

Deaths involving coronavirus (COVID-19) in Scotland

Week 23 (07 to 13 June 2021)



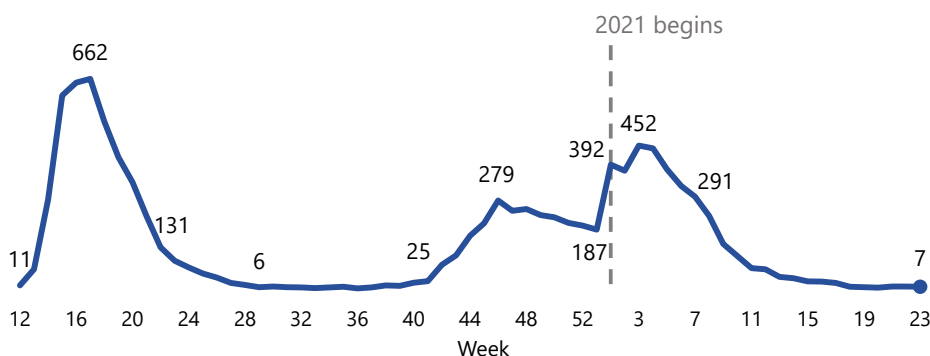
Published on 16 June 2021

This statistical report includes provisional statistics on the number of deaths associated with coronavirus (COVID-19) and the total number of deaths registered in Scotland, for week 23 of 2021 and additional monthly analysis on deaths occurring up to 31st May 2021.

COVID-19 deaths have been at a low level in the past month

There have been 8 or fewer deaths involving COVID-19 in each of the past six weeks. In the most recent week up to 13 June, 7 deaths involved COVID-19.

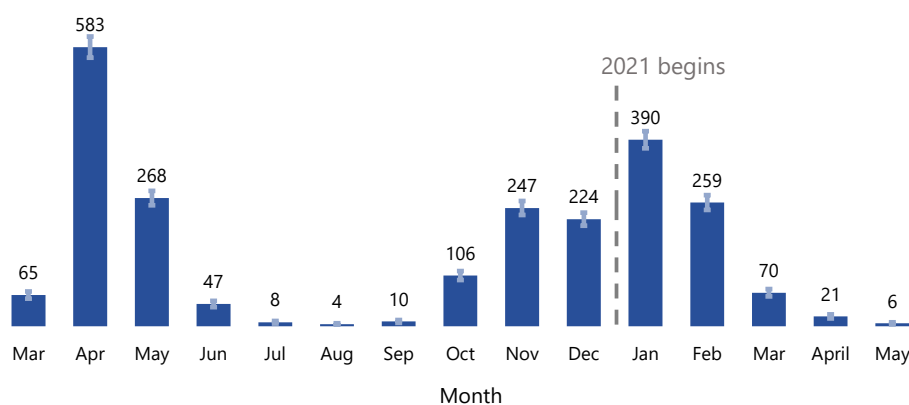
Deaths involving COVID-19



COVID-19 death rate close to its lowest value in Scotland in May

Accounting for age and population structure, 6 in every 100,000 people died from COVID-19 in Scotland in May. The lowest monthly rate is 4 per 100,000 in August 2020.

Deaths per 100,000 people involving COVID-19

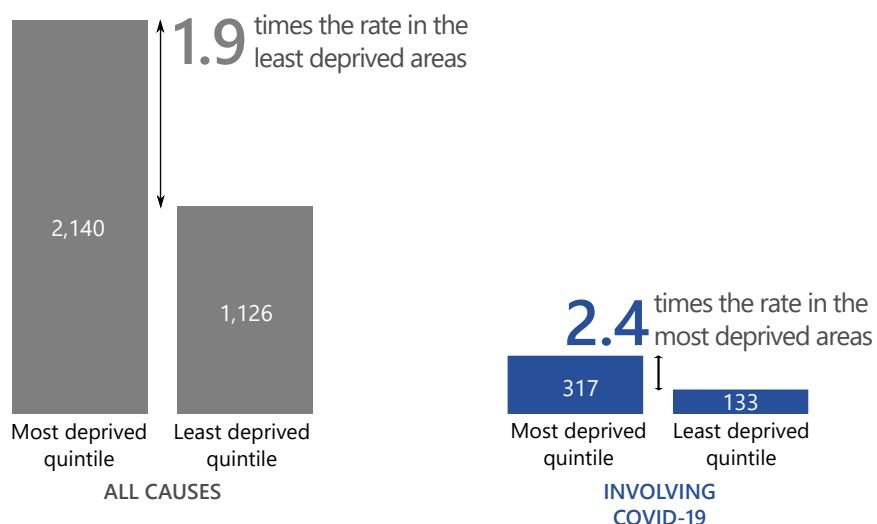


■ = 95% confidence interval

COVID-19 mortality more likely in most deprived areas

Since the beginning of the pandemic, the death rate from all causes (adjusted for age) was 1.9 times the rate in the least deprived areas. For deaths involving COVID-19, the gap was 2.4 times.

Deaths per 100,000 people by multiple deprivation



Key Findings

Deaths involving COVID-19, weekly registrations ([go to section](#))

- As at the 13th of June, there have been a total of 10,137 deaths registered in Scotland where the novel coronavirus (COVID-19) was mentioned on the death certificate. In the latest week there were 7 deaths, a decrease of 1 from the previous week.
- Of deaths involving COVID-19 in the latest week:
 - 4 were female, 3 were male.
 - 5 were aged 75 or older, the other 2 deaths were of people aged 65 to 74.
 - There were 2 deaths in South Lanarkshire, with one death in each of Aberdeen City, City of Edinburgh, East Dunbartonshire, Glasgow City and North Ayrshire, .
 - There were 4 deaths in care homes and 3 in hospitals.

Deaths from all causes, weekly registrations ([go to section](#))

- The number of deaths registered in Scotland in week 23 of 2021 was 1,142. This was 86 deaths more than the five year average for week 23 (8% above average).
- In week 23 there were 31 fewer deaths in care homes (13% below average), 101 excess deaths at home or in non-institutional settings (33% above average) and 15 more deaths in hospitals (3% above average), compared to the 2015-2019 average.
- There were 86 excess deaths across all locations for the latest week. There were 43 more deaths from cancer compared to the five year average, with 8 more deaths from dementia/Alzheimer's, 5 more deaths from circulatory diseases and 50 excess deaths from other causes. The number of deaths where COVID-19 was the underlying cause was 4. Deaths from respiratory causes (-23) were below average.

Monthly mortality analysis, deaths occurring up to 31 May 2021 ([go to section](#))

- The age standardised rate for deaths involving COVID-19 fell to 6 deaths per 100,000 people in May 2021. Throughout the pandemic, the highest this has been was 583 deaths per 100,000 people in April 2020.
- Age-standardised rates for males were significantly higher than for females (186 compared with 128 per 100,000 population in the period from March 2020 to May 2021).
- After adjusting for age, people living in the most deprived areas were 2.4 times as likely to die with COVID-19 as those in the least deprived areas. The size of this gap has slowly widened from 2.1 to 2.4 over the period of the pandemic.
- Of the 10,126 deaths involving COVID-19 between March 2020 and May 2021, 93% (9,435) had at least one pre-existing condition. One quarter of all people whose death involved COVID-19 had dementia or Alzheimer's disease. This was the most common main pre-existing condition.
- In the period from March 2020 to May 2021, there were 12 deaths where post COVID-19 conditions (including long COVID) were mentioned on the death certificate.
- There have been 4 deaths in Scotland where the underlying cause of death was adverse effects of COVID-19 vaccines. By 31 May 2021 [statistics from Public Health Scotland](#) state that 3.27 million people had been given at least one vaccine dose.

