

Coronavirus (COVID-19): Analysis

State of the Epidemic in Scotland – 4 February 2022

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 28 January 2022¹. 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 combined LFD and PCR case and test data up to and including 2 February 2022. The rest of the analysis will also cover up to and including 2 February 2022 for consistency, when available.

Due to a technical error at Public Health Scotland, PCR cases by specimen date were only available up to 1 February. With the applied lag, this means specimen cases are reported up until 28 January in this week's report. This does not affect total combined LFD and PCR case numbers.

This error also affected hospital and ICU admissions numbers in Scotland. These were not reported on 2 February, meaning that data on Scotland ICU and hospital admissions included in the report was published on 3 February. This also affects hospital admissions on the UK government dashboard and the data used in the section comparing these indicators across the 4 Nations, which was accessed on 1 February.

This error also affected death numbers reported by PHS on 2 February, used when comparing death rates across the four UK nation. This section also uses data accessed on 1 February.

¹ 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)

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Summary

The daily positivity estimates from the Covid-19 Infection Survey for Scotland appear to be starting to level off from mid to late January, although the trend in the week to 29 January is (statistically) uncertain. This roughly aligns with the trends seen in PCR and LFD reported cases, which have levelled off since around 18 January 2022. However, there may be early indication of Covid-19 viral levels in wastewater showing a slight increase in some areas of the country.

Weekly PCR and LFD cases have decreased in all age groups apart from those aged 14 or below in the period from 12 January to 2 February. However, the weekly case rate for those aged 14 and below has now started to decrease, after peaking on 27 January, and those aged 20 to 24 and 15 to 19 have increased by 29% and 26%, respectively, in the week to 2 February.

Admissions to hospital and ICU have continued to decrease in the most recent week since peaking in early January 2022. Covid-19 deaths have decreased in the week leading up to 30 January and there were fewer fatalities among those over 85.

Key Points

- The reproduction rate R in Scotland is between 0.6 and 0.9, as at 18 January. The lower limit of the R value has decreased since the last published R value, while the upper limit has remained unchanged.
- As at 18 January, the UKHSA's consensus view was that the incidence of new daily infections in Scotland was between 146 and 270 new infections per 100,000 people.
- The daily growth rate for Scotland is currently estimated as between -8% and -1% as at 18 January 2022. The upper limit has increased since the previous week, while the lower growth limit remains unchanged.
- As determined through the latest weekly ONS infection survey, the percentage of people testing positive for Covid-19 in the private residential population in Scotland decreased in the two weeks up to 29 January 2022, but the trend was (statistically) uncertain in the most recent week. It is estimated that around 1 in 30 people (95% credible interval: 1 in 30 to 1 in 25) in Scotland had COVID-19 at any given time in the week ending 29 January 2022.
- The seven-day average number of combined PCR or LFD daily reported cases has levelled off since around the 18 January. By reporting date, an average number of 7,144 cases confirmed by either a PCR or LFD test were reported per day in the week leading up to 2 February. This a slight decrease from the daily average of 7,394 cases reported in the week leading up to 26 January.
- Data from the PHS Daily Dashboard shows that as of 2 February, the highest combined PCR and LFD weekly case rates by reporting date per 100,000 were observed amongst those aged 0-14, followed by those aged 25 to 44, 15 to 19,

20 to 24, and 45 to 64. The lowest total weekly combined PCR and LFD case rates per 100,000 were in the age groups 65-74, aged 85 and above, and 75 to 84.

- According to data from the PHS education dashboard, total combined PCR and LFD weekly case rates per 100,000 among children and young adults in the week leading up to 30 January have decreased for those aged under 16 compared to the previous week (ending 23 January). In the same time period, the weekly case rate has increased in age groups 16 and above.
- As of 24 January 2022, 3.1% of all PCR confirmed cases in Scotland throughout the pandemic were determined to be reinfections, according to the 90-day threshold. The proportion of reinfections has seen an increase in December 2021 and January 2022, to 6.4% and 9.8%, respectively, of all reported PCR cases.
- In the week to and including 2 February, Covid-19 hospital occupancy decreased overall by 20% and Covid-19 ICU occupancy (short and long stay) decreased by 9% from the previous week (26 January 2022).
- Admissions to hospital in the week to 30 January decreased by 23% compared to the previous week ending 23 January, while ICU admissions have decreased by 21% in the week to 2 February compared to the previous week ending 26 January.
- Average hospital admissions (three-week rolling average) related to Covid-19 in children and young adults (aged under 22) have decreased all age groups, except for those aged between 2 and 11, in the three weeks leading up to 26 January compared to the previous three-week period leading up to 19 January. These figures refer both to young patients in hospital because of Covid-19 and with Covid-19.
- After a period of decrease in the number of Covid-19 deaths throughout the last quarter of 2021, the three weeks leading up to 23 January 2022 have seen a sharp increase in deaths where Covid-19 was mentioned on the death certificate. While remaining high, the number of Covid-19 deaths has decreased by 17% to 121 deaths in the week leading up to 30 January compared to the week leading up to 23 January.
- In the week leading up to 2 February 2022, Aberdeen City had the highest combined PCR and LFD weekly case rate by reporting date, reporting 1,320 weekly cases per 100,000 population. Na h-Eileanan Siar had the lowest weekly combined LFD and PCR case rate in the same time period, reporting 279 cases per 100,000.
- Although combined PCR and LFD case rates have slightly decreased, a higher proportion of cases are identified as the Omicron variant sub-lineage BA.2 in Scotland and the UK. Initial analysis indicated this is due to a possible increase in transmissibility compared to the Omicron sub-lineage BA.1, which was the first to emerge in the UK.

Method

This report brings together a wide range of publically 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 weekly YouGov polling surveys.

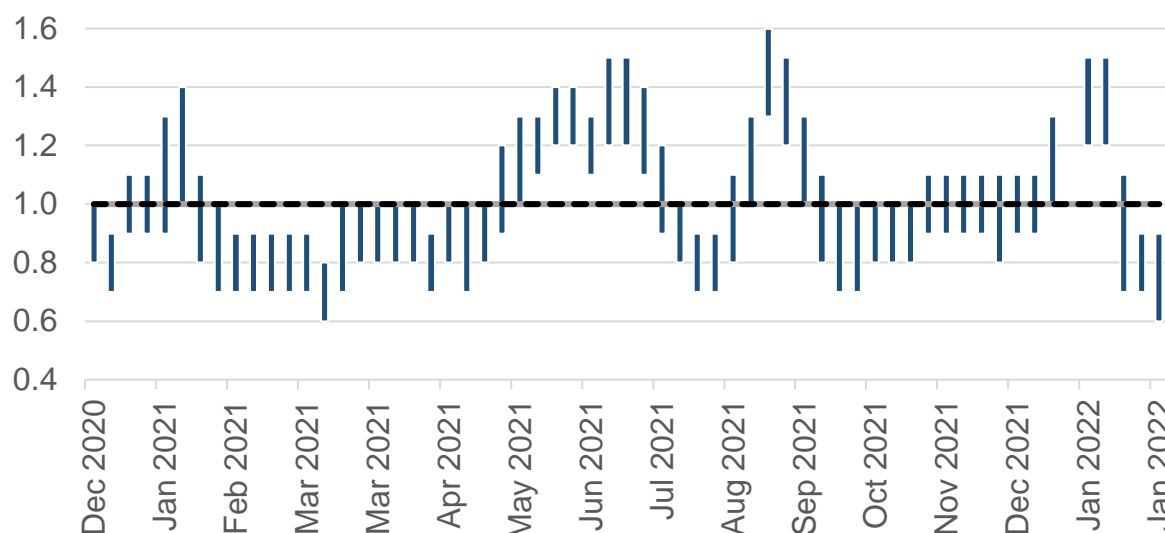
Estimated Infection Levels and Case Numbers

Estimated Infection Levels

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 other people 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 18 January 2022 is between 0.6 and 0.9 (**Figure 1**)^{2 3}. The lower limit of the R value has decreased since the last published R value, while the upper limit has remained unchanged.

Figure 1: R in Scotland over time (week of publication)⁴



As at 18 January, the UKHSA's consensus view was that the incidence of new daily infections in Scotland was between 146 and 270 per 100,000 people⁵. This equates to between 8,000 and 14,800 people becoming infected each day in Scotland⁶.

² Scottish Government: [Coronavirus \(COVID-19\): modelling the epidemic - gov.scot \(www.gov.scot\)](#)

³ Using data to 31 January 2022.

⁴ 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 R is dated 26 January 2022, reflecting the R value as of 11 January 2022.

⁵ Using data to 31 January 2022.

⁶ Scottish Government: [Coronavirus \(COVID-19\): modelling the epidemic - gov.scot \(www.gov.scot\)](#)

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 18 January 2022 was between -8% and -1%⁷. The upper limit has increased since the previous week, while the lower growth limit remains unchanged⁸.

Covid Infection Survey

[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. Participants are also asked to provide a blood sample to test for antibodies. This means the study is unaffected by testing policy changes mentioned at the start of this report.

In Scotland, the percentage of people testing positive for COVID-19 decreased in the two weeks up to 29 January, but the trend was (statistically) uncertain in the most recent week. The estimated percentage of people testing positive for Covid-19 in the private residential population is 3.52% (95% credible interval: 3.08% to 4.00%)⁹, equating to around 1 in 30 people (95% credible interval: 1 in 30 to 1 in 25). This is higher than the latest peak of 2.29% recorded in the week to 11 September 2021, and higher than the previous peak of 1.24% recorded in the week to 17 July 2021.

Figure 2 shows that the COVID-19 Infection Survey daily positivity estimates for Scotland may be starting to level off from mid to late January. This roughly aligns with the trends seen in PCR and LFD reported cases.

