Office for National Statistics

Statistical bulletin

Deaths involving COVID-19, England and Wales: deaths occurring in April 2020

Number of deaths involving the coronavirus (COVID-19) that occurred in each month in England and Wales, by country, age, sex and place of death

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1 . Main points

- There were 33,841 deaths involving the coronavirus (COVID-19) that occurred between 1 March and 30 April 2020 registered up to 5 May 2020 in England and Wales; of these, 32,143 (95.0%) had COVID-19 assigned as the underlying cause of death.
- To put the number of deaths due to COVID-19 into context, the 32,143 deaths that had been registered up to 5 May 2020 are equivalent to the third highest cause of death for the whole of 2018 (the most recent year data are published for): chronic lower respiratory diseases with 32,355 deaths.
- Of the deaths involving COVID-19 that occurred in England and Wales in March and April 2020, there was at least one pre-existing condition in 90.4% of cases.
- Taking into account the age structure of the population, the rate of deaths in the period due to COVID-19 was 587.4 per 100,000 persons in England compared with 480.8 per 100,000 persons in Wales.
- COVID-19 was the most frequent underlying cause of death for deaths occurring in April 2020.
- Males had a significantly higher rate of death due to COVID-19; the age-standardised mortality rate (ASMR) for males in England was 781.9 deaths per 100,000 males compared with 439.0 deaths per 100,000 females; in Wales, this was 630.6 deaths per 100,000 males compared with 363.2 deaths per 100,000 females.
- Dementia and Alzheimer disease was the most common main pre-existing condition found among deaths involving COVID-19 and was involved in 6,887 deaths (20.4% of all deaths involving COVID-19).
- Compared with the five-year average, the rate of deaths due to Dementia and Alzheimer disease was significantly higher in April 2020; we are currently investigating the increase in non-COVID-19-related deaths and will publish more information on this in the upcoming weeks.

2 . Introduction

This bulletin contains detailed analysis of all deaths that occurred in England and Wales between 1 March and 30 April 2020, registered up to 5 May 2020, where the coronavirus (COVID-19) was involved. There are breakdowns by age and sex and the causes of death mentioned on the death certificate.

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 that result in the registration of the death being delayed. For example, when a death needs to be investigated by a coroner. Therefore, there may be some deaths involving COVID-19 that occurred in March and April 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) 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. Our blog Counting deaths involving 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. 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 . How many people have died from COVID-19

Between 1 March and 30 April 2020, there were 126,748 deaths that occurred in England and Wales and were registered by 5 May 2020. Of these, 26.7% involved the coronavirus (COVID-19) (33,841 deaths). 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 majority of cases (32,143 deaths, 95.0%) when COVID-19 was mentioned on the death certificate, it was found to be the underlying cause of death.

Our definition of COVID-19 includes some cases where the certifying doctor suspected the death involved COVID-19 but was not certain, for example, because no test was done. Of the 32,143 deaths with an underlying cause of COVID-19, 1,325 (4.1%) were classified as “suspected” COVID-19. Including mentions, “suspected” COVID-19 was recorded on 4.7% of all deaths involving COVID-19.

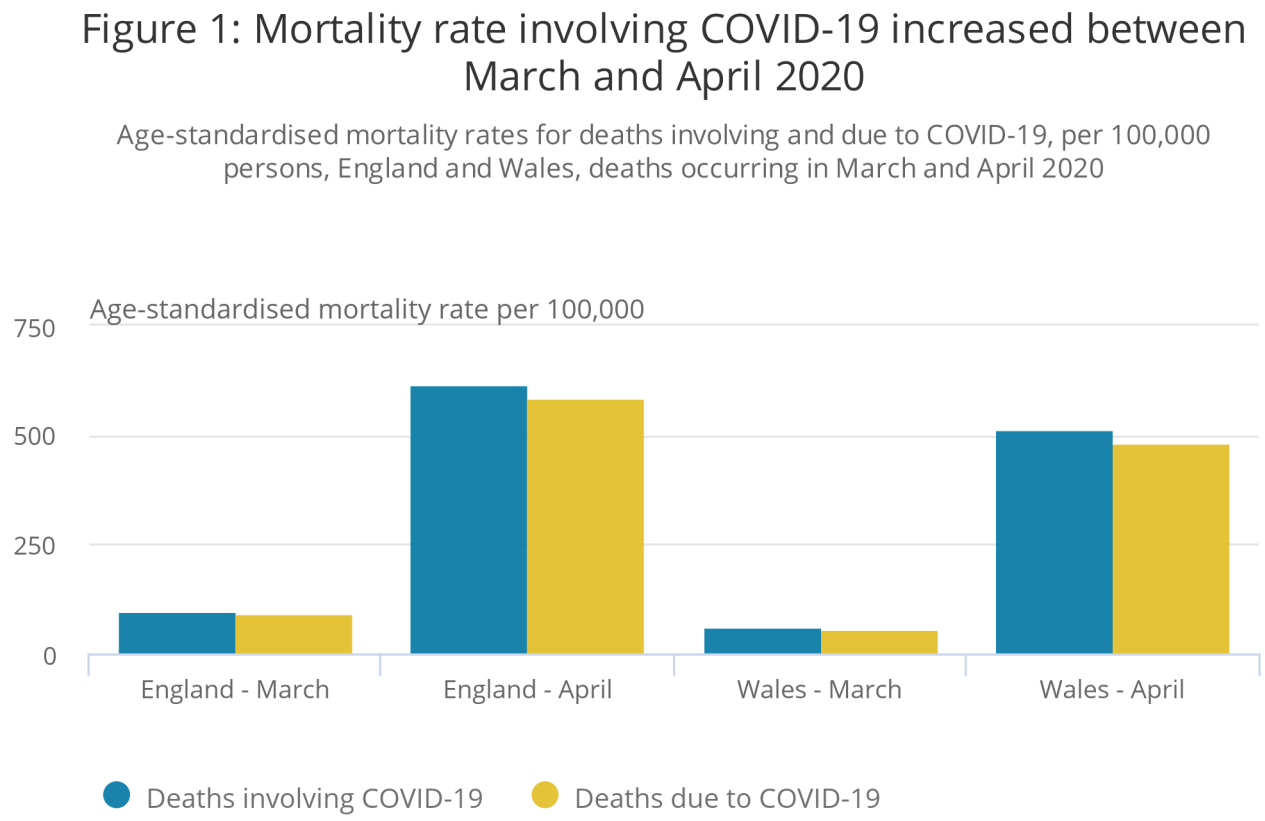
To put the number of deaths due to COVID-19 into context, the 32,143 deaths that had been registered up to 5 May 2020 is a similar figure to the third highest cause of death for the whole of 2018 (the most recent year data are published for): chronic lower respiratory diseases with 32,355 deaths.

In this bulletin, we use the term “due to COVID-19” when referring only to deaths with an underlying cause of death as COVID-19, and 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.

Figure 1 shows the age-standardised mortality rates (ASMRs) for deaths “due to” and “involving” COVID-19. ASMRs are a better 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.

Figure 1: Mortality rate involving COVID-19 increased between March and April 2020

Age-standardised mortality rates for deaths involving and due to COVID-19, per 100,000 persons, England and Wales, deaths occurring in March and April 2020



