

Statistical bulletin

# Deaths involving COVID-19 by local area and socioeconomic deprivation: deaths occurring between 1 March and 30 June 2020

Provisional counts of the number of deaths and age-standardised mortality rates involving the coronavirus (COVID-19) between 1 March and 30 June 2020 in England and Wales. Figures are provided by age, sex, geographies down to local authority level and deprivation indices.

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# 1 . Main points

- There were 50,574 deaths occurring in England and Wales between 1 March and 30 June 2020 and registered by 11 July 2020 that involved the coronavirus (COVID-19); this represented 22.9% of all deaths occurring over this period (220,636 deaths).
- Taking into account the size and age structure of the population, there were 88.0 deaths involving COVID-19 per 100,000 people in England and Wales over the period March to June 2020; this was 88.7 per 100,000 people in England compared with 73.7 per 100,000 people in Wales.
- Between March to June 2020, London had the highest age-standardised mortality rate with 141.8 deaths involving COVID-19 per 100,000 people; this was [statistically significantly](#) higher than any other region in England and nearly one-third (30.2%) higher than the region with the next highest rate (the North West).
- All English regions and Wales recorded an increase in age-standardised mortality rates involving COVID-19 between March and April 2020, followed by decreases in May and June 2020; the mortality rate fell by more than four-fifths in all English regions and Wales between April and June 2020, and the greatest decrease was in London where the mortality rate fell by 96.7%.
- Of the 10 local authorities with the highest age-standardised mortality rates for deaths involving COVID-19 over this period, nine were London Boroughs; Brent had the highest overall age-standardised rate with 216.6 deaths per 100,000 people, followed by Newham (201.6 deaths per 100,000 people) and Haringey (185.1 deaths per 100,000 people).
- All local authorities in England and Wales recorded an increase in age-standardised mortality rates involving COVID-19 between March and April 2020, followed by decreases in May and June 2020 for most areas; the mortality rate fell by more than half between April and June 2020 in nearly all local authorities, and the greatest decrease was in Barnet where the rate fell by 99.1%.
- In England, the age-standardised mortality rate for deaths involving COVID-19 in the most deprived areas between March to June 2020 was 139.6 deaths per 100,000 people; this was more than double the mortality rate in the least deprived areas (63.4 deaths per 100,000 population).
- The most deprived areas in Wales had a mortality rate for deaths involving COVID-19 of 119.1 deaths per 100,000 people between March to June 2020, nearly twice as high as in the least deprived areas (63.5 deaths per 100,000 people).

Rates used in this release have not been adjusted to take into account the period observed and therefore may differ to other rates published. More information can be found in the Measuring the Data section.

## Statistician's comment

"Following the peak recorded in April, in June we have seen a large decrease in the proportion of deaths involving COVID-19 across all English regions and Wales. London experienced the largest decrease over the period from having more than 1 in 2 deaths in April which involved COVID-19 to only about 1 in 20 deaths in June that were related to the coronavirus.

The South West region continued to have the lowest proportion of COVID-19 deaths in June with about 1 in 30 deaths involving the coronavirus, while the North West had the highest where 1 in 8 deaths in June were COVID-19 related."

Sarah Caul, Head of Mortality Analysis, Office for National Statistics.

## 2 . Introduction

This bulletin contains provisional analysis of all deaths that occurred in England and Wales between 1 March and 30 June 2020, registered up to 11 July 2020, where the coronavirus (COVID-19) was involved, focusing on differences between local areas. For this analysis, we use the term “involving COVID-19” when referring to deaths that had COVID-19 mentioned anywhere on the death certificate, whether an underlying cause or not.

The information used to produce these statistics is based on details collected when certified deaths are registered with the local registration office. In England and Wales, deaths should be registered within five days of the death occurring, but there are some situations (such as referral to a coroner) that result in later registration. Therefore, there are likely to be some deaths involving COVID-19 that occurred in the period 1 March to 30 June 2020 that 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) 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 of the death, and the ONS's wider inclusion criteria. The statement [The different uses of figures on deaths from COVID-19 published by DHSC and the ONS](#) 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. 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.

The following analysis looks at the number and age-standardised rates by different geographies and level of deprivation. There may be some interaction between geographies and level of deprivation, but this will need further investigation.

### 3 . Country and region

The numbers of deaths by country and region are published each week in our [Deaths registered weekly in England and Wales provisional](#) release.

The analysis in this report looks at deaths that occurred between 1 March and 30 June 2020 and uses age-standardised mortality rates to take into account the population and age structure of each area.

Between 1 March and 30 June 2020, there were 220,636 deaths occurring in England and Wales that were registered by 11 July 2020; of these, 50,574 deaths involved COVID-19. When adjusting for size and age structure of the population, there were 88.0 deaths involving COVID-19 per 100,000 people in England and Wales in the time period; 88.7 deaths per 100,000 people in England and 73.7 deaths per 100,000 people in Wales.

