

## Coronavirus (COVID-19): Analysis

### State of the Epidemic in Scotland – 25 November 2021

#### Background

This report summarises the current situation on 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 summarises the data up to and including 24 November 2021 on Covid-19 in Scotland. This updates the previous publication published on 19 November<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.

New data feeds have been established between England and Scotland, meaning that from 18 November 2021 PHS include data from private laboratory testing within Pillar 2 figures. Reports contain this data in real-time, however, figures reported on 18 November contained historic data from 22 October 2021 and may therefore look inflated.

Please note this report has been published earlier than usual due to the St Andrew's Day Holiday, because of this some sections of this report have not been updated. This affects parts of 'How Scotland compares with the rest of the UK' – ONS Covid-19 Infection Survey estimates,

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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/publications/state-of-the-epidemic-in-scotland/pages/1-introduction-and-background.aspx)

‘Children and Education’ and ‘How the virus is changing’ sections. An update to these will be provided next week for 3 December 2021 publication.

## Key Points

- The reproduction rate  $R$  in Scotland, as of 9 November, is estimated as being between 0.9 and 1.1. This has not changed since last week.
- An average of 2,835 cases were reported per day in the 7 days to 24 November. This is a 7% decrease from the daily average of 3,034 recorded on 17 November.
- In the last week 7 day case rates have decreased in Scotland.
- There were 372 weekly cases per 100,000 in the week to 21 November (by specimen date). This is a 5% decrease from 391 weekly cases per 100,000 on 14 November. This is lower than the most recent peak (825 weekly cases per 100,000 on 6 September) and lower than the peak in July (425 weekly cases per 100,000 recorded on 3 July).
- Case rates (by specimen date) have decreased in those aged 0-19, 60-79 and 80+, increased slightly in those aged 40-59, and have started to level off in those aged 20-39 in the week to 21 November. As of 21 November, the highest case rates were observed amongst those aged under 20, followed by 40-59, 20-39, 60-79 and 80+.
- Latest modelled estimates suggest that as of 9 November, based on data to 22 November, there were between 90 and 125 new daily infections per 100,000 people in Scotland.
- Falkirk currently has the highest weekly case rate in Scotland reporting 547 weekly cases per 100,000 in the week to 21 November, followed by Moray with 531 weekly cases per 100,000, and Dumfries and Galloway with 515 weekly cases per 100,000. Na h-Eileanan Siar has the lowest case rate at 132 per 100,000.
- In the week to 24 November the number of people in hospital with confirmed Covid-19 has fluctuated but has decreased by 9% overall since 17 November. The number of people in ICU (short and long stay) with confirmed Covid-19 appears to be on a fluctuating plateau with daily variations throughout the week.
- There were 94 deaths registered in Scotland where coronavirus was mentioned on the death certificate in the week ending 21 November. This is a 19% decrease from 116 deaths registered in the week to 14 November.
- Nationwide, wastewater Covid-19 levels have risen, with the week ending on 23 November seeing levels of around 77 million gene

copies per person per day (Mgc/p/d), up from around 62 Mgc/p/d in the previous week.

- There continues to be uncertainty over hospital occupancy and intensive care in the next four weeks.
- Over 4.3 million people in Scotland have been given a first vaccine against Covid-19, over 3.9 million have received a second dose, and over 1.5 million people have received a booster or dose 3 by 24 November.
- The Delta variant remains the dominant strain in Scotland. Prevalence rates of AY.4.2 (Delta+) have increased in recent weeks in both Scotland and England. Clinical implications of Delta+ are still to be determined.

## 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.

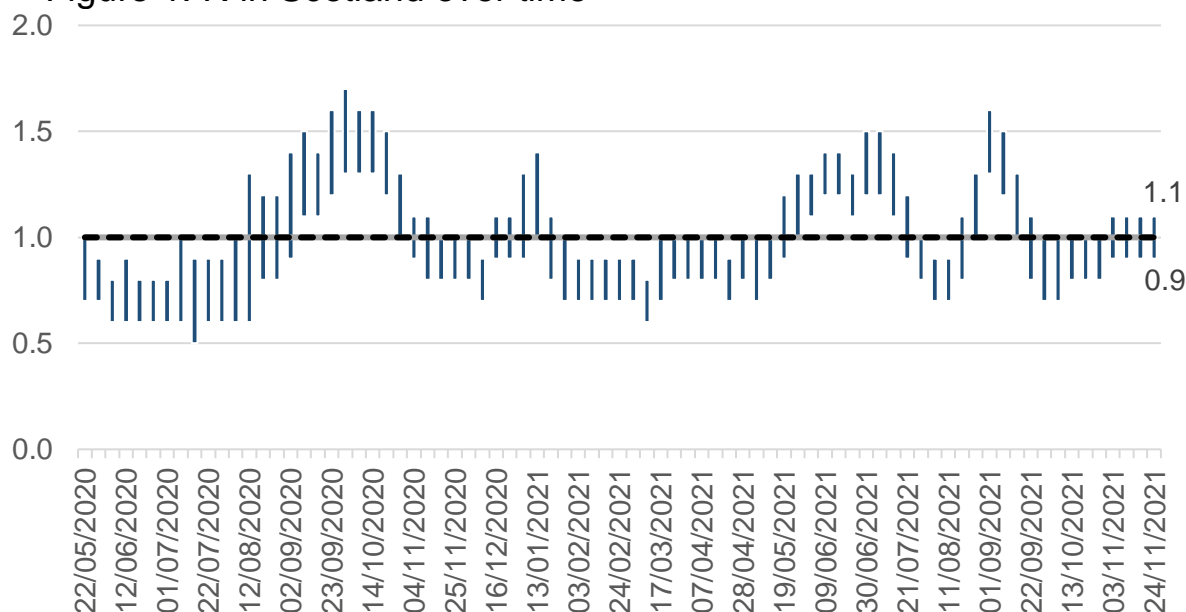
## The national picture

The latest R value for Scotland, as of 9 November (using data to 22 November)<sup>2</sup>, was between 0.9 and 1.1 (Figure 1), with a growth rate of between -1% and 1%. The R value has not changed, however the lower growth rate limit has increased and the upper limit has decreased since last week.

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<sup>2</sup> Scottish Government: [Coronavirus \(COVID-19\): modelling the epidemic - gov.scot \(www.gov.scot\)](https://www.gov.scot/publications/coronavirus-covid-19/modelling-the-epidemic/pages/22-november-2021/)

Figure 1: R in Scotland over time



An average of 2,835 cases were reported per day in the 7 days to 24 November. This is a 7% decrease from the daily average of 3,034 recorded on 17 November<sup>3</sup>. In the week 13 November to 19 November 2021, there were 502 cases (PCR testing only) per 100,000 among unvaccinated individuals, compared to 289 cases per 100,000 for those that had been vaccinated with two or more doses<sup>4</sup>.

In the last week 7 day case rates have decreased in Scotland. There were 372 weekly cases per 100,000 in the week to 21 November (by specimen date), which is a 5% decrease from 391 weekly cases per 100,000 on 14 November<sup>5</sup>. This is lower than the most recent peak of 825 weekly cases per 100,000 on 6 September and lower than the previous peak of 425 weekly cases recorded on 3 July (see Figure 2).