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

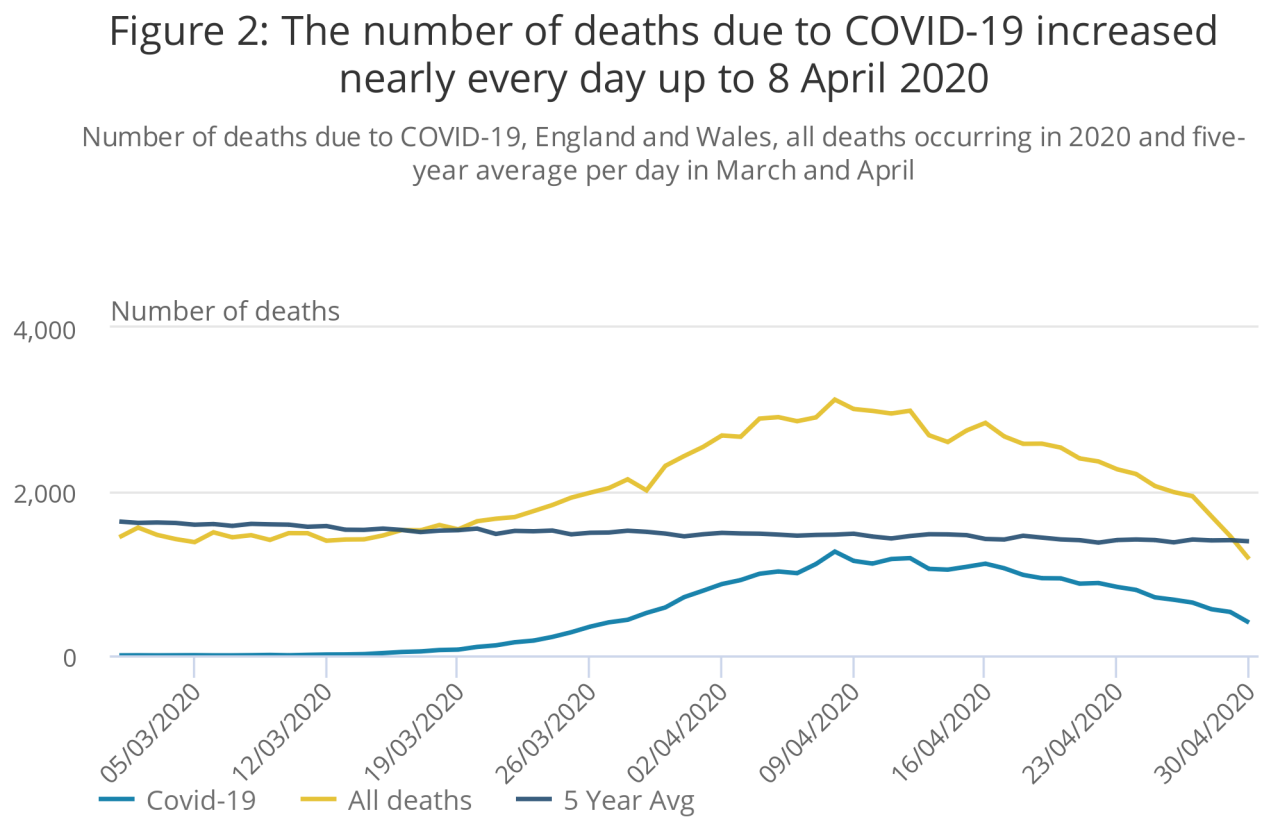
Notes:

1. Figures exclude deaths of non-residents.
2. Based on the date a death occurred rather than when it was registered.
3. Figures are provisional.
4. In this report, we use the term “due to COVID-19” when referring only to deaths with an underlying cause of death as the coronavirus (COVID-19) and 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.

When adjusting for size and age structure of the population, all mortality rates for deaths involving and due to COVID-19 increased between March and April 2020. There were 587.4 deaths per 100,000 persons in England and 480.8 deaths per 100,000 persons in Wales due to COVID-19 in April 2020. Taking into account all deaths involving COVID-19 increases the rate to 617.3 deaths per 100,000 persons and 513.4 deaths per 100,000 persons in England and Wales respectively.

Figure 2: The number of deaths due to COVID-19 increased nearly every day up to 8 April 2020

Number of deaths due to COVID-19, England and Wales, all deaths occurring in 2020 and five-year average per day in March and April



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

Notes:

1. Figures include deaths of non-residents.
2. Based on the date a death occurred rather than when it was registered.
3. Figures are provisional.

Figure 2 presents the number of deaths with an underlying cause of death of COVID-19 that occurred on each day since 2 March 2020, the first date a COVID-19 death occurred. We have included deaths that were registered up to 5 May 2020 but occurred in March or April. Over time, as more deaths are registered, the number of cases that are known to have occurred in March and April will rise, especially for dates in the later part of the month.

Since 11 March 2020, the number of COVID-19 deaths occurring on each day rose (except for 6 April 2020 when it decreased by 21 deaths) until the peak of 1,267 deaths that occurred on 8 April 2020. Since 8 April the number of deaths has been steadily decreasing with 400 deaths occurring on 30 April, although the number of recorded deaths on more recent dates will rise as we receive more death registrations.

Figure 2 also shows the number of deaths per day in March and April 2020 for all causes of death combined and the five-year average for each day. At the start of March, the number of deaths per day was below the five-year average, possibly because of the mild winter and low levels of circulating flu. However, towards the end of the month, the number of deaths was above the five-year average. On 8 April, the number of deaths (3,122) was more than double the five-year average (1,474 deaths). The increase in overall daily deaths coincides with the increase in daily deaths due to COVID-19. Towards the end of April, the number of deaths was below the five-year average, but this is likely to change as we receive more death registrations.

More about coronavirus

- Find the latest on coronavirus (COVID-19) in the UK.
- All ONS analysis, summarised in our coronavirus roundup.
- View all coronavirus data.
- Find out how our studies and surveys are serving public need.

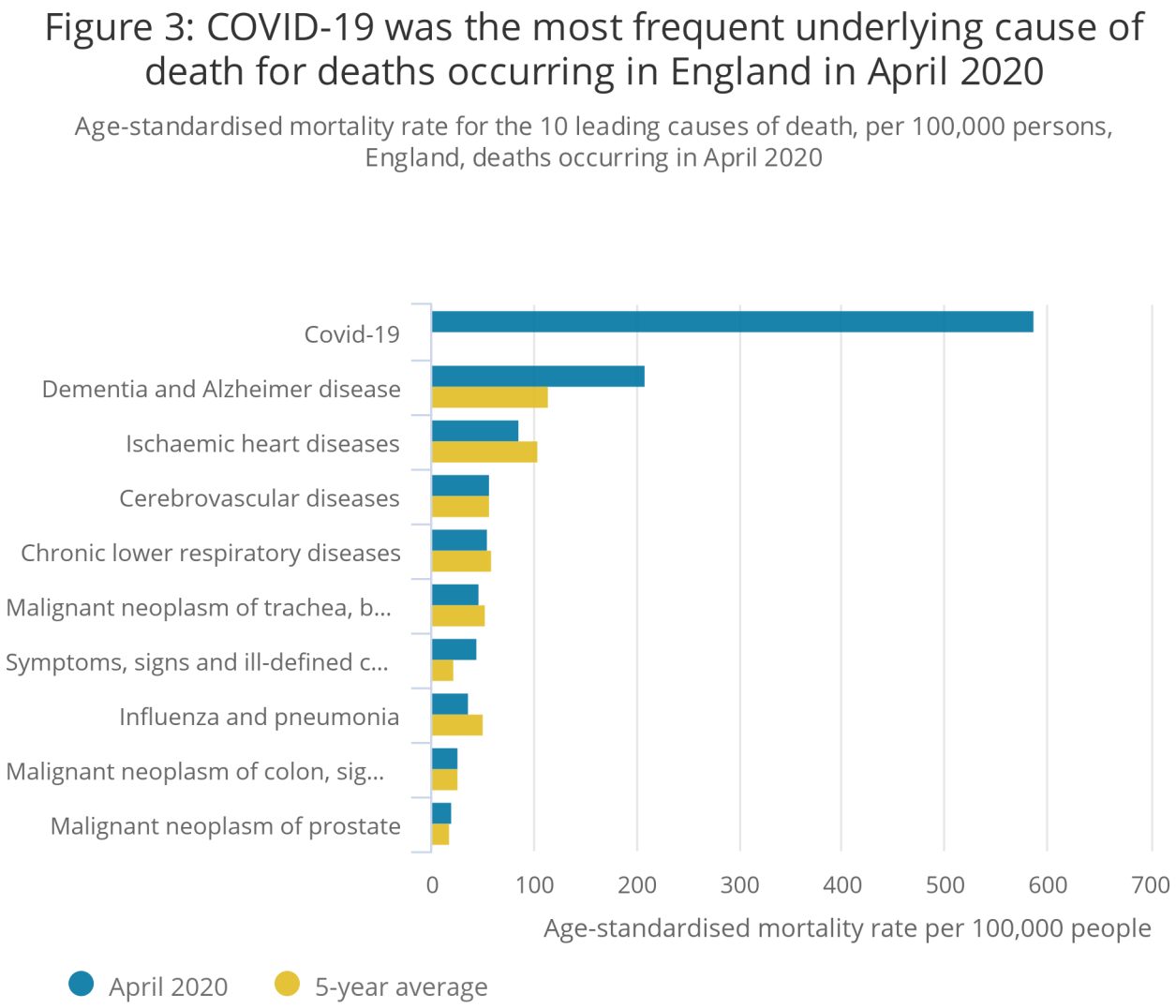
4 . Comparing COVID-19 to other causes of death

The Office for National Statistics's (ONS's) leading causes of death groupings are based on a list developed by the World Health Organization (WHO). This categorises causes of death using the International Classification of Diseases, tenth edition (ICD-10) into groups that are epidemiologically more meaningful than single ICD-10 codes, for the purpose of comparing the most common causes of death in the population.

