-19 is mentioned on the death certificate.

From week 27 onwards, 35,566 (216.0 per 100,000) deaths have occurred in males and 30,529 (181.3 per 100,000) in females. The mortality rate in both sexes in January was higher than the average for the total period 29 June 2020 to 31 January 2021.

**Table 3. Number of deaths and mortality rate** (per 100,000 population) in laboratory-confirmed cases of COVID-19, by sex*†**

| Sex | Deaths (week 27 onwards*) | Mortality rate** (95% CI) (week 27 onwards*) | Deaths | Mortality rate** (95% CI) (week 27 onwards*) |
|---|---|---|---|---|
| Female | 30,529 | 181.3 (179.2-183.3) | 15,104 | 624.9 (615.0-634.9) |
| Male | 35,566 | 216.0 (213.7-218.2) | 16,617 | 703.1 (692.4-713.9) |

*Data is presented from 29 June 2020 to 31 January 2021.

**Rates are time-adjusted: the population denominator used to calculate the mortality rate is adjusted for the number of days each time period covers.

†Deaths within 60 days of a positive COVID-19 test or where COVID-19 is mentioned on the death certificate.

**Figure 2.a. Mortality rate** (per 100,000 population) in laboratory-confirmed cases of COVID-19 by age and sex, from week 27 onwards*†**
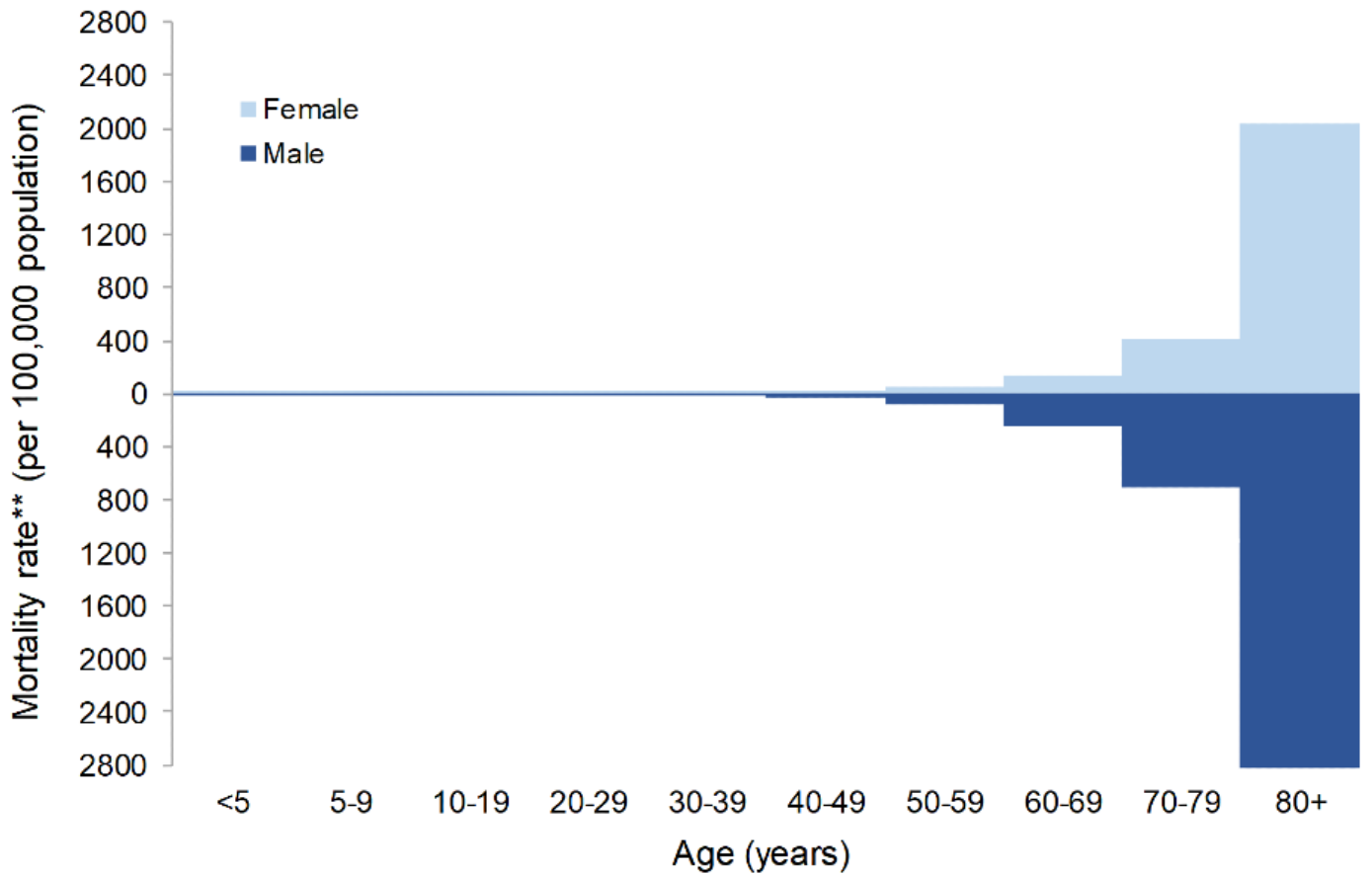
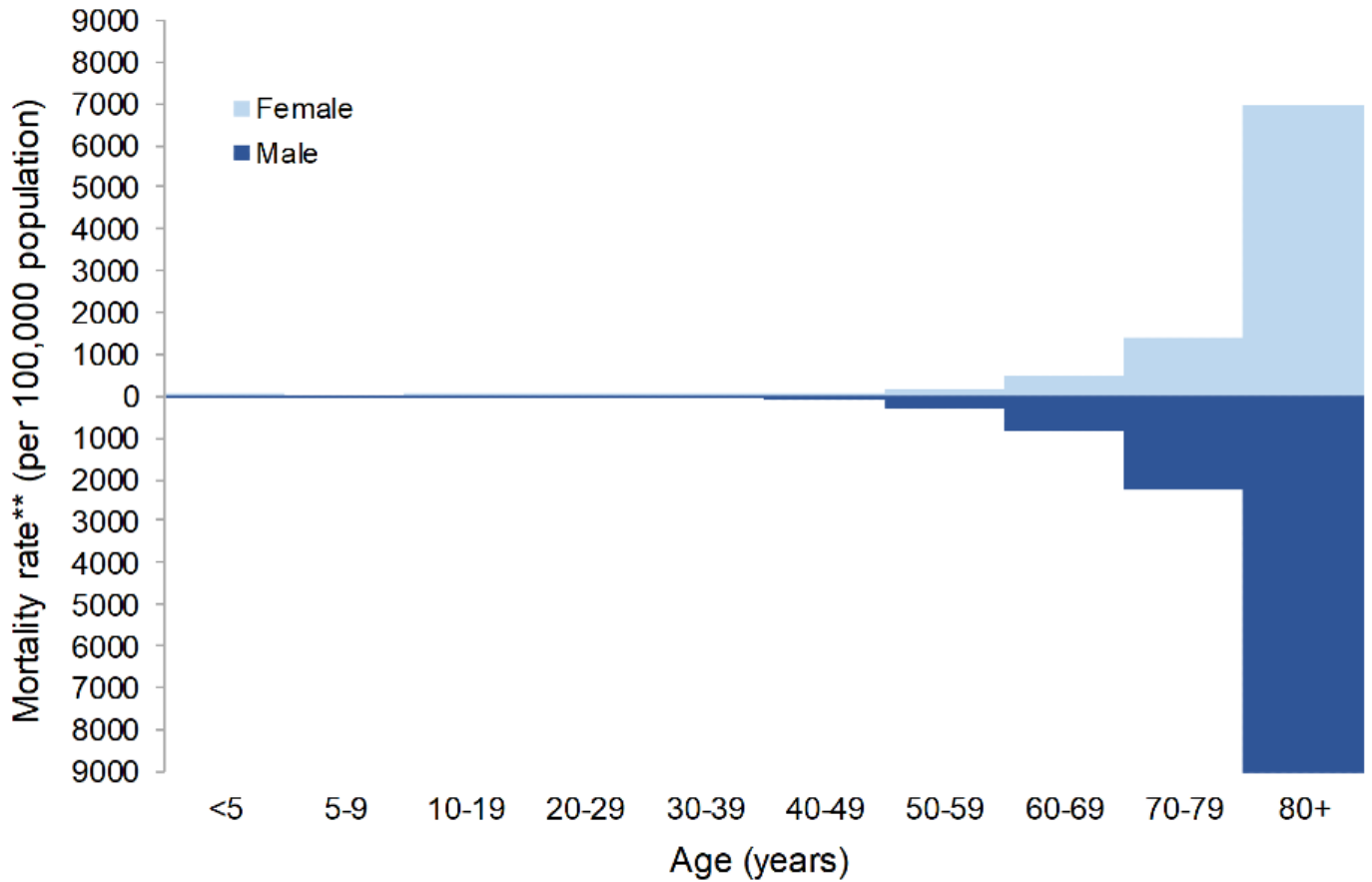Note: Please note the difference in scale between Figure 2.a. and Figure 2.b.

