

Statistical bulletin

# Deaths involving COVID-19, UK: deaths occurring between 1 March and 30 April 2020

Provisional counts of the number of deaths and age-standardised mortality rates involving the coronavirus (COVID-19) between 1 March and 30 April 2020 in the UK.

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# 1 . Main points

- The total number of deaths in the UK occurring in March and April 2020 that were registered by 15 May 2020 was 147,785; this is 44,449 (43.0%) more than the average for the same time period over the last five years, 2015 to 2019.
- Of the total number of deaths, 38,156 (25.8%) involved the coronavirus (COVID-19); male deaths involving COVID-19 accounted for 56.6% of these, with females accounting for 43.4%.
- England had the highest rate of COVID-19 deaths, with 363.8 deaths per 100,000 population, followed by Scotland, with 319.5 deaths per 100,000 population, and Wales, with 289.3 deaths per 100,000 population; the lowest rate was in Northern Ireland, with 185.9 deaths per 100,000 population.
- The all-cause mortality rate for deaths occurring in March and April 2020 in the UK was 1,364.9 deaths per 100,000 population; this was statistically significantly higher than the five-year average rate for the same period (1,004.3 deaths per 100,000 population).
- More deaths occurred in March and April 2020 than the five-year average in all types of location, with care homes having 97.6% more deaths, home having 40.3% more deaths, hospitals having 22.9% more deaths, and those dying elsewhere having 9.1% more deaths.

Rates used in this release have been adjusted to take into account the period observed and therefore may differ to other rates published. More information can be found in [Measuring the data](#).

## 2 . Introduction

This bulletin brings together analysis of all deaths that occurred in the UK between 1 March and 30 April 2020, registered up to 15 May 2020, where the coronavirus (COVID-19) was involved. Information on deaths in Scotland and Northern Ireland has been provided by [National Records of Scotland \(NRS\)](#) and [Northern Ireland Statistics and Research Agency \(NISRA\)](#).

The information used to produce these statistics is based on details collected when deaths are registered with the local registration office. A death should be registered within five days of the death occurring in England, Wales and Northern Ireland and within eight days in Scotland. There are some situations that result in the registration of the death being delayed, such as when it needs to be investigated by a coroner (except in Scotland). Therefore, there may be some deaths involving COVID-19 that occurred in March and April 2020 but are yet to be registered, meaning they will not be included in this analysis.

Figures on deaths published by the Office for National Statistics (ONS), NRS and NISRA differ from those produced by the Department of Health and Social Care (DHSC) and the UK's public health agencies for two main reasons: the time between death and reporting and the wider inclusion criteria. Our blog [Counting deaths involving the coronavirus \(COVID-19\)](#) helps to explain the [differences](#).

Deaths involving COVID-19 are reported for each week in our [Deaths registered weekly in England and Wales, provisional](#) release and in [Deaths involving coronavirus \(COVID-19\)](#) for Scotland and [Weekly death registrations in Northern Ireland, 2020](#) for Northern Ireland. These weekly reports are based on date of registration; however, this release looks at date of death. The weekly numbers reported as "occurring" change over time, as more deaths are registered that happened in past weeks. Unlike most ONS publications on deaths, this bulletin is based on occurrence (date of death), not date of registration.

### **3 . Number of deaths in the UK occurring in March and April 2020**

The total number of deaths in the UK occurring in March and April 2020 that were registered by 15 May 2020 was 147,785. This is 44,449 (43.0%) more than the average for the same time period over the last five years, 2015 to 2019.