Figures 3 and 4 show the top ten underlying causes of death occurring in April 2020 for England and Wales.

Figure 3: COVID-19 was the most frequent underlying cause of death for deaths occurring in England in April 2020

Age-standardised mortality rate for the 10 leading causes of death, per 100,000 persons, England, deaths occurring in April 2020



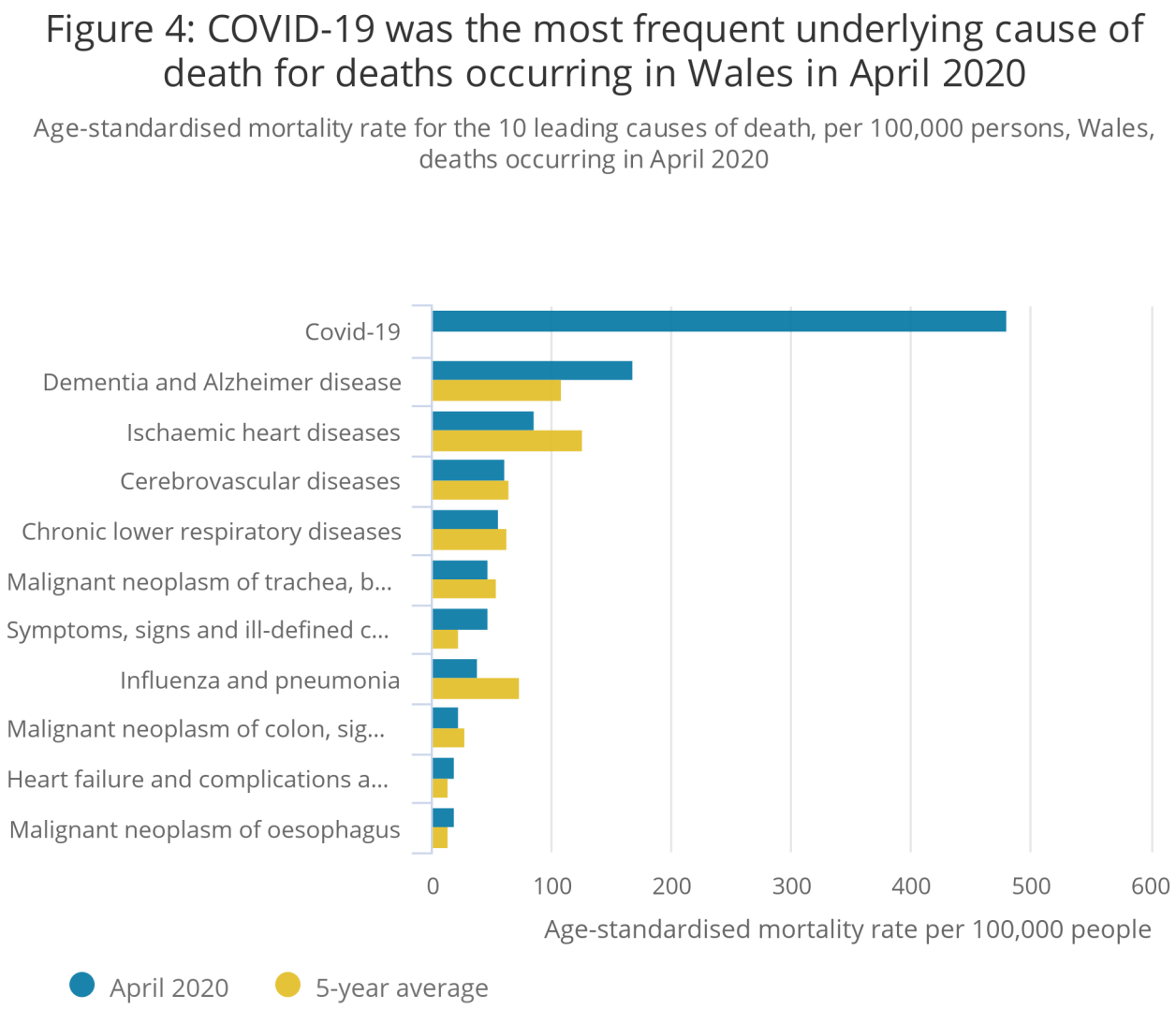
Source: Office for National Statistics – Deaths involving COVID-19

Notes:

1. Figures exclude deaths of non-residents.
2. Based on the date a death occurred rather than when it was registered.
3. Figures are provisional.

Figure 4: COVID-19 was the most frequent underlying cause of death for deaths occurring in Wales in April 2020

Age-standardised mortality rate for the 10 leading causes of death, per 100,000 persons, Wales, deaths occurring in April 2020



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

Notes:

1. Figures exclude deaths of non-residents.
2. Based on the date a death occurred rather than when it was registered.
3. Figures are provisional.

For both England and Wales, the coronavirus (COVID-19) was the leading cause of death for the period, followed by Dementia and Alzheimer disease, ischaemic heart diseases, cerebrovascular diseases and chronic lower respiratory diseases.

For England specifically, COVID-19 was the underlying cause of death for 26,396 deaths, 37.0% of the total. This was more than double the next cause of death (Dementia and Alzheimer disease with 9,429 deaths) and more than the remaining leading causes of death combined. The nine other leading causes of deaths made up 35.5% of deaths occurring in April 2020. The ASMR of deaths due to COVID-19 was 587.4 deaths per 100,000 persons.

Compared with the five-year average, the rate of deaths due to Dementia and Alzheimer disease was significantly higher in April 2020, at 208.9 deaths per 100,000 persons compared with 113.8 deaths per 100,000 persons for the five-year average. Ischaemic heart diseases and chronic lower respiratory diseases decreased significantly to 85.2 and 55.1 deaths per 100,000 persons compared with 103.8 and 58.4 deaths per 100,000 in the five-year average, respectively. We are looking into excess of non-COVID-19-related deaths and will be publishing more on this soon.

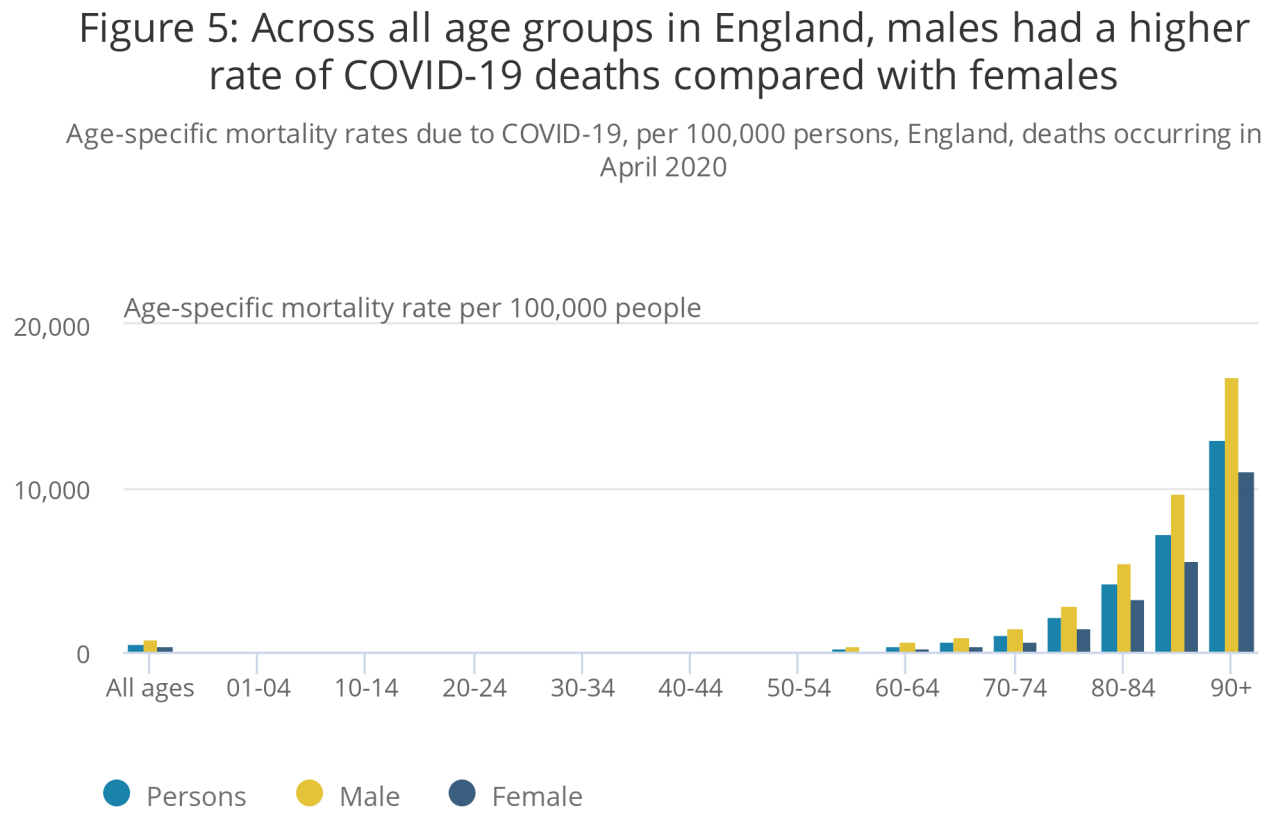
A similar pattern can be seen for Wales. COVID-19 was the underlying cause of 1,326 deaths, 33.0% of the total. This was almost triple the next cause of death (Dementia and Alzheimer disease with 462 deaths). The ASMR of deaths due to COVID-19 was 480.8 deaths per 100,000 persons.

