

# State of the Epidemic in Scotland – 13 May 2022

## Scottish Government Central Analysis Division

### Background

This report summarises the current situation of the Covid-19 epidemic in Scotland. It brings together the different sources of evidence and data about the epidemic in Scotland at this point in time, why we are at that place, and what is likely to happen next. This updates the previous publication published on 29 April 2022<sup>1</sup>. The information in this document helps the Scottish Government, the health service and the wider public sector respond to the epidemic and put in place what is needed to keep us safe and treat people who have the virus.

This edition of the State of the Epidemic summarises current data on Covid-19 at a national and local level, and how Scotland currently compares to the rest of the UK. It looks at the vaccination program in Scotland and its impact. Information is provided about variants of concern and what impact these may have. Bringing this information together in one place gives the opportunity to better understand the current state of the epidemic in Scotland.

The State of the Epidemic report this week will summarise the situation up to and including 10 May 2022. Due to changes in reporting and testing, certain data sources will have earlier cut-off dates than 10 May. This is highlighted throughout the report in the footnotes of the relevant sections.

We are currently considering the appropriate frequency and content of this report, if you have any feedback please contact [sqcentralanalysisdivision@gov.scot](mailto:sqcentralanalysisdivision@gov.scot).

### Changes to Testing Policy in Scotland

Please note that patient testing requirements changed on 1 April 2022, which may mean a reduction in asymptomatic cases of Covid detected and a corresponding decrease in Covid related occupancy and admissions. Following the publication of the [Test and Protect Transition Plan](#), the LFD Universal Offer for asymptomatic testing came to an end on 18 April 2022. In addition, on 1 May 2022 the purpose of COVID-19 testing shifted from population-wide testing to reduce transmission, to

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<sup>1</sup> Scottish Government: [Coronavirus \(Covid-19\): state of the epidemic - gov.scot \(www.gov.scot\)](https://www.gov.scot/Coronavirus-Covid-19-state-of-the-epidemic)

targeted testing and surveillance. Reported cases will no longer be representative of all COVID-19 cases in Scotland, and caution is advised when comparing trends in cases over time. This has reduced the availability and reliability of Covid-19 data and indicators that rely on testing, including cases data, hospital admissions and occupancy data. In this publication, affected indicators have been marked out and highlighted throughout the report.

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Please note that this week's State of the Epidemic report does not include a section on LFD testing or reinfection cases (commentary on this can still be found in the Reported Covid-19 Cases section), and no commentary on Covid-19 cases in different age groups, cases among care home residents, or case rates in Scottish local authorities. This is due to data availability following the implementation of testing policy changes in Scotland.

## Summary

Since the last publication, the UKHSA consensus estimate of R has decreased, and both the lower and upper limits of the R value were below one as at 26 April. The positivity estimate from the Covid-19 Infection Survey (CIS) for Scotland continued to decrease in the most recent week to 7 May. Over the past two weeks to 10 May there has been an overall nationwide decline in wastewater Covid-19 levels; however, the most recent week saw a slight increase. According to the CIS, the estimated percentage of people testing positive has decreased among all ages.

Both Covid-19 related daily hospital and ICU occupancy appear to have continued to decline in the most recent week to 8 May, after reaching the highest levels seen throughout the pandemic on 2 April. The weekly number of Covid-19 admissions appears to have continued to decrease in the week to 19 April, after reaching the highest levels seen throughout the pandemic in the week to 18 March; however, these trends are to be interpreted with caution due to recent changes in testing. There were 85 deaths where Covid-19 was mentioned on the death certificate in the latest week, a decrease from the week before.

## Key Points

- The UK Health Security Agency's (UKHSA) consensus estimate for R in Scotland as at 26 April is between 0.7 and 0.9. The lower and upper limits of the R value have both decreased since the previous publication.
- As at 26 April, the UKHSA's consensus view was that the incidence of new daily infections in Scotland was between 16 and 302 per 100,000 people.
- The latest estimated growth rate for Scotland as at 26 April was between -6% and -3%. The upper and lower growth limits have both decreased since the previous publication.
- As determined through the latest weekly ONS Covid-19 Infection Survey (CIS), in Scotland, the percentage of people living in private residential households testing positive for Covid-19 continued to decrease in the week ending 7 May 2022. In the latest week, the estimated percentage of people testing positive was 3.01% (95% credible interval: 2.57% to 3.45%)<sup>2</sup>, equating to around 1 in 35 people (95% credible interval: 1 in 40 to 1 in 30).
- In the most recent week (1 to 7 May 2022), estimates for the percentage of people testing positive were similar for all CIS Regions in Scotland and ranged from 3.17% in CIS Region 128 (NHS Ayrshire & Arran, NHS Borders and NHS Dumfries & Galloway) (95% credible interval: 2.65% to 3.81%) to 3.25% in CIS Region 127 (NHS Lanarkshire) (95% credible interval: 2.65% to 3.89%).

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<sup>2</sup> A **credible interval** gives an indication of the uncertainty of an estimate from data analysis based on a sample population. 95% credible intervals are calculated so that there is a 95% probability of the true value lying in the interval.

- Nationwide, wastewater Covid-19 levels declined slightly in the last two weeks. The week ending 10 May saw levels of around 84 million gene copies per person per day (Mgc/p/d), a decrease compared to 97 Mgc/p/d two weeks ago (week ending 26 April) and 76 Mgc/p/d observed in the previous week (week ending 3 May).
- Please note that due to testing policy changes, reported cases will no longer be representative of all COVID-19 cases in Scotland, and caution is advised when comparing trends in cases over time. By specimen date, there were 158 weekly combined PCR and LFD cases (including reinfections) per 100,000 population in the week to 6 May.
- In the week to 8 May, daily Covid-19 hospital occupancy in Scotland appears to be on a decline; however, this is to be interpreted with caution due to latest changes in testing. NHS boards reported 1,033 patients in hospital or in short stay ICU on 8 May with recently confirmed Covid-19, compared to 1,285 on 1 May.
- There were 917 Covid-19 admissions to hospital in the week to 19 April compared to the previous week ending 12 April (1,128 admissions); a 19% decrease. There were 27 new Covid-19 patients admitted to ICU in the week to 24 April, compared to 25 in the week to 17 April; an 8% increase. These figures are to be interpreted with caution due to recent testing changes, and data continues to be lagged by two weeks from the latest available date due to high numbers of revisions.
- The overall number of Covid-19 deaths has decreased by 11%, or 10 deaths, to a total of 85 deaths in the week leading up to 8 May, compared to 95 in the week leading up to 1 May.
- In the week ending 8 May, the total number of deaths registered in Scotland was 1,085. This was 4% above the five-year average for this week.
- According to PHS analysis on the equality of vaccine uptake, White ethnic groups tend to have the highest vaccination uptake while African, Caribbean or Black and Other ethnic groups tend to have the lowest vaccination uptake for all the available Covid-19 vaccine doses. However, over time this difference in uptake has become smaller. Additionally, individuals living in the least deprived areas tend to have a higher vaccination uptake than those living in the most deprived areas in Scotland.
- Omicron sub-lineage BA.2 remains dominant in the United Kingdom (UK) and Scotland based on sequencing data. Some diversity is developing within this variant, and South Africa has seen an increase in cases compatible with Omicron sub-lineages BA.4 and BA.5. However, the population within South Africa has a different background of natural immunity compared to UK and Scotland as they did not previously undergo a significant wave of Omicron BA.2 infections. Therefore, the conditions favouring BA.4 and BA.5 growth may not be applicable in the UK and Scotland.

## **Method**

This report brings together a wide range of publicly available figures from a range of data sources. These include publications by Scottish Government, Public Health Scotland, National Records of Scotland and Office for National Statistics along with scientific publications and SAGE and UKHSA summaries where appropriate to summarise the state of the epidemic in Scotland in a given week. We also provide information on public attitudes to the virus from monthly YouGov polling surveys and fortnightly information from the Scottish Contact Survey.

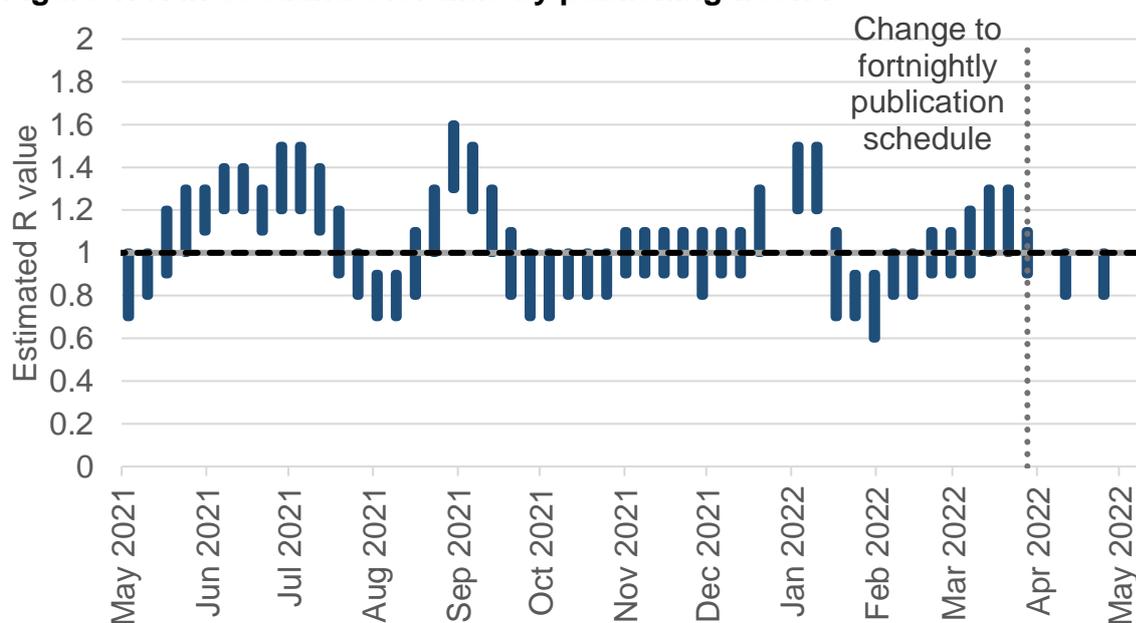
## Covid-19 Prevalence

### R value, Growth Rate and Estimated New Daily Infections

The reproduction number (R) is the average number of secondary infections produced by a single infected person. If R is greater than one the epidemic is growing, if R is less than one the epidemic is shrinking. The higher R is above one, the more people one infectious person might further infect and so the faster the epidemic grows. **Please note that R is an indicator that lags by two or three weeks.** For more information please visit [the UK government website](#).

The UK Health Security Agency's (UKHSA) consensus estimate for R in Scotland as at 26 April is between 0.7 and 0.9. The lower and upper limits of the R value have both decreased since the previous publication (Figure 1)<sup>3 4</sup>.

Figure 1: R in Scotland over time by publishing week<sup>5</sup>.



As at 26 April, the UKHSA's consensus view was that the incidence of new daily infections in Scotland was between 16 and 302 per 100,000. This equates to between 900 and 16,500 people becoming infected each day in Scotland<sup>6 7</sup>.

