

Public Health Scotland COVID-19 Statistical Report

As at 25 October 2021

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This is a Management Information publication

Published management information are non-official statistics. They may not comply with the UK Statistics Authority’s Code of Practice with regard to high data quality or high public value but there is a public interest or a specific interest by a specialist user group in accessing these statistics as there are no associated official statistics available.

Users should therefore be aware of the aspects of data quality and caveats surrounding these data, all of which are listed in this document. Therefore, the data presented are subject to change.

Introduction

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

The Public Health Scotland [COVID-19 Daily Dashboard](#) publishes daily updates on the number of positive cases of COVID-19 in Scotland, with charts showing the trend since the start of the outbreak. From 26 February 2021 the Daily Dashboard also includes daily updates on vaccinations for COVID-19 in Scotland.

This report provides additional information not found in the Daily Dashboard on topics such as Test and Protect and Quarantining Statistics.

The accompanying [interactive dashboard](#) contains charts and data on the following topics:

- Hospital and unscheduled care
- Healthcare for cardiovascular disease
- Healthcare for mental health
- New cancer diagnoses
- Uptake of pre-school immunisations
- Coverage of health visitor child health reviews
- Infant feeding
- Child development
- Women booking for antenatal care
- Terminations of pregnancy
- Births and babies
- Excess deaths

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

The coronavirus pandemic is a rapidly evolving situation. Future reports will provide further data and analysis to contribute to the evidence base around the outbreak.

Main Points

- As at 24 October 2021, there have been 627,596 confirmed COVID-19 cases; 15,363 of these were recorded in the most recent week, a decrease of 13.3% from the previous week.
- In the week ending 17 October 2021, 17,692 individuals were recorded in the contact tracing software, from which 24,257 unique contacts have been traced.
- In the week ending 24 October 2021, under the Community Testing Programme 21.2% of symptomatic and 9.4% of asymptomatic tests for COVID-19 were positive.
- In the week ending 19 October 2021, there were 639 admissions to hospital with a laboratory confirmed test of COVID-19. The highest number of new admissions are now in those aged 80+.
- The proportion of all people who were admitted to hospital within 14 days of a laboratory confirmed COVID-19 positive test has declined, from 12% in the week ending 31 January 2021, to 4% in the most recent week ending 10 October 2021.
- The number of new admissions to Intensive Care Units (ICUs) for confirmed COVID-19 patients has increased from 33 in the week ending 16 October 2021, to 50 in the week ending 23 October 2021.
- In the week ending 24 October 2021 there were 81,402 people who arrived in Scotland from outside the UK, of which 3,176 were required to quarantine.
- Analysis of hospitalisations and more severe outcomes due to COVID-19 point to continued evidence of increased risks in most ethnic minority groups relative to the White group.

Results and Commentary

Incidence of Variants of Concern and Variants Under Investigation

Since early May 2021, there has been a rapid increase in the Delta variant detected through whole genome sequencing (WGS) in Scotland. The Delta variant has been the dominant COVID-19 variant in Scotland since 31 May 2021.

Public Health Scotland (PHS) continues to monitor COVID-19 Variants of Concern, in collaboration with other Public Health Agencies in the UK.

The latest [information on the number of such variants detected by genomic analyses across the UK](#) is published by Public Health England.

COVID-19 Daily Data

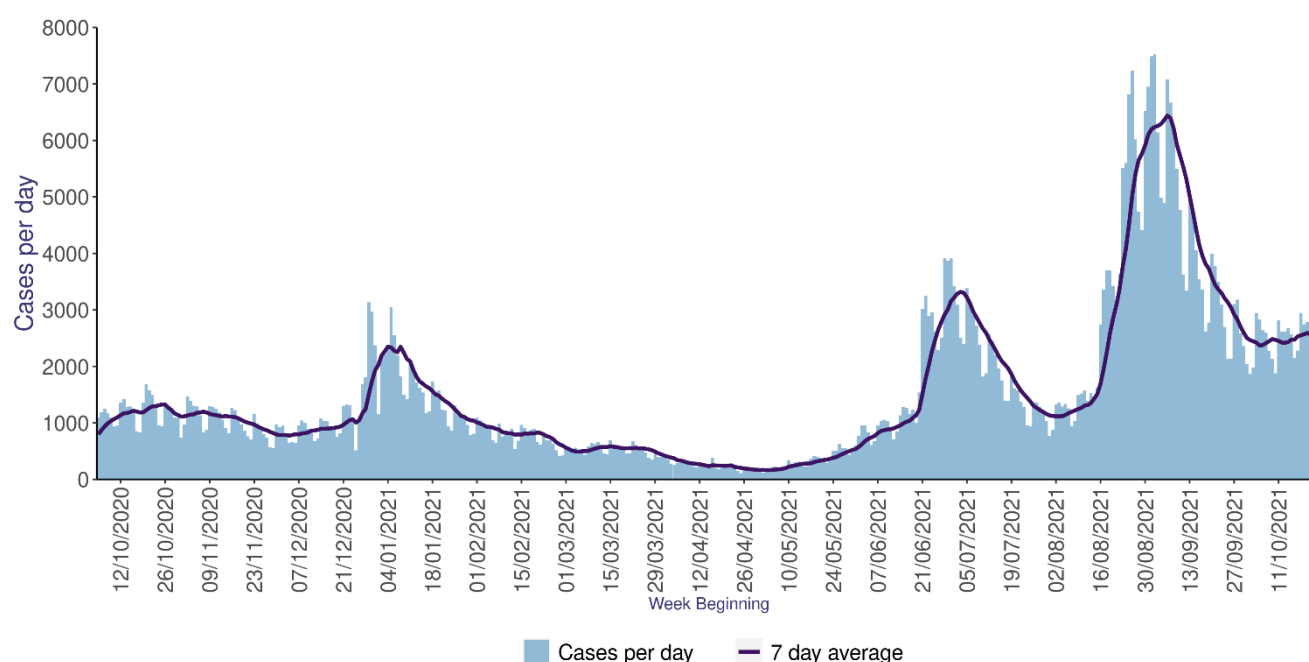
The Public Health Scotland [COVID-19 Daily Dashboard](#) publishes daily updates on the number of positive cases of COVID-19 in Scotland, with charts showing the trend since the start of the outbreak.

The total number of people within Scotland who have, or have had COVID-19, since the coronavirus outbreak began is unknown. The number of confirmed cases is likely to be an underestimate of the total number who have, or have had, COVID-19. A person can have multiple tests but will only ever be counted once. The drop in the number of confirmed cases at weekends likely reflects that laboratories are doing fewer tests at the weekend.

- There have been 627,596 people in Scotland who have tested positive, at any site in Scotland (NHS and UK Government Regional Testing centres), for COVID-19 up to 24 October 2021.
- In the week ending 24 October 2021 there were 15,363 confirmed COVID-19 cases.¹

1. Correct as at 24 October, may differ from more recently published data in the previous week's report and on the [COVID-19 Daily Dashboard](#).

Figure 1: Number of Positive Cases per day with 7 Day Average



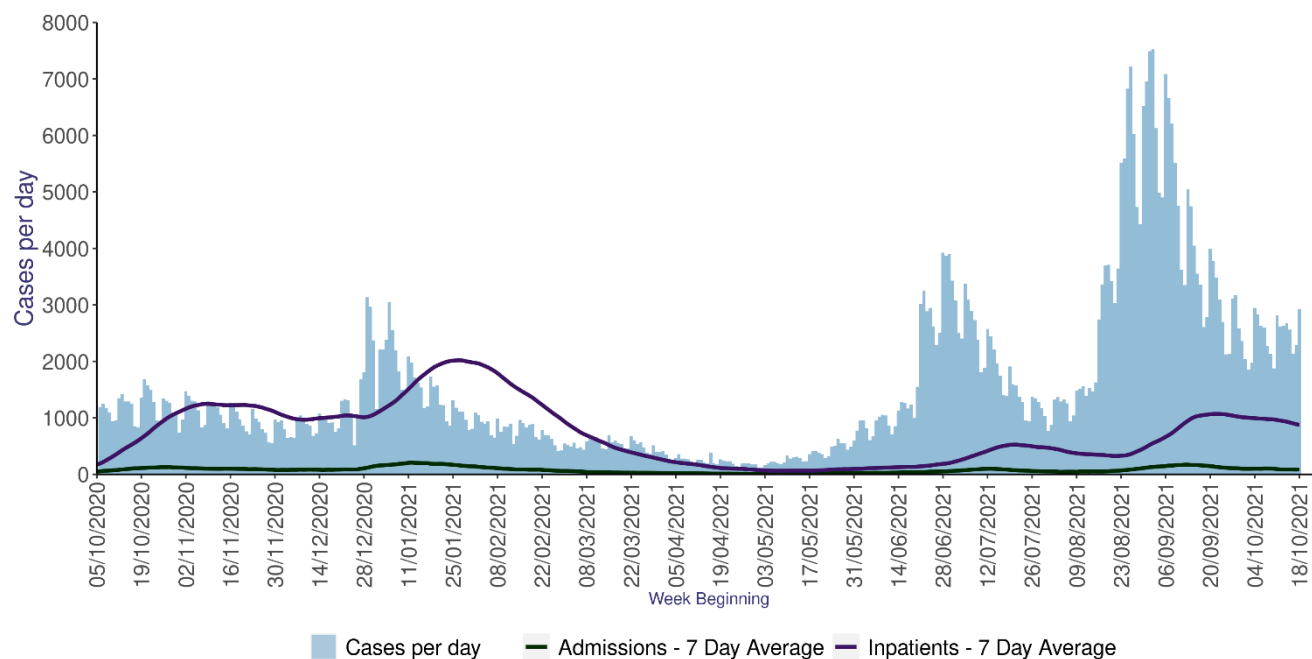
The daily dashboard also now includes data on Hospital Admissions and ICU admissions for patients with COVID-19:

- In the week ending 19 October 2021, there were 639 admissions to hospital with a laboratory confirmed test of COVID-19.
- In the week ending 23 October 2021 there were 50 new admissions to Intensive Care Units (ICUs) for confirmed COVID-19 patients.

The number of confirmed daily COVID-19 cases increased from 2,618 to 2,920 between 12 October 2021 and 18 October 2021. During this same time period, the daily COVID-19

confirmed hospital admissions has decreased from 89 to 87 (seven-day rolling average). The seven-day average of inpatients in hospital has decreased by 8% (from 953 to 877).

Figure 2: Number of Positive Cases, Admissions and Inpatients, as at 18 October 2021²



2. Please refer to [Appendix 3 - Hospital Admissions Notes](#) for definitions of hospital admissions and inpatients.

Additional charts and data are available to view in the [interactive dashboard](#) accompanying this report.

Data is also monitored and published daily on the [Scottish Government Coronavirus website](#).

COVID-19 Hospital Admissions

Hospital Admissions 'with' COVID-19

Since the start of the pandemic Public Health Scotland have been reporting on the number of people in acute hospitals with recently confirmed COVID-19. These admissions are identified from RAPID (rapid and preliminary inpatient data) and defined as the following: A patient's first positive PCR test for COVID 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 PCR test is after their date of discharge from hospital, they are not included in the analysis.

It is important to note, that the figures presented below may include patients being admitted and treated in hospital for reasons other than COVID-19. Further exploratory analysis can be found below in [Hospital Admissions 'because of' COVID-19](#). Supplementary analysis on COVID-19 related acute hospital admissions by vaccine status is also available within the [COVID-19 cases, acute hospitalisations, and deaths by vaccine status](#) section of this report.

Figure 3 below shows the weekly trend of hospital admissions with COVID-19 from week ending 05 January 2021 to 19 October 2021. The number of admissions have been increasing since week ending 17 August 2021, with a 4% increase in new admissions in the latest week.

Figure 3: Trend of hospital admissions 'with' COVID-19 in Scotland

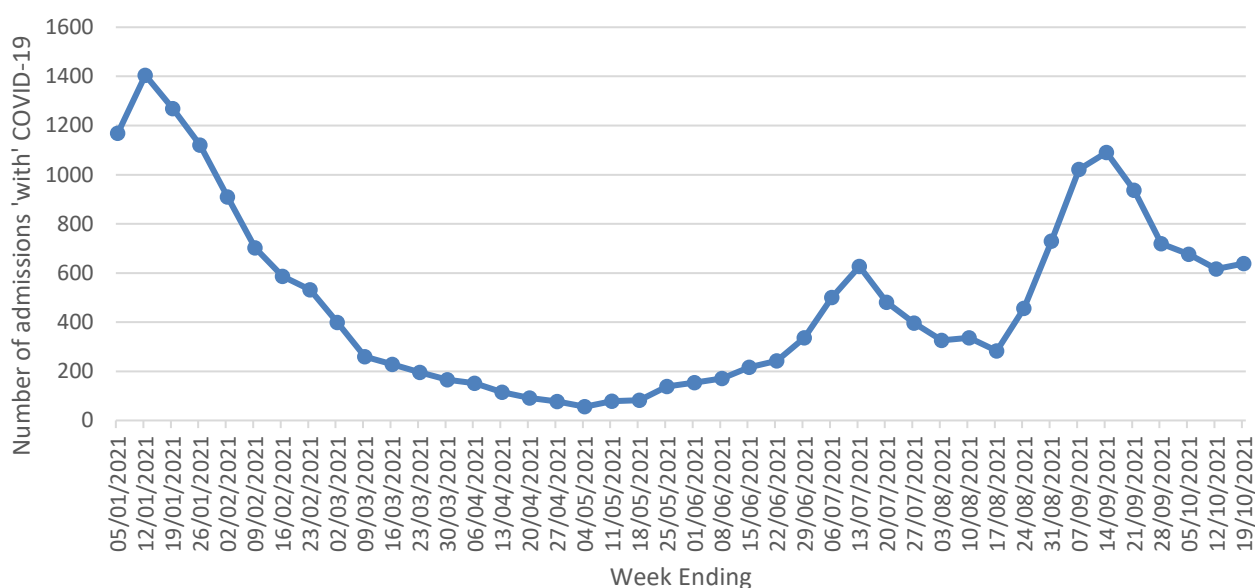


Table 1 below shows a breakdown of people admitted to hospital across all ages and by age group for the most recent four weeks. Data from 03 March 2021 is available on the [Covid Statistical Report website](#).