Compared with the five-year average, the rate of deaths due to Dementia and Alzheimer disease was significantly higher in April 2020, at 168.3 deaths per 100,000 persons compared with 108.7 deaths per 100,000 persons for the five-year average. Ischaemic heart diseases decreased significantly to 85.9 deaths per 100,000 persons compared with 126.7 deaths per 100,000 persons in the five-year average.

5 . Characteristics of those dying from COVID-19

Figure 5: Across all age groups in England, males had a higher rate of COVID-19 deaths compared with females

Age-specific mortality rates due to COVID-19, per 100,000 persons, England, deaths occurring in April 2020



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

Notes:

1. Figures exclude deaths of non-residents.
2. Based on the date a death occurred rather than when it was registered.
3. Figures are provisional.
4. Rate is not supplied for an age group with fewer than three deaths.

The age-standardised mortality rate (ASMR) in England for all ages was significantly higher in males (781.9 deaths per 100,000 males) than females (439.0 deaths per 100,000 females).

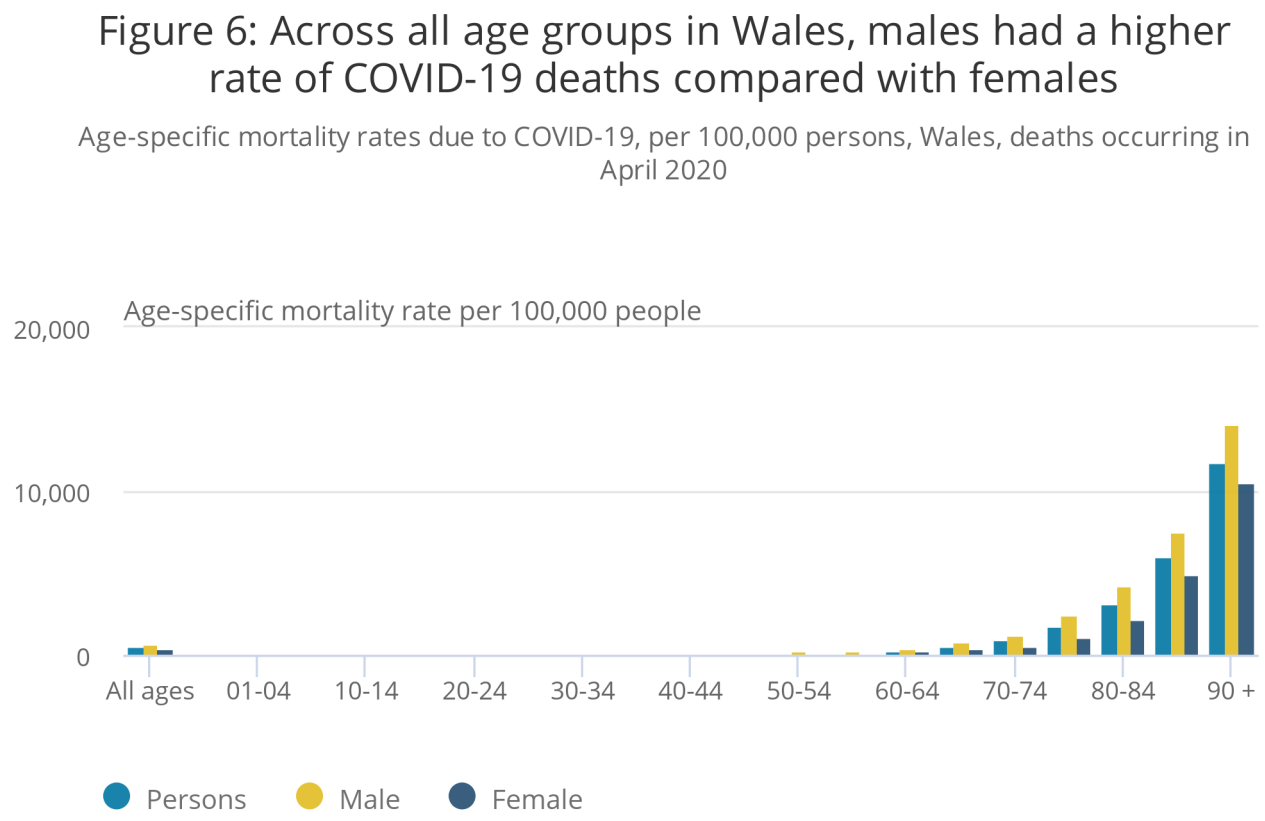
There were no deaths in the three youngest age groups (those aged 0 to 9 years). The youngest age group to record a death was those aged 10 to 14 years, with one female death.

Looking at the age-specific mortality rate for persons, males and females, the mortality rate increased consistently with age. In each age group where a rate was recorded, males had a higher age-specific mortality rate than females. This difference was significant in all age groups starting from those aged 40 to 44 years.

The age group 90 years and over had the highest age-specific mortality rate for both males (16,865.9 per 100,000 males) and females (11,070.6 per 100,000 females), with 5,539 deaths occurring overall in this age group. The mortality rate in this age group was significantly higher than all other ages for both sexes. The age-specific mortality rate due to the coronavirus (COVID-19) increased significantly in each age group, starting from ages 35 to 39 years in males and ages 40 to 44 years in females.

Figure 6: Across all age groups in Wales, males had a higher rate of COVID-19 deaths compared with females

Age-specific mortality rates due to COVID-19, per 100,000 persons, Wales, deaths occurring in April 2020



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

Notes:

1. Figures exclude deaths of non-residents.
2. Based on the date a death occurred rather than when it was registered.
3. Figures are provisional.
4. Rate is not supplied for an age group with fewer than three deaths.

The ASMR in Wales for all ages was significantly higher in males (630.6 deaths per 100,000 males) than females (363.2 deaths per 100,000 females).

The youngest age group to record a death was those aged 20 to 24 years, with one male death. Because of the small numbers, rates could only be calculated from age group 35 to 39 years onwards.