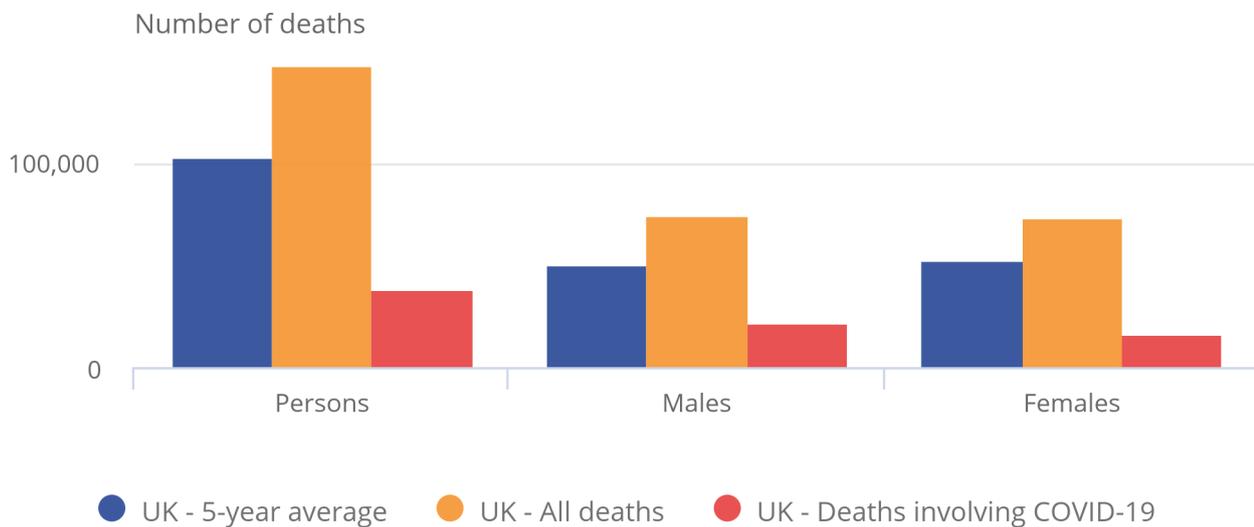
Of the total number of deaths, 38,156 (25.8%) involved the coronavirus (COVID-19). Male deaths involving COVID-19 accounted for 56.6% of these with females accounting for 43.4%. The doctor certifying a death can list all causes in the chain of events that led to the death and pre-existing conditions that may have contributed to the death. Using this information, we determine an underlying cause of death. More information on this process can be found in our [user guide](#). In the following analysis, we look at where COVID-19 was mentioned anywhere on the death certificate as opposed to where COVID-19 was the underlying cause of death.

## Figure 1: Deaths involving COVID-19 accounted for 25.8% of all UK deaths in March and April 2020

Numbers of deaths occurring in March and April 2020, registered by 15 May 2020, by sex, UK

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Numbers of deaths occurring in March and April 2020, registered by 15 May 2020, by sex, UK



Source: Office for National Statistics, National Records of Scotland, and Northern Ireland Statistics and Research Agency

#### Notes:

1. Figures exclude deaths of non-residents with the exception of Northern Ireland which may include a very small number.
2. Based on the date a death occurred rather than when it was registered.
3. Figures are provisional.
4. In this bulletin, we use the term “involving COVID-19” when referring to deaths that had COVID-19 mentioned anywhere on the death certificate, whether as underlying cause or not.

## 4 . Rate of deaths in the UK occurring in March and April 2020

Age-standardised mortality rates (ASMRs) are a better comparative measure of mortality than the number of deaths, as they account for the population size and age structure. They are also better for comparing between areas and over time.

The overall ASMR for deaths occurring in March and April 2020 in the UK was 1,364.9 deaths per 100,000 population. This was statistically significantly higher than the five-year average rate for the same period (1,004.3 deaths per 100,000 population), and the difference is significant across both sexes.

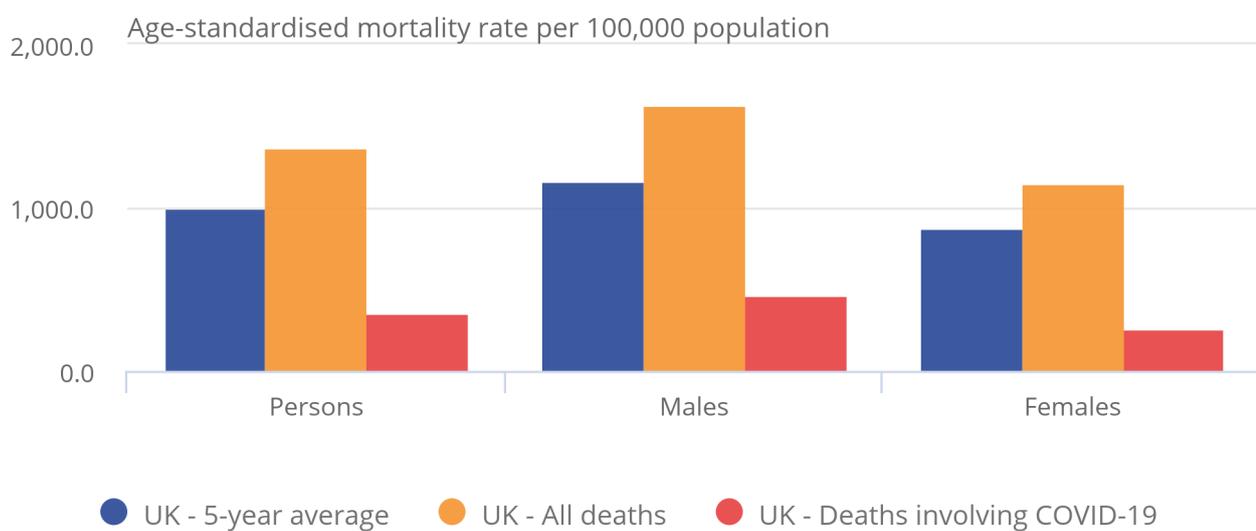
Figure 2 shows that males had a higher overall ASMR of 1,627.6 deaths per 100,000 population compared with 1,156.8 for females. This was also true for deaths involving the coronavirus (COVID-19). The rate for male deaths involving COVID-19 was 468.6 per 100,000 population, while the rate for females was significantly lower at 262.6 per 100,000 population.

