

Deaths involving coronavirus (COVID-19) in Scotland

Week 49 (6 December to 12 December 2021)



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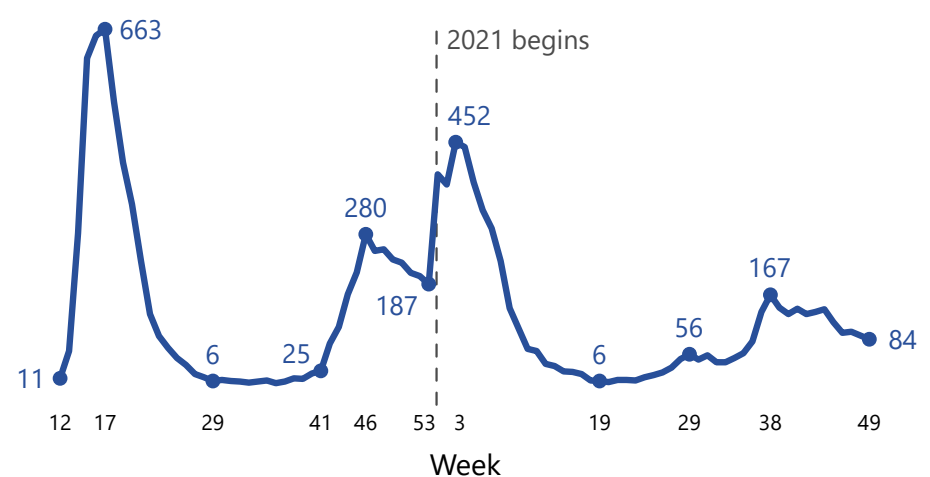
This statistical report includes provisional statistics on the number of deaths associated with coronavirus (COVID-19) and the total number of deaths registered in Scotland, for week 49 of 2021 and additional monthly analysis on deaths occurring up to 30th November 2021.

There have been 12,303 deaths involving COVID-19 since March 2020

Deaths involving COVID-19 rose between June and September 2021, reaching 167 deaths involving COVID-19 in week 38.

However, since then the numbers have been falling.

Deaths involving Covid-19 per week

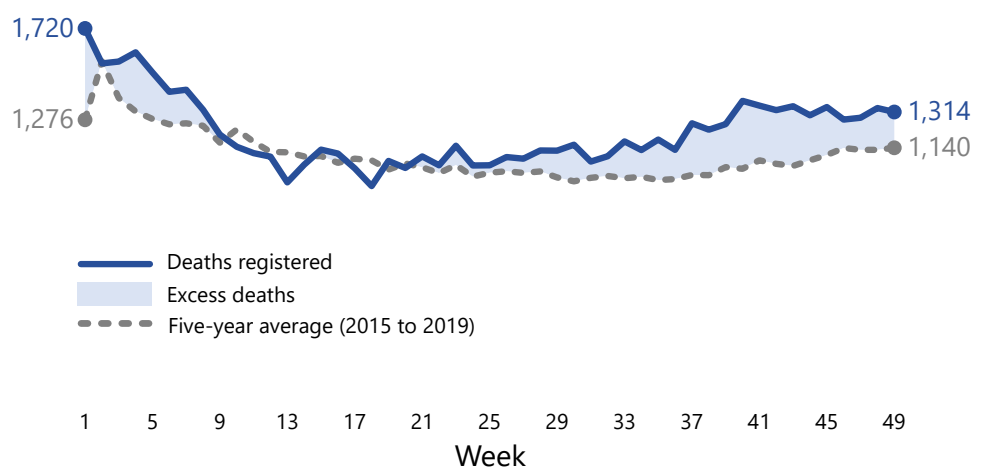


Deaths have been above average for 29 consecutive weeks

There were 174 excess deaths registered in week 49, which is 15% above pre-pandemic average levels for week 49).

In 2021, excess deaths peaked in week 1 at 35% above average.

Deaths from all causes, 2021

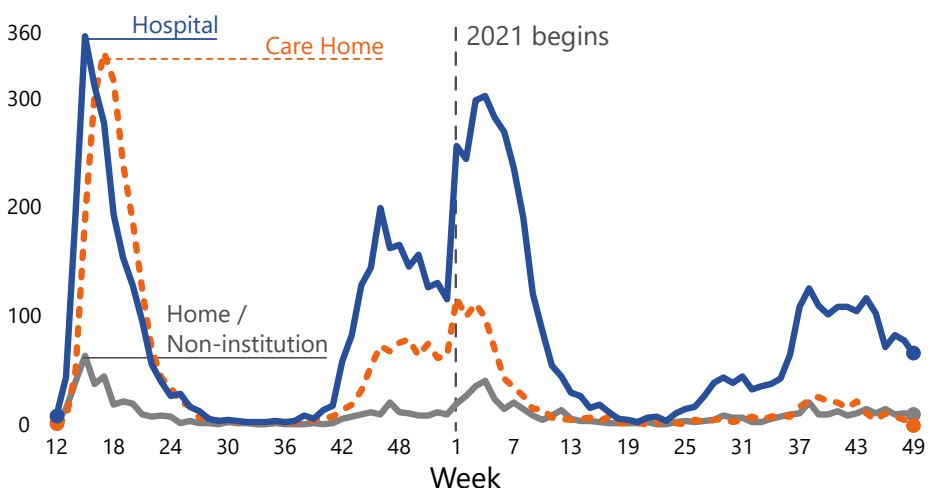


Most COVID-19 deaths in recent weeks have been in hospitals

Since week 24 deaths in hospitals began to rise peaking in week 38 at 125 deaths involving COVID-19.

This remained fairly constant until week 44 and the numbers have begun to fall since then.

Deaths involving Covid-19 per week by location



Key Findings

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

- As at the 12th of December, there have been a total of 12,303 deaths registered in Scotland where the novel coronavirus (COVID-19) was mentioned on the death certificate. In the latest week there were 84 deaths, a decrease of 7 from the previous week.
- Of deaths involving COVID-19 in the latest week:
 - 44 were female, 40 were male.
 - 51 were aged 75 or older, 16 were aged 65 to 74 and 17 were under 65.
 - There were 11 deaths in Glasgow City, 8 in Aberdeenshire and 8 in Fife. In total 23 council areas (out of 32) had at least one death involving COVID-19 last week.
 - 64 were in hospitals, 11 were in care homes and 9 were at home or a non-institutional setting.

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

- The total number of deaths registered in Scotland in week 49 of 2021 was 1,314. This was 174 deaths more than the five year average for week 49 (15% above average).
- In week 49 there were 119 excess deaths at home or in non-institutional settings (38% above average), 52 excess deaths in hospitals (9% above average), and 2 fewer deaths in care homes (1% below average) compared to the 2015-2019 average.
- There were 174 excess deaths across all locations for the latest week. There were 44 more deaths due to circulatory causes, 10 more deaths due to cancer and 9 more deaths due to dementia/Alzheimer's compared to the five year average. Respiratory deaths were 3 below average last week. There were also 54 excess deaths from other causes. The number of deaths where COVID-19 was the underlying cause was 61.

