COVID-19 surveillance and registered deaths data review

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Office for Statistics Regulation

We provide independent regulation of all official statistics produced in the UK. Statistics are an essential public asset. We aim to enhance public confidence in the trustworthiness, quality and value of statistics produced by government.

We do this by setting the standards they must meet in the *Code of Practice for Statistics*. We ensure that producers of government statistics uphold these standards by conducting assessments against the *Code*. Those which meet the standards are given National Statistics status, indicating that they meet the highest standards of trustworthiness, quality and value. We also report publicly on system-wide issues and on the way statistics are being used, celebrating when the standards are upheld and challenging publicly when they are not.

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Introduction

Information available on COVID-19 cases and deaths has been developed rapidly in a constantly shifting environment. The work being done by analysts to get this information into the public domain is commendable. There will always be a desire for improvements to the timeliness and completeness of data, but this should not undermine the huge efforts being made by individuals and organisations to deliver timely data to support decision making and inform the public.

Our vision is statistics that serve the public good. We aim to support producers of statistics and data to achieve this while championing the needs of the public. We have undertaken a short review of the data releases on COVID-19 cases and deaths - at a UK level and for each country within the UK - to help understanding of the available sources and to highlight strengths and our view on areas for improvement. This document outlines the findings from our review, that is necessarily only a snapshot of what are very fast-moving developments.

In reviewing the various statistical outputs, we have been guided by the three pillars of the Code of Practice for Statistics: Trustworthiness, Quality and Value. Trustworthiness refers the governance that surrounds the production of statistics; Quality refers to the characteristics of the data; and Value considers the extent to which the statistics answer users' questions.

Summary of findings

There have been many developments to the data and supporting information available on COVID-19. Analysts have made huge efforts to deliver the information and have shown a willingness to address concerns and make rapid improvements.

There is great value in having timely data, such as the daily surveillance data covering the UK that is published less than 24 hours after the data reporting period. It provides an important leading indicator of the trend in COVID-19 testing, cases and deaths, which is essential to inform operational decisions being made at pace. However, the speed at which these data are made available means there has been a trade off with completeness, and the limitations of the UK data have not been fully explained.

The nature and extent of the uncertainty around the UK estimates of deaths associated with COVID-19 has not so far been made clear. However, we are aware of efforts being made to improve the clarity and transparency of the material that accompanies the daily briefing, including drawing on support from the Government Statistical Service (GSS).

In contrast, the weekly death statistics published for England and Wales, Scotland and Northern Ireland provide a more complete measure of the number of deaths associated with COVID-19, but these statistics are released with a greater time lag .

ONS's publication of its forward workplans in this area is a helpful development for stakeholders and it is important that other nations provide detail about their plans to keep users of the statistics informed. We understand that the GSS is considering the accessibility of all the information on COVID-19 to allow users to navigate all outputs from a central hub, such as the GSS health and care statistics landscape.

Areas for further development

1. It is important to maintain public confidence and trustworthiness of statistics that are used to inform public debate. The nature and extent of the uncertainty around the UK estimates of deaths associated with COVID-19 should be clarified.

2. All statistics producers should show they are actively considering the diverse and changing user need for COVID-19 statistics, by publishing detailed plans for improvements, for example, information about the occupancy of intensive care units or beds, or on person characteristics, such as ethnicity.

3. The GSS should consider the accessibility of the information and allow users to navigate all COVID-19 related outputs from a central hub, such as the GSS landscape.

Our findings

We have split our findings into three areas.

- UK level daily reporting
- Daily data
- Weekly data

For each of these areas we have reviewed the published outputs and engaged with producers. We have kept our review light touch to minimise the burden on producers and to be able to report our findings quickly, given the pace of change in this area.

In each nation we are seeing rapid improvements to the data and have seen examples of collaboration by statisticians from all UK administrations. We understand that there is a UK-GSS mortality group with counterparts from England, Wales, Scotland and Northern Ireland to ensure coherence in the publication of COVID-19 data.