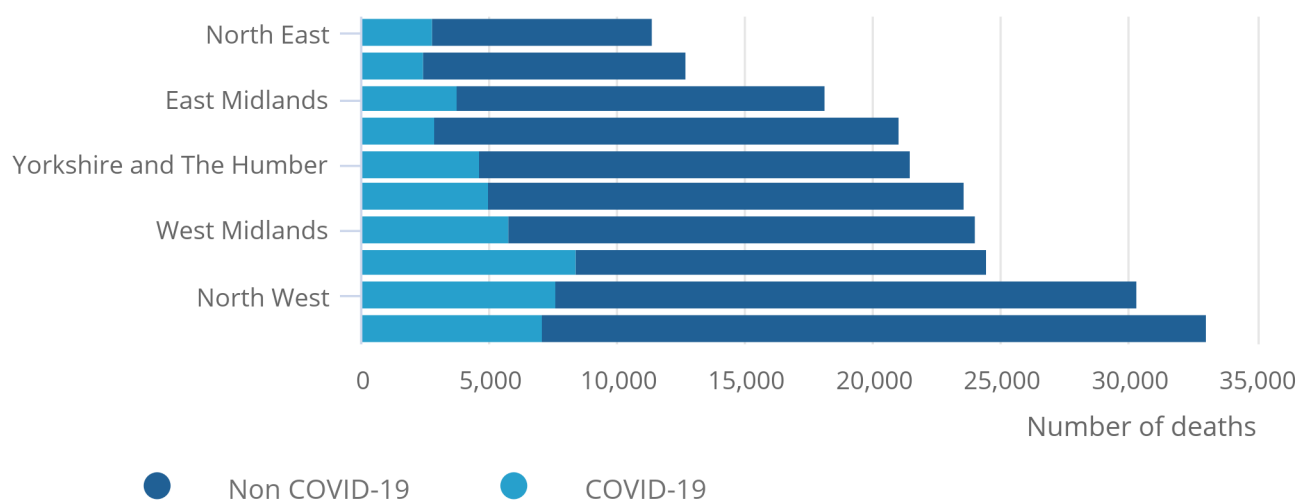
The age-standardised rate in England and Wales was 8.3 deaths involving COVID-19 per 100,000 people in March 2020, 53.3 deaths per 100,000 people in April 2020, 20.6 deaths per 100,000 people in May 2020 and 5.8 deaths per 100,000 population in June 2020. As more deaths are registered, the age-standardised rate is likely to increase, especially in the latest month of June.

**Figure 1: London had the highest proportion of deaths involving the coronavirus (COVID-19) between March and June 2020**

Number of deaths involving and not involving the coronavirus (COVID-19), Wales and regions of England, deaths occurring between 1 March and 30 June 2020

Figure 1: London had the highest proportion of deaths involving the coronavirus (COVID-19) between March and June 2020

Number of deaths involving and not involving the coronavirus (COVID-19), Wales and regions of England, deaths occurring between 1 March and 30 June 2020



**Source: Office for National Statistics – Deaths involving COVID-19**

**Notes:**

1. Deaths occurring between 1 March 2020 and 30 June 2020 and registered by 11 July 2020.
2. Figures exclude death of non-residents and are based on May 2020 boundaries.
3. Coronavirus (COVID-19) was the underlying cause or was mentioned on the death certificate as a contributory factor (ICD-10 codes U07.1 and U07.2).
4. Figures are provisional.

Over this four-month period, the English region with the highest number of deaths occurring from all causes was the South East with 33,105 deaths; of these, 7,086 deaths involved COVID-19 (21.4% of deaths). The lowest number of deaths was in the North East with 11,440 deaths, of which 2,791 involved COVID-19 (24.4% of deaths).

The region with the highest proportion of deaths involving COVID-19 was London with 8,438, making up 34.5% of the 24,466 total deaths. The lowest proportion of deaths involving COVID-19 was in the South West with 2,872, making up 13.6% of the 21,094 total deaths.

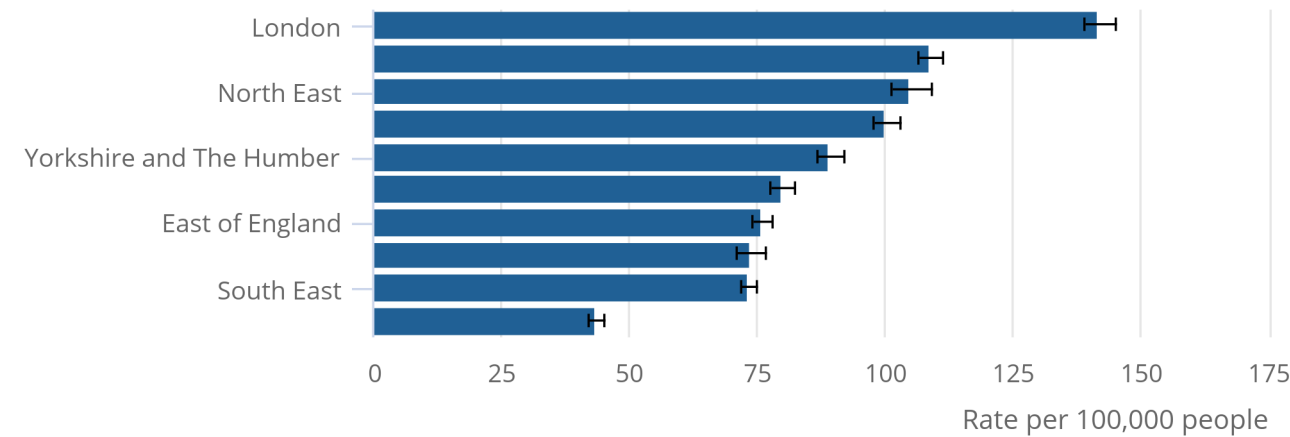
However, the lowest number of COVID-19 deaths overall was in Wales with 2,460 deaths, making up 19.4% of all deaths.