Monthly mortality analysis, deaths occurring up to 30th November 2021 ([go to section](#))

- The age standardised death rate for deaths involving COVID-19 was lower in November 2021 (95 per 100,000) compared to October 2021 (126 per 100,000). The difference between the past two months was statistically significant. Throughout the pandemic, the highest rate was 585 deaths per 100,000 people in April 2020.
- After adjusting for age, people living in the most deprived areas were 2.5 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 2.5 over the period of the pandemic.
- Of the 12,210 deaths involving COVID-19 between March 2020 and November 2021, 93% (11,326) had at least one pre-existing condition. Just under one quarter of people whose death involved COVID-19 had dementia or Alzheimer's disease. This was the most common main pre-existing condition.
- There have been 5 deaths in Scotland in which the underlying cause of death was due to the adverse effects of vaccination against COVID-19. One additional death occurred in November 2021 where an adverse effect was mentioned on the death certificate, although it was not the underlying cause of death. By 30 November 2021 [statistics from Public Health Scotland](#) state that 4.4 million people had been given at least one vaccine dose.

Figure 1: Weekly deaths involving COVID-19 in Scotland, week 12 2020 to week 49 2021

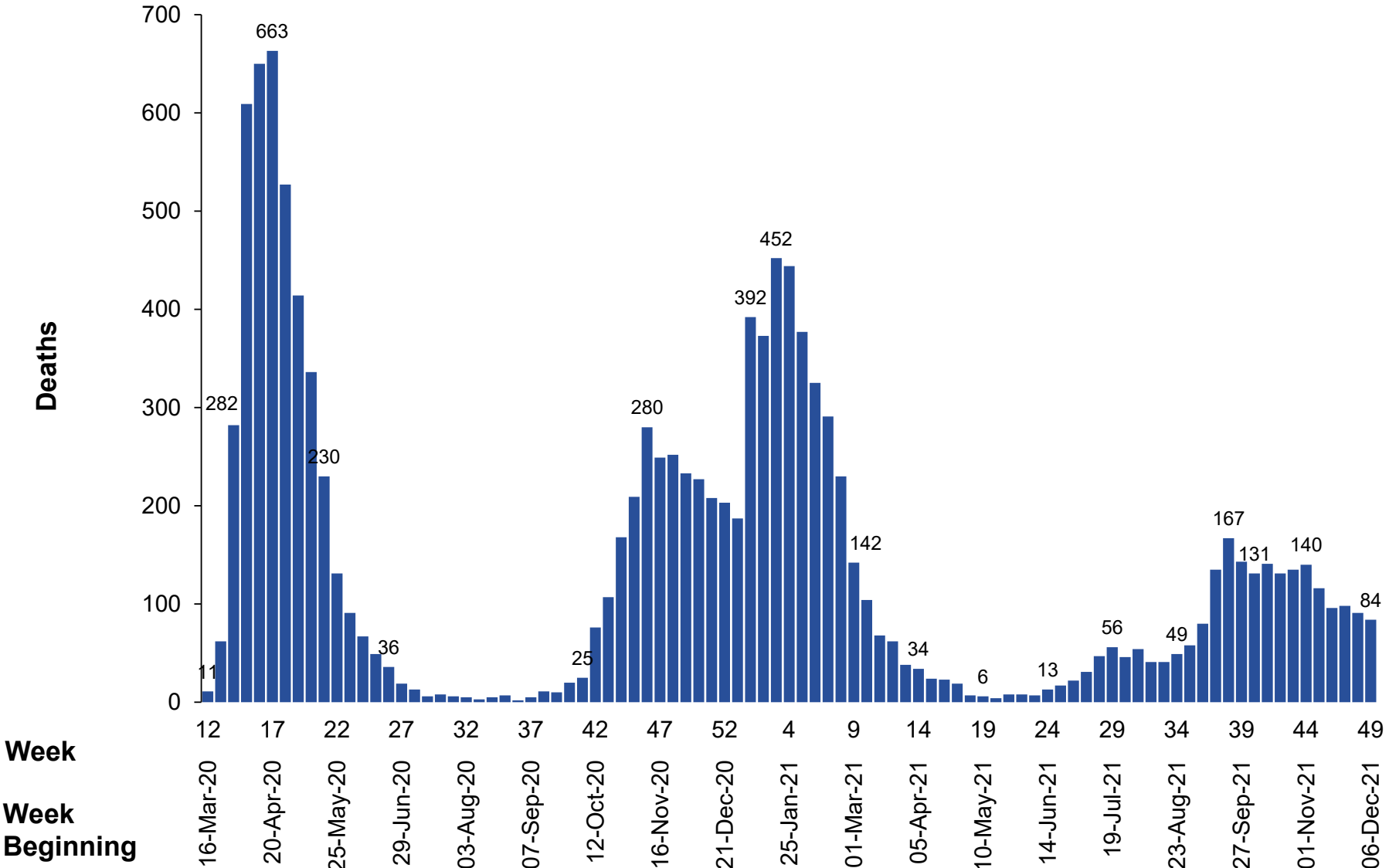
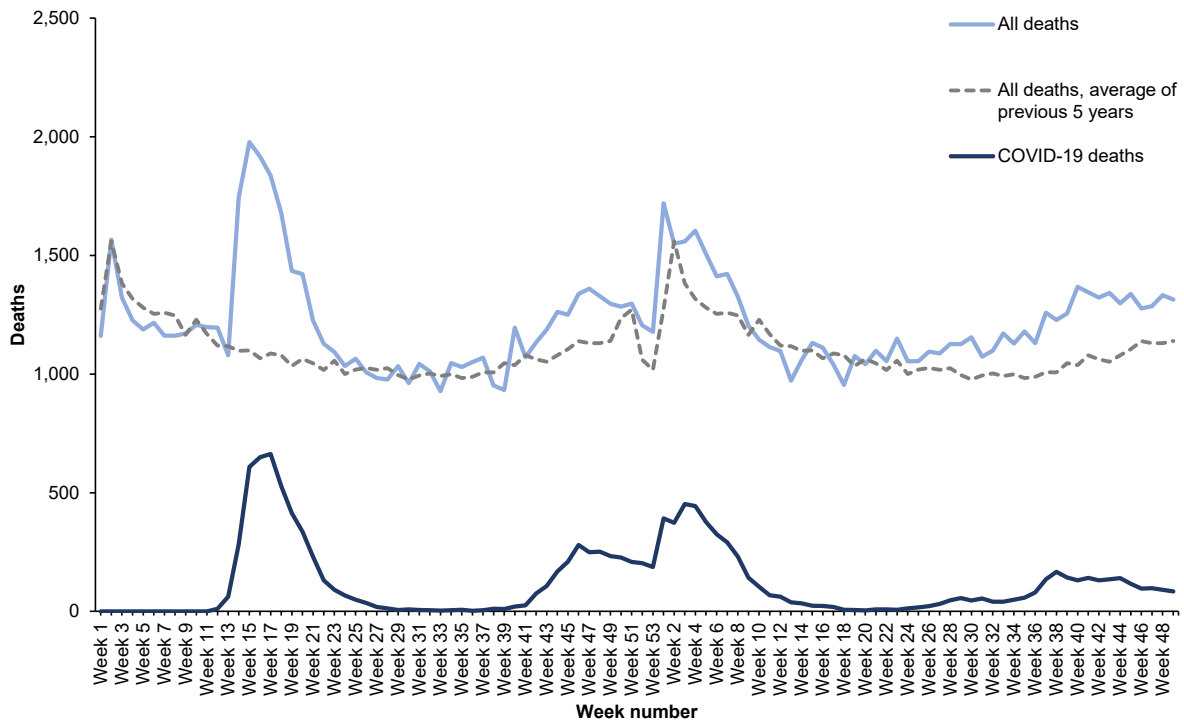


