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Introduction

On 1 March 2020, the first person in Scotland was tested positive for COVID-19. On the 17 March NHS Scotland was placed in an emergency footing by the Cabinet Secretary. Schools closed on 20 March and the country went into lockdown on 23 March. Scotland entered phase one of easing out of lockdown on 29 May, phase two on 19 June and phase three on 10 July. Schools started to re-open from 11 August.

Since the start of the outbreak Public Health Scotland (PHS) has been working closely with Scottish Government and health and care colleagues in supporting the surveillance and monitoring of COVID-19 amongst the population.

This report shows the trends of the number of positive COVID-19 tests in Scotland, and looks at some of the wider impacts of the virus on the healthcare system, comparing recent trends in activity with historic norms. Since 17 June 2020 the report includes data on Test and Protect.

There is a large amount of data being regularly published regarding COVID-19 (for example, Coronavirus in Scotland – Scottish Government and Deaths involving coronavirus in Scotland – National Records of Scotland). This report complements the range of existing data currently available.

The coronavirus pandemic is a rapidly evolving situation. This report provides an analysis of the data up to 23 August 2020. Future reports will provide further data and analysis to contribute to the evidence base around the outbreak.

Since 15 June 2020, Public Health Scotland publishes the total number of results, positive and negative, carried out across any NHSScotland Laboratories and UK Government Regional Testing Centres.
Main Points

- Between 28 May to 23 August 2020, 2,330 individuals were recorded in the contact tracing software, from which 10,091 contacts have been traced.

- As at 23 August 2020, there have been 19,877 confirmed COVID-19 cases, equating to 363.8 confirmed cases per 100,000 population.

- As at 23 August 2020, 456,917 people in Scotland have tested negative.

- Between 1 March 2020 and 19 August 2020, there had been 5,970 admissions to hospital with a laboratory confirmed test of COVID-19, and 12 in the most recent week.

- As at 23 August 2020, 535 confirmed COVID-19 patients have been treated in an Intensive Care Unit. In the last week there were 0 patients who have ever been confirmed COVID-19 that were admitted to ICU.

- There were 183,695 people who arrived in Scotland from outside the UK from 22 June to 23 August, of which 49,789 were required to quarantine and 3,303 were contacted by the National Contact Tracing Centre.

- A sizeable proportion of excess deaths in Scotland during the COVID-19 pandemic have not been coded as being directly due to COVID-19. A new report on summarising analysis of which underlying causes have contributed to these non-COVID-19 excess deaths can be found [here](#).
Results and Commentary

COVID-19 Confirmed Cases

This part of the report contains information on positive and negatives cases of COVID-19 that have been confirmed by testing carried out through NHSScotland laboratories and now include those testing at a Regional Testing Centre (RTCs) as part of the UK Government testing programme. This includes tests done at the drive through centres, mobile units, and home testing kits.

The total number of people within Scotland who have, or have had COVID-19, since the coronavirus outbreak began is unknown. The number of confirmed cases is likely to be an underestimate of the total number who have, or have had, COVID-19.

As the number of people being tested for COVID-19 increases, the pattern observed in the data within this report may change.

As at 23 August 2020;

• There have been 19,877 people in Scotland who have tested positive, at any site in Scotland (NHS and UK Government Regional Testing centres), for COVID-19 since the start of the outbreak.
• This equates to 363.8 people per 100,000 population having tested positive for COVID-19.
• There have been 456,917 people in Scotland who have tested negative, at any site in Scotland (NHS and UK Government Regional Testing Centres), since the start of the outbreak.

A person can have multiple tests but will only ever be counted once.

The number of confirmed COVID-19 cases, on a daily basis, are shown in Figure 1. Figure 1 shows a decreasing 7-day moving average for positive cases across Scotland. There was a decreasing trend between 20 April 2020 to around the end of June, which levelled off through July. There has been a slight increase throughout August.

This data is monitored and published daily on the Scottish Government Coronavirus website. The drop in the number of confirmed cases at weekends likely reflects that laboratories are doing fewer tests at the weekend.

