

Coronavirus (COVID-19): Analysis

State of the Epidemic in Scotland – 18th June 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 17 June 2021 on Covid-19 in Scotland. This updates the previous publication published on 11 June 2021¹. 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 the effects that are beginning to be seen from this. 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.

Key Points

- The reproduction rate R in Scotland is currently estimated as being between 1.2 and 1.4. This is unchanged from last week.
- An average of 1,050 cases were reported per day in the 7 days to 17 June, which is a 29% increase in reported cases since the 10 June.
- There were 123 weekly cases per 100,000 in the week to 14 June, which is an increase since last week. This compares to 302 weekly

¹ Scottish Government: [Coronavirus \(COVID-19\): state of the epidemic - gov.scot \(www.gov.scot\)](https://www.gov.scot/publications/state-of-the-epidemic/pages/1-introduction-and-summary/pages/1-introduction-and-summary.aspx)

cases per 100,000 on 8 January and is similar to the weekly case rate observed on 3 February.

- Case rates saw a rise amongst all age bands, except for the over 80s. The highest case rates were observed amongst 20-39, followed by 0-19, 40-59, 60-79 and 80+ this week.
- As determined through the latest weekly ONS survey, the estimated proportion of people becoming infected with Covid in the community in Scotland has remained stable in the last week, however the trend remains uncertain. Scotland is currently below England, but above Wales and Northern Ireland.
- Latest modelled estimates suggest there are currently between 34 and 54 new daily infections per 100,000 people in Scotland.
- There were 7 deaths registered in Scotland where coronavirus was mentioned on the death certificate in the week ending 13 June. Deaths have declined in those aged 75-84 over the 3 weeks to 13 June, having gone down from 2 deaths to 1 death.
- Average daily deaths per 100,000 population in Scotland (0.02) are similar to England (0.02), but above Wales and Northern Ireland (0.01 and 0.00, respectively).
- Dundee currently has the highest weekly case rate in Scotland reporting 318 cases per 100,000 in the week to 14 June, followed by South Ayrshire with 253 cases per 100,000, and Edinburgh with 207 cases per 100,000. There were 14 other local authorities reporting over a 100 weekly cases per 100,000 population in the last week. Orkney and Shetland reported no weekly cases per 100,000 in the same period.
- At a national level hospital bed and ICU occupancy are projected to rise over the next few weeks but at a lower rate than previously projected.
- Over 3.5 million people in Scotland have been given a first vaccine against SARS-CoV-2, and over 2.5 million have now received a second dose.
- The Delta variant of concern, (VOC-21APR-02, first identified in India), is now the dominant strain in Scotland.

Method

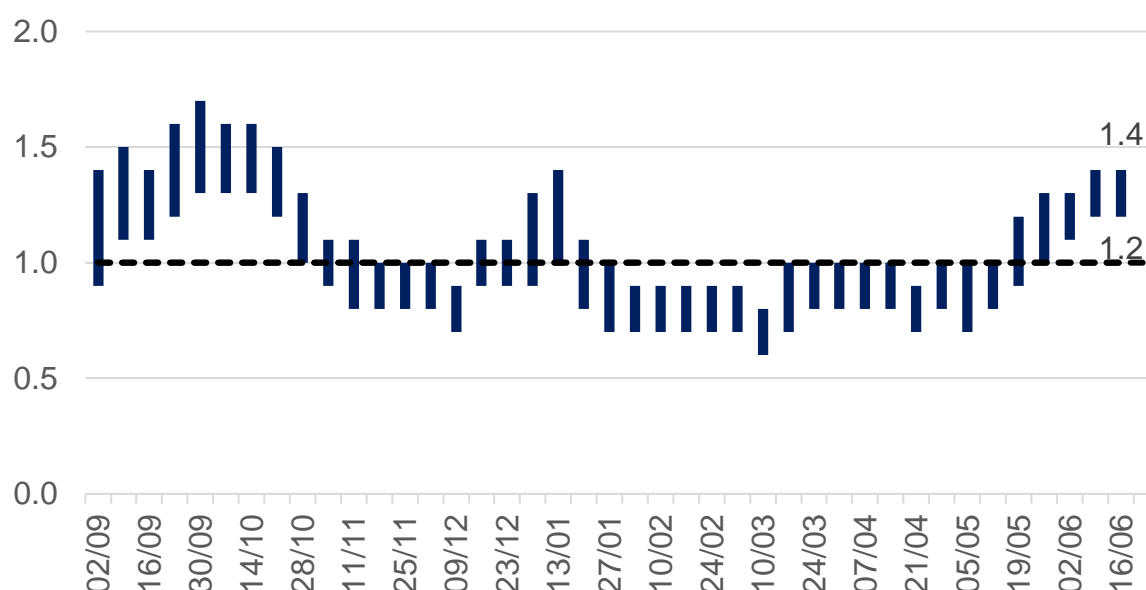
This report brings together a wide range of publically available figures from a range of data sources. These include publications by Scottish Government, Public Health Scotland, National Records of Scotland and Office for National Statistics along with scientific publications and SAGE summaries where 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 (published on 17 June)² was between 1.2 and 1.4 (Figure 1), with a growth rate of between 3% and 6%. This is unchanged from last week.

Figure 1. R in Scotland over time.



An average of 1,050 cases were reported per day in the 7 days to 17 June. This is a 29% increase from the daily average cases recorded a week earlier to 10 June³. Average daily cases reported are almost half of the peak of 2,323 in the week to 7 January. Our current position is 123 weekly cases per 100,000 in the week to 14 June⁴. This compares to 302 weekly cases per 100,000 on 8 January (see Figure 2) and is similar to the weekly case rate observed on 3 February⁴.