**Figure 2: Males had a higher age-standardised mortality rate compared with females for both all causes and deaths involving COVID-19**

Age-standardised mortality rate per 100,000 population, deaths occurring in March and April 2020, registered by 15 May 2020, by sex, UK

Figure 2: Males had a higher age-standardised mortality rate compared with females for both all causes and deaths involving COVID-19

Age-standardised mortality rate per 100,000 population, deaths occurring in March and April 2020, registered by 15 May 2020, by sex, UK



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5. Age-standardised mortality rates are produced using adjusted populations; please see Measuring the data for more information.

Figure 3 shows that there was a significant difference between each country within the UK when looking at both all deaths and those involving COVID-19. Scotland continues to have the highest overall mortality rate but only the second-highest rate of deaths involving COVID-19. England had the highest rate (363.8 per 100,000 population) and Northern Ireland had the lowest (185.9 per 100,000 population).

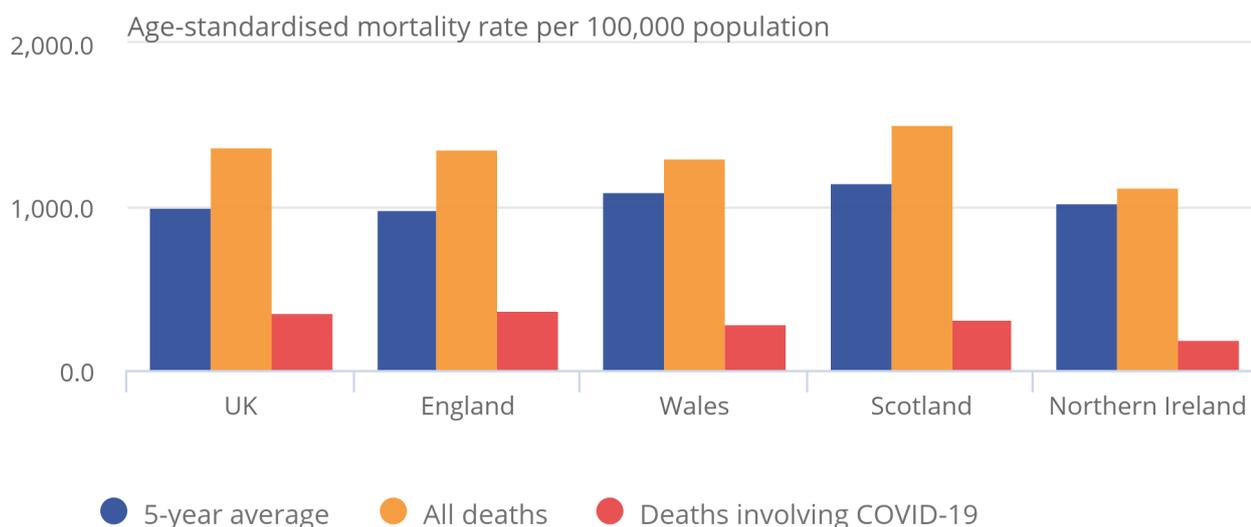
England had the highest percentage of deaths involving COVID-19 over the period with 26.8% (33,235 deaths) of all deaths in England involving COVID-19. This was followed by Wales with 22.3% of deaths, Scotland with 21.0% of deaths and Northern Ireland with 16.5% of deaths.

### Figure 3: England had the highest mortality rate of the four UK nations for deaths involving COVID-19 in March and April 2020

Age-standardised mortality rate per 100,000 population, deaths occurring in March and April 2020, registered by 15 May 2020, UK and its constituent countries

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Age-standardised mortality rate per 100,000 population, deaths occurring in March and April 2020, registered by 15 May 2020, UK and its constituent countries



Source: Office for National Statistics, National Records of Scotland, and Northern Ireland Statistics and Research Agency

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## 5 . Age-specific mortality rates in the UK for deaths occurring in March and April 2020

There was one death involving the coronavirus (COVID-19) in each of the 0 to 4 years and 10 to 14 years age groups, with no deaths in the 5 to 9 years age group.