In the week 23 to 29 January 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 in private residential households remained high: 4.83% (95% credible interval: 4.67% to 5.00%), equating to around 1 in 20 people (95% credible interval: 1 in 20 to 1 in 20).
- In Wales, the percentage of people testing positive in private residential households increased: 4.57% (95% credible interval: 3.94% to 5.24%), equating to around 1 in 20 people (95% credible interval: 1 in 25 to 1 in 20).

⁷ Using data to 31 January 2022.

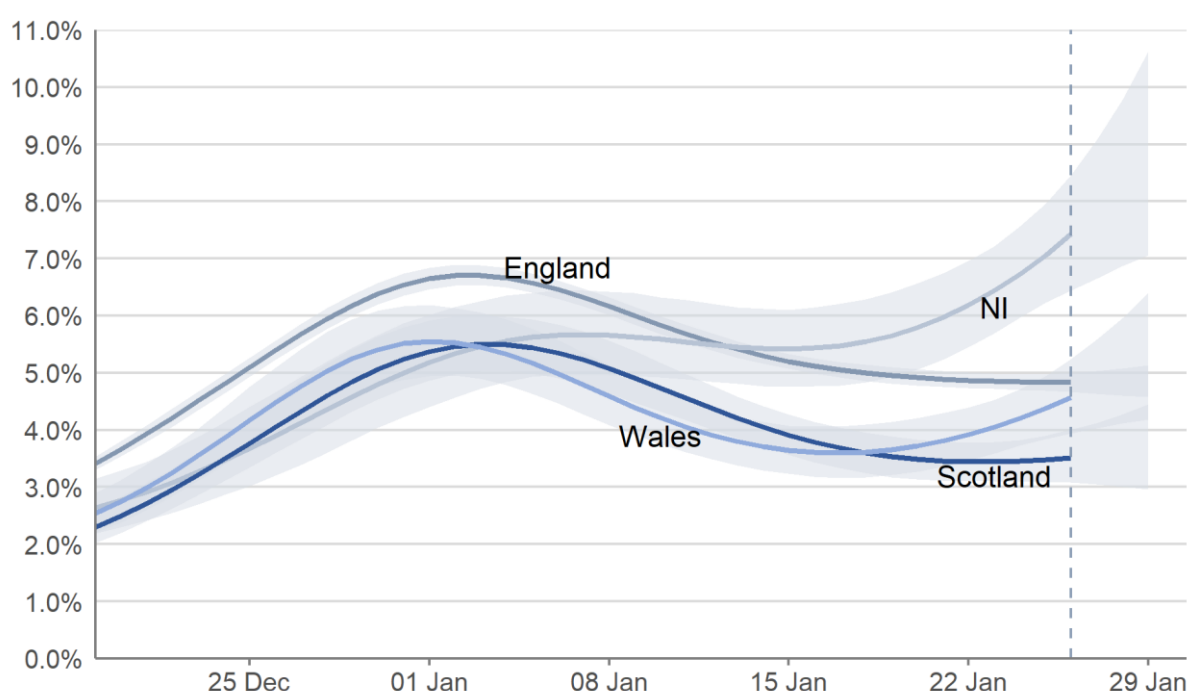
⁸ Scottish Government: [Coronavirus \(COVID-19\): modelling the epidemic - gov.scot \(www.gov.scot\)](#)

⁹ 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 in private residential households increased: 7.43% (95% credible interval: 6.44% to 8.46%), equating to around 1 in 15 people (95% credible interval: 1 in 15 to 1 in 10)¹⁰.

In Scotland, estimates for the percentage of people testing positive for COVID-19 in private residential households increased for primary school aged children and decreased for young adults. The trends were uncertain for secondary school ages, as well as the older ages¹¹.

Figure 2: Modelled daily estimates of the percentage of the private residential population testing positive for Covid-19 in each of the four nations of the UK, between 19 December 2021 and 29 January 2022, including 95% credible intervals



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 number of locations where the levels of SARS-CoV-2 in wastewater are monitored has increased to 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 have stopped falling, with the week ending on 1 February recording levels of 56 million gene copies per person per day (Mgc/p/d), matching 57 Mgc/p/d the previous week (week ending 25 January). There

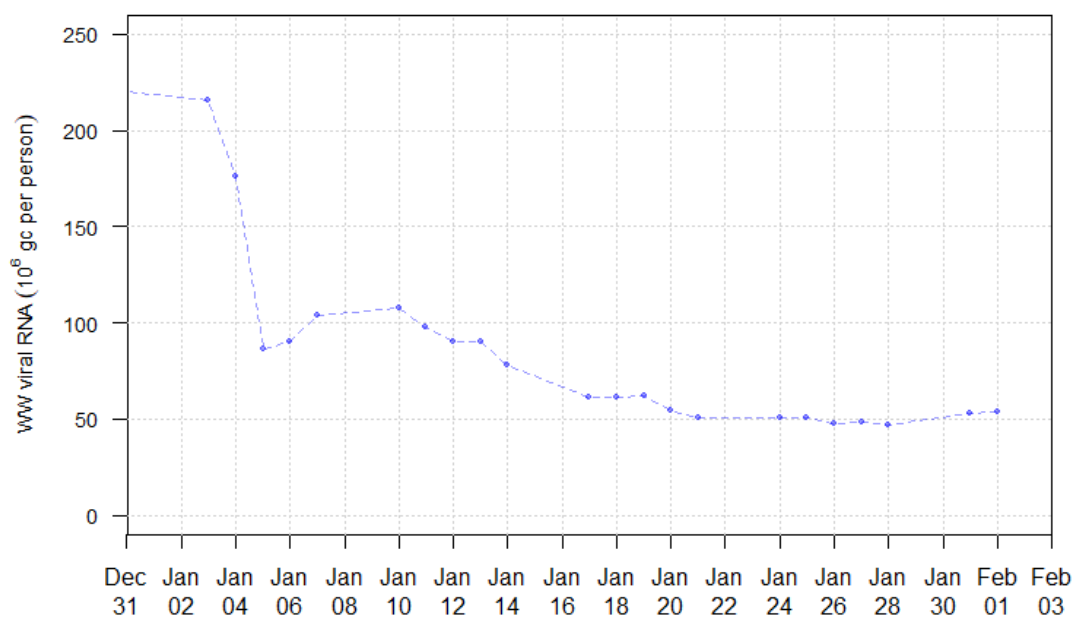
¹⁰ Scottish Government: [Coronavirus \(COVID-19\): infection survey - gov.scot \(www.gov.scot\)](https://www.gov.scot)

¹¹ Ibid.

may also be early indication of viral levels showing a slight increase in some areas of the country¹².

Compared to before December 2021, wastewater Covid-19 levels appear lower than anticipated given the known levels of Covid-19 activity. This effect may be due to the switchover from Delta variants to the new Omicron variant. Thus, **Figure 3** shows only data from after the end of 2021, at which point the Omicron variant already represents almost all cases in Scotland. From this, we see a rapid decline from peak levels in early January with a continued albeit slower decline up to the start of February¹³.

Figure 3: National running average trends in wastewater Covid-19 from 31 December 2021 to 1 February 2022¹⁴



Covid-19 Cases

Please note that on 5 January 2022 people were [advised](#) that they no longer need to seek a confirmatory PCR test following a positive lateral flow test. This will impact the number of cases reported from 6 January 2022, and means that comparisons over time need to be made with caution. The Omicron variant represents the dominant variant in Scotland. For more information on the difference between reporting and specimen date, please see this [earlier publication](#).

The seven-day average number of combined PCR or LFD daily reported cases has levelled off since 18 January. By reporting date¹⁵, an average number of 7,144 cases

¹² Scottish Government: [Coronavirus \(COVID-19\): modelling the epidemic - gov.scot \(www.gov.scot\)](https://www.gov.scot)

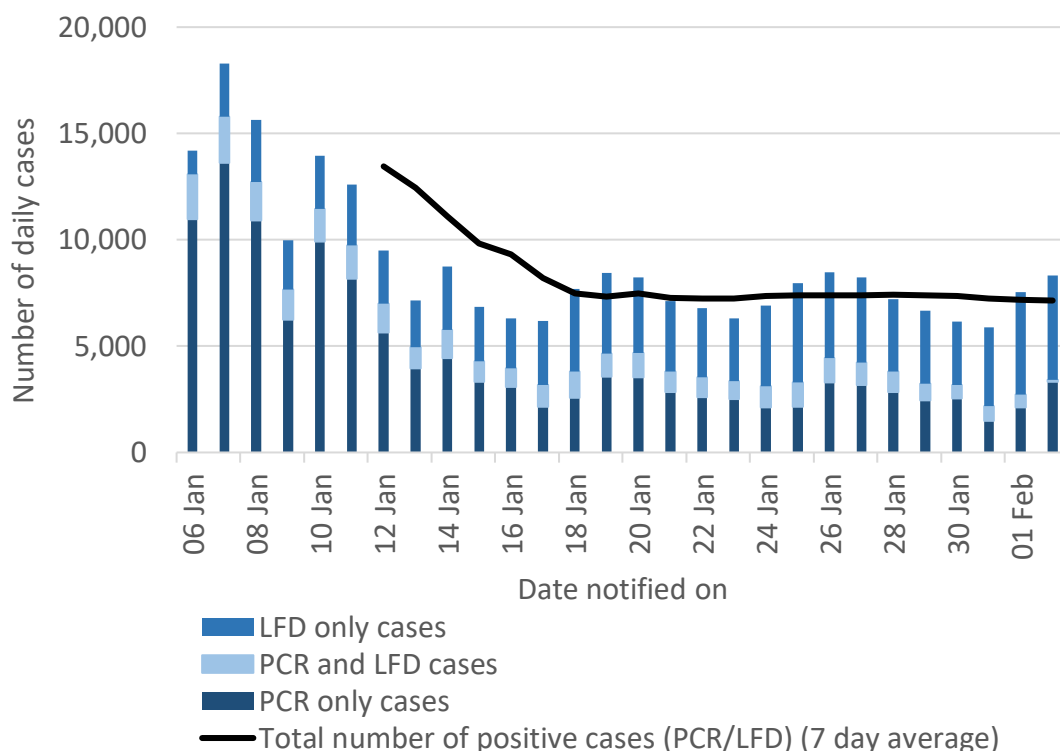
¹³ Ibid.