The number of locations where the levels of Covid 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. The overall level of wastewater Covid-19

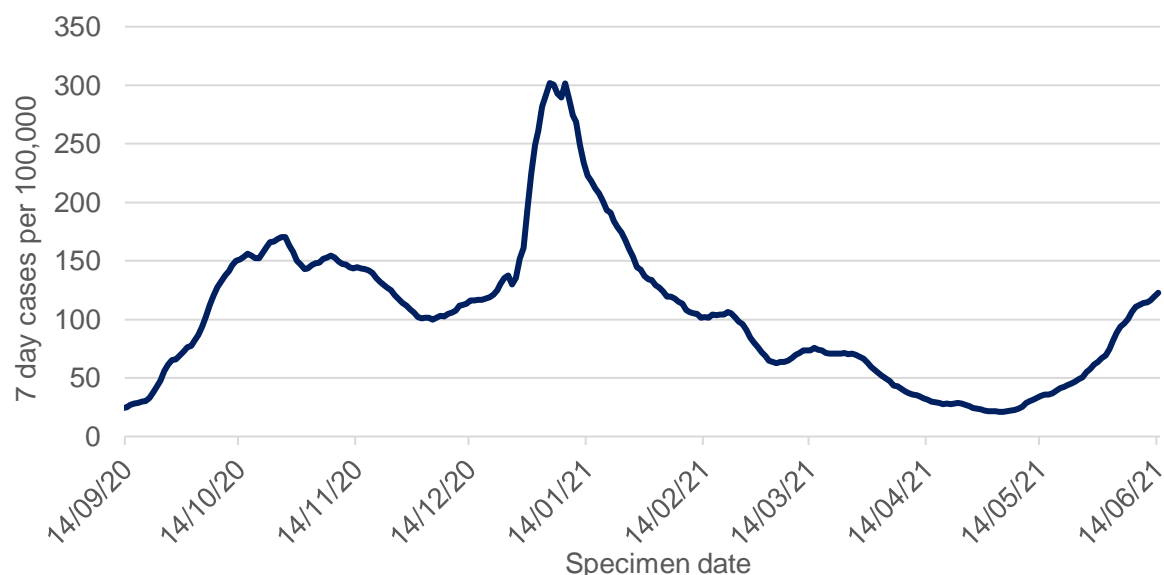
² Scottish Government: [Coronavirus \(COVID-19\): modelling the epidemic - gov.scot \(www.gov.scot\)](https://www.gov.scot/publications/coronavirus-covid-19-daily-data-for-scotland/)

³ Scottish Government: <https://www.gov.scot/publications/coronavirus-covid-19-daily-data-for-scotland/>

⁴ Public Health Scotland Covid dashboard: https://public.tableau.com/profile/phs.covid.19#!/vizhome/COVID-19DailyDashboard_15960160643010/Overview

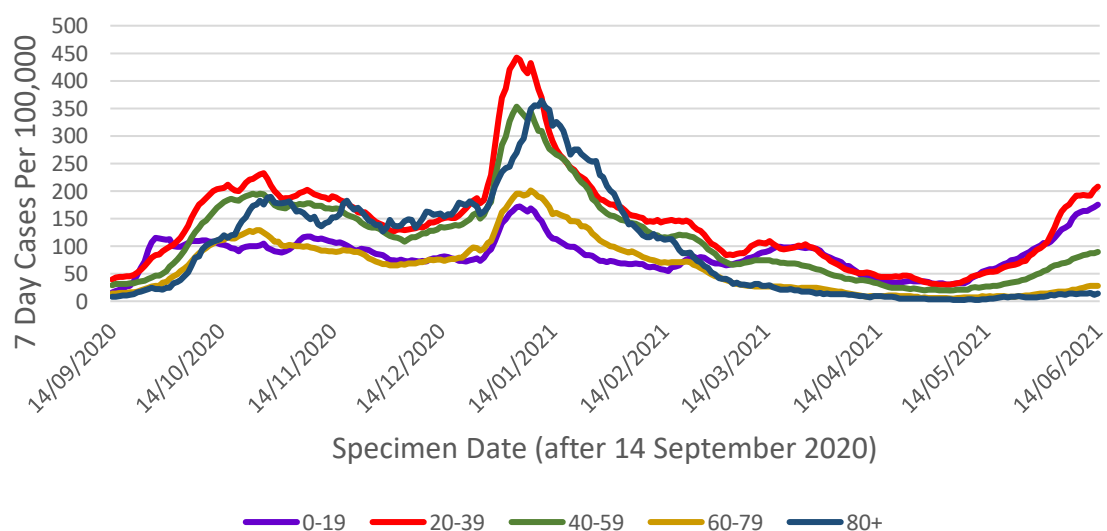
continues to rise at around the same rate as in recent weeks, with a similar rise in case rates. Levels rose in and around Edinburgh and Dundee as last week, joined by a range of other sites.

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



Case rates have risen across all age bands except for the 80+ this week, with the highest case rates similarly to last week currently being reported in those aged 20-39 followed by 0-19, 40-59, 60-79 and 80+ (Figure 3).

Figure 3. Seven day case rate in Scotland by age group by specimen date⁵. Refers to PCR testing only.



⁵ Source: Public Health Scotland

Not everyone who has the virus will be tested, as many people do not realise they have Covid, or they have mild symptoms and do not come forward. Latest modelled estimates suggest there are currently anywhere between 1,900 and 3,000 people infected in Scotland each day². This means that as of 16 June there were between 34 and 54 new daily infections per 100,000 people.