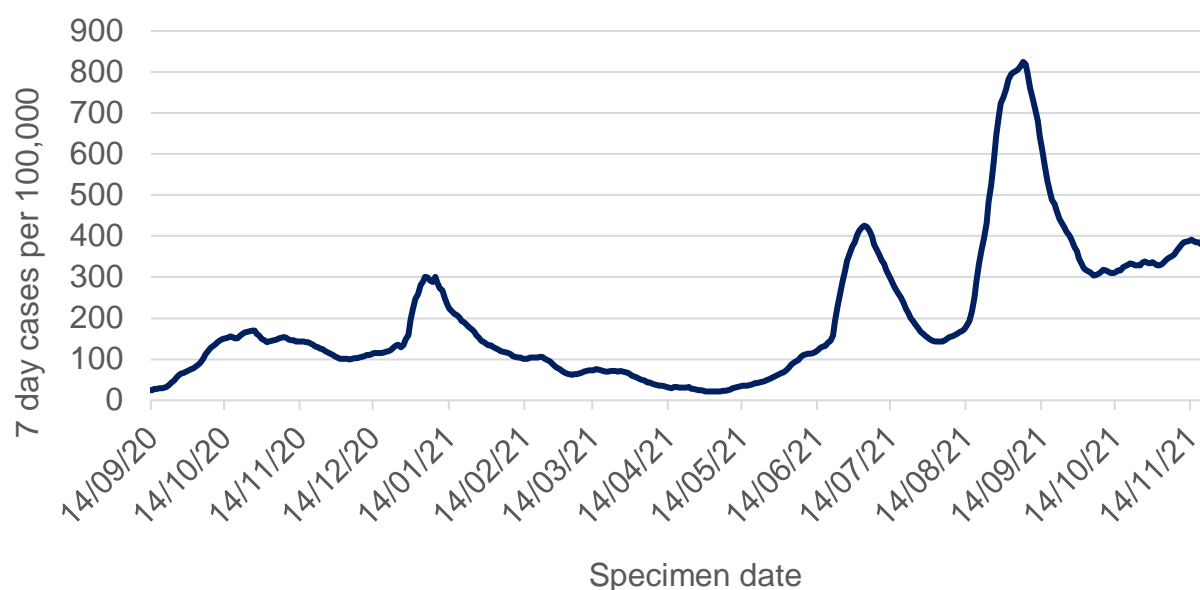
The number of locations where the levels of SARS-CoV-2 in wastewater are monitored has increased to 110 sites around Scotland. In contrast to Covid-19 case records, virus shedding into wastewater is a biological process. This means that wastewater data is unaffected by factors that impact whether testing is done. Nationwide, wastewater Covid-19 levels have risen, with the week ending on 23 November seeing levels of around 77 million gene copies per person per day (Mgc/p/d), up from around 62 Mgc/p/d in the previous week.

<sup>3</sup> Scottish Government: <https://www.gov.scot/publications/coronavirus-covid-19-daily-data-for-scotland/> (week on week comparison may be affected by data flow issue.)

<sup>4</sup> Public Health Scotland COVID-19 statistical report

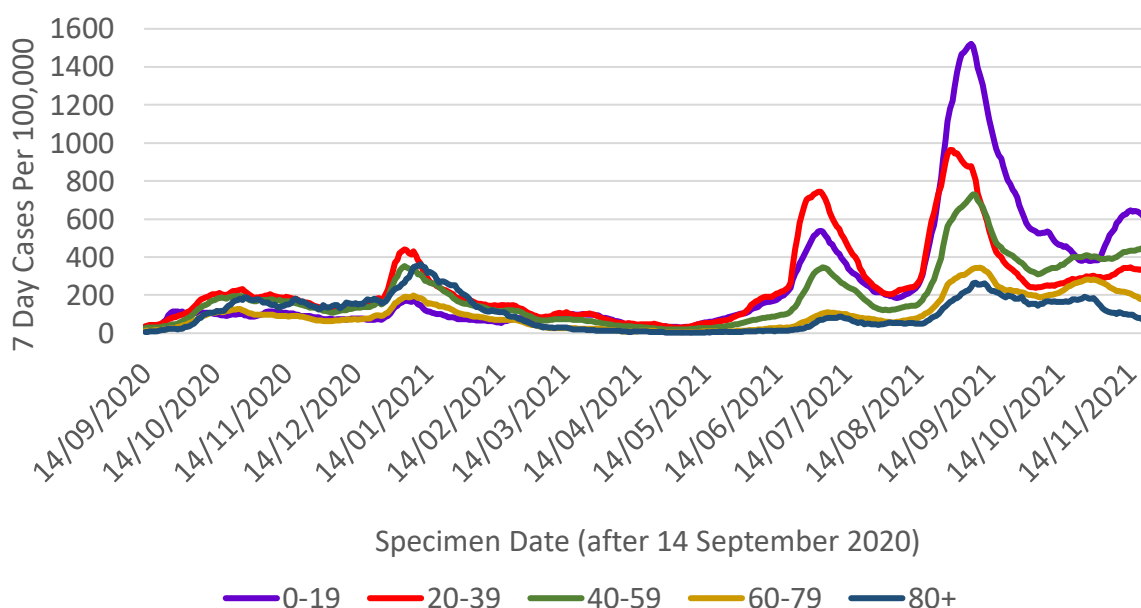
<sup>5</sup> Public Health Scotland Covid-19 dashboard: [https://public.tableau.com/profile/phs.covid.19#!/vizhome/COVID-19DailyDashboard\\_15960160643010/Overview](https://public.tableau.com/profile/phs.covid.19#!/vizhome/COVID-19DailyDashboard_15960160643010/Overview)

Figure 2: Seven day case rate for Scotland by specimen date. Refers to PCR testing only.



Case rates (by specimen date) have decreased in those aged 0-19, 60-79 and 80+, increased slightly in those aged 40-59, and have started to level off in those aged 20-39 in the week to 21 November (by 40-59, 20-39, 60-79 and 80+ (Figure 3)). Between 1 and 14 November 2021, case rates increased particularly for those aged 0-19, with the biggest increase seen among those aged 5-11 (Figure 6). However, in the week to 21 November, those aged 0-19 saw largest decrease in case rates. As of 21 November, the highest case rates were observed amongst those aged under 20, followed by 40-59, 20-39, 60-79 and 80+ (Figure 3).

Figure 3: Seven day case rate in Scotland by age group by specimen date<sup>6</sup>. Refers to PCR testing only



Not everyone who has the virus will be tested, as many people do not realise they have Covid-19, or they have mild symptoms and do not come forward. Latest modelled estimates suggest that, as at 9 November, based on data to 22 November, the incidence of new daily infections in Scotland was between 90 and 125 new infections per 100,000<sup>7</sup>. This equates to between 4,900 and 6,800 people becoming infected each day in Scotland.

In the week to 24 November the number of people in hospital with confirmed Covid-19 has fluctuated but has decreased by 9% overall since 17 November. The number of people in hospital with confirmed Covid-19 for less than 28 days peaked at 2,053 on 22 January, decreased to a low of 58 on 6 May, and then increased to 1,107 on 21 September<sup>8</sup>. This has since decreased and as of 24 November there were 708 patients in hospital with Covid-19 (Figure 4). The number of people in ICU (short and long stay) with confirmed Covid-19 appears to be on a fluctuating plateau with daily variations throughout the week<sup>9</sup>.