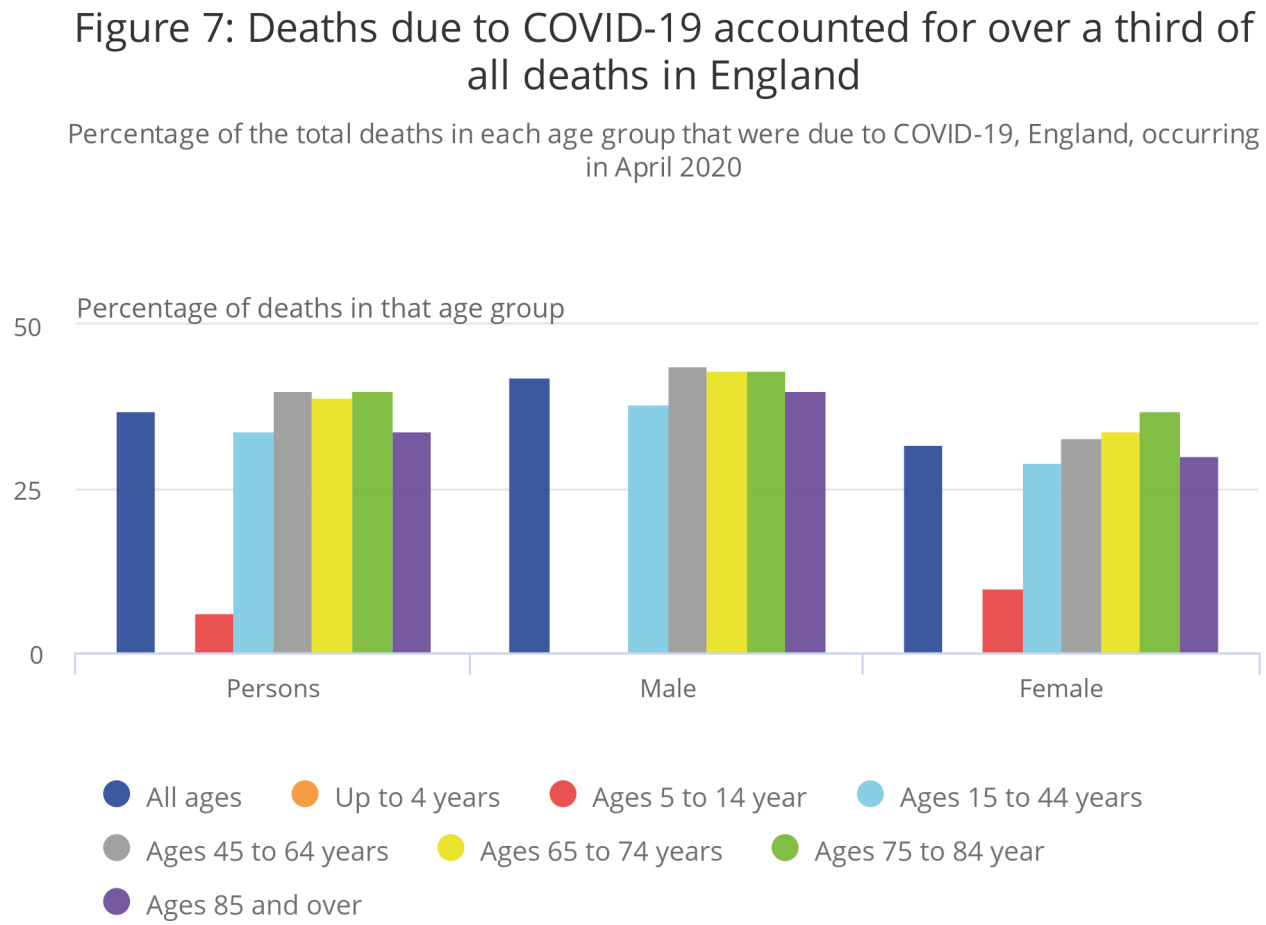
As with England, the age-specific mortality rate for persons, males and females increased consistently with age. In each age group where a rate was recorded, males had a higher age-specific mortality rate than females. This difference was significant in all age groups 65 to 69 years through to 85 to 89 years.

The age group 90 years and over had the highest age-specific mortality rate for both males (14,171.0 deaths per 100,000 males) and females (10,548.5 deaths per 100,000 females), with 293 deaths occurring overall in this age group. The mortality rate in this age group was significantly higher than all other ages for both sexes. The age-specific mortality rate due to COVID-19 increased significantly in each age group, starting from ages 70 to 74 years in males and in females.

This section looks at the proportion COVID-19 deaths accounted for out of all deaths in each age group.

Figure 7: Deaths due to COVID-19 accounted for over a third of all deaths in England

Percentage of the total deaths in each age group that were due to COVID-19, England, occurring in April 2020



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

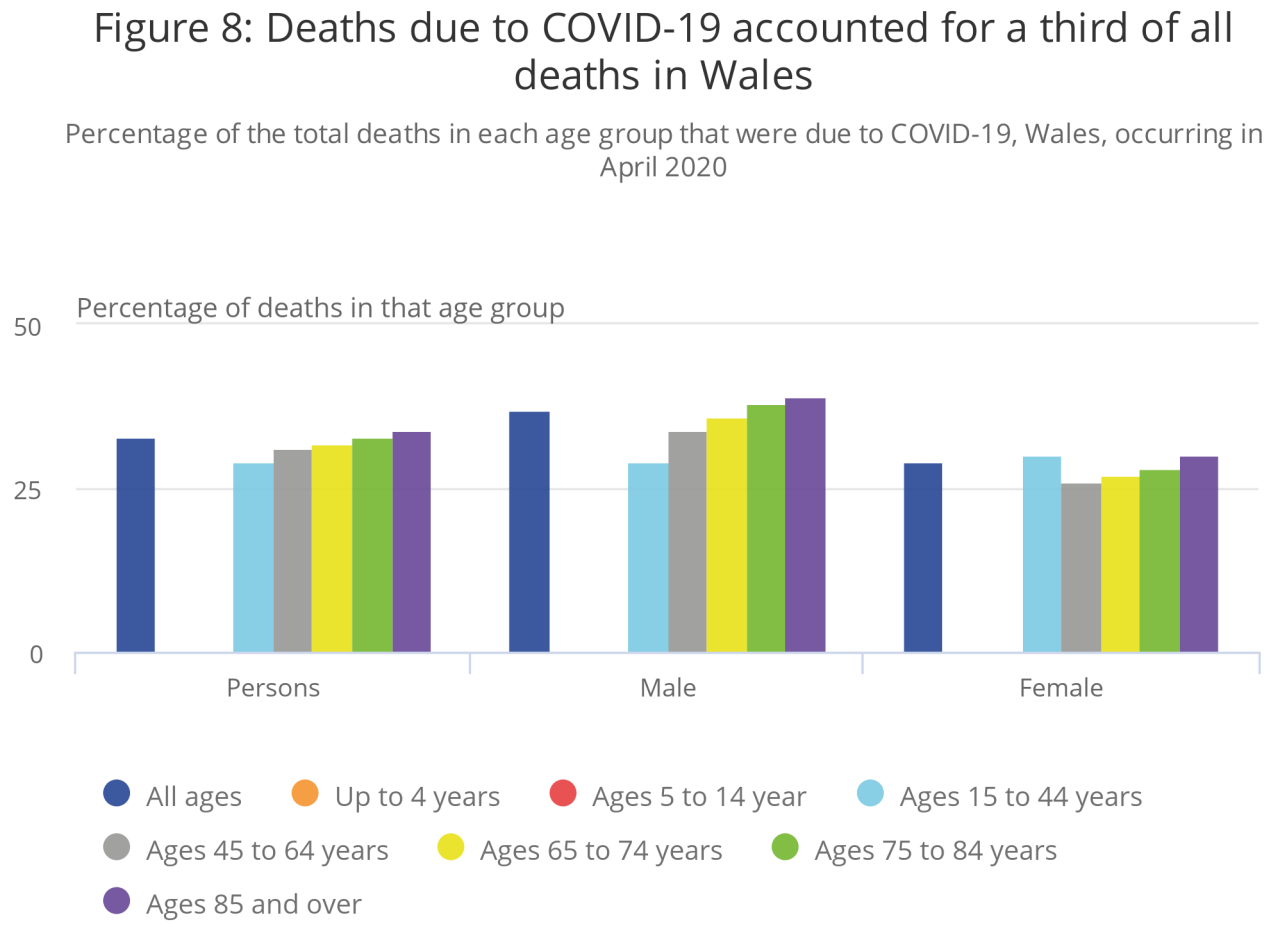
Notes:

1. Figures exclude deaths of non-residents.
2. Based on the date a death occurred rather than when it was registered.
3. Figures are provisional.

In April 2020 in England, 37.0% of all deaths occurring were a result of COVID-19. When broken down by sex, this was 41.6% of all deaths for males and 32.4% of all deaths for females. When looking at the proportion by age group, the highest proportion of deaths due to COVID-19 was in age group 75 to 84 years, with 40.1% of all deaths in this age group having an underlying cause of COVID-19. For males, the highest proportion of deaths due to COVID-19 was in age group 45 to 64 years (44.3%), whereas for females it was age group 75 to 84 years (36.5%).