**Figure 2: London had the highest age-standardised mortality rate of deaths involving the coronavirus (COVID-19) between March and June 2020**

Age-standardised mortality rates for deaths involving the coronavirus (COVID-19), per 100,000 population, English regions and Wales, deaths occurring between 1 March and 30 June 2020

Figure 2: London had the highest age-standardised mortality rate of deaths involving the coronavirus (COVID-19) between March and June 2020

Age-standardised mortality rates for deaths involving the coronavirus (COVID-19), per 100,000 population, English regions and Wales, deaths occurring between 1 March and 30 June 2020



Source: Office for National Statistics – Deaths involving COVID-19

Notes:

1. Deaths occurring between 1 March 2020 and 30 June 2020 and registered by 11 July 2020.
2. Figures exclude death of non-residents and are based on May 2020 boundaries.
3. Coronavirus (COVID-19) was the underlying cause or was mentioned on the death certificate as a contributory factor (ICD-10 codes U07.1 and U07.2).
4. Rates have been standardised using European Standard Population 2013 (ESP 2013) and are expressed per 100,000 people.
5. Rates have not been adjusted to take into account the period of interest. They use the annual population as a base and may differ from rates presented in other publications.
6. Figures are provisional.

Between March and June 2020, London had the highest age-standardised mortality rate, with 141.8 deaths per 100,000 people involving COVID-19. This was [statistically significantly](#) higher than any other English region or Wales, while the next highest rate of 108.9 deaths per 100,000 people was found in the North West. Conversely, the South West saw the lowest age-standardised mortality rate of 43.5 deaths per 100,000 people. This was [statistically significantly](#) lower than any other English region or Wales.

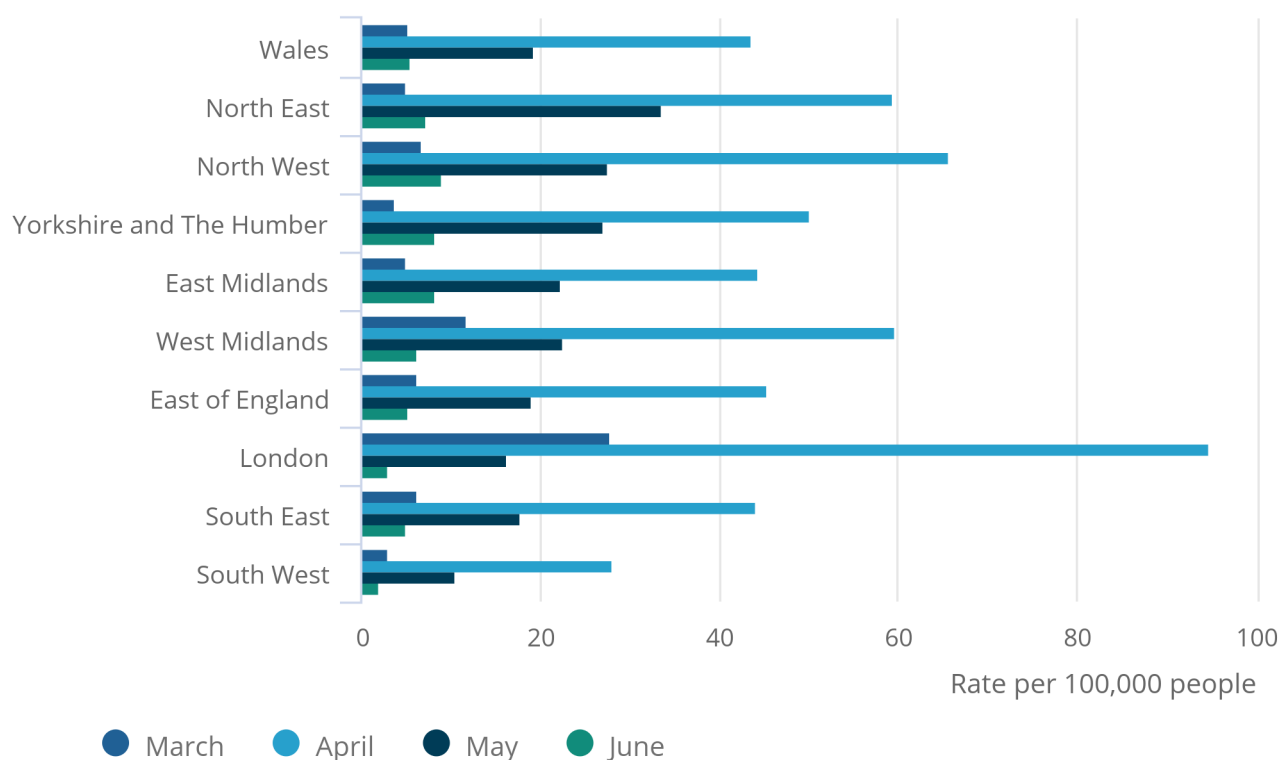
For all areas, males had a significantly higher mortality rate than females, except for the North East region in May 2020, and Wales and the North East in June 2020. More information can be found in the [accompanying datasets](#).