¹⁴ Ibid.

¹⁵ The reporting date is when the result of the test is authorised and released to Public Health Scotland by NHS Scotland and UK Government Regional Testing Laboratories.

confirmed by either a PCR or LFD test¹⁶ were reported per day in the week leading up to 22 February. This is a slight decrease (3%) from the daily average of 7,394 cases reported in the week leading up to 26 January (**Figure 4**)¹⁷.

Figure 4: PCR and LFD positive daily case numbers by reporting date. Data to 2 February 2022¹⁸.



By specimen date¹⁹, seven-day PCR case rates decreased in Scotland in the week leading up to 31 January. There were 444 weekly PCR cases per 100,000 population in the week to 31 January 2022, which is a 7% decrease from 476 weekly cases per 100,000 on 24 January (**Figure 5**)²⁰. Covid-19 case data that combines PCR and LFD test results are not yet available by specimen date following the change in testing policy on 5 January, so the figures above and in **Figure 5** only include PCR test results and caution must be exercised interpreting these figures.

A similar decreasing trend as seen in the PCR case rates per 100,000 by specimen date can be seen when looking at the seven-day average of PCR only daily cases by reporting date, which decreased by 6% in the week to 2 February compared to the previous week. However, this contrasts with the seven-day average of LFD only cases by reporting date, which increased by 7% in the same period. This is likely why the seven-day average of combined LFD and PCR daily reported cases has shown signs of levelling off since mid-January.

¹⁶ Please note that this is experimental statistics

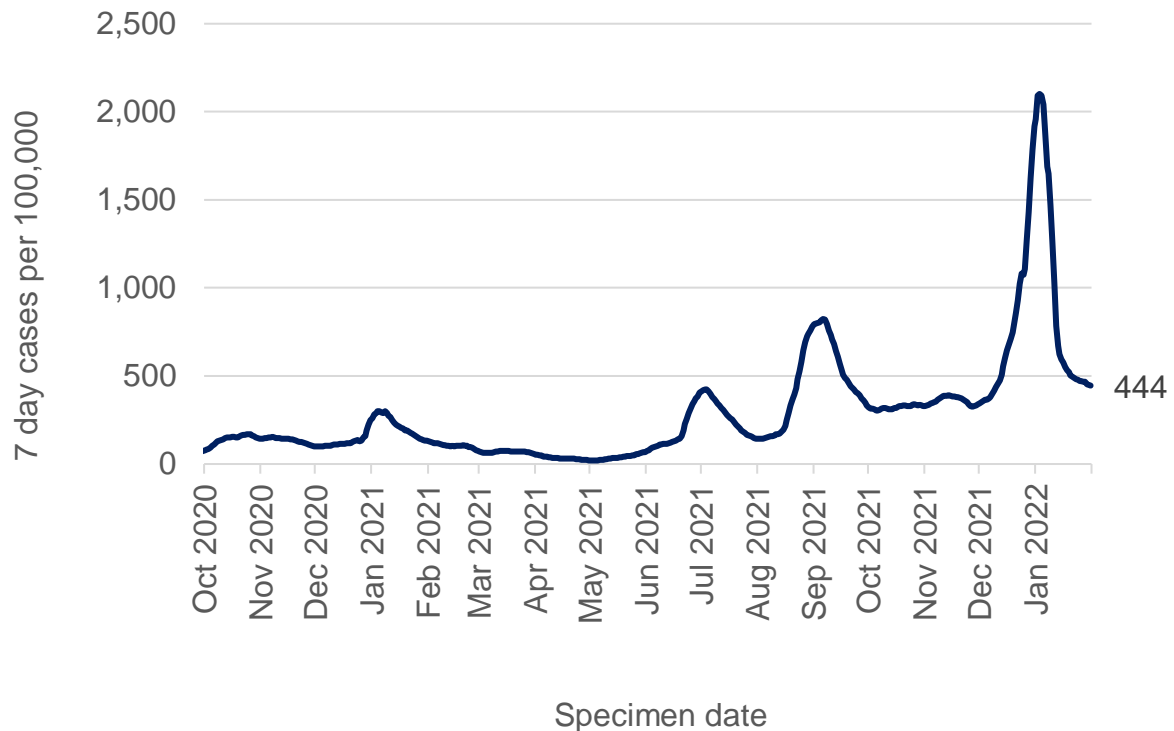
¹⁷ Public Health Scotland: [Covid-19 Daily Dashboard](#)

¹⁸ These figures are produced by Public Health Scotland as “experimental statistics” and may be subject to future revision as the new method for counting combined PCR and LFD tests evolves.

¹⁹ The specimen date is the date the sample was collected from the patient.

²⁰ Public Health Scotland: [Covid-19 Daily Dashboard](#)

Figure 5: Seven day case rate for Scotland by specimen date. Refers to PCR testing only. Data up to 31 January 2022.



The following age breakdowns only include test results by reporting date.

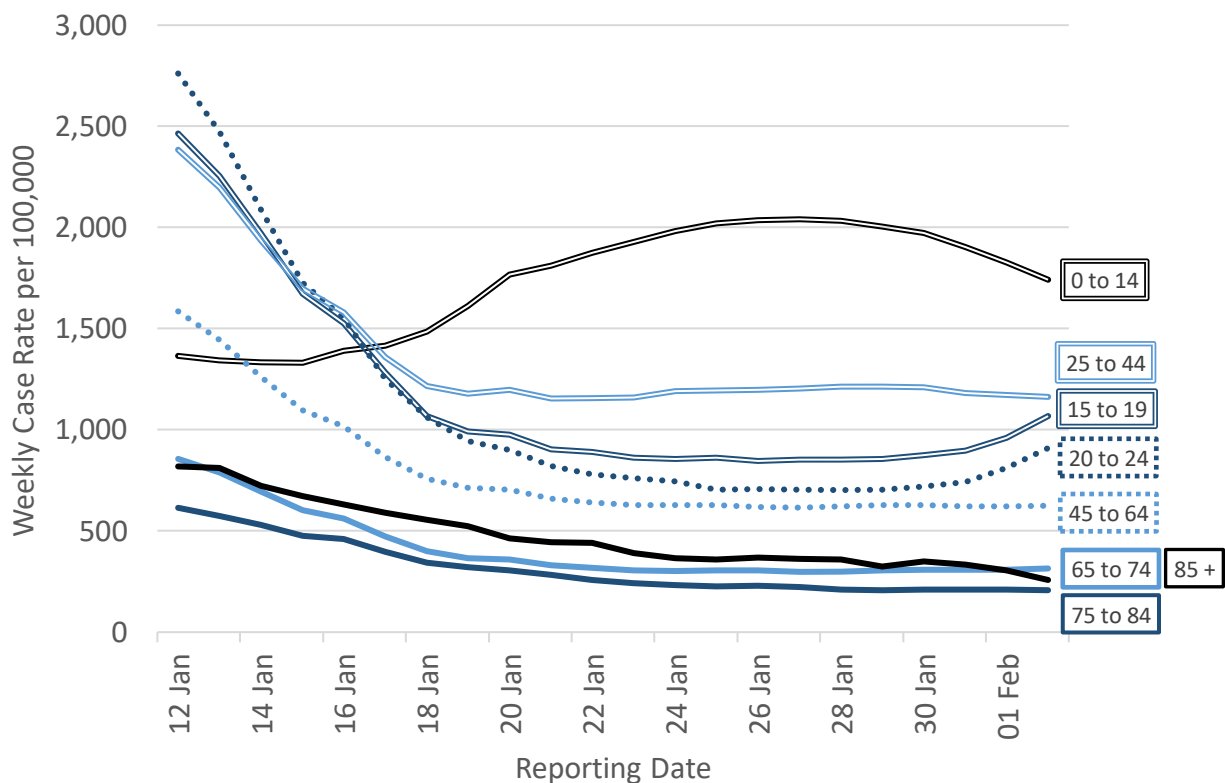
Combined PCR and LFD weekly cases by reporting date (as per data from the PHS Daily Dashboard) have decreased in all age groups apart from those aged 14 or below in the period from 12 January to 2 February. The weekly case rate for those aged 14 and below has started to decrease later, peaking on 27 January (**Figure 6**)²¹. As of 2 February, the highest combined PCR and LFD weekly case rates by reporting date per 100,000 were observed amongst those aged 0 to 14, followed by those aged 25 to 44, 15 to 19, 20 to 24, and 45 to 64. The lowest total weekly combined PCR and LFD case rates per 100,000 were in the age groups 65-74, aged 85 and above, and 75 to 84.

In the week leading up to 2 February, compared to the week leading up to 26 January, the total combined PCR and LFD weekly case rate for those aged 14 or younger decreased by 14%. Among those aged 20 to 24, the weekly case rate increased by 29% to 910 per 100,000 in the week leading up to 2 February. There was also a 26% increase in the weekly case rate for those aged 15 to 19 in this time period, increasing to 1,067 weekly cases per 100,000 population in the week leading up to 2 February²².

²¹ Source: Public Health Scotland

²² Ibid.

Figure 6: Weekly total combined PCR and LFD cases per 100,000 population in Scotland by age group, by reporting date²³. Data from 12 January to 2 February 2022.



The trend seen among those aged 14 and below from the PHS daily dashboard aligns with data published on the PHS Education dashboard, which provides a **weekly** combined PCR and LFD case rate **by specimen date**. The highest total combined PCR and LFD weekly case rates by specimen date among children and young people (aged under 22) in the week to 30 January 2022, were observed among those aged 5 to 11, 12 to 15, 2 to 4 and 18 to 19.