*Data is presented from week 27 onwards (29 June 2020 to 31 January 2021).

**Rates are time-adjusted: the population denominator used to calculate the mortality rate is adjusted for the number of days covered in this time period.

†Deaths within 60 days of a positive COVID-19 test or where COVID-19 is mentioned on the death certificate.

**Figure 2.b. Mortality rate** (per 100,000 population) in laboratory-confirmed cases of COVID-19 by age and sex, January 2021*†**

Note: Please note the difference in scale between Figure 2.a. and Figure 2.b.

*Data is presented from 1 January to 31 January 2021.

**Rates are time-adjusted: the population denominator used to calculate the mortality rate is adjusted for the number of days covered in this time period.

†Deaths within 60 days of a positive COVID-19 test or where COVID-19 is mentioned on the death certificate.

**Figure 3.a. Seven-day rolling average mortality rates** (per 100,000 population) in laboratory-confirmed cases of COVID-19 by age group, from week 27 onwards*†**
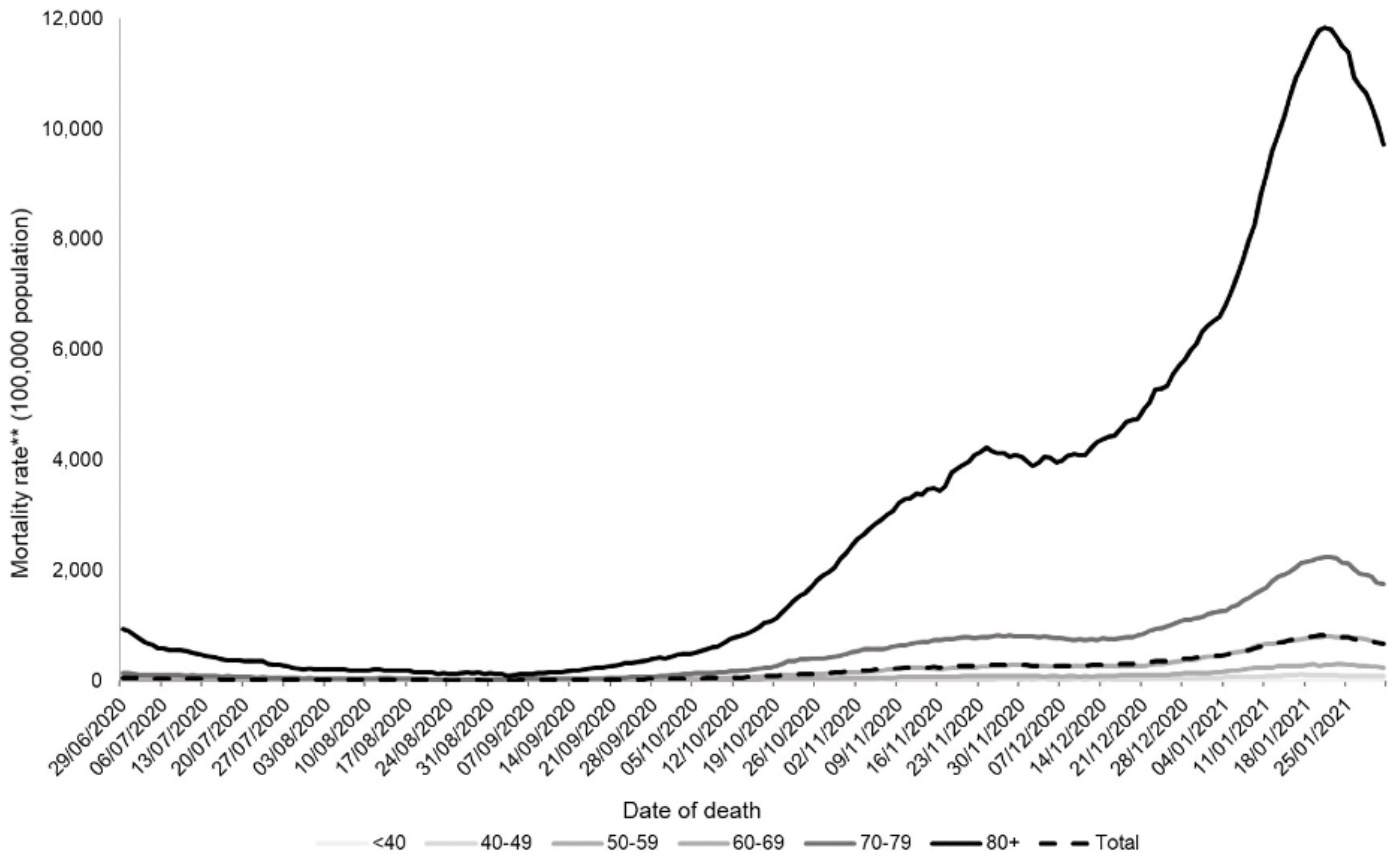
*Data is presented from 29 June 2020 to 31 January 2021.

**Rates are time-adjusted: a daily population denominator has been used to calculate the mortality rate.

†Deaths within 60 days of a positive COVID-19 test or where COVID-19 is mentioned on the death certificate.

**Figure 3.b. Seven-day rolling average mortality rates** (per 100,000 population) in laboratory-confirmed cases of COVID-19 by age group, January 2021*†**
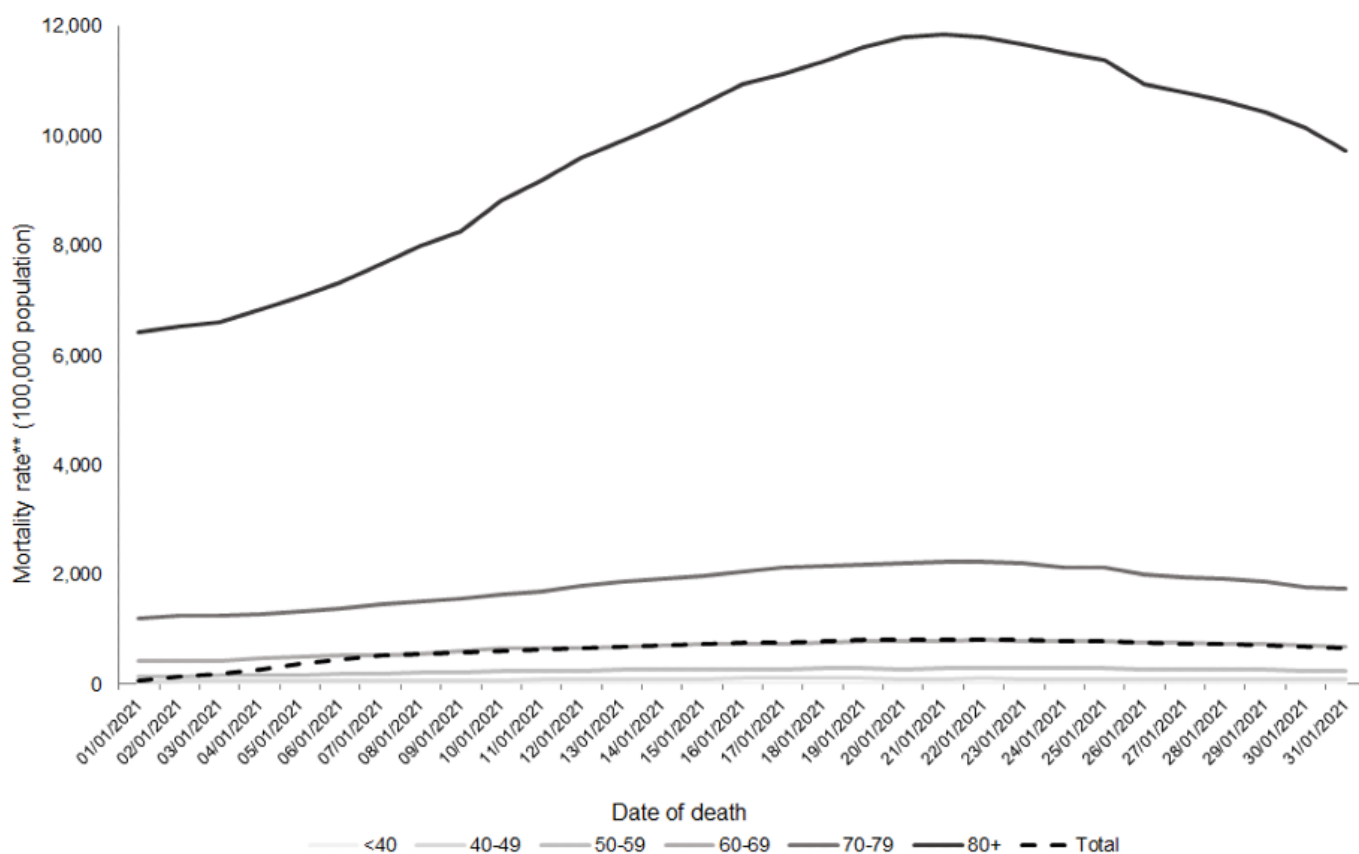
*Data is presented from 1 January to 31 January 2021.