Figure 8: Deaths due to COVID-19 accounted for a third of all deaths in Wales

Percentage of the total deaths in each age group that were due to COVID-19, Wales, occurring in April 2020



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

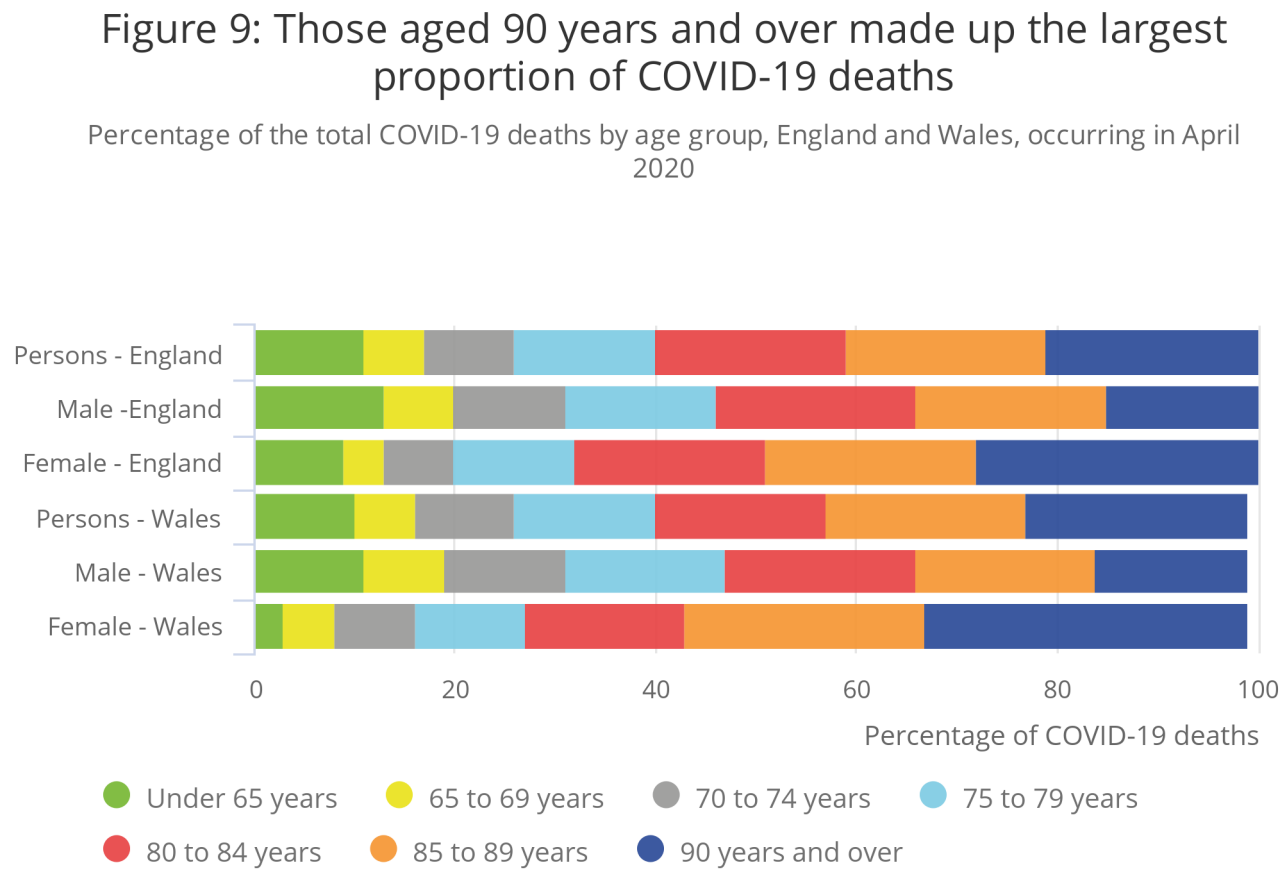
Notes:

1. Figures exclude deaths of non-residents.
2. Based on the date a death occurred rather than when it was registered.
3. Figures are provisional.

In April 2020 in Wales, 33.0% of all deaths occurring were due to COVID-19. When broken down by sex, this was 37.2% of all deaths for males and 28.9% for females. When looking at the proportion by age group, the highest proportion of deaths due to COVID-19 was in age group 85 years and over, with 33.6% of all deaths in this age group having an underlying cause of COVID-19. For males and females, the highest proportion of deaths due to COVID-19 was also in those aged 85 years and over with 39.2% and 30.2% respectively.

Figure 9: Those aged 90 years and over made up the largest proportion of COVID-19 deaths

Percentage of the total COVID-19 deaths by age group, England and Wales, occurring in April 2020



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

Notes:

1. Figures exclude deaths of non-residents.
2. Based on the date a death occurred rather than when it was registered.
3. Figures are provisional.

For both England and Wales, in April over one in five deaths due to COVID-19 occurred in those aged 90 years and over, at 21.0% and 22.1% respectively. The age group that made up the highest proportion of COVID-19 deaths in males was those aged 80 to 84 years, with this age group accounting for 19.6% of deaths in England and 19.0% of deaths in Wales. For females, the age group that made up the highest proportion of deaths due to COVID-19 was those aged 90 years and over with 27.8% of COVID-19 deaths in England and 30.7% of COVID-19 deaths in Wales.

The proportion of COVID-19 deaths is greater in the older age groups in females compared with males because the female population is larger than the male population in this age group. England and Wales population projections for 2020 show an estimated 939,000 females compared with 564,000 males.

6 . Pre-existing conditions of people who died with COVID-19

We define a pre-existing condition as any health condition mentioned on the death certificate that either came before the coronavirus (COVID-19) or was an independent contributory factor in the death. Where only COVID-19 was recorded on the death certificate, or COVID-19 and subsequent conditions caused by COVID-19 were recorded, we refer to these deaths as having “No pre-existing conditions”.

Of the 33,841 deaths that occurred in March and April 2020 involving COVID-19 in England and Wales, 30,577 (90.4%) had at least one pre-existing condition, while 3,264 (9.6%) had none. The mean number of pre-existing conditions for deaths involving COVID-19 in March and April 2020 was 2.3.

This section presents analysis for England and Wales combined, and the accompanying data tables present data for England and Wales combined as well as England and Wales separately.