**Figure 3: The age-standardised mortality rate of deaths involving the coronavirus (COVID-19) was highest in April for all English regions and Wales**

Age-standardised mortality rates for deaths involving the coronavirus (COVID-19), per 100,000 people, English regions and Wales, deaths occurring in March, April, May and June 2020

**Figure 3: The age-standardised mortality rate of deaths involving the coronavirus (COVID-19) was highest in April for all English regions and Wales**

Age-standardised mortality rates for deaths involving the coronavirus (COVID-19), per 100,000 people, English regions and Wales, deaths occurring in March, April, May and June 2020



Source: Office for National Statistics – Deaths involving COVID-19

**Notes:**

1. Deaths occurring in March, April, May and June 2020 and registered by 11 July 2020.
2. Figures exclude death of non-residents and are based on May 2020 boundaries.
3. Coronavirus (COVID-19) was the underlying cause or was mentioned on the death certificate as a contributory factor (ICD-10 codes U07.1 and U07.2).
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6. Figures are provisional.

All the English regions and Wales recorded an increase in age-standardised mortality rates involving COVID-19 between March and April 2020 followed by decreases in May and June 2020. The mortality rate fell by more than four-fifths in all English regions and Wales between April and June 2020, and the greatest decrease was in London where the mortality rate fell by 96.7%.

Looking at the age-standardised mortality rate for the individual months of March, April, May and June 2020, all regions in England and Wales had the highest mortality rate in April 2020. By June 2020, the mortality rates in five of the nine English regions were lower than in March 2020 at the start of the pandemic, while the remaining regions and Wales still had higher mortality higher compared with March.

Age-standardised rates will increase as more deaths are registered, especially in the more recent months of May and June.

## 4 . Local authorities

Along with our weekly provisional release for England and Wales, we publish [number of deaths by local authority and health board](#) by week and place of occurrence (hospital, home, care home, hospice, other communal establishment and elsewhere). The following analysis looks at age-standardised mortality rates of local authorities in England and Wales.

**Figure 4: Age-standardised mortality rates for deaths from all causes and deaths involving the coronavirus (COVID-19), local authorities in England and Wales, deaths occurring between 1 March and 30 June 2020**

**Notes:**



1. Deaths occurring in between 1 March 2020 and 30 June 2020 and registered by 11 July 2020.
2. Figures exclude death of non-residents and are based on May 2020 boundaries.
3. Coronavirus (COVID-19) was the underlying cause or was mentioned on the death certificate as a contributory factor (ICD-10 codes U07.1 and U07.2).
4. Rates have been standardised using European Standard Population 2013 (ESP 2013) and are expressed per 100,000 people.
5. Rates have not been adjusted to take into account the period of interest. They use the annual population as a base and may differ from rates presented in other publications.
6. Figures are provisional.

[Download the data](#)

Figure 4 is a map of local authorities in England and Wales, showing age-standardised mortality rates for deaths involving the coronavirus (COVID-19) and all causes between March and June 2020.

As in our previous [report](#) for the period March to May 2020, there were 26 London Boroughs (out of 33) which had a [statistically significantly](#) higher age-standardised mortality rate than the England and Wales average. 9 out of the 10 local authorities in England and Wales with the highest age-standardised mortality rates were London Boroughs. The areas with the highest overall age-standardised mortality rate involving COVID-19 in England and Wales has also remained the same: Brent, with a rate of 216.6 deaths per 100,000 people, followed by Newham with a rate of 201.6 deaths per 100,000 people, and Haringey with a rate of 185.1 deaths per 100,000 people.

Similarly, the non-London local authorities with the highest age-standardised mortality rates remain unchanged; these were Middlesbrough with an age-standardised mortality rate of 178.0 deaths per 100,000 people, Hertsmere with a rate of 166.7 deaths per 100,000 people and Salford with a rate of 166.2 deaths per 100,000 people. These mortality rates were also [statistically significantly](#) higher than the England and Wales average.

Over the period 1 March to 30 June 2020, there were 91 (27.1%) local authorities with [statistically significantly](#) higher mortality rates involving COVID-19 than the England and Wales average.

The [accompanying datasets](#) provide a gender breakdown. For males, the areas with the highest mortality rates involving COVID-19 over this period were Brent, Haringey and Newham, and 16 of the 20 local authorities with the highest rates were also London Boroughs. For females, Brent, Middlesbrough and Hertsmere had the highest rates, and 12 of the 20 highest local authority mortality rates were in London Boroughs.

Looking at age-standardised mortality rates for each month during this period, many of the highest mortality rates in March and April 2020 occurred in London Boroughs. By May and June 2020, London ceased to have the highest mortality rates. The highest age-standardised mortality rate for London Boroughs in June 2020 occurred in Bexley (5.6 deaths per 100,000 people), which was in the middle of the local authority rankings. Rates for June 2020 should be treated with caution as they are based on small numbers of deaths (involving COVID-19).

In England, the local authority with the highest mortality rate involving COVID-19 in June 2020 was Ashford with a rate of 36.5 deaths per 100,000 people. In Wales, the highest rate was seen in Wrexham (15.0 deaths per 100,000 people).