**Rates are time-adjusted: a daily population denominator has been used to calculate the mortality rate.

†Deaths within 60 days of a positive COVID-19 test or where COVID-19 is mentioned on the death certificate.

## Ethnicity

Overall, the age-adjusted mortality rate from 29 June 2020 onwards was highest among those of Other ethnic groups (699 per 100,000) followed by those of Asian or Asian British ethnic groups (372 per 100,000). Although 87.2% deaths have been reported among those of White or White British ethnic groups, the age-adjusted mortality rate is lowest among those of White or White British ethnic groups (146 per 100,000). The mortality rate in all ethnic groups in January was higher than the adjusted rate for the total period 29 June 2020 to 31 January 2021.

**Table 4. Number of deaths and age-adjusted mortality rate** (per 100,000 population) in laboratory-confirmed cases of COVID-19, by ethnicity†**

| Ethnic category*** | Deaths† (week 27 onwards*) | Age-adjusted mortality rate** (95% CI) (week 27 onwards*) | Deaths (January 2021) | Mortality rate** (95% CI) (January 2021) |
|---|---|---|---|---|
| White/White British | 58,014 | 146.0 (123.3-171.7) | 27,247 | 464.0 (422.7-508.2) |

| Ethnic category*** | Deaths† (week 27 onwards*) | Age-adjusted mortality rate** (95% CI) (week 27 onwards*) | Deaths (January 2021) | Mortality rate** (95% CI) (January 2021) |
|---|---|---|---|---|
| Black/Black British | 1,551 | 254.0 (223.7-287.2) | 973 | 1,102.0 (1,037.9-1,169.0) |
| Asian/Asian British | 4,480 | 372.0 (335.2-411.8) | 2,210 | 1,266.0 (1,197.2-1,337.7) |
| Mixed | 318 | 165.0 (140.8-192.2) | 188 | 676.0 (626.0-728.9) |
| Other± | 1,009 | 699.0 (648.1-752.8) | 628 | 3,049.0 (2,941.7-3,159.2) |
| Unknown | 1,107 | - | 583 | - |

*Data is presented from 29 June 2020 to 31 January 2021.

**Rates are time-adjusted: the population denominator used to calculate the mortality rate is adjusted for the number of days each time period covers.
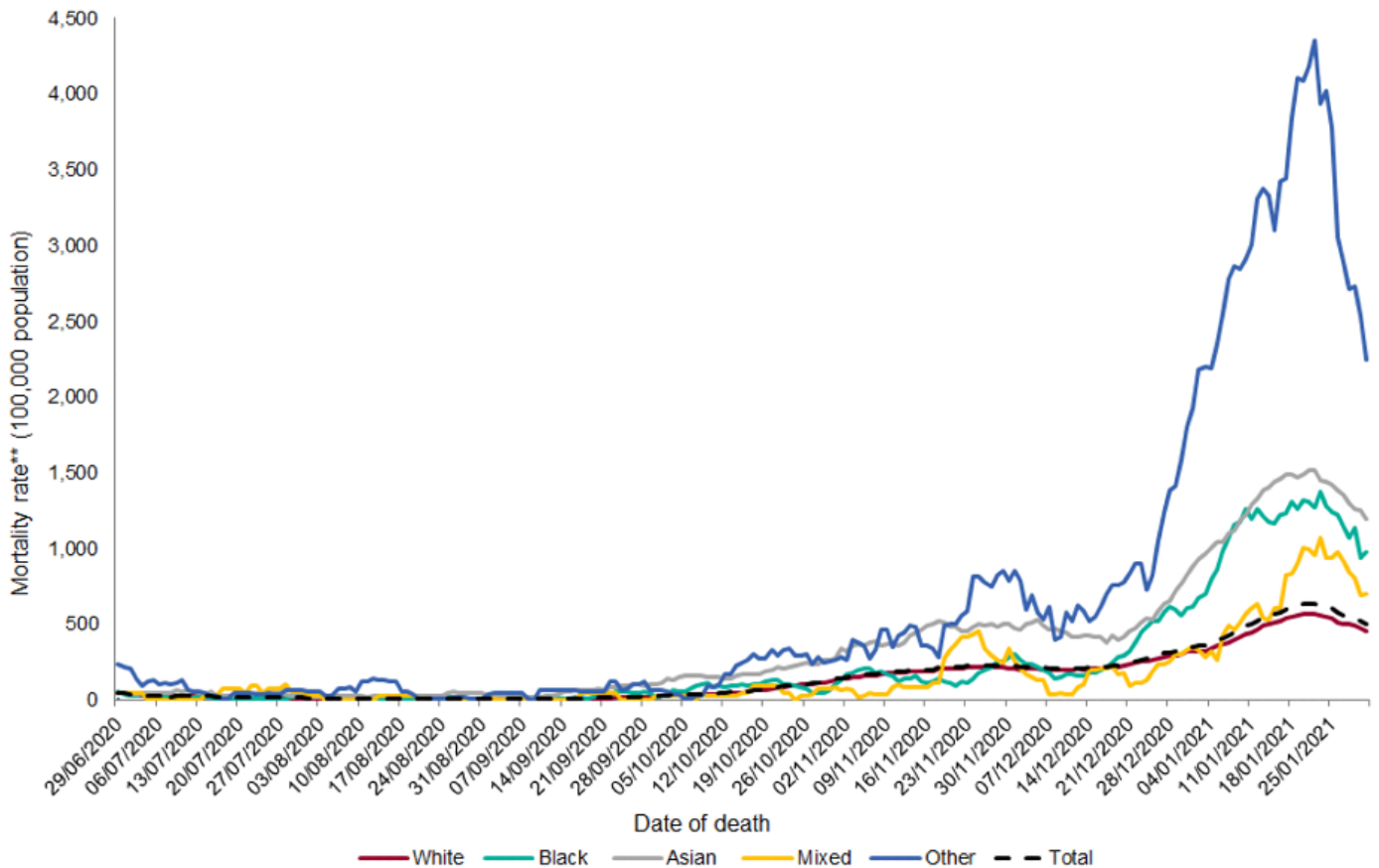
***Ethnic categories are based on ONS classifications (https://www.ons.gov.uk/methodology/classificationsandstandards/measuringequality/ethnicgroupnationalidentity andreligion)

±The rates in the Other ethnic group are likely to be an overestimate due to the difference in the method of allocating ethnicity codes to the deaths data and the population data used to calculate the rates.

†Deaths within 60 days of a positive COVID-19 test or where COVID-19 is mentioned on the death certificate.

**Figure 4.a. Seven-day rolling average age-adjusted mortality rates** (per 100,000 population) in laboratory-confirmed cases of COVID-19 by ethnicity, from week 27 onwards*†**

*Data is presented from 29 June 2020 to 31 January 2021.

