

# Deaths involving coronavirus (COVID-19) in Scotland: Methodology Guide



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## How deaths involving COVID-19 are defined

Deaths involving the novel coronavirus [COVID-19 \(SARS-CoV-2\)](#) are defined as those where COVID-19 is mentioned by the certifying doctor 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 10<sup>th</sup> Revision \(ICD-10\)](#). The relevant codes are:

### **U07.1 – COVID-19 virus identified**

Deaths where COVID-19 has been confirmed by laboratory testing.

### **U07.2 – COVID-19 virus not identified**

Deaths where COVID-19 has been diagnosed clinically or epidemiologically but laboratory testing is inconclusive or not available. This includes deaths where the death certificate includes mentions 'suspected' or 'probable' COVID-19.

### **U09.9 – Post COVID-19 condition, unspecified**

Deaths where a link has been established to a previous COVID-19 infection. COVID-19 not present in the system at the time of death.

### **U10.9 – Multisystem inflammatory syndrome associated with COVID-19, unspecified**

Deaths where a Cytokine storm or Kawasaki-like syndrome occurs and is temporally associated with a COVID-19 infection.

Prior to 22 March 2021 only codes U07.1 and U07.2 were used to identify deaths involving COVID-19. From the week beginning 22 March 2021, U09.9 and U10.9 were also included. Data prior to this point has been recoded to include these new codes to ensure consistency of the time series.

## Underlying cause and contributory cause

Deaths involving COVID-19 are defined as any death where COVID-19 is mentioned on the death certificate; this can be as the underlying cause of death or as a contributory factor.

The underlying cause of death is the disease or injury which initiated the chain of morbid events leading directly to death, or the accident or act which produced the fatal injury. Every death has only one underlying cause. More information is on the [NRS website](#).

Other causes listed on the death certificate are recorded as contributory causes of death. More information about what is recorded on the Medical Certificate of the Cause of Death (MCCD) can be found on the [NRS website](#).

## Revisions

Data are provisional and subject to change in future weekly publications. The data for 2020 will be finalised in August 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.

## **Week Numbers**

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.

## **Date of registration and date of death**

Unless specified, all figures in the weekly report are based on the date a death was registered rather than the date the death occurred. When someone dies, their family (or a representative) have to make an appointment with a registrar to register the death. Legally this must be done within 8 days, although in practice there is, on average, a 3 day gap between a death occurring and being registered. This gap can be greater at certain times of the year such as Easter and Christmas when registration offices are closed for public holidays.

Date of death is less timely but gives a more accurate idea of trends, particularly at times of year where there are many public holidays (such as at the turn of the year, or in the spring).

## **Timing**

Weekly statistics are released three days after the end of the reporting week on a Wednesday. As these statistics are extremely timely, the data can be revised as detailed above.

Monthly statistics are released around two weeks after the end of a given month, and these are based on date of occurrence. These statistics go into more detail on age standardised mortality rates (ASMR), deaths by multiple deprivation (using the Scottish Index of Multiple Deprivation), deaths by urban-rural classification, deaths by occupation and deaths by neighbourhood (2011 Intermediate Zone).

## **Geographical Area**

For council area, health board and intermediate zone death statistics, NRS use the place of usual residence for allocating the death to a particular geography. If the time spent at this address was less than 12 months, the previous address is used. If the deceased had not spent time at the previous address for a period of 12 months or more, the address where the most time had been spent is used. Deaths where an address cannot be ascertained will be allocated to the place of death in most instances. More information can be found at: <https://www.nrscotland.gov.uk/files/statistics/vital-events/ve-general-geographical-basis.pdf>

## Location of death

Public Health Scotland maintains a [list of institutions](#) across Scotland. These are mainly health-related institutions but the list also includes prisons and schools etc. NRS use this list to assign an institution code to the place of death on each death record. The institution codes are set up in such a way that the last letter of the code designates the type of institution.