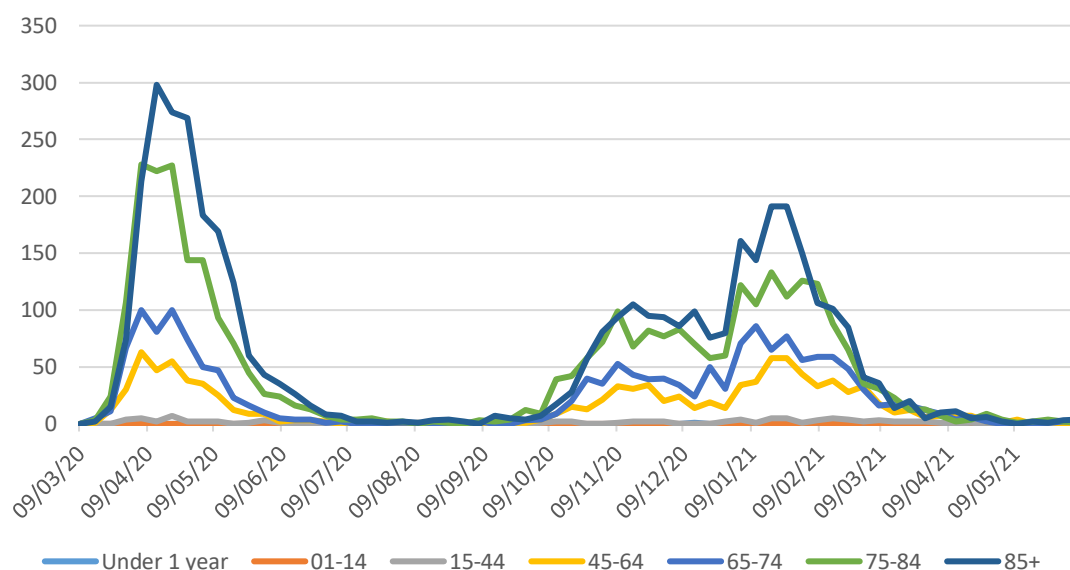
The number of people in hospital with confirmed Covid for less than 28 days has started to increase. After peaking at 2,053 on 22 January, this figure decreased to a low of 58 on 6 May. This has since increased and as of 17 June there were 140 patients in hospital with Covid-19. Daily hospital admissions for people with Covid follow a similar pattern, having decreased from a peak of 241 on 11 January to a low of 4 on 28 April, and have since increased slightly to 23 on 13 June⁶.

There were 7 deaths registered where Covid was mentioned on the death certificate in the week to 13 June. This is slightly lower than the 8 deaths the week before, and 99% lower than the peak in April 2020 (663 deaths). The proportion of deaths in care homes decreased from 60% in April 2020 to between 14% and 25% of Covid deaths from 3 May to 6 June 2021. However, in the most recent week ending 13 June, 57% (4 of 7 deaths) occurred in care homes. Deaths involving coronavirus have declined in those aged 75-84 down from 2 deaths to 1 death over the 3 weeks to 13 June⁷ (Figure 4). Deaths increased slightly in those aged 65-74 (from 0 to 2 deaths), and 85+ (from 2 to 4 deaths) over this period. However, this variation in age and location is expected when death numbers are low.

⁶ Public Health Scotland dashboard: [COVID-19 Daily Dashboard - PHS COVID-19 | Tableau Public](#)

⁷ 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>

Figure 4. Deaths by age group (weekly total by week beginning, NRS)⁷.



How Scotland compares with the rest of the UK

The latest ONS survey estimates that the proportion of the population infected in the community in Scotland (0.17% of people currently testing positive for Covid-19 from 6 to 12 June) remains uncertain in the most recent week. The estimation is lower than in England (0.19%) but above Northern Ireland (0.16%) and Wales (0.07%). In the week to 12 June the estimated rate of community infection was 1 in 600 people in Scotland, compared to 1 in 520 for England, 1 in 1,500 for Wales and 1 in 610 for Northern Ireland⁸. Average daily deaths in Scotland (0.02 per 100,000 in the week to 17 June) are in line with England (0.02), but above Wales and Northern Ireland (0.01 and 0.00 respectively). The Coronavirus Infection Survey estimated that in the week to 23 May, 72.6% of the adult population in Scotland would have tested positive for antibodies against Covid-19, as a result of having the infection in the past or being vaccinated. This compares to 80.3% in England, 82.7% in Wales and 79.9% in Northern Ireland⁹.

87,000 people in Scotland (1.7% of the respective population) living in private households were experiencing self-reported long COVID symptoms for any duration as of 2 May 2021. This compares to

⁸ Office for National Statistics:

<https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/conditionsanddiseases/bulletins/coronaviruscovid19infectionsurveysurvey/pilot/previousReleases>

⁹ Office for National Statistics: [Coronavirus \(COVID-19\) Infection Survey, antibody and vaccination data for the UK - Office for National Statistics](#)

1.6% in England, 1.7% in Wales and 1.2% in Northern Ireland¹⁰.

Following the ONS analysis of new positive infection after COVID-19 vaccination at the UK level, 0.5% of those who had been vaccinated had a new infection after vaccination to 31 May 2021. A lower proportion (0.1%) tested positive after two vaccinations¹¹.

Situation by local authority within Scotland

Dundee currently has the highest case rate in Scotland with 318 weekly cases reported per 100,000 in the week to 14 June, which is a 28% increase from the week to 7 June⁴. It is followed by South Ayrshire with 253 weekly cases per 100,000, and Edinburgh with 207 cases per 100,000 population. In the week to 14 June there were 14 other local authorities reporting over a 100 weekly cases per 100,000 population (Table 1). There are mostly high and very high levels of cases across Scotland (Figure 5). 24 local authorities recorded an increase in cases per 100,000 population over the last week. Orkney and Shetland have the lowest case rates in Scotland, reporting no weekly cases to 14 June. Na h-Eileanan Siar had fewer than 10 weekly cases per 100,000 in the week to 14 June⁴.