Figure 1: Weekly deaths involving COVID-19 in Scotland, week 12 2020 to week 23 2021

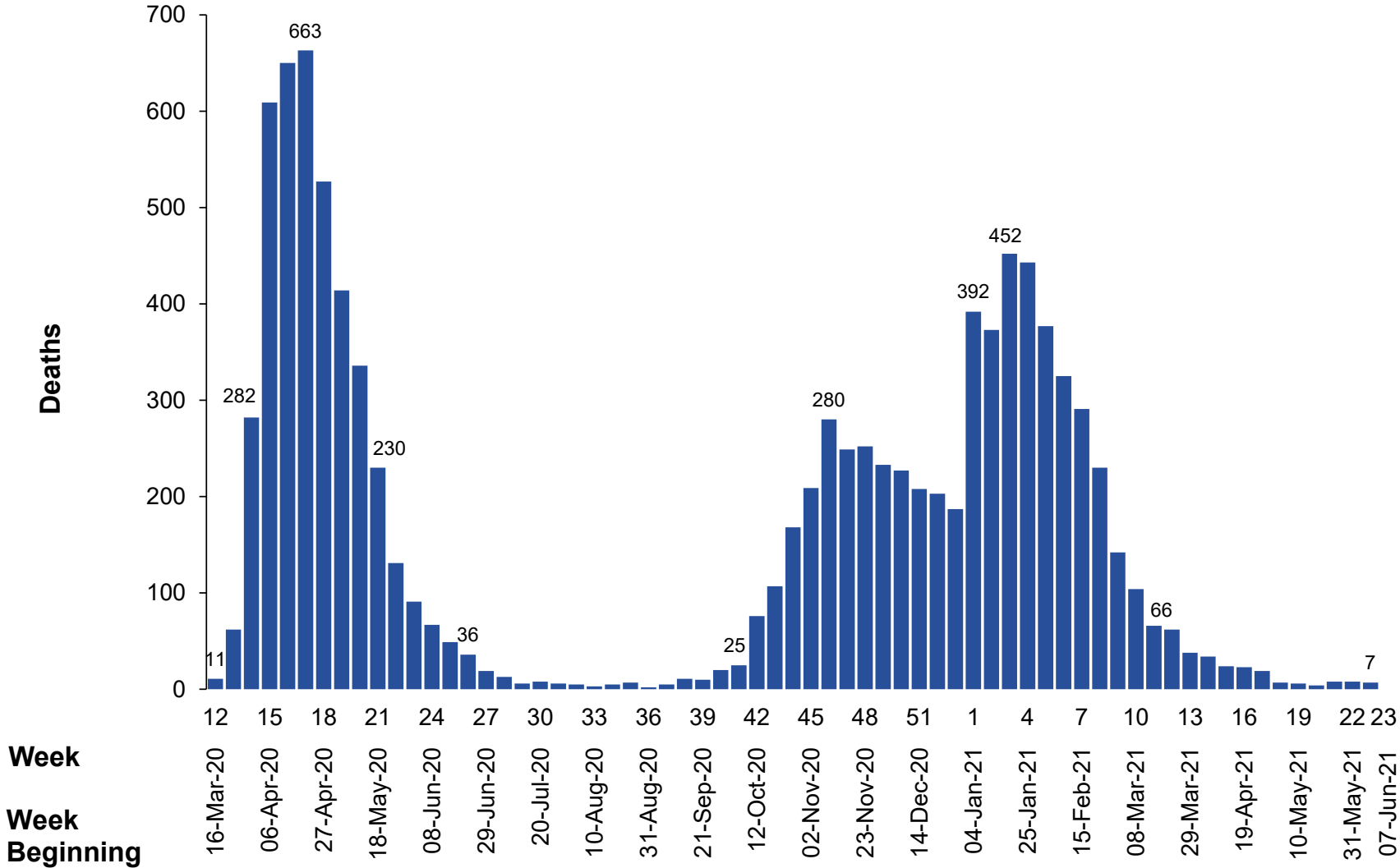
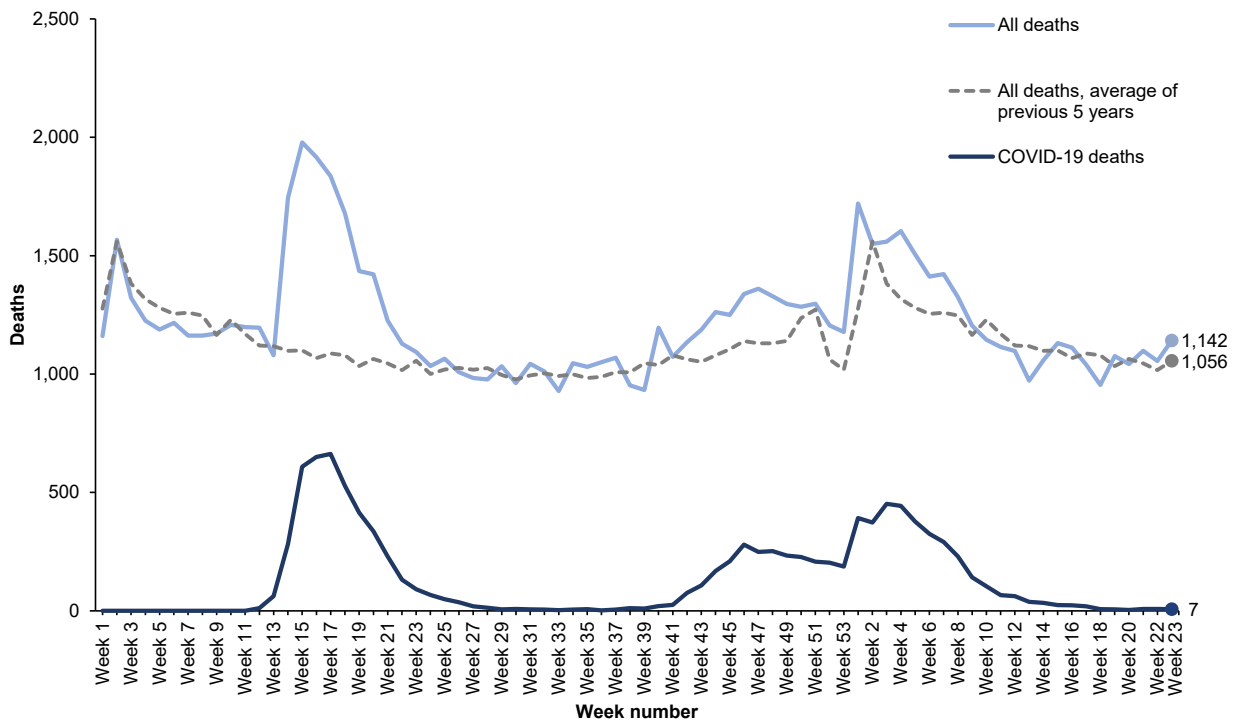


Figure 2 shows that in the most recent week (week 23, beginning 7 June 2021), there were 8% more deaths than the average for the period 2015-2019. Excess deaths were very high in spring 2020 and returned to normal levels throughout the summer before increasing in the autumn and winter. During the autumn and winter weekly excess deaths were at a lower level than in the spring but lasted for a longer period of time.