## 5 . Local Health Boards in Wales

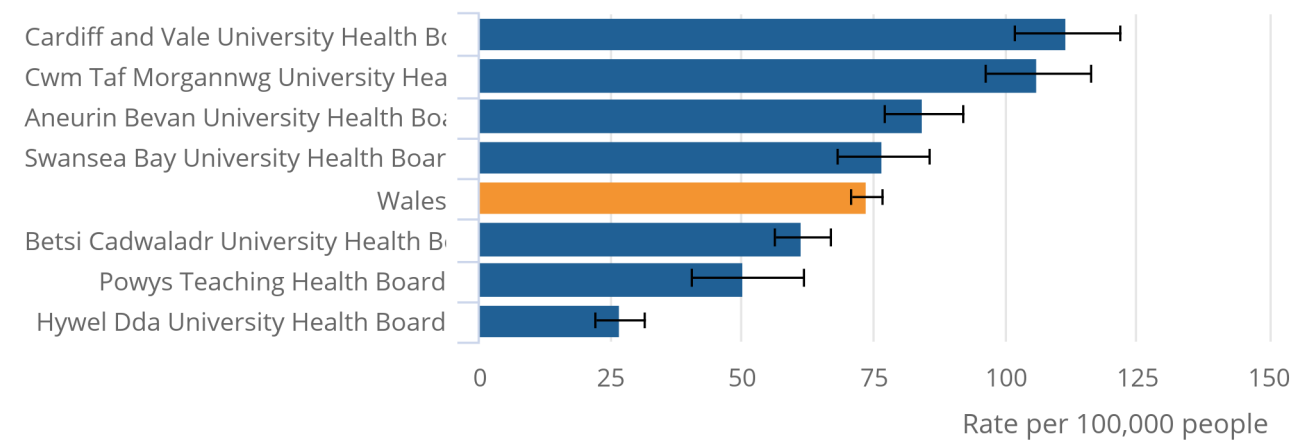
As well as local authorities, Wales also has seven Local Health Boards.

**Figure 5: Hywel Dda University Health Board had the lowest age-standardised mortality rate of deaths involving the coronavirus (COVID-19) in Wales during March to June 2020**

Age-standardised mortality rates of deaths involving the coronavirus (COVID-19), Local Health Boards in Wales, deaths occurring between 1 March and 30 June 2020

Figure 5: Hywel Dda University Health Board had the lowest age-standardised mortality rate of deaths involving the coronavirus (COVID-19) in Wales during March to June 2020

Age-standardised mortality rates of deaths involving the coronavirus (COVID-19), Local Health Boards in Wales, deaths occurring between 1 March and 30 June 2020



Source: Office for National Statistics – Deaths involving COVID-19

Notes:

1. Deaths occurring between 1 March 2020 and 30 June 2020 and registered by 11 July 2020.
2. Figures exclude death of non-residents and are based on May 2020 boundaries.
3. Coronavirus (COVID-19) was the underlying cause or was mentioned on the death certificate as a contributory factor (ICD-10 codes U07.1 and U07.2).
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6. Figures are provisional.

The three Local Health Boards highest age-standardised mortality rates of deaths involving the coronavirus (COVID-19) were all [statistically significantly](#) higher than the overall Wales rate (73.7 deaths per 100,000 people). They were Cardiff and Vale University Health Board with 111.6 deaths per 100,000 people; Cwm Taf Morgannwg University Health Board with 106.1 deaths per 100,000 people; and Aneurin Bevan University Health Board with 84.3 deaths per 100,000 people.

The lowest age-standardised mortality rate for deaths involving COVID-19 was in Hywel Dda University Health Board with 26.7 deaths per 100,000 people, which was [statistically significantly](#) lower than the overall Wales rate and all Local Health Boards.

## 6 . Middle Layer Super Output Areas

Super Output Areas are a small-area statistical geography covering England and Wales. Each area has a similarly sized population and remains stable over time. For this analysis, Middle Layer Super Output Areas have been used. The [accompanying datasets](#) show the number of all deaths as well as deaths involving the coronavirus (COVID-19).

The following interactive map allows you to see the cumulative number of monthly deaths involving COVID-19 in each area.

**Figure 6: Number of deaths involving COVID-19 in Middle Layer Super Output Areas, England and Wales, deaths occurring between 1 March and 30 June 2020**

## 7 . Rural and urban areas

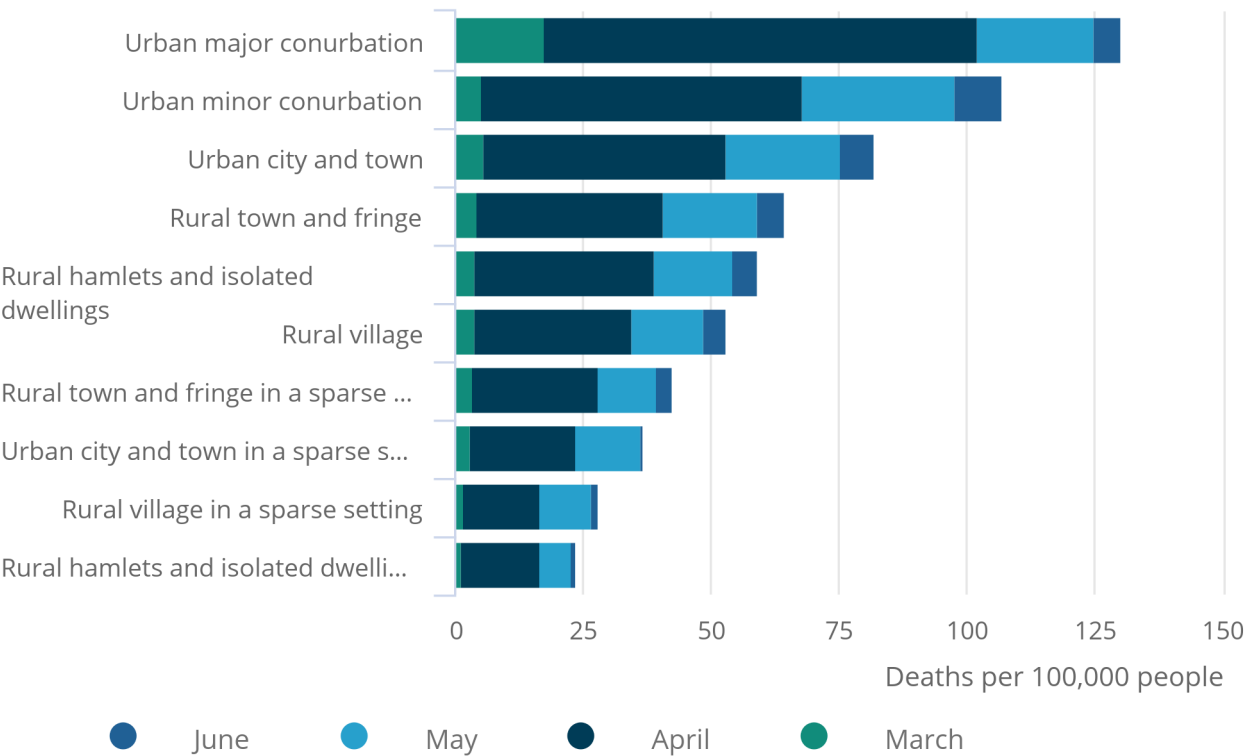
The [Rural Urban Classification for England and Wales](#) is used to distinguish rural and urban areas of different housing sparsity and location for analytical and policy purposes. Areas with 10,000 resident population or more are defined as urban; urban areas are split into major conurbations, minor conurbations, and city and town categories. Rural areas are split between town and fringe, village, and hamlets and isolated dwellings.