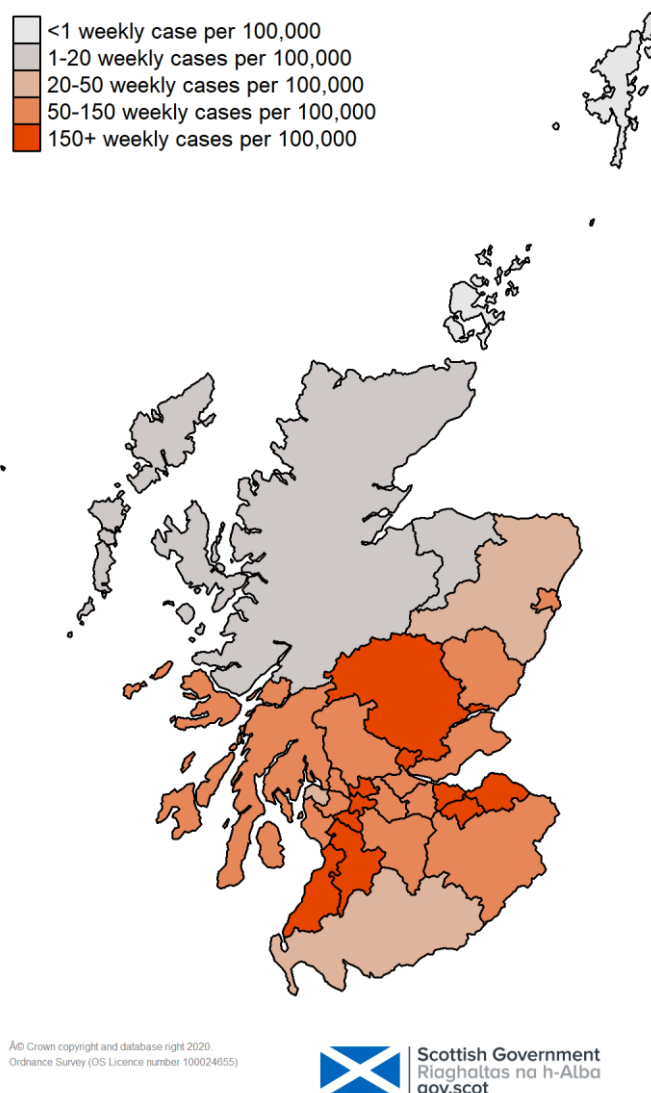
¹⁰ Office for National Statistics: [Prevalence of ongoing symptoms following coronavirus \(COVID-19\) infection in the UK](https://www.ons.gov.uk/coronavirus/articles/prevalenceofongoingsymptomsfollowingcoronavirus(covid-19)infectionintheuk) - Office for National Statistics (ons.gov.uk)

¹¹ Office for National Statistics: [Coronavirus \(COVID-19\) Infection Survey technical article: analysis of positivity after vaccination data](https://www.ons.gov.uk/coronavirus/articles/coronavirus(covid-19)infectionsurveytechnicalarticleanalysisofpositivityaftervaccinationdata) - Office for National Statistics

Table 1. Total new weekly cases per 100,000 population, in order of prevalence.

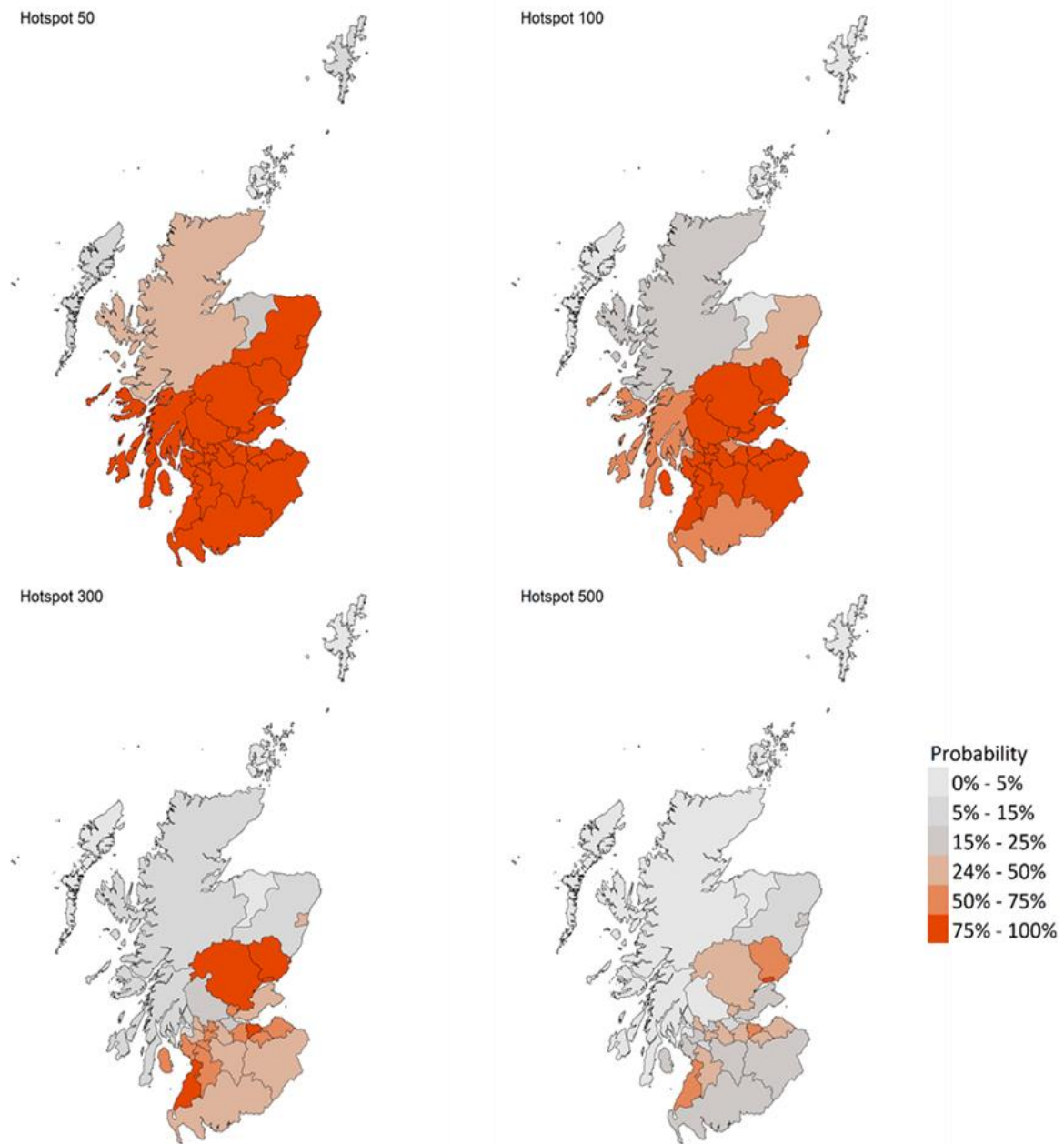
Local authority	Total new weekly cases per 100,000 population (7 June)	Change since previous week (31 May)
Dundee City	318	+70
South Ayrshire	253	+52
City of Edinburgh	207	+20
Clackmannanshire	182	-47
Midlothian	182	+18
East Renfrewshire	172	+45
East Lothian	160	+66
East Ayrshire	158	+18
East Dunbartonshire	155	+33
Perth and Kinross	154	+25
Glasgow City	153	-11
West Dunbartonshire	137	+42
Renfrewshire	137	-1
North Ayrshire	135	+53
North Lanarkshire	126	+34
Angus	125	-57
West Lothian	125	+30
South Lanarkshire	98	+2
Aberdeen City	95	+52
Stirling	87	+13
Argyll and Bute	72	+47
Fife	69	+16
Scottish Borders	68	+35
Falkirk	53	+5
Inverclyde	49	+19
Dumfries and Galloway	41	+14
Aberdeenshire	25	+2
Highland	14	-6
Moray	10	-5
Na h-Eileanan Siar	7	+4
Shetland Islands	0	-17
Orkney Islands	0	-9
Scotland	123	+17