Main pre-existing conditions

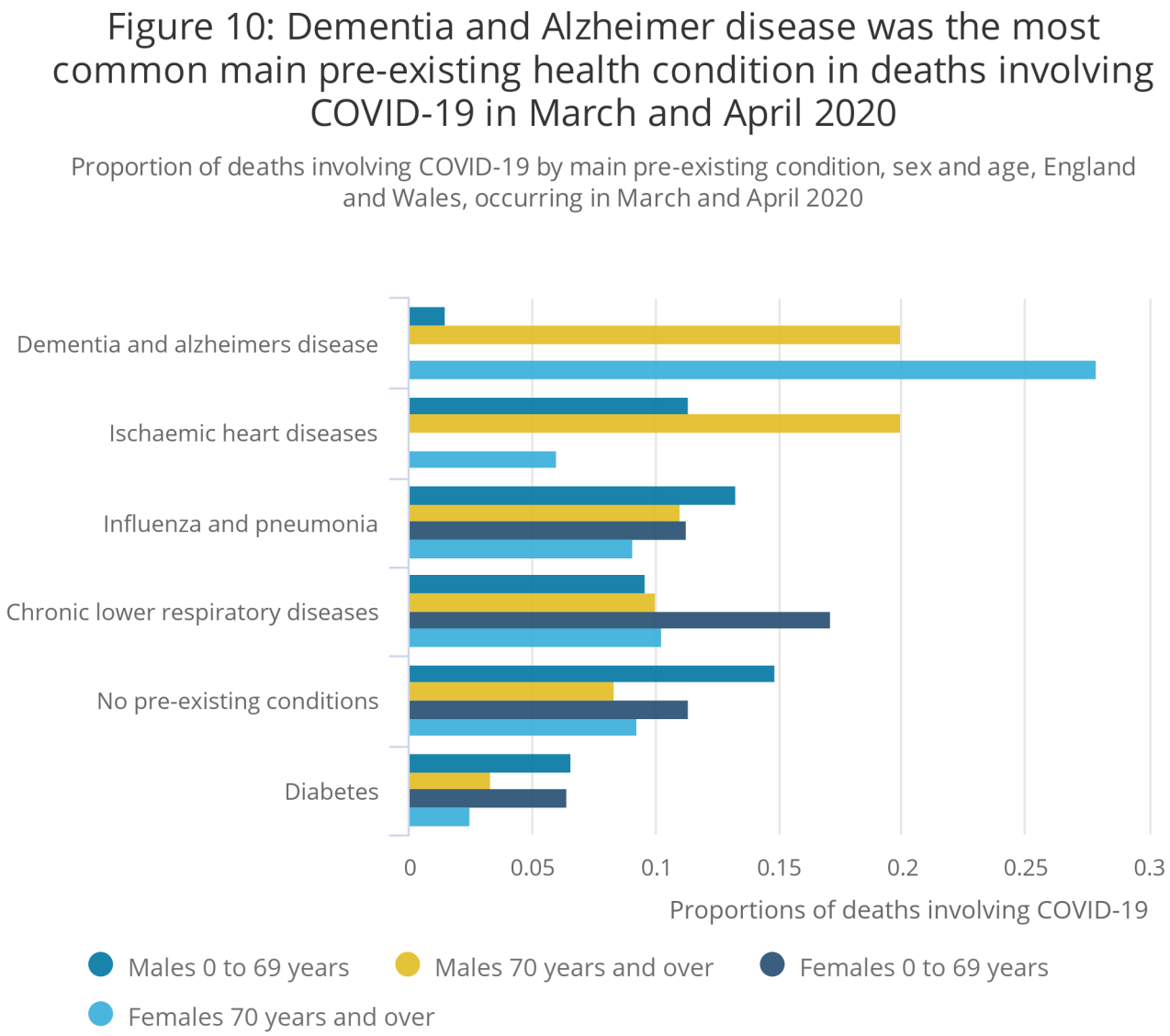
Here, we analyse deaths involving COVID-19 by the main pre-existing condition. This is defined as the one pre-existing condition that is, on average, most likely to be the underlying cause of death for a person of that age and sex had they not died from COVID-19. For more detail on how pre-existing conditions and main pre-existing conditions are derived, please see the accompanying methodology article, Measuring pre-existing health conditions in death certification – deaths involving COVID-19.

The most common main pre-existing condition in England and Wales was Dementia and Alzheimer disease, with 6,887 deaths (20.4% of all deaths involving COVID-19). This has changed from when we analysed March 2020 alone, when the most common main pre-existing condition was ischaemic heart diseases. Ischaemic heart diseases is now the second most common main pre-existing condition across all ages and sexes in England and Wales, with 3,647 deaths (10.8% of all deaths involving COVID-19 in March and April 2020).

The most common main pre-existing conditions differed by age group. Figure 10 shows the proportion of deaths involving COVID-19 with six main pre-existing cause groups, for males and females aged 0 to 69 years and 70 years and over. For age groups younger than age 70 years, “No pre-existing conditions” ranks much higher than in those aged 70 years and over, where conditions such as Dementia and Alzheimer disease are much more prominent.

Figure 10: Dementia and Alzheimer disease was the most common main pre-existing health condition in deaths involving COVID-19 in March and April 2020

Proportion of deaths involving COVID-19 by main pre-existing condition, sex and age, England and Wales, occurring in March and April 2020



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

Notes:

1. Based on deaths involving the coronavirus (COVID-19) rather than deaths where COVID-19 was the underlying cause of death.

2. Deaths occurring in March and April 2020 rather than deaths registered in March and April 2020.

3. Main pre-existing conditions are grouped using the Office for National Statistics's (ONS's) leading causes of deaths list and the International Classification of Diseases, tenth edition (ICD-10) blocks of causes.

The accompanying dataset provides breakdowns of the main pre-existing conditions for all persons, males and females by five-year age group from age 45 years onwards for England and Wales combined and separately.

All pre-existing conditions

Here, we analyse all pre-existing conditions on the death certificate, not just the main pre-existing condition. The average number of conditions across all ages and sexes in England and Wales was 2.3. This varied by age and by sex with males aged 70 years and over having an average of 2.4 pre-existing conditions, whereas males aged 0 to 69 years had an average of 2.1 pre-existing conditions.

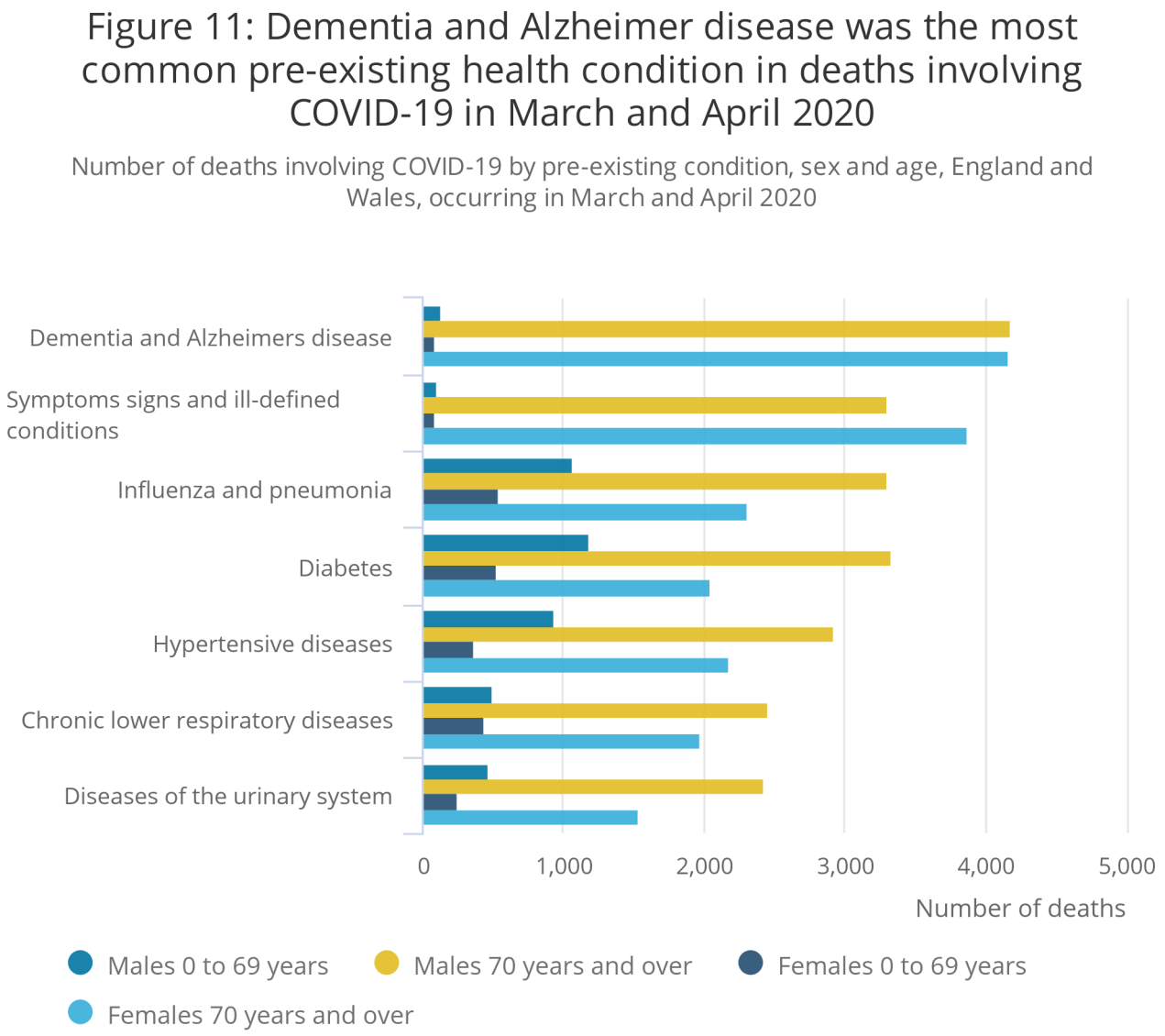
The most common pre-existing condition for all ages was Dementia and Alzheimer disease with 8,577 deaths across both sexes and all ages in England and Wales.

Figure 11 shows the counts of deaths involving COVID-19 for the most common pre-existing conditions. Deaths may be counted more than once here as someone may have more than one pre-existing condition.