We are pleased that work is being done to improve the clarity and transparency of the material that accompanies the daily briefing, using additional support from the GSS. Both the Scottish and Northern Ireland statisticians have held briefings for the press to explain the differences between the daily and weekly figures, this has improved media reporting and enhanced the public understanding of the data.

1.   UK level reporting

Daily deaths and cases data for the UK (Source: Department of Health and Social Care and Public Health England)

Daily coronavirus cases dashboard (Source: Public Health England)

On a daily basis, surveillance figures for each of the countries of the United Kingdom are combined and published in the afternoon by the Department for Health and Social Care (DHSC). Later that day, the same figures are then added to the dashboard published by Public Health England (PHE) for the UK.

The data are very timely, being published less than 24 hours from close of the data reporting period. It provides the most timely indication of trends of the spread and impact of coronavirus. However, with this timeliness there is a trade-off with completeness, for example, publishing the setting where the death occurs. Each country reports daily deaths from different settings differently, meaning comparisons across nations is not straightforward. England daily data only includes deaths in hospitals, Scotland data includes deaths in all settings, Northern Ireland and Wales data includes some deaths outside hospitals. Without clarity around the data and its limitations it is possible the use of the data will be stretched beyond what is reasonable.

The different ways the data are collected and aggregated means it is currently not possible to get more detailed demographic or geographic breakdowns from the UK perspective, though some are available for countries within the UK. It would support public confidence in the statistics if producers of these outputs continue to improve the clarity on the limitations of the data and work to bring greater consistency in measures across countries within the UK. Some of the other key statistical issues include:

- **Transparency** – currently, not all statements, slides and datasets published by the government use statistics that can be verified through publicly available data and analysis. Improvements are being made, but it is important that charts and graphs are appropriately sourced and accurately labelled, caveats should be well explained and detail of the limitations of the statistics including what they can and cannot be used for should be included in the source material even if not in headline materials.

- **Coverage** – there is variation by country about whether the data cover deaths from all settings, or just those in hospital settings.

- **Clarity** – the approach each country is taking to collecting its surveillance data should be made clearer.

- **Punctuality** – publication times can be quite varied, and we would like to see improvements to the consistency in the timing of publication for the UK figures.

- **Comparability** – there should be greater clarity about the extent to which the UK figures are comparable with international figures and other sources.

On Tuesday 14 April, for the first time in this pandemic, ONS published weekly deaths registration data for the whole of the UK (these data can be found in the tab labelled UK COVID-19 weekly registrations). The data includes provisional figures on deaths registered in UK with breakdowns by age for all nations of the UK. In the associated metadata, there are good explanations for the UK level data and details of adjustments made.

2.   Daily data

Daily coronavirus cases dashboard (Source: Public Health England)

Coronavirus Covid19 daily data for Scotland (Source: Scottish Government)

COVID-19 Overview (Source: Department of Health, Northern Ireland)

Rapid COVID-19 Surveillance dashboard (Source: Public Health Wales)

On a daily basis, each of the countries in the United Kingdom collect and publish COVID-19 data in easily accessible formats, consistently including the number of cases, number of tests and number of deaths where there is a confirmed test for COVID-19. Guidance about reporting surveillance data and about what to communicate to the population throughout a pandemic is published by the World Health Organisation (WHO).

These national data provide timely information to support decision making and inform the public. It is impressive that such timely data are being published on a daily basis, and within countries there are specific instances of good practice, for example:

- The Scottish Government publish a daily bulletin including transparent information around the number of patients in hospitals and intensive care units to demonstrate the impact on capacity of hospitals in Scotland.

- The daily surveillance reports (published by the Public Health Agency (Northern Ireland)) have been superseded by an accessible, informative daily dashboard (20 April) published by the Department of Health, Northern Ireland, that also includes information about the number of intensive care unit beds available.

There is variation by country about whether the data cover deaths from all settings, or just those in hospital settings. England daily data currently only includes deaths in hospitals, but we understand that ONS is working with the Care Quality Commission to publish further data on deaths in care home residences.