The latest data from PHS shows 492 admissions to hospital for people with confirmed Covid-19 in the week to 20 November compared to 563 in the week to 13 November<sup>10</sup>. In the 4 weeks to 19 November 26.3% of

<sup>6</sup> Source: Public Health Scotland

<sup>7</sup> Scottish Government: [Coronavirus \(COVID-19\): modelling the epidemic - gov.scot \(www.gov.scot\)](https://www.gov.scot/publications/coronavirus-covid-19-daily-data-for-scotland/)

<sup>8</sup> Scottish Government: <https://www.gov.scot/publications/coronavirus-covid-19-daily-data-for-scotland/>

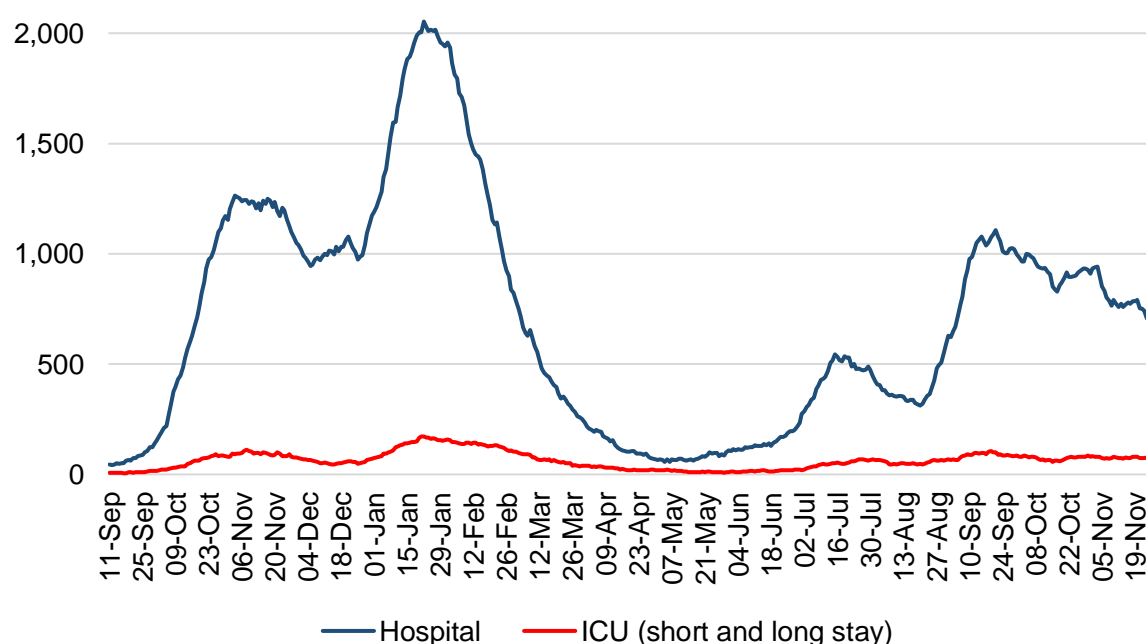
<sup>9</sup> *ibid*

<sup>10</sup> Public Health Scotland dashboard: [COVID-19 Daily Dashboard - PHS COVID-19 | Tableau Public](https://phs.scot.nhs.uk/covid-19/).

acute Covid-19 hospital admissions were in unvaccinated individuals<sup>11</sup>. For context, as of 24 November, 90.7% of those aged 12+ have had at least one dose of the vaccine. Overall, individuals in the oldest age groups were most likely to be hospitalised. The age-standardised rate of hospital admissions per 100,000 were higher in unvaccinated individuals compared to vaccinated individuals in the four weeks to 19 November. Unvaccinated individuals were 3.3 times more likely to be in hospital with Covid-19 compared to individuals that had received two doses of vaccine in the period 13 November to 19 November<sup>12</sup>.

As the population is increasingly vaccinated, more of the patients in hospital will be fully or partially vaccinated. Therefore, it is important that we can differentiate between patients in hospital because of Covid-19 rather than with Covid-19. Public Health Scotland estimates that as at July 2021, 75% of acute hospital admissions had a primary diagnosis of Covid-19. The trend decreased from 78% in January 2021 to a low of 66% in April 2021, but has since increased<sup>13</sup>.

Figure 3: Patients in hospital (including those in ICU) (with length of stay 28 days or less) and ICU<sup>14</sup> with recently confirmed Covid-19



<sup>11</sup> [Public Health Scotland COVID-19 statistical report](#)

<sup>12</sup> [ibid](#)

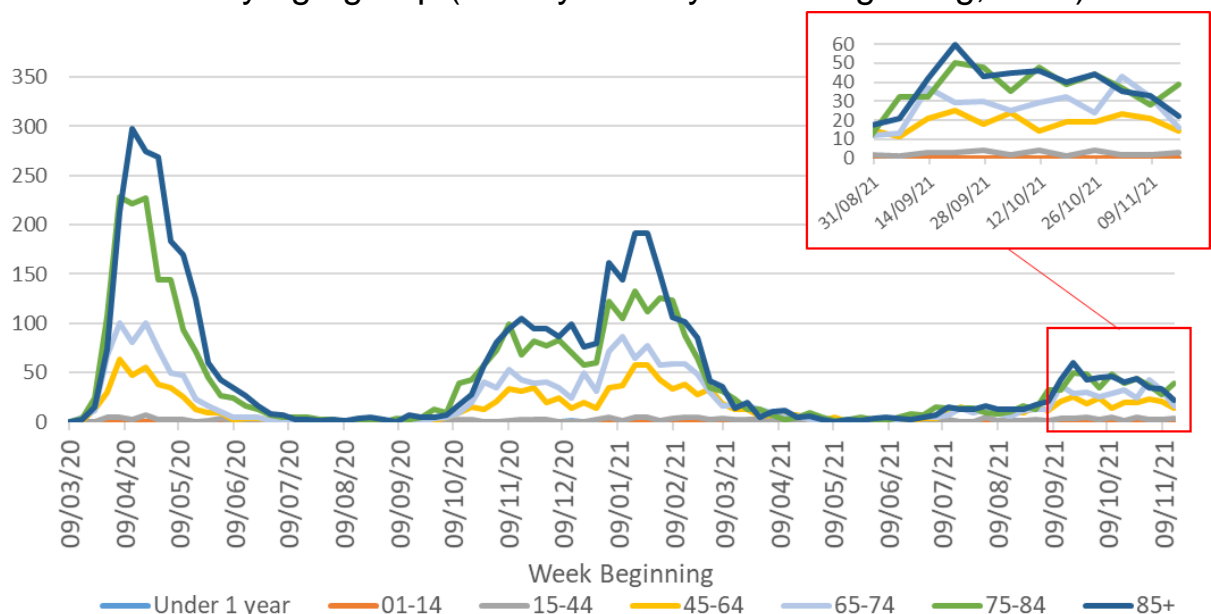
<sup>13</sup> [Public Health Scotland COVID-19 Statistical Report](#)

<sup>14</sup> 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.