<sup>3</sup> Scottish Government: [Coronavirus \(Covid-19\): modelling the epidemic](#) (Issue 99, published 12 May 2022)

<sup>4</sup> Using data to 9 May 2022.

<sup>5</sup> No R value was published for the week beginning 27 December 2021 (as publications were paused over the festive period). The most recent data point for the R value is dated 11 May 2022, reflecting the R value as at 26 April 2022.

<sup>6</sup> Scottish Government: [Coronavirus \(Covid-19\): modelling the epidemic](#) (Issue 99, published 12 May 2022)

<sup>7</sup> Using data to 9 May 2022.

The growth rate reflects how quickly the numbers of infections are changing day by day. It is an approximation of the percentage change in the number of new infections each day. More information can be found on [the UK government website](#).

The latest growth rate for Scotland as at 26 April was between -6% and -3%. The upper growth and lower growth limit have both decreased since the last published figure<sup>8 9</sup>.

## Covid-19 Infection Survey – Headline Estimates

The Covid-19 Infection Survey is a UK wide study carried out by the Office for National Statistics (ONS) and the University of Oxford. The survey invites private residential households to test whether they have the infection, regardless of whether they have symptoms, using a PCR test. This means the study is unaffected by testing policy changes. Participants are also asked to provide a blood sample to test for antibodies.

In Scotland, the percentage of people living in private residential households testing positive for Covid-19, as estimated by the Covid-19 Infection Survey, continued to decrease in the most recent week (1 to 7 May), as seen in Figure 2<sup>10</sup>. The estimated percentage of people testing positive in Scotland has been decreasing since the end of March. This follows a peak in the week 14 to 20 March 2022 which saw the highest estimate for Scotland since the survey began. The estimated percentage of people testing positive for Covid-19 in the private residential population in the week 1 to 7 May in Scotland is 3.01% (95% credible interval: 2.57% to 3.45%)<sup>11</sup>, equating to around 1 in 35 people (95% credible interval: 1 in 40 to 1 in 30).

In the week 1 to 7 May 2022, estimates for the other nations of the UK are as follows and can be seen in Figure 2:

- In England, the percentage of people testing positive continued to decrease: 2.21% (95% credible interval: 2.09% to 2.33%), equating to around 1 in 45 people (95% credible interval: 1 in 50 to 1 in 45).
- In Wales, the percentage of people testing positive continued to decrease: 2.91% (95% credible interval: 2.40% to 3.46%), equating to around 1 in 35 people (95% credible interval: 1 in 40 to 1 in 30).

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<sup>8</sup> Using data to 9 May 2022.

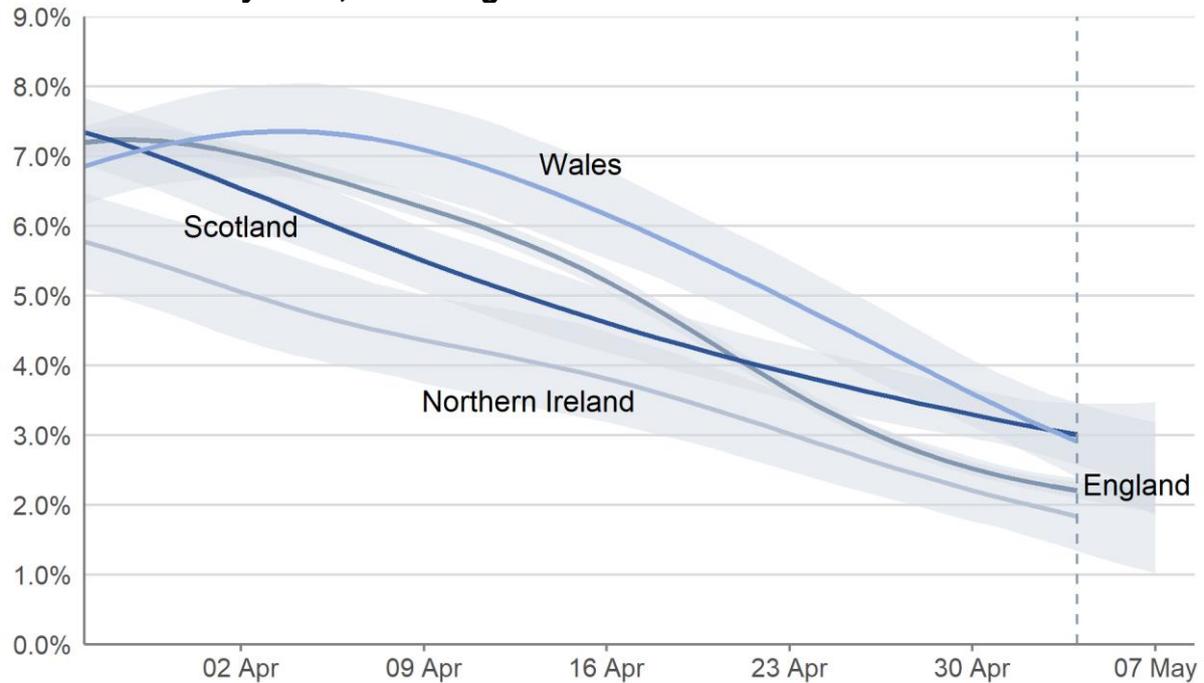
<sup>9</sup> Scottish Government: [Coronavirus \(Covid-19\): modelling the epidemic](#) (Issue 99, published 12 May 2022)

<sup>10</sup> Scottish Government: [Coronavirus \(COVID-19\): ONS infection survey - Headline Results](#) (published 13 May 2022)

<sup>11</sup> A **credible interval** gives an indication of the uncertainty of an estimate from data analysis based on a sample population. 95% credible intervals are calculated so that there is a 95% probability of the true value lying in the interval.

- In Northern Ireland, the percentage of people testing positive continued to decrease: 1.84% (95% credible interval: 1.34% to 2.39%), equating to around 1 in 55 people (95% credible interval: 1 in 75 to 1 in 40).

**Figure 2: Modelled daily estimates of the percentage of the private residential population testing positive for Covid-19 in the four UK nations, between 27 March and 7 May 2022, including 95% credible intervals<sup>12</sup>.**



In Scotland, the estimated percentage of people testing positive has decreased for all age groups in recent weeks<sup>13</sup>.

<sup>12</sup> Scottish Government: [Coronavirus \(COVID-19\): ONS infection survey - Headline Results](#) (published 13 May 2022)

<sup>13</sup> Scottish Government: [Coronavirus \(COVID-19\): ONS infection survey - Headline Results](#) (published 13 May 2022)

## Covid-19 Infection Survey – Regional Analysis

The ONS have created sub-regions across the UK for the purposes of providing Covid-19 positivity estimates for the residential populations on a lower level than the four nations. In Scotland, these sub-regions are comprised of Health Boards (for an overview on how these align with local authorities, please see Table 1 in the Technical Annex).

Sub-regional estimates are based on a different model to the headline estimates, and should not be compared to headline positivity estimates. The sub-regional figures may differ from the headline estimates because they are averaged over a longer time period.

There is a higher degree of uncertainty in the sub-regional estimates because of a smaller sample size in each sub-region relative to their respective national sample. This is indicated by wider credible intervals and therefore results should be interpreted with caution.

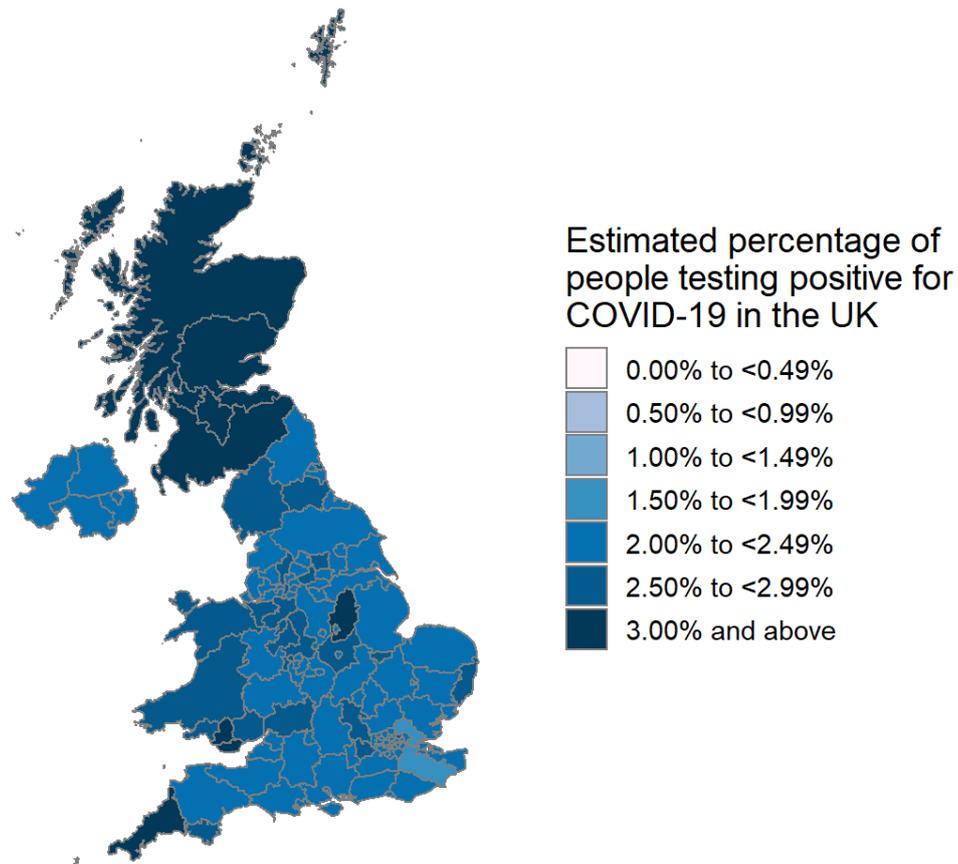
In the most recent week (1 to 7 May 2022), estimates for the percentage of people testing positive for Covid-19 were similar for all CIS Regions in Scotland and ranged from 3.17% in CIS Region 128 (NHS Ayrshire & Arran, NHS Borders and NHS Dumfries & Galloway) (95% credible interval: 2.65% to 3.81%) to 3.25% in CIS Region 127 (NHS Lanarkshire) (95% credible interval: 2.65% to 3.89%). Overlapping credible intervals indicate that there may not be a true difference between the estimates (Figure 3)<sup>14</sup> <sup>15</sup>. Figure 3 is also available as a [dynamic map](#).

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<sup>14</sup> Scottish Government: [Coronavirus \(COVID-19\): ONS infection survey - Headline Results](#) (published 13 May 2022)

<sup>15</sup> Sub-regional estimates are based on a different model to the national headline estimates, and should not be compared to headline positivity estimates. The sub-regional figures may differ from the headline estimates because they are averaged over a longer time period. The number of people sampled in each sub-regional area who tested positive for COVID-19 is lower relative to the respective overall national samples. This means there is a higher degree of uncertainty in these estimates; caution should be taken, and the uncertainty of the estimates and wide credible intervals taken into account, when interpreting or ranking them.