Figure 2: Deaths by week of registration, Scotland, 2020 and 2021



Where have COVID-19 deaths taken place?

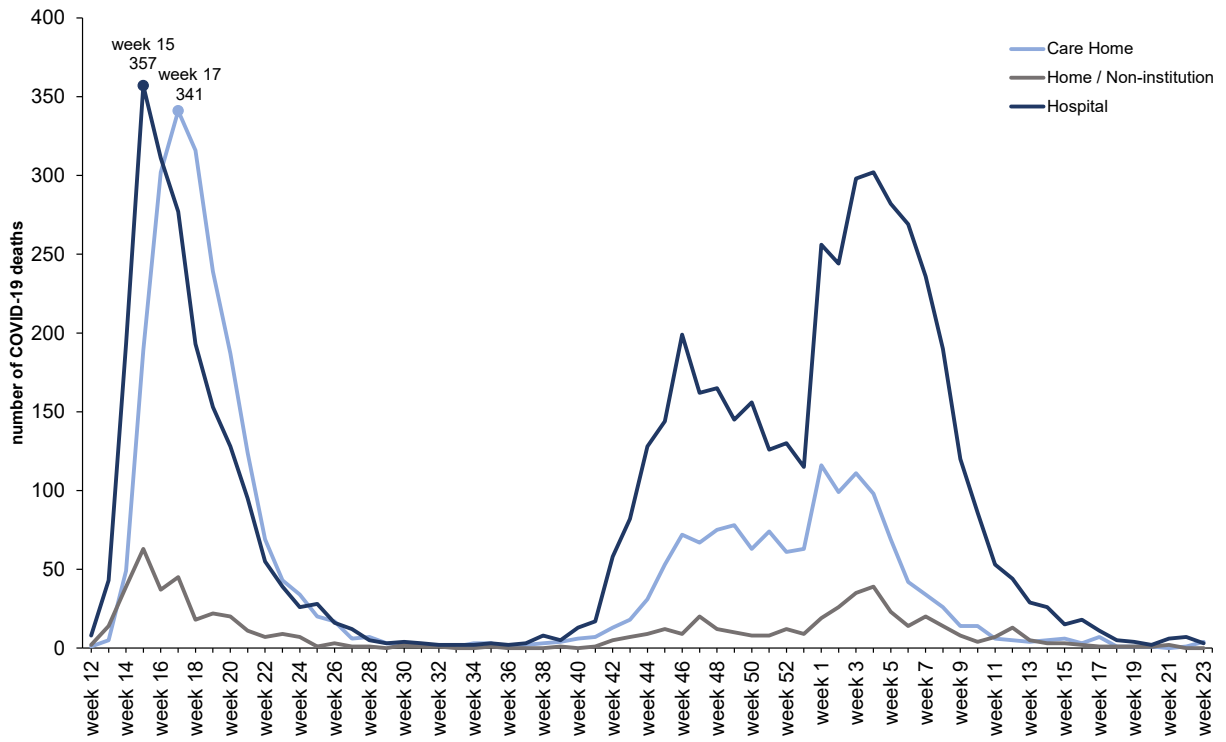
Of the 10,137 deaths involving COVID-19 which have been registered to date, 60% related to deaths in hospitals. 33% of deaths were in care homes and 7% of deaths were at home or non-institutional settings.

To put these figures into context, in 2019 around 48% of all deaths occurred in hospitals, 24% in care homes and 28% in home or non-institutional settings.

Figure 3 shows the number of deaths involving COVID-19 by location for week 12 of 2020 to week 23 of 2021.

Breakdowns of location of death within health board and council area are available on the [related statistics](#) page of our website

Figure 3: Deaths involving COVID-19 by location of death



Date of occurrence vs date of registration

Most of the figures throughout the weekly report are based on the date a death was registered rather than the date the death occurred. There is on average a 3 day gap between a death occurring and being registered. Please find a more detailed explanation in the [methodology](#) document.

Why focus on date of registration rather than the actual date of death?

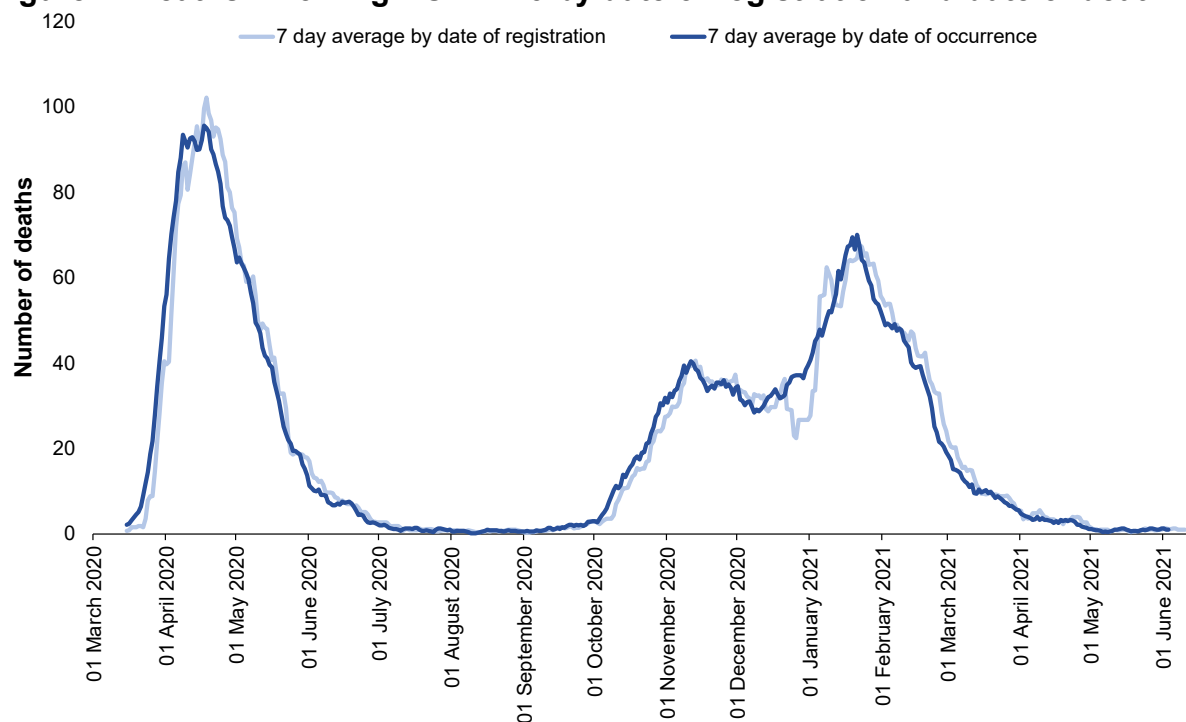
The death count based on **date of registration** is more timely but is incomplete and is subject to fluctuations due to public holidays.

The death count based on **date of death** is more complete and gives a more accurate trend on the progress of the virus, but less timely (a one week delay compared to date of registration figures).

Based on date of registration, the trend, which had been falling since mid-November, continued to fall with a substantial dip around Christmas (as registration offices closed for public holidays) and then increased rapidly in early January as registration offices caught up with the backlog of registrations. The trend based on date of occurrence shows a different picture and indicates that deaths began to increase as early as mid-December, and continued to increase through most of January. Towards the end of January the seven day average for deaths by date of occurrence began to fall and has continued to fall since.