Total combined PCR and LFD weekly case rates per 100,000 among children and young adults in the week leading up to 30 January have decreased for ages under 16 compared to the previous week (ending 23 January). In the same time period, the weekly case rate has increased in age groups 16 to 17, 18 to 19 and 20 to 21, with the biggest increase seen among those aged 18 to 19, where the case rate increased by 35%, and among those aged 20 to 21, where it increased by 30%. All younger age groups (aged under 22) have a higher seven day combined PCR and LFD case rate than the Scotland level in this time period²⁴.

²³ Source: Public Health Scotland

²⁴ Public Health Scotland: [PHS COVID-19 Education Report](#)

Due do different case definitions across the UK, comparisons between countries cannot be made at this time. Cases data from Scotland and Wales used below includes only PCR test results. Cases data from Northern Ireland includes both PCR and LFD results, and cases data from England includes PCR, LFD and LAMP (loop-mediated isothermal amplification) test results.

Additionally, from 31 January 2022, case reporting in England and Wales has changed to an episode-based definition which includes possible reinfections. Historical data on cases by specimen date from these two countries has been revised back to the beginning of the pandemic, but cases by reporting dates have not. This changing case definition has not yet been implemented for data from Scotland or Northern Ireland. Reported case numbers can be found on the [UK Government Dashboard](#).

Due to the different case definitions outlined above, we have not included case comparisons across the four UK nations using data from the UK Government dashboard in this edition of the report. When these definitions are more aligned we will resume reporting on these comparisons. To compare estimated infection levels in private residential households across the UK, please see the previous section on the Covid-19 Infection Survey.

Testing Rates and Positivity

After a period of increase, the seven day total of conducted PCR tests per 1,000 populations peaked at 83 on 7 January 2022, and then decreased to 33 on 23 January. The seven day total of conducted PCR tests per 1,000 has since plateaued, showing 30 tests per 1,000 people in the week leading up to 2 February.

Showing a similar trend, the proportion of positive PCR tests in the last seven days (test positivity rate) reached 29.4% on 4 January and then sharply decreased to 17.9% on 18 January. The PCR test positivity rate has since plateaued with slight fluctuations throughout the two most recent weeks, with a 17.3% PCR positivity rate on 2 February²⁵. Please note that caution must be exercised when interpreting these figures following changes to the testing policy on 5 January 2022.

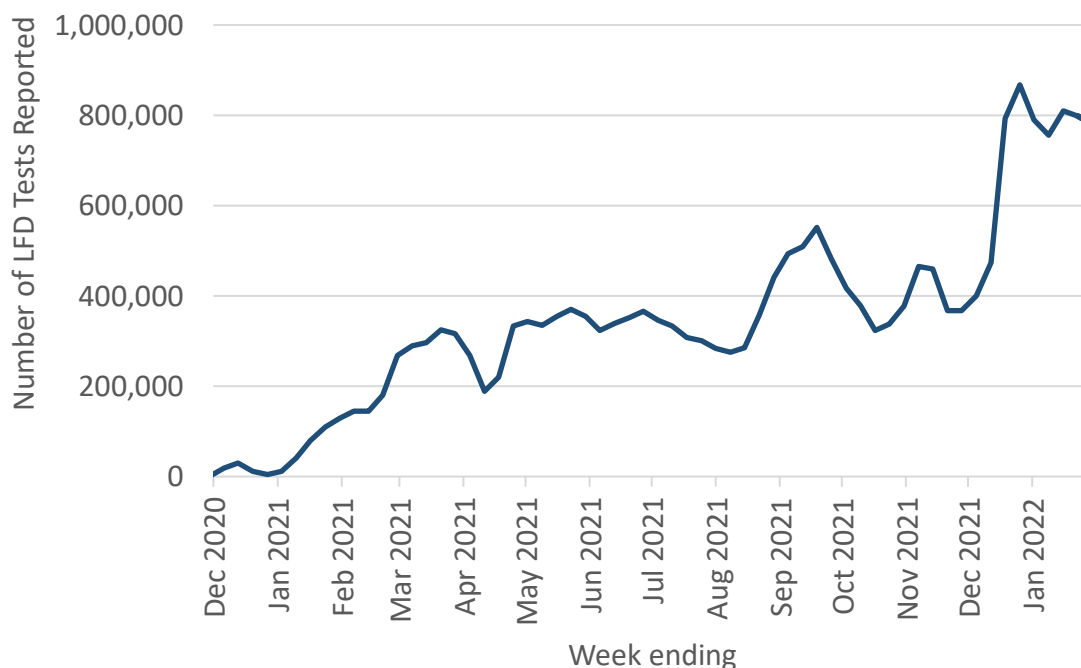
After a decrease in the number of LFD tests that were reported between 27 December 2021 and 9 January 2022, there was a 7% increase in the number reported in the week leading up to 16 January 2022, with 810,225 reported tests²⁶. The weekly total of tests reported in the week to 30 January decreased by 2% from the previous week. This follows a sharp increase in LFD tests that were reported throughout December 2021 (Figure 7)²⁷.

²⁵ Scottish Government: [Coronavirus \(COVID-19\): daily data for Scotland](#)

²⁶ Public Health Scotland: [Covid-19 Statistical Report](#)

²⁷ Ibid.

Figure 7: Number of LFD Tests Reported by Week Ending. Data up to 30 January 2022.



YouGov survey results have shown that on 18-19 January, 58% of respondents had taken a LFD test and 10% a PCR test in the past week²⁸. Of those who had taken a LFD test, 47% recorded the result of their last LFD test online and 48% did not record the results online²⁹.

Scottish Contact Survey asks whether people use Lateral Flow Device tests and if so how often. Approximately 78% of individuals had taken at least one lateral flow test within the last 7 days for the survey pertaining to the 20 to 26 January, decreasing from 84% two weeks prior. Of those individuals who had taken a lateral flow within the last 7 days, 27% did not report their results³⁰.

There are differences in the results from the YouGov and the Scottish Contact Survey (SCS) which may be likely to be due to differences in sampling and methodology. YouGov is an online survey based on an active sample which is representative of the Scottish population with around 1000 respondents³¹. The

²⁸ Results are taken from questions run on behalf of Scottish Government on the YouGov online omnibus survey. Question 'Coronavirus tests typically take two forms – Rapid 'Lateral Flow or LFD' tests (sometimes called Antigen Tests), which give a test result in 30 minutes and are usually self-administered, or PCR Tests mostly conducted at official Test Sites (but also available as a 'Home Kit) – processed by a laboratory, with results available within 48 hours. In both tests, a swab of nose and/or throat is needed. Which of the following applies to you in relation to testing for Covid-19 in the past week (i.e. since 18 January)?'

²⁹ Question -Thinking about the LAST lateral flow/antigen test you did in the past week...Which of the following best describes you in relation to that test? (Base: 550 - All who have taken a Lateral Flow/antigen test in the last week)

³⁰ Scottish Government: [Coronavirus \(COVID-19\): modelling the epidemic - gov.scot \(www.gov.scot\)](https://www.gov.scot)

³¹ The sample is demographically and geographically representative of adults 18+ across Scotland, with circa 1000 responses each week fieldwork is conducted. YouGov apply weighting to the data to match the population profile to adjust for any over/under representations and to maximise consistency from wave to wave. Parameters used include age, gender, social class, region and level of education.

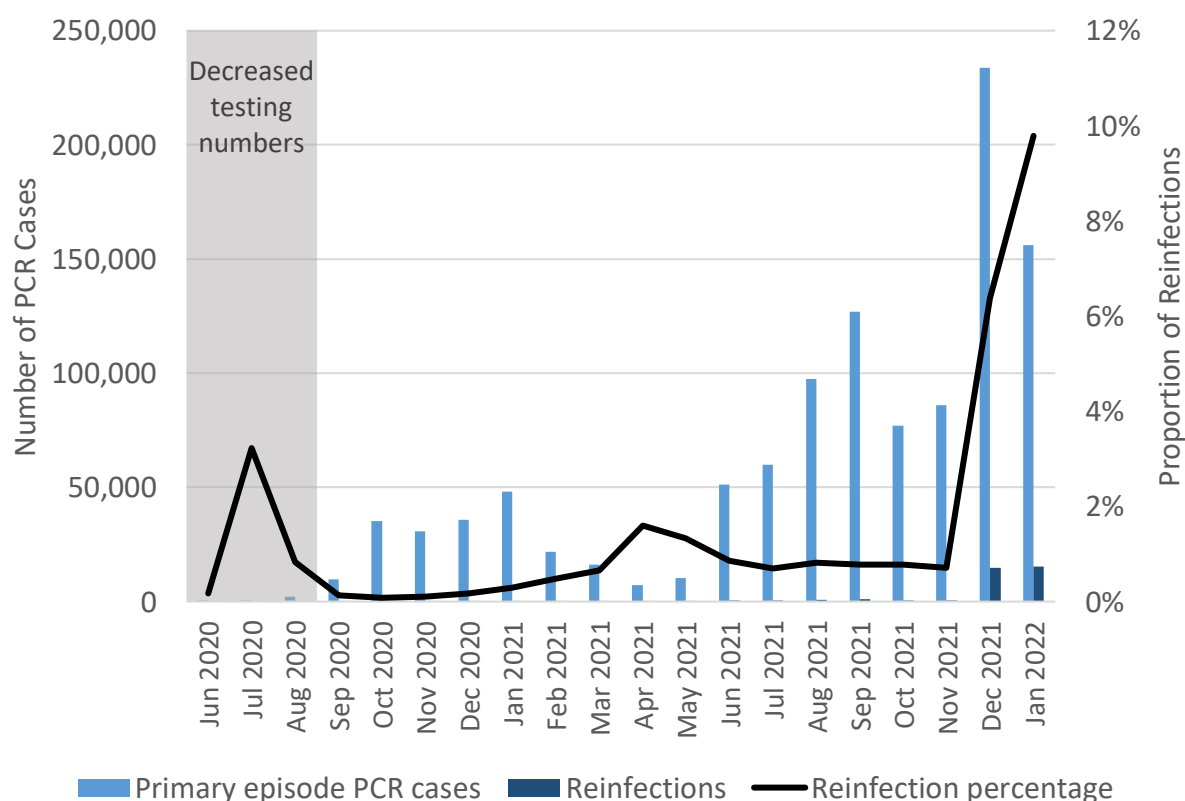
SCS³² is based on a longitudinal survey with a larger sample of around 3000, with the responses being modelled to represent the Scottish population.