*Note that the number of confirmed cases shown for each day may differ slightly from data published on the Scottish Government website. This is because the data below has some cases added retrospectively and assigned to days based on the most up to date records. This has no impact on the overall number of confirmed cases.*
Figure 1: Epidemic curve for first laboratory positive sample for COVID-19 cases by date of specimen with 7-day rolling average (includes NHS Laboratory and UK Govt testing centre data)

Note: Specimen date was not available for historical UK Government Regional Testing centres data between 15 and 25 April. As a sample date is required to report in ECOSS (Electronic Communication of Surveillance in Scotland) these samples were assigned a specimen date in the mid-point within this date range (20 April).

Note: Date refers to the date the sample was received into the PHS Surveillance System.

For a small number of laboratory results initially reported as positive on subsequent additional testing the laboratory result may be amended to negative, and the individual no longer managed as a confirmed case.
Test and Protect

On 26 May 2020, the Scottish Government set Test and Protect - Scotland’s approach to implementing the 'test, trace, isolate, support' strategy. This strategy is designed to minimise the spread of COVID-19.

Public Health Scotland is working closely with the Scottish Government and all local NHS Boards to implement 'Test and Protect'. Since 28 May 2020, once an individual receives a positive result, a team of contact tracers will then gather details on individuals who have been in contact with the person who tested positive. The contact tracers will then proceed to contact these individuals and advise them to isolate.

The data within this report is the number of contacts which are recorded in the contact tracing software. The figures presented below are developmental and may be updated in subsequent publications. A case is generated by a positive test however an individual can have multiple tests, and all positive results are reported to the contact tracing system so that each result can be assessed by the contact tracer and followed up as required. In many cases, there is no follow up for a repeat positive test (because the person was already contact traced when their first positive result was reported). To reflect this, test and protect data now includes details on the number of individuals whose positive test resulted in contact tracing being undertaken. The number of individuals who tested positive is also more comparable with the figures given in the COVID-19 Confirmed Cases section of this report, which reports on new positive cases.

From 28 May to 23 August 2020, the test and protect figures are:

Cases* – 3,050 (of which 2,824 have completed contact tracing)
Individuals** - 2,330
Contacts traced – 10,091

*A case is generated for each positive result with a test date on or after 28 May. This includes tests derived from Scottish laboratories and from UK Government laboratories.

**An individual is a unique person who has had a positive test. An individual can have multiple positive tests which results in multiple cases within the test and protect system. In these figures, each person is only counted once.

Data by NHS Board is presented in Table 1 for the most recent two weeks. Table 1 shows the number of individuals and the number of contacts by NHS Board. Note that the number of positive cases of COVID-19 in Scotland is low. Therefore, comparisons between NHS Boards should be made with caution due to the small numbers involved and the variation in complexity of cases which the Boards are dealing with at any point in time (e.g. some cases will be straightforward with a low number of contacts to be traced; others will be more complex with a higher number to be traced). These figures will be updated in subsequent weeks to incorporate any additional contacts who had not had their tracing completed by the time the analysis was undertaken.
Table 1: Number of individuals and the number of contacts by NHS Board

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Individual</td>
<td>Contacts</td>
</tr>
<tr>
<td>Ayrshire &amp; Arran</td>
<td>13</td>
<td>50</td>
</tr>
<tr>
<td>Borders</td>
<td>5</td>
<td>25</td>
</tr>
<tr>
<td>Dumfries &amp; Galloway</td>
<td>*</td>
<td>1</td>
</tr>
<tr>
<td>Fife</td>
<td>10</td>
<td>117</td>
</tr>
<tr>
<td>Forth Valley</td>
<td>6</td>
<td>20</td>
</tr>
<tr>
<td>Grampian</td>
<td>36</td>
<td>105</td>
</tr>
<tr>
<td>Greater Glasgow &amp; Clyde</td>
<td>101</td>
<td>786</td>
</tr>
<tr>
<td>Highland</td>
<td>8</td>
<td>55</td>
</tr>
<tr>
<td>Lanarkshire</td>
<td>43</td>
<td>175</td>
</tr>
<tr>
<td>Lothian</td>
<td>33</td>
<td>121</td>
</tr>
<tr>
<td>Orkney</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Shetland</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Tayside</td>
<td>166</td>
<td>573</td>
</tr>
<tr>
<td>Western Isles</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Unknown Health Board**</td>
<td>*</td>
<td>121</td>
</tr>
<tr>
<td>Scotland</td>
<td>426</td>
<td>2,149</td>
</tr>
</tbody>
</table>

* Denotes data which has been suppressed due to risk of disclosure.
** Please note this includes individuals with no information on their Health Board of residence and from elsewhere in the UK.