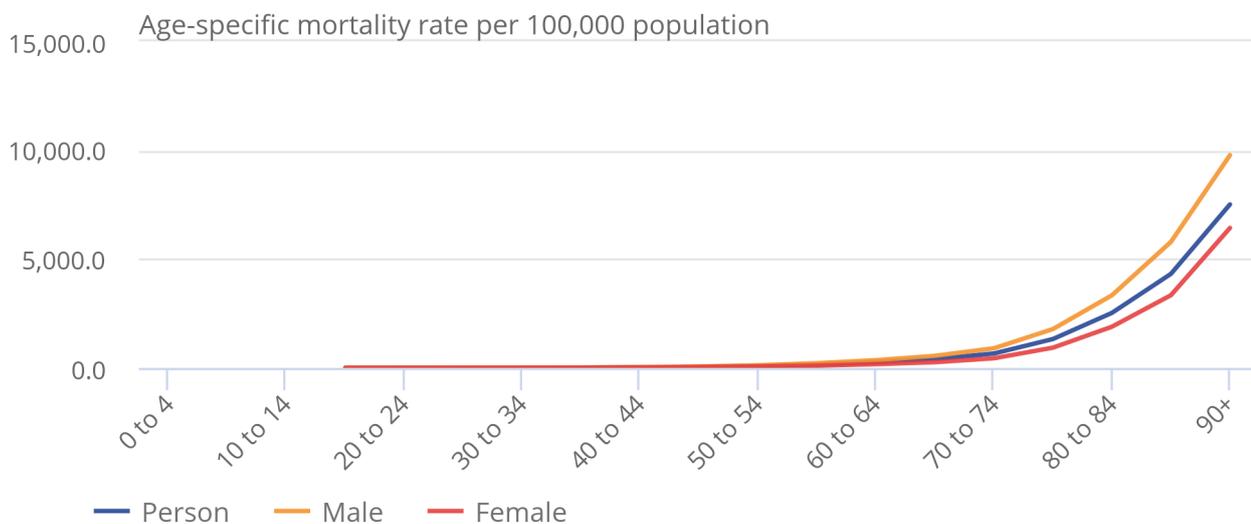
The age-specific mortality rate increased consistently with age, with deaths to persons aged 90 years and over having rates of 32,947.4 and 7,510.9 per 100,000 population for all causes and COVID-19 respectively. Overall, the highest rate of death involving COVID-19 was in males aged 90 years and over with a rate of 9,773.2 deaths per 100,000 population.

**Figure 4: Males aged 90 years and over had the highest mortality rate for deaths involving COVID-19**

Age-specific mortality rates for deaths involving COVID-19, occurring in March and April 2020, registered up to 15 May 2020, by sex, UK

Figure 4: Males aged 90 years and over had the highest mortality rate for deaths involving COVID-19

Age-specific mortality rates for deaths involving COVID-19, occurring in March and April 2020, registered up to 15 May 2020, by sex, UK



Source: Office for National Statistics, National Records of Scotland, and Northern Ireland Statistics and Research Agency

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5. Age-standardised mortality rates are produced using adjusted populations; please see Measuring the data for more information.
6. Rates have not been provided for age groups with fewer than three deaths.

Those aged 80 to 84 years had the highest proportion of deaths involving COVID-19, accounting for 28.7% of all deaths in this age group. This decreased to 26.5% and 22.8% in those aged 85 to 89 years and those aged 90 years and over, respectively.

Compared to the five-year average, the mortality rate was significantly higher for deaths occurring in March and April 2020 for those aged 50 years and over. For those aged under 45 years, the rate was significantly lower when compared to the five-year average. One possible reason for this is that those aged under 45 years are more likely to have deaths that need to be referred to coroners, for example, deaths involving drugs or suicide. These deaths are subject to [registration delays](#) because of the need for an inquest, so they may not yet be available to be included in these provisional figures.