Covid-19 Reinfections

In Scotland, possible reinfections are defined as a positive test 90 days or more after a previous positive test. This amount of time is set in order to be able to distinguish between viral persistence of the primary Covid-19 episode and a true reinfection. The current Covid-19 Case definition only includes the first time a person is infected, but Public Health Scotland is currently reviewing its methodologies and infrastructure to incorporate reinfection reporting routinely in late February 2022, as well as provide revised historical data on hospitalisations and deaths. See more in the [PHS Weekly Report](#).

As of 24 January 2022, 3.1% of all PCR confirmed cases in Scotland throughout the pandemic were determined to be reinfections, according to the 90-day threshold (34,774 out of 1,158,822). This is in line with what has been reported in England, where 4% of cases have been determined as reinfections as of 31 January 2022³³.

Figure 8: Total PCR cases, reinfections and proportion of reinfections in Scotland by month and year as of 24 January 2022³⁴



³² The sample is demographically representative of adults 18+ across Scotland, with circa 3000 responses over two alternating panels. This is modelled to represent the Scottish population.

³³ Public Health Scotland: [Covid-19 Statistical Report](#)

³⁴ Ibid.

As can be seen in **Figure 8**, the proportion of reinfections has fluctuated over time. Between June 2020 and December 2021, the overall proportion of reinfections remained low, with two peaks of reinfections occurring in July 2020 and April 2021. The small number of cases between June and August 2020 will have contributed to the increased proportion of reinfections in this period.

The proportion of reinfections has seen an increase in December 2021 and January 2022, where the proportion of reinfections were at 6.4% and 9.8%, respectively, of all reported PCR cases. This coincides with the rapid increase of the Omicron variant in Scotland; which, evidence suggests, is associated with an increased risk of reinfection.

In Scotland, the Health boards with the highest rates of reinfection are NHS Greater Glasgow and Clyde, and NHS Lanarkshire, at 946 and 927 reinfections per 100,000. The highest number of reinfections have been reported among people aged 20 to 24 and there have been a higher number of reported reinfections among females than among males. The difference between males and females is likely linked to higher rates of routine occupations screenings by women in healthcare roles³⁵.

Severe Illness: Hospitalisation, ICU and Deaths

Hospital and ICU Occupancy and Admissions

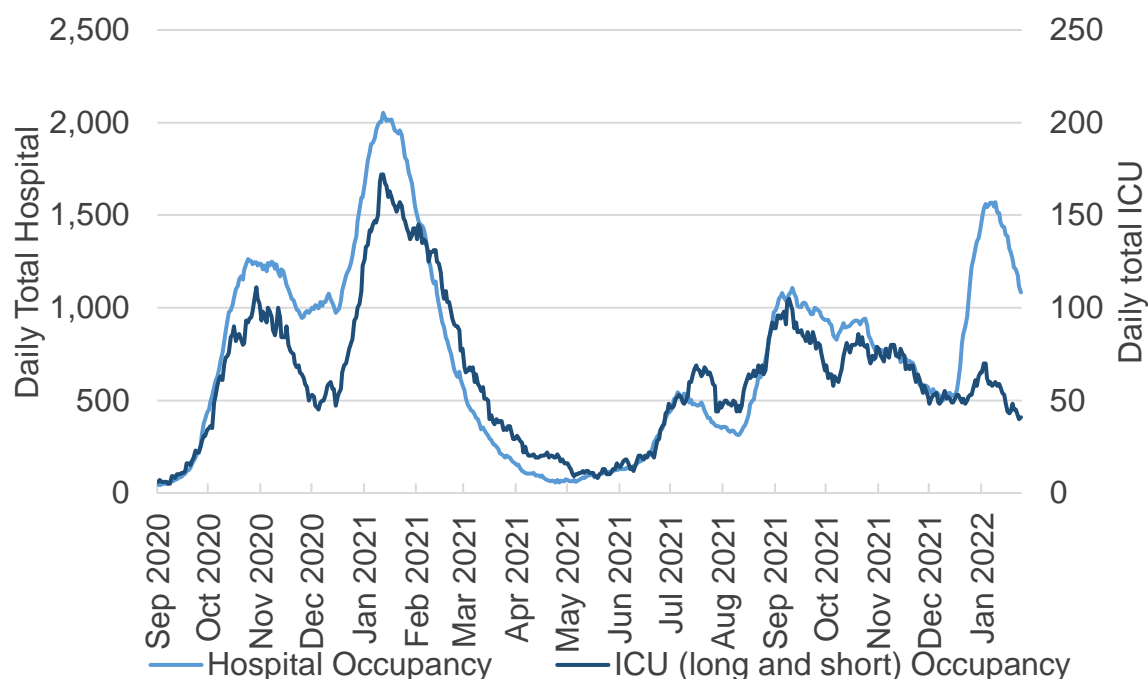
In the week to and including 2 February, Covid-19 hospital occupancy continued to decrease. NHS boards reported 1,116 patients in hospital on 2 February with recently confirmed Covid-19, compared to 1,389 on 26 January 2022. This is a decrease of 273 patients, or 20%, from the previous week and compares with 2,053 patients in hospital at the peak in January 2021 (**Figure 9**).

ICU occupancy (including short and long stay) has decreased to 40 patients on 2 February, a decrease of 4 patients or 9% since 26 January, and remains lower than the peak of 172 ICU patients recorded in January 2021. There was a decrease in ICU patients in short stay (28 days or less) ICU, while the number of long stay (more than 28 days) ICU patients plateaued in the week leading up to 2 February (**Figure 9**)³⁶.

³⁵ Public Health Scotland: [Covid-19 Statistical Report](#)

³⁶ Public Health Scotland: [Coronavirus \(COVID-19\): Trends in Daily Data](#)

Figure 9: Patients in hospital (including short stay ICU), and patients in ICU³⁷ with recently confirmed Covid-19, data up to 2 February 2022



Admissions to hospital have decreased over the last week, with 589 admissions to hospital for people with confirmed Covid-19 in the week to 30 January compared to 761 in the week to 23 January (**Figure 10**)³⁸. This is a 23% decrease.

The latest data from PHS shows 22 new Covid-19 patients admitted to ICU in the week to 2 February, compared to 28 in the week to 26 January (**Figure 10**)³⁹. This is a 21% decrease. In the four weeks from 1 January to 28 January 2022, the rate of acute hospital admissions for individuals with a booster or third dose remains lower compared to unvaccinated people or those who have only received one or two doses of a Covid vaccine^{40 41}.

³⁷ ICU or combined ICU/HDU (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.

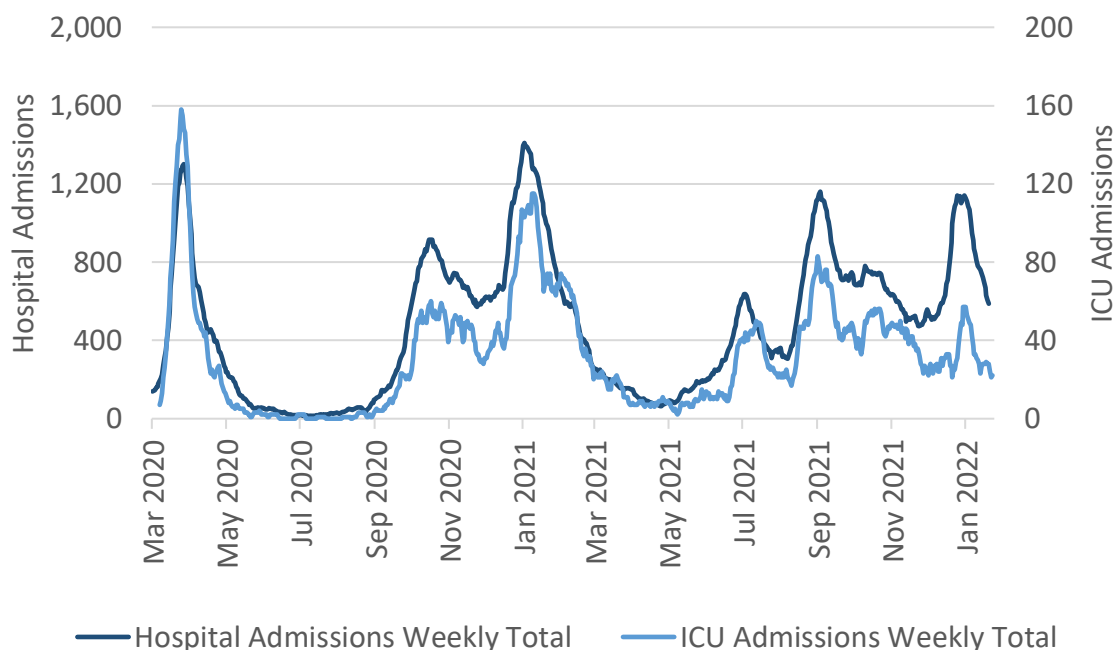
³⁸ Public Health Scotland: [Covid-19 Daily Dashboard](#)

³⁹ Ibid.