Figures for the most recent week are provisional and will be updated in next week’s publication.

Data is extracted Sunday 23 August 2020 at 8pm. Data relates to tests up to 22 August 2020. Weekly data presented from Sunday to Saturday to allow a 24-hour contact period. Figures are provisional and may change as the test and protect tool is updated by contact tracers.

Contact tracers, within the National Contact Tracing Centre and NHS Boards, were unable to contact a very small proportion of individuals with a positive test and their contacts:

- 4 individuals* with a positive test were unable to be contacted since the CMS went live. This is 0.3% (4/1400) of all individuals.
- 89 contacts* were unable to be contacted by since the CMS went live. This is 1.1% (89/7790) of all contacts.

*This information is only available for index cases that have been recorded on the Case Management System (CMS). The CMS went live on 22 June 2020 with NHS Boards migrating on a phased approach with all Boards using CMS from 21 July 2020. Prior to Board migrating to CMS, data was recorded in a Simple Tracing Tool (STT) which did not give the level of granularity required to report on these measures. These data are
Developmental and an extensive data quality assurance exercise is underway and data may be revised in subsequent publications.

Data within the CMS can be recorded in 4 ways:

- **Active** – A new record is in the CMS and contact tracing is underway.
- **Completed** – Contact tracing has been successful and the purpose of making contact achieved.
- **Failed** – The contact tracing team has been unable to make contact.
- **Excluded** – The individual with a positive test or the contact has been excluded due to a small number of reasons. Examples are: negative test following a weak positive test, or contact has become an index case following a positive test. Excluded records are not used in calculating the proportion of ‘failed’ contacts with individuals and their contacts.

**Completed Index cases**

Since 3 August 2020, the use of some fields within the Contact Tracing Case Management System has become mandatory – this allows for improvement in data recording and other measures to be explored as to how Test and Protect in Scotland is responding to the number of positives cases. The measures below are the initial exploratory analysis to describe the timeliness of contact tracing. Please note these are developmental statistics and ongoing work is in place to improve recording and use of fields within the CMS to increase accuracy. The three measures are; the time between a sample being taken and the positive individual being interviewed, the time between the record appearing in the CMS and the positive individual being interviewed and the time between the record appearing in the CMS and contact tracings being completed^.

^i.e. contacts have been interviewed or attempted to be interviewed.

**Table 2: Time (hours) between date test sample taken and the positive individual being interviewed – 03 August 2020 to 23 August 2020**

Table 2 shows the time (hours) taken between the test sample being taken to the interview being completed by a contact tracer.

<table>
<thead>
<tr>
<th>Number of Index Cases</th>
<th>% of Total Index Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-24 hours</td>
<td>258</td>
</tr>
<tr>
<td>24-48</td>
<td>394</td>
</tr>
<tr>
<td>48-72</td>
<td>117</td>
</tr>
<tr>
<td>Over 72</td>
<td>117</td>
</tr>
<tr>
<td>Not known*</td>
<td>27</td>
</tr>
</tbody>
</table>

*Records where dates cannot be identified to calculate the difference. Data quality assurance exercises are taking place to improve this recording.
Table 3 - Time (hours) between case created in CMS and the positive individual being interviewed – 03 August 2020 to 23 August 2020

Table 3 shows the time (hours) taken between the case appearing in CMS to the interview being completed by a contact tracer.

<table>
<thead>
<tr>
<th>Number of Index Cases</th>
<th>% of Total Index Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-24hrs</td>
<td>812</td>
</tr>
<tr>
<td>24-48hrs</td>
<td>57</td>
</tr>
<tr>
<td>48-72hrs</td>
<td>11</td>
</tr>
<tr>
<td>Over 72hrs</td>
<td>22</td>
</tr>
<tr>
<td>Not known*</td>
<td>11</td>
</tr>
</tbody>
</table>

*Records where dates cannot be identified to calculate the difference. Data quality assurance exercises are taking place to improve this recording.