This report includes all deaths which were registered by 13th of June. There will, however, be deaths which occurred before this date but were not yet registered. In order to include a more complete analysis based on date of occurrence, we need to wait an additional week to allow the registration process to fully complete. The trend based on date of occurrence therefore only includes deaths which occurred by 6th June as the majority of these are likely to have been registered by now.

Figure 4: Deaths involving COVID-19 by date of registration and date of death



Monthly mortality analysis (deaths occurring up to 31 May 2021)

This section provides an in-depth analysis of deaths which **occurred** in Scotland between March 2020 and May 2021. This is a different basis from the rest of this report which (unless specified) is based on the date deaths were **registered**.

Age-standardised mortality rates

When adjusting for size and age structure of the population, for all deaths involving COVID-19 between March 2020 and May 2021 there were 153 deaths per 100,000 population. Rates for males were significantly higher than for females (186 compared with 128 per 100,000).

Why use age-standardised mortality rates?

Age-standardised mortality rates are a better measure of mortality than numbers of deaths, as they account for the population size and age structure and provide more reliable comparisons between groups or over time. As the probability of death tends to increase with age, changes in the age-distribution of the population could have an effect on any apparent trend shown by numbers of deaths, or crude death rates (dividing the number of deaths by the total population).

Similarly, if two groups' populations have different age-distributions, using age-standardised rates will remove the effect of the differences between the groups and show which one has the higher mortality.

Age-standardised rates are therefore more reliable for comparing mortality over time and between different countries, different areas within a country, deprivation quintiles, and different sexes.

More information on the calculation of age-standardised mortality rates is available on our [website](#).

Looking only at deaths where COVID-19 was the underlying cause, the rates were only slightly lower – reflecting the fact that it was the underlying cause in the vast majority (88%) of deaths involving COVID-19. In the combined data for March 2020 to May 2021, the age-standardised mortality rate was 135 per 100,000 population, with a similar differential between males (165) and females (112).

The age standardised death rate for deaths involving COVID-19 fell significantly in May 2021 compared to April 2021, from 21 to 6 deaths per 100,000 population. This was the fourth consecutive month where the age standardised rate for deaths involving COVID-19 fell.

Figure 5a: Age standardised rates for deaths involving COVID-19 by sex, between 1st March 2020 and 31st May 2021

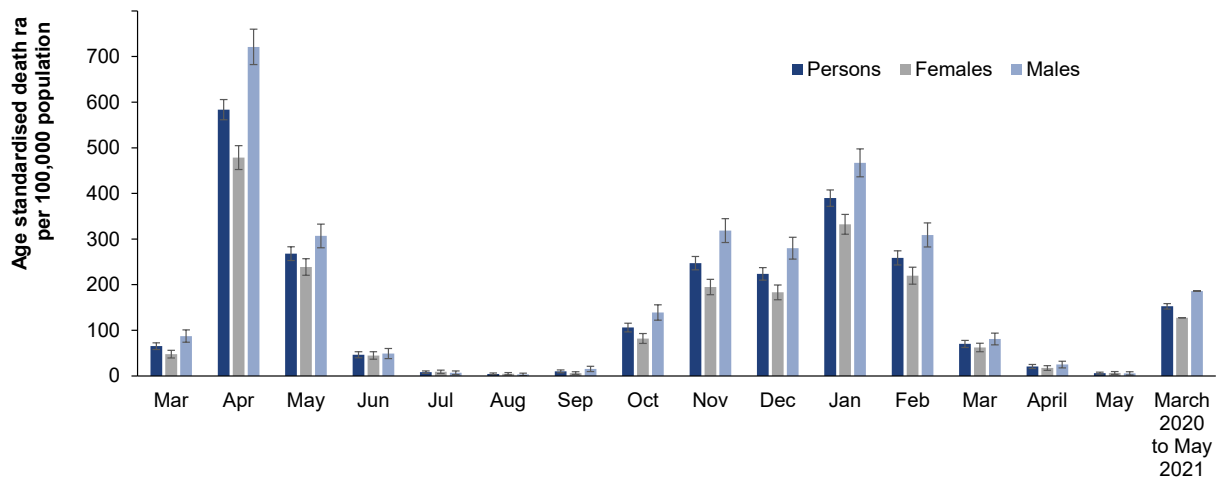
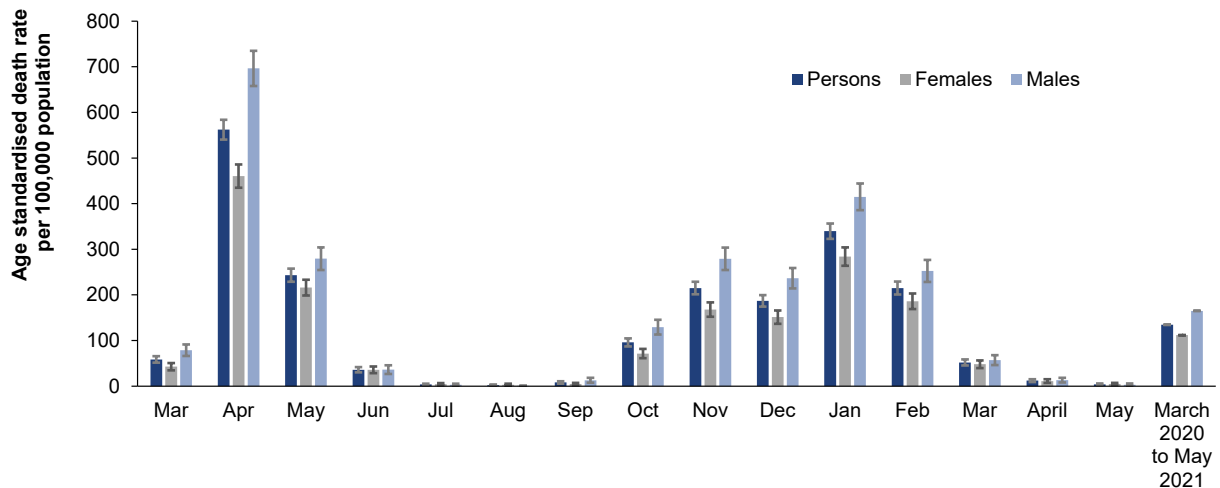


Figure 5b: Age standardised rates for deaths where COVID-19 was the underlying cause, by sex, between 1st March 2020 and 31st May 2021



The age-standardised mortality rate from all causes was 1,202 per 100,000 population in March 2020 to May 2021. To put this figure into context the age-standardised mortality rate from all causes in 2019 was 1,108 per 100,000 population and was last above this level in 2008 (1,283 per 100,000 population).

Leading causes of death

As this analysis compares different causes of death it is based on the underlying cause of death and therefore the figures for COVID-19 only include those deaths where it was the underlying cause rather than all those in which it was mentioned.