## 6 . Deaths involving COVID-19 per day

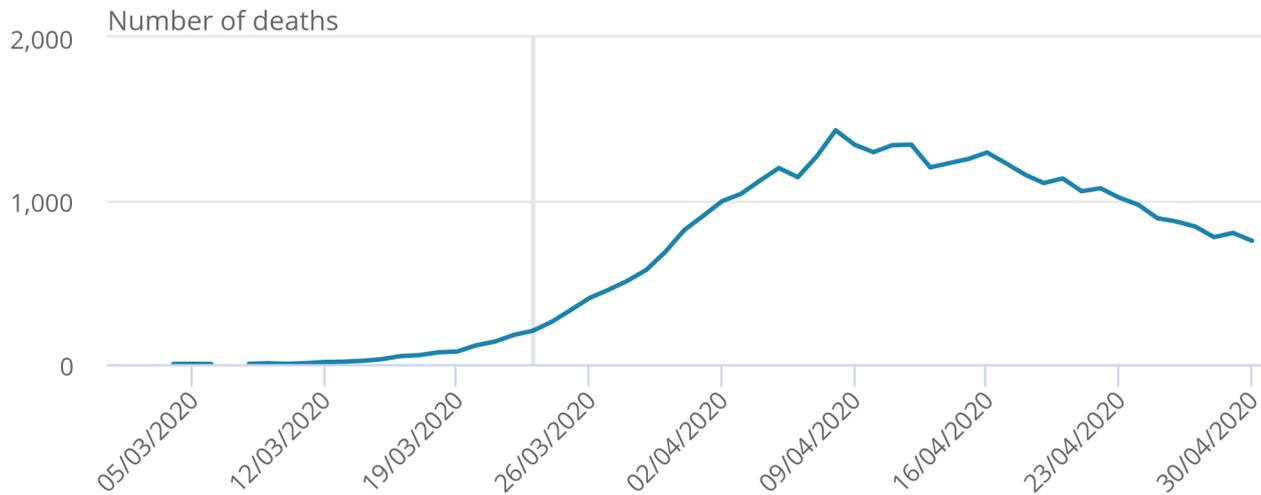
Figure 5 shows the number of deaths involving the coronavirus (COVID-19) by day of occurrence. The first death occurred on 2 March 2020. The number of deaths per day peaked on 8 April 2020, when 1,431 deaths occurred. This number declined to 755 by 30 April 2020, although the decline was not continuous, with many days showing more deaths than the previous day. Over time, as more deaths are registered, the number of cases that are known to have occurred in March and April 2020 will rise, especially for dates in the later part of April.

**Figure 5: The number of deaths involving COVID-19 peaked on 8 April 2020**

Number of deaths involving COVID-19 by date of occurrence, March and April 2020, registered up to 15 May 2020, UK

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Number of deaths involving COVID-19 by date of occurrence, March and April 2020, registered up to 15 May 2020, UK



Source: Office for National Statistics, National Records of Scotland, and Northern Ireland Statistics and Research Agency

**Notes:**

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## 7 . Place of death

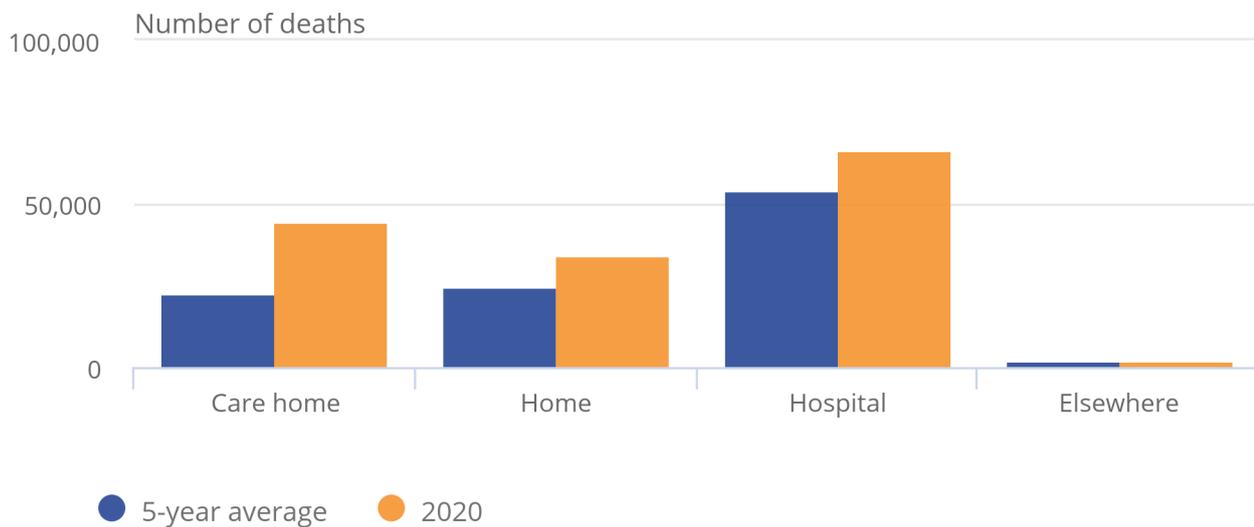
Figure 6 compares the number of UK deaths from all causes occurring in March and April 2020 by place of death to the five-year average for the same calendar period. In all types of location, the numbers for 2020 were higher than the average, with care homes having 97.6% more deaths, home having 40.3% more deaths, hospitals having 22.9% more deaths, and those dying elsewhere having 9.1% more deaths.

## Figure 6: Care home deaths from all causes in the UK rose by 97.6% compared to the five-year average

Number of deaths in March and April 2020, registered up to 15 May 2020, by place of death compared to the five-year average, UK

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Number of deaths in March and April 2020, registered up to 15 May 2020, by place of death compared to the five-year average, UK



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Looking at the constituent countries of the UK, England had the highest percentage of deaths involving the coronavirus (COVID-19) in hospitals (68.6%), followed by Wales with 66.9%. Northern Ireland had the highest percentage of COVID-19 deaths in care homes (43.7%), followed by Scotland with 42.8%. Scotland showed the highest percentage of deaths occurring in the home (7.7%), although deaths occurring in other non-institutional locations, such as shops, public houses and bus shelters, are also included in the home category for Scotland.