Table 4 - Time between case created in CMS and case closed – 03 August 2020 to 23 August 2020

Table 4 shows the time taken between the case appearing in CMS to its closure, measured by the time taken to complete the final contact interview.

<table>
<thead>
<tr>
<th>Number of Index Cases*</th>
<th>% of Total Index Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-24hrs</td>
<td>512</td>
</tr>
<tr>
<td>24-48hrs</td>
<td>214</td>
</tr>
<tr>
<td>48-72hrs</td>
<td>92</td>
</tr>
<tr>
<td>Over 72hrs</td>
<td>95</td>
</tr>
</tbody>
</table>

*Includes failed and excluded contacts

Future publication plans

NHS Boards have migrated to the new CMS and PHS will continue to increase the level of information presented during the coming weeks. The CMS enables a greater level of granularity in the data available to us about contact tracing, including the demographics (for example age, sex, deprivation status) of individuals and time taken to reach their contacts.
Quarantining Statistics

These statistics provide a summary of the number of passengers entering Scotland from outside the UK, those required to quarantine, and the numbers contacted by the National Contact Tracing Centre. Passenger arrivals into Scotland are provided by the Home Office to Public Health Scotland (PHS). PHS then take a sample of those passengers who are required to quarantine and pass the data to NHS National Services Scotland, which runs the National Contact Tracing Centre.

Up to the end of August, the National Centre has been averaging around 600 contacts per week.

Table 5 – Quarantine Statistics by date.

<table>
<thead>
<tr>
<th></th>
<th>Cumulative Total (22 June to 23 August)</th>
<th>Latest Week (to 23 August)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of people arriving in Scotland¹</td>
<td>183,695</td>
<td>28,478</td>
</tr>
<tr>
<td>Number of people requiring to quarantine²</td>
<td>49,789</td>
<td>9,350</td>
</tr>
<tr>
<td>Number of people contact by National Centre³</td>
<td>4,143</td>
<td>959</td>
</tr>
</tbody>
</table>

Of the total number of people contacted by the National Centre, table 6 shows the breakdown of these contacts.

Table 6: Number of people contacted by National Centre by status.

<table>
<thead>
<tr>
<th></th>
<th>Cumulative Total (22 June to 23 August)</th>
<th>Latest Week (to 23 August)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Successful contacts made⁴</td>
<td>3,303</td>
<td>805</td>
</tr>
<tr>
<td>Unable to contact individual⁵</td>
<td>764</td>
<td>78</td>
</tr>
<tr>
<td>In progress⁶</td>
<td>76</td>
<td>76</td>
</tr>
</tbody>
</table>

Notes:
1 People who arrive in the UK, as notified to Public Health Scotland by the Home Office
2 People who are required to quarantine in Scotland (all countries prior to 30th June; high risk countries from 30th June), adults aged 18 and over only.
3 Sample of people who are passed to NCTC for follow-up to provide advice and support
4 People who were successfully contacted by NCTC
5 Calls which could not be completed because the individual could not be contacted (invalid phone number or no response to call). Where appropriate details of individuals are passed to Police Scotland for further follow up. This also includes not completed due to quarantine period ending before NCTC could contact individual
6 Calls which are still in progress
COVID-19 across the NHS

Charts for a number of measures related to COVID-19 service use in the NHS were presented in the report up until July 15. These are now available to view in an Excel spreadsheet.

This includes:

- Number of positive confirmed cases per day and cumulative total
- Positive cases by age, sex and SIMD
- COVID-19 admissions to hospital
- COVID-19 patients admitted to ICU (Intensive Care Unit)
- COVID19 Hub and Assessment Consultations
- COVID-19 related contacts to NHS 24 and calls to Coronavirus helpline
- SAS (Scottish Ambulance Service) Incidents related to COVID-19

Further commentary on these measures can be found in the 15 July statistical report.
Wider Impact of COVID-19

The COVID-19 pandemic has direct impacts on health as a result of illness, hospitalisations and deaths due to COVID-19. However, the pandemic also has wider impacts on health and on health inequalities. Reasons for this may include:

- Individuals being reluctant to use health services because they do not want to burden the NHS or are anxious about the risk of infection.
- The health service delaying preventative and non-urgent care such as some screening services and planned surgery.
- Other indirect effects of interventions to control COVID-19, such as mental or physical consequences of distancing measures.