There were 94 deaths registered where Covid-19 was mentioned on the death certificate in the week to 21 November 2021. This is a decrease of 22 (-19%) in the number of deaths from the previous week, and 86% lower than the peak in April 2020 (663 deaths). The proportion of deaths in care homes decreased from 60% in April 2020 to 11% in the week to 21 November 2021, with 10 deaths occurring in care homes in this week<sup>15</sup>. In the same week, deaths involving coronavirus decreased in all age groups compared to the week ending 31 October. Deaths decreased from 4 to 3 deaths among those aged 15-44, from 19 to 14 deaths in age group 45-64, from 24 to 16 in age group 65-74, from 44 to 39 in age group 75-84 and from 44 to 22 deaths among those aged over 85. Death numbers remained at 0 in those aged under 15 in the same period<sup>16</sup> (Figure 4). From 29 December 2020 to 12 November 2021, 67.2% of Covid-19 deaths were in unvaccinated individuals<sup>17</sup>. Amongst those individuals who have been vaccinated with two doses of Covid-19 vaccine, 78.1% of the confirmed Covid-19 deaths occurred in the 70+ age group<sup>18</sup>.

Figure 4: Deaths by age group (weekly total by week beginning, NRS)



<sup>15</sup> NRS Scotland: <https://www.nrscotland.gov.uk/statistics-and-data/statistics/statistics-by-theme/vital-events/general-publications/weekly-and-monthly-data-on-births-and-deaths/deaths-involving-coronavirus-covid-19-in-scotland>

<sup>16</sup> *ibid*

<sup>17</sup> [Public Health Scotland COVID19 statistical report](#)

<sup>18</sup> *ibid*



## How Scotland compares with the rest of the UK

Please note that the latest ONS Covid-19 Infection Survey estimates are not available in the State of the Epidemic report this week due to the earlier publication date. The below paragraph is based on last week's estimates and an update to it will be provided next week (3 December 2021). These estimates will however be published on the Scottish Government website on Friday 26 December 2021 and can be accessed through the following link: [Coronavirus \(COVID-19\): infection survey - gov.scot \(www.gov.scot\)](https://www.gov.scot/publications/coronavirus-covid-19-infection-survey/pages/1-introduction-and-what-the-survey-measures.aspx)

The ONS Covid-19 Infection Survey estimates that in the week 7 to 13 November 2021, the estimated percentage of the population living in private residential households testing positive for Covid-19 in Scotland was 1.06% (95% credible interval: 0.86% to 1.29%). The percentage of people testing positive for Covid-19 in the private residential population remained level in that week. Estimates for the week 7 to 13 November 2021 in the other UK nations are as follows: 1.51% (95% credible interval: 1.42% to 1.60%) for England, 1.84% (95% credible interval: 1.47% to 2.24%) for Wales and 1.53% (95% credible interval: 1.16% to 1.96%) for Northern Ireland. This equates to around 1 in 95 people in Scotland, 1 in 65 in England, 1 in 55 in Wales and 1 in 65 in Northern Ireland<sup>19</sup>.

The ONS Covid-19 Infection Survey estimated that in the week beginning 1 November 2021, 92.5% (95% CI: 91.1% to 93.7%) of the adult population living in private residential households in Scotland would have tested positive for antibodies against SARS-CoV-2, as a result of having the infection in the past or being vaccinated. This compares to 92.8% in England (95% CI: 91.6% to 93.9%), 91.4% in Wales (95% CI: 89.7% to 92.9%) and 93.3% in Northern Ireland (95% CI: 90.2% to 94.9%)<sup>20</sup>.

An estimated 1.9% of the population living in private residential households in the UK were experiencing self-reported long Covid symptoms (symptoms persisting for more than four weeks after the first suspected coronavirus (Covid-19) infection that were not explained by something else) in the 4 weeks ending 2 October 2021. In Scotland, 92,000 people (1.75% of the respective population) living in private

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<sup>19</sup> Office for National Statistics: <https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/conditionsanddiseases/bulletins/coronaviruscovid19infectionsurveys/pilot/previousReleases>

<sup>20</sup> Office for National Statistics: [Coronavirus \(COVID-19\) Infection Survey, antibody and vaccination data, UK - Office for National Statistics](https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/conditionsanddiseases/bulletins/coronaviruscovid19infectionsurveys/antibodyandvaccinationdata)

households self-reported long Covid symptoms for this period. This compares to 1.90% in England, 1.56% in Wales and 1.43% in Northern Ireland<sup>21</sup>.

Average daily deaths in Scotland (2 per 1 million population) in the week to 24 November were similar to England and Wales (2 per 1 million each), and below Northern Ireland (3 per 1 million)<sup>22</sup>. Average daily cases in Scotland (519 per 1 million) in the week to 24 November were below Northern Ireland (867 per 1 million), Wales (722 per 1 million), and England (646 per 1 million)<sup>23</sup>.

## **Situation by local authority within Scotland**

The trend in case rates varied across the country, but most local authorities saw a slight decrease in case rates over the past week. Case rates increased in Aberdeen City, Aberdeenshire, City of Edinburgh, Dundee City, East Lothian, East Renfrewshire, Glasgow City, Shetland Islands, West Dunbartonshire and West Lothian in the week leading up to November 21, and decreased in all other local authorities. Falkirk currently has the highest weekly case rate in Scotland reporting 547 weekly cases per 100,000 in the week to 21 November, followed by Moray with 531 weekly cases per 100,000, Dumfries and Galloway with 515 weekly cases per 100,000, Stirling with 489 weekly cases per 100,000, Angus with 482 weekly cases per 100,000, and East Lothian with 474 weekly cases per 100,000 population. Na h-Eileanan Siar has the lowest case rate in Scotland, reporting 132 weekly cases per 100,000 population in the week to 21 November<sup>24</sup>. Case rates remain high across Scotland with all local authorities, except for Na h-Eileanan Siar, reporting over 200 weekly cases per 100,000 population in that week (Table 1 and Figure 5).

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<sup>21</sup> Office for National Statistics:

<https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/conditionsanddiseases/bulletins/prevalenceofongoingsymptomsfollowingcoronaviruscovid19infectionintheuk/4november2021>