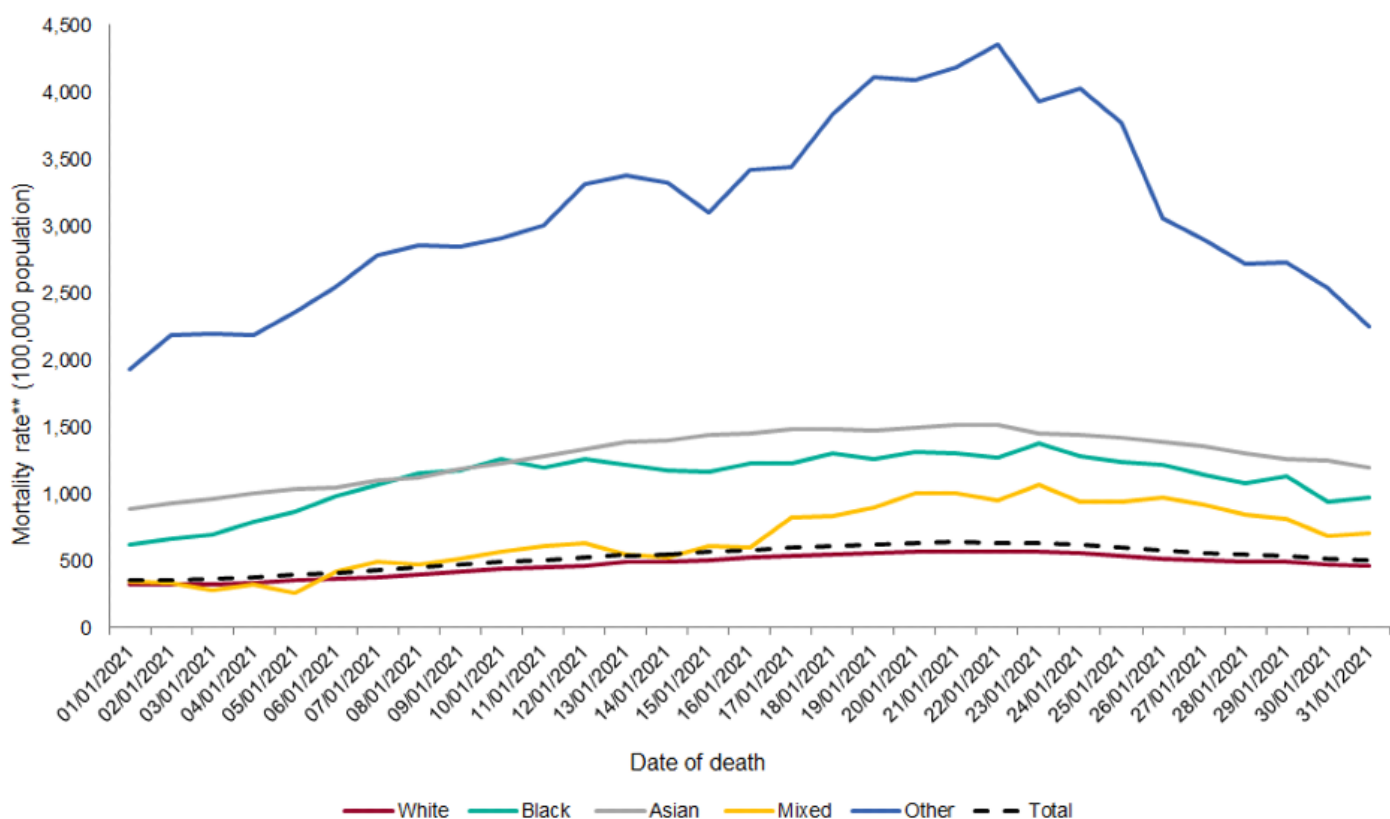**Rates are time-adjusted: a daily population denominator has been used to calculate the mortality rate.

***Ethnic categories are based on ONS classifications (https://www.ons.gov.uk/methodology/classificationsandstandards/measuringequality/ethnicgroupnationalidentity andreligion)

±The rates in the Other ethnic group are likely to be an overestimate due to the difference in the method of allocating ethnicity codes to the cases data and the population data used to calculate the rates.

†Deaths within 60 days of a positive COVID-19 test or where COVID-19 is mentioned on the death certificate.

**Figure 4.b. Seven-day rolling average age-adjusted mortality rates** (per 100,000 population) in laboratory-confirmed cases of COVID-19 by ethnicity, January 2021*†**

*Data is presented from 1 January to 31 January 2021.

**Rates are time-adjusted: a daily population denominator has been used to calculate the mortality rate.

±The rates in the Other ethnic group are likely to be an overestimate due to the difference in the method of allocating ethnicity codes to the cases data and the population data used to calculate the rates.

†Deaths within 60 days of a positive COVID-19 test or where COVID-19 is mentioned on the death certificate.

## Deprivation

Relative deprivation was assessed using quintiles of the IMD linked to residential lower super output area, with IMD 1 representing the most deprived. Overall, the age-adjusted mortality rate is highest among those living in the most deprived areas (371 per 100,000), with a gradual decrease in mortality rate seen with decreasing deprivation. The mortality rate in all deprivation groups in January was higher than the adjusted rate for the total period 29 June 2020 to 31 January 2021.

**Table 5. Number of deaths and age-adjusted mortality rate** (per 100,000 population) in laboratory-confirmed cases of COVID-19, by IMD quintile*†**

| IMD quintile (1 most deprived) | Deaths (week 27 onwards*) | Age-adjusted mortality rate** (95% CI) (week 27 onwards*) | Deaths (January 2021) | Age-adjusted mortality rate** (95% CI) (January 2021) |
|---|---|---|---|---|

| IMD quintile (1 most deprived) | Deaths (week 27 onwards*) | Age-adjusted mortality rate** (95% CI) (week 27 onwards*) | Deaths (January 2021) | Age-adjusted mortality rate** (95% CI) (January 2021) |
|---|---|---|---|---|
| 1 | 15,640 | 371.0 (334.2-410.7) | 6,359 | 637.0 (588.5-688.4) |
| 2 | 14,242 | 262.0 (231.2-295.7) | 6,756 | 516.0 (472.4-562.5) |
| 3 | 13,013 | 186.0 (160.2-214.7) | 6,539 | 385.0 (347.5-425.4) |
| 4 | 12,173 | 150.0 (127.0-176.0) | 6,128 | 314.0 (280.2-350.7) |
| 5 | 10,918 | 118.0 (97.7-141.3) | 5,715 | 259.0 (228.4-292.5) |
| Unknown | 493 | - | 332 | - |

*Data is presented from 29 June 2020 to 31 January 2021.

**Rates are time-adjusted: the population denominator used to calculate the mortality rate is adjusted for the number of days each time period covers.

†Deaths within 60 days of a positive COVID-19 test or where COVID-19 is mentioned on the death certificate.