**Figure 3: Modelled estimates of the percentage of the private residential population within each CIS sub-region who would have tested positive for COVID-19 in the week 1 May to 7 May 2022<sup>16</sup>.**



Source: ONS COVID-19 Infection Survey, 2021.  
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(OS Licence number 100024655)

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<sup>16</sup> Scottish Government: [Coronavirus \(COVID-19\): ONS infection survey - Headline Results](#) (published 13 May 2022)

## Covid-19 Wastewater Estimates

The Scottish Government has been working with the Scottish Environment Protection Agency (SEPA) to detect and analyse fragments of Covid-19 virus RNA in wastewater. The levels of SARS-CoV-2 in wastewater are monitored at 141 sites around Scotland. In contrast to Covid-19 case records, virus shedding into wastewater is a biological process. This means that wastewater data is unaffected by factors that impact whether testing is done.

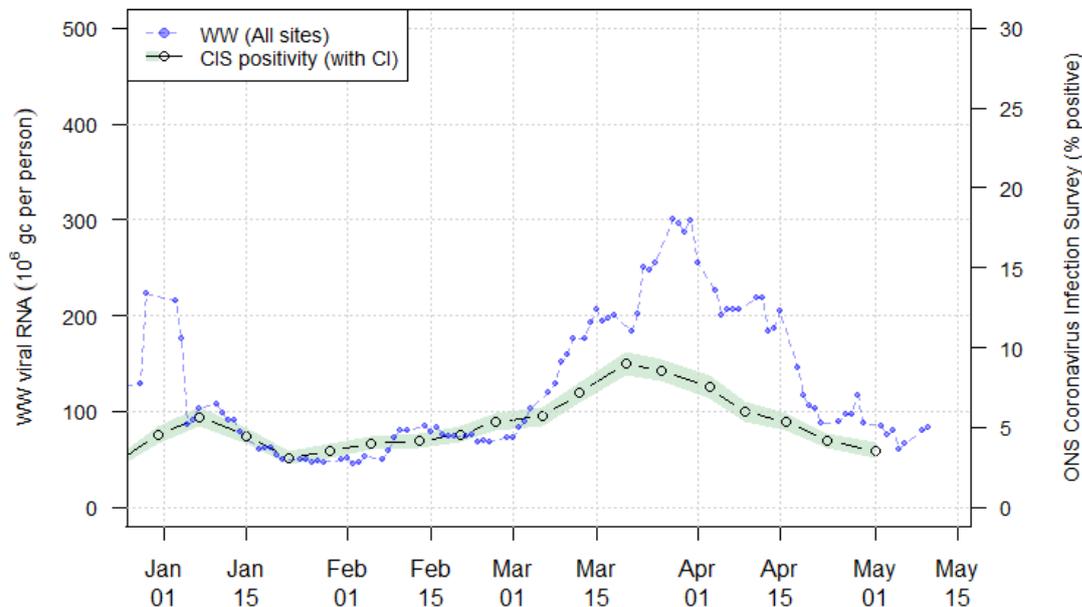
Nationwide, wastewater Covid-19 levels declined slightly in the last two weeks. The week ending 10 May saw levels of around 84 million gene copies per person per day (Mgc/p/d), a decrease compared to 97 Mgc/p/d two weeks ago (week ending 26 April) and 76 Mgc/p/d observed in the previous week (week ending 3 May) (Figure 4)<sup>17</sup>.

Although overall there are decreases in wastewater Covid-19 levels across most of Scotland in the last two weeks, 14 local authorities have increased their levels over the past week. Increases were reported in Angus, City of Edinburgh, Clackmannanshire, Dundee City, East Dunbartonshire, East Lothian, Falkirk, Highland, Inverclyde, Midlothian, Moray, Perth and Kinross, Renfrewshire, and West Lothian. Please note that comparisons for Argyll and Bute, Na h-Eileanan Siar, Orkney, Shetland and Stirling are not possible due to sampling coverage.

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<sup>17</sup> Scottish Government: [Coronavirus \(Covid-19\): modelling the epidemic](#) (Issue 99, published 12 May 2022)

**Figure 4: National running average trends in wastewater Covid-19 from 31 December 2021 to 10 May 2022, and CIS positivity estimates from 31 December to 1 May 2022<sup>18 19 20</sup>.**



## Reported Covid-19 Cases

The LFD Universal Offer for asymptomatic testing came to an end on 18 April 2022. In addition, on 1 May 2022 the purpose of COVID-19 testing shifted from population-wide testing to reduce transmission, to targeted testing and surveillance. **Reported cases will no longer be representative of all COVID-19 cases in Scotland, and caution is advised when comparing trends in cases over time. For more information, see the [Scottish Government Covid-19 Test and Protect Transition Plan](#).**

Please note that due to testing policy changes, reported cases will no longer be representative of all COVID-19 cases in Scotland, and caution is advised when comparing trends in cases over time. By specimen date, there were 158 weekly combined PCR and LFD cases (including reinfections) per 100,000 population in the week to 6 May (Figure 5)<sup>21</sup>. This follows a period of sharply decreasing case rates

<sup>18</sup> Scottish Government: [Coronavirus \(Covid-19\): modelling the epidemic](#) (Issue 99, published 12 May 2022)

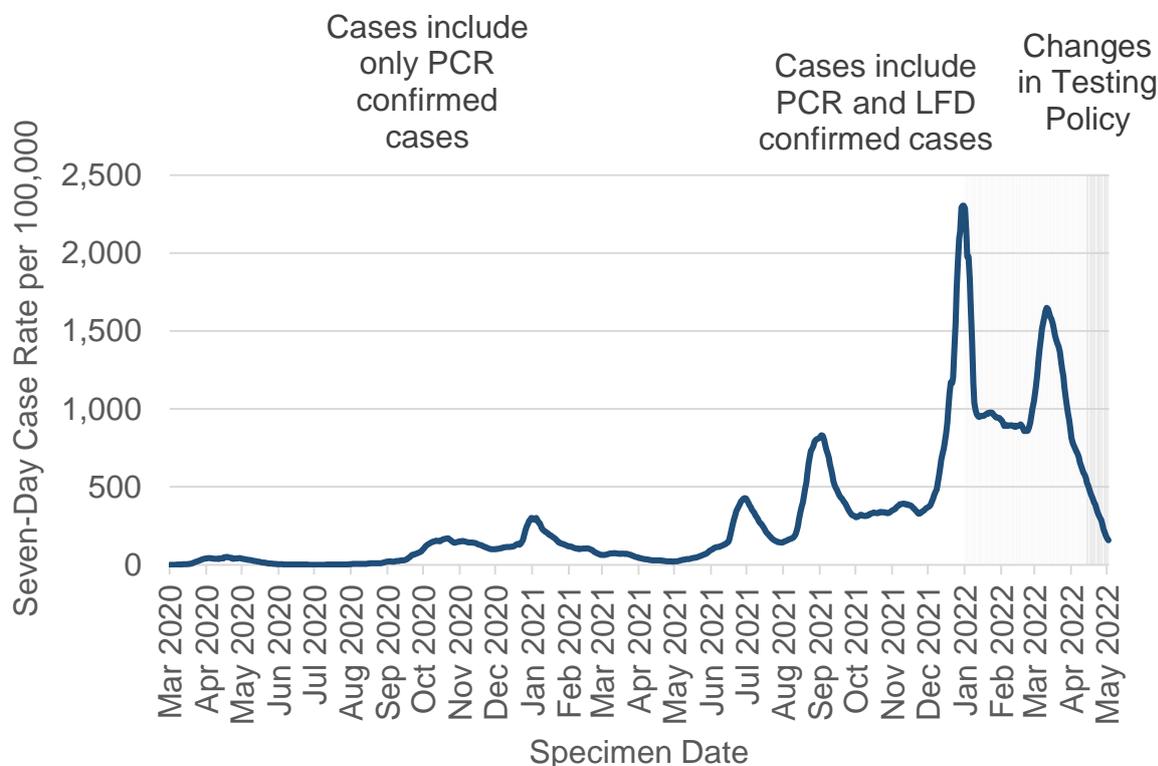
<sup>19</sup> The Omicron variant emerged in Scotland around mid-December 2021. After the end of 2021, S-gene dropout testing data suggest that nearly all cases are from the Omicron variant. During the period of change in the dominant variant, a change in the relationship between the wastewater SARS-CoV-2 RNA levels and case numbers was observed and postulated to be due to different levels of virus shed by the two variants. If this assumption is true, and there is no further change in shedding following the emergence of the Omicron variant BA.2, then from early January 2022, wastewater SARS-CoV-2 RNA levels should have a consistent relationship with the underlying Covid-19 prevalence.

<sup>20</sup> The latest CIS estimates up to the week to 7 May were not available at the time that Figure 3 was produced. As a result, Figure 3 uses CIS estimates from the week ending 1 May 2022). See the previous section for the latest CIS estimates.

<sup>21</sup> Public Health Scotland: [Covid-19 Daily Dashboard](#) (accessed 9 May 2022)

since the most recent peak in March. The regular analyses on case rates in different age groups and among care home residents are no longer included in this report.

**Figure 5: Seven-day combined PCR and LFD case rate (including reinfections) per 100,000 for Scotland by specimen date. Data to 6 May 2022<sup>22 23</sup>.**



The proportion of reinfections among the total weekly cases has increased in the most recent week. By specimen date, there was a total number of 1,159 reinfection cases confirmed by either a PCR or LFD test in the week leading up to 6 May. This represents 13.4% of reported cases, and compares to 12.8% in the week leading up to 29 April<sup>24</sup>. However, this number is likely affected by testing changes and this figure may no longer be comparable over time. The proportion of reinfections have increased rapidly since December 2021 and the emergence of the Omicron variant.

While the LFD Universal Offer for asymptomatic testing came to an end on 18 April 2022 in Scotland, 129,983 LFD tests were reported in the week to 8 May. This is a 29% decrease from the week previously (week to 1 May), when 182,972 LFD tests

<sup>22</sup> Public Health Scotland: [Covid-19 Daily Dashboard](#) (accessed 9 May 2022)

<sup>23</sup> Before 5 January 2022, the case rate includes only positive laboratory confirmed PCR tests. After 5 January 2022, the case rate includes PCR and LFD confirmed cases. From 18 April 2022, the Universal LFD Offer for asymptomatic testing is no longer available. In addition, on 1 May 2022 the purpose of COVID-19 testing shifted from population-wide testing to reduce transmission, to targeted testing and surveillance. Reported cases will no longer be representative of all COVID-19 cases in Scotland, and caution is advised when comparing trends in cases over time.

<sup>24</sup> Public Health Scotland: [Covid-19 Daily Dashboard](#) (accessed 9 May 2022)

were reported. This compared to a peak of 865,561 tests being reported in the week to 26 December 2021, while the LFD Universal Offer was still in place<sup>25</sup>.