Figure 2 shows that in the most recent week (week 49, beginning 06 December 2021), there were 15% more deaths than the average for the period 2015-2019. Deaths have been above the five year average in each of the past 29 weeks. Over that time, weekly deaths have ranged from being 4% above average to 32% above average. At the height of the pandemic in April 2020, deaths were around 80% above average.

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



Where have COVID-19 deaths taken place?

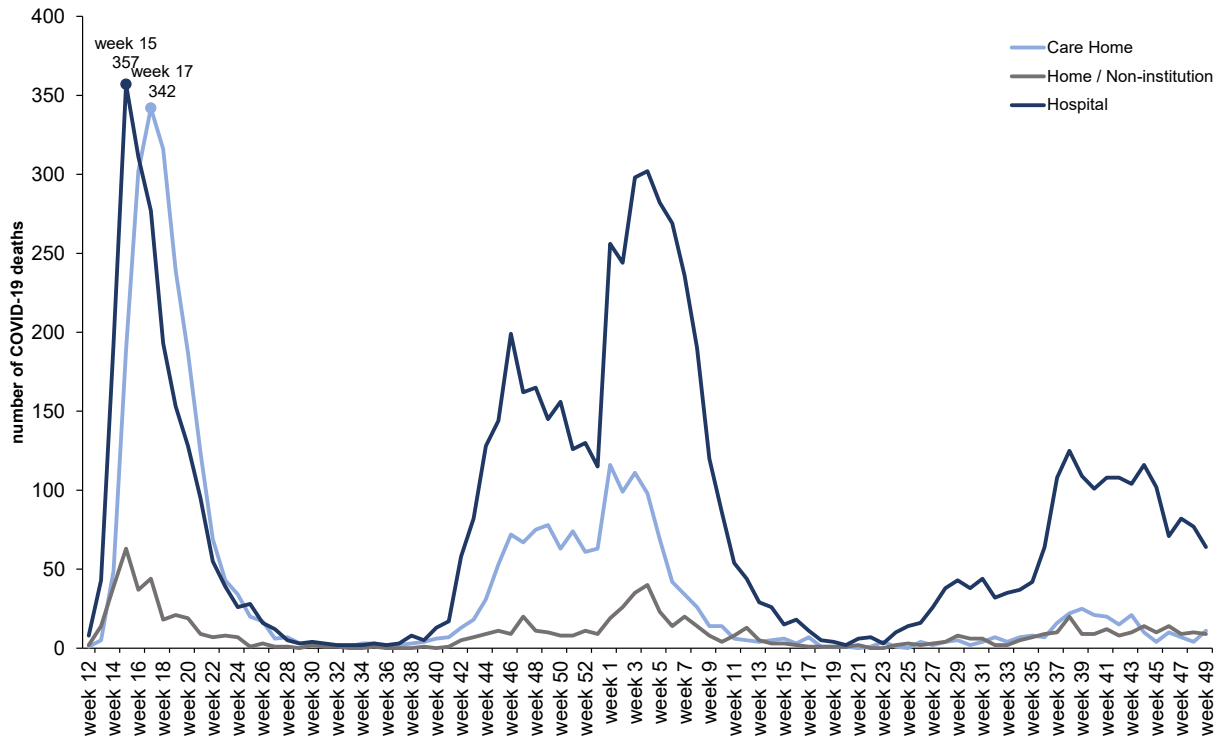
Of the 12,303 deaths involving COVID-19 which have been registered to date, 64% related to deaths in hospitals. 29% of deaths were in care homes and 7% of deaths were at home or non-institutional settings.

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 49 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?

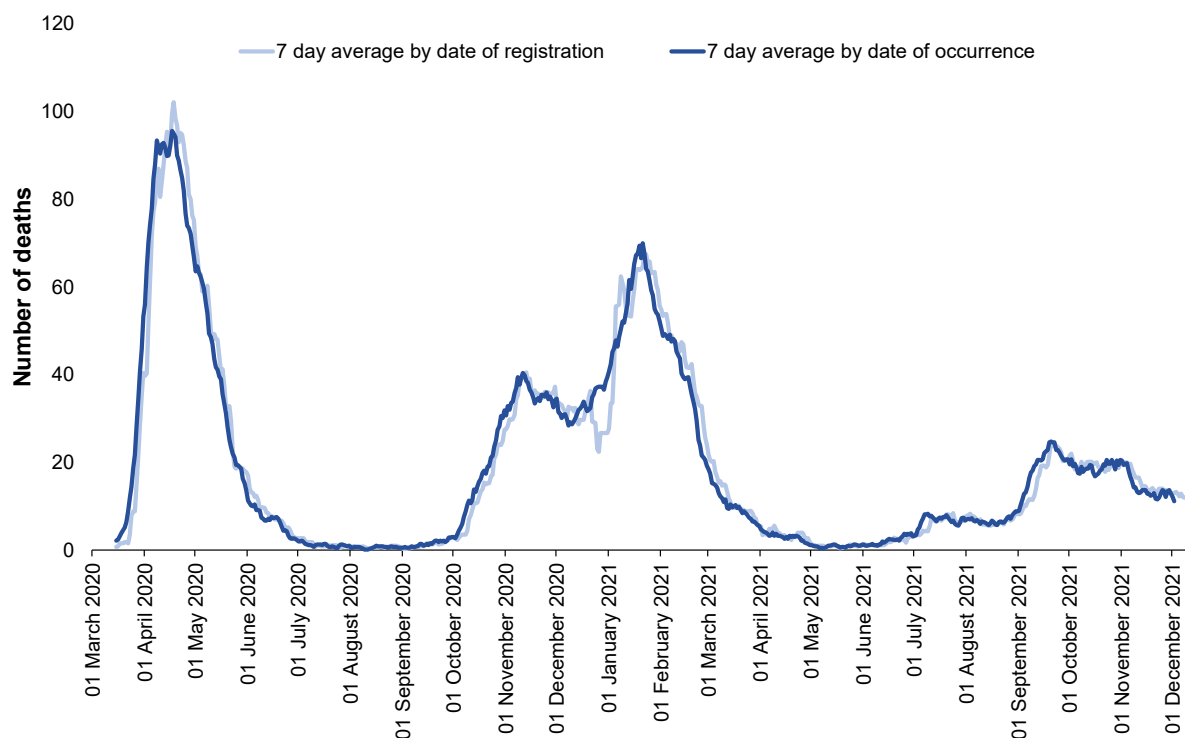
The death count based on **date of registration** is more timely but is incomplete and is subject to fluctuations due to public holidays.