The “Symptoms signs and ill-defined conditions” is mostly deaths with a code for “Old Age”.

Figure 11: Dementia and Alzheimer disease was the most common pre-existing health condition in deaths involving COVID-19 in March and April 2020

Number of deaths involving COVID-19 by pre-existing condition, sex and age, England and Wales, occurring in March and April 2020



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

Notes:

1. Figures include deaths of non-residents.
2. Based on the date a death occurred rather than when it was registered.
3. Figures are provisional.
4. In this report, we use the term “due to COVID-19” when referring only to deaths with an underlying cause of death as the coronavirus (COVID-19) and 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.
5. Pre-existing conditions are grouped using the Office for National Statistics’s (ONS’s) leading causes of deaths list and the International Classification of Diseases, tenth edition (ICD-10) blocks of causes.
6. Deaths may be counted more than once here as someone may have more than one pre-existing condition.

7 . Time taken for the deaths in March and April to be registered

Deaths should normally be registered within five days of the date of death, but there are a number of situations where the registration of a death will be delayed.

This section looks at how long the deaths that occurred in March and April 2020 took to be registered. As there is a delay between death occurrence and death registration, we do not know the final number of deaths that occurred in March or April 2020 yet. The median registration delay may therefore increase as those deaths not registered yet but occurring in March and April 2020 are registered. More information on this issue can be found in our impact of registration delays release.

Table 1 shows the median delay in days of death registration for deaths that occurred in March and April 2020 for all causes of death and for those involving the coronavirus (COVID-19). The median delay in registration was the same at four days for deaths involving COVID-19 and for all causes of death.

Table 1: Median delay in registration was the same for COVID-19 deaths and all causes of death in March and April 2020
Median registration delay, lower and upper quartiles, minimum and maximum delay for deaths occuring in England and Wales, March and April 2020

Statistics (days)	All causes of death	Deaths involving COVID-19
Median registration delay	4	4
Lower quartile	2	2
Upper quartile	6	6
Minimum	0	0
Maximum	64	56

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

Notes

1. Figures are provisional. Back to table
2. Based on deaths occurring in March and April 2020 rather than deaths registered in March and April 2020. Back to table

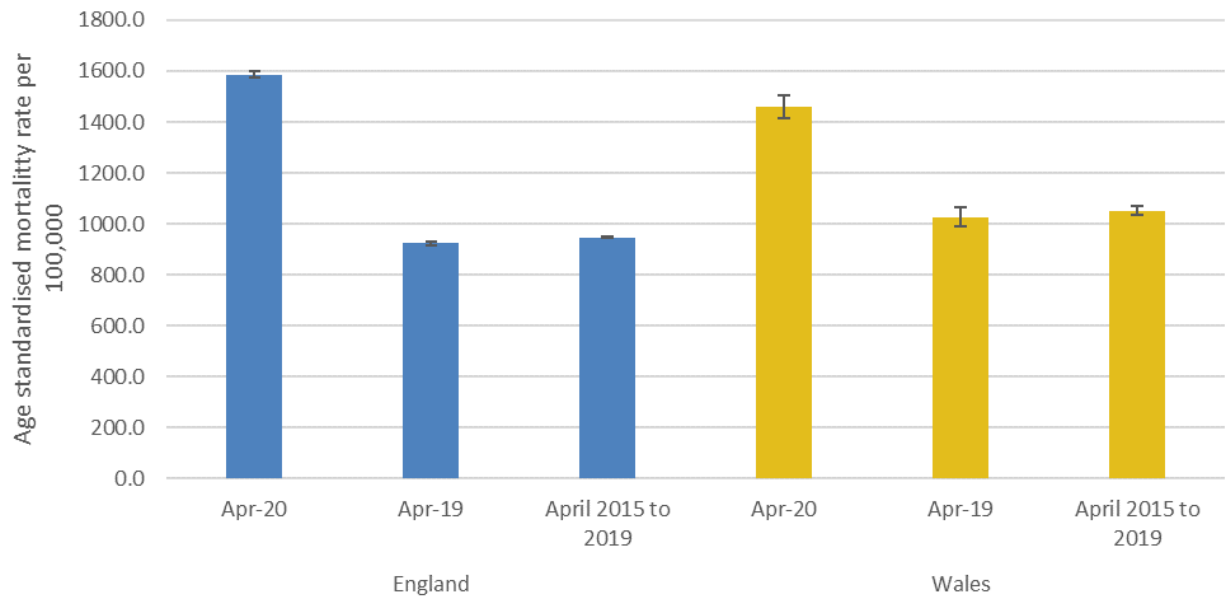
Looking at the percentage of deaths registered within seven days of death, 82.0% of all deaths that occurred in March and April 2020 were registered within seven days, whereas 86.4% of deaths involving COVID-19 that occurred in March and April 2020 were registered within seven days.

8 . COVID-19 and the overall mortality rate for April

Figure 12 shows the age-standardised mortality rate (ASMR) for April 2020 as well as comparative figures for April 2019 and the five-year April average between 2015 and 2019.

Figure 12: The overall mortality rate in April 2020 was higher than the five-year average

Age-standardised mortality rates for all deaths, per 100,000 persons, England and Wales, April 2020, April 2019, and the five-year average for April 2020



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

Notes:

1. Figures exclude deaths of non-residents.
2. Based on the date a death occurred rather than when it was registered.
3. Figures for 2020 are provisional.

It is important to note that the number of deaths for April 2020 is likely to increase as we receive more registrations. Currently, the rate of deaths occurring in April 2020 (1,587.0 deaths per 100,000 persons for England and 1,459.2 deaths per 100,000 persons for Wales) is significantly higher than the five-year average of April 2015 to 2019 (947.3 deaths per 100,000 persons for England and 1,051.7 deaths per 100,000 persons for Wales). It is also significantly higher when comparing with April 2019, which had 923.3 deaths per 100,000 persons for England and 1,026.3 deaths per 100,000 persons for Wales.

9 . Analysis of deaths involving COVID-19 data

Deaths registered monthly in England and Wales
Dataset | Released 15 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.

Pre-existing condition

A pre-existing condition is defined as any condition that either preceded the disease of interest (for example, COVID-19) in the sequence of events leading to death or was a contributory factor in the death but was not part of the causal sequence.

Main pre-existing condition

The main pre-existing condition is defined as the one pre-existing condition that is, on average, mostly likely to be the underlying cause of death for a person of that age and sex.

Registration delay

Mortality statistics are compiled from information supplied when deaths are certified and registered as part of civil registration, a legal requirement. According to the Births and Deaths Registration Act 1953, a death should be registered within five days unless it is referred to a coroner for investigation. Mortality statistics for a given time period can be based on occurrence (death date) or registration (registration date); registration delay is the difference between date of occurrence and date of registration.

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.

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 (ASMRs) and age-specific mortality rates for recent time periods and breakdowns of deaths involving the coronavirus (COVID-19) by associated pre-existing health conditions.

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 2 provides an overview of the differences in definitions between sources.

Table 2: Definitions of coronavirus (COVID-19) deaths between different sources

	DHSC COVID-19 (as published on GOV.UK) before 29 April	DHSC COVID-19 (as published on GOV.UK) from 29 April	ONS COVID-19 deaths registered	ONS COVID-19 death occurrence (actual date of death)	NHS England	Public Health Wales
Coverage	UK (however we only include England and Wales breakdowns for comparable coverage with ONS data)	UK (however we only include England and Wales breakdowns for comparable coverage with ONS data)	Registrations in England and Wales Selected UK figures are included in the weekly release	Registrations in England and Wales In discussions with devolved nations to create UK estimates in the near future	England only	Wales only
Inclusion	Deaths in hospitals	Includes any place of death, including care homes and community	Any place of death, including care homes and community	Any place of death, including care homes and community	Deaths in hospitals	Includes any place of death, including care homes and community
Timeliness	Deaths where patient has been tested for COVID-19	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	Deaths where patient has been tested for COVID-19
	Provided daily but not officially registered	Provided daily but not officially registered	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	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.

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 .

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.

Coronavirus (COVID-19) product page
Product page | Updated as and when new data are available
Brings together the latest data and analysis on the COVID-19 pandemic in the UK and its effect on the economy and society.

Coronavirus (COVID-19) roundup
Blog | Updated as and when data become available
Catch up on the latest data and analysis related to the COVID-19 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.

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.