The Scottish Contact Survey<sup>26</sup> continues to ask whether people use LFD tests and if so how often. Approximately 51% of individuals had taken at least one lateral flow test within the last 7 days for the survey pertaining to the period 28 April to 4 May, decreasing from 68% two weeks prior<sup>27</sup>.

Antimicrobial Resistance and Healthcare Associated Infection Scotland (ARHAI Scotland) provide analyses on hospital onset acquired Covid-19 infections, where patients are likely to have been infected after being admitted to hospital, based on the date when the sample was collected for a first positive Covid-19 test. Cases where the sample was collected before a hospital admission are considered community onset cases, while samples collected on day eight or later are considered nosocomial cases, or cases likely to have been acquired in a hospital setting. For more information, see this ARHAI [weekly publication](#).

According to data from ARHAI Scotland, 97.8% of the 30,262 Covid-19 cases reported in the week ending 17 April 2022 were reported as community onset cases. 237 cases in the same period were reported as nosocomial cases<sup>28</sup>. This is a 27% decrease from the previous week ending 10 April (324 nosocomial cases). This follows a period of increasing numbers of nosocomial cases since the beginning of February (following a peak in late December 2021 and early January 2022). The number of cases in all categories of inpatient diagnosed COVID-19 cases increased during the same time period, including those diagnosed on day one or two, reflecting the high levels of transmission in the community<sup>29</sup>.

**In line with recent changes to testing policy and transitions to long term strategies in the four UK nations, cases comparison between countries will no longer be included in the report.** For more information see following links for [England](#), [Scotland](#), [Wales](#), and [Northern Ireland](#).

To compare trends in estimated infection levels in private residential households across the UK, please see the previous section on the **Covid-19 Infection Survey**.

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<sup>25</sup> Public Health Scotland: [Covid-19 Statistical Report Dashboard](#) (published 11 May 2022)

<sup>26</sup> The sample is demographically representative of adults aged 18 and older across Scotland, with circa 3000 responses over two alternating panels. This is modelled to represent the Scottish population.

<sup>27</sup> Scottish Government: [Coronavirus \(Covid-19\): modelling the epidemic](#) (Issue 99, published 12 May 2022)

<sup>28</sup> Nosocomial cases include cases where the onset is either probable or definite hospital onset (where the sample was collected on day eight of hospital cases or later).

<sup>29</sup> ARHAI: [Hospital onset COVID-19 cases in Scotland](#) (published 11 May 2022)

## Covid-19 Related Severe Illness and Death

Please note that patient testing requirements changed on 1 April 2022, which will mean a reduction in asymptomatic cases of Covid detected and a corresponding decrease in ascertained Covid-19 related occupancy and admissions. In addition, from 1 May 2022, testing changed from asymptomatic population-wide testing, to targeted testing for clinical care and surveillance. Therefore, data should be interpreted with caution and over time comparison should be avoided. For more information, please see this [resource from the NHS](#).

Please note that hospital admissions data in Scotland is dynamic and subject to daily revisions. We continue to see a large number of mostly upward revisions which is likely due to infections being identified after patients have been admitted to hospital. As the greatest revisions are likely to impact the latest two weeks of data, we have moved to reporting week-on-week comparisons with a two-week lag. You can still see the latest data in Figure 7 but we advise caution in interpreting the latest trends.

Covid-19 occupancy and admissions figures presented in this section may include patients being admitted and treated in hospital or ICU for reasons other than COVID-19.

Following changes in the Covid-19 Case definition and changing testing policies on 5 January 2022, hospital and ICU occupancy figures include patients with Covid-19 cases confirmed by either PCR or LFD from 9 February and onwards. Prior to this date, it only included cases confirmed by a PCR test. Hospital and ICU occupancy include reinfection cases.

Covid-19 admissions to hospital (including for children and young people) include patients with Covid-19 cases confirmed either by PCR or LFD from 5 January and onwards. Prior to this date, it only included cases confirmed by a PCR test. Hospital admissions include reinfection cases. Admissions to ICU only include PCR confirmed Covid-19 cases.

### Hospital and ICU Occupancy

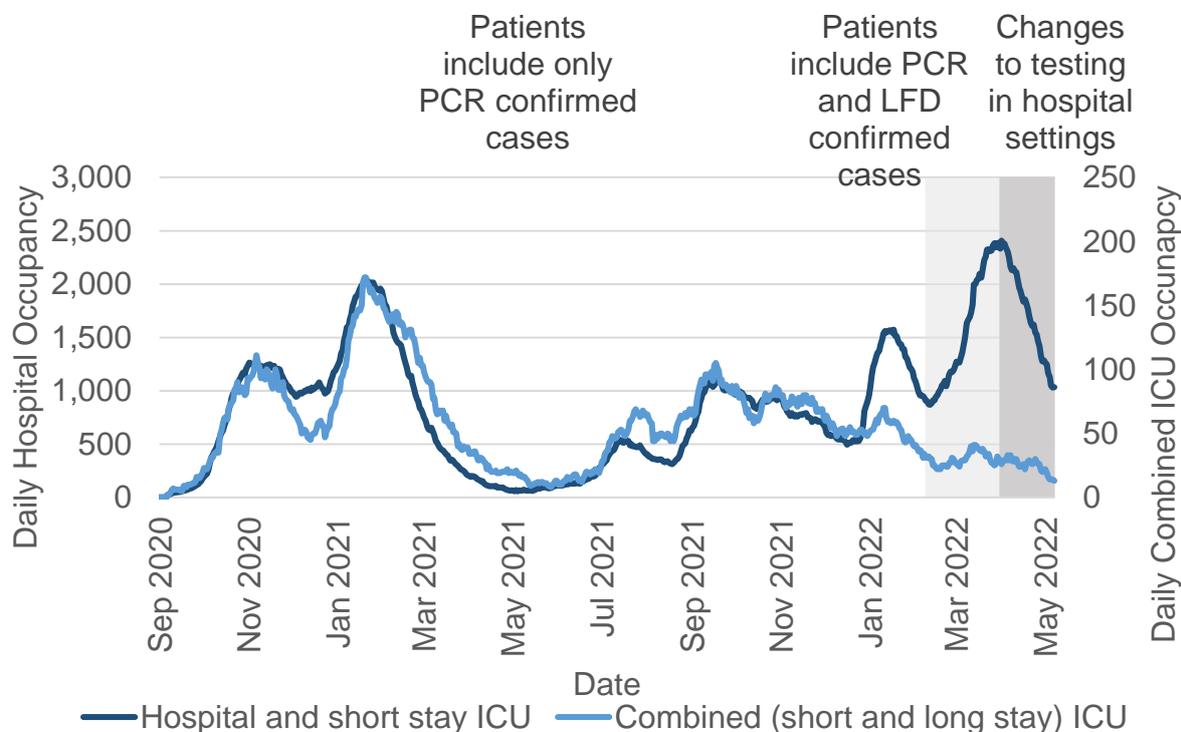
In the week to 8 May, daily Covid-19 hospital occupancy in Scotland appears to be on a decline; however, this is to be interpreted with caution due to recent testing changes. NHS boards reported 1,033 patients in hospital or in short stay ICU on 8 May with recently confirmed Covid-19, compared to 1,285 on 1 May. This follows a period of sharply increasing hospital occupancy numbers which peaked on 2 April with the highest figure seen throughout the pandemic at 2,406 patients (Figure 6)<sup>30</sup>.

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<sup>30</sup> Public Health Scotland: [Covid-19 Daily Dashboard](#) (accessed 9 May 2022)

NHS boards also reported 13 patients in short-stay or long-stay ICU on 8 May, compared to 20 on 1 May. Due to the changes in testing policy, any interpretations of trends need to be made with caution (Figure 6).

**Figure 6: Patients in hospital (including short stay ICU), and patients in combined ICU with recently confirmed Covid-19, data up to 8 May 2022<sup>31 32</sup>.**



## Hospital and ICU Admissions

Covid-19 related admissions to hospital<sup>33</sup> appear to have decreased, with 917 admissions to hospital for people with confirmed Covid-19 in the week to 19 April compared to 1,128 in the week to 12 April. This is a 19% decrease; however, this is to be interpreted with caution due to recent testing changes. This follows a period of sharply increasing numbers of Covid-19 related hospital admissions, reaching the highest levels seen throughout the pandemic in the week to 18 March 2022 (1,668

<sup>31</sup> ICU includes combined ICU/HDU figures and both patients with length of stay 28 days or less and with length of stay more than 28 days. Please note that only patients with length of stay 28 days or less in ICU were recorded until 20 January 2021. From 20 January 2021 ICU short and long stay includes both ICU or combined ICU/HDU with length of stay 28 days or less and with length of stay more than 28 days.

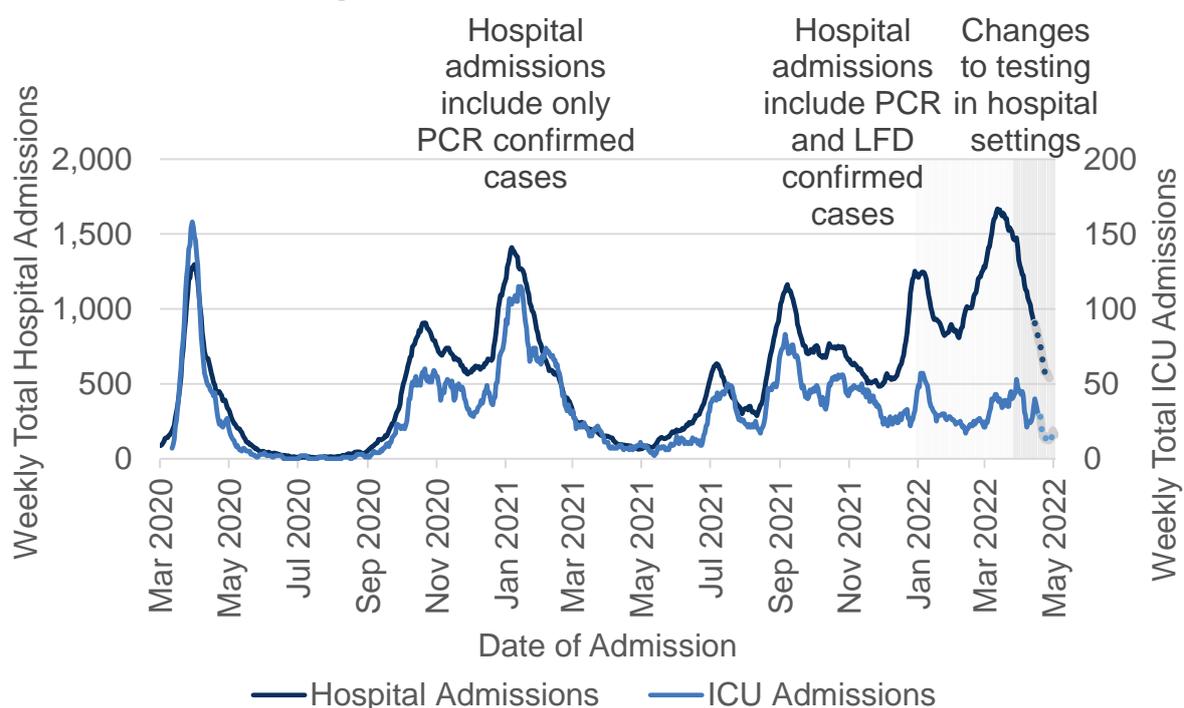
<sup>32</sup> Before 9 February 2022, patients were only included if they had a recent positive laboratory confirmed PCR test. Hospital and ICU occupancy includes reinfections from 7 March 2022 onwards. Patient testing requirements changed on the 1 April 2022 and population wide testing policy changed on 1 May 2022, which may mean a reduction in asymptomatic cases of Covid-19 detected and a corresponding decrease in Covid-19 related occupancy.