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).

Differences between the two measures can be seen at times of year when there are public holidays, most noticeably at Christmas and Easter. Daily deaths began to rise in July 2021 and then rose through most of September. Deaths have generally fallen since mid-September. By early December, the average number of deaths occurring per day was 12.

This report includes all deaths which were registered by 12th of December. 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 5th of December 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 30 November 2021)

This section provides an in-depth analysis of deaths which **occurred** in Scotland between March 2020 and November 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 November 2021 there were 131 deaths per 100,000 population. Rates for males were significantly higher than for females (161 compared with 108 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

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 (87%) of deaths involving COVID-19. In the combined data for March 2020 to November 2021, the age-standardised mortality rate was 114 per 100,000 population, with a similar differential between males (141) and females (93).

The age standardised death rate for deaths involving COVID-19 was lower in November 2021 (95 per 100,000) when compared to October 2021 (126 per 100,000). The difference between the past two months was statistically significant.

Figure 5a: Age standardised rates for deaths involving COVID-19 by sex, between 1st March 2020 and 30th November 2021

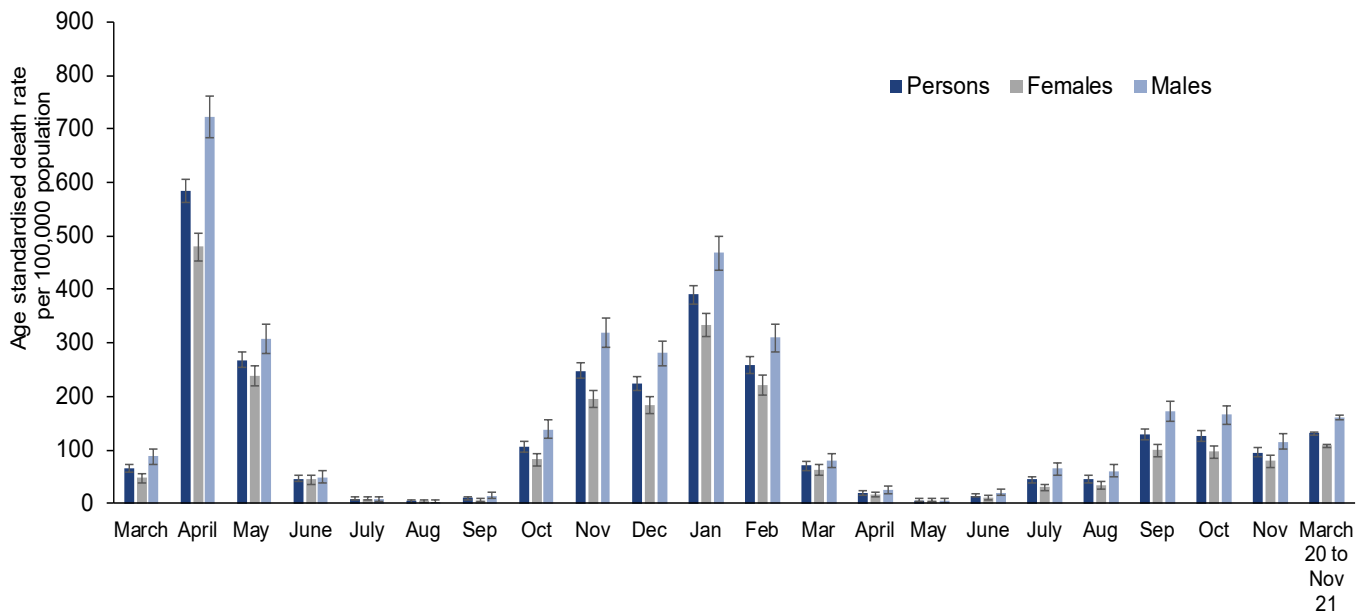
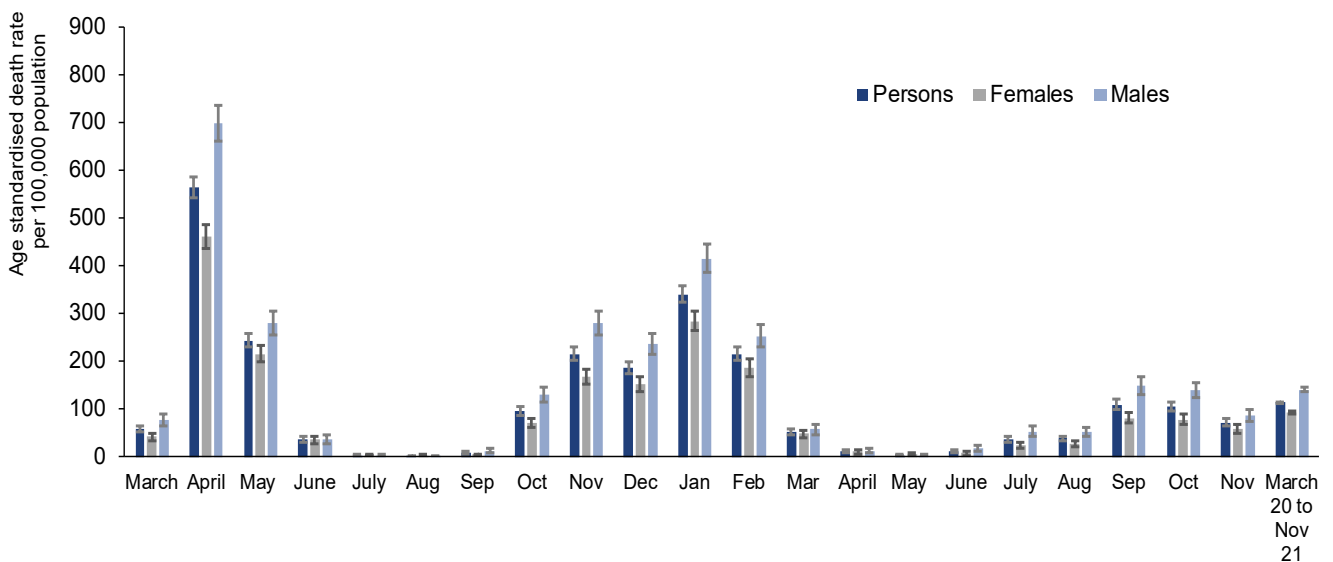


Figure 5b: Age standardised rates for deaths where COVID-19 was the underlying cause, by sex, between 1st March 2020 and 30th November 2021



The age-standardised mortality rate from all causes was 1,190 per 100,000 population in March 2020 to 30th November 2021. To put this figure into context the age-standardised mortality rate from all causes in 2019 was 1,108 per 100,000.