**Figure 5.a. Seven-day rolling average age-adjusted mortality rate** (per 100,000 population) in laboratory-confirmed cases of COVID-19 by IMD quintile, from week 27 onwards*†**
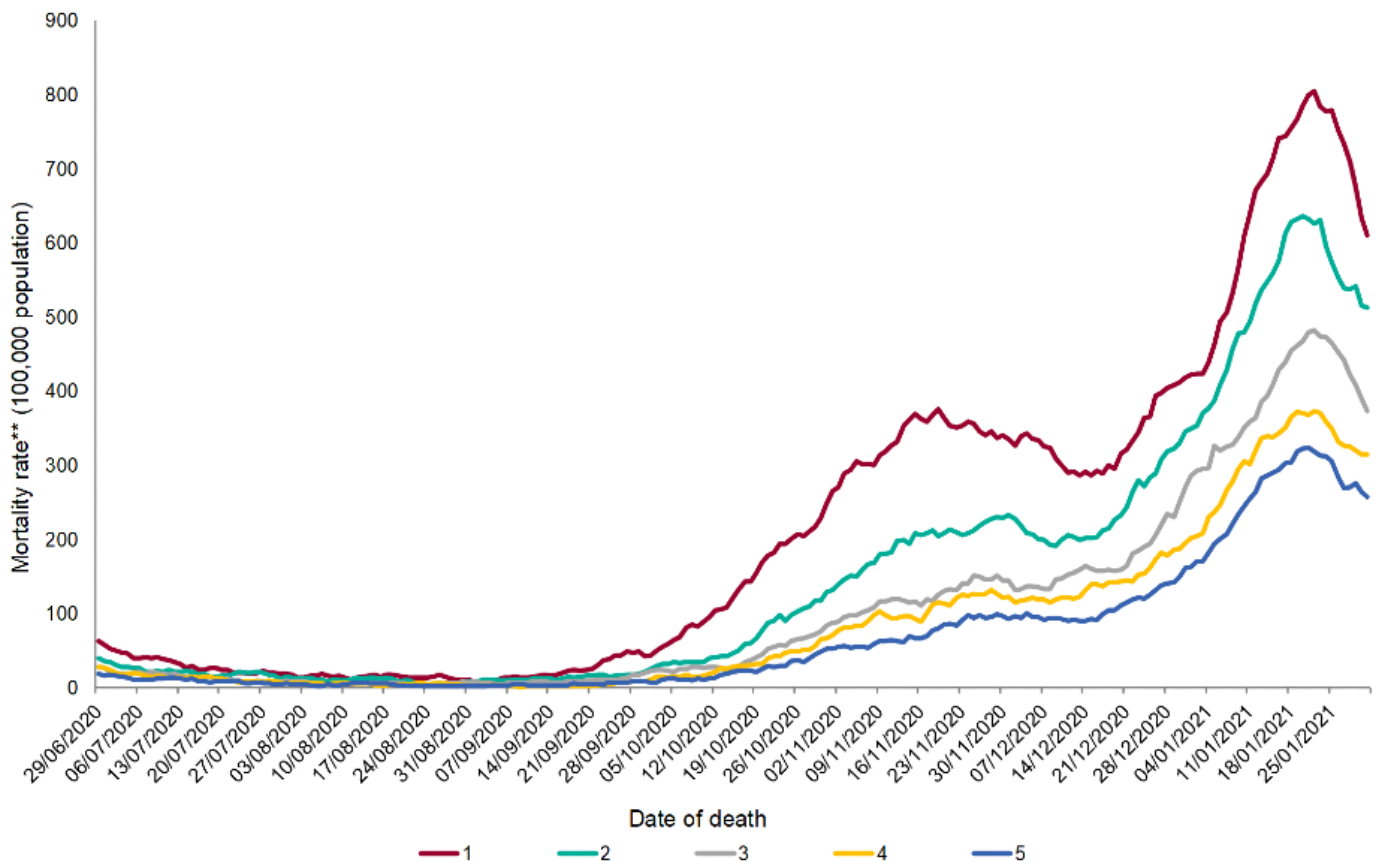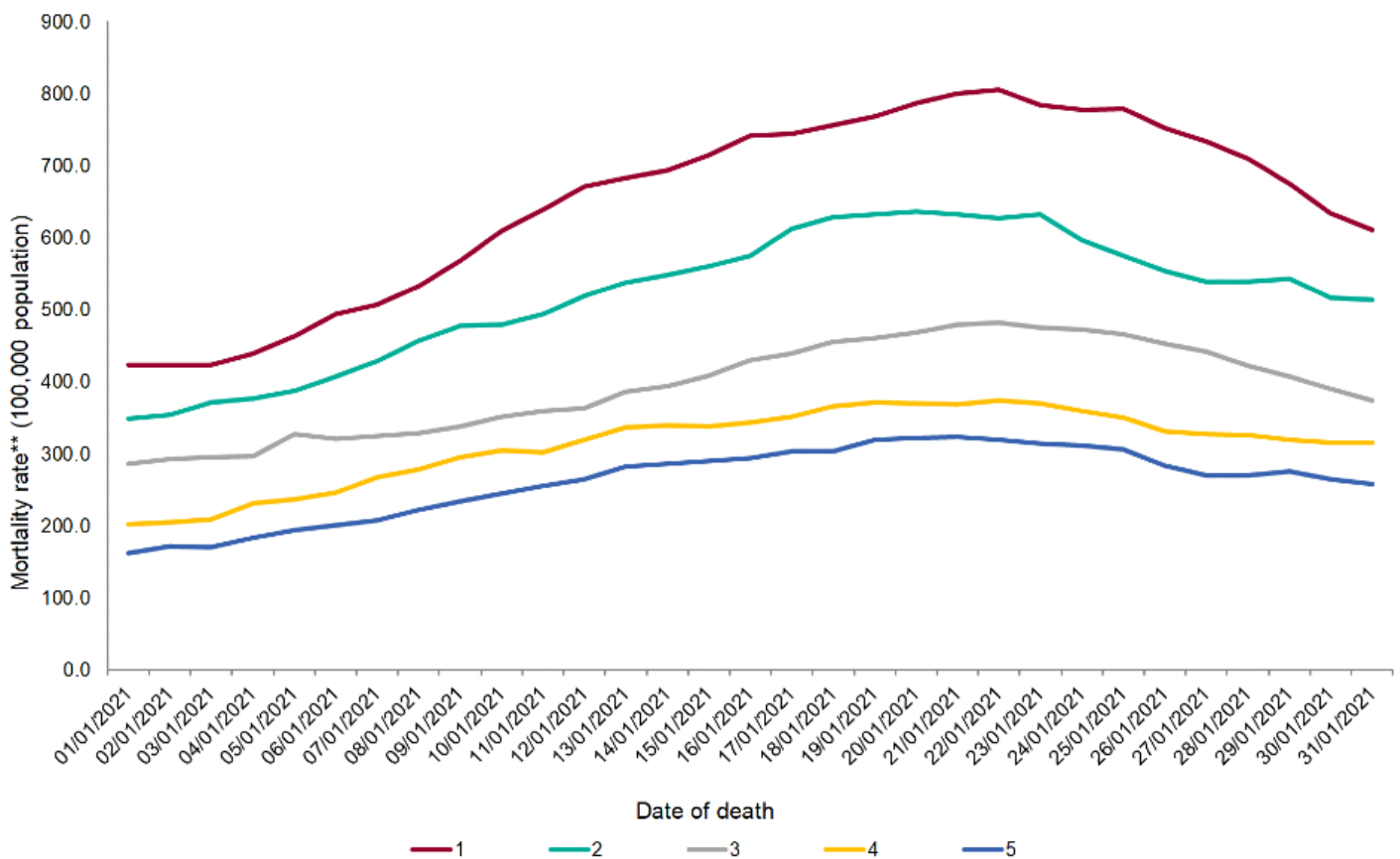
*Data is presented from 29 June 2020 to 31 January 2021.

**Rates are time-adjusted: a daily population denominator has been used to calculate the mortality rate.

†Deaths within 60 days of a positive COVID-19 test or where COVID-19 is mentioned on the death certificate.

**Figure 5.b. Seven-day rolling average age-adjusted mortality rate** (per 100,000) population in laboratory-confirmed cases of COVID-19 by IMD quintile, January 2021*†**



*Data is presented from 1 January to 31 January 2021.

**Rates are time-adjusted: a daily population denominator has been used to calculate the mortality rate.

†Deaths within 60 days of a positive COVID-19 test or where COVID-19 is mentioned on the death certificate.

## Regional breakdown

Since 29 June 2020, the mortality rate was highest in the North West (247.0 per 100,000 population), followed by the North East (224.2 per 100,000 population). The lowest the mortality rate was seen in the South West (121.6 per 100,000 population). In January the highest mortality rate was seen in the East of England (918.9 per 100,000 population).

**Table 6. Number of deaths and mortality rate** (per 100,000 population) in laboratory-confirmed cases of COVID-19, by PHE centre*†**

| PHE centre | Deaths (week 27 onwards*) | Mortality rate** (95% CI) (week 27 onwards*) | Deaths (January 2021) | Mortality rate** (95% CI) (January 2021) |
|---|---|---|---|---|
| East Midlands | 6,168 | 215.5 (210.2-221.0) | 2,480 | 603.8 (580.3-628.1) |
| East of England | 8,182 | 212.5 (207.9-217.2) | 5,077 | 918.9 (893.8-944.5) |
| London | 8,290 | 156.3 (153.0-159.7) | 5,184 | 681.1 (662.7-699.9) |
| North East | 3,543 | 224.2 (216.9-231.7) | 1,171 | 516.4 (487.2-546.8) |
| North West | 10,729 | 247.0 (242.3-251.7) | 3,653 | 585.9 (567.0-605.2) |
| South East | 10,583 | 200.7 (196.9-204.6) | 6,319 | 835.0 (814.5-855.8) |
| South West | 4,048 | 121.6 (117.9-125.4) | 2,254 | 471.8 (452.6-491.7) |
| West Midlands | 7,687 | 218.9 (214.0-223.8) | 3,517 | 697.8 (675.0-721.3) |
| Yorkshire and Humber | 6,756 | 207.5 (202.5-212.5) | 1,842 | 394.1 (376.3-412.5) |
| Unknown | 493 | - | 332 | - |

*Data is presented from 29 June 2020 to 31 January 2021.