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



The most recent modelling predicts that for the week ending 3 July there are 27 local authorities that have at least a 75% probability of exceeding 50 cases per 100,000 population. Of those, 22 local authorities have at least a 75% probability of exceeding 100 cases, 5 have at least 75% probability of exceeding 300 cases (Angus, Dundee, Edinburgh, Perth and Kinross and South Ayrshire), and Dundee is the only local authority with at least a 75% probability of exceeding 500 cases in this period (Figure 6)².

Figure 6. Maps of probability of Local Authorities exceeding 50, 100, 300 and 500 cases per 100,000 population in the period 27 June – 3 July 2021.

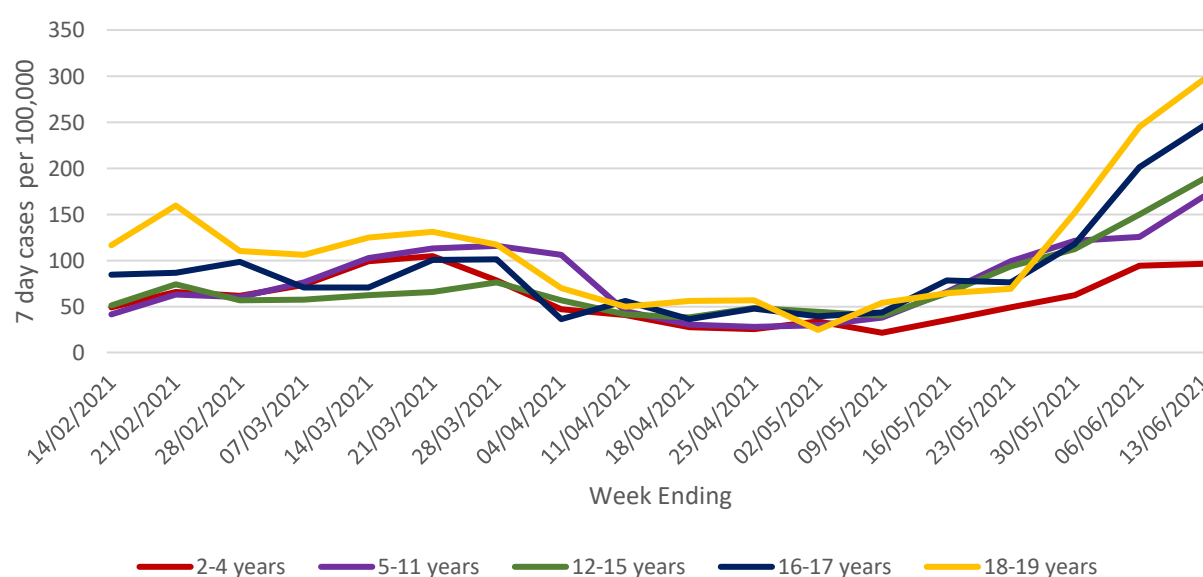


Children and Education

Over the last week there was a further increase in the total number of COVID-19 cases in young people, which has gone up from 1,537 cases in the week to 6 June to 1,921 cases in the week ending 13 June. 7 day cases per 100,000 have also increased in all age groups in the week ending 13 June (Figure 7). The percentage of cases made up of children under 12 was just over 45% (875 cases) compared to just under 45% (688 cases) in the previous week¹².