The surveillance workstream of the social and systems recovery cell aims to provide information and intelligence on the wider impacts of COVID-19 on health, healthcare and health inequalities that are not directly due to COVID-19.

The wider impact dashboard can be viewed online and includes the following topics:

- A&E Attendances
- Hospital admission
- NHS 24 111 completed contacts
- Primary Care Out of Hours Service
- Scottish Ambulance Service
- Cardiovascular
- Immunisation – uptake of first, second and third dose of 6-in-1 vaccine
- MMR Immunisation Data
- Child Health Visitors
- Excess deaths
- Stillbirths and Infant Deaths

These analyses are based on a selected range of data sources that are available to describe changes in health service use in Scotland during the COVID-19 pandemic. More detailed information is available at NHS Board and Health and Social Care Partnership (HSCP) level.
Excess deaths by underlying cause and area deprivation

A sizeable proportion of excess deaths in Scotland during the COVID-19 pandemic have not been coded as being directly due to COVID-19. A new report on summarising analysis of which underlying causes have contributed to these non-COVID-19 excess deaths can be found [here](#).

Using provisional death register data from National Records of Scotland, data is presented for excess in age-sex standardised rates of death from key underlying causes during the 14-week period from the registration of the first COVID-19 deaths in Scotland until numbers of deaths from all causes had returned to normal levels (16 March to 21 June 2020, inclusive). There is also an analysis of how excess mortality by cause varied by area deprivation (quintiles of the 2020 Scottish Index of Multiple Deprivation, or SIMD).

The findings provide some support for various hypotheses about non-COVID-19 excess mortality, including undiagnosed COVID-19, reduced use of health services by those that need them, and unintended consequences of measures taken to control the spread of the virus. To inform future measures that may be taken to control the spread of viruses such as COVID-19 it will be important to understand these wider implications of non-clinical responses to the pandemic.
Contact
Public Health Scotland
phs.statsgov@nhs.net

Further Information
COVID surveillance in Scotland
Scottish Government
Daily Dashboard by Public Health Scotland National Records of Scotland

UK and international COVID reports
Public health England
European Centre for Disease Prevention and Control
WHO
International Severe Acute Respiratory Emerging Infection Consortium.

The next release of this publication will be 2 September 2020.

Open data
Data from this publication is available to download from the Scottish Health and Social Care Open Data Portal.

Rate this publication
Let us know what you think about this publication via the link at the bottom of this publication page on the PHS website.
Appendices

Appendix 1 – Background information

In late December 2019, the People’s Republic of China reported an outbreak of pneumonia due to unknown cause in Wuhan City, Hubei Province.

In early January 2020, the cause of the outbreak was identified as a new coronavirus. While early cases were likely infected by an animal source in a ‘wet market’ in Wuhan, ongoing human-to-human transmission is now occurring.

There are a number of coronaviruses that are transmitted from human-to-human which are not of public health concern. However, COVID-19 can cause respiratory illness of varying severity. Currently, there is no vaccine and no specific treatment for infection with the virus.

On the 30 January 2020 the World Health Organization declared that the outbreak constitutes a Public Health Emergency of International Concern.

Extensive measures have been implemented across many countries to slow the spread of COVID-19.

Further information for the public on COVID-19 can be found on NHS Inform.
Appendix 2 – PHS and Official Statistics

About Public Health Scotland (PHS)

PHS is a knowledge-based and intelligence driven organisation with a critical reliance on data and information to enable it to be an independent voice for the public’s health, leading collaboratively and effectively across the Scottish public health system, accountable at local and national levels, and providing leadership and focus for achieving better health and wellbeing outcomes for the population. Our statistics comply with the Code of Practice for Statistics in terms of trustworthiness, high quality and public value. This also means that we keep data secure at all stages, through collection, processing, analysis and output production, and adhere to the ‘five safes’.