<sup>22</sup> UK Government: <https://coronavirus.data.gov.uk/>

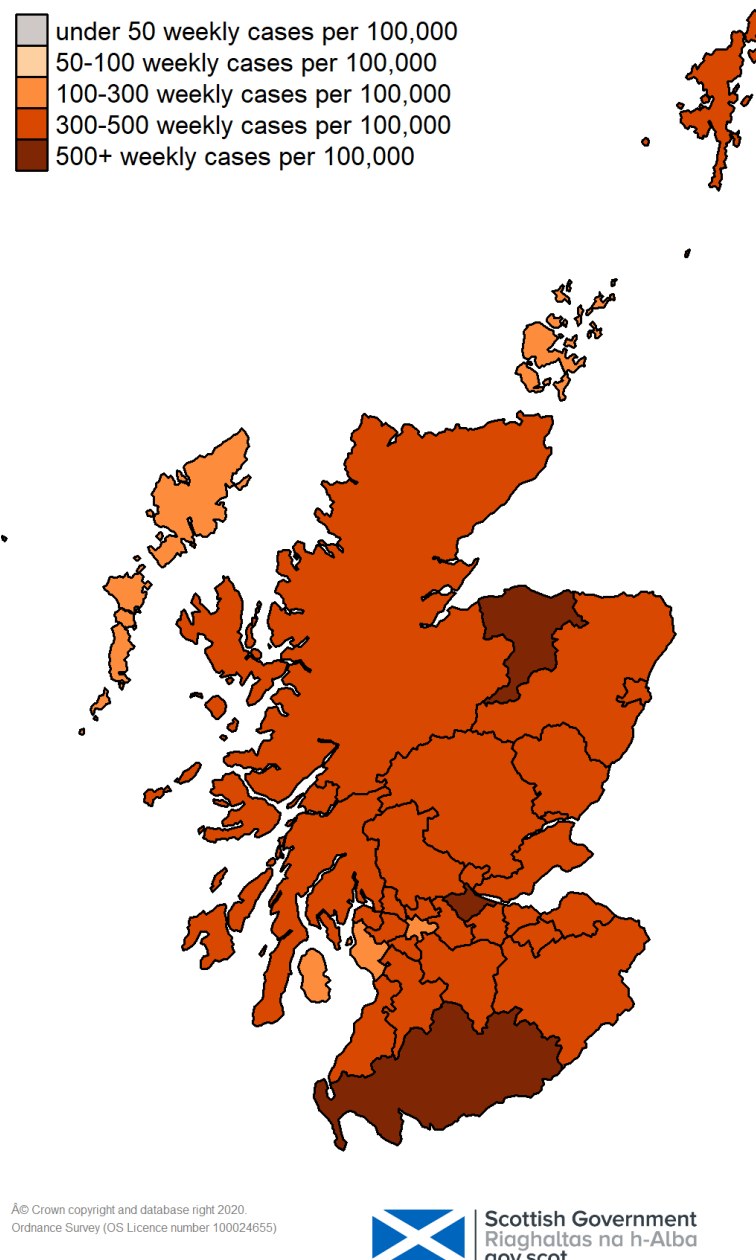
<sup>23</sup> ibid

<sup>24</sup> Public Health Scotland Covid dashboard: [https://public.tableau.com/profile/phs.covid.19#!/vizhome/COVID-19DailyDashboard\\_15960160643010/Overview](https://public.tableau.com/profile/phs.covid.19#!/vizhome/COVID-19DailyDashboard_15960160643010/Overview)

Table 1: Total new weekly cases (by specimen date) per 100,000 population to 21 November 2021, in order of prevalence

<b>Local authority</b>	<b>Total new cases in the week, per 100,000 population</b>	<b>Change since previous week</b>
Falkirk	547	-9
Moray	531	-42
Dumfries and Galloway	515	-40
Stirling	489	-10
Angus	482	-57
East Lothian	474	+97
Aberdeen City	470	+29
Shetland Islands	442	+136
Fife	435	-18
Clackmannanshire	429	-172
East Dunbartonshire	418	-70
East Renfrewshire	402	+37
West Dunbartonshire	393	+41
North Lanarkshire	387	-11
Argyll and Bute	378	-25
Highland	365	-107
Inverclyde	362	-14
Aberdeenshire	361	+1
East Ayrshire	354	-146
West Lothian	353	+17
South Ayrshire	346	-41
Perth and Kinross	336	-93
Dundee City	334	+32
South Lanarkshire	334	-52
Scottish Borders	331	-72
City of Edinburgh	313	+6
Midlothian	309	-16
Renfrewshire	302	-15
North Ayrshire	283	-49
Glasgow City	267	+11
Orkney Islands	214	-295
Na h-Eileanan Siar	132	-234
Scotland	372	-19

Figure 5: Map of weekly new positive cases per 100,000 people in Scotland



There is uncertainty when modelling predicted case rates in local authorities in regions with smaller populations, and hence lower test counts. This concerns regions such as Na h-Eileanan Siar, Orkney Islands and Shetland Islands.

The most recent modelling predicts, based on data up to 22 November, that for the week commencing 5 December 2021, 29 out of 32 local authorities are expected to exceed 50 cases per 100,000 population with at least 75% probability. These 29 local authorities are also expected to

exceed 100 cases per 100,000 with at least 75% probability. Two local authorities are expected to exceed 300 cases per 100,000 population with at least 75% probability<sup>25</sup>. These are Falkirk and Dumfries and Galloway. There are no local authorities which are expected to exceed 500 cases per 100,000 population with at least 75% probability.

## Children and Education

Please note that the latest data on cases and hospitalisations among children and young adults is not available in the State of the Epidemic report this week due to the earlier publication date, except for the vaccination uptake in 17-21 year olds. The below section is based on figures available last week and an update to it will be provided next week (3 December 2021). These figures will however be published as part of Public Health Scotland Covid-19 Education Surveillance Report on Friday 26 December 2021 and can be accessed through the following link: <https://scotland.shinyapps.io/phs-covid19-education/ w 852fb58e/>

Schools resumed in Scotland by the week ending 20 August and universities resumed by end of September. Throughout October schools were on half-term holidays, and testing rates in children were lower during this period. The majority of children and young people have returned to full time education.

The total number of Covid-19 cases in young people aged under 22 has increased by 18% over the last week (7,741 cases recorded in the week to 14 November compared to 6,566 cases in the week ending 7 November). The number of cases has increased in all age groups except among those aged 2-4. The percentage of cases made up of children under 12 was 65.3% (5,054 cases) in the week to 14 November, a slight increase from the previous week (64.8%)<sup>26</sup>.

7 day case rates per 100,000 have increased in all age groups in the week ending 14 November, except for those aged 2-4 where it has decreased slightly (Figure 7). However, case rates have continued to increase more sharply in the 5-11 and 12-15 age groups.

The rate of testing increased or remained level amongst all age groups, apart from 16-17 where it decreased in the week ending 14 November.

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<sup>25</sup> Scottish Government: [Coronavirus \(COVID-19\): modelling the epidemic - gov.scot \(www.gov.scot\)](https://www.gov.scot/publications/coronavirus-modelling-the-epidemic/pages/12/default.aspx)