Table 1: COVID-19 hospital admissions by age as at 19 October 2021³

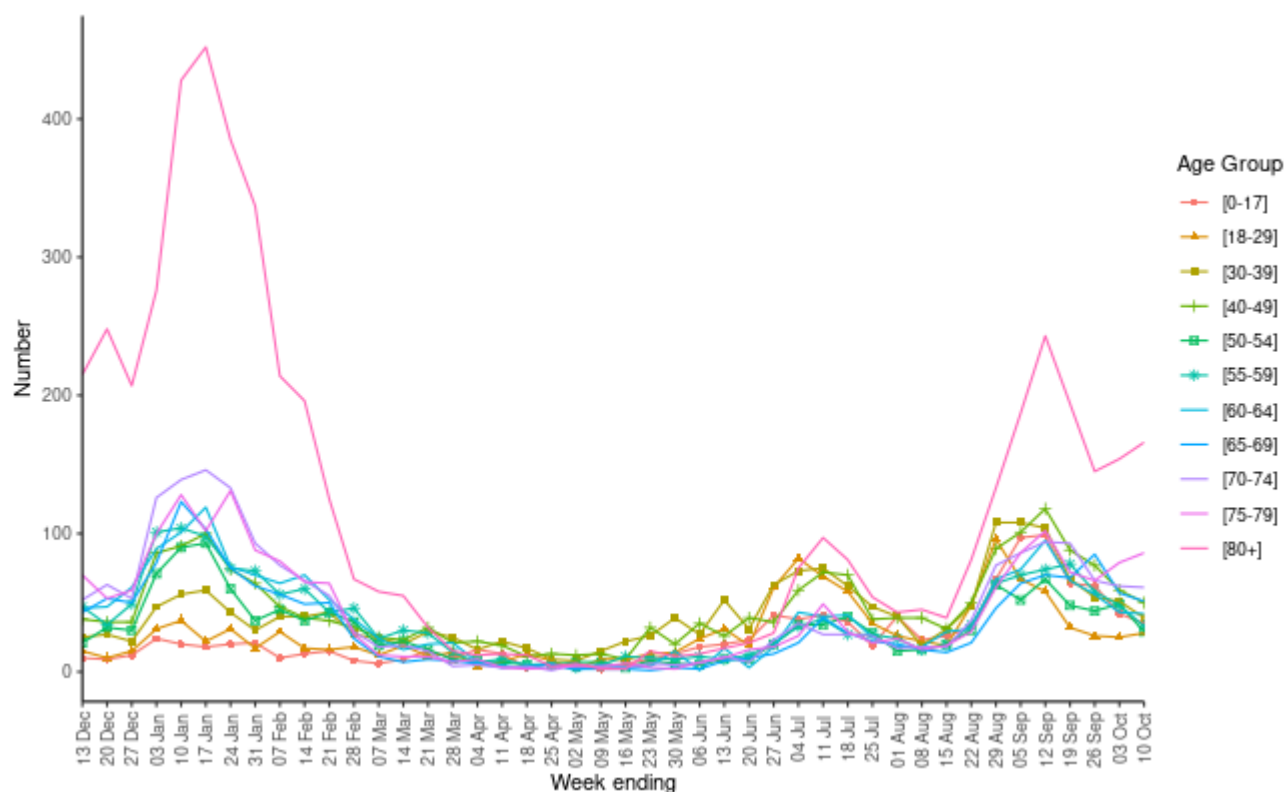
Age Band	22 September – 28 September	29 September – 05 October	06 October – 12 October	13 October – 19 October
Under 18	51	43	35	25
18-29	26	28	15	33
30-39	54	46	47	40
40-49	80	57	49	57
50-54	42	44	35	41
55-59	56	52	44	40
60-64	42	54	43	52
65-69	70	55	55	49
70-74	70	67	59	75
75-79	73	63	77	79
80+	156	168	158	148
Total	720	677	617	639

Source: RAPID (Rapid and Preliminary Inpatient Data)

3. Please refer to [Appendix 4 – RAPID Hospital Admissions](#) for explanatory notes regarding RAPID Hospital Admissions.

In the latest week there has been a 4% increase in the number of new admissions, those aged 80+ years having the highest number of admissions. Also, in the latest week 55% of the hospital admissions related to patients aged 65+.

Figure 4: Trend in Hospital Admissions, who have tested positive for COVID-19 within 14 days, by age



In recent months, the proportion of all people who were admitted to hospital within 14 days of a laboratory confirmed COVID-19 positive test has also declined, from 12% in the week ending 31 January 2021 to 4% in the most recent week ending 10 October 2021 (Figure 5).

This reduction can be explained by a change in the age profile of people acquiring COVID-19. Although those over 60 with COVID-19 are more likely to be admitted to hospital than younger age groups (Figure 6), the proportion of newly reported cases in the over 60s has reduced in recent months (Figure 7).

Figure 5: Proportion of weekly cases admitted to hospital within 14 days of a first positive test

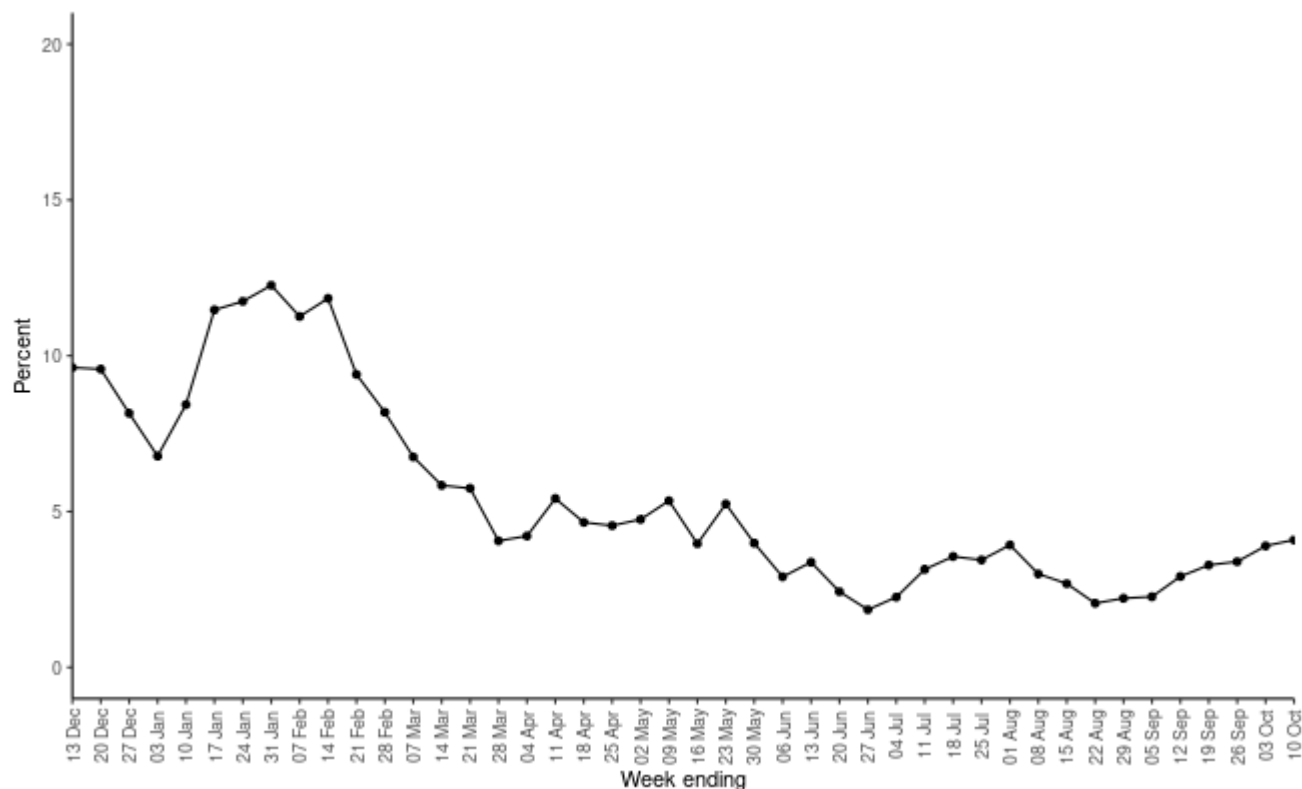


Figure 6: Proportion of weekly cases admitted to hospital within 14 days of a first positive test by age group

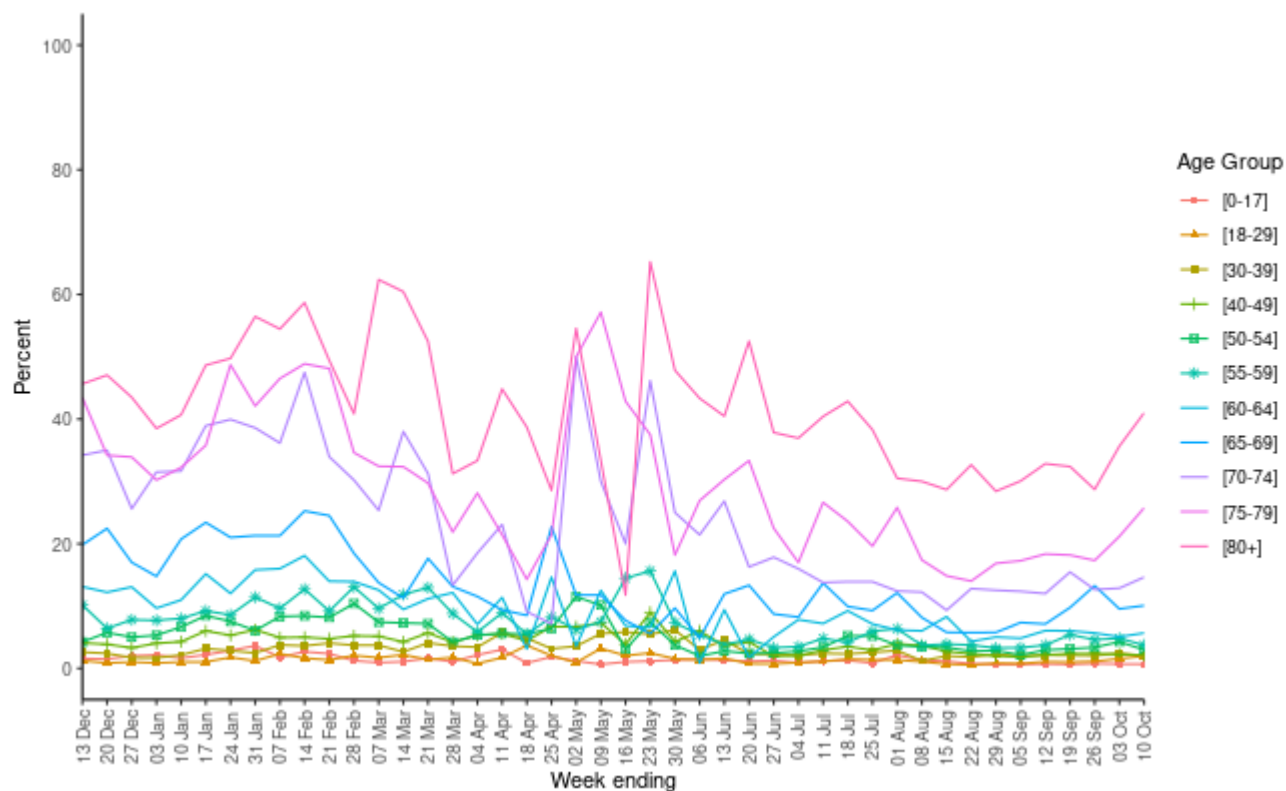
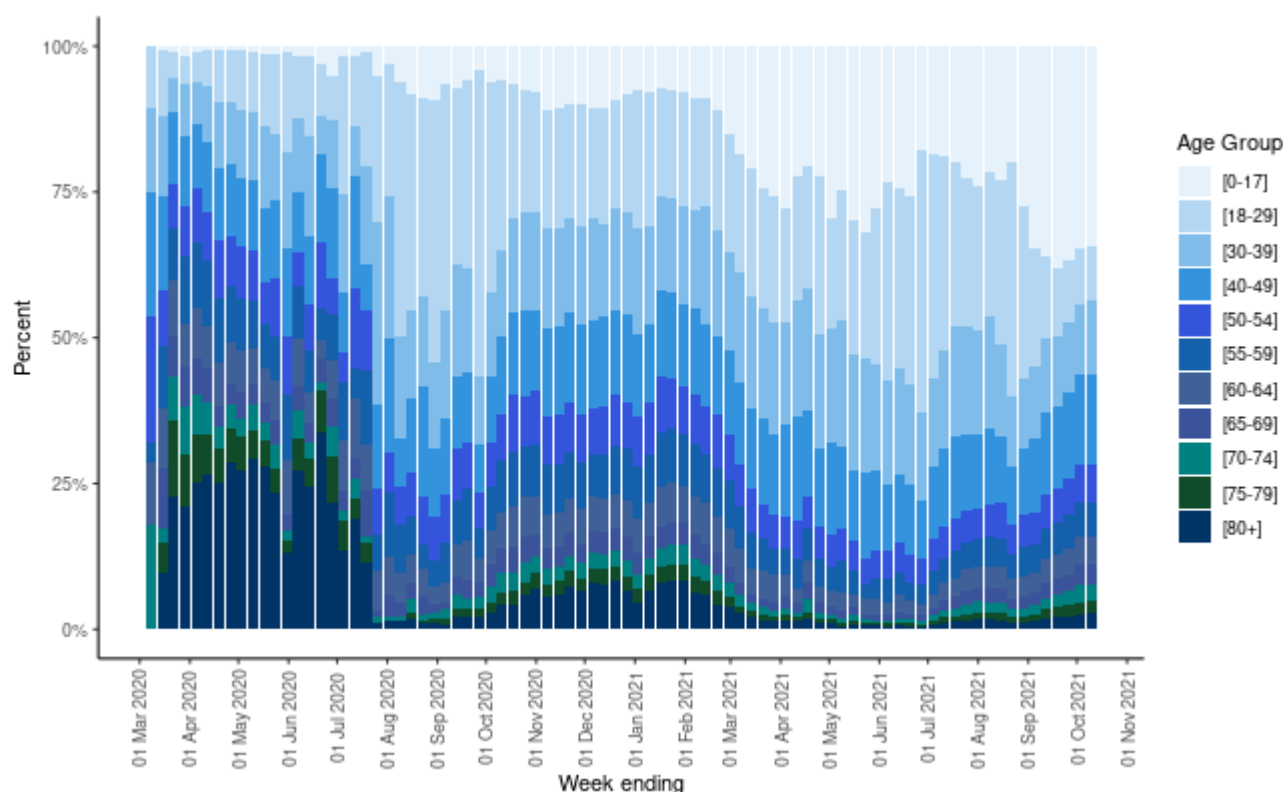