Leading causes of death

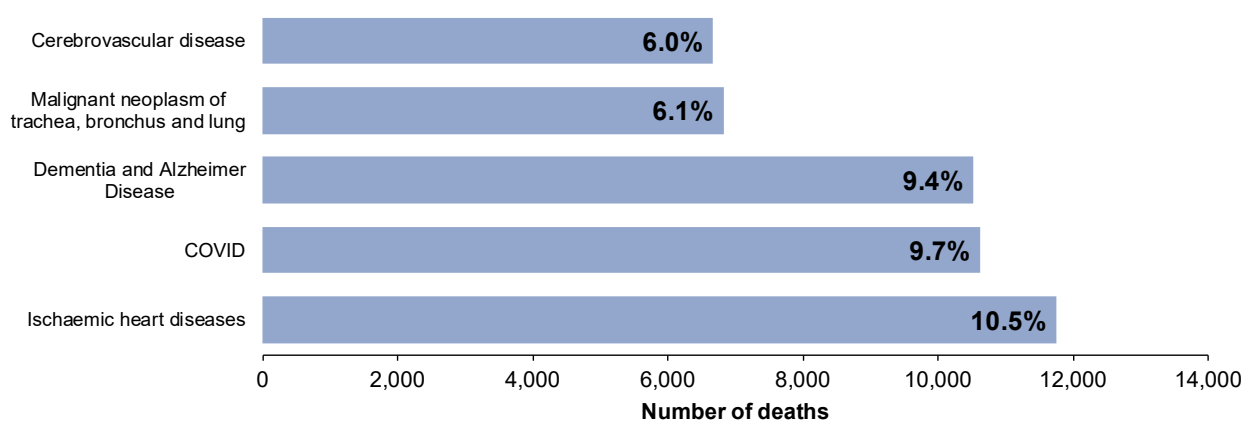
As this analysis compares different causes of death it is based on the underlying cause of death and therefore the figures for COVID-19 only include those deaths where it was the underlying cause rather than all those in which it was mentioned.

Over the period between March 2020 and 30th November, the leading cause of death was ischaemic heart disease (11,754 deaths, 10.5% of all deaths) followed by COVID-19 (10,625 deaths, 9.5% of all deaths) and dementia and Alzheimer's disease (10,524, 9.4%).

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.

The most common cause of death in November 2021 was dementia and Alzheimer's disease, which accounted for 10.5% of all deaths last month. COVID-19 was the most common cause of death for every month between November 2020 and February 2021 (inclusive). COVID-19 did not appear in the top 5 leading causes between March and August 2021 but reappeared in third place in September 2021, and dropped to fifth place in November 2021.

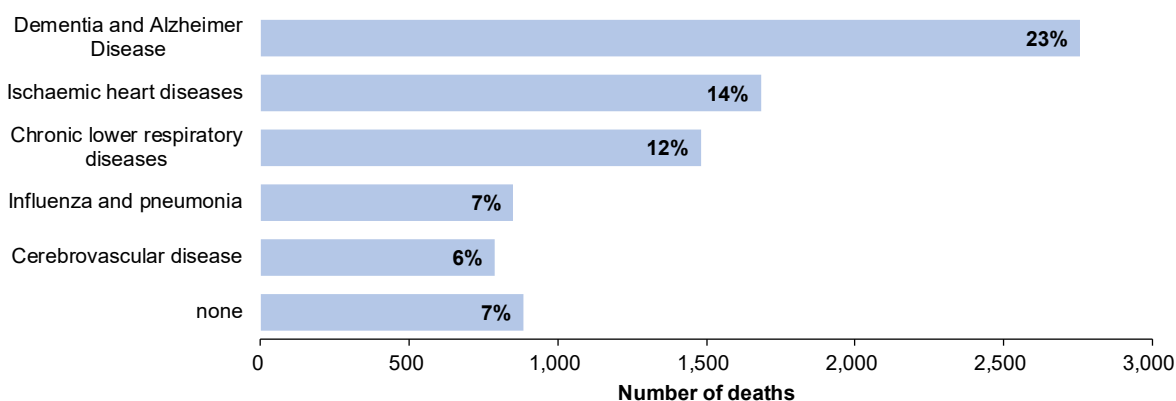
Figure 6: Leading causes of death - 1st March 2020 to 30th November 2021



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

Of the 12,210 deaths involving COVID-19 between March 2020 and November 2021, 93% (11,326) had at least one pre-existing condition.

Figure 7: Main pre-existing condition in deaths involving COVID-19, between 1st March 2020 and 30th November 2021