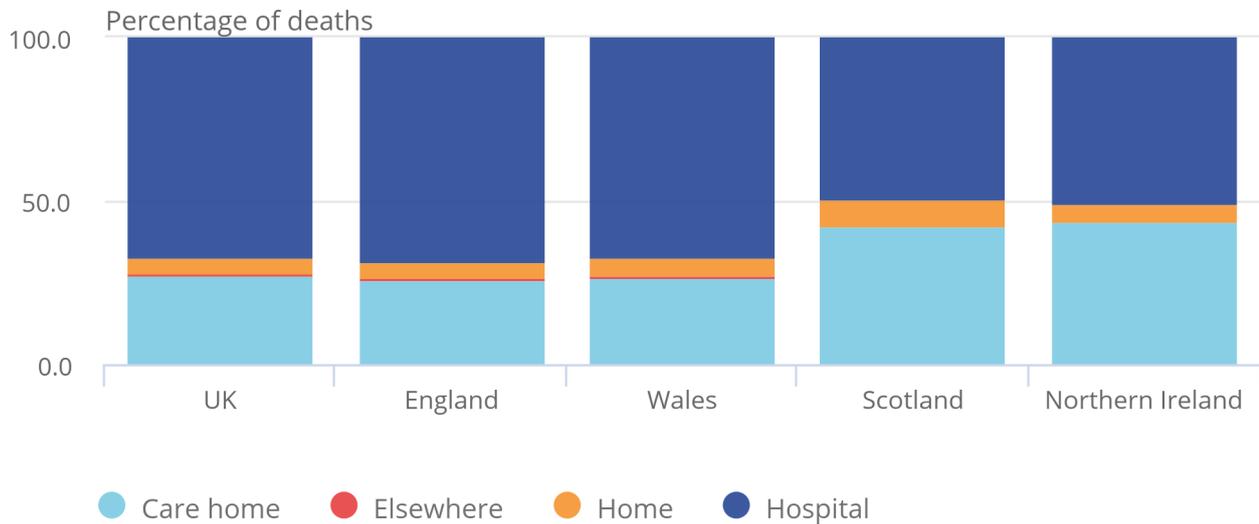
Care needs to be taken when comparing deaths in care homes across the UK countries, as possible differences in the population of care home residents in each country have not been taken into account.

## Figure 7: Northern Ireland had the highest percentage of deaths in care homes

Percentage of deaths by place of death, March and April 2020, registered up to May 15, UK and its constituent countries

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Percentage of deaths by place of death, March and April 2020, registered up to May 15, UK and its constituent countries



Source: Office for National Statistics, National Records of Scotland, and Northern Ireland Statistics and Research Agency

#### Notes:

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5. Figures may not sum because of rounding.

## 8 . Number of deaths above the five-year average

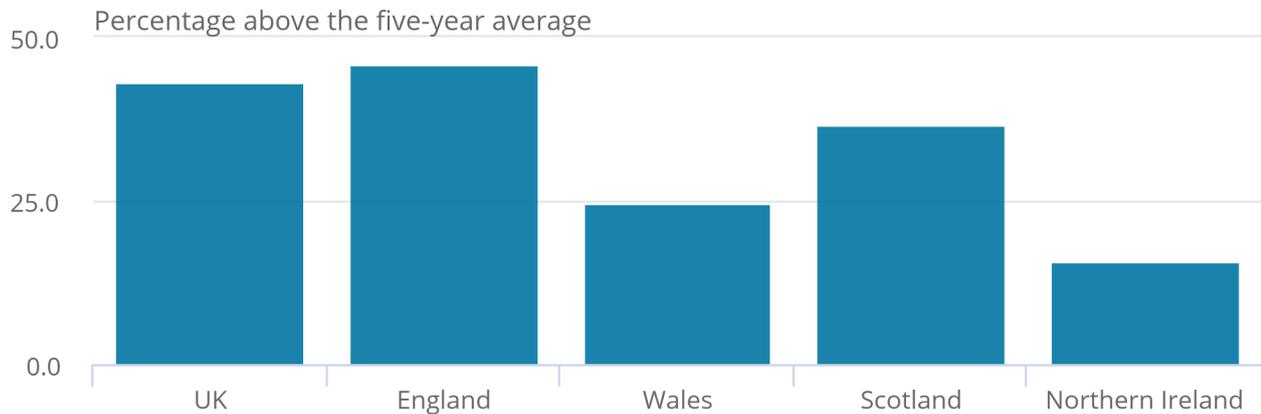
In the UK, for deaths occurring in March and April 2020, there were 43.0% more deaths (44,449 deaths) than the five-year average. England had the most deaths above the five-year average with 39,020 deaths, 45.8% above the five-year average. The lowest number of deaths above the five-year average was in Northern Ireland, with 413 deaths; this is 15.7% above the five-year average.