⁴⁰ Public Health Scotland: [Covid-19 Statistical Report](#)

⁴¹ This relates to an age-standardised rate of hospital admissions per 100,000. Please note that these statistics do not differentiate between individuals in hospital with COVID-19 illness requiring hospitalisation compared to those in hospital for other reasons (e.g. routine operations) for whom COVID-19 was identified incidentally through testing but they are not requiring hospitalisation because of their COVID-19 symptoms.

Figure 10: Weekly total of Covid-19 admissions to hospital and ICU with a positive Covid test in Scotland, data up to 22 January 2022⁴²



Average hospital admissions (three-week rolling average) related to Covid-19 in children and young adults (aged under 22) have decreased all age groups, except for those aged between 2 and 11, in the three weeks leading up to 26 January compared to the previous three-week period leading up to 19 January. Among those aged 2 to 4 average hospital admissions increased by 6% compared to the previous three week period, while it increased by 23% in the age group 5 to 11. Overall hospital admissions related to Covid-19 in children and young adults remain high, but have decreased from the previous three-week period. The highest number (three-week rolling average) of hospital admissions in children and young adults was seen among those aged 0-1 in the three weeks leading up to 26 January⁴³. These figures refer both to young patients in hospital because of Covid-19 and with Covid-19.

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.

Last week, Public Health Scotland published a [final report](#) of clinical audit data on people with a recent, community-acquired COVID-19 diagnosis admitted to hospital in selected NHS Boards (NHS Dumfries and Galloway, NHS Grampian, NHS

⁴² 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.

⁴³ Public Health Scotland: [PHS COVID-19 Education Report](#)

Greater Glasgow and Clyde and NHS Tayside). Findings from this report concluded that 64% of patients were in hospital 'because of' COVID-19 during the period December 2021 to January 2022, as opposed to 'with' a Covid-19 diagnosis⁴⁴.

This week, Public Health Scotland published additional analysis based on the national SMR01 data base, looking at the proportion of people in hospital 'because of' Covid-19 by using the clinical diagnosis information recorded from the patient discharge summary. A hospital admission 'because of' COVID-19 is defined as an admission where COVID-19 is recorded as the main diagnosis on the patients discharge summary⁴⁵. This data is received from NHS boards with a two-to-three-month lag. Based on data from six NHS boards, this analysis concludes that as at October 2021⁴⁶, an estimated 73% acute hospital admissions in Scotland 'with' Covid-19 had a **primary** diagnosis of Covid-19.

The analysis also concluded that the average length of time a patient is spending in hospital 'because of' COVID-19 has reduced from 8.1 days in May 2021 to 6.9 days in October 2021. This reduction is most likely linked to the roll out of the vaccination programme and the change in the age profile of patients being admitted⁴⁷.

While it may be helpful to compare hospital occupancy between the UK nations, any comparisons must be made with caution. Definitions are not consistent across the nations and data are not reported daily by each nation. Additionally, data from Scotland, Wales and Northern Ireland is updated retrospectively if errors come to light. Data from England is not revised retrospectively, but instead is corrected in the following day's data update. For more information see [UK Government website](#).

The seven day average hospital occupancy in Scotland per 100,000 people in the week to 1 February was 23⁴⁸. Seven day average hospital occupancy per 100,000 population in the same period for other UK nations were as follows:

- England: 24 per 100,000 population;
- Wales: 25 per 100,000 population;
- Northern Ireland: 21 per 100,000 population.

There were 2 hospital admissions (7 day average) in Scotland per 100,000 people in the week to 28 January⁴⁹. Seven day average hospital admissions per 100,000 population in the same period for other UK nations were as follows:

- England: 3 per 100,000 population
- Wales: 1 per 100,000 population
- Northern Ireland: 1 per 100,000 population.

⁴⁴ Public Health Scotland: [COVID-19 Statistical Report 26 January 2022](#)

⁴⁵ Public Health Scotland: [Covid-19 Statistical Report](#)

⁴⁶ Refers to the period when Delta was the dominant variant

⁴⁷ Public Health Scotland: [Covid-19 Statistical Report](#)

⁴⁸ UK Government: [Coronavirus \(COVID-19\) in the UK](#) (accessed 2 February 2022)

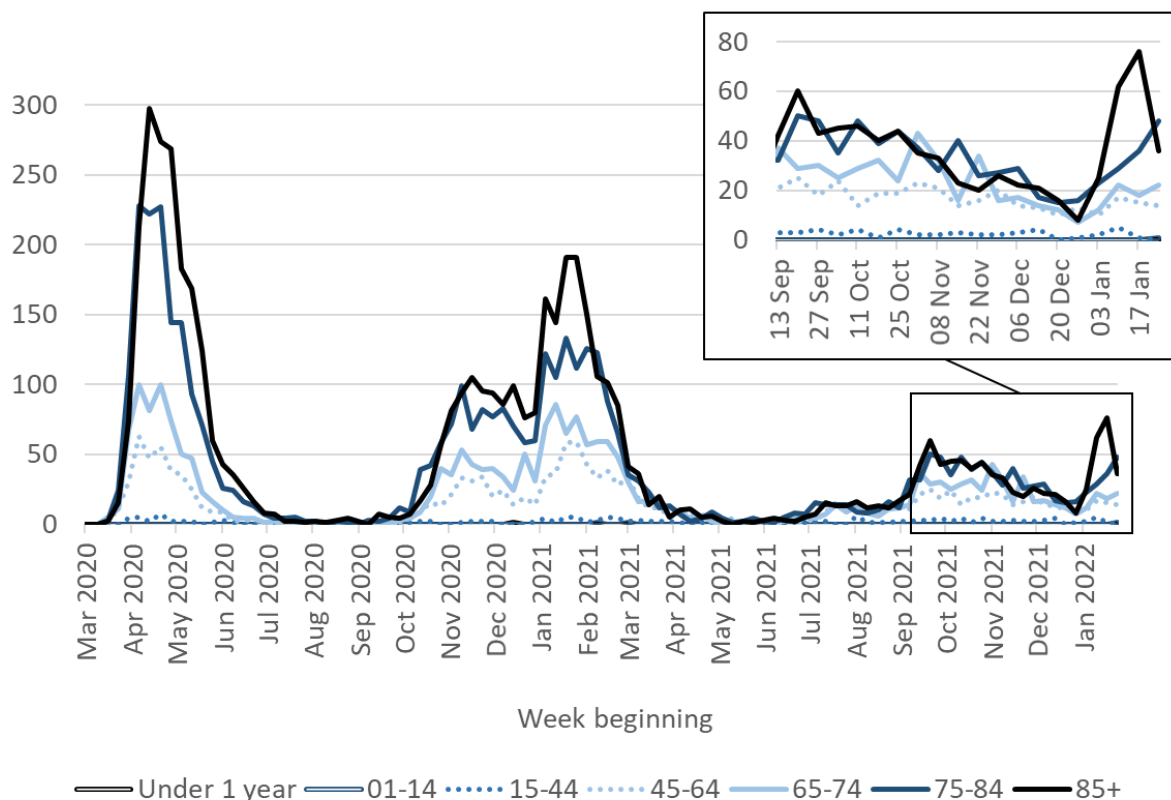
⁴⁹ Ibid.

Deaths

Covid-19 deaths most recently peaked in the week leading up to 26 September 2021, with 167 deaths registered in that week where Covid-19 was mentioned on the death certificate. After a period of decreasing numbers of Covid-19 deaths throughout the last quarter of 2021, the week to 23 January 2022 saw 146 Covid deaths. This came after three weeks of increasing numbers of deaths, largely consisting of fatalities among those aged 45 or above as Covid-19 deaths among younger age groups have remained at similar low levels throughout the pandemic.

While remaining high, the overall number of Covid-19 deaths have decreased by 17% to 121 deaths in the week leading up to 30 January compared to the week leading up to 23 January. This figure is 82% lower than the peak in April 2020 (663 deaths)⁵⁰. However, there are different trends in different age groups. In the week leading up to 30 January, deaths decreased among those aged 85 or above, while continuing to increase among those aged 75 to 84. The age group 75 to 84 had the highest number of Covid-19 deaths, with 48 registered in the week to 30 January. Those aged 65-74 also saw an increase in the number of Covid-19 deaths in the week to 30 January (**Figure 11**). National Records of Scotland publish a weekly detailed analysis on deaths involving Covid-19 in Scotland in their [weekly report](#)⁵¹.

Figure 11: Deaths by age group (weekly total by week beginning, NRS), data up to 23 January 2022



⁵⁰ NRS Scotland: [Deaths involving coronavirus \(COVID-19\) in Scotland](#)

⁵¹ Ibid.

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.

In the week leading up to 30 January 2022, all cause deaths were 8% below average levels for this time of year. This constitutes the fourth week in a row where deaths were below average⁵².

Data from England, Northern Ireland, Scotland and Wales use different methodologies, so they cannot be directly compared. Additionally, deaths within 28 days of positive test will be updated on 1 February 2022 to include deaths following the most recent episode of infection, using the new episode-based case definition in England. For more information see [UK Government website](#).

There were 3 average daily deaths in Scotland⁵³ per 1 million people in the week to 1 February. Average daily deaths per 1 million population in the same period for other UK nations were as follows:

- England: 4 per one million
- Northern Ireland: 3 per one million
- Wales: 2 per one million⁵⁴.

Resilience: Vaccinations, Antibody Estimates and Variants of Concern

Vaccinations

As at 2 February, 3,302,671 people in Scotland (69% of those aged 12 and above) had received a third vaccine dose or booster, over 4.4 million people had received their first dose and over 4.1 million people had received their second dose.

For daily updates on vaccination figures in Scotland, see Public Health Scotland's [Covid-19 Daily Dashboard](#). For more analysis on vaccination numbers, see [previous publications](#). Further analysis on vaccinations will be provided in our next weekly release, to align with the publication of antibody estimates.