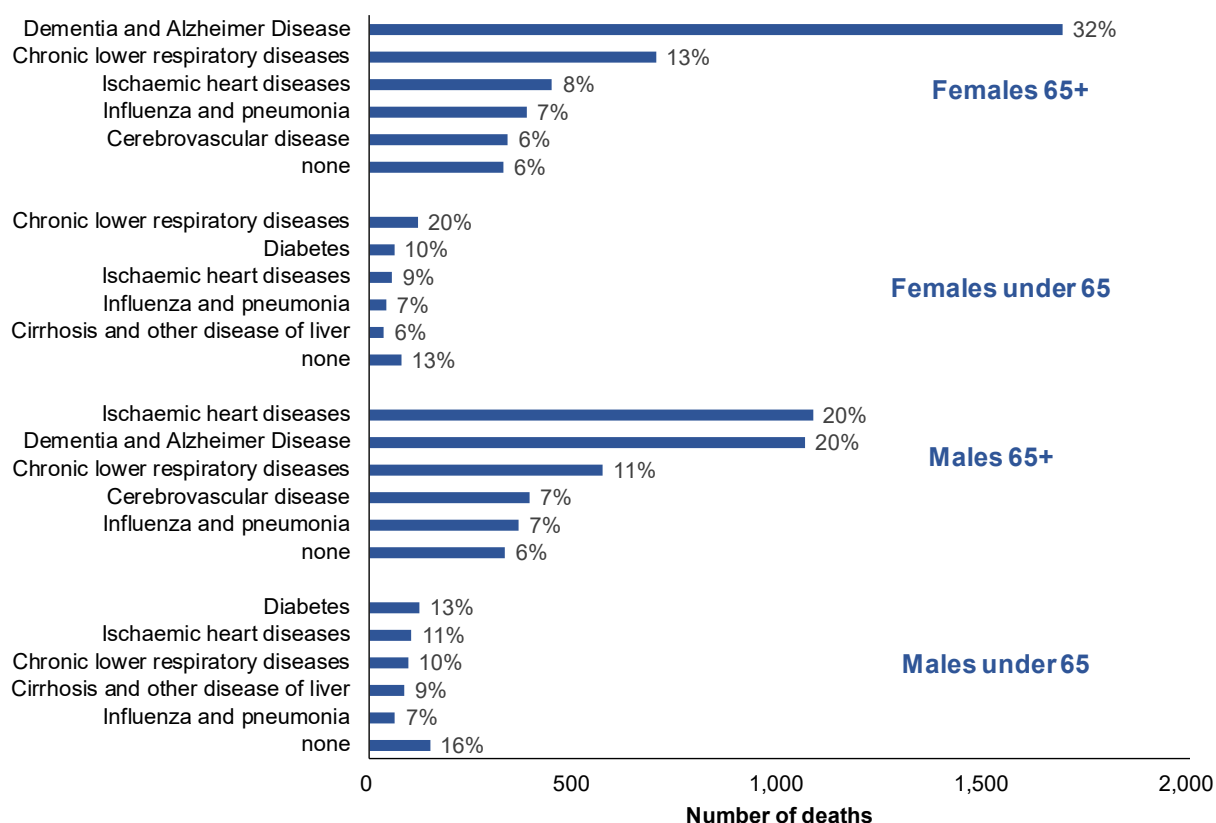
The most common main pre-existing condition among those who died with COVID-19 was dementia and Alzheimer's disease (23%), followed by ischaemic heart disease (14%), chronic lower respiratory diseases (12%), influenza and pneumonia (7%) and cerebrovascular disease (6%).

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

Pre-existing conditions differed by age and sex. For females over 65 the most common main pre-existing condition was dementia and Alzheimer's disease (32% of all COVID-19 deaths), whereas for males over 65 the most common was ischaemic heart diseases (20%). For females under 65, the most common main pre-existing condition was chronic lower respiratory diseases (20%) and for males under 65 it was diabetes (13%).

Figure 8: Main pre-existing medical condition by age and sex, in deaths involving COVID-19 between 1st March 2020 and 30th November 2021



Mortality by deprivation

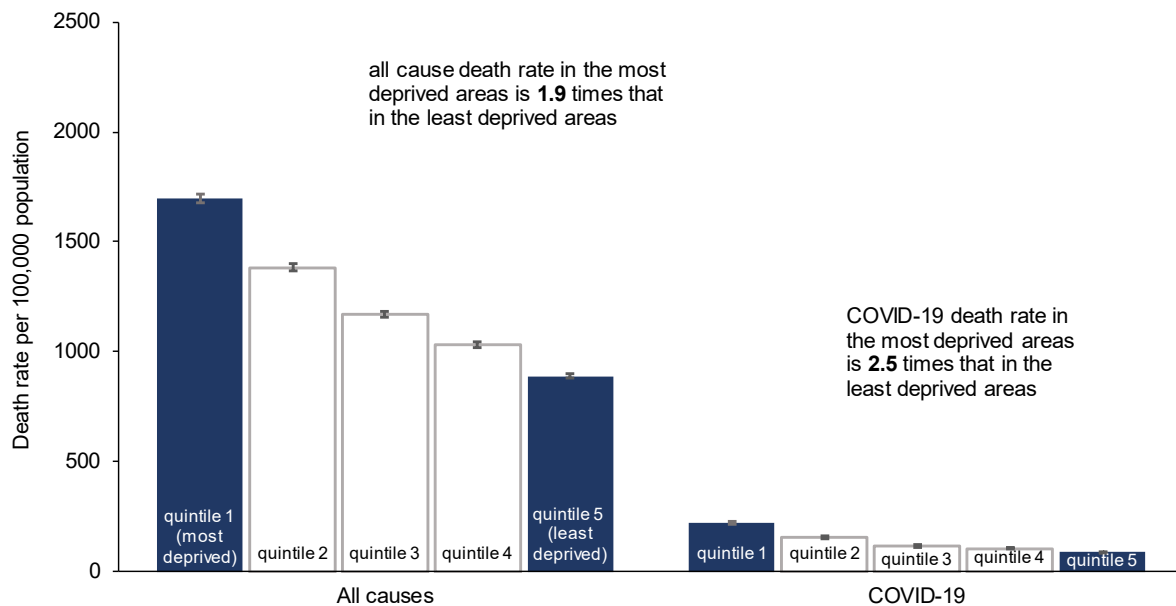
Age-standardised death rates from all causes are generally higher in the most deprived areas than in the least deprived areas. The rate in the most deprived quintile was 1.9 times the rate in the least deprived quintile between March 2020 and November 2021.

The deprivation gap is greater when looking at deaths involving COVID-19. The rate in the most deprived quintile (221 per 100,000 population) was 2.5 times the rate in the least deprived quintile (89 per 100,000 population).

The size of this gap has widened from 2.1 to 2.5 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 30th November 2021

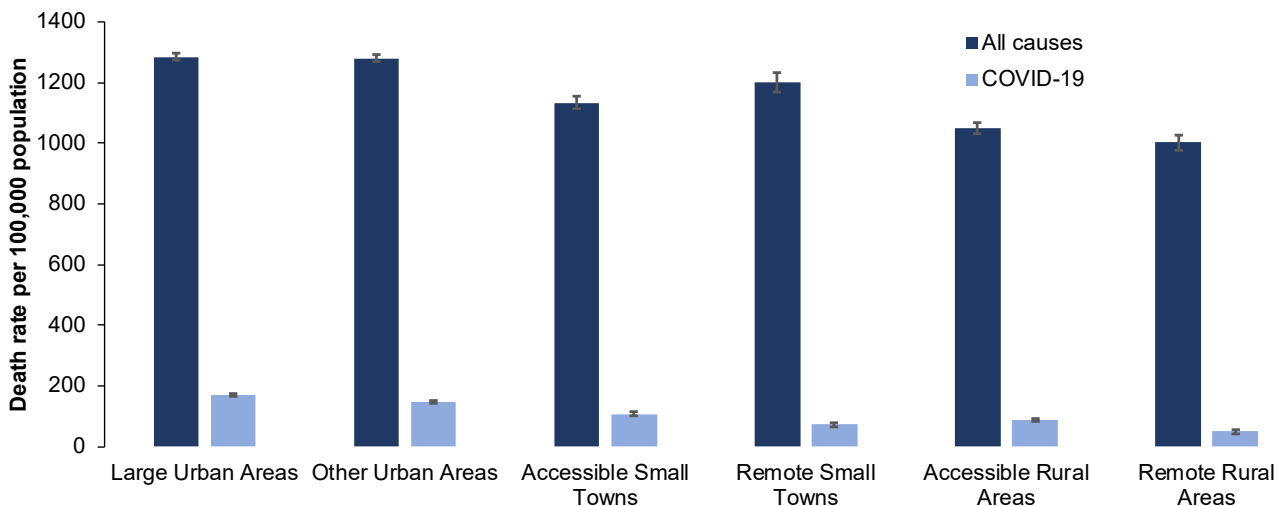


Mortality by urban rural classification

The age-standardised rate for deaths involving COVID-19 in large urban areas (172 deaths per 100,000 population) was 3.5 times the rate in remote rural locations (50 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 30th November 2021