Figure 7: Distribution of confirmed COVID-19 cases by age group



Hospital Admissions ‘because of’ COVID-19

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, to inform Scotland’s public health response.

To estimate the proportion of patients in hospital ‘because of’ COVID-19 - analysis was carried out using the national Scottish Morbidity Records (SMR01 - acute inpatient and day case activity) dataset 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, using SMR01.

The analysis on hospital admissions (Table 2) ‘because of’ COVID-19 is based on data from six NHS Boards, with good quality and complete data up to end July 2021. The aggregated data for these six NHS Boards is used as a proxy to represent the Scotland position. These six NHS Boards are listed in Appendix 10.

Table 2 below shows that as at July 2021, 75% of acute hospital admissions ‘with’ COVID-19 had a **primary** diagnosis of COVID-19.

The average length of time a patient is spending in hospital ‘because of’ COVID-19 has reduced from 13.0 days in January 2021 to 5.6 days in July 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 admitted. More detailed information by age group is shown below in Figure 9.

Table 2: SMR01 COVID-19 Hospital Admissions with a primary diagnosis of COVID-19

	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21
Percentage of hospital admissions 'because of' COVID-19	78%	76%	75%	66%	72%	72%	75%
Average length of stay 'with' COVID-19 (days)	14.9	11.8	8.8	5.4	7.2	5.7	5.4
Average length of stay 'because of' COVID-19 (days)	13.0	10.9	8.8	6.0	6.5	5.9	5.6

Source: SMR1 (Scottish Morbidity Records –Acute Inpatient & Day case) & ECOSS

Notes and definitions can be found in [Appendix 10](#)

Figure 8: Percentage of COVID-19 hospital admissions with a primary diagnosis of COVID-19, and average length of stay

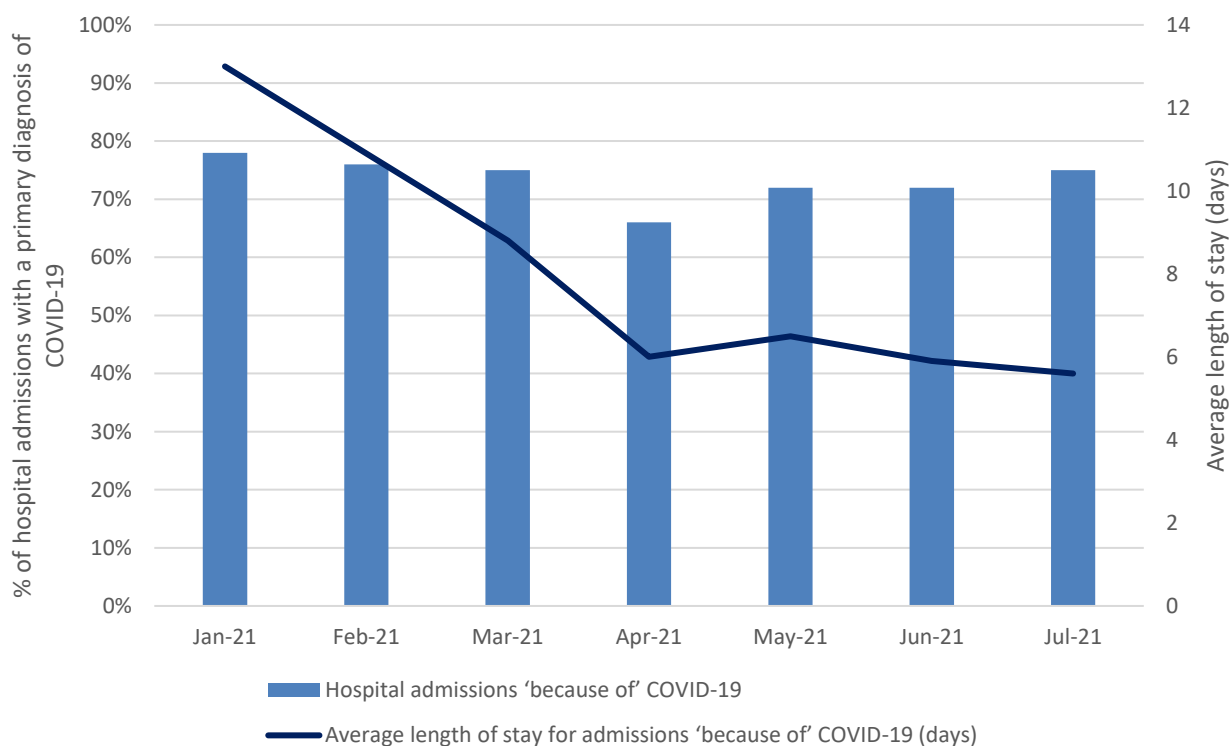
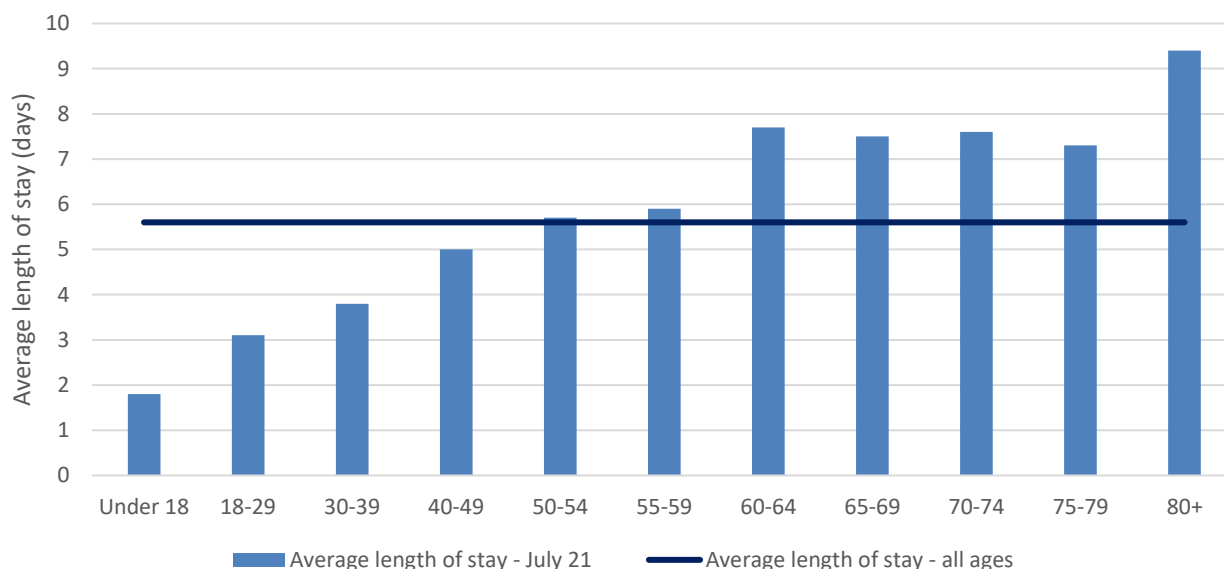


Figure 9 below shows a breakdown of the average length of stay in days for July 2021 for hospital admissions with a primary diagnosis of COVID-19.

Figure 9: Average length of stay of SMR01 COVID-19 hospital admissions with a primary diagnosis of COVID-19 by age band; July 2021



Public Health Scotland will continue to report the number of COVID-19 hospital admissions using existing methodology and will updated additional SMR01 analysis on a monthly basis, as and when more recent data become available.

COVID-19 Testing in Adult Care Home in Scotland

As of 20 January 2021, Public Health Scotland took over reporting of weekly testing data on COVID-19 in adult Care Homes in Scotland – data prior to 11 January 2021 can be found on the [Scottish Government website](#).

This data is provisional management information submitted to the Turas Care Home Management system by Care Homes, and details numbers of people (i.e. staff and residents) tested in the last week. The numbers capture both those tests undertaken via NHS routes and those done via the Scottish Social Care portal.

Figures are an undercount in some cases as complete data was not collected for all Care Homes.

It is the responsibility of Boards to work with care homes as part of their oversight arrangements to quality assure this data. The role of PHS is to collate and publish only. Please use this information with caution.

Table 3: Adult care home testing for week ending 25 October 2021

Further information on COVID-19 testing in Adult Care Homes can be found at [Coronavirus \(COVID-19\): trends in daily data - gov.scot \(www.gov.scot\)](#).

NHS Board	Care Home with confirmed COVID-19		Care Homes with no confirmed COVID-19
	Staff tested	Residents tested	Staff tested
Ayrshire and Arran	497	128	2,645
Borders	48	7	603
Dumfries & Galloway	39	0	990
Fife	215	6	2,665
Forth Valley	341	186	2,092
Grampian	275	161	4,237
Greater Glasgow & Clyde	932	88	6,470
Highland	133	41	1,976
Lanarkshire	439	212	3,488
Lothian	576	159	4,843
Orkney	0	0	112
Shetland	0	0	220
Tayside	331	191	2,994
Western Isles	49	55	338
Scotland	3,875	1,234	33,673

Please note some of the data is suppressed due to disclosure methodology being applied to protect patient confidentiality

Healthcare workers – COVID-19 Testing

In July 2020, the Scottish Government expanded COVID-19 testing (PCR) to include key healthcare workers in oncology and haemato-oncology in wards and day patient areas including radiotherapy; staffing wards caring for people over 65 years of age where the length of stay for the area is over three months, and wards within mental health services where the anticipated length of stay is also over three months. A data collection was initially set up to monitor the expansion of testing starting in July 2020. Weekly trend data, broken down by health board, is available on the [interactive dashboard](#).

Work was undertaken with Boards to improve the quality of the data and this collection has moved over to Public Health Scotland. This management information must be treated with caution as it may be subject to change as the quality of the data improves. Public Health Scotland is working closely with SG and Boards to improve data definitions and quality to ensure consistency across Scotland. As a result, data may be revised in subsequent weeks and any changes will be clearly signposted.

Table 4: Number of COVID-19 tests and positive results for healthcare workers for week ending 21 October 2021

Area	Total Eligible Staff	Total Staff tested	Number of positive tests ⁴	Number of Staff not tested - declined to test	Number of Staff not tested for operational reasons	Number of Staff not tested for other reasons
Specialist Cancer Wards and Treatment Areas	2,597	2,479	10	27	7	84
Long Stay Care of the Elderly	705	636	*	35	5	29
Long Stay Old Age Psychiatry and Learning Disability Wards	2,379	2,221	*	66	48	44
Scotland	5,681	5,336	14	128	60	157

4. Please note some of the data is suppressed due to disclosure methodology being applied to protect staff confidentiality. See [Appendix 5 – Healthcare Worker Testing](#) for notes on staff not tested.