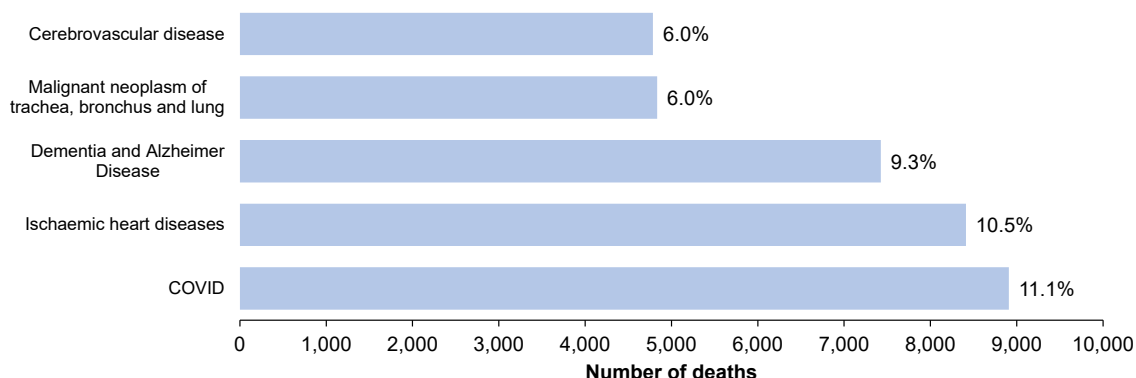
The leading cause of death analysis is based on a list of causes developed by the World Health Organisation (WHO). There are around 60 categories in total and cancers are grouped separately according to the type of cancer. For example, lung, breast and prostate cancer are all counted as separate causes. The full [list](#) of leading causes is available on the ONS website.

Over the period between March 2020 and May 2021, the leading cause of death was COVID-19 (8,909 deaths, 11.1% of all deaths) followed by ischaemic heart diseases (8,411 10.5%) and dementia and Alzheimer's disease (7,426, 9.3%).

The most common cause of death in May 2021 was ischaemic heart diseases, which accounted for 12.6% of all deaths last month. COVID-19 had previously been the most common cause of death for every month between November 2020 and February 2021 (inclusive)

Between June 2020 and September 2020, COVID-19 didn't appear in the top five most common causes of death, and hasn't made the top five in the past three months (March to May 2021).

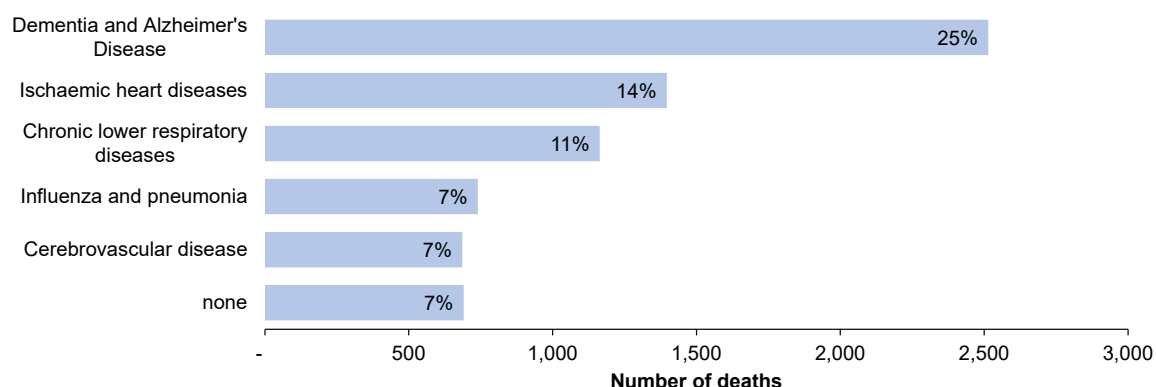
Figure 6: Leading causes of death - 1st March 2020 and 31st May 2021



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

Of the 10,126 deaths involving COVID-19 between March 2020 and May 2021, 93% (9,435) had at least one pre-existing condition.

Figure 7: Main pre-existing medical condition in deaths involving COVID-19, between 1st March 2020 and 31st May 2021



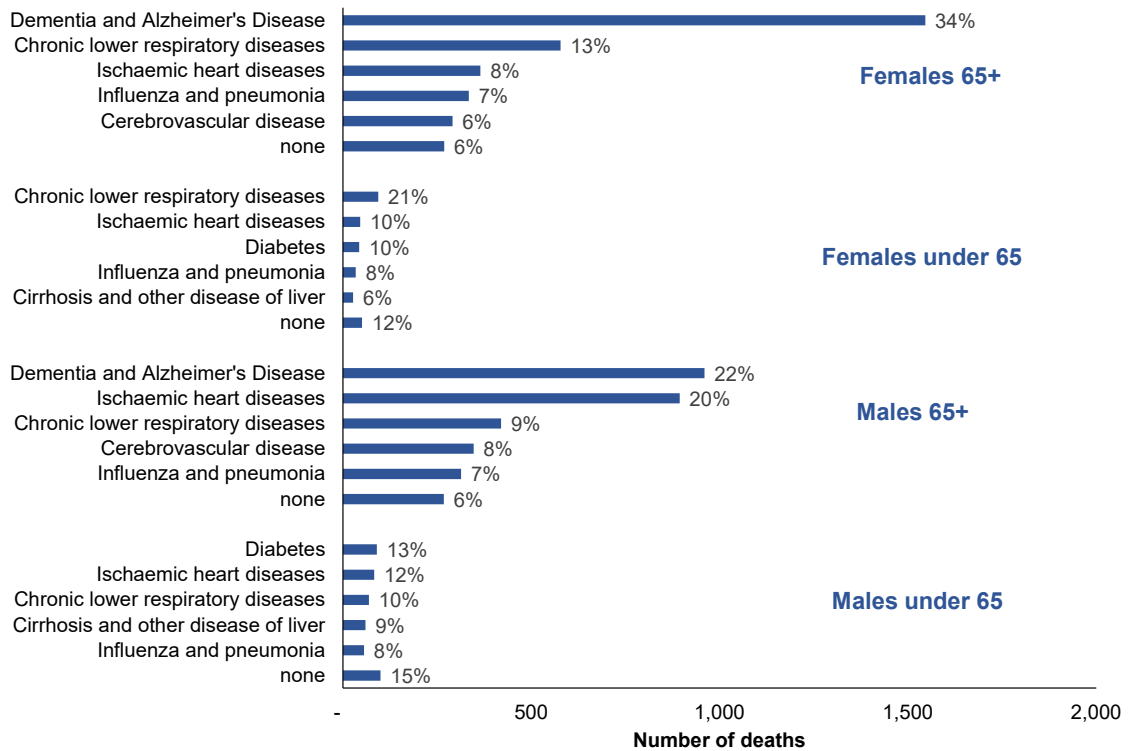
The most common main pre-existing condition among those who died with COVID-19 was dementia and Alzheimer's disease (25%), followed by ischaemic heart disease (14%), chronic lower respiratory diseases (11%), influenza and pneumonia (7%) and cerebrovascular disease (7%).

Pre-existing conditions are defined as a health condition mentioned on the death certificate which either came before COVID-19 or was an independent contributory factor in the death. Where only COVID-19 was recorded on the death certificate, or only COVID-19 and subsequent conditions caused by COVID-19 were recorded, these deaths are referred to as having no pre-existing conditions.

We have used methodology developed by ONS to determine 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, refer to the [methodology paper](#).

Pre-existing conditions differed by age and sex. For both males and females over 65 the main pre-existing condition was dementia and Alzheimer's disease (22% and 34% of all COVID-19 deaths respectively). For females under 65, the most common main pre-existing condition was chronic lower respiratory diseases (21%) and for males under 65 it was diabetes (13%). 12% of females and 15% of males under 65 who died with COVID-19 had no pre-existing condition, although it should be noted that deaths in this age group were relatively low.