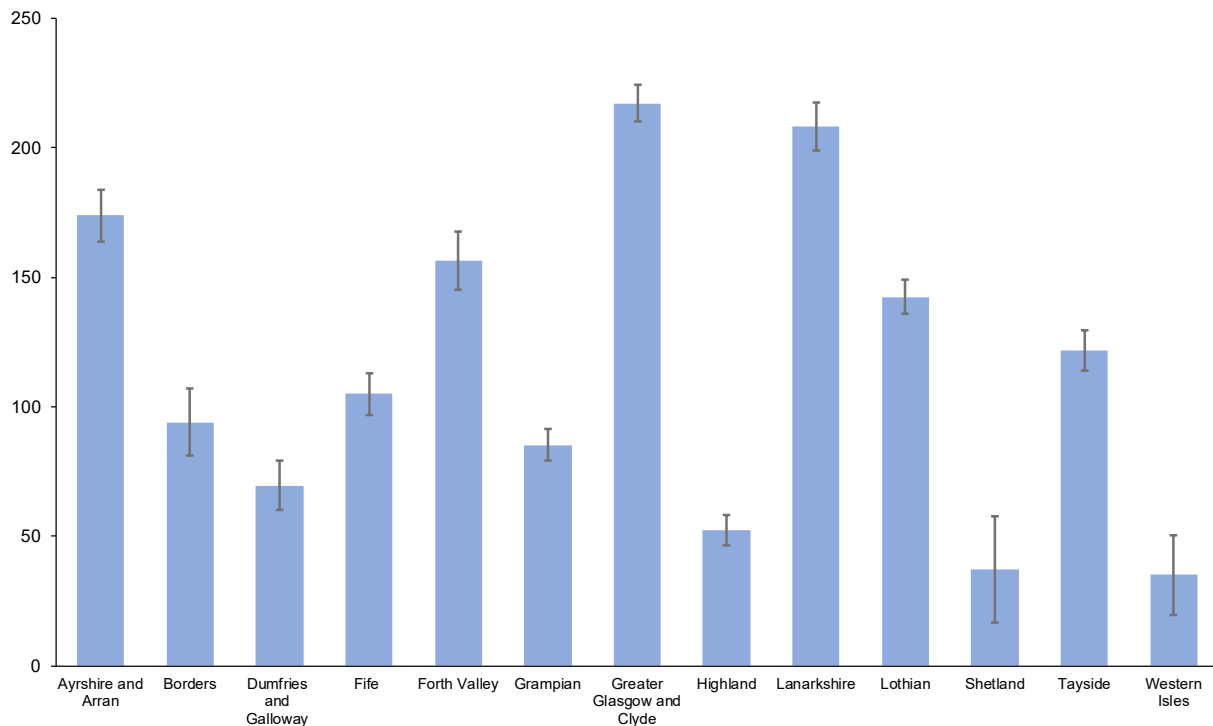


Age-standardised death rates by health board and council area

Figure 11 shows that Greater Glasgow and Clyde had the highest rate of all health boards (217 per 100,000 population), followed by Lanarkshire (208) and Ayrshire and Arran (174).

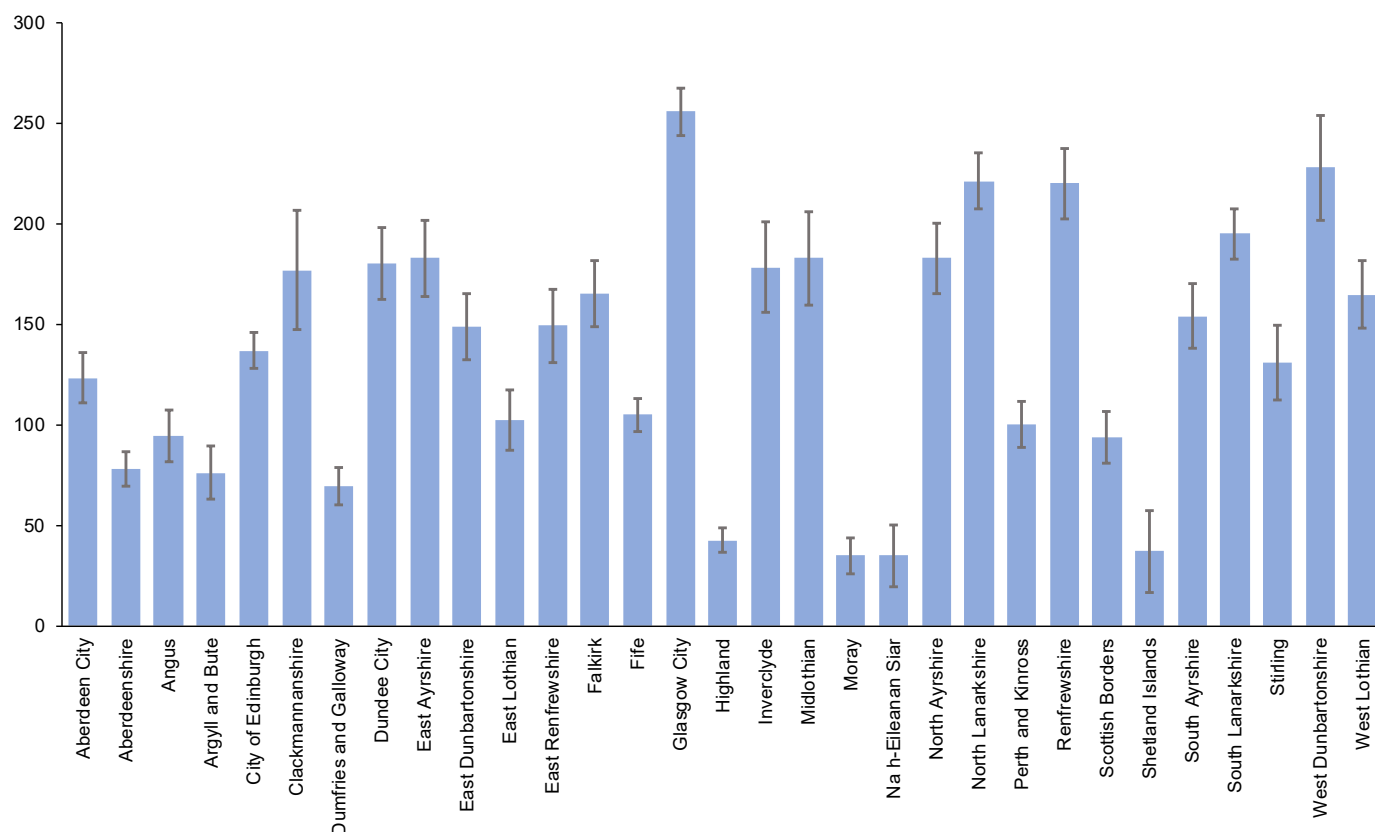
Rates are not shown for Orkney as the number of deaths involving COVID-19 are too low to calculate robust age-standardised rates.