The rate of testing increased amongst all age groups in the week ending 13 June. Test positivity rates increased amongst all age groups except for 2-4 year olds in the same period¹². The proportion of positive cases who report having been in an education setting in the 7 day period prior to the onset of symptoms has gone up to 18.3% in week ending 13 June, from 17.4% of positive cases in the previous week. Hospital admissions amongst children are increasing, with a 3-week rolling average of 3.7 admissions for 2-4 year olds, 3.0 for 5-11 year olds, and 3.0 for 12-17 year olds up to 9 June¹². This compares to 2.7 among 2-4 year olds, 2.3 among 5-11 year olds and 2.3 among 12-17 year olds in the period ending 2 June. Overall, the proportion of school, early learning and childcare settings with incidents remains low.

Figure 7. Seven day case rate in Scotland by age group by specimen date for children. Refers to PCR testing only.



¹² Public Health Scotland: [PHS COVID-19 Education report \(shinyapps.io\)](https://shinyapps.io/PHS_COVID-19_Education_report/)

Looking ahead

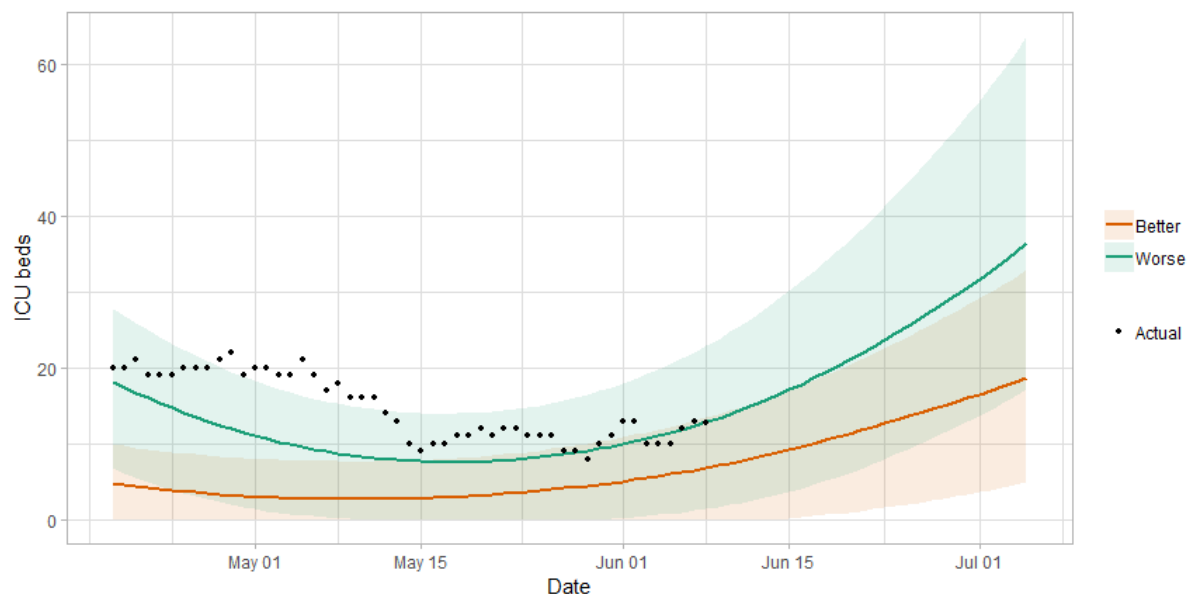
Changes in patterns of mixing and adherence to restrictions will impact on future case numbers. The Scottish Contact Survey measures times and settings that people mix where they could potentially spread Covid². From this survey we can say that average contacts have remained at a similar level in the last two weeks (comparing surveys pertaining to 20th May - 26th May and 3rd June - 9th June) with a current level of 4.3 daily contacts. Contacts within the work and school setting have decreased in the last two weeks; by 25% and 56% respectively. Contacts within the other setting (contacts outside of home, school and work) have increased by approximately 16% over the same period. Only age groups 40-49 and 60-69 reported an increase in overall contacts in comparison to two weeks prior. Both age groups are also the only to have increased their contacts within the work setting during this period. Interactions between those over 18 with each other have remained at similar levels in comparison to two weeks prior with the exception of those aged between 18-29 with individuals 60 and over who have shown the biggest increase in interactions 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 15-16 June, 66% of people reported 'complete' or 'almost complete' compliance¹³.

Hospital bed and ICU occupancy are projected to rise over the next few weeks but at a lower rate than previously projected (Figure 8²).

¹³ 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 15-16 June with a total sample size of 1,005 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 from the Scottish Government 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?*

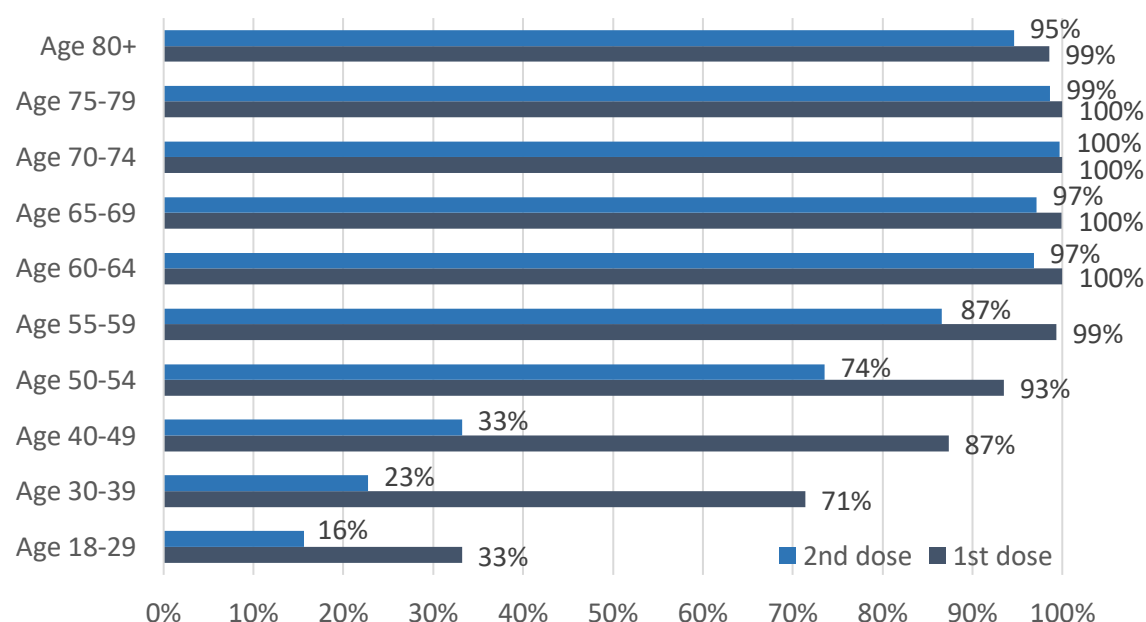
Figure 8. Medium term projections of modelled ICU bed demand, from Scottish Government modelling¹⁴.