Figure 8: Main pre-existing medical condition by age and sex, in deaths involving COVID-19 between 1st March 2020 and 31st May 2021



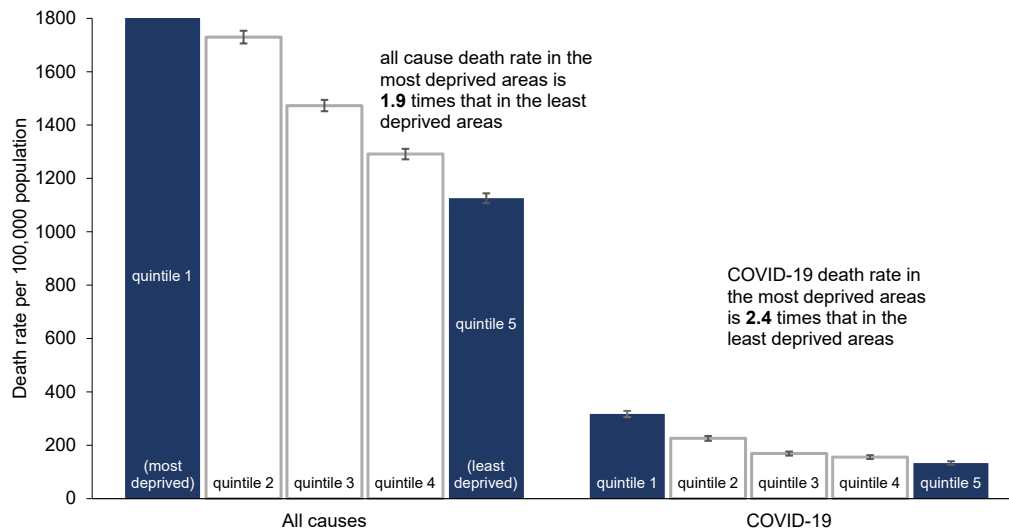
Mortality by deprivation

Age-standardised death rates from all causes are generally higher in the most deprived areas than in the least deprived areas. The rate in the most deprived quintile was 1.9 times the rate in the least deprived quintile between March 2020 and May 2021.

The deprivation gap is greater when looking at deaths involving COVID-19. The rate in the most deprived quintile (317 per 100,000 population) was 2.4 times the rate in the least deprived quintile (133 per 100,000 population). The size of this gap has widened from 2.1 to 2.4 across the period of the pandemic.

Deprivation quintiles are based on the Scottish Index of Multiple Deprivation (SIMD). This is an area based measure of deprivation. Quintiles are allocated according to the deceased's usual place of residence.

Figure 9: Age-standardised death rates by SIMD quintile between 1st March 2020 and 31st May 2021

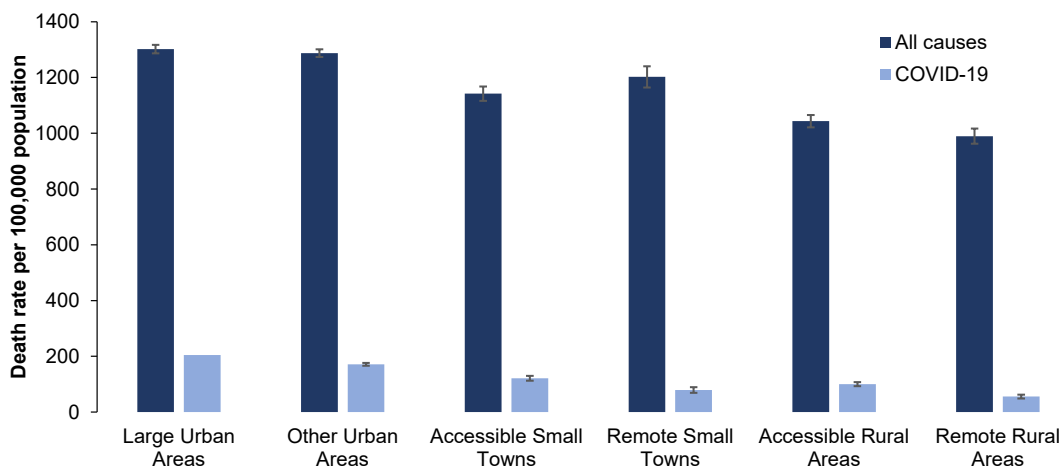


Mortality by urban rural classification

The age-standardised rate for deaths involving COVID-19 in large urban areas (205 deaths per 100,000 population) was 3.7 times the rate in remote rural locations (56 per 100,000 population).

The gap was substantially smaller when considering the rate of deaths from all causes (the rate in large urban areas was 1.3 times that in remote rural areas).

Figure 10: Age-standardised death rates by urban rural classification between 1st March 2020 and 31st May 2021

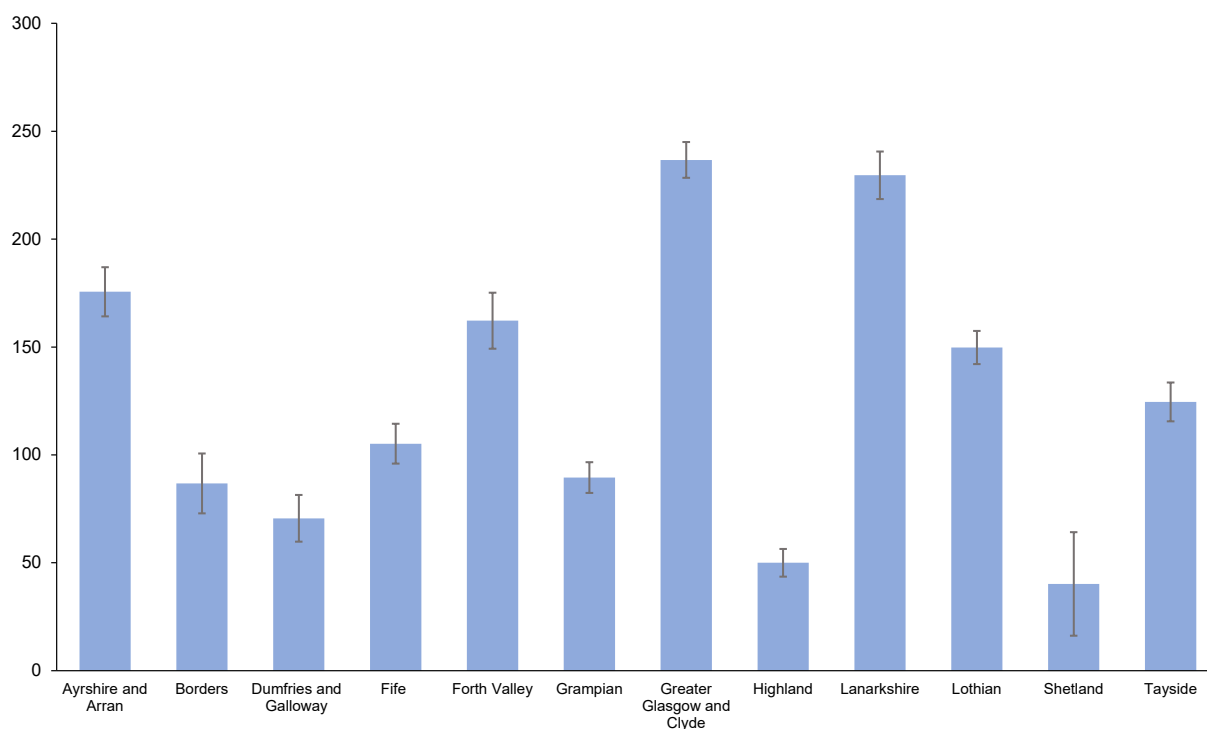


Age-standardised death rates by health board and council area

Figure 11 shows that Greater Glasgow and Clyde had the highest rate of all health boards (237 per 100,000 population), followed by Lanarkshire (230) and Ayrshire and Arran (176).