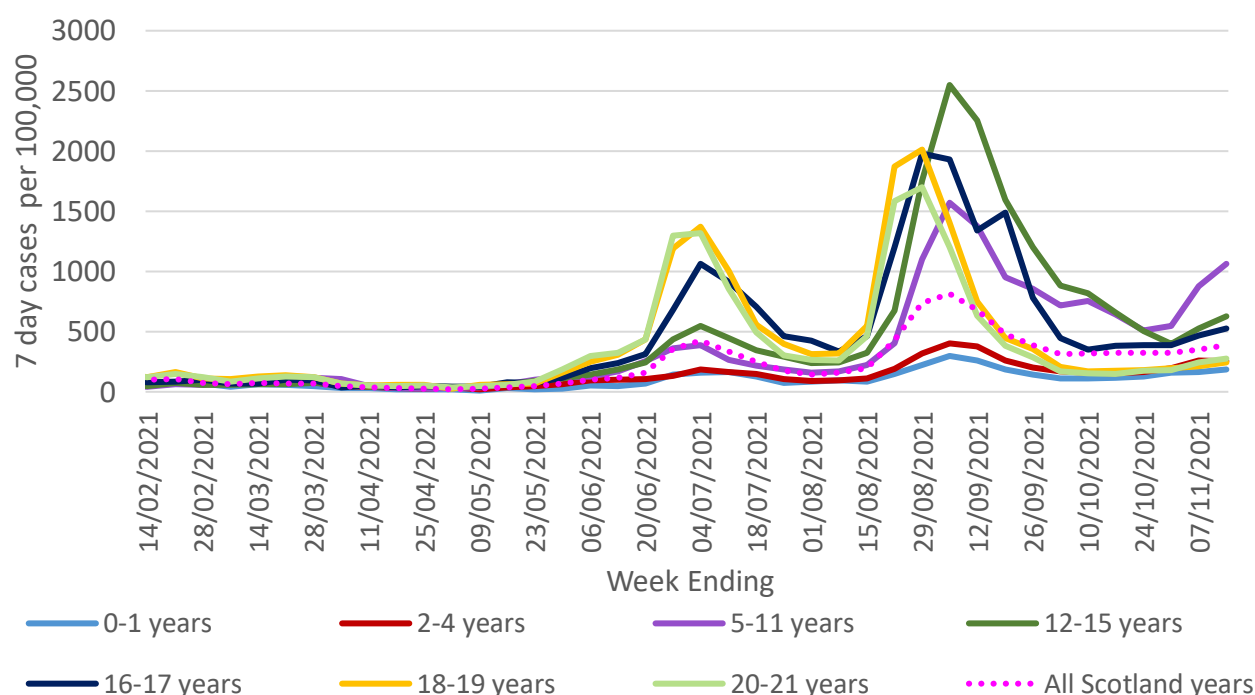
<sup>26</sup> Public Health Scotland: [PHS COVID-19 Education report \(shinyapps.io\)](https://scotland.shinyapps.io/phs-covid19-education/)

Test positivity rates have decreased in age group 2-4, however increased in other age groups in the same period.

Average hospital admissions (3-week rolling average) related to Covid-19 in children have decreased in age groups 12-17 and 18-19, and remained stable among those under 1, but have increased in all other age groups in the three weeks leading up to 10 November 2021 compared to the previous three-week period.

Vaccine uptake in 17-21 year olds as at 22 November was 80.8% for the first dose and 63.7% for the second dose<sup>27</sup>. Please note that under half of Scottish students are in this age category and only Scottish students (i.e. registered with a GP in Scotland) are included in the figures. Covid-19 infection survey estimated that up to the week beginning 18 October 2021, the percentage of 16-24 year olds in the community population in Scotland testing positive for antibodies increased to 95.8%<sup>28</sup>.

Figure 6: Seven day case rate in Scotland by age group by specimen date for children and young people (week ending 14 November). Refers to PCR testing only. (not updated this week)



<sup>27</sup> Public Health Scotland

<sup>28</sup> Office for National Statistics: [Coronavirus \(COVID-19\) Infection Survey, antibody and vaccination data, UK - Office for National Statistics](#)

## Looking ahead

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 A cohort of the Scottish Contact Survey (week ending 17 November) indicate an average of 4.8 contacts.

Mean contacts within the other setting (contacts outside home, school and work) have decreased by 7% in the last two weeks. Contacts within the home and work setting remained at a similar level over the same period.

The largest increase was reported by the 60-69 age group, increasing overall contacts by 14%. This was largely due to a rise in contacts within the other setting. The biggest decrease was reported in the 18-29 age group.

Those aged between 40-49 have reported the biggest decrease in interactions with those aged under 18 in the last two weeks.

Self-reported compliance with the current regulations and guidance has decreased since January but remains at a high level. On 16-17 November, 68% of people reported 'complete' or 'almost complete' compliance<sup>29</sup>.

There continues to be uncertainty over hospital occupancy and intensive care in the next four weeks (Figure 7)<sup>30</sup>.

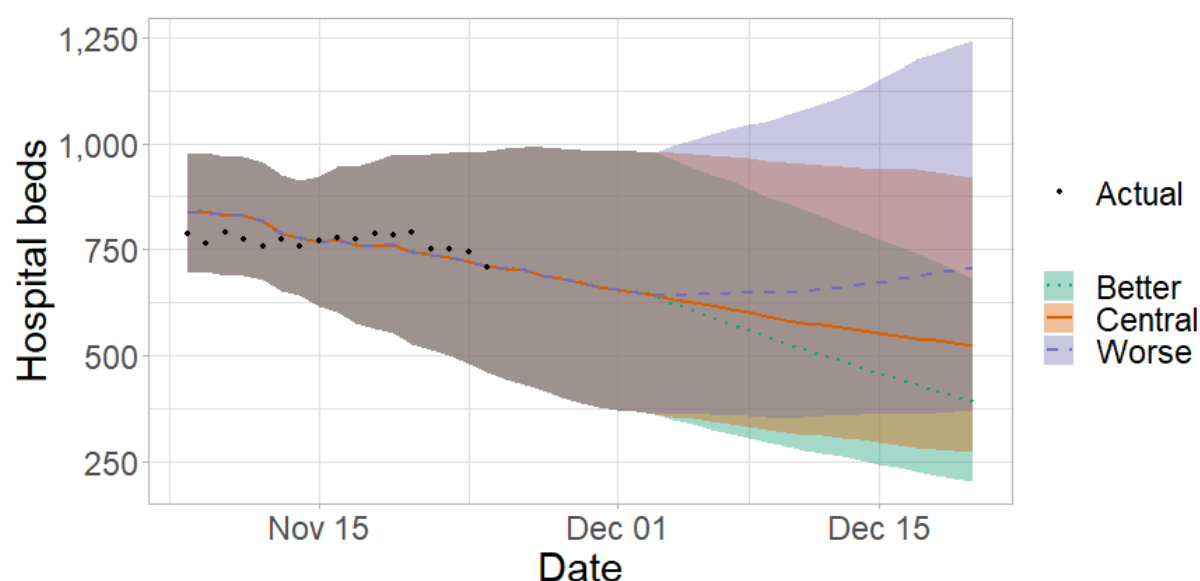
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<sup>29</sup> Results are taken from questions run on behalf of Scottish Government on the YouGov online omnibus survey. The sample is demographically and geographically representative of adults 18+ across Scotland, with c. 1000 responses each week. Fieldwork took place on 16-17 November with a total sample size of 1009 adults. 'Complete' or 'almost complete' compliance refers to respondents who rated themselves 6 or 7 on a scale of 1-7 for the question: *Thinking about ALL of the guidance on what to do and what not to do during the Coronavirus pandemic (including distancing, protection measures and all restrictions). On a scale of 1-7, where 1 is 'Not at all' and 7 is 'Completely', to what extent do you feel you are following the regulations and guidance?*

<sup>30</sup> Scottish Government: [Coronavirus \(COVID-19\): modelling the epidemic - gov.scot \(www.gov.scot\)](https://www.gov.scot/publications/coronavirus-modelling-epidemic/pages/10/index.aspx)



Figure 7: Medium term projections of modelled hospital bed demand, from Scottish Government modelling<sup>31</sup>



Vaccinations are continuing and 91% of the 12+ population in Scotland has now been vaccinated with the first dose<sup>32</sup>. The first vaccines were administered on Tuesday 8 December 2020 and 4,341,224 people had received their first dose by 24 November 2021<sup>33</sup>. 3,941,715 people (82% of those aged 12 and over) had received their second dose and 1,502,266 people have received their dose 3 or booster vaccine by 24 November<sup>34</sup>. There remains a low level of deaths amongst vaccinated individuals (Figure 4).