Test and Protect

Scotland's approach to contact tracing has continued to adapt throughout the pandemic to reflect changing circumstances, variability in cases, and increasing proportion of the population fully vaccinated since the roll out of the vaccination programme. The most recent [Strategic Framework](#) issued by the Scottish Government in June 2021 sets out how Scotland will continue to adapt now that we are in the phase described as "beyond level zero". That will require a constant review of the associated management information compiled in the weekly report. The information we produce will change over time to reflect the most critical information to help understand, plan and deliver contact tracing at any given point in time.

World Health Organisation (WHO) current guidance on "[Contact tracing in the context of COVID-19](#)" focuses on targeted approaches to contact tracing based on transmission patterns, engaging communities, and prioritising follow-up of high risk cases when it is not possible to identify, monitor and quarantine all contacts. For further information please refer to [Appendix 2](#).

Please note, PHS has moved to weekly reporting of this data and cumulative data is available in the [interactive dashboard](#). Data for the most recent week, previously included as provisional, is no longer included as this is variable due to cases which are still open (either because contact tracing is still underway or the NHS Board is still managing the case for a particular reason). Only finalised data will be included within the report going forward.

Further background information and definitions are available in [Appendix 6](#).

Index cases

An **index case** is generated for each positive result with a test date on or after 28 May 2020. This includes tests derived from Scottish laboratories and from UK Government laboratories.

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

Contact Tracing figures for the week ending 17 October 2021 (based on test date), are detailed in Table 5 below, which provides a recent time trend. A longer time trend is available on the [interactive dashboard](#).

Table 6 provides details of the status of the index cases for each week.

In the week ending 17 October 2021, there were 18,389 Index Cases, of which 14,908 (81.1%) had completed contact tracing by telephone or other digital methods, and a further 1,230 are in progress (6.7%).

Table 5: Contact Tracing trend information, by week ending

	05 Sep	12 Sep	19 Sep	26 Sep	03 Oct	10 Oct	17 Oct
Total Index Cases ¹	46,026	38,211	26,902	21,895	17,718	17,841	18,389
Individuals ²	44,700	37,012	26,260	21,467	17,252	17,272	17,692

1. Does not include "Excluded" cases which are those where a decision has been made that the case should not have been created within the contact tracing system.
2. A count of unique individuals with a positive test. An individual can have multiple positive tests which results in multiple cases within the contact tracing system.

Table 6: Contact Tracing trend information by status, by week ending

Status of cases	05 Sep	12 Sep	19 Sep	26 Sep	03 Oct	10 Oct	17 Oct
New/ Not yet started ¹	31	10	4	9	257	335	465
% New/ Not yet started	0.1	0	0	0	1.5	1.9	2.5
In progress ²	18	69	10	27	896	1,009	1,230
% In progress	0	0.2	0	0.1	5.1	5.7	6.7
Complete ³	35,878	31,562	22,867	19,234	14,809	14,751	14,908
% Complete	78	82.6	85	87.8	83.6	82.7	81.1
Incomplete ⁴	10,099	6,570	4,021	2,625	1,756	1,746	1,786
% Incomplete	21.9	17.2	14.9	12	9.9	9.8	9.7

1. New – New/not yet started cases within the contact tracing system. During the first 2 weeks in September, high case numbers meant that some cases were dealt with outside the CMS system (to ensure advice was given promptly). It is possible not all of that admin backlog has been cleared yet and cases described as "not started" have now been dealt with / closed. An exercise is underway to improve that data quality.
2. In progress – The case is still in progress with either the case interview to be completed, or contacts related to the case to be followed up.
3. Complete - The case is complete and all achievable contact tracing has been carried out.
4. Incomplete - Unsuccessful attempts to reach or carry out a case interview via the telephone, or for the index case to provide contacts via digital contact tracing (SMS)

Method of Contacting Index Cases

Public Health Scotland works closely with National Services Scotland (NSS) and the Scottish Government to support local NHS Boards and the National Contact Centre (NCC) to carry out COVID-19 contact tracing. The approach to contact tracing has adapted as restrictions and policy have changed throughout the pandemic in order to best meet the needs of the Scottish population. As numbers of new cases have increased, the method has changed from attempting to phone all new cases and contacts - to prioritising the highest risk situations for telephone calls and sending public health advice by SMS text to all others, who have tested positive for COVID-19 and their close contacts.

The introduction of SMS messaging was designed to get the best public health advice about isolation to cases and contacts as quickly as possible, this is especially pertinent when daily case numbers are very high. The approach was part of a deliberate decision to manage resources through an agreed framework and is in keeping with the evidence-informed advice of the European Centre for Disease Control.

All index cases will receive an initial SMS containing Public Health information and advice, which will then be followed by contact either by telephone or additional SMS messages containing further Public Health information and advice.

Table 7 below shows a breakdown of the methods used to contact the index cases over time.

Table 7: Contact method used for contact tracing of index cases trend information

	05 Sep	12 Sep	19 Sep	26 Sep	03 Oct	10 Oct	17 Oct
Telephone	24,037	22,095	18,927	15,581	13,195	13,087	12,680
% Telephone	52.2	57.8	70.4	71.2	74.5	73.4	69.0
SMS	21,989	16,116	7,975	6,314	4,523	4,754	5,709
% SMS	47.8	42.2	29.6	28.8	25.5	26.6	31.0

In the week ending 17 October 2021, 69.0% of index cases received a telephone call.

Time for a Positive Index Case to be Contact Traced

The data within this section are based on the number of **completed cases** which are recorded in the contact tracing software, these figures are preliminary and may be updated in subsequent publications.

The three measures shown are;

- the time between a sample being taken and the positive individual being contacted (i.e. interviewed by a contact tracer or completing the online tracing form)
- the time between the record appearing in the CMS and the positive individual being contacted (i.e. interviewed by a contact tracer or completing the online tracing form)

- the time between the record appearing in the CMS and contact tracing being closed (i.e. contacts have been interviewed, attempted to be interviewed or contacted digitally).

These figures are now weekly measures, data are available for previous weeks within the [interactive dashboard](#).

Table 8 and Figure 10 below describes the timeliness of contact tracing by calculating the hours between a test sample being taken and the index case being contacted by Test and Protect either by phone or SMS.

Table 8: Time (hours) between date test sample taken (specimen date) and the positive index case being contacted, for cases completed⁵

Hours taken	Week Ending 17 October 2021		
	Number of Complete Index Cases	% of Total Complete Cases	% of Total Complete & Incomplete Cases
0-24	4,798	32.2	28.7
24-48	5,656	37.9	33.9
48-72	1,026	6.9	6.1
Over 72	523	3.5	3.1
Not recorded* - SMS	2,584	17.3	15.5
Not recorded* – Phone	321	2.2	1.9
Total Complete Cases	14,908	100	
Incomplete Cases	1,786		10.7
Total Complete & Incomplete Cases	16,694		100

⁵ For further information and additional notes on Contact Tracing, please see [Appendix 6 – Contact Tracing](#)

*Improvements into recording of times and dates are being investigated and technical solutions will be identified to reduce the proportion of ‘Not recorded’ cases.

Figure 10: Trend in time (hours) between date test sample taken (specimen date) and the positive individual being called for cases completed; by week

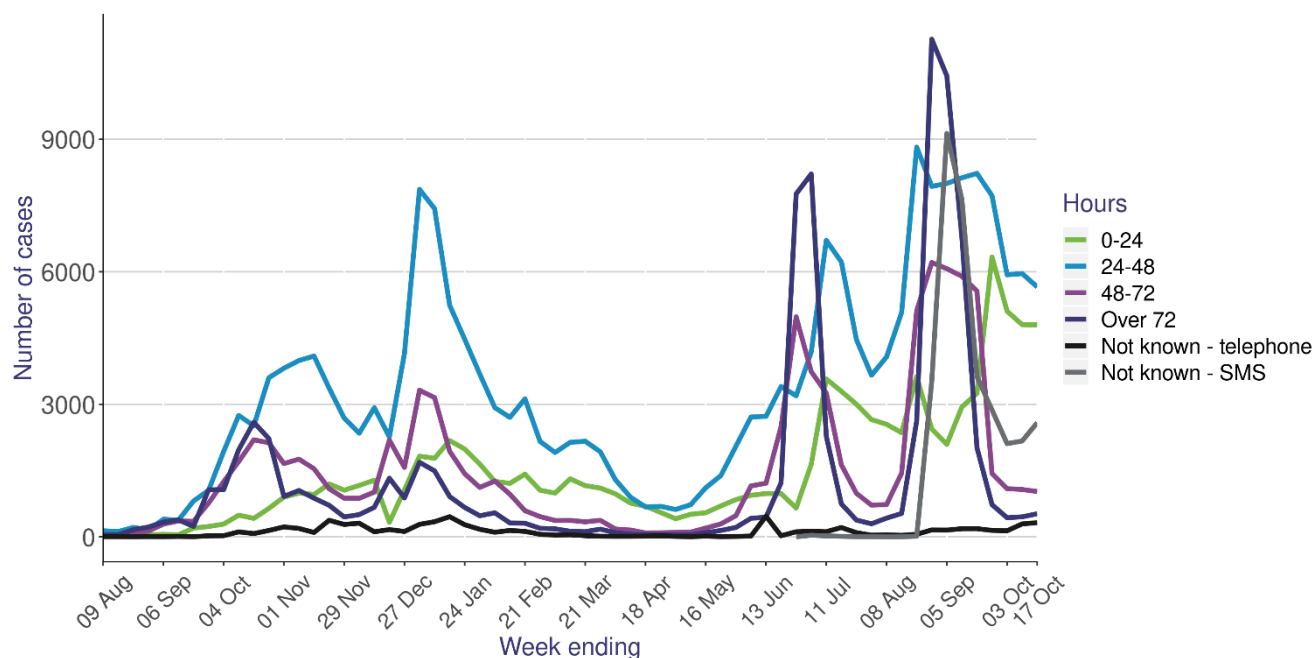


Figure 10 shows that more positive cases were contacted over 72 hours after their test sample was taken in June 2021 and August 2021, which corresponds with a rise in cases over the same period.

On 21 September 2021, there was a technical issue which affected the availability of Test & Protect data. This caused operational delays for the contact tracing service initiating communication with some index cases by up to 24 hours. This issue was rapidly addressed and has subsequently been resolved.

Table 9: Time (hours) between case created in CMS and the positive individual being contacted^{5,6}

Hours taken	Week Ending 17 October 2021		
	Number of Complete Index Cases	% of Total Complete Cases	% of Total Complete & Incomplete Cases
0-24	10,794	72.4	64.7
24-48	793	5.3	4.8
48-72	206	1.4	1.2
Over 72	210	1.4	1.3
Not recorded* – SMS	2,584	17.3	15.5
Not recorded* - Phone	321	2.2	1.9
Total Complete Cases	14,908	100	
Incomplete Cases	1,786		10.7
Total Complete & Incomplete Cases	16,694		100

5 For further information and additional notes on Contact Tracing, please see [Appendix 6 – Contact Tracing](#)

6 Includes being interviewed by a contact tracer or submitting preliminary information via a CO3 form

*Improvements into recording of times and dates are being investigated and technical solutions will be identified to reduce the proportion of ‘Not recorded’ cases.

Table 10: Time (hours) between case created in CMS to its closure^{5,7}

Hours taken	Week Ending 17 October 2021		
	Number of Complete Index Cases	% of Total Complete Cases	% of Total Complete & Incomplete Cases
0-24	12,068	81.0	72.3
24-48	1,568	10.5	9.4
48-72	506	3.4	3.0
Over 72	554	3.7	3.3
Not recorded* – SMS	67	0.5	0.4
Not recorded* - Phone	145	1.0	0.9
Total Complete Cases	14,908	100	
Incomplete Cases	1,786		10.7
Total Complete & Incomplete Cases	16,694		100

5 For further information and additional notes on Contact Tracing, please see [Appendix 6 – Contact Tracing](#)

7 Measured by the time taken to complete the final contact interview for high risk settings/contacts and those completed via SMS

*Improvements into recording of times and dates are being investigated and technical solutions will be identified to reduce the proportion of ‘Not recorded’ cases.

Incomplete index cases

Table 11 and Figure 11 below show the different reasons why an index case is categorised as incomplete (previously referred to as failed) within the contact tracing system.

Incomplete cases are defined as: unsuccessful attempts to carry out a case interview via the telephone, or for the index case to provide contacts via digital contact tracing. This would include scenarios where the mobile/home phone/email address provided by the case was incorrect and no other method of contact could be established; where multiple SMS/telephone call attempts to the case had been made but not been successful in eliciting a response from the index case; where the index case has failed to pass relevant data protection identity checks and where the index case has refused to participate in the contact tracing process.

For operational purposes some index cases are categorised as incomplete because the telephone process has started, but does not complete for the reasons outlined in Table 10 below. Public Health information is typically sent by SMS to 99% of the incomplete index cases.