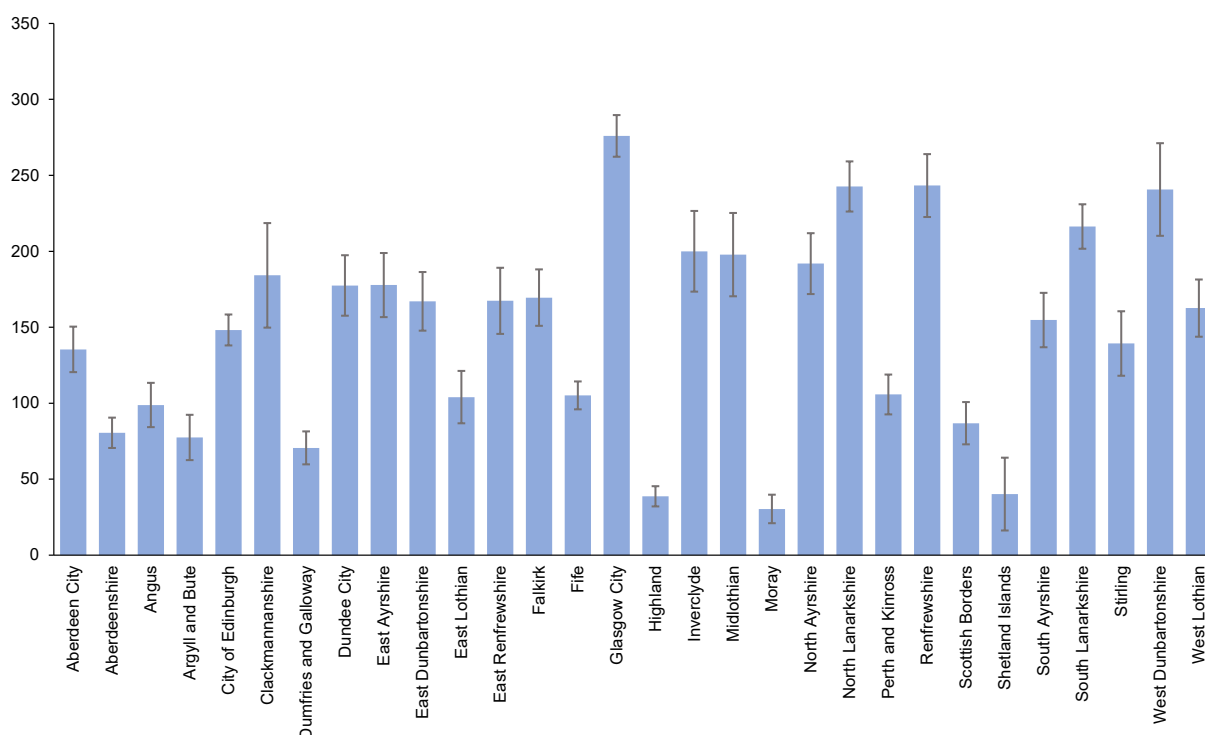
Rates are not shown for Orkney and Western Isles as the number of deaths involving COVID-19 are too low to calculate robust age-standardised rates.

Figure 11: age standardised rates for deaths involving COVID-19 between 1st March 2020 and 31st May 2021 in NHS health boards



Glasgow City had the highest age-standardised death rate of all council areas (276 per 100,000 population), followed by Renfrewshire (243), North Lanarkshire (243) and West Dunbartonshire (241). Moray (30 per 100,000 population), Highland (39) and Shetland Islands (40) had the lowest rates (in addition to Na h-Eileanan Siar and Orkney whose numbers were too low to calculate rates) (Figure 12).

Figure 12: Age-standardised rates for deaths involving COVID-19 between 1st March 2020 and 31st May 2021 in Council areas



COVID-19 deaths by occupation

Analysis by major occupation group (of deaths involving COVID-19 of people aged 20-64 years old) showed that the highest number of deaths occurred among process, plant and machine operatives (130 deaths and an age-standardised death rate of 61.2 per 100,000 population) followed by elementary occupations (110 deaths, 38 per 100,000 population). For context, there were 697 COVID-19 deaths across all occupations, with a rate of 25.2 per 100,000 population. People in professional occupations had the lowest death rate (40 deaths, 6.6 per 100,000 population). ([Table 10](#))

Compared to the average COVID-19 death rate for all occupations, health care workers had a lower death rate (12.9 per 100,000 population) whilst social care workers had a higher rate (41.1 per 100,000 population).

It is important to note that these are the occupations as stated on the death certificate. It does not mean that the individuals contracted the virus while at work, merely that this was their occupation at the time of their death.

COVID-19 deaths at a small area level

A breakdown of deaths involving COVID by intermediate zone is available in [table 11](#). Intermediate zones are a statistical geography that sit between datazones and local authorities. There are 1,279 intermediate zones covering the whole of Scotland and their populations ranges between 2,500 and 6,000.

Deaths involving COVID-19 by ICD-10 code

[Table 12](#) shows all deaths with ICD-10 codes related to COVID-19 following the release of additional ICD-10 codes by the World Health Organisation (WHO).

In the period from March 2020 to May 2021, there were 12 deaths where post COVID-19 conditions (including long COVID) were mentioned on the death certificate.

Between December 2020 and the end of May 2021 [statistics from Public Health Scotland](#) state that 3.27 million people had been given at least one COVID-19 vaccine dose. Over this period there have been 4 deaths where the underlying cause of death was reported as being due to adverse effects of COVID-19 vaccines.

Table 12: Number of deaths with ICD-10 codes related to COVID-19 mentioned on the death certificate, Scotland, 1st March 2020 – 31st May 2021

ICD-10 code	Description	Deaths where this code was mentioned on the death certificate	of which, deaths where this code was the underlying cause
U07.1	COVID-19, virus identified	8,557	7,464
U07.2	COVID-19, virus not identified	1,566	1,445
U08.9	Personal history of COVID-19, unspecified	0	:
U09.9	Post COVID-19 condition, unspecified	12	:
U10.9	Multisystem inflammatory syndrome associated with COVID-19, unspecified	0	0
U11.9	Need for immunisation against COVID-19, unspecified	0	:
U12.9	COVID-19 vaccines causing adverse effects in therapeutic use, unspecified	4	4

Why are the NRS number of deaths different from the Scottish Government daily updates?

Put simply - they are two different measures that each have a valuable role in helping to monitor the number of deaths in Scotland involving COVID-19.

Scottish Government daily updates

These are provided by Health Protection Scotland (HPS) and count:

- all people who have had a positive test for COVID-19 and died within 28 days of their first positive test.

These are important because they are available earlier, and give a quicker indication of what is happening day by day and are broadly comparable with the figures released daily for the UK by the Department for Health and Social Care.