<sup>33</sup> Covid-19 related admissions have been identified as the following: A patient's first positive test for Covid-19 up to 14 days prior to admission to hospital, on the day of their admission or during their stay in hospital. If a patient's first positive test is after their date of discharge from hospital, they are not included in the analysis. An admission is defined as a period of stay in a single hospital. If the patient has been transferred to another hospital during treatment, each transfer will create a new admission record.

admissions)<sup>34</sup>. As noted above, we are continuing to see a large number of daily revisions, so comparisons for the latest two weeks of data have not been made<sup>35</sup>.

There were 27 new Covid-19 patients admitted to ICU in the week to 24 April, compared to 25 in the week to 17 April. This is an 8% increase; however, this is to be interpreted with caution due to recent testing changes. This compares to 57 weekly ICU admissions during the most recent peak in early January 2022. As noted above we are currently seeing a large number of daily revisions, so the number of admissions to ICU for the latest two weeks are likely to change (Figure 7)<sup>36</sup>.

**Figure 7: Weekly total of Covid-19 admissions to hospital and ICU with a positive Covid test in Scotland. Hospital admission data to 3 May 2022 and ICU admission data to 8 May 2022<sup>37 38</sup>.**



The highest number of hospital admissions in the week to 26 April were among those aged 80 and over. In the same week, approximately 65% of the hospital admissions related to patients aged 60 or older. This remains similar to 66% of admissions in the week to 12 April. According to the latest data, 67% of the hospital

<sup>34</sup> The State of the Epidemic report incorporates hospital admissions data published up on 9 May 2022, so any revisions since then will not be included in this report.

<sup>35</sup> Public Health Scotland: [Covid-19 Daily Dashboard](#) (accessed 9 May 2022)

<sup>36</sup> Public Health Scotland: [Covid-19 Daily Dashboard](#) (accessed 9 May 2022)

<sup>37</sup> Before 5 January 2022, hospital admissions were only included if the patient had a recent positive laboratory confirmed PCR test. **ICU admissions rely on PCR testing only.** Hospital admissions data in the chart now includes reinfections and has been updated to include this methodology retrospectively to the start of the pandemic. Patient testing requirements changed on the 1 April 2022 and population wide testing policy changed on 1 May 2022, which may mean a reduction in asymptomatic cases of Covid-19 detected and a corresponding decrease in Covid-19 related admissions.

<sup>38</sup> Public Health Scotland: [Covid-19 Daily Dashboard](#) (accessed 9 May 2022)

admissions in the week to 3 May related to patients aged 60 or older. However, the latest data does not have a lag applied to account for revisions<sup>39</sup>.

According to data from the PHS Education Dashboard, average hospital admissions related to Covid-19 in children and young adults were at 87 average weekly admissions in the three-week period to 27 April. This compares to 115 average weekly admissions in the previous three-week period to 20 April. This comes after a period of increasing numbers of hospital admissions among children and young people, peaking in the three-week period to 30 March, at 188 weekly average admissions<sup>40 41</sup>.

In the period 13 April to 26 April 2022, 61% of Covid-19 hospital admissions stayed longer than 48 hours after being admitted. Analysis from Public Health Scotland on the same time period shows that length of stay tends to increase with age, as 66% of hospital stays for those aged 17 or younger had a length of stay of less than 24 hours, while 78% of hospital stays for those aged 80 or older had a length of stay of over 48 hours<sup>42</sup>. Please note that length of stay can be influenced by a variety of factors, and that the figures above may be subject to future revisions due to the completeness of discharge summary information. For more information, please see the [PHS Weekly report](#).

Not all people hospitalised with a recent Covid-19 diagnosis will be in the hospital setting because of this infection. It is important to be able to differentiate between patients in hospital who are admitted to hospital 'because of' their Covid-19 as opposed to patients who are admitted to hospital for other reasons with a Covid-19 diagnosis incidentally identified through testing. For more information, see the [PHS Weekly Report](#) published 4 May 2022.

In September 2021, Public Health Scotland developed analysis to calculate the proportion of people in hospital because of Covid-19, based on SMR01 discharge summaries from NHS health boards. A hospital admission 'because of' Covid-19 is defined as an admission where acute Covid-19 illness is recorded as the main reason that the patient required treatment (including reinfections). This data provides valuable information, however, there is typically a two-to-three-month lag in receiving the discharge summaries from NHS health boards.

Between August and December 2021, the percentage of hospital admissions where Covid-19 was reported as the main diagnosis ranged between 60% (December 2021) and 74% (September 2021). By January 2022, this decreased to 42% (Figure 8). This decrease was seen despite the actual number of patients admitted with a main diagnosis of Covid-19 remaining similar between November 2021 and January

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<sup>39</sup> Public Health Scotland: [COVID-19 Statistical Report](#) (published 11 May 2022)

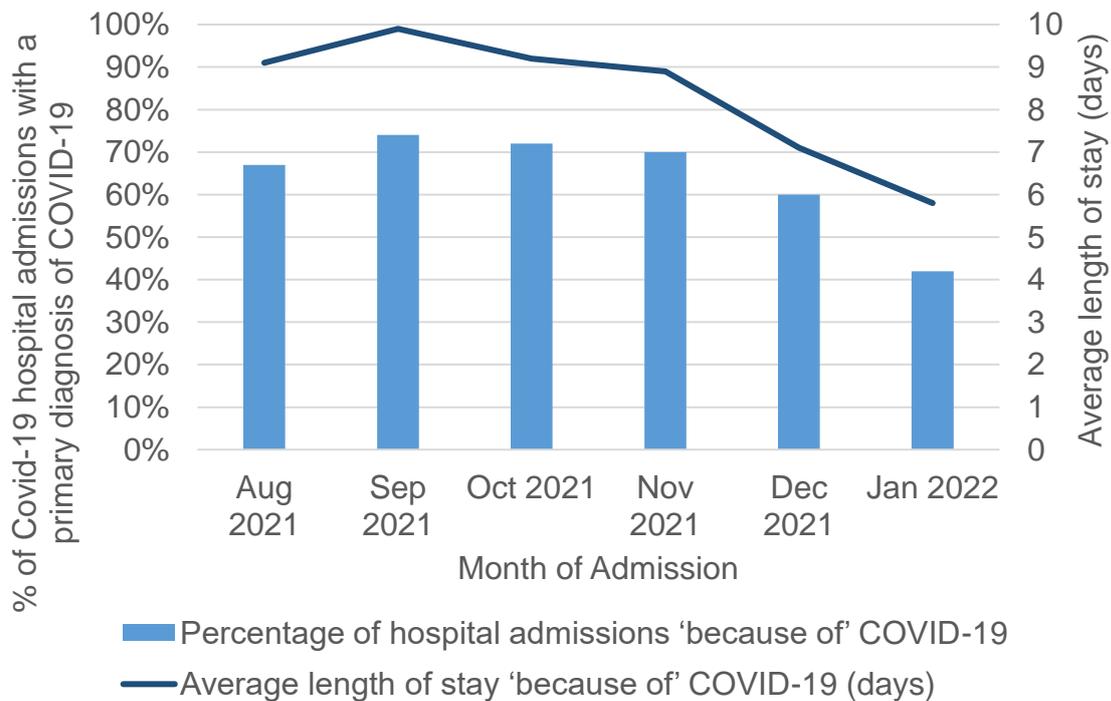
<sup>40</sup> Public Health Scotland: [COVID-19 Education report](#) (published 6 May 2022)

<sup>41</sup> This Covid-19 hospital admissions figure is based on a three-week rolling average rather than weekly totals, which is less likely to be significantly affected by revisions. It is therefore presented without a lag. These figures will be affected by the end to the Universal LFD Offer for asymptomatic testing.

<sup>42</sup> Public Health Scotland: [COVID-19 Statistical Report](#) (published 11 May 2022)

2022; however, January saw rising Covid-19 prevalence in Scotland, which led to increasing numbers of patients being admitted to hospital with a Covid-19 infection but where Covid-19 was not the main diagnosis. The average length of stay for hospital admissions where Covid-19 was the main diagnosis decreased from 9.9 days in September 2021, to 5.8 days in January 2022<sup>43</sup>.

**Figure 8: Percentage of Covid-19 hospital admissions with a primary diagnosis of Covid-19, and average length of stay. Data to January 2022<sup>44</sup>.**



Please note that patient testing requirements in Scotland and England started changing from 1 April 2022, with further changes implemented in Scotland on 1 May 2022. Changes covering policies for testing general population and patients in Wales were set out to start the transition from the end of March. In Northern Ireland, testing changes in the general population are being phased out from 22 April, with no immediate change to public health advice. For more information see the following links for [England](#), [Wales](#) and [Northern Ireland](#).

Due to the testing differences across the four nations mentioned above, we have removed the four nations comparisons on hospital admissions and occupancy. We will continue to monitor the data to see if it will become appropriate to reintroduce this analysis.