For the purposes of NRS death statistics, hospitals are counted as codes ending in H, care homes as codes ending in J, K, R, S, T, U or V, home / non-institution codes ending in N and other institution is everything else.

The codes used for care homes are not an exact match. V contains some non-NHS hospitals, J and K contain some hospitals but mainly care homes. This grouping of codes is the closest we can get with the institution code structure which PHS has and, importantly, it's consistent with previous practice.

It should also be noted that there is no separate category for hospices. In some cases hospices have a code which means they are counted in the care home category, but in other cases hospices have a code which is counted in the hospital category.

It is not possible to separate hospices out into a category of their own under the current coding structure used by PHS.

## Comparison with other sources

The number of deaths given in the Scottish Government / Public Health Scotland daily updates are different to the number given by NRS. This is because these 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 Public Health Scotland and count all people who have had a positive test for COVID-19 and died within 28 days of their first positive test.

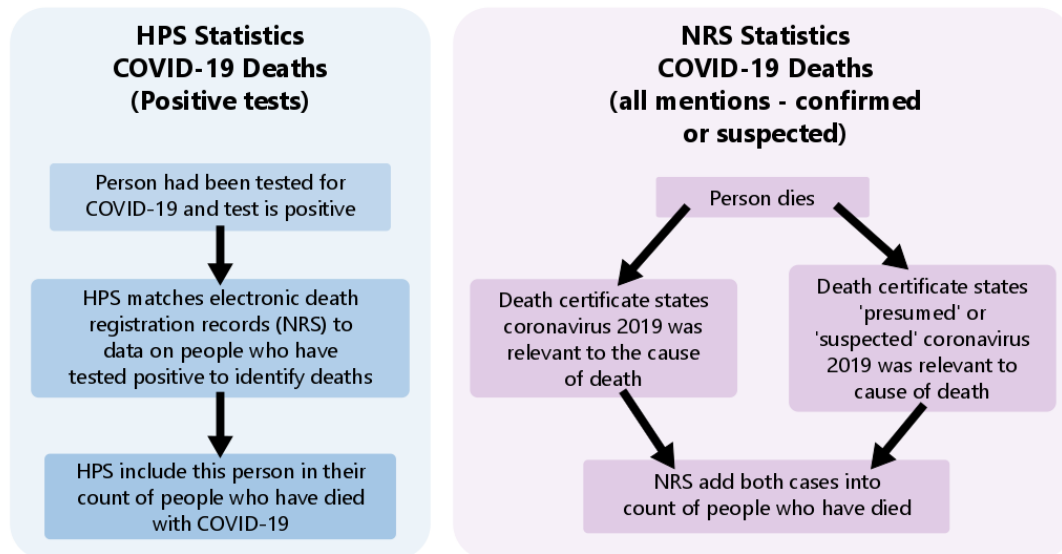
These are important because they are available earlier, and give a quicker indication of what is happening day by day and are broadly comparable with the figures released daily for the UK by the Department for Health and Social Care.

### 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.



Therefore both NRS and HPS will include people who died and had a positive COVID-19 test. NRS statistics will additionally include those people who have died and whose death is suspected to be related to COVID-19 (but for whom there was no COVID-19 test performed or results available at the time of death).

The figures are produced using same definition as those published by the ONS (for England and Wales) and NISRA (for Northern Ireland), so are broadly comparable.

One minor difference is how the registration weeks are defined:

- Weeks used by ONS and NISRA run from Saturday to Friday
- NRS weeks run from Monday to Sunday (this is the [ISO8601](#) standard week).

In practice, this is likely to have very little impact on comparisons as there are few registrations that take place on Saturdays and Sundays.

You can view the latest weekly figures from ONS for England and Wales [here](#). The latest figures from NISRA for Northern Ireland are available [here](#). The figures for the rest of the UK are a week behind those for Scotland so the equivalent weeks should be compared.