⁵² NRS Scotland: [Deaths involving coronavirus \(COVID-19\) in Scotland](#)

⁵³ Deaths within 28 days of positive test.

⁵⁴ UK Government: [Coronavirus \(COVID-19\) in the UK](#) (accessed 2 February 2022)

Antibodies Estimates

Estimated on the proportion of people in the private residential population in Scotland that would test positive for antibodies against SARS-CoV-2 are published by the ONS Covid-19 Infection Survey.

The next scheduled release of antibody and vaccination data from the Covid-19 Infection Survey is 9 February, this will be incorporated into our next weekly release. For information on the most recent estimates, see [earlier publications](#) or [Covid Infection Survey publications](#).

Variants of Concern: Omicron Variant

The Omicron variant (parent Pango lineage B.1.1.529) can be separated into three groups: BA.1, BA.2 and BA.3. BA.1 and BA.3 have the 69-70 deletion in the spike protein which gives the S-Gene target failure that has been used to identify the Omicron variant in the recent months, but BA.2 does not^{55 56}. The Omicron variant sub-lineage known as BA.2 has been designated a variant under investigation (VUI-22JAN-01) by the UK Health Security Agency (UKHSA). The original Omicron lineage, BA.1, is dominant in the UK and the proportion of BA.2 cases is currently low. However, there are increasing numbers of BA.2 sequences identified both in the UK and internationally⁵⁷. Analysis from routine contract tracing data in England from 27 December 2021 to 11 January 2022 indicate higher secondary attack rates amongst contacts of BA.2 households (13.4%) than those for contacts of other Omicron cases (10.3%)⁵⁸.

A new risk assessment for BA.2 lineage carried out by the UK Health Security Agency (UKHSA), established with moderate confidence that BA.2 lineage is showing a growth advantage compared to currently dominant BA.1 lineage in the UK. The advantage has been attributed to increased transmissibility rather than immune evasion however confidence is low due to a small number of BA.2 cases in the analysis⁵⁹. The Omicron VOC-21NOV-01 risk assessment were reported last week in the State of the Epidemic report.

The UKHSA reported that vaccine effectiveness against symptomatic disease with the Omicron variant is lower compared to the Delta variant, and that it wanes rapidly. The latest data showed effectiveness against symptomatic disease 2-4 weeks after a booster dose ranges from around 60-75% and drops to around 25-40% after 15 or more weeks after the booster. The vaccine effectiveness against hospitalisation with Omicron is high at around 90% after a Pfizer booster (after either primary vaccination course), and dropping to around 75% after ten to fourteen weeks after a Pfizer booster dose. After a Moderna booster (mRNA-1273) vaccine effectiveness against hospitalisation was 90 to 95% up to 9 weeks after vaccination.

⁵⁵ World Health Organisation: [Enhancing Readiness for Omicron \(B.1.1.529\)](#) [17 December 2021]

⁵⁶ UK Health Security Agency: [SARS-CoV-2 variants of concern and under investigation - Technical briefing 31](#)

⁵⁷ UK Government: [COVID-19 variants identified in the UK](#)

⁵⁸ UK Health Security Agency: [SARS-CoV-2 variants of concern and variants under investigation in England](#) [28 January 2022]

⁵⁹ UK Health Security Agency: [Risk assessment for SARS-CoV-2 variant: VUI-22JAN-01 \(BA.2\)](#) [26 January 2022]

The high level of protection against mortality was also restored after the booster dose with vaccine effectiveness at 95% 2 or more weeks following vaccination for those aged 50 and older⁶⁰. More data on vaccine effectiveness against the Omicron variant can be found in the [UKHSA vaccine surveillance reports](#) and it was summarised [last week](#) in the State of the Epidemic report.

Preliminary assessment of vaccine effectiveness against symptomatic disease with BA.2 compared to BA.1, showed similar results with BA.1 having an effectiveness of 9% and BA.2 having an effectiveness of 13% after 25 or more weeks following the second dose. These estimates have large overlapping confidence intervals. The booster dose of vaccine restored effectiveness to around 63% for BA.1 and 70% for BA.2 at 2 weeks following a booster vaccine⁶¹.

There is evidence that there is reduced overall risk of hospitalisation for Omicron compared to Delta^{62 63}, with the most recent estimate of the risk of presentation to emergency care or hospital admission with Omicron was approximately half of that for Delta⁶⁴.

Situation by Local Authority within Scotland

Please note that the methodology for comparing case rates between local authorities has changed following the testing policy changes announced on 5 January 2022. Previously this section presented a weekly PCR case rate per 100,000 population by specimen date. This has changed to a weekly case rate based on either only PCR, only LFD or a combined PCR and LFD case rate per 100,000 by reporting date. **This means that the results presented in this section are not comparable to previous State of the Epidemic Report publications.**

In the week leading up to 2 February 2022, Aberdeen City had the highest combined PCR and LFD weekly case rate by reporting date, reporting 1,320 cases per 100,000 population. Na h-Eileanan Siar had the lowest weekly combined LFD and PCR case rate in the same time period, reporting 279 cases per 100,000. The total combined LFD and PCR weekly case rates by reporting date per 100,000 had increased in 10 local authorities in the week leading up to 2 February 2022 compared with the weekly case rate leading up to 26 January 2022, while 22 local authorities saw a decrease in the same period (**Figure 12**)⁶⁵.

⁶⁰ UK Health Security Agency: [COVID-19 vaccine surveillance report](#) [3 February 2022]

⁶¹ Ibid.

⁶² University of Edinburgh: [Severity of Omicron variant of concern and vaccine effectiveness against symptomatic disease](#)

⁶³ Imperial College COVID-19 response team: [Report 50: Hospitalisation risk for Omicron cases in England](#)

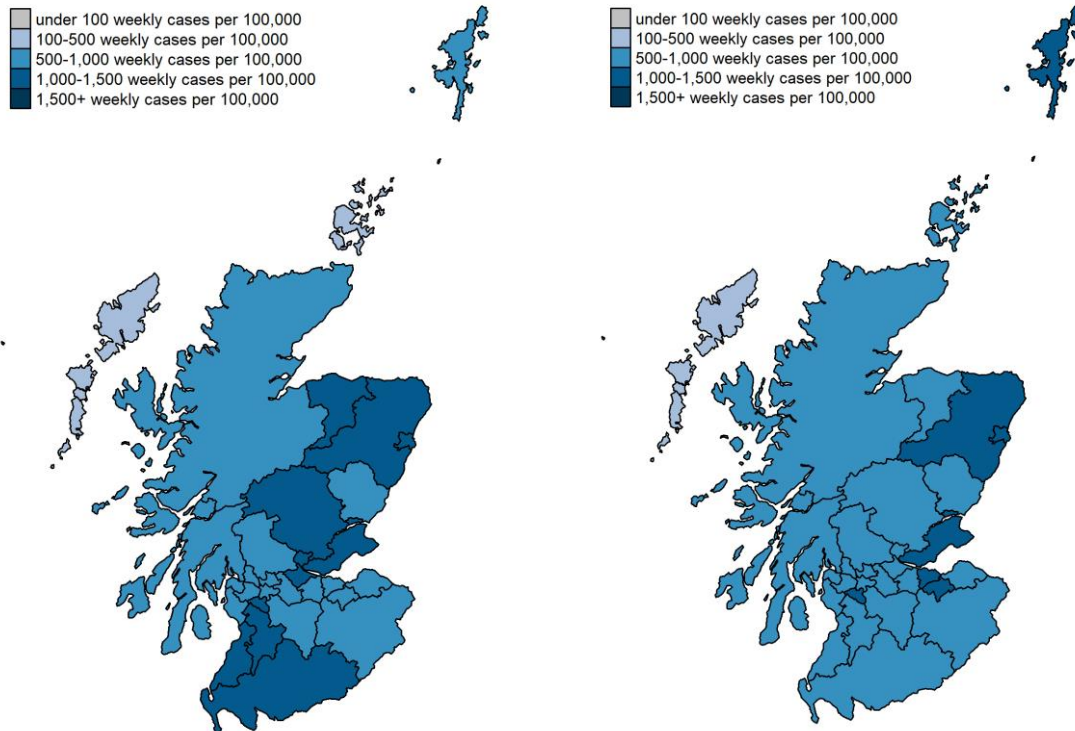
⁶⁴ UK Health Security Agency: [SARS-CoV-2 variants of concern and variants under investigation](#)

⁶⁵ Public Health Scotland: [Covid-19 Daily Dashboard](#)

Figure 12: Maps showing weekly total LFD or PCR case rates per 100,000 people in Local Authorities across Scotland, by reporting date

Total (LFD or PCR) weekly case rate on 26 January

Total (LFD or PCR) weekly case rate on 2 February



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Please note that the following local authority hotspot modelling uses data to 31 January 2022 from several academic groups to give an indication of whether a local authority is likely to experience high levels of Covid-19. This has been compiled via UKHSA into a consensus. **The modelled weekly case rate below is not directly comparable to the weekly case rate reported in the section and figure above.**

In less populated regions in which case numbers are small, there is a greater variation in model estimates, and hence increased uncertainty. This has led to one model not being included in the combination for Na h-Eileanan Siar, Orkney Islands and Shetland Islands. Some of the models contributing to this analysis are informed by both PCR and LFD positive tests whilst others are currently informed by PCR only.

Modelled rates of positive tests per 100,000 population indicate that, for the week commencing 13 February 2022, 29 of the 32 local authorities are expected to exceed

50 cases per 100,000 population with at least 75% probability⁶⁶. The exceptions are Na h-Eileanan Siar, Orkney Islands and Shetland Islands.

28 local authorities are expected to exceed 100 cases per 100,000, with at least 75% probability. The exceptions are Moray, Na h-Eileanan Siar, Orkney Islands and Shetland Islands. No local authorities are expected to exceed 300 cases per 100,000, with at least 75% probability⁶⁷.