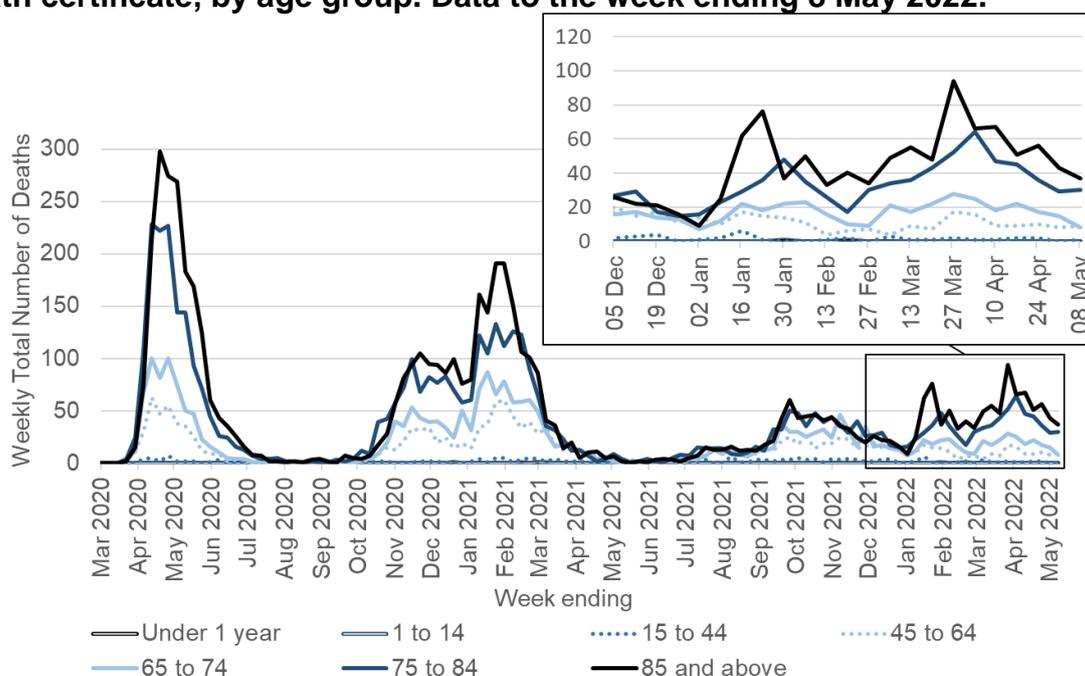
<sup>43</sup> Public Health Scotland: [COVID-19 Statistical Report](#) (published 4 May 2022)

<sup>44</sup> Public Health Scotland: [COVID-19 Statistical Report](#) (published 4 May 2022)

## Covid-19 Related Deaths and Excess Mortality

There were 85 deaths where Covid-19 was mentioned on the death certificate in the week to 8 May. Out of these, there were 41 deaths where Covid-19 was the underlying cause. The number of deaths where Covid-19 was mentioned on the death certificate decreased by 11%, or 10 deaths, compared to the previous week (95 deaths in the week to 1 May). The 85 deaths where Covid-19 was mentioned on the death certificate in the week to 8 May 2022 is 87% lower than the peak in 2020, when the week ending 27 April 2020 saw a total of 663 deaths where Covid-19 was mentioned on the death certificate<sup>45</sup>. The number of deaths is higher among those aged 45 and older but is fluctuating on a weekly basis. Covid-19 deaths among younger age groups have remained at low levels throughout the pandemic (Figure 9). National Records of Scotland publish a detailed analysis on deaths involving Covid-19 in Scotland in their weekly data releases and monthly report<sup>46</sup>.

**Figure 9: Weekly total number of deaths where Covid-19 was mentioned on the death certificate, by age group. Data to the week ending 8 May 2022.**



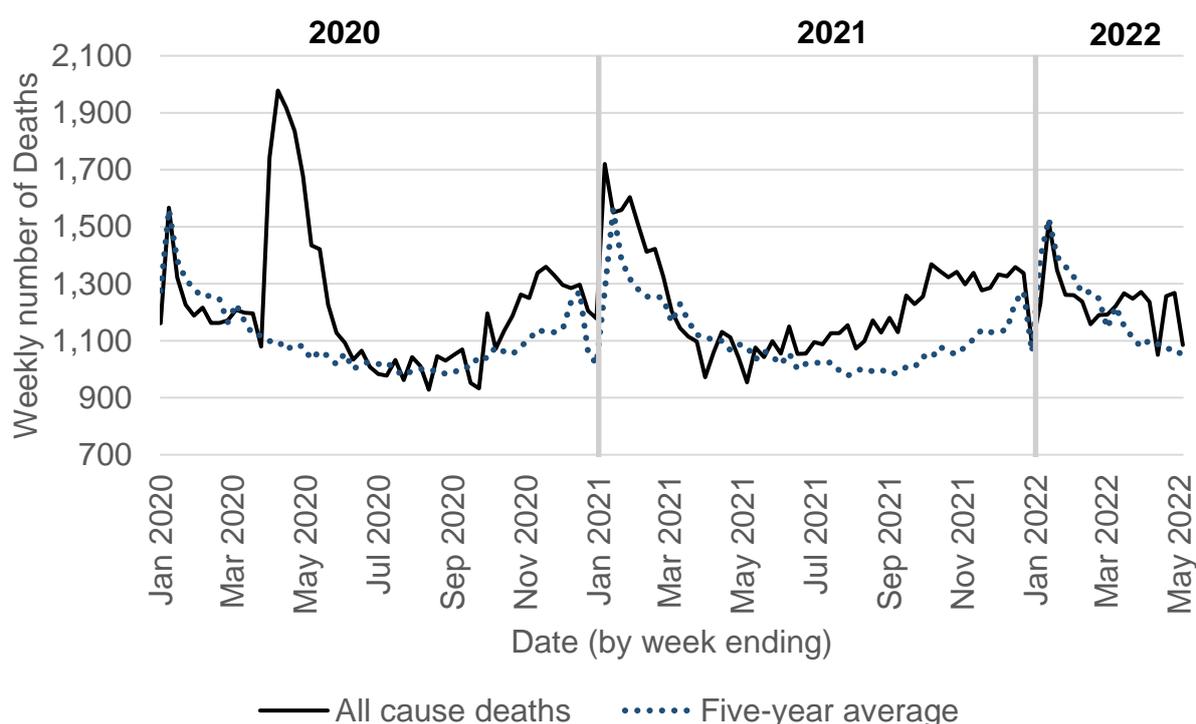
**Excess deaths** are the total number of deaths registered in a week minus the average number of deaths registered in the same week over the previous five years (excluding 2020). Measuring excess deaths allows us to track seasonal influenza, pandemics and other public health threats. Excess deaths include deaths caused by Covid-19 and those resulting from other causes.

<sup>45</sup> NRS Scotland: [Deaths involving coronavirus \(Covid-19\) in Scotland](#) (published 12 May 2022)

<sup>46</sup> NRS Scotland: [Deaths involving coronavirus \(Covid-19\) in Scotland](#) (published 12 May 2022)

In the week ending 8 May, the total number of deaths registered in Scotland was 1,085. This was 4%, or 38 deaths, above the five-year average for this week (Figure 10)<sup>47 48</sup>. In the same week, the number of deaths from Dementia and Alzheimer’s disease were 27 below the previous five-year average for this week, the number of deaths from cancer diseases were five below the average, and deaths from circulatory diseases were three below the average. Deaths from respiratory disease (not including Covid-19) were 8 above the average. There were 26 excess deaths from other causes<sup>49</sup>.

**Figure 10: Weekly deaths from all causes and five-year average weekly deaths in Scotland. Data to week ending 8 May 2022<sup>50</sup>.**



<sup>47</sup> NRS Scotland: [Deaths involving coronavirus \(Covid-19\) in Scotland](#) (published 12 May 2022)

<sup>48</sup> Please note that due to unusual numbers of mortality in 2020, the excess deaths calculation for 2021 use the average from the years 2015 – 2019. Year 2022 uses data from 2016, 2017, 2018, 2019 and 2021 to calculate average 5-year period.

<sup>49</sup> Please note that Covid-19 deaths are included in all cause deaths, and are counted towards all cause excess deaths. However, Covid-19 does not yet have a separate category for excess deaths calculation as excess deaths are compared against a five-year average. The separate categories of causes of death do not sum to the total excess due to the omission of a Covid-19 category, and it would not make sense to use the number of COVID deaths in the previous 5 years as a baseline.

<sup>50</sup> NRS Scotland: [Deaths involving coronavirus \(Covid-19\) in Scotland](#) (published 12 May 2022)

**Deaths data from England, Northern Ireland, Scotland and Wales use different methodologies, so they cannot be directly compared.** Due to recent and upcoming changes to testing policy across the four nations, we have moved from reporting daily number of people who died within 28 days of being identified as a Covid-19 case by a positive test, to reporting on deaths where Covid-19 was mentioned on the death certificate. This type of reporting is based on death registration, and as such it includes a lag of around two weeks to allow for deaths to be registered. For more information see [UK Government website](#).

There was one average daily death per one million where Covid-19 was mentioned on the death certificate in the week leading up to 29 April 2022 in Scotland. This compares to two weekly deaths per one million in the week to 22 April 2022. In the week to 29 April, seven-day average daily Covid-19 deaths for the other UK nations were as follows<sup>51 52</sup>:

- England: one per one million. This compares to two average deaths per one million in the week to 22 April 2022,
- Northern Ireland: one per one million. This compares to two average deaths per one million in the week to 22 April 2022,
- Wales: two per one million. This compares to three average deaths per one million in the week to 22 April 2022.

## Resilience: Vaccine Uptake, Antibody Estimates, and Vaccine Effectiveness

### Vaccine Uptake

Vaccinations started in Scotland on 8 December 2020 and there has been a very high uptake. Covid-19 vaccines protect most people against severe outcomes of a Covid-19 infection, but some people will still get sick because no vaccine is 100% effective. The current evidence suggests that you may test positive for Covid-19 or be reinfected even if you are vaccinated, especially since the emergence of the Omicron variant in the UK. The major benefit of vaccination against Omicron is to protect from severe disease. More information is available on the [PHS website](#).

By 9 May, almost 4.4 million people had received their first dose, an estimated 90.3% of the population in Scotland aged 12 and older. Over 4.1 million people had received their second dose, an estimated 85.9% of the population aged 12 and

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<sup>51</sup> Deaths where Covid-19 was mentioned on the death certificate.

<sup>52</sup> UK Government: [Coronavirus \(Covid-19\) in the UK](#) (accessed 10 May 2022)

older. Additionally, almost 3.5 million people in Scotland had received a third vaccine dose, which is an estimated 72.8% of the population aged 12 and older<sup>53</sup>.

The JCVI now advise a spring booster dose of the Covid-19 vaccine for: adults aged 75 years and over, residents in care homes for older adults, and individuals aged 12 years and over who have a weakened immune system<sup>54</sup>. By 9 May, 426,678 fourth dose vaccinations had been administered, with 75.7% of all care home residents having received their fourth dose. It is also estimated that 75.2% of those aged 75 or older have received their fourth dose<sup>55</sup>.

## Equality of Covid-19 Vaccination Uptake

Public Health Scotland (PHS) produces analysis on the equality of Covid-19 Vaccination uptake. This report updates on a previous analysis, summarised in the [State of the Epidemic report](#) published on 11 February 2022.

Since the last publication, PHS have reviewed the processes and methodologies underlying the analysis and concluded that there was an error in the creation of the ethnicity lookup file. This resulted in some bias in the uptake calculations for certain non-White ethnicities, and over-reporting of the estimated uptake in the ethnicity group “White – other”. For more information on the methodology changes, current processes and data sources, please see the PHS Weekly report published on 11 May 2022. **Please note that the vaccine uptake rates in this analysis uses different denominators than those in the Vaccine Uptake section, so the figures are not directly comparable.**

The updated PHS analysis on the equality of Covid-19 vaccination uptake uses data from 8 December 2020 to 3 May 2022, and contains comparisons by ethnicity and multiple deprivation (based on the [SIMD index](#)) in age bands for those aged five and older for dose one, those aged 12 and older for dose two, those aged 16 and older for dose three, and those aged 75 and older for dose four.