Vaccinations are continuing across the priority groups and 80.2% of the adult population in Scotland has now been vaccinated with the first dose⁶. The first vaccines were administered on Tuesday 8 December and 3,571,726 people had received their first dose by 17 June 2021, a 4% increase from 10 June³. By 17 June over 35,000 residents in care homes had received their first vaccination along with over 53,000 care home staff. In older adult care homes 94% of residents have now received their second dose. By age group, almost 100% of individuals aged 55+ and 93% of those aged 50-54 have received their first vaccination (Figure 9). 95% of the over 80s, 99% of those aged 75-79, 100% of those aged 70-74, 97% of those aged 65-69 and 60-64 have received their second dose. Overall, 2,516,066 people (56.6% of those aged 18 and over) had received their second dose by 17 June⁶. There remains low levels of hospitalisations and deaths among those groups vaccinated first (Figure 4).

¹⁴ The difference between the Better and Worse scenarios illustrates the difference between different hospital lengths of stay (worse, remaining the same for Delta as it was for Alpha, and better, with a reduced length of stay) for the Delta variant. The number of infections are assumed to be the same in both projections. Both scenarios cover the same wide range of behavioural patterns, from decreased mixing in comparison to now to increased mixing.

Figure 9. Estimated percentage of adults vaccinated by 17 June 2021.



The proportion of people surveyed who said they would be likely to be vaccinated for Covid-19 remains relatively high. 81% of all respondents have already received at least their first vaccine dose. Of those not vaccinated, 61% report they are likely to be vaccinated when a vaccine becomes available to them¹⁵.

How the virus is changing

The variant of concern Delta, also referred to as VOC-21APR-02 (first identified in India) is spreading rapidly and has fast replaced Alpha (VOC-20DEC-01, first identified in the UK) as the dominant strain in Scotland, and 4,659 cases have now been sequenced as Delta to 16 June 2021.

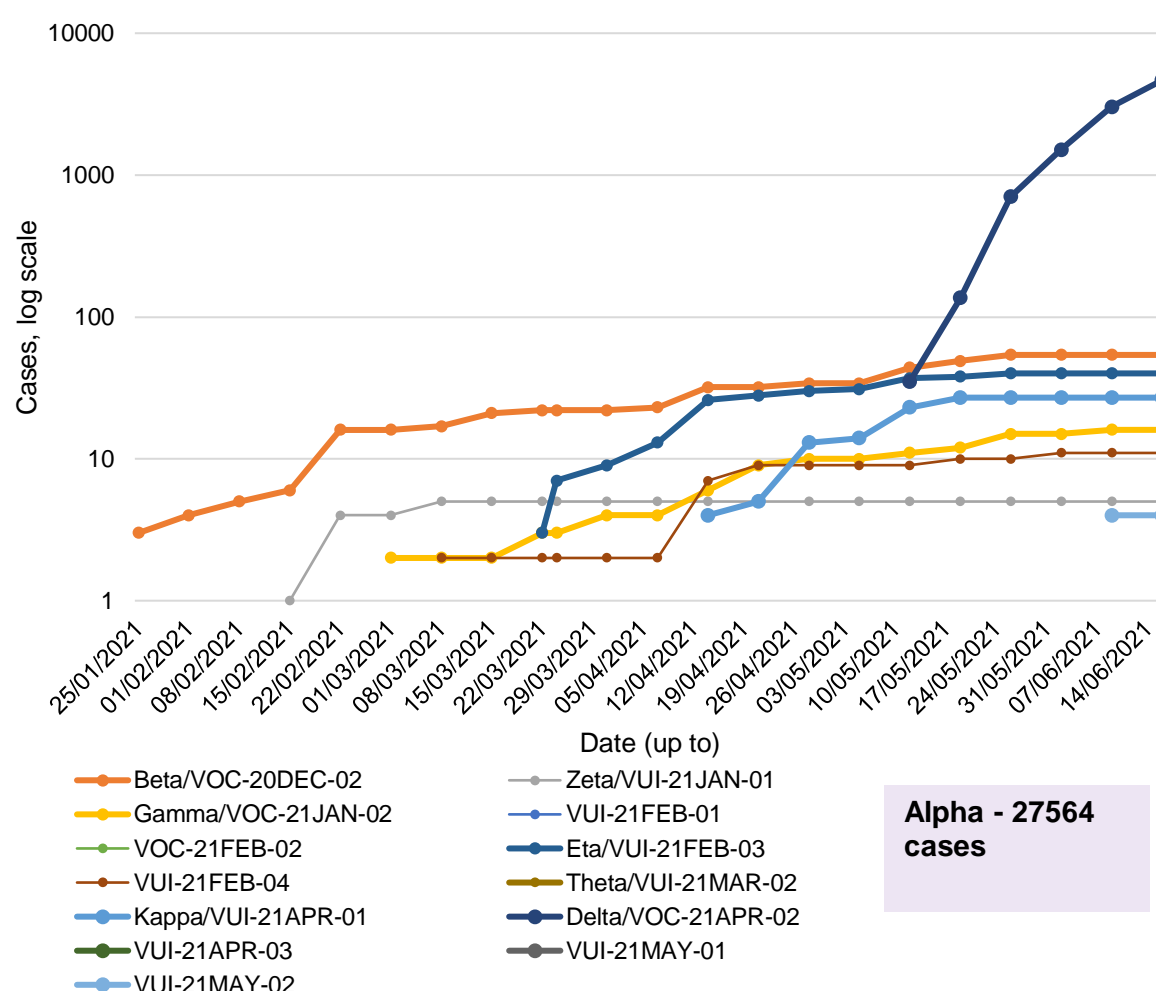
To date there are five VOCs and nine variants under investigation¹⁶. As reported in last week's issue, up to 16 June there have been 54 genomically confirmed cases of the variant Beta/VOC-20DEC-02 (first seen in South Africa) in Scotland. There have been 16 confirmed cases of the variant Gamma/VOC-21JAN-02 (first identified from Brazil). There have also been a number of cases of other variants which are currently