**Figure 7: Urban major conurbation had a significantly higher age-standardised mortality rate of deaths involving the coronavirus (COVID-19) than any other Rural Urban Classification**

Age-standardised mortality rate of deaths involving the coronavirus (COVID-19), Rural Urban Classification'

Figure 7: Urban major conurbation had a significantly higher age-standardised mortality rate of deaths involving the coronavirus (COVID-19) than any other Rural Urban Classification

Age-standardised mortality rate of deaths involving the coronavirus (COVID-19), Rural Urban Classification



Source: Office for National Statistics – Deaths involving COVID-19

Notes:

1. Deaths occurring between 1 March 2020 and 30 June 2020 and registered by 11 July 2020.
2. Figures exclude death of non-residents and are based on May 2020 boundaries.
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5. Rates have not been adjusted to take into account the period of interest. They use the annual population as a base and may differ from rates presented in other publications.
6. Figures are provisional.

The highest age-standardised mortality rate involving the coronavirus (COVID-19) for the period March to June 2020 was in urban major conurbations, with 130.3 deaths per 100,000 people. This was [statistically significantly](#) higher than all other categories. The next two highest rates were also [statistically significantly](#) different to all other categories: urban minor conurbations had 107.1 deaths per 100,000 people, and urban cities and towns had 82.1 deaths per 100,000 people. The lowest rates were all found in sparse settings; rural hamlets and isolated dwellings in a sparse setting had the lowest age-standardised mortality rate of 23.8 deaths per 100,000 people.

Looking at mortality rates involving the coronavirus (COVID-19) for the individual months, the highest age-standardised rates for all rural urban classification areas occurred in April 2020, after which rates decreased in both May and June 2020. The highest mortality rate in both May 2020 (29.6 deaths per 100,000 people) and June 2020 (9.3 deaths per 100,000 people) occurred in urban minor conurbations and was [statistically significantly](#) higher than all other categories. This is in contrast to urban major conurbations which had the highest rate for the four-month period overall.

For all areas, the age-standardised mortality rate involving the coronavirus (COVID-19) decreased in May 2020 compared with April 2020, and in June 2020 compared with May 2020. The largest decrease was seen in urban city and town in a sparse setting which fell by 97.7% from 20.8 deaths per 100,000 people in April 2020 to 0.5 deaths per 100,000 people in June 2020.

"Major towns and cities" is a statistical geography created to provide comparable definitions of the major towns and cities in England and Wales, excluding London. This definition has been developed specifically for the production and analysis of statistics. The aim is to provide a precise definition, with a focus on the "core" built-up area of a town or city rather than its surrounding area. It should be noted that in this geography, the boundaries do not follow administrative areas and instead are defined to cover the built-up area of each town or city.

Of the 111 major towns and cities (excluding London), the highest age-standardised mortality rate of deaths involving COVID-19 was in Salford, with a rate of 215.7 deaths per 100,000 people. The lowest rate was 10.0 deaths per 100,000 people in Hastings.

## 8 . Travel to Work Areas

Travel to Work Areas (TTWAs) are a geography created to approximate labour market areas. In other words, they are derived to reflect self-contained areas in which most people both live and work. TTWAs have been developed so that relatively few commuters cross a TTWA boundary on their way to work. As such, TTWAs are based on statistical analysis rather than administrative boundaries.

Similar to previous geography breakdowns discussed in this bulletin, London has the highest rate of deaths involving COVID-19 in March 2020 (26.9 deaths per 100,000 people) but has a comparatively low age-standardised rate in June 2020 (3.3 deaths per 100,000 people). The highest age-standardised mortality rates involving COVID-19 for June 2020 occurred in Ashford (37.2 deaths per 100,000 people), Folkstone and Dover (25.9 deaths per 100,000 people) and Northampton (19.5 deaths per 100,000 people); in March 2020, both Ashford and Folkstone and Dover were in the bottom third of the TTWAs ranking.