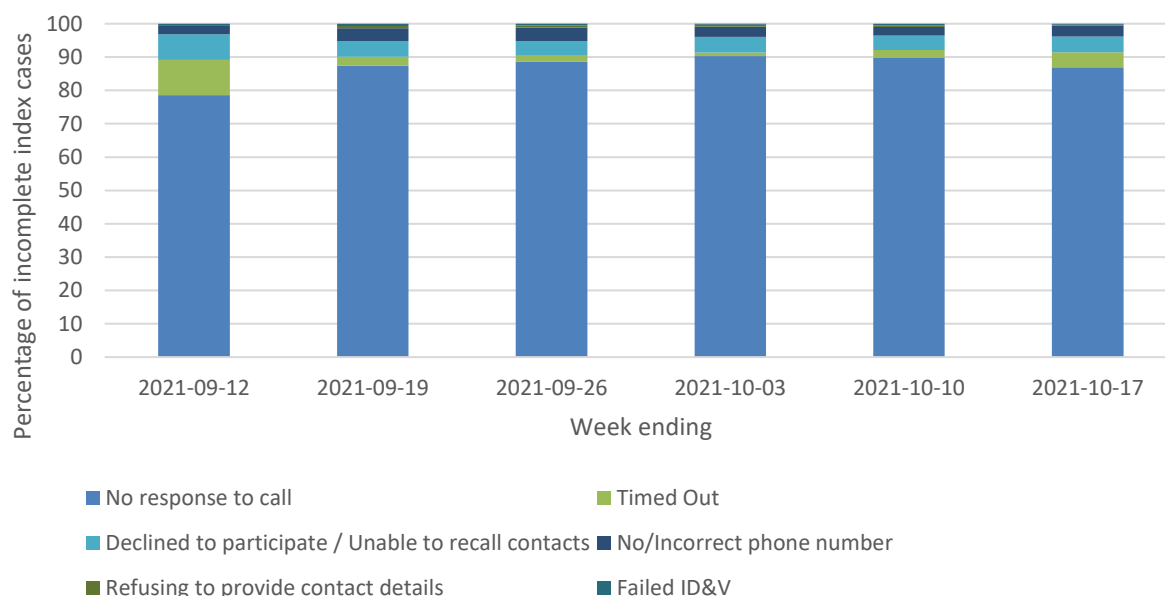
Table 11: Number of incomplete index cases by reason

Reason for Incompletion	Week Ending 17 October 2021	
	Number of Index Cases	% of <i>Incomplete Index Cases</i>
Failed ID & verification	6	0.3
No response to call	1,552	86.9
No/incorrect phone number	59	3.3
Refused to provide contact details	4	0.2
Declined to participate / unable to recall contacts	83	4.7
Timed out ¹	82	4.6
Total incomplete cases	1,786	100.0
% incomplete as proportion of all index cases		9.7

1. Timed out includes individuals contacted by SMS and asked to complete an online contact tracing form, but haven't completed the form within 5 days.

In week ending 17 October 2021, 86.9% of incomplete index cases were due to the index case not responding to the multiple calls from Test and Protect.

Figure 11: Proportion of reasons for incomplete index cases



Contacts

The Test and Protect system ensures all positive index cases are asked to identify their close contacts, whether they were contacted by telephone and/or SMS. Table 12 below shows the recent trend information of contacts reported to Test and Protect.

Table 12: Contact Tracing contacts trend information, by week ending

	05 Sep	12 Sep	19 Sep	26 Sep	03 Oct	10 Oct	17 Oct
Total Primary Contacts ¹	67,881	56,853	47,321	42,079	35,711	34,356	34,488
Unique Primary Contacts ²	51,946	42,120	33,738	30,669	25,281	24,519	24,257
Average number of primary contacts per case	1.5	1.5	1.8	1.9	2	1.9	1.9

1. Total number of primary contacts recorded in the contact tracing system.

2. Unique number of primary contacts each week. A contact may have been in close contact with multiple index cases.

The average number of primary contacts per case has remained stable over recent weeks.

Contacts not required to self-isolate

It is worth noting that from 9 August 2021 under 18's do not need to be reported as close contacts. Revised isolation and contact tracing guidance for children and young people under 18 split contacts into 'high' and 'low' risk. High risk contacts are reported through Test and protect with low risk contacts identified by schools and issued with public health guidance locally. Test and Protect does not gather the details of low risk contacts and this is not contained in these figures.

Since the beginning of contact tracing, a small proportion of primary contacts who were successfully contacted were advised they did not need to isolate. Up to 17 October 2021, a total of **3,378** cumulative primary contacts, pertaining to completed index cases, were not advised to self-isolate. This represents **1.2%** of the total **290,769** cumulative primary contacts for which this information is known. Some reasons why contacts do not need to isolate include; children under the age of 16, contact was wearing PPE or did not come into close contact with a positive case.

In the week ending 17 October 2021, of the **24,257** unique contacts recorded, **4,961** (20.5%) went on to test positive within ten days of their contact with an index case.

Travel outside of Scotland cases

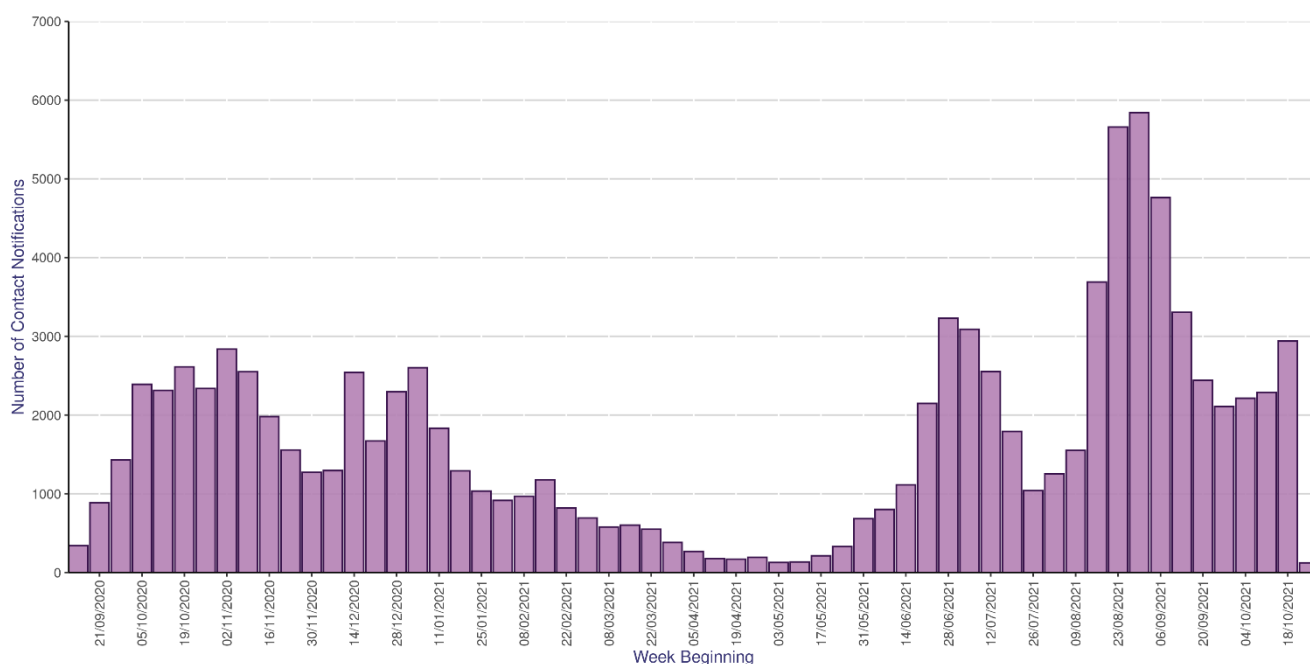
Since 28 September 2020 fields have been available to record information about whether a case has travelled outside of Scotland. In the week ending 24 October 2021, 15,877 index cases were newly created on CMS, of which 8,655 had a fully completed index case interview. Of those interviewed, **701** travelled to the UK (excluding Scotland), **497** travelled to Europe and **31** to the rest of the world.

This information is collected on the contact tracing interview and is where outside of Scotland travel information is recorded. Please note we are aware of an undercount for those travelled outside Scotland. This is a data quality issue due to recording of the travel information, Public Health Scotland is working closely with contact tracing leads to improve this recording.

Protect Scotland App

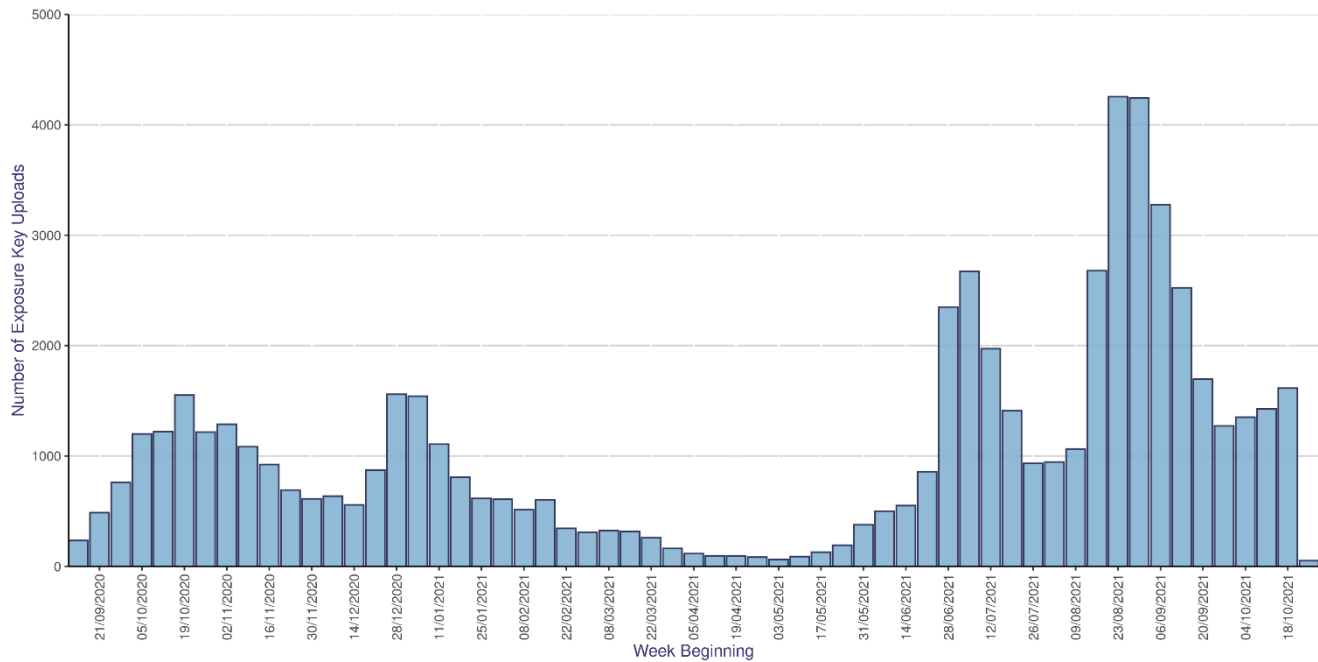
The Protect Scotland App was launched on 10 September 2020. It is free and designed to protect individuals and reduce the spread of coronavirus. The app alerts individuals if they have been in close contact with another app user who tests positive for coronavirus. If they test positive, it can help in determining contacts that may have otherwise been missed while keeping individual's information private and anonymous. As of 25 October 2021 the total number of people who have downloaded the app is **2,308,440** with the number of contact notifications at **99,980** (see Figure 12).

Figure 12: Weekly number of contact notifications sent from the Protect Scotland App from 14 September 2020 to 25 October 2021



As of 25 October 2021, **61,300** exposure keys had been uploaded to the central server by index cases to enable contact notifications to be sent to those with whom they had close contact around the time they were likely to have been infectious (see Figure 13).

Figure 13: Weekly number of exposure key uploads to the Protect Scotland App from 14 September 2020 to 25 October 2021



Event and Settings Cases

Public Health Scotland has been able to present a table of settings and events that index cases have attended over the previous 7 days. This is based on interviews conducted with cases identified in the CMS and involves cases recalling where they have been in the 7 days prior to symptom onset (or date of test if asymptomatic).

These figures are now updated in Settings tab of the [interactive dashboard](#) accompanying this report. Please note that Public Health Scotland cannot infer from the figures whether a specific setting or an event indicates where the COVID-19 transmission took place. This is because cases may have attended multiple settings or events within a short space of time. In addition, it is possible that even though a case visited a few settings and events, transmission may have taken place elsewhere.

More information on event groupings can be found in the accompanying metadata document available on the [COVID-19 Statistical Report website](#).

Please note that this section has not been updated since 28th August 2021 due to changes in contact tracing.

Estimated COVID-19 cases in university accommodation settings: 02 August – 10 October 2021

Introduction

Data on COVID-19 [cases associated with university accommodation settings](#) was first published by Public Health Scotland on 9 December 2020. This first report identified cases in student accommodation between 1 August and 30 November 2020. This section presents updated analysis on this topic covering data between 2 August 2021 and 10 October 2021.