## Figure 8: England had the highest percentage of deaths above the five-year average

Percentage of deaths above the five-year average, March and April 2020, registered up to 15 May 2020, UK and its constituent countries

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Percentage of deaths above the five-year average, March and April 2020, registered up to 15 May 2020, UK and its constituent countries



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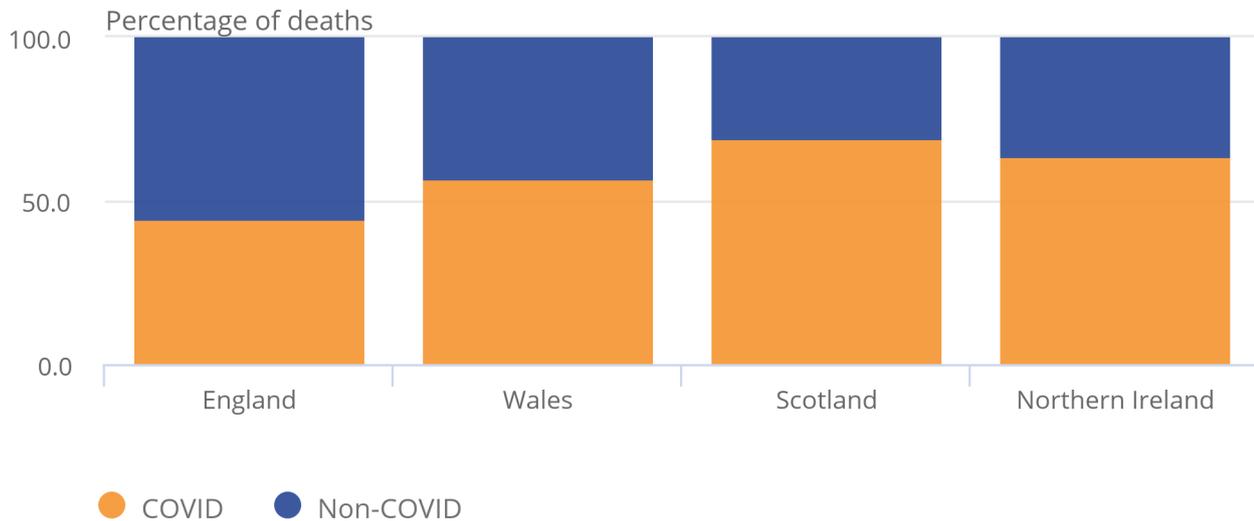
Looking at deaths that have occurred in care homes over the period, England had the highest percentage of deaths above average, with 102.0% more deaths than the five-year average. Of these, 44.4% involved the coronavirus (COVID-19). Wales had the second-highest percentage, with 78.9% more deaths than average, 56.6% of which involved COVID-19. This was followed by Scotland, with 76.0% deaths above average, of which 69.3% involved COVID-19; this is the highest proportion of the four countries. Northern Ireland had the lowest percentage of deaths above average, with 66.7%; of these, 63.8% involved COVID-19.

## Figure 9: Scotland had the highest percentage of deaths in care homes involving COVID-19

Percentage of deaths in care homes above the five-year average, all causes and deaths involving COVID-19, countries of the UK, deaths occurring in March and April that were registered by 15 May 2020

### Figure 9: Scotland had the highest percentage of deaths in care homes involving COVID-19

Percentage of deaths in care homes above the five-year average, all causes and deaths involving COVID-19, countries of the UK, deaths occurring in March and April that were registered by 15 May 2020



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## 9 . Analysis of deaths involving COVID-19 data

### [Deaths involving COVID-19 in the UK](#)

Dataset | Released 12 June 2020

Provisional counts of the number of deaths and age-standardised mortality rates (ASMRs) involving the coronavirus (COVID-19) between 1 March and 30 April 2020 in the UK.

### [Deaths registered monthly in England and Wales](#)

Dataset | Released 28 May 2020

Number of deaths registered each month by area of usual residence for England and Wales, by region, county, local and unitary authority, and London borough.

## 10 . Glossary

### Age-specific mortality rates

Age-specific mortality rates are used to allow comparisons between specified age groups.

### Age-standardised mortality rates

Age-standardised mortality rates (ASMRs) are used to allow comparisons between populations that may contain different proportions of people of different ages. The 2013 European Standard Population is used to standardise rates.