Information on all 173 TTWAs can be found in our [accompanying datasets](#).

## 9 . English Index of Multiple Deprivation

The Index of Multiple Deprivation (IMD) is an overall measure of deprivation based on factors such as income, employment, health, education, crime, the living environment and access to housing within an area. There are different measurements for England and Wales, which are not directly comparable.

### **Figure 8: The coronavirus (COVID-19) has had a proportionally higher impact on the most deprived areas of England**

Age-standardised mortality rates, all deaths and deaths involving the coronavirus (COVID-19), Index of Multiple Deprivation, England, deaths occurring between 1 March and 30 June 2020

## Source: Office for National Statistics – Deaths involving COVID-19

### Notes:

1. Deaths occurring between 1 March 2020 and 30 June 2020 and registered by 11 July 2020.
2. Figures exclude death of non-residents and are based on May 2020 boundaries.
3. Coronavirus (COVID-19) was the underlying cause or was mentioned on the death certificate as a contributory factor (ICD-10 codes U07.1 and U07.2).
4. Rates have been standardised using European Standard Population 2013 (ESP 2013) and are expressed per 100,000 people.
5. Deprivation quintiles are based on the English Index of Multiple Deprivation, version 2019.
6. Figures are provisional.

### [Download the data](#)

Looking at deaths involving the coronavirus (COVID-19), the mortality rate in the least deprived areas (decile 10) in England was 63.4 deaths per 100,000 people for the period March to June 2020; in contrast, the mortality rate in the most deprived areas (decile 1) was 139.6 deaths per 100,000 people, more than double (120.2%) the rate in the least deprived areas. In the least deprived areas, the age-standardised mortality rate for all deaths was 296.2 deaths per 100,000 population. In the most deprived area, the age-standardised mortality rate for all deaths was 92.4% higher than that of the least deprived, at 570.0 deaths per 100,000 people.

In June 2020, the mortality rate for deaths involving the coronavirus (COVID-19) in the most deprived areas (9.5 deaths per 100,000 people) was 137.5% higher than the rate in the least deprived areas (4.0 deaths per 100,000 people). This was a bigger proportional difference in rates than observed for the four-month period overall. In contrast, the mortality rate for all deaths in June 2020 in the most deprived areas was 83.3% higher than that of the least deprived areas, a smaller proportional difference than for the four-month period.

Figure 8 shows how much higher the age-standardised mortality rate is for each decile compared with the least deprived decile for all deaths and deaths involving COVID-19 in England. For deciles 4 to 9, the percentage increase in age-standardised mortality rate of deaths involving COVID-19 is similar to that of overall deaths. However, the percentage increases for the most deprived deciles (1 to 3) are proportionally worse for deaths involving COVID-19 than for overall deaths.

Looking across geographies and the IMD, Figure 7 shows that Urban Conurbations areas have a higher mortality rate involving COVID-19 compared with other rural or urban classifications; these urban conurbations areas also make up a larger proportion of the most deprived areas compared with other classifications.

## **10 . Welsh Index of Multiple Deprivation**

The Index of Multiple Deprivation (IMD) is an overall measure of deprivation based on factors such as income, employment, health, education, crime, the living environment and access to housing within an area. There are different measurements for England and Wales, which are not directly comparable.

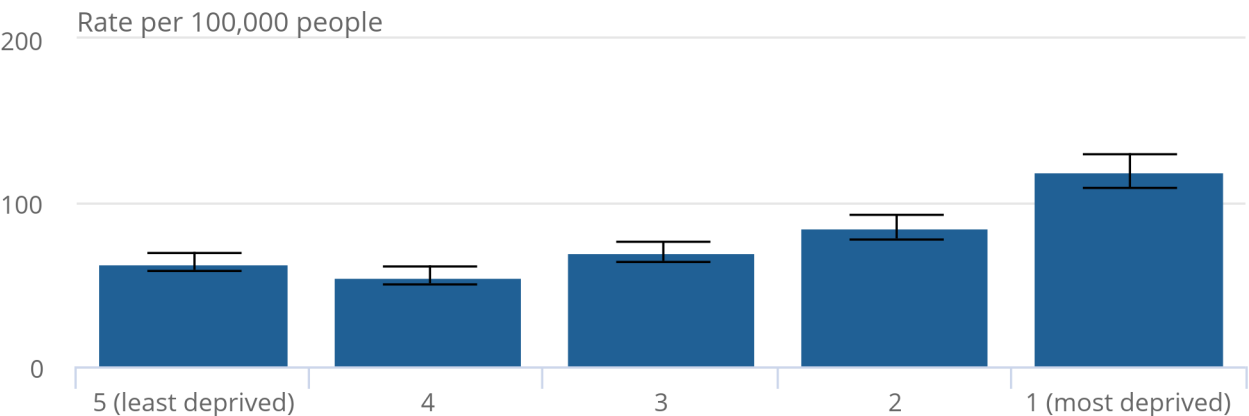


**Figure 9: The mortality rate involving COVID-19 in the most deprived areas in Wales was nearly twice as high as that in the least deprived areas**

Age-standardised mortality rates, all deaths and deaths involving the coronavirus (COVID-19), Index of Multiple Deprivation, Wales, deaths occurring between 1 March and 30 June 2020

Figure 9: The mortality rate involving COVID-19 in the most deprived areas in Wales was nearly twice as high as that in the least deprived areas