Key points

- Between 2 August and 10 October 2021, there were a total of 902 positive COVID-19 cases associated with university accommodation postcodes. These represent 0.37% of the cumulative number of recorded cases of COVID-19 in Scotland in that time period. In comparison, during the same period in 2020 (3 August to 11 October 2020), there were a total of 1,799 positive COVID-19 cases associated with university accommodation postcodes, representing 8.0% of the cumulative number of recorded cases of COVID-19 in Scotland at that time.
- A weekly peak of 181 cases (0.4% of all cases that week in Scotland) was observed in the week ending 29 August 2021 during the time period of investigation. This compares to a weekly peak of 729 cases (20.3% of all cases in Scotland that week) in the week ending 27 September 2020.
- The cities of Glasgow and Edinburgh accounted for over three quarters (78.2%) of cases in the period 2 August 2021 to 10 October 2021 (Table X) reflecting large student populations in these areas. However, numbers of recorded COVID-19 cases within all individual accommodation postcodes remained low, with cases never exceeding 5 in any given week.
- Compared with last year, a low number of positive COVID-19 cases were identified in student accommodation between 2 August and 10 October 2021, despite higher numbers of PCR tests taken this year compared with the equivalent time period last year.

Methods

A list of postcodes was provided by the Scottish Government where the Higher Education Statistics Agency (HESA) data indicated that students had reported living there in 2019/20 (the most recent data available). This analysis includes students living in university accommodation and PBSA accommodation. These postcodes were then matched to the postcodes of positive PCR test results in the NHS Scotland Electronic Communication of Surveillance in Scotland (ECOSS) Database. All data for people aged 16 and over and residing in these postcodes is included. The figures for August to October 2020 presented here have been updated to take account of the latest HESA data and are therefore not directly comparable to the previous publication.

The time period newly presented in this report is from 2 August 2021 to 10 October 2021. This is presented alongside comparable data for 3 August 2020 to 11 October 2020. Information is presented on weekly numbers of COVID-19 cases, the percentage of the all COVID-19 cases occurring in the relevant postcodes and the percentage of PCR tests taken in these postcodes which were positive.

The following limitations should be recognised in interpreting these data:

- HESA data for student postcode accommodation is for 2019/20 and as such will not take into account any new university accommodation units that have opened since then. This will likely underestimate the number of cases associated with university accommodation.
- These data are likely to overestimate the number of cases associated with university accommodation settings, as the full set of postcodes used in the matching process may also contain some non-university housing units.
- It is not possible to account for the occurrence of false-positive tests within these data.

Results

- Between 2 August and 10 October 2021, there has been a total of 902 positive COVID-19 cases associated with university accommodation postcodes (Table 13). In comparison, during the same period in 2020 (3 August to 11 October 2020), there were a total of 1,799 positive COVID-19 cases associated with university accommodation postcodes.
- These numbers represent 0.37% of the cumulative number of recorded cases of COVID-19 in Scotland between 2 August and 10 October 2021 compared with 8.0% of the cumulative number of recorded cases of COVID-19 in Scotland in the corresponding time period in 2020.
- A weekly peak of 181 cases (0.4% of all cases that week in Scotland) was observed in the week ending 29 August 2021 during the time period of investigation, compared to a weekly peak of 729 cases (20.3% of all cases in Scotland that week) in the week ending 27 September 2020.
- The cities of Glasgow and Edinburgh accounted for over three quarters (78.2%) of cases in the period 2 August 2021 to 10 October 2021 (Table 14) reflecting large student populations in these areas. However, numbers of recorded COVID-19 cases within all individual accommodation postcodes remained low, with cases never exceeding 5 in any given week.
- Compared with last year, a low number of positive COVID-19 cases were identified in student accommodation between 2 August and 10 October 2021, despite higher

numbers of PCR tests taking this year than the equivalent time period during the previous year.

**Table 13: Weekly COVID-19 cases in postcodes associated with university accommodation:
3 August 2020 to 11 October 2020 and 2 August 2021 to 10 October 2021**

2020				2021			
Week ending	University accommodation COVID-19 cases (n)	All COVID-19 cases (n)	University accommodation COVID-19 cases (% of all)	Week ending	University accommodation COVID-19 cases (n)	All COVID-19 cases (n)	University accommodation COVID-19 cases (% of all)
09/08/2020	2	342	0.58	08/08/2021	26	8,549	0.30
16/08/2020	2	321	0.62	15/08/2021	47	10,599	0.44
23/08/2020	1	582	0.17	22/08/2021	168	23,623	0.71
30/08/2020	3	626	0.48	29/08/2021	181	40,343	0.45
06/09/2020	2	1,194	0.17	05/09/2021	111	44,507	0.25
13/09/2020	11	1,289	0.85	12/09/2021	107	37,187	0.29
20/09/2020	146	1,742	8.38	19/09/2021	81	26,141	0.31
27/09/2020	729	3,597	20.27	26/09/2021	102	21,313	0.48
04/10/2020	563	5,108	11.02	03/10/2021	37	17,103	0.22
11/10/2020	340	7,699	4.42	10/10/2021	42	15,418	0.27

Figure 14 below shows weekly COVID-19 cases in postcodes associated with university accommodation for 3 August to 11 October 2020 and 2 August to 10 October 2021. Last year, the number of weekly COVID-19 cases in postcodes associated with university accommodation peaked with 729 cases in the week ending 27 September 2020. This year, a peak of 181 COVID-19 cases was identified in the week ending 29 August 2021, a month earlier than the peak observed last year, perhaps reflecting the earlier return of some students for early preparatory courses.

**Figure 14: Weekly COVID-19 cases in postcodes associated with university accommodation:
3 August 2020 to 11 October 2020 and 2 August 2021 to 10 October 2021**

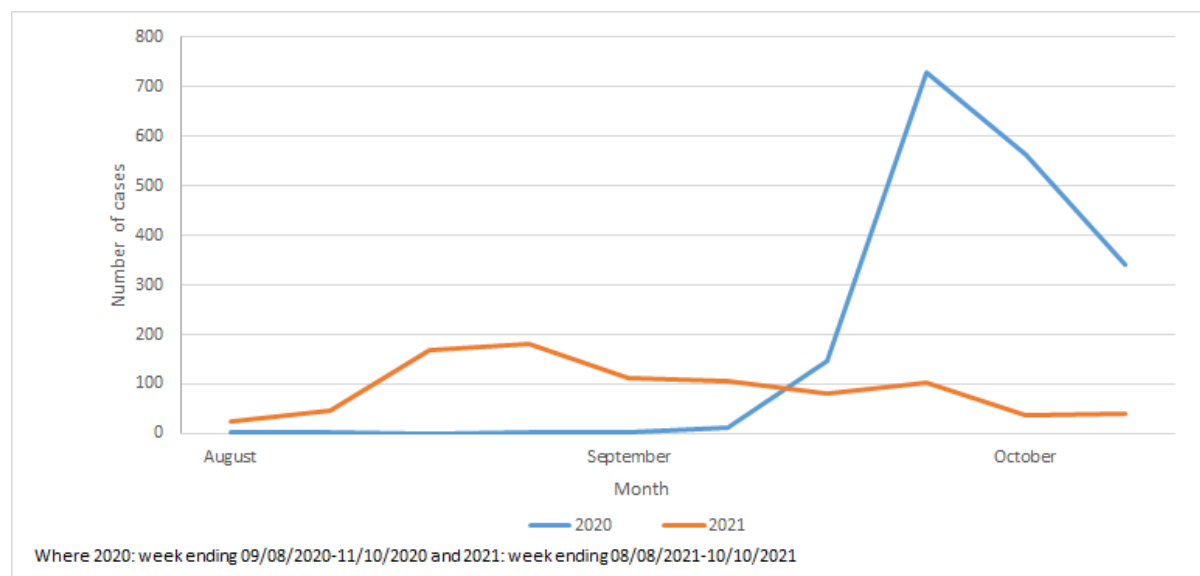


Figure 15 below suggests that for the start of the 2021/22 academic year, COVID-19 positivity rates in postcodes associated with university accommodation followed similar positivity rates to that in the general population. In the more recent weeks, test positivity in postcodes related to university accommodations was lower than that in the general population. This is in contrast to the comparable period in 2020 where positivity rates in postcodes associated with university accommodation were much higher than the general population figures. It is worth noting that the number of PCR tests taken by residents of postcodes associated with university accommodation was greater in the period 2 August 2021 to 10 October 2021 where 34,472 PCR tests were taken, compared with 8,935 PCR tests taken in the period 3 August 2020 to 11 October 2020.

Figure 15: Weekly PCR test positivity (%) - tests associated with university accommodation and all Scotland tests, 3 August 2020 to 10 October 2021

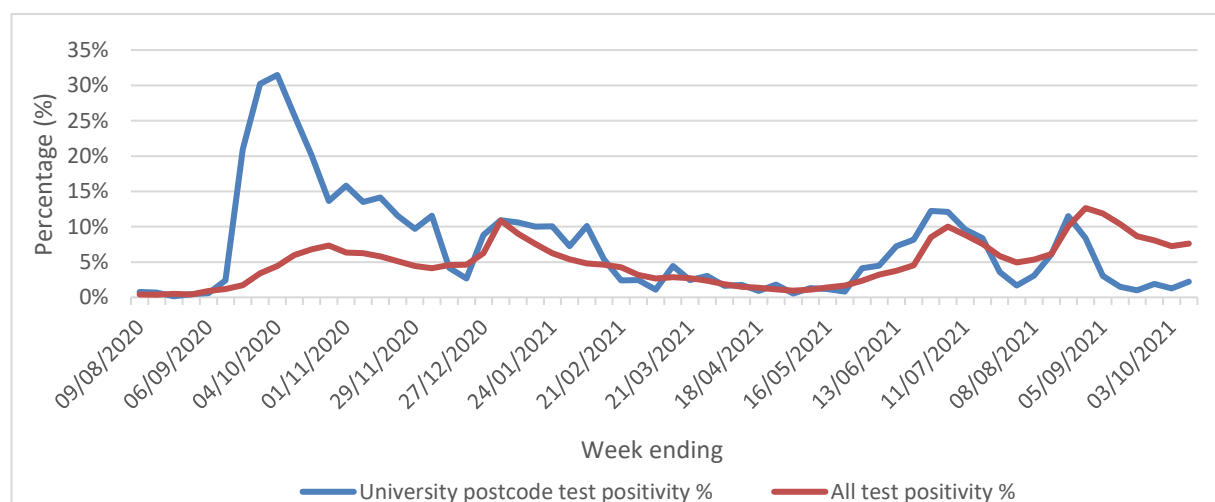


Table 14 highlights that the majority of COVID-19 cases identified in university accommodation were in Edinburgh and Glasgow, reflecting the larger student populations in these areas.

Table 14: All COVID-19 cases in postcodes associated with university accommodation, by location of postcode, 2 August 2021 to 10 October 2021

Location of postcode	University accommodation COVID-19 cases (n)	% of university accommodation COVID-19 cases (%)
Edinburgh	332	36.81
Glasgow	373	41.35
Other	197	21.84

During the period August to October 2021, numbers of recorded COVID-19 cases within all individual accommodation postcodes remained low, with cases in identified university accommodations never exceeding 5 in any given week. In the previous report, two university accommodation settings were identified as being associated with higher numbers of cases in August to November 2020: Murano Street Student Village in Glasgow and Pollock Halls of Residence in Edinburgh. This was not observed for the start of the 2021/22 academic year where Murano Street Student Village was associated with 8 cases in total compared with 156 in the corresponding time period in 2020 and Pollock Halls was associated with 17 cases in total compared with 246 cases in the corresponding 2020 time period.

In summary, compared with last year, a smaller number of cases were identified in postcodes associated with university accommodation during the period covering 2 August 2021 and 10 October 2021. In this period, while Glasgow and Edinburgh accounted for the majority of the COVID-19 cases in postcodes associated with university settings, no large clusters of cases were identified within an individual accommodation postcode.

Quarantining Statistics

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

Those arriving into Scotland who have been in a country on the red list (high risk) at any point in the 10 days before arriving in Scotland are required to quarantine in a hotel for a minimum of 10 days (further information available on the Scottish Government website). Those arriving in Scotland who have been in a country on the amber list (non-high risk) are required to quarantine at home.

Up to 23 June 2021, a sample of those individuals quarantining at home were contacted by the NCC. These calls were paused in order to prioritise contact tracing. Since 13 July 2021, these call have resumed. All travellers (except those exempt and those under 18 years of age) will receive an email, providing them with appropriate public health information on self-isolation and testing. Unvaccinated travellers arriving from an Amber country are also called by the NCC. Fully vaccinated travellers arriving from an Amber country, or travellers arriving from a Green country, receive a SMS and email. Arrivals from a Red country receive an email and continue to be managed via quarantine. Travellers under the age of 18 are not contacted.

Table 15: Quarantine Statistics by date (22 June 2020 to 24 October 2021) ⁹

	Week Ending 24 October 2021	Cumulative
Number of people arriving in Scotland	81,402	1,406,558
Number of people requiring to quarantine in a hotel (anywhere in the UK)	0	22,263
Number of people requiring to quarantine at home	3,176	477,820
Number of people contacted by National Centre	2,616	137,093

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

Table 16: Number of people contacted by National Centre by status (22 June 2020 to 24 October 2021) ⁹

	Week Ending 24 October 2021	Cumulative
Successful contacts made	2,181	126,578
Unable to contact individual	320	10,400
In progress	115	115

⁹ For further information and additional notes on Contact Tracing, please see [Appendix 7 – Quarantine Statistics](#).