**Rates are time-adjusted: the population denominator used to calculate the mortality rate is adjusted for the number of days each time period covers.

†Deaths within 60 days of a positive COVID-19 test or where COVID-19 is mentioned on the death certificate.

**Figure 6.a. Seven-day rolling average mortality rates** (per 100,000 population) in laboratory-confirmed cases of COVID-19 by PHE centre, from week 27 onwards*†**
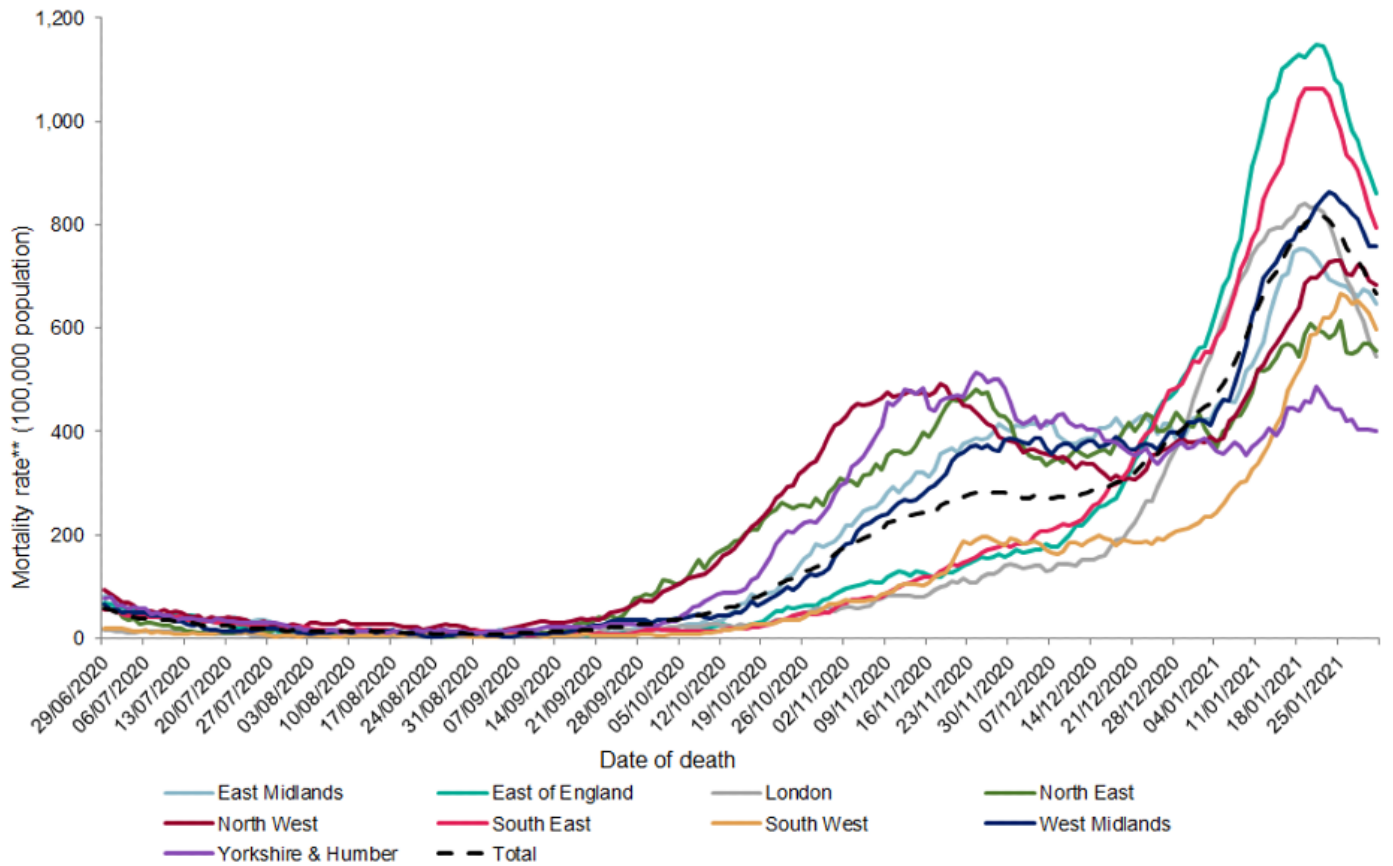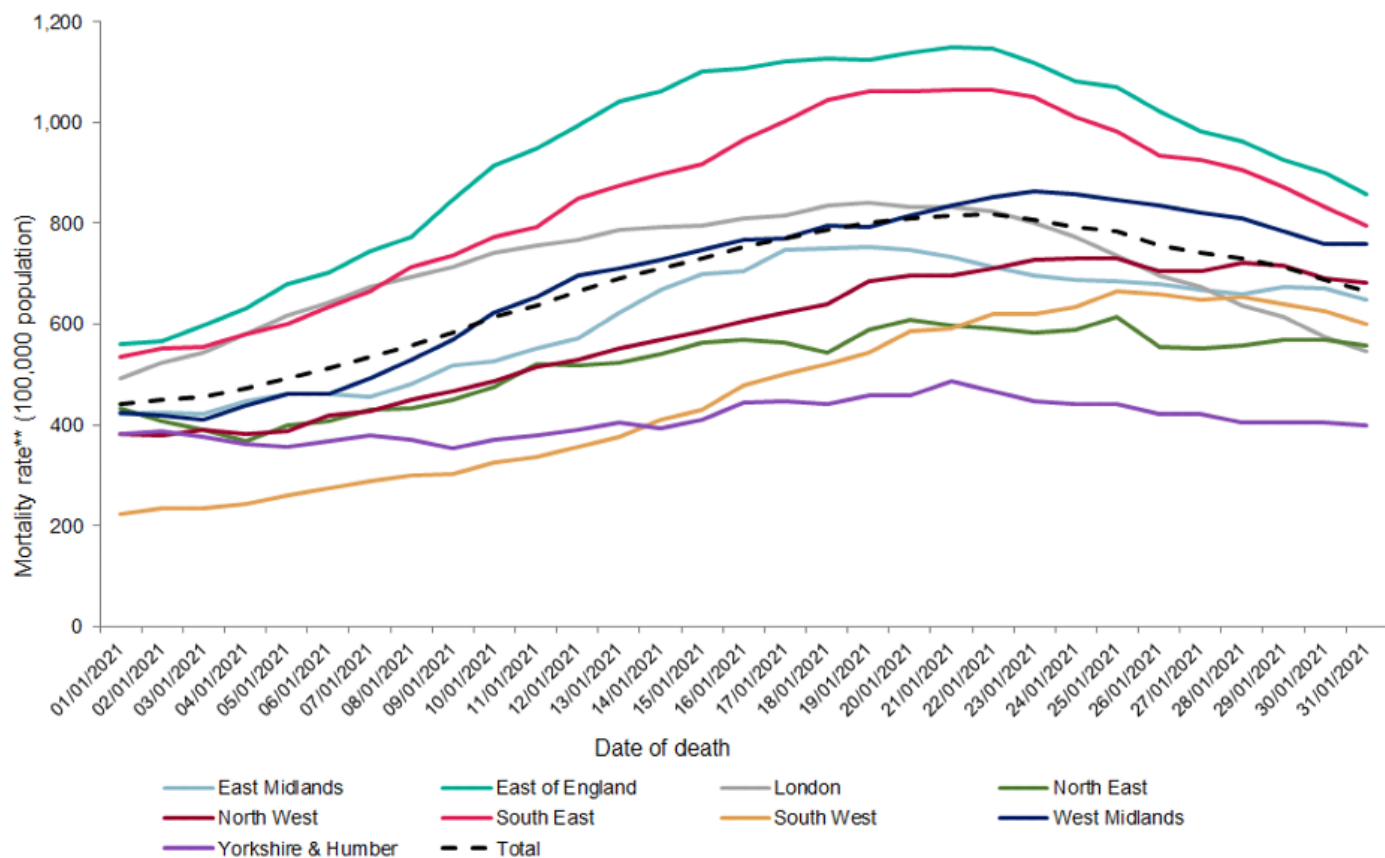
*Data is presented from 29 June 2020 to 31 January 2021.