¹⁵ Total sample size on 15-16 June was 1,005 adults. Sample size for those who have not yet received their first vaccine was 132 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')

¹⁶ [Variants: distribution of cases data - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/collections/variants-distribution-of-cases-data)

under investigation, including 40 cases of Eta/VUI-21FEB-03 (first seen in Nigeria) (no change from the week before) and 27 cases of Kappa/VUI-21APR-01 (first identified in India), no increase from the week before (Figure 10). 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^{17 18 19}.

Figure 10. Variants detected in Scotland by sequencing (data up to 16 June and reported weekly²⁰).



It is highly likely that Delta/VOC-21APR-02 variant is more transmissible than Alpha/VOC-20DEC-01, and it is a realistic possibility that it is as

¹⁷ [Brief note on SARS-CoV-2 variants \(publishing.service.gov.uk\)](https://publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/954441/brief-note-on-sars-cov-2-variants.pdf)

¹⁸ [Brief note on SARS-CoV-2 B.1.351 - 27 January 2021 \(publishing.service.gov.uk\)](https://publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/954441/brief-note-on-sars-cov-2-b.1.351-27-january-2021.pdf)

¹⁹ [Brief note on SARS-CoV-2 variant of concern P.1 \(publishing.service.gov.uk\)](https://publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/954441/brief-note-on-sars-cov-2-variant-of-concern-p.1.pdf)

²⁰ [Variants: distribution of cases data - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/statistics/variants-distribution-of-cases-data)

much as 50% more transmissible^{21 22}. R is currently estimated to be 40–80% higher for delta than for alpha (B.1.1.7), although this is highly uncertain²³. The secondary attack rates for contacts of cases with Delta/VOC-21APR-02 and no travel history are higher than those for contacts of non-travel cases with Alpha/VOC-20DEC-01²⁴.

Public Health England preliminary analysis of vaccine effectiveness suggests that while vaccine effectiveness against symptomatic disease is lower in Delta cases compared to Alpha cases after one dose, any difference in vaccine effectiveness after 2 doses of vaccine is likely to be small²⁵. PHE preliminary analysis also shows that vaccines highly effective against hospitalisation from Delta variant²⁶. EAVE II data from Scotland also shows that both the Oxford–AstraZeneca and Pfizer–BioNTech COVID-19 vaccines are effective in reducing the risk of SARS-CoV-2 infection and COVID-19 hospitalisation in people with the Delta VOC, but these effects on infection appeared to be diminished when compared to those with the Alpha VOC²⁷.

There remains uncertainty regarding the impact of the Delta variant on severity of illness, treatment or reinfections. Early evidence suggests there may be an increased risk of hospitalisation for Delta compared to Alpha²⁸. Current data from the EAVEII project shows that compared to the Alpha variant, the Delta variant is associated with an increase in the risk of Covid-19 hospitalisation in Scotland by 85% (95% CI 39-147)²⁹. As more data is analysed we shall become more certain on the impact of Delta on hospitalisations and disease severity.

²¹ [S1236 Eighty-ninth SAGE.pdf \(publishing.service.gov.uk\)](#)

²² [Risk assessment for SARS-CoV-2 variant: VOC-21APR-02 \(B.1.617.2\) \(publishing.service.gov.uk\)](#)

²³ [S1284 SAGE 92 minutes.pdf \(publishing.service.gov.uk\)](#)

²⁴ [SARS-CoV-2 variants of concern and variants under investigation \(publishing.service.gov.uk\)](#)

²⁵ [COVID-19 vaccine surveillance report - week 23 \(publishing.service.gov.uk\)](#)

²⁶ [Vaccines highly effective against hospitalisation from Delta variant - GOV.UK \(www.gov.uk\)](#)

²⁷ [SARS-CoV-2 Delta VOC in Scotland: demographics, risk of hospital admission, and vaccine effectiveness - The Lancet](#)

²⁸ [Risk assessment for SARS-CoV-2 variant: VOC-21APR-02 \(B.1.617.2\) \(publishing.service.gov.uk\)](#)

²⁹ [SARS-CoV-2 Delta VOC in Scotland: demographics, risk of hospital admission, and vaccine effectiveness - The Lancet](#)

Next steps

The Scottish Government continues to work closely with Public Health Scotland to monitor the course of the epidemic using several data sources. 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, 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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