By age group, almost 100% of individuals aged 55+, 97% of those aged 50-54, 92% of those aged 40-49, 85% of those aged 30-39, 79% of those aged 18-29, 77% of those aged 16-17, and 58% of those aged 12-15 have received their first vaccination by 24 November 2021 (Figure 8).

100% of individuals aged 60+, 97% of those aged 55-59, 94% of those aged 50-54, 88% of those aged 40-49, 78% of those aged 30-39, 69% of those aged 18-29, 20% of those aged 16-17, and 1% of those aged 12-15 have received their second dose in the same time period.

<sup>31</sup> The difference between the scenarios: 'Central' assumes that infections will plateau at the current level or fall slightly. 'Worse' assumes a rise in transmission from the current level. 'Better' assumes a drop in transmission. All scenarios are based on current vaccine roll-out plans and efficacy assumptions.

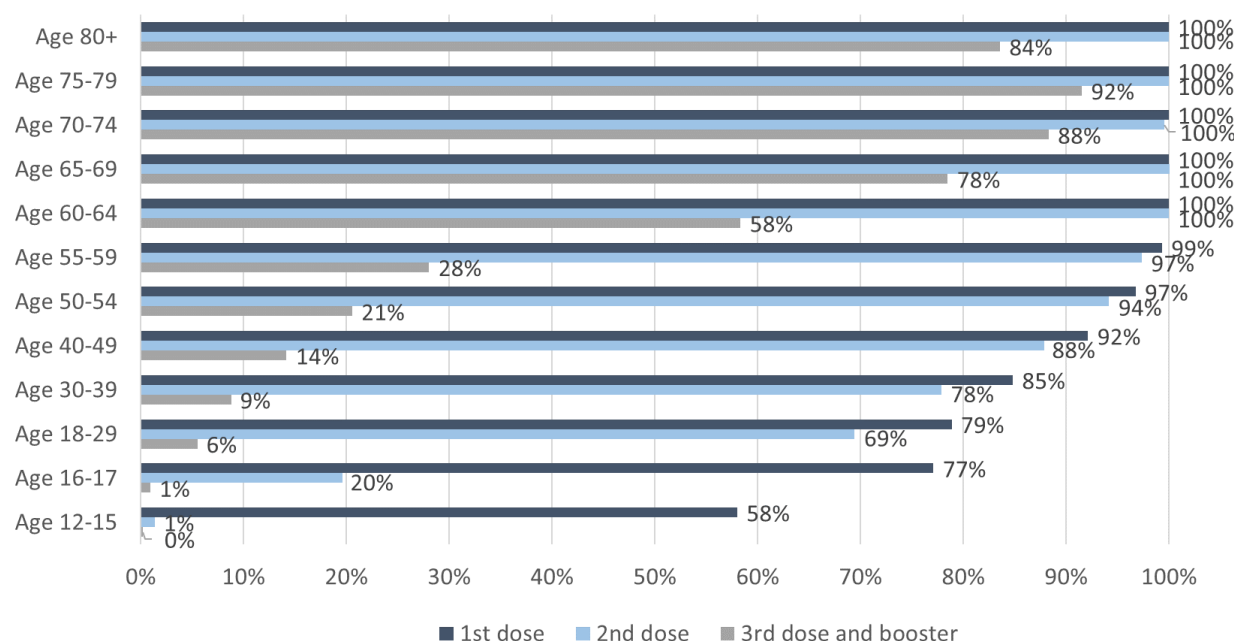
<sup>32</sup> Public Health Scotland Covid-19 dashboard: [https://public.tableau.com/profile/pbs.covid.19#!/vizhome/COVID-19DailyDashboard\\_15960160643010/Overview](https://public.tableau.com/profile/pbs.covid.19#!/vizhome/COVID-19DailyDashboard_15960160643010/Overview)

<sup>33</sup> *ibid*

<sup>34</sup> Public Health Scotland Covid-19 dashboard: [https://public.tableau.com/profile/pbs.covid.19#!/vizhome/COVID-19DailyDashboard\\_15960160643010/Overview](https://public.tableau.com/profile/pbs.covid.19#!/vizhome/COVID-19DailyDashboard_15960160643010/Overview)

84% of individuals aged 80+, 92% of those aged 75-79, 88% of those aged 70-74, 78% of those aged 65-69, 58% of those aged 60-64, 28% of those aged 55-59, 21% of those aged 50-54, 14% of those aged 40-49, 9% of those aged 30-39, 6% of those aged 18-29, 1% of those aged 16-17, and 0% of those aged 12-15 have received their dose 3 or booster vaccination by 24 November 2021.

Figure 8: Estimated percentage of adults vaccinated by 24 November 2021



The proportion of people surveyed who said they have been vaccinated for Covid-19 is high. 91% of all respondents have already received at least their first vaccine dose. Of those not vaccinated (and small base must be noted), 11% report they are likely to be vaccinated when a vaccine becomes available to them<sup>35</sup>.

## How the virus is changing

Please note that the latest data on variants of concern is not available in the State of the Epidemic report this week due to the earlier publication date. The below section is based on figures available last week and an update to it will be provided next week (3 December 2021). These figures will however be published as normal on the UK government

<sup>35</sup> Source: YouGov online survey. Total sample size on 16-17 November was 1009 adults. Sample size for those who have not yet received their first vaccine was 58 adults. 'Likely' to be vaccinated refers to respondents who rated themselves 8 to 10 on a scale of 0-10 for the question: 'How likely or unlikely are you to be vaccinated for COVID-19 when a vaccine becomes available to you?' (Please select a number between 0 and 10, where 0 means 'extremely unlikely' and 10 means 'extremely likely')

website on Friday 26 December 2021 and can be accessed through the following link: <https://www.gov.uk/government/publications/covid-19-variants-genomically-confirmed-case-numbers>.

The variant of concern Delta, also referred to as VOC-21APR-02 (first identified in India) is more transmissible than Alpha variant<sup>36 37 38</sup>. It quickly replaced Alpha (VOC-20DEC-01), first identified in the UK, as the dominant strain in Scotland, and 107,843 cases have now been identified as Delta to 17 November 2021. A sublineage of Delta, AY.4.2, has been classified as VUI-21OCT-01, and 5,329 cases have now been identified in Scotland.

To date there are five 'variants of concern' (VOCs) and twelve 'variants under investigation' (VUIs)<sup>39</sup>. There is a concern that some of these new variants may partially escape immunity, from both natural infection and from vaccines currently being deployed and we are monitoring the evidence on this<sup>40 41 42</sup>. Up to 17 November there have been 62 genomically confirmed cases of the variant Beta/VOC-20DEC-02 (first detected in South Africa), and 23 cases of Gamma in Scotland. Genomically confirmed cases of other VOCs and VUIs remain low, there have been no new cases of other VOCs or VUIs in the last week (Figure 10). There remains uncertainty regarding the impact of the Delta variant on severity of illness, treatment or reinfections. As more data is analysed we shall become more certain of the impact of Delta on infections, hospitalisations and disease severity and long term vaccine protection effects.