**Rates are time-adjusted: a daily population denominator has been used to calculate the mortality rate.

†Deaths within 60 days of a positive COVID-19 test or where COVID-19 is mentioned on the death certificate.

**Figure 6.b. Seven-day rolling average mortality rates** (per 100,000 population) in laboratory-confirmed cases of COVID-19 by PHE centre, January 2021*†**
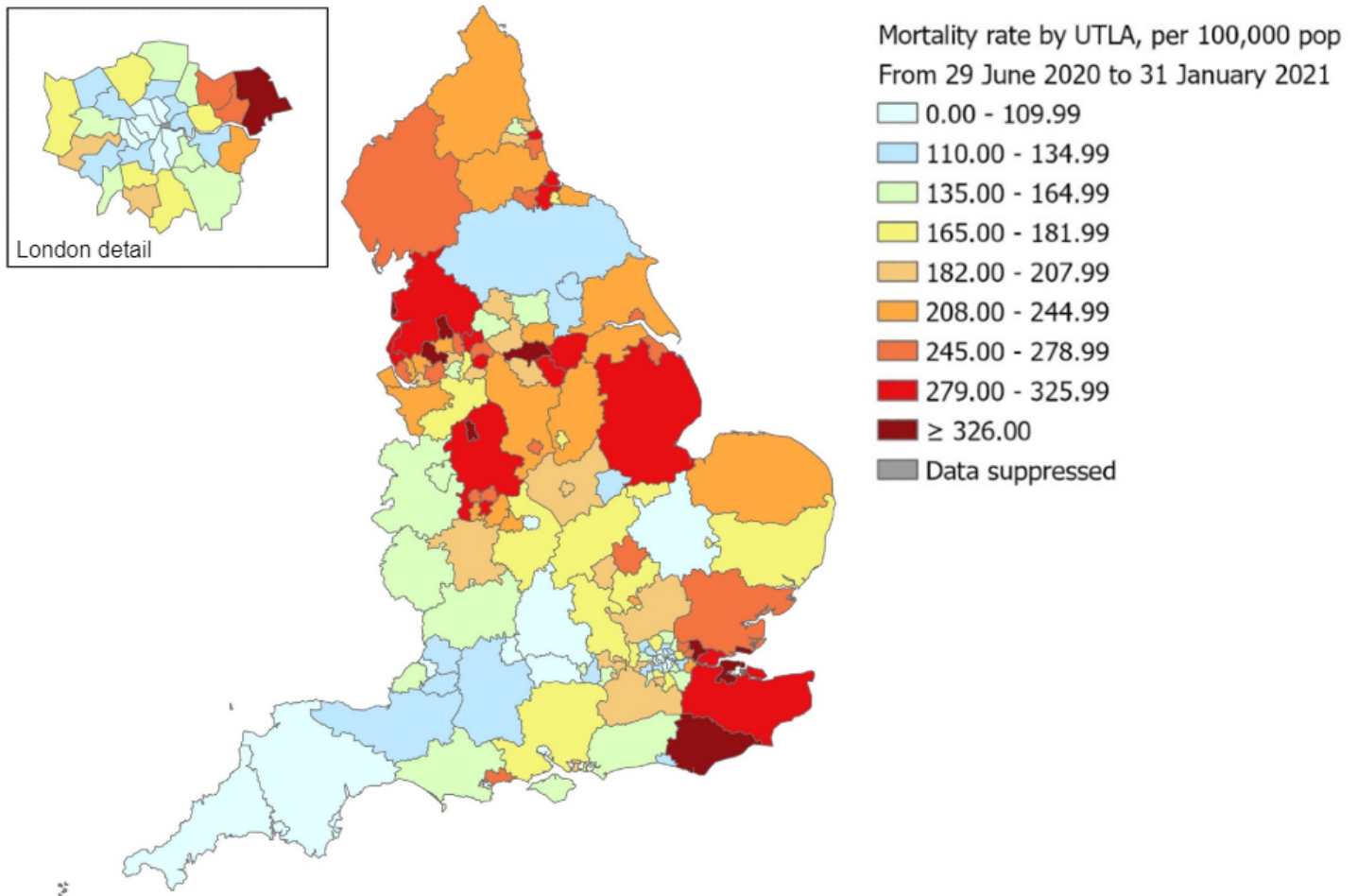
*Data is presented from 1 January 2021 to 31 January 2021.

**Rates are time-adjusted: a daily population denominator has been used to calculate the mortality rate.

†Deaths within 60 days of a positive COVID-19 test or where COVID-19 is mentioned on the death certificate.

**Figure 7.a. Mortality rates** (per 100,000 population) in laboratory-confirmed cases of COVID-19 by upper-tier local authority, week 27 onwards*†**

Mortality rate by UTLA, per 100,000 pop
From 29 June 2020 to 31 January 2021

- 0.00 - 109.99
- 110.00 - 134.99
- 135.00 - 164.99
- 165.00 - 181.99
- 182.00 - 207.99
- 208.00 - 244.99
- 245.00 - 278.99
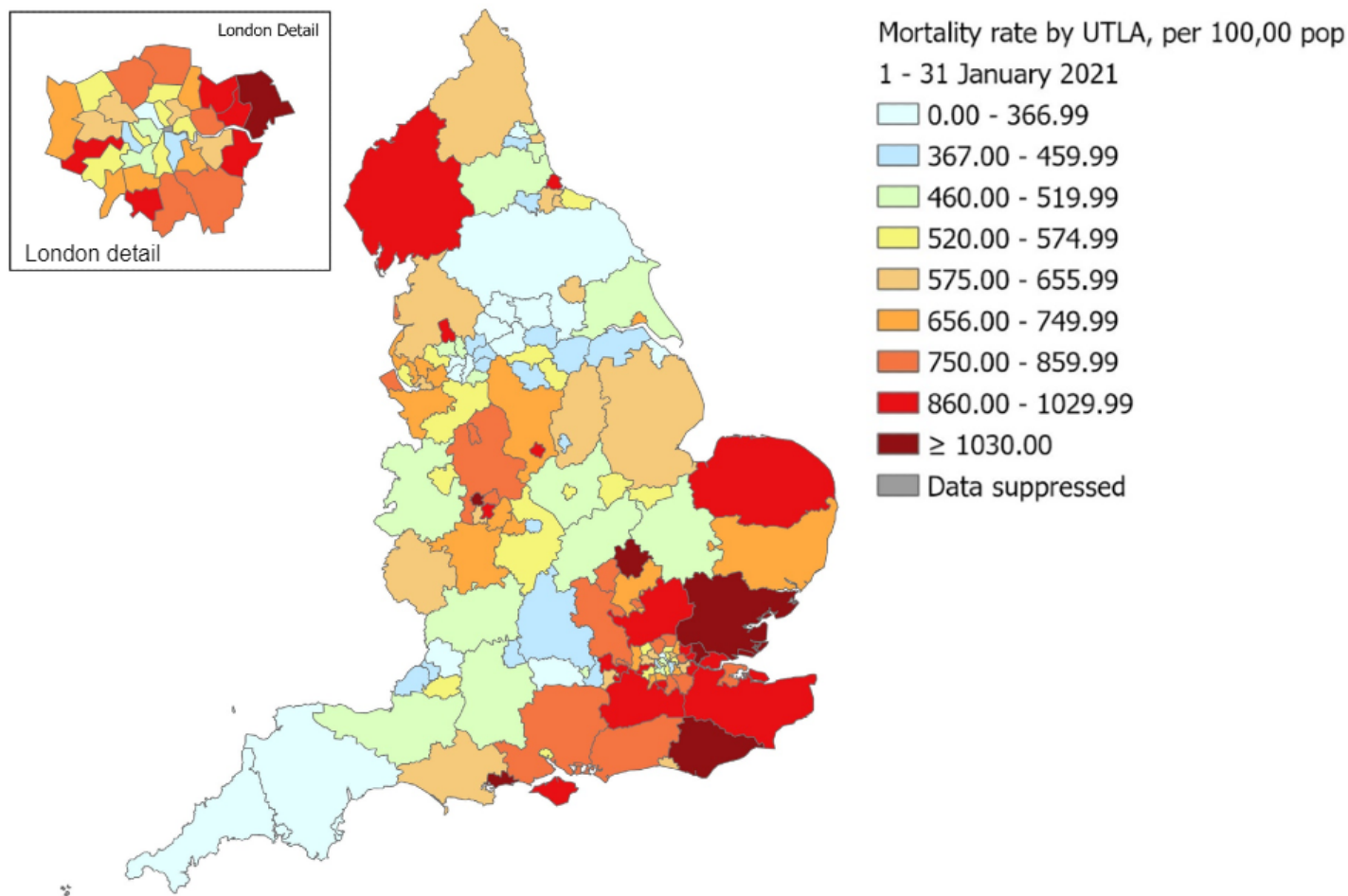- 279.00 - 325.99
- ≥ 326.00
- Data suppressed