In the period 8 December 2020 to 3 May 2022, vaccine uptake for dose one and two was highest among White ethnic groups (88.6% and 84.5% respectively) and lowest among Caribbean or Black ethnic groups (70.0% and 62.1% respectively); similarly, in the period 1 August 2021 to 3 May 2022, dose three vaccine uptake among those aged 16 and older was highest among White ethnic groups (75.4%) and lowest among African ethnic groups (41.7%). The range in uptake of dose 3 was bigger among the older age groups, with 28.4 percentage points difference in uptake between individuals aged 80 and older in White and African ethnic groups. Among the age groups eligible for the fourth dose (those aged 75 and older) uptake was

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<sup>53</sup> Public Health Scotland: [Covid-19 Daily Dashboard](#) (accessed 9 May 2022)

<sup>54</sup> [Coronavirus \(COVID-19\) booster vaccination | The coronavirus \(COVID-19\) vaccine \(nhsinform.scot\)](#)

<sup>55</sup> Public Health Scotland: [Covid-19 Daily Dashboard](#) (accessed 9 May 2022)

highest among White ethnic groups (68.7%) and lowest in African ethnic groups (37.2%)<sup>56</sup>.

The drop-off refers to the proportion of individuals vaccinated with any dose that do not, for any reason, return for a subsequent vaccination when eligible. For the same time period as above, the drop-off between doses one and two, and between doses two and three, were biggest among African ethnic groups, with 9.0% vaccinated with dose one and not returning for the second (among those aged 12 and older), and 25.8% vaccinated with two doses not returning for the third (among those aged 16 and older). The smallest drop-off was seen among white ethnic groups for these doses (4.1% and 11.3%).

The trends in vaccine uptake over time for the first, second dose (data analysed between 8 December 2020 and 3 May 2022) and third dose (data analysed between 1 August 2021 and 3 May 2022) reflect the JCVI priorities for vaccination. For each age group and dose there is a point at which uptake naturally plateaus as most people who want to get the vaccine when first invited within their priority group, have done so. From that point onwards, this analysis shows that there was a continual decrease in the gap between the ethnic groups for all vaccine doses, indicating that individuals are continuing to come forward for vaccination after their priority group was already invited. For the second dose and third dose, this was particularly seen among African ethnic groups. However, the majority of individuals coming forward for a first and second dose in the past two months have been in the younger age groups.

By multiple deprivation, the uptake of dose one and two among those aged 12 and older was higher among those living in the least deprived areas in Scotland (84.2% and 81.2%), compared to those living in the most deprived areas (75.7% and 69.4%). For both doses, the difference in uptake between the most and least deprived areas increased in the younger age groups. This was also seen among those vaccinated with a third or fourth dose; the third dose had a 76.2% uptake in the least deprived areas and a 56.1% uptake in the most deprived areas (of those aged 16 and older), with the equivalent figures being 71.2% and 61.8% for the fourth dose (of those aged 75 and older).

In the most deprived areas, 6.3% of those aged 12 or older who received their first dose had not received their second, while the equivalent number for the least deprived areas was 3.0%. In the most deprived areas, 15.8% of those aged 12 or older who received their second dose had not received their third, while the equivalent number for the least deprived areas is was 6.2%<sup>57</sup>.

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<sup>56</sup> The roll out of dose 4 vaccination programme is still ongoing. As a result, figures for dose 4 can be affected by the different stages of this programme across different areas and settings.

<sup>57</sup> Public Health Scotland: [COVID-19 Statistical Report](#) (published 11 May 2022)

## Covid-19 Antibody Estimates

The analysis of antibody prevalence can be used to identify individuals who have had Covid-19 in the past or who have developed antibodies as a result of vaccination. As [detailed by the ONS](#), there is a clear pattern between vaccination and testing positive for Covid-19 antibodies but the detection of antibodies alone is not a precise measure of the immunity protection given by vaccination.

As the pandemic and vaccinations have evolved, the ONS has reviewed how it presents information about antibody levels. To enable enhanced monitoring of antibody levels and waning, in this release, the ONS has introduced an additional antibody series based on a higher level of 800 nanograms per millilitre (ng/mL). This is the highest level at which the ONS can produce a historic back-series of estimates. Please note, it is not based on academic research on protection against Omicron, as sufficient evidence on this is not yet available.

The ONS continues to report the antibody threshold of 179 ng/mL level, but have removed the previously reported standard antibody threshold of 42 ng/mL level from reporting, as all age groups have been at or nearly at 100% antibody positivity at or above 42 ng/mL for some time.

In the week beginning 11 April 2022, the ONS Covid-19 Infection Survey estimated that in Scotland the percentage of adults (aged 16 years and above) living in private residential households in Scotland who are estimated to have antibodies against Covid-19 was 98.9% of adults at or above the 179 ng/mL threshold (95% credible interval: 98.5% to 99.2%), and 94.7% of adults at or above 800 ng/mL (95% credible interval: 93.8% to 95.4%). This suggests that they had the infection in the past or have been vaccinated<sup>58</sup>. This compares to:

- 98.8% in England (95% credible interval: 98.5% to 99.0%) at the 179 ng/mL threshold, and 95.4% of adults at or above 800 ng/ml (95% credible interval: 94.9% to 95.9%),
- 98.7% in Wales (95% credible interval: 98.2% to 99.0%) at the 179 ng/mL threshold, and 95.6% of adults at or above 800 ng/ml (95% credible interval: 94.8% to 96.4%),
- 99.0% in Northern Ireland (95% credible interval: 98.2% to 99.4%) at the 179 ng/mL threshold, and 94.4% of adults at or above 800 ng/ml (95% credible interval: 91.9% to 96.2%)<sup>59</sup>.

The estimated percentage of the adult (aged 16 years and above) population living in private residential households in Scotland testing positive for antibodies against

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<sup>58</sup> Scottish Government: [Coronavirus \(COVID-19\): ONS Infection Survey - Antibody Data for Scotland](#) (Published 4 May 2022)

<sup>59</sup> Office For National Statistics: [Coronavirus \(COVID-19\) Infection Survey, antibody data, UK](#) (Published 4 May 2022)

SARS-CoV-2 at the 179 ng/mL threshold ranged from 97.5% for those aged 80 years and over (95% credible interval: 95.6% to 98.6%) to 99.5% for those aged 70 to 74 years (95% credible interval: 99.1% to 99.7%), in the week beginning 11 April 2022. At the 800 ng/mL threshold, antibody estimates for adults ranged from 89.6% for those aged 80 years and over (95% credible interval: 86.0% to 92.3%) to 96.0% for those aged 16 to 24 years (95% credible interval: 94.2% to 97.2%)<sup>60</sup>.

In the week beginning 11 April 2022, the percentage of children (aged 8 to 15 years) living in private residential households in Scotland who are estimated to have antibodies against SARS-CoV-2 at the 179 ng/mL threshold was: 90.3% for those aged 8 to 11 years (95% credible interval: 82.9% to 94.9%) and 97.2% for those aged 12 to 15 years (95% credible interval: 94.5% to 98.7%)<sup>61</sup>.

## Vaccine Effectiveness Against Omicron

The UKHSA reported that vaccine effectiveness against symptomatic disease, hospitalisation, or mortality with the Omicron variant is lower compared to the Delta variant and that it wanes rapidly. High vaccine effectiveness against all outcomes is restored after the booster dose, with effectiveness against symptomatic disease ranging initially from around 60% to 75% and dropping to around 25% to 40% after 15 weeks; however, from 20 or more weeks after the booster dose vaccine, effectiveness against symptomatic disease has almost no effect. Vaccine effectiveness against hospitalisation ranged from 85% to 95% up to six months after the booster dose with little variation between the type of vaccine used for priming or boost. High levels of protection against mortality were also restored after the booster dose, with a vaccine effectiveness of 94% two or more weeks following vaccination, and dropping to around 88% from 10 weeks after the vaccination for those aged 50 and older<sup>62</sup>.

Vaccine effectiveness against symptomatic disease with Omicron BA.2 compared to Omicron BA.1 showed similar results, with BA.1 having an effectiveness of below 20% and BA.2 having an effectiveness of just above 20% after 25 or more weeks following the second dose. The booster dose of vaccine increased effectiveness to around 70% against both BA.1 and BA.2 at two to four weeks following a booster vaccine. Effectiveness dropped to around 50% for BA.1 and BA.2 15 weeks after vaccination. Vaccine effectiveness against hospitalisation ranged from 83% for BA.1 to 87% for BA.2 at 14 to 34 days after the booster dose, and dropped to 73% for BA.1 and 70% for BA.2 after 70 days. These estimates have large overlapping confidence intervals<sup>63</sup>.

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<sup>60</sup> Scottish Government: [Coronavirus \(COVID-19\): ONS Infection Survey - Antibody Data for Scotland](#) (Published 4 May 2022)

<sup>61</sup> Scottish Government: [Coronavirus \(COVID-19\): ONS Infection Survey - Antibody Data for Scotland](#) (Published 4 May 2022)

<sup>62</sup> [COVID-19 vaccine surveillance report: week 17 \(publishing.service.gov.uk\)](#)

<sup>63</sup> [COVID-19 vaccine surveillance report: week 17 \(publishing.service.gov.uk\)](#)

More data on vaccine effectiveness against the Omicron variant can be found in the [UKHSA vaccine surveillance reports](#). There is evidence that there is reduced overall risk of hospitalisation for Omicron compared to Delta<sup>64 65</sup>, with the most recent estimate of the risk of presentation to emergency care or hospital admission with Omicron approximately half of that for Delta<sup>66</sup>. A recent, non-peer reviewed UK study revealed that risk of Covid-19 related death was 67% lower for Omicron when compared with Delta<sup>67</sup>.

## Looking ahead

### New Variants

VOC-22JAN-01 (Omicron sub-lineage BA.2) remains dominant in the United Kingdom (UK) and Scotland based on sequencing data. There is some diversity developing within this variant. V-22APR-03 (Omicron sub-lineage BA.4) and V-22APR-04 (Omicron sub-lineage BA.5) are increasing in South Africa and may be associated with the current increase in incidence there. Small numbers of BA.4 and BA.5 sequences continue to be detected in the UK<sup>68 69</sup>. There is evidence of a growth advantage of BA.4 and BA.5 compared to BA.2, in South Africa; however, it is not clear whether the growth advantage of BA.4 and BA.5 will be seen elsewhere. There is evidence of some antigenic change of BA.4 and BA.5 compared to BA.2 based on structural modelling and lab based pseudo-virus neutralisation studies. There is currently insufficient data to draw conclusions on the disease severity of BA.4 and BA.5<sup>70</sup>.

### Scottish Contact Survey

Changes in patterns of mixing will likely impact on future Covid-19 prevalence. The Scottish Contact Survey measures the times and settings in which people mix where they could potentially spread Covid-19<sup>71</sup>. Average contacts from the most recent wave of the Scottish Contact Survey (28 April to 4 May) indicate an average of 4.9 contacts. This has remained at a similar level compared to the previous wave of the survey (14 April to 20 April).