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<sup>36</sup> [S1236 Eighty-ninth SAGE.pdf \(publishing.service.gov.uk\)](#)

<sup>37</sup> [Risk assessment for SARS-CoV-2 variant: VOC-21APR-02 \(B.1.617.2\) \(publishing.service.gov.uk\)](#)

<sup>38</sup> [S1284 SAGE 92 minutes.pdf \(publishing.service.gov.uk\)](#)

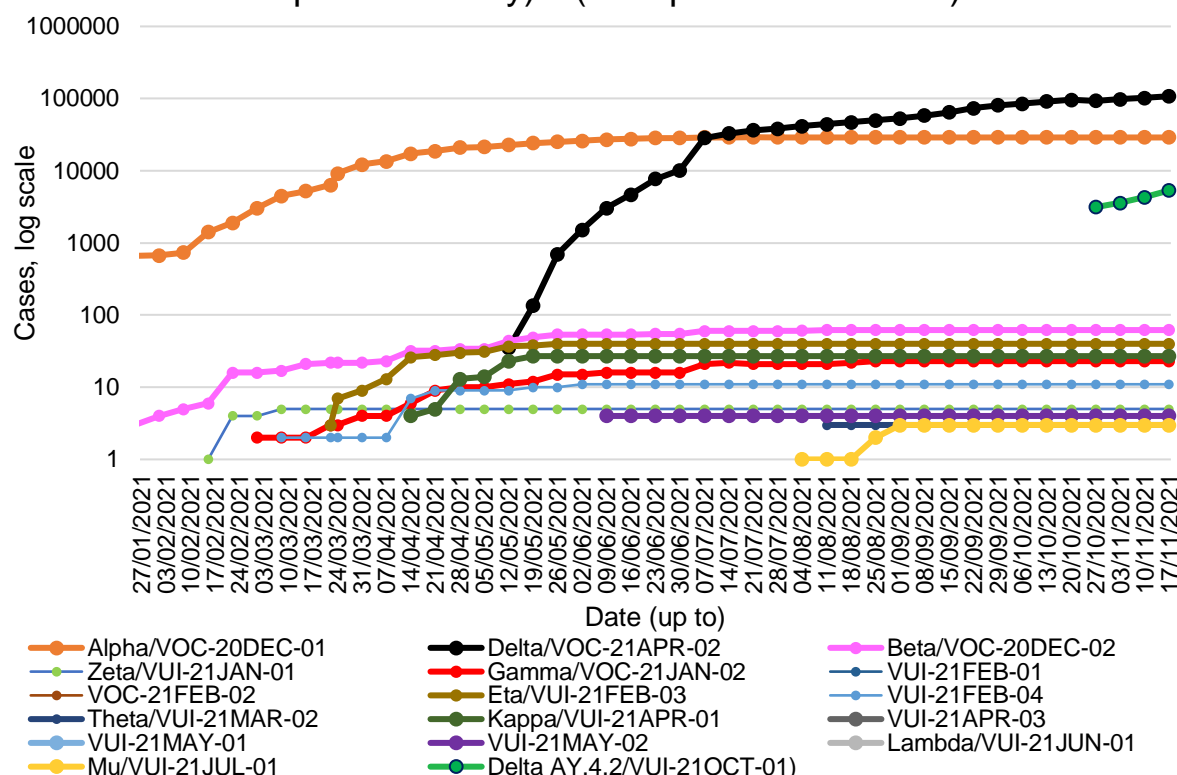
<sup>39</sup> [Variants: distribution of cases data - GOV.UK \(www.gov.uk\)](#)

<sup>40</sup> [Brief note on SARS-CoV-2 variants \(publishing.service.gov.uk\)](#)

<sup>41</sup> [Brief note on SARS-CoV-2 B.1.351 - 27 January 2021 \(publishing.service.gov.uk\)](#)

<sup>42</sup> [Brief note on SARS-CoV-2 variant of concern P.1 \(publishing.service.gov.uk\)](#)

Figure 9: Variants detected in Scotland by sequencing (data up to 17 November and reported weekly)<sup>43</sup> (not updated this week)



## The effectiveness of vaccines

The vaccine effectiveness expert panel (VEEP) recently published their updated consensus view on the effectiveness of different vaccines on infections, symptomatic disease, and severe disease as well as some initial evidence on vaccine waning effects<sup>44</sup>. The consensus view of vaccine effectiveness against infection or symptomatic disease in fully vaccinated people is between 45-95%, depending on the vaccine and when it was given. Office of National Statistics data from during the Delta period reports that two vaccine doses (14 days or more previously) reduced the risk of testing positive by 67% (95% confidence interval: 64% to 70%) compared to those not yet vaccinated (or 21 days or more before vaccination) without evidence of prior infection<sup>45</sup>.

Public Health England analysis shows that vaccines are highly effective against hospitalisation and death from Delta variant with vaccine effectiveness of over 90% after two doses of vaccine<sup>46</sup>. A recent report

<sup>43</sup> [Variants: distribution of cases data - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/statistics/covid-19-variants-distribution-of-cases-data)

<sup>44</sup> [Research and analysis overview: VEEP: Vaccine effectiveness table, 24 September 2021 - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/statistics/covid-19-veep-vaccine-effectiveness-table)

<sup>45</sup> [Coronavirus \(COVID-19\) Infection Survey Technical Article: Impact of vaccination on testing positive in the UK - Office for National Statistics](https://www.gov.uk/government/statistics/covid-19-impact-of-vaccination-on-testing-positive-in-the-uk)

<sup>46</sup> COVID-19 vaccine surveillance report - week 44 (publishing.service.gov.uk)

from EAVEII finds that from 1 April to 27 September 2021, there were 201 Covid-19 deaths in the group studied. In the 16-39 age bracket, 17 unvaccinated people died and no fully vaccinated people died. The Pfizer-BioNTech vaccine was 95% effective in 40-59 year olds and 87% effective in people 60 and over. The Oxford-AstraZeneca vaccine was 88% effective in 40-59 year olds and 90% effective in people aged 60 or older. In people of all ages who had been double-vaccinated at least two weeks before a positive PCR test, the vaccines offer around 90% effectiveness against Covid-19 deaths caused by the Delta variant<sup>47</sup>. Vaccine effectiveness against symptomatic disease, hospitalisation and death wanes over time<sup>48</sup>. The Joint Committee on Vaccination and Immunisation (JCVI) gave advice on a booster programme to re-vaccinate adults against Covid-19 in the UK<sup>49</sup> and preliminary data shows an increase in vaccine effectiveness after the booster dose<sup>50</sup>.

## Next steps

The Scottish Government continues to work closely with Public Health Scotland and modelling groups 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.

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 and deaths among different age cohorts. Investigations are ongoing by NERVTAG, SPI-M, SAGE, UKHSA, Public Health England and Public Health Scotland regarding the impact of new variants and of vaccination; this will be reflected here as work is undertaken.

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<sup>47</sup> BNT162b2 and ChAdOx1 nCoV-19 Vaccine Effectiveness against Death from the Delta Variant | NEJM

<sup>48</sup> COVID-19 vaccine surveillance report - week 46 ([publishing.service.gov.uk](https://publishing.service.gov.uk))

<sup>49</sup> JCVI statement, September 2021: COVID-19 booster vaccine programme for winter 2021 to 2022 - GOV.UK ([www.gov.uk](https://www.gov.uk))

<sup>50</sup> COVID-19 vaccine surveillance report - week 46 ([publishing.service.gov.uk](https://publishing.service.gov.uk))

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