London detail

*Data is presented from week 27 onwards (from 29 June 2020 to 31 January 2021).

**Rates are time-adjusted: the population denominator used to calculate the mortality rate is adjusted for the number of days covered in this time period.

†Deaths within 60 days of a positive COVID-19 test or where COVID-19 is mentioned on the death certificate.

**Figure 7.b. Mortality rates** (per 100,000 population) in laboratory-confirmed cases of COVID-19, by upper-tier local authority, January 2021*†**

Mortality rate by UTLA, per 100,00 pop
1 - 31 January 2021

- ☐ 0.00 - 366.99
- ☐ 367.00 - 459.99
- ☐ 460.00 - 519.99
- ☐ 520.00 - 574.99
- ☐ 575.00 - 655.99
- ☐ 656.00 - 749.99
- ☐ 750.00 - 859.99
- ☐ 860.00 - 1029.99
- ☐ ≥ 1030.00
- ☐ Data suppressed

*Data is presented from 1 January to 31 January 2021.

**Rates are time-adjusted: the population denominator used to calculate the mortality rate is adjusted for the number of days covered in this time period.

†Deaths within 60 days of a positive COVID-19 test or where COVID-19 is mentioned on the death certificate.

Figures 7a and 7b:

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## Case fatality risk

Case fatality risk (CFR) describes the risk of death following a laboratory-confirmed positive COVID-19 test. For this report, CFR has been calculated within 60 days of an individual's first positive specimen. CFR is reported on data from week 27 (29 June 2020) up to and including 1 December 2020. Cases diagnosed in the last 60 days were excluded from this analysis, due to incomplete follow-up period. Deaths are excluded from the CFR calculation if they cannot be linked to laboratory-confirmed COVID-19 case data.

CFR is sensitive to:

- changes in testing coverage and detection rate of COVID-19 infections (Dudel et al., 2020; Wu et al., 2020; Harman et al., 2021)
- changes in the demographics of the infected population

- changes in the effectiveness of treatment and the health system's ability to care for severe COVID-19 cases

**Table 7. Number of laboratory-confirmed cases, deaths and case fatality risk in laboratory-confirmed cases of COVID-19, from week 27 onwards*†**

|  | Cases | Deaths† | Case fatality risk (%) |
|---|---|---|---|
| Week 27 onwards* | 1,201,547 | 23,836 | 2.0 |

*Data is presented from 29 June 2020 to 1 December 2020. Figures differ from Table 1 based on CFR calculation inclusion criteria.

†Deaths within 60 days of a positive COVID-19 test and linked to the confirmed COVID- 19 case data.

**Figure 8. Number of laboratory-confirmed cases, deaths and case fatality risk in laboratory-confirmed cases of COVID-19, from week 27 onwards*†**
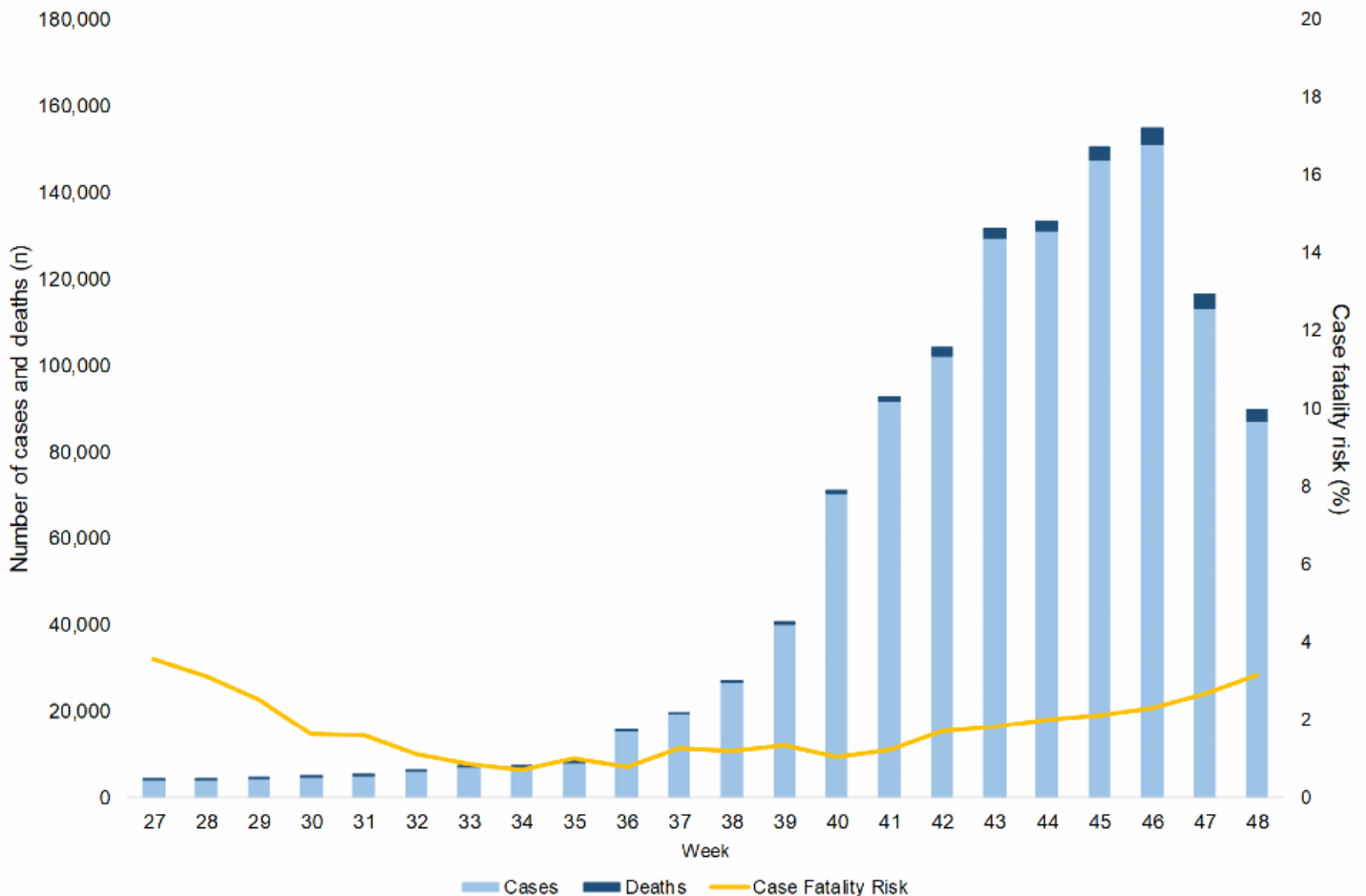


Note: The time period presented covers a period where there has been improved testing availability, therefore apparent changes in estimated case fatality should be interpreted with caution. Numbers of cases and deaths are stacked by week. Cases are presented by week of specimen date. Deaths are presented by week of death.

*Data from week 27 to week 48 2020, the last full week of eligible positive case data before 1 December (23 November to 29 November 2020).

†Deaths within 60 days of a positive COVID-19 test and linked to the confirmed COVID- 19 case data.

**Report prepared by PHE COVID-19 Epidemiology Cell**

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