Lateral Flow Device Testing

Across Scotland, there are numerous testing pathways being rolled out using Lateral Flow Devices (LFD) - a clinically validated swab antigen test taken that does not require a laboratory for processing. This test can produce rapid results within 45 minutes at the location of the test.

Some of the areas using LFD tests are: schools, health and social care workers, care homes and more. Public Health Scotland has collected the information on the number of LFD tests carried out across Scotland and will now publish this information weekly. This section is the totality of LFD across Scotland and across strategies. Sections focussing in on specific topics such as Schools, Higher Education and Community testing can be found later in the report.

Since 19 November 2020, there have been 13,066,808 LFD tests carried out in Scotland, of which 85,524 were positive (0.7%). Table 17 shows the number of LFD tests carried out in Scotland by testing group, and Table 18 shows the number of LFD tests by Health Board of residence of the individual taking the test.

Any individual who receives a positive test result using a Lateral Flow Device is advised to self-isolate and arrange for a confirmatory PCR test. The PCR result will determine the number of cases of COVID-19 in Scotland.

For additional details on Lateral Flow Device Tests, please see - [Appendix 8 – Lateral Flow Device Testing](#)

Table 17: Number of LFD¹⁰ tests by Test group 19 November 2020 – 24 October 2021

Test Group	Test Reason	Number of tests	Number of positive tests	% LFT positive
Care Home Testing	Care Home - Visiting Professional	48,640	58	0.1%
	Care Home - Visitor	532,712	370	0.1%
	Care Home Staff	1,433,362	1,137	0.1%
Community Testing	Community Testing	90,975	831	0.9%
Education Testing	Combined School Staff	44,737	87	0.2%
	ELC Staff	264,786	930	0.4%
	Primary School Staff	1,269,459	3,061	0.2%
	Secondary School Pupils	785,793	6,790	0.9%
	Secondary School Staff	693,937	1,620	0.2%
	University Staff	8,580	51	0.6%
	University Students	27,947	229	0.8%
	University Testing Site	96,517	380	0.4%
Healthcare Testing	Healthcare Worker	2,498,642	4,391	0.2%
	Primary Care And Independent Contractors	168,319	217	0.1%
Social Care Testing	Children, Young People and Mental Health	914	-	0%
	NSS Portal Social Care	581,660	741	0.1%
	Residential Homes	13,217	16	0.1%
	Support Services	12,985	81	0.6%
Universal Offer	Attend An Event	429,767	1,191	0.3%
	High Cases In Local Area	183,977	3,825	2.1%
	Lives With Someone Who Is Shielding	28,107	570	2%
	Travel Within UK	102,533	518	0.5%
	Universal Offer	1,274,831	30,970	2.4%
Workplace Testing	Private Sector	16,048	45	0.3%
	Public Sector	59,532	154	0.3%
	Quarantine Hotel Staff/Security Personnel	3,682	44	1.2%
	Third Sector	553	2	0.4%
	UK Gov Other	1,925,910	23,234	1.2%
Other	Other	468,686	3,981	0.8%
Total	Total	13,066,808	85,524	0.7%

Data extracted: 25 October 2021

Please note some of the data is suppressed due to disclosure methodology being applied to protect staff confidentiality.

Table 18: Number of LFD¹⁰ tests, up until 24 October 2021, by NHS Board of Residence (based on the postcode provided by the individual taking the test)

Board of Residence	Number of tests	Number of positive tests	% LFD positive
NHS Ayrshire & Arran	966,101	6,096	0.6%
NHS Borders	272,959	1,409	0.5%
NHS Dumfries & Galloway	374,406	1,956	0.5%
NHS Fife	805,575	6,352	0.8%
NHS Forth Valley	723,058	4,683	0.6%
NHS Grampian	1,630,710	7,570	0.5%
NHS Greater Glasgow & Clyde	2,399,121	19,748	0.8%
NHS Highland	855,571	3,788	0.4%
NHS Lanarkshire	1,370,420	11,007	0.8%
NHS Lothian	2,077,806	14,895	0.7%
NHS Orkney	59,761	183	0.3%
NHS Shetland	81,020	249	0.3%
NHS Tayside	1,069,091	6,086	0.6%
NHS Western Isles	94,221	150	0.2%
Unknown	286,988	1,352	0.5%
Total	13,066,808	85,524	0.7%

Data extracted: 25 October 2021

10 For additional details on Lateral Flow Device Tests, please see - [Appendix 8 – Lateral Flow Device Testing](#).

Targeted Community Testing

The Community Testing Programme is ongoing across Scotland. This programme is a mixture of LFD and PCR tests. This is targeted at areas where there are concerns around community transmission levels, and offer testing to any member of that community. Further information is available within the [interactive dashboard](#).

Table 19: Targeted Community Testing (18 January 2021 to 24 October 2021)

Symptoms	Week Ending 24 October 2021			Cumulative		
	Number of Tests	Number Positive	% positive	Number of Tests	Number Positive	% positive
Asymptomatic	10,701	1,002	9.4	450,022	34,641	7.7
Symptomatic ¹¹	10,618	2,247	21.2	343,043	71,140	20.7
All¹²	22,225	3,498	15.7	816,720	111,049	13.6

¹¹ Symptomatic - the individual has selected on the booking website they have symptoms.

¹² In week ending 24 October 2021, 906 tests were of unknown symptomatic status of which 249 were positive.

Table 20: Targeted Community Testing by Health Board (Week to 17 October 2021)

Health Board (of site)	Number of Tests	Number of Positive Test Results	% positive
NHS Ayrshire and Arran	1,407	245	17.4
NHS Borders	509	*	12.8
NHS Dumfries and Galloway	782	123	15.7
NHS Fife	819	136	16.6
NHS Forth Valley	2,252	316	14.0
NHS Grampian	801	110	13.7
NHS Greater Glasgow and Clyde	3,019	440	14.6
NHS Highland	33	*	6.1
NHS Lanarkshire	7,474	1,191	15.9
NHS Lothian	3,836	610	15.9
NHS Tayside	1,287	260	20.2
Unknown Health Board	6	0	0
Total	22,225	3,498	15.7

Please note some of the data is suppressed due to disclosure methodology being applied to protect staff confidentiality

Analysis of COVID-19 outcomes by Ethnic Group

Public Health Scotland first published an analysis of the variation in outcomes by ethnic group among those tested positive for COVID-19 on [20 May 2020](#), followed by releases on [15 July](#), [12 August](#), [2 December](#) and [3 March 2021](#). These reports focussed on the risk of a more serious outcome due to COVID-19, requiring hospitalisation, admission to a critical care unit care or dying. In addition, for the first time, this release also includes analysis of COVID-19 testing data by ethnic group. This new analysis provides context to improve understanding of whether the more serious outcomes relate to differences in infection rates across different ethnic groups.

This release provides updated information on hospitalisation and deaths for those testing positive for COVID-19 up to 30 September 2021. It presents rates, standardised by age and sex across ethnic groups, and comparisons using the ratio of these rates. Age standardisation is necessary when comparing rates among ethnic groups since many ethnic minority groups have a younger age profile compared to White groups and age is a strong predictor of the risk of serious outcomes following COVID-19 infection within the general population. The rates presented are based on the ethnic group populations from the 2011 census.

Ethnic group categories for the hospitalisations and deaths data are based on the 2011 Scottish census ethnicity categories which are used as the current standard groupings across NHS Scotland. Results are shown by disaggregated categories where possible, including in the Excel data tables that accompany this report, but some grouping of categories has been necessary due to small numbers and to allow more precise statistical comparisons of outcomes.

This release includes analysis of 34,199 COVID-19 related admissions and deaths where ethnic group was available. This is an increase of over 12,000 since the previous release reflecting the continued impact of the pandemic. Ethnicity is now available for 94% of all COVID-19 related hospitalisations and deaths, an increase from 87% in the previous release as a result of further use of health records to enhance availability of ethnicity where it is missing on the source data.

Figure 16 shows standardised rates of COVID-19 related admissions and deaths by ethnic group populations. The width of the confidence intervals indicates the statistical precision of the estimate; rates for groups with smaller populations and case numbers have wider confidence intervals. Similar to previous releases, these latest data show increased risk of hospitalisation or deaths in several ethnic minority groups relative to the White Scottish group.

Figure 16: Rates of COVID-19 hospitalisation or death by ethnic group as at 30 September 2021

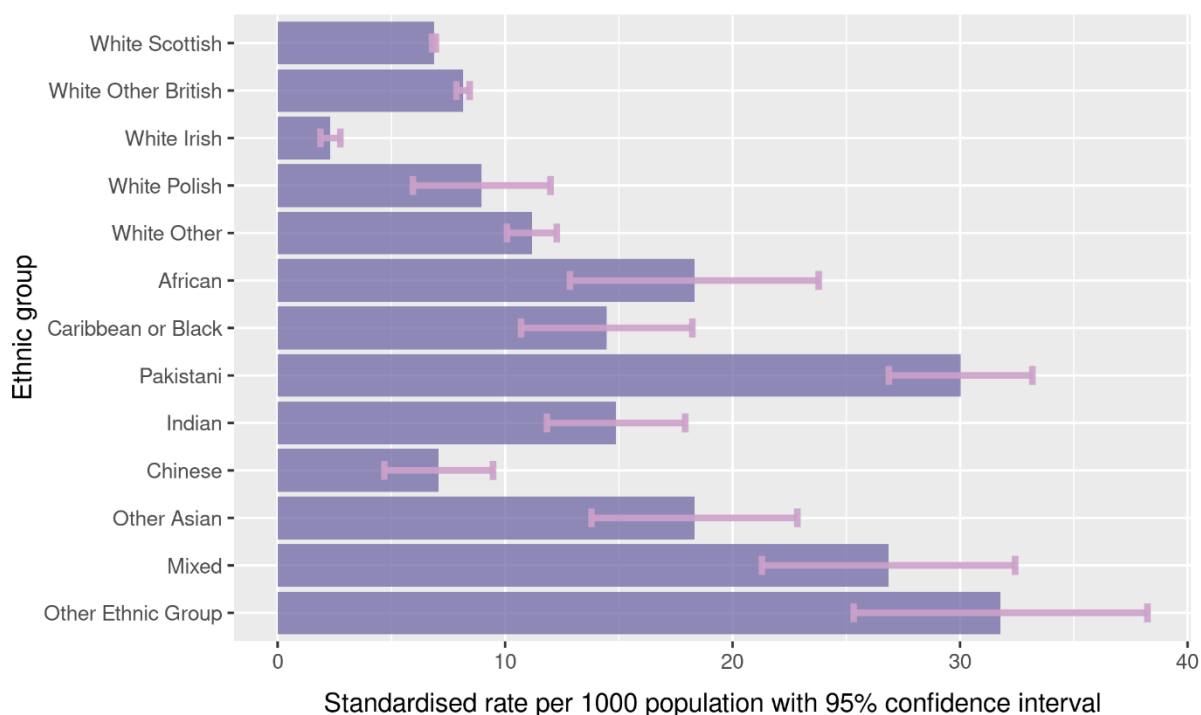


Figure 16 shows that compared to White Scottish, rates of hospitalisation or death were estimated to be around 4-fold higher in Pakistani and Mixed groups, and around 2-fold higher in Indian, Other Asian, Caribbean or Black, and African groups. Higher rates were also observed in White Other. Lower rates were observed in patients recorded as White Irish.

Some of these results could be due to ethnicity recording practices as described in the 'Further Information on Methods' section later in this document.

Figure 17 shows the age-standardised rates in wave 1 of the pandemic (prior to 1 August 2020), wave 2 (1 August 2020 to April 2021) and wave 3 (1 May 2021 onwards). Ethnic groups have been aggregated in a similar way to previous releases to take account of small numbers.

Higher rates of hospitalisation or death were evident in many of the ethnic groups compared to the White group. While all rates increased in wave 2 due to an overall higher number of admissions and deaths during this period, the increase appears to have been proportionally greater for South Asian groups. In wave 3, the number of admissions and deaths have reduced, but compared to wave 1 the risk remained greater for those in the South Asian and Black/Caribbean/African ethnic groups.