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<sup>64</sup> University of Edinburgh: [Severity of Omicron variant of concern and vaccine effectiveness against symptomatic disease](#)

<sup>65</sup> Imperial College Covid-19 response team: [Report 50: Hospitalisation risk for Omicron cases in England](#)

<sup>66</sup> UK Health Security Agency: [SARS-CoV-2 variants of concern and variants under investigation](#)

<sup>67</sup> [Risk of COVID-19 related deaths for SARS-CoV-2 Omicron \(B.1.1.529\) compared with Delta \(B.1.617.2\) | medRxiv](#)

<sup>68</sup> [SARS-CoV-2 variants of concern and variants under investigation \(publishing.service.gov.uk\)](#)

<sup>69</sup> [Variants: distribution of case data, 6 May 2022 - GOV.UK \(www.gov.uk\)](#)

<sup>70</sup> [Risk assessment for SARS-CoV-2 variants V-22APR-03 and V-22APR-04 \(publishing.service.gov.uk\)](#)

<sup>71</sup> From the 31 March 2022, panels A and B have been merged into one survey and are now run fortnightly.

These data points are reported as at the first day of the survey week. Further details of this are presented in the Scottish Government: [Coronavirus \(Covid-19\): modelling the epidemic](#) (Issue 99, published 12 May 2022)

Mean contacts within the work setting have increased in the last two weeks by 34% whereas contacts within the home and other setting (contacts outside home, school and work) have decreased by 7% and 21% respectively over the same period.

The youngest age group (18 to 29 year olds) reported a decrease in contacts within the last two weeks, by approximately 57%. The decrease is largely driven by a reduction in contacts within the other setting.

## Modelling the Epidemic

The Scottish Government assesses the potential impact of Covid-19 on the NHS in the next few weeks. The latest [Modelling the Epidemic](#) report includes infection and hospital bed projections over the next six weeks. These projections include the effect of vaccines rolled out so far and projected future vaccine rollout including the rollout of fourth doses, and the effect of the end of the legal requirement for wearing face masks on 18 April 2022. The changes to restrictions are assumed to result in people's behaviour gradually returning towards pre-pandemic levels over the coming weeks and months. The 'Central' scenario assumes that transmissibility remains at current levels. 'Worse' assumes a higher transmissibility for Covid-19 whereas 'Better' assumes a lower transmissibility.

According to the Scottish Government modelling based on wastewater derived data, it is estimated that daily infections may be up to 100,000 in mid-June<sup>72</sup>. The increase seen in projected infections is a result of waning immunity and gradual changes in behaviour due to the lifting of restrictions. The projections for this period are therefore even more uncertain than usual<sup>73</sup>.

Figure 11 shows the impact of the daily infection projections on the number of people in hospital. The modelling includes all hospital stays, whereas the actuals only include stays up to 28 days' duration that are linked to Covid-19. It is estimated that hospital occupancy may be up to 1,250 in mid-June. However, there continues to be uncertainty over hospital occupancy and intensive care in the next six weeks<sup>74</sup>.

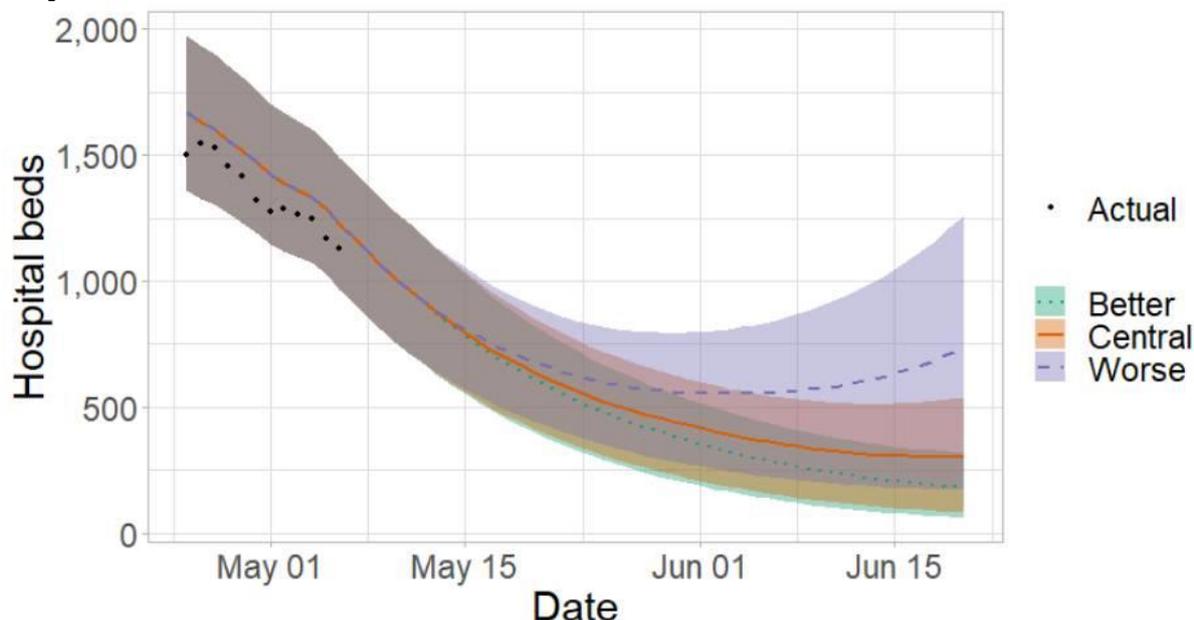
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<sup>72</sup> Using wastewater data to 3 May 2022.

<sup>73</sup> Scottish Government: [Coronavirus \(Covid-19\): modelling the epidemic](#) (Issue 99, published 12 May 2022)

<sup>74</sup> Scottish Government: [Coronavirus \(Covid-19\): modelling the epidemic](#) (Issue 99, published 12 May 2022)

**Figure 11: Medium term projections of modelled hospital bed demand, from Scottish Government modelling, based on wastewater derived data up to 3 May 2022.**



## Long Covid-19

According to the Office for National Statistics (ONS), long Covid is defined as symptoms persisting more than four weeks after the first suspected coronavirus (Covid-19) episode that are not explained by something else.

The ONS Covid-19 Infection Survey estimated that around 1,795,000 million people (95% confidence interval: 1,751,000 to 1,839,000) in the private residential population in the UK (2.78% of the respective population; 95% CI: 2.71% to 2.84%) reported experiencing long Covid over the four-week period ending 3 April 2022. In Scotland, over the same period, an estimated 151,000 people (95% CI: 139,000 to 164,000) in the private residential population (2.88% of the respective population; 95% CI: 2.64% to 3.11%) reported experiencing long Covid of any duration. This compares to:

- 2.78% in England (95% CI: 2.71% to 2.85%),
- 2.81% in Wales (95% CI: 2.51% to 3.11%), and
- 2.30% in Northern Ireland (95% CI: 1.96% to 2.64%)<sup>75</sup>.

Fortnightly modelled estimates for Scotland are also usually published in the Modelling the Epidemic report. However, a report on the rate of long Covid-19 has

<sup>75</sup> Office for National Statistics: Prevalence of ongoing symptoms following coronavirus (COVID-19) infection in the UK (published 6 May 2022)

not been included this week. This will resume again once updated estimates of self-reported long Covid-19 prevalence amongst those infected with the less severe Omicron variant become available.

## Additional data sources

State of the Epidemic report has predominantly focused on the direct impact that Covid-19 has had on Scotland including infection levels, cases, hospitalisations and hospital occupancy, deaths, vaccinations, situation across the four nations, as well as local authorities in Scotland. There are additional sources of data which monitor wider impacts of Covid-19 on health, societal issues and the economy, which can be found at the links below. **However, please note that these data do not solely reflect the impact of the Covid-19 epidemic.**

- [PHS wider impacts dashboard](#). Information presented in the dashboard covers wider planned and emergency hospital admissions, Accident and Emergency attendances, NHS 24 contacts, out of hours and Scottish Ambulance Services, outpatient appointments, as well as various aspects of cardiovascular, cancer, injuries, mental health, substance use, pregnancy, births and children health.
- NHS Education for Scotland publish weekly data [on NHS staff reported as absent due to COVID-19](#).
- The Care Inspectorate produce weekly data on [staff in adult care homes reported as absent due to COVID-19](#).
- The Scottish Government has published a [collection of reports relating to public attitudes to Covid-19](#). In addition, school attendance and absence figures are published [here](#) every Thursday afternoon.
- The Scottish Government also publish statistics on [Scottish Welfare Fund and Self-Isolation Support Grants](#), as well as quarterly [Scottish Welfare Fund](#) publication.
- Transport Scotland previously published a range of COVID-19 [analysis](#) on the impact on transport and are continuing to monitor transport demand. Additionally, an annual publication on transport and travel in Scotland is available [here](#).
- For a summary of statistics relating to the economy, please refer to the [Monthly Economic Brief](#) and [State of the Economy Reports](#).

## Next steps

The Scottish Government continues to work closely with Public Health Scotland, modelling groups, the Office for National Statistics (ONS), the Scottish Environment Protection Agency (SEPA) and YouGov to monitor what is happening across Scotland.

This report will continue to provide a fortnightly overview of the current Covid-19 situation in Scotland incorporating a variety of data sources including estimates of the prevalence of Covid-19, hospitalisations and deaths and how Scotland's figures compare to those from the rest of the UK, where possible.

Investigations are ongoing by NERVTAG, SPI-M, SAGE, UK Health Security Agency (UKHSA), and Public Health Scotland regarding the impact of new variants and of vaccination; this will be reflected here as work is undertaken.

## Technical Annex

**Table 1: The composition of each CIS region in Scotland, by Health Board and Local Authority area. Local Authority areas map to the Health Board areas.**

<b>CIS Region Code</b>	<b>Health Boards</b>	<b>Local Authority Areas</b>
<b>123</b>	NHS Grampian, NHS Highland, NHS Orkney, NHS Shetland and NHS Western Isles	Aberdeen City, Aberdeenshire, Argyll & Bute, Highland, Moray, Na h-Eileanan Siar, Orkney Islands, Shetland Islands
<b>124</b>	NHS Fife, NHS Forth Valley and NHS Tayside	Angus, Clackmannanshire, Dundee City, Falkirk, Fife, Perth & Kinross, Stirling
<b>125</b>	NHS Greater Glasgow & Clyde	East Dunbartonshire, East Renfrewshire, Glasgow City, Inverclyde, Renfrewshire, West Dunbartonshire
<b>126</b>	NHS Lothian	City of Edinburgh, East Lothian, Midlothian, West Lothian
<b>127</b>	NHS Lanarkshire	North Lanarkshire, South Lanarkshire
<b>128</b>	NHS Ayrshire & Arran, NHS Borders and NHS Dumfries & Galloway	Dumfries & Galloway, East Ayrshire, North Ayrshire, Scottish Borders, South Ayrshire

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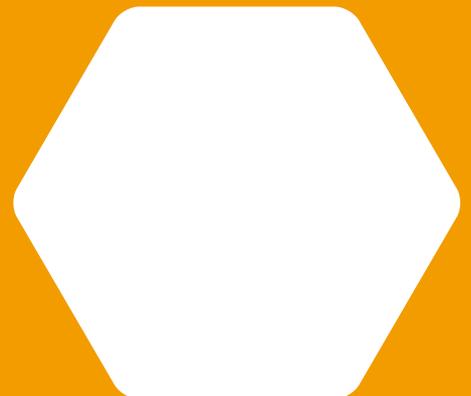
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