Figure 11: age standardised rates for deaths involving COVID-19 between 1st March 2020 and 30th November 2021 in NHS health board areas



Glasgow City had the highest age-standardised death rate of all council areas (256 per 100,000 population), followed by West Dunbartonshire (228), North Lanarkshire (221) and Renfrewshire (220). Moray (35 per 100,000 population), Na h-Eileanan Siar (35), Shetland Islands (37) and Highland (43) had the lowest rates (in addition to 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 30th November 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 rate of death occurred among process, plant and machine operatives (174 deaths and an age-standardised death rate of 58 per 100,000 population) followed by elementary occupations (143 deaths, 36 per 100,000 population). For context, there were 950 COVID-19 deaths in this age group across all occupations, with a death rate of 25 per 100,000 population. People in professional occupations had the lowest death rate (68 deaths, 8 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 (14 per 100,000 population) whilst social care workers had a higher rate (35 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 November 2021, there were 17 deaths where post COVID-19 conditions (including long COVID) were mentioned on the death certificate.

Between December 2020 and the end of November 2021 [statistics from Public Health Scotland](#) state that 4.4 million people had been given at least one COVID-19 vaccine dose. Over this period there have been 5 deaths where the underlying cause of death was reported as being due to adverse effects of COVID-19 vaccines. There was one death where adverse effects of COVID-19 vaccination was mentioned on the death certificate but was not the underlying cause.

Table 12: Number of deaths with ICD-10 codes related to COVID-19 mentioned on the death certificate, Scotland, 1st March 2020 – 30th November 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	10,609	9,158
U07.2	COVID-19, virus not identified	1,592	1,467
U08.9	Personal history of COVID-19, unspecified	0	:
U09.9	Post COVID-19 condition, unspecified	17	:
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	6	5

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.

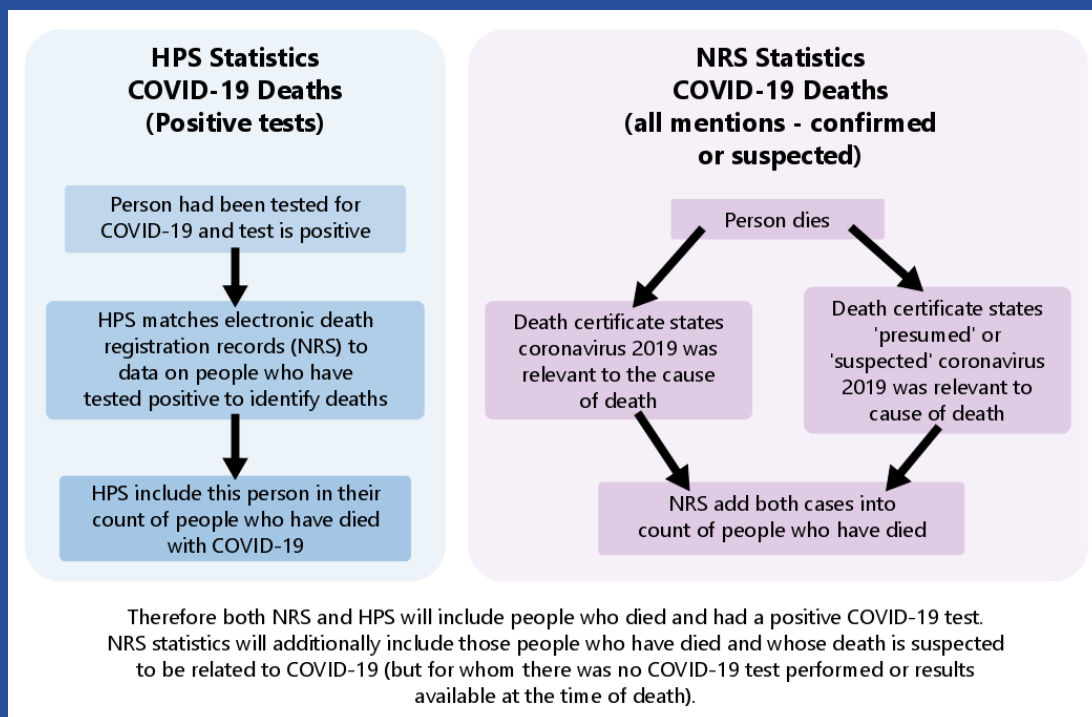
NRS weekly death totals

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 for 2021 are provisional and subject to change in future weekly publications. The data will be finalised in June 2022. 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
- 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

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 49	15 th December 2021
Sex	Weekly	8 th April 2020	Week 49	15 th December 2021
Location	Weekly	15 th April 2020	Week 49	15 th December 2021
Health Board	Weekly	8 th April 2020	Week 49	15 th December 2021
Local Authority	Weekly	22 nd April 2020	Week 49	15 th December 2021
Excess deaths by cause	Weekly	22 nd April 2020	Week 49	15 th December 2021
Excess deaths by cause and location	Weekly	17 th June 2020	Week 49	15 th December 2021
Age-standardised mortality rates – Scotland	Monthly	13 th May 2020	November 2021	15 th December 2021
Age-standardised mortality rates – sub-Scotland	Monthly	17 th June 2020	March 2020 – November 2021	15 th December 2021
Leading causes of death	Monthly	13 th May 2020	November 2021	15 th December 2021
Pre-existing conditions	Monthly	13 th May 2020	November 2021	15 th December 2021
Deprivation	Monthly	13 th May 2020	March 2020 – November 2021	15 th December 2021
Urban Rural	Monthly	13 th May 2020	March 2020 – November 2021	15 th December 2021
Daily occurrences by location of death	Monthly	13 th May 2020	November 2021	15 th December 2021
Occupation	Monthly	17 th June 2020	March 2020 – November 2021	15 th December 2021
Intermediate Zone	Monthly	17 th June 2020	March 2020 – November 2021	15 th December 2021
Deaths by ICD-10 codes	Monthly	16 th June 2021	March 2020 – November 2021	15 th December 2021
Ethnic Group	Occasional	8 th July 2020	March 2020 – September 2021	17 th November 2021
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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Enquiries and suggestions

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