Age-standardised mortality rates, all deaths and deaths involving the coronavirus (COVID-19), Index of Multiple Deprivation, Wales, deaths occurring between 1 March and 30 June 2020



Source: Office for National Statistics – Deaths involving COVID-19

Notes:

1. Deaths occurring between 1 March 2020 and 30 June 2020 and registered by 11 July 2020.
2. Figures exclude death of non-residents and are based on May 2020 boundaries.
3. Coronavirus (COVID-19) was the underlying cause or was mentioned on the death certificate as a contributory factor (ICD-10 codes U07.1 and U07.2).
4. Rates have been standardised using European Standard Population 2013 (ESP 2013) and are expressed per 100,000 people.
5. Deprivation quintiles are based on the Welsh Index of Multiple Deprivation, version 2019 (WIMD 2019).
6. Rates have not been adjusted to take into account the period of interest. They use the annual population as a base and may differ from rates presented in other publications.
7. Figures are provisional.

The most deprived fifth of areas (quintile) in Wales had a rate of 119.1 deaths involving the coronavirus (COVID-19) per 100,000 people; this was nearly twice as high as the least deprived areas (63.5 deaths per 100,000 people) and over twice as high as the lowest mortality rate in quintile 4 (55.2 deaths per 100,000 population).

The increase in mortality rate in quintile 5 compared with quintile 4 is not found when looking at overall mortality (this is provided in the [datasets](#)). This discrepancy was also found our previous [reports](#), which analysed deaths involving COVID-19 by local area and socio-economic deprivation for March to April 2020 and March to May 2020. Care should be taken when comparing this increase because of the wide [confidence intervals](#).

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

### [Deaths involving COVID-19 by local area and deprivation](#)

Dataset | Released 24 July 2020

Provisional counts of the number of deaths and age-standardised mortality rates involving the coronavirus (COVID-19) between 1 March and 30 June 2020 in England and Wales. Figures are provided by age, sex, geographies down to local authority level and deprivation indices.

## 12 . Glossary

### Age-standardised mortality rates

Age-standardised mortality rates 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 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.

## 13 . 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](#).

To meet user needs, we are providing more information alongside our usual [Deaths registered monthly in England and Wales](#) dataset. This information is presented by sex and age group. We are also providing age-standardised mortality rates and age-specific mortality rates for recent time periods and breakdowns of deaths involving the coronavirus (COVID-19) by associated pre-existing health conditions.

Rates calculated in this report use the annual population as a base. This will differ from other publications such as [Deaths involving COVID-19, England and Wales](#), which adjusts the populations to take into account the length of time observed and therefore produces a higher rate as the rate is effectively annualised. As population projections and 2019 mid-year population estimates are not available for Lower Super Output Areas (which are needed to aggregate to Index of Multiple Deprivation and some other geographic areas presented in this report) we are unable to annualise the rates. We have therefore used 2018 mid-year population estimates throughout, except for the calculation of rates at country, region and local authority level where we have used 2019 mid-year population estimates.

These figures are different from the daily surveillance figures on COVID-19 deaths published by the Department of Health and Social Care (DHSC) on the [GOV.UK](#) website for the UK as a whole and its constituent countries. Figures in this report are derived from the formal process of death registration and may include cases where the doctor completing the death certificate diagnosed possible cases of COVID-19, for example, where this was based on relevant symptoms but no test for the virus was conducted. Our figures also include any deaths that occur outside hospital.

In contrast to the GOV.UK figures, we include only deaths registered in England and Wales, which is the legal remit of the Office for National Statistics (ONS). Table 1 provides an overview of the differences in definitions between sources.

Table 1: Definitions of coronavirus (COVID-19) deaths between different sources

	<b>DHSC COVID-19</b> <b>(as published on GOV.UK)</b>	<b>ONS COVID-19</b> <b>deaths registered</b>	<b>ONS COVID-19</b> <b>death occurrence</b> <b>(actual date of death)</b>	<b>NHS England</b>
<b>Coverage</b>	UK (however, we only include England and Wales breakdowns for comparable coverage with ONS data)	Registrations in England and Wales	Registrations in England and Wales	England
		In discussions with devolved nations to create UK estimates in the near future	In discussions with devolved nations to create UK estimates in the near future	
<b>Inclusion</b>	Deaths in hospitals	Any place of death, including nursing homes	Any place of death, including nursing homes	Deaths in hospitals
	Deaths where patient has been tested for COVID-19	Deaths where COVID-19 has been mentioned on the death certificate	Deaths where COVID-19 has been mentioned on the death certificate	Deaths where patient has been tested for COVID-19
<b>Timeliness</b>	Provided daily but not officially registered. Data are provided to NHS-E directly by hospitals	Weekly registrations are 11 days behind because of the time taken to register, process and publish	Weekly registrations are 11 days behind because of the time taken to register, process and publish	Updated daily for each date of death

Source: Office for National Statistics - Deaths involving COVID-19

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](#).

## 14 . 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 that are not yet registered. More information on this issue can be found in our [impact of registration delays release](#).

## 15 . 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.

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

Product page | Updated when new data are available

Brings together the latest data and analysis on the coronavirus (COVID-19) pandemic in the UK and its effect on the economy and society.

### [Deaths registered weekly in England and Wales, provisional: week ending 10 July 2020](#)

Bulletin | Released 21 July 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.

### [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 coronavirus (COVID-19) deaths and infection rates published by the different constituent countries of the UK.