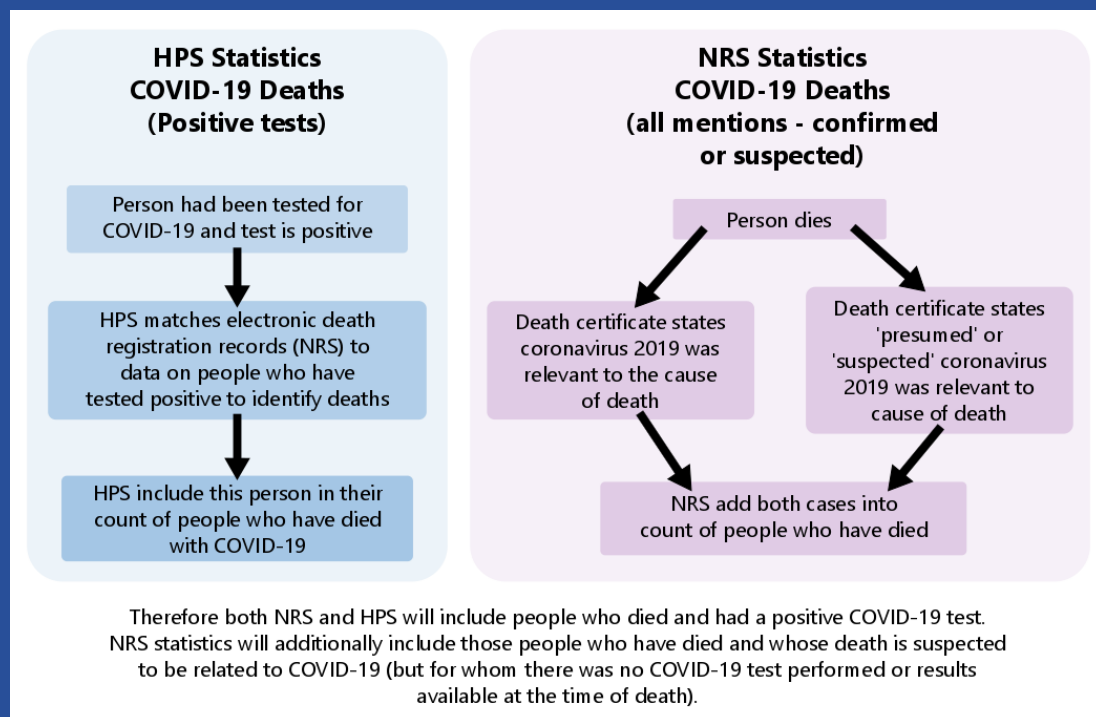
NRS weekly death totals

The figures in this publication count:

- all deaths where COVID-19 was mentioned on the death certificate by the doctor who certified the death. This includes cases where the doctor noted that there was suspected or probable coronavirus infection involved in the death.

As a result these weekly totals are likely to be higher than the daily figures - because the daily updates only include those who tested positive for the virus.

Using the complete death certificate allows NRS to analyse a lot of information, such as location of death and what other health conditions contributed to the death.



How do NRS compile these statistics?

- Weekly figures are based on the date of registration. In Scotland deaths must be registered within 8 days but in practice, the average time between death and registration is around 3 days.
- Figures are allocated to weeks based on the ISO8601 standard. Weeks begin on a Monday and end on a Sunday. Often weeks at the beginning and end of a year will overlap the preceding and following years (e.g. week 1 of 2020 began on Monday 30 December 2019) so the weekly figures may not sum to any annual totals which are subsequently produced.
- Deaths involving COVID-19 are defined as those where COVID-19 is mentioned on the death certificate, either as the underlying cause of death or as a contributory cause. Cause of death is coded according to the International Statistical Classification of Diseases and Related Health Conditions 10th Revision (ICD-10). The relevant codes included in this publication are U07.1, U07.2, U09.9 and U10.9.
- Figures include deaths where 'suspected' or 'probable' COVID-19 appears on the death certificate.
- From the week beginning 22 March 2021, new ICD-10 codes issued by the World Health Organisation (WHO) were also used to code deaths involving COVID-19. U09.9 is used for 'post-COVID' conditions, when death occurred after acute or ongoing COVID-19. U10.9 is used in the rare cases where 'Kawasaki-like' syndrome is caused by COVID-19. Data back to March 2020 has been recoded to ensure consistency of the time series.
- Data are provisional and subject to change in future weekly publications. The data will be finalised in June 2021. Reasons why the data might be revised later include late registration data being received once the week's figure have been produced or more information being provided by a certifying doctor or The Crown Office and Procurator Fiscal Service (COPFS) on the cause of death.
- Certain user enquiries for ad-hoc analysis related to COVID-19 deaths have been published on our [website](#).
- The weekly publication includes breakdowns by sex, age, health board, local authority and location of death. It also includes an analysis of excess deaths by location and broad cause of death. We also publish a comprehensive and detailed analysis of mortality on a monthly basis (this publication).
- NRS mortality data (COVID-19 and excess deaths) continue to be made available on a weekly basis through the [Scottish Government's COVID-19 dashboard](#)

Index of available analysis on registered deaths involving COVID-19

Breakdown	Frequency	When Added	Latest Period Covered	Date Last updated
Age group	Weekly	8 th April 2020	Week 23	16 th June 2021
Sex	Weekly	8 th April 2020	Week 23	16 th June 2021
Location	Weekly	15 th April 2020	Week 23	16 th June 2021
Health Board	Weekly	8 th April 2020	Week 23	16 th June 2021
Local Authority	Weekly	22 nd April 2020	Week 23	16 th June 2021
Excess deaths by cause	Weekly	22 nd April 2020	Week 23	16 th June 2021
Excess deaths by cause and location	Weekly	17 th June 2020	Week 23	16 th June 2021
Age-standardised mortality rates – Scotland	Monthly	13 th May 2020	May 2021	16 th June 2021
Age-standardised mortality rates – sub-Scotland	Monthly	17 th June 2020	March 2020 – May 2021	16 th June 2021
Leading causes of death	Monthly	13 th May 2020	May 2021	16 th June 2021
Pre-existing conditions	Monthly	13 th May 2020	May 2021	16 th June 2021
Deprivation	Monthly	13 th May 2020	March 2020 – May 2021	16 th June 2021
Urban Rural	Monthly	13 th May 2020	March 2020 – May 2021	16 th June 2021
Daily occurrences by location of death	Monthly	13 th May 2020	May 2021	16 th June 2021
Occupation	Monthly	17 th June 2020	March 2020 – May 2021	16 th June 2021
Intermediate Zone	Monthly	17 th June 2020	March 2020 – May 2021	16 th June 2021
Deaths by ICD-10 codes	Monthly	16 th June 2021	March 2020 – May 2021	16 th June 2021
Ethnic Group	One-off	8 th July 2020	March to mid-June	11 th November 2020
Disability	One-off	24 th March 2021	March to Jan	24 th March 2021

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Preserving the past – We look after Scotland’s national archives so that they are available for current and future generations, and we make available important information for family history.

Recording the present – At our network of local offices, we register births, marriages, civil partnerships, deaths, divorces and adoptions in Scotland.

Informing the future – We are responsible for the Census of Population in Scotland which we use, with other sources of information, to produce statistics on the population and households.

You can get other detailed statistics that we have produced from the Statistics section of our website. Scottish Census statistics are available on the Scotland’s Census website.

We also provide information about future publications on our website. If you would like us to tell you about future statistical publications, you can register your interest on the Scottish Government ScotStat website.

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