### Coronaviruses

The World Health Organization (WHO) defines coronaviruses as "a large family of viruses that are known to cause illness ranging from the common cold to more severe diseases such as Middle East Respiratory Syndrome (MERS) and Severe Acute Respiratory Syndrome (SARS)". Between 2001 and 2018, there were 12 deaths in England and Wales due to a coronavirus infection, with a further 13 deaths mentioning the virus as a contributory factor on the death certificate.

### Coronavirus (COVID-19)

COVID-19 refers to the "coronavirus disease 2019" and is a disease that can affect the lungs and airways. It is caused by a type of coronavirus. Further information is available from the WHO.

### Statistical significance

The term "significant" refers to statistically significant changes or differences. Significance has been determined using the 95% confidence intervals, where instances of non-overlapping confidence intervals between estimates indicate the difference is unlikely to have arisen from random fluctuation. In some circumstances, significance has also been tested using z scores.

More information about this z test is available in Appendix 1 of the [Sullivan guide](#).

## 95% confidence intervals

A confidence interval is a measure of the uncertainty around a specific estimate. If a confidence interval is 95%, it is expected that the interval will contain the true value on 95 occasions if repeated 100 times. As intervals around estimates widen, the level of uncertainty about where the true value lies increases. The size of the interval around the estimate is strongly related to the number of deaths, prevalence of health states and the size of the underlying population. At a national level, the overall level of error will be small compared with the error associated with a local area or a specific age and sex breakdown. Therefore, the widths of the confidence intervals reported in this release will have sizable differences.

## 11 . Measuring the data

More quality and methodology information on strengths, limitations, appropriate uses, and how the data were created is available in the [Mortality statistics in England and Wales QMI](#) as well as the [National Records of Scotland \(NRS\)](#) and [Northern Ireland Statistics and Research Agency \(NISRA\)](#) methodology pages.

Age-standardised mortality rates (ASMRs) and age-specific mortality rates in this bulletin have been adjusted to take into account the length of time observed, therefore effectively annualising the rate. This allows the rates to be comparable with rates in other annual publications. Rates will differ and appear higher than those produced in Office for National Statistics (ONS) publications, which are not able to have these adjustments made, as well as NRS and NISRA publications where rates have not been adjusted.

There is usually a delay of at least five days between occurrence and registration. More information on this issue can be found in our [impact of registration delays release](#).

Our [User guide to mortality statistics](#) provides further information on data quality, legislation and procedures relating to mortality and includes a [glossary of terms](#).

## 12 . Strengths and limitations

Figures are based on the date the death occurred, not when it was registered. There is usually a delay of at least five days between occurrence and registration, so there may be some deaths that occurred in March and April that are not yet registered. More information on this issue can be found in our [impact of registration delays release](#).

This release uses age-standardised mortality rates (ASMRs) that take into account the length of the period in question: March and April 2020. This effectively annualises the rates to make them more comparable with our annual statistics. There are some releases involving the coronavirus (COVID-19) produced by the Office for National Statistics (ONS), National Records of Scotland (NRS) and Northern Ireland Statistics and Research Agency (NISRA) that do not take into account the length of period and therefore will not match what is published here.

## 13 . Related links

### [Deaths registered in England and Wales: 2018](#)

Bulletin | Released 6 August 2019

Registered deaths by age, sex, selected underlying causes of death and the leading causes of death. Contains death rates and death registrations by area of residence and single year of age.

### [Deaths involving coronavirus \(COVID-19\) in Scotland](#)

Report | Released 10 June 2020

Provisional statistics on the number of deaths associated with COVID-19 and the total number of deaths registered in Scotland, for weeks 1 to 23 of 2020.

### [Weekly death registrations in Northern Ireland, 2020](#)

Bulletin | Released 5 June 2020

Statistics on the number of deaths registered each week in Northern Ireland.

### [Coronavirus \(COVID-19\) product page](#)

Product page | Updated as and when new data are available

Brings together the latest data and analysis on the coronavirus pandemic in the UK and its effect on the economy and society.

### [Coronavirus \(COVID-19\) roundup](#)

Blog | Updated as and when new data are available

Catch up on the latest data and analysis related to the coronavirus pandemic and its impact on our economy and society.

### [Deaths registered weekly in England and Wales, provisional: week ending 1 May 2020](#)

Bulletin | Released 12 May 2020

Provisional counts of the number of deaths registered in England and Wales, including deaths involving COVID-19, by age, sex and region, in the latest weeks for which data are available.

### [Impact of registration delays on mortality statistics](#)

Dataset | Released 7 February 2020

Data for England and Wales on the time taken to register deaths in 2018, by cause of death, by area of usual residence and for infant deaths.

### [Where to find statistics on UK deaths involving the coronavirus \(COVID-19\) and infection rates by country](#)

Article | Released on 19 May 2020

Links to statistics on COVID-19 deaths and infection rates published by the different constituent countries of the UK.