Looking ahead

Scottish Contact Survey

Changes in patterns of mixing and adherence to restrictions will impact on future case numbers. The Scottish Contact Survey measures times and settings that people mix where they could potentially spread Covid-19. Average contacts from the most recent Panel B cohort of the Scottish Contact Survey (week ending 26 January) indicate an average of 4.7 contacts. This is an increase of 13% compared to two weeks prior.

Mean contacts have increased within the work and other setting (contacts outside home, school and work) by 45% and 13% respectively in the last two weeks. Contacts within the home have remained at a similar level over the same period.

All age groups with the exception of those in the 30-39 age group reported an increase in contacts in the last two weeks. Increases were largely driven by contacts within the work setting for those under 70. Individuals 70 and over reported a rise in contacts within the other setting.

Modelling the Epidemic

The latest [Modelling the Epidemic report](#) includes projections over the next few weeks for combined Delta and Omicron infections. These projections include the effect of the interventions announced on 14 and 21 December 2021; those announced as being lifted from 17, 24 and 31 January 2022; and booster take up. All projections also assume a lower vaccine effectiveness for Omicron than for Delta.

With this taken into account, it is estimated that daily infections may be between 5,000 and 50,000 at the start of March⁶⁸. However, the future trajectory of infections is uncertain.

Figure 13 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. However, there continues to be uncertainty over hospital occupancy and intensive care in the next four weeks. In this figure, the 'Central' scenario assumes that infections broadly plateau at current levels. The 'Worse' scenario assumes a higher transmissibility for

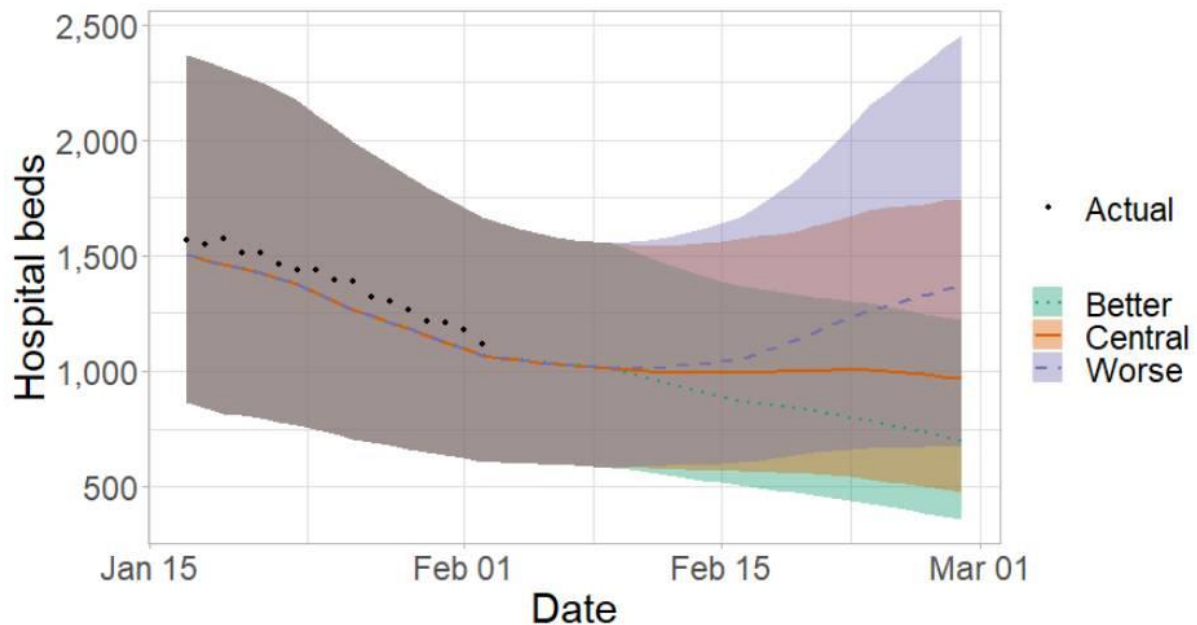
⁶⁶ Using data to 31 January 2022

⁶⁷ Scottish Government: [Coronavirus \(COVID-19\): modelling the epidemic - gov.scot \(www.gov.scot\)](https://www.gov.scot)

⁶⁸ Ibid.

Covid-19, whereas the 'Better' scenario assumes a lower transmissibility. All projections also assume a lower vaccine effectiveness for Omicron than for Delta⁶⁹.

Figure 13: Medium term projections of modelled hospital bed demand, from Scottish Government modelling, based on positive test data reported up to 31 January 2022^{70 71}.



Long Covid

According to the Office for National Statistic (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 1,332,000 people (95% confidence interval: 1,290,000 to 1,373,000) in the private residential population in the UK (2.06% of the respective population; 95% CI: 2.00% to 2.12%) reported experiencing long Covid over the four-week period ending 2 January 2022. In Scotland, over the same period, an estimated 100,000 people (95% CI: 90,000 to 111,000) in the private residential population (1.91% of the respective population; 95% CI: 1.71% to 2.11%) reported experiencing long Covid of any duration. This compares to 2.10% in England (95% CI: 2.03% to 2.17%), 1.99% in Wales (95% CI: 1.74% to 2.24%) and 1.47% in Northern Ireland (95% CI: 1.19% to 1.74%)⁷².

Scottish Government modelling of long Covid estimates that at 20 February 2022, between 61,000 (1.1% of the population) and 161,000 (2.9%) people are projected to

⁶⁹ Scottish Government: [Coronavirus \(COVID-19\): modelling the epidemic - gov.scot \(www.gov.scot\)](https://www.gov.scot/coronavirus-modelling-the-epidemic)

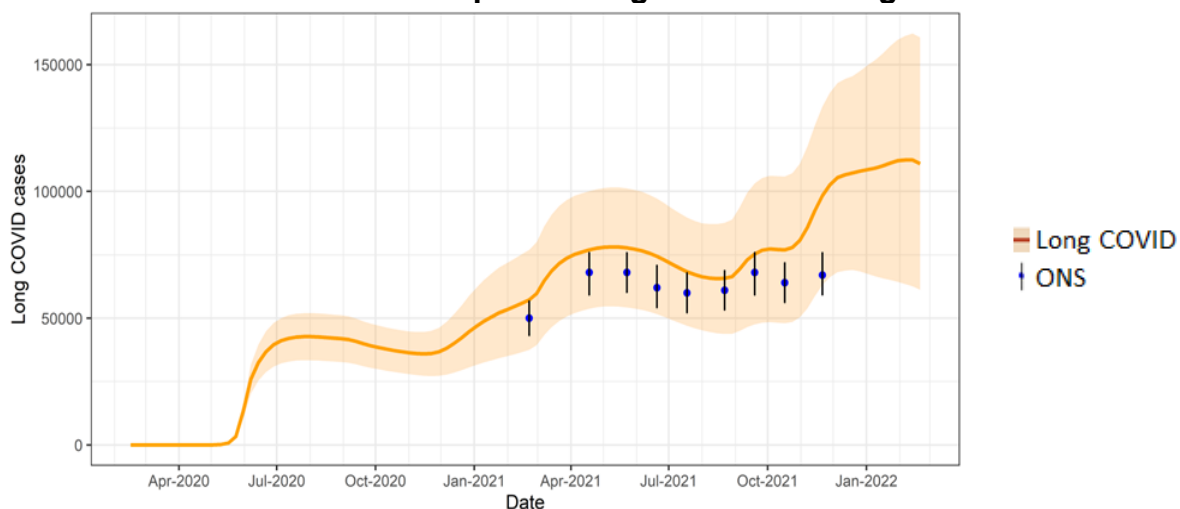
⁷⁰ Ibid.

⁷¹ Following the announcement removing the need for a confirmatory PCR test in some cases combined PCR and LFD reported date data has been used from 6th January.

⁷² Office for National Statistics: [Prevalence of ongoing symptoms following coronavirus \(COVID-19\) infection in the UK: 3 February 2022](#)

self-classify with long Covid for **12 weeks or more** after their first suspected Covid infection in Scotland (**Figure 14**)⁷³. These are preliminary results, further data on rates of long Covid and associated syndromes as research emerges are required.

Figure 14: Estimates of self-classified long Covid prevalence at 12 weeks from 16 February 2020 to 20 February 2022 (showing 90% confidence interval). ONS estimates for Scotland of self-reported long Covid with range also shown⁷⁴.



Next steps

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

Each week this report will provide an overview of the current Covid-19 situation in Scotland. This will include real time data on case rates, hospitalisations and deaths and how Scotland's figures compare to those from the rest of the UK. Following the change in testing policy in Scotland this report will focus on Covid-19 Infection Survey and wastewater estimates to bring an insight in to the pandemic, as well as incorporating experimental statistics that combines PCR and LFD test results.

Modelling can tell us where the epidemic is likely to be heading. Local data and data by age group can highlight where problems arise, which can help in addressing some of these issues. In the coming weeks the roll out of the vaccine will continue to be monitored along with the impact of this on case rates, hospital admissions and deaths among different age cohorts. Wastewater monitoring and Covid-19 Infection Survey will provide key insights in response to the pandemic.

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.

⁷³ Scottish Government: [Coronavirus \(COVID-19\): modelling the epidemic - gov.scot \(www.gov.scot\)](https://www.gov.scot)

⁷⁴ Ibid.

This publication will be available in accessible HTML on the [gov.scot](http://www.gov.scot) website

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This document is also available from our website at www.gov.scot.
ISBN: 978-1-80435-018-8

The Scottish Government
St Andrew's House
Edinburgh
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Produced for
the Scottish Government
by APS Group Scotland
PPDAS1023358 (02/22)
Published by
the Scottish Government,
February 2022



ISBN 978-1-80435-018-8

Web Publication

PPDAS1023358 (02/22)