Table 1 outlines the strengths and limitations of the daily data.

Table 1: Daily data

Strengths	Limitations
Timeliness – nationwide data is reported less than 24 hours from close of the data reporting period	Producers are currently unable to give an accurate assessment of the uncertainty around the figures
Daily data is clear that deaths are reported for those who tested positive for coronavirus	Each country reports deaths from different settings differently, meaning comparisons across nations is not straightforward (England data includes deaths in hospitals, Scotland data includes deaths in all settings, NI and Wales includes some deaths outside hospitals).
Consistent time series are available for each country individually	
The dashboards are an accessible way to present the information	

NHS England also publishes daily death information, for patients in hospital in England who had tested positive for COVID-19 at the time of death. The data provides more detail and has been broken down by hospital provider, region, age group and ethnicity category (from 2 April with ethnicity from 20 April).

3. Weekly deaths data

Deaths registered weekly for England and Wales (Source: Office for National Statistics)

Weekly deaths involving coronavirus in Scotland (Source: National Records of Scotland)

Weekly death registrations in Northern Ireland (Source: NI Statistics and Research Agency)

All countries now publish weekly death registration reports focusing on COVID-19 detailing granular information such as age group, sex and place of occurrence. Registration deaths data is less timely but is a more complete record and can be disaggregated based on other data recorded on the death certificate.

The statistics include all cases where COVID-19 was mentioned on the death certificate by the doctor who certified the death and will include suspected cases where no test for the virus was conducted. For most analyses produced, the statistics are based on date of death registration rather than date of occurrence and they include all deaths registered including those in hospitals, care homes and other settings. The statistics provide breakdowns by person characteristics recorded on the death certificate, such as age band and sex. The comparability of the data between UK nations is explained and the data collections in each country are robust, having been developed over a long time period. While there are still some limitations – such as a lack of information on ethnicity and analyses on deaths not associated with COVID-19 – these data provide more complete estimates of deaths associated with COVID-19. These data are published as National Statistics.

Clear and helpful explanations are being included in those outputs to explain the differences with daily surveillance data. Producers are supplementing the main statistical releases with other outputs, for example, ONS published a [separate release on COVID-19 deaths in March 2020](#) which included new analysis of underlying causes of death and the Northern Ireland Statistics and Research Agency (NISRA) have presented the key statistics in a separate [dashboard](#).

Table 2 outlines the strengths and limitations of the death registrations data.

Table 2: Registrations data

Strengths	Limitations
Coverage – data includes all cases where COVID-19 was mentioned on the death certificate and includes all registered deaths including those in hospitals, care homes and other settings	Not as timely and not consistent across all countries. ONS – 11 days, NISRA – 7 days, NRS – 3 days after close of data reporting period.
Data allows for more granular breakdowns – male/female, age band and geography	Data includes all cases where COVID-19 was mentioned on the death certificate and will include suspected cases where no test for the virus was conducted, or the test was negative. The underlying causes of death are based on professional clinical judgement.
Data is broadly comparable across the UK, there are differences in how the registration weeks are defined, however, this is likely to have little impact on comparisons	User needs for additional information such as breakdowns by ethnicity and further analysis of excess death (those not associated with COVID-19) are not currently able to be met – though some producers have plans to address these.
Data definitions and data quality are clearly explained	

Each week, ONS, NISRA and NRS publish registered death reports including those related to COVID-19. The releases are pre-announced and punctual. NRS requested an exemption to the Code of Practice for Statistics' standard publication time of 9.30am to permit a later release time of noon. This allows appropriate quality assurance of the data and preparation of the statistics while publishing in a timelier fashion.

We are encouraged to see that all reports include a clear explanation about comparability to the daily surveillance figures and also include an analysis of date of death versus date of registration. From our conversations with producers, we recognise that more work is ongoing to understand the nature of the number of deaths not associated with COVID-19.