Figure 17: Rates of COVID-19 hospitalisation or death by ethnic group and pandemic wave

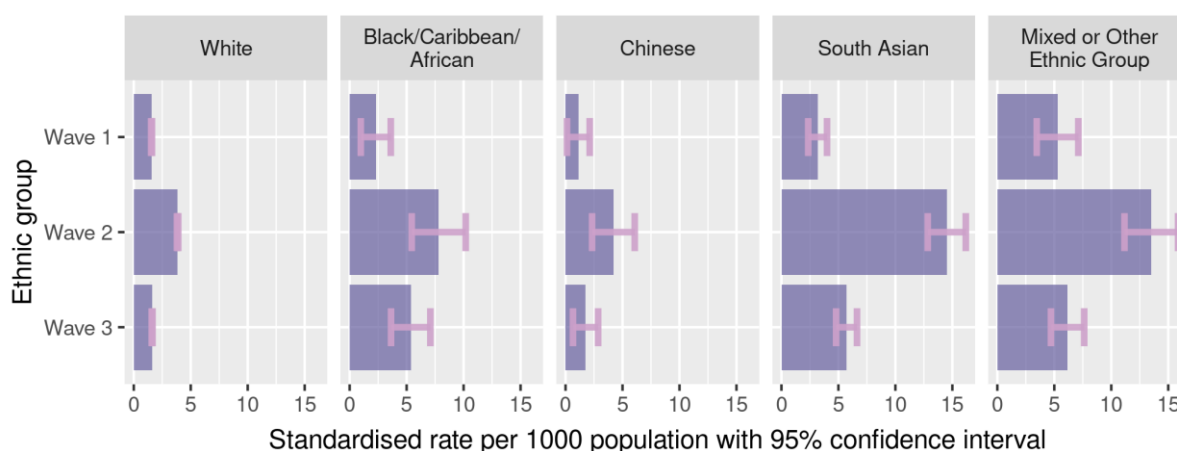


Table 21 summarise how rates by ethnic group have changed in waves 1,2 and 3 in comparison to the White group. A rate ratio greater than 1 indicates a higher rate, and a value less than 1 a lower rate, relative to the White group.

Higher rates of admission or death relative to the White group that were seen in some ethnic groups in wave 1 have persisted in waves 2 and 3:

- Among South Asians there is evidence that rates were higher in waves 2 and 3 than in wave 1, relative to the White group. In wave 1 of the pandemic, the rate of hospitalisation or death for people in the South Asian (Pakistani, Indian and Bangladeshi) group relative to that of the White group was 2.03 (95% CI 1.57 - 2.64). The rate ratio for this group was higher in the second wave of the pandemic at 3.78 (95% CI 3.36 - 4.24); and in wave 3 at 3.55 (95% CI 3.02 - 4.17).
- For the Black/Caribbean/African group there is evidence that rates were higher in wave 3, relative to the White group, than in wave 1 and wave 2. In wave 1 of the pandemic, the rate of hospitalisation or death for people in this group relative to that of the White group was 1.47 (95% CI 0.83 - 2.61). The rate ratio for this group was higher in the second wave of the pandemic at 2.03 (95% CI 1.50 - 2.74); and in wave 3 was higher again at 3.33 (95% CI 2.41 – 4.59).

Table 21: COVID-19 hospitalisation or death outcome by ethnic group and pandemic wave

	Wave 1		Wave 2		Wave 3	
	Rate Ratio (95% confidence interval)		Rate Ratio (95% confidence interval)		Rate Ratio (95% confidence interval)	
White	1.00		1.00		1.00	
Black/Caribbean/African	1.47	(0.83 - 2.61)	2.03	(1.50 - 2.75)	3.33	(2.41 - 4.59)
Chinese	0.72	(0.30 - 1.75)	1.09	(0.70 - 1.71)	1.09	(0.58 - 2.04)
South Asian	2.03	(1.57 - 2.64)	3.78	(3.36 - 4.24)	3.55	(3.02 - 4.17)
Mixed or Other Ethnic Group	3.39	(2.39 - 4.79)	3.51	(2.95 - 4.19)	3.83	(3.02 - 4.85)

The [accompanying Excel](#) files includes analysis of hospitalisation or death at a more disaggregated level of ethnic group. These show that among the South Asian groups it is the Pakistani group in particular which have the highest rate ratios.

Hospitalisations and deaths from COVID-19 have been much reduced due to the ongoing vaccination programme and this will have impacted on the results for Waves 2 and 3 reported here.

Reports on COVID-19 vaccination uptake by ethnic group are published by PHS, most recently on [6 October](#), showing lower uptake in all ethnic minority groups in comparison to the White group. This report includes analysis of hospital admissions and deaths by vaccination status; both rates are lower in vaccinated individuals. Ethnic groups which have seen an increase in their risk of COVID-19 related hospitalisation or death relative to the White Scottish group in wave 3 compared to wave 1 are among those groups with lowest vaccination uptake.

COVID-19 Testing

Information on COVID-19 tests are collected through NHS Scotland laboratories and UK Government Regional Testing Centres, including Drive Through Centres, Mobile Units and Home testing kits. The range of sources, volume of tests carried out, and policy changes over time complicate the analysis and interpretation of these data. For example, ethnic group recording can vary between the testing data sources. Data collected for tests carried out via the UK Government run testing programme are based on the ethnic groups used in the England and Wales census which do not include White Polish and White Scottish categories. Therefore, it has not been possible to provide analysis of COVID-19 testing for these groups. A full breakdown of the ethnic groups recorded by the different testing and hospital systems and how they have been collated are provided in the accompanying excel data files. Aggregated data at a higher level of grouping has been provided for both the testing and hospitalisation and deaths analysis to aid comparisons across the different analyses.

Figure 18: Rates of COVID-19 positive cases by ethnic group as at 30 September 2021



Figure 18 shows that compared to White British, most ethnic groups had higher rates of positive cases per population. Rates of positive cases were estimated to be more than 2-fold higher in African, Pakistani, Bangladeshi, Mixed and Other Ethnic groups, which is consistent with the higher rates of hospitalisation and death observed for these groups. Lower rates were observed in patients recorded as White Irish and Chinese, consistent with the lower rates of hospitalisation and death seen in these populations compared to White British.

Since the rates of positive cases can be affected by how often testing is carried out, [accompanying Excel](#) files also show comparisons of test rates by ethnic group. These show that, among those who have ever been tested, Pakistani and Bangladeshi groups had the highest percentage of those testing positive and the Chinese group the lowest.

The number of COVID-19 tests carried out over the course of the pandemic has been influenced by factors including accessibility of testing and changes to testing policy. This needs to be considered when interpreting these data, which are provided to give context to the analysis of hospitalisations and deaths.

Table 22: COVID-19 positive tests by ethnic group and pandemic wave

	Wave 1		Wave 2		Wave 3	
	Rate Ratio (95% confidence interval)		Rate Ratio (95% confidence interval)		Rate Ratio (95% confidence interval)	
White	1.00		1.00		1.00	
Black/Caribbean/African	2.96	(2.36 - 3.73)	2.03	(1.90 - 2.16)	1.51	(1.44 - 1.59)
Chinese	0.52	(0.31 - 0.87)	0.59	(0.52 - 0.67)	0.53	(0.49 - 0.58)
South Asian	2.40	(2.10 - 2.75)	3.29	(3.20 - 3.38)	1.62	(1.58 - 1.66)
Mixed or Other Ethnic Group	4.49	(3.82 - 5.29)	2.55	(2.44 - 2.66)	1.94	(1.88 - 2.00)

Among South Asians the pattern of change to risk of hospitalisation or death, relative to the White ethnic group are reflected in analysis of those testing positive by pandemic wave:

- The rate of testing positive for COVID-19 among South Asians relative to that of the White group was 2.40 (95% CI 2.10 - 2.75) in wave 1 of the pandemic, increased to 3.29 (95% CI 3.20 - 3.38) in wave 2 and reduced to 1.62 (95% CI 1.58 - 1.66) in wave 3.

For people in the Black / Caribbean / African group the increased risks of hospitalisation or death across the pandemic waves are not reflected in the relative risks of testing positive:

- For people in the Black / Caribbean / African group the rate of testing positive for COVID-19 relative to that of the White group was 2.96 (95% CI 2.36 - 3.73) in wave 1 of the pandemic, reducing to 1.51 (95% CI 1.44 - 1.59) in wave 3.

See the [supplementary Excel](#) tables and interactive dashboards accompanying this report for additional information, including:

- Details of the numbers of cases, rates and rate ratios by ethnic group used in the figures and tables presented here can be found in the supplementary [Excel tables accompanying](#) this report.
Patterns of risk were broadly similar when restricting analysis to COVID-19 patients with the most severe outcomes, i.e. admission to a critical care unit (ICU or HDU) or death (as shown in the supplementary tables).
- Further breakdown of hospitalisation and death by demographic characteristic (please note that aggregation of ethnic groups has been required when presenting these analyses to improve precision of statistical comparisons).
In general males, older people and people living in more deprived areas have a higher risk of a hospitalisation and death due to COVID-19. People living in more deprived areas are at higher risk of testing positive for COVID-19.
- Trends in the number and percentage of monthly hospital admissions by ethnic group are shown in the interactive dashboard that accompanies this report.

Further Information on Methods

- For the hospitalisation deaths analyses, ethnic group categories are based on the 2011 Scottish census ethnicity categories which are used as a standard across the NHS in Scotland.
- For the testing analyses, ethnic group categories are based on the ethnic groups used in the England and Wales census.
- There are a small number of cases with recorded ethnicities which are not specific enough to fit into the disaggregated categories. For example, 'White' with no subgroup recorded. The sum of those in the disaggregated White categories does not add up to the aggregated 'White' group.
- Ethnicity is taken from the source testing or hospitalisation record, further enhanced using a reference file sourced from various health datasets: outpatient (SMR00) and inpatient or day case (SMR01) hospital records from March 2010, Rapid Preliminary hospital Inpatient Data (RAPID) records from February 2020, COVID Case Management System (CMS) from June 2020, Electronic Communication of Surveillance in Scotland (ECOSS) from February 2020 or from the Urgent Care Datamart (A&E, SMR04) from January 2011. The use of this reference file has contributed to the increased availability of ethnicity for this analysis, from 87% of all COVID-19 related hospitalisations and deaths in the previous release to 94% in this release.
- Ever tested and ever tested positive are based on PCR tests processed through NHS Scotland laboratories and UK Government Regional Testing Centre laboratories. If an individual is tested multiple times the specimen that was taken first is counted to avoid double counting of individuals. Does not include Lateral Flow Test (LFT) results. People who have a positive LFT should have a PCR to confirm.
- Data on deaths includes, in addition to those who have died within 28 days of a positive test, those who have had COVID-19 mentioned on the death certificate to reduce any bias due to testing.
- Rates have been directly standardised by age and sex using the European Standard Population.
- The rates presented are based on the most recently available population by ethnic group reported in the last census (2011). A limitation to this approach is the impact of 10 years of population change on the population, which is likely to have affected ethnic groups differently.
- The absolute numbers of cases in some ethnic minority groups are low, particularly for more severe disease outcomes. This limits the ability to make reliable statistical comparisons between ethnic groups and has necessitated the grouping of some ethnic groups. The group labelled 'Mixed or Other Ethnic Group' for example is shown for completeness but consists of a variety of smaller ethnic groups and is therefore difficult to interpret. Previous work however suggests that recording of some ethnic groups on hospital records may not be consistent with how these groups are recorded on the census which may have resulted in a degree of under- or over-recording due to numerator-denominator bias (Knox et al, 2019). This could in

part explain the higher rates seen among the Other Ethnic group and relatively low rates among the White Irish.

Conclusions

The analysis of hospitalisations and more severe outcomes due to COVID-19 has been updated to take account of the continued impact of the pandemic and a third wave of infections through the summer. These results point to continued evidence of increased risks of hospitalisation or death due to COVID-19 in most ethnic minority groups relative to the White group.

While rates of hospitalisation or death have reduced since the second wave across the population, those of South Asian and Black, Caribbean or African ethnicity appear to continue to be at proportionally greater risk compared to the White group.

New analyses of those being tested for COVID-19 show that most ethnic minority groups have experienced higher rates of infection, broadly reflecting these more serious outcomes.

COVID-19 Vaccine

On 08 December 2020, a COVID-19 vaccine developed by Pfizer BioNTech was first used in the UK as part of national immunisation programmes. The AstraZeneca (Vaxzevria) vaccine was also [approved for use](#) in the national programme, and rollout of this vaccine began on 04 January 2021. Moderna (Spikevax) vaccine was approved for use on 08 January 2021 and rollout of this vaccine began on 07 April 2021. These vaccines have met strict standards of safety, quality and effectiveness set out by the independent Medicines and Healthcare Products Regulatory Agency (MHRA).

For most people, a 2-dose schedule is advised for the vaccines. For the Pfizer BioNTech (Comirnaty) vaccine, the second vaccine dose can be offered between 3 to 12 weeks after the first dose. For the AstraZeneca (Vaxzevria) and Moderna (Spikevax) vaccine, the second dose can be offered 4 to 12 weeks after the first dose.

Information on uptake across the vaccine programme is available on a daily basis via the PHS [COVID-19 Daily Dashboard](#), 7 days a week at 2pm. This provides a cumulative picture of the position nationally and locally.

The dashboard provides total uptake nationally with breakdowns by [Joint Committee on Vaccination and Immunisation \(JCVI\)](#) age based cohorts and non age based cohorts for priority groups 1-9.

The vaccination content of this weekly publication is kept under continual review and specific editions have contained more in-depth analyses of uptake by particular groups or characteristics, including uptake by ethnicity and deprivation category, for teachers, for prisoners and for pregnant women. We also include weekly information on vaccine effectiveness and COVID-19 cases, acute hospitalisations, and deaths by vaccine status.

COVID-19 cases, hospitalisations, and deaths by vaccine status

Vaccine Surveillance

Public Health Scotland has a [COVID-19 vaccine surveillance strategy](#) to monitor the effectiveness, safety and impact of all approved COVID-19 vaccines in Scotland. The key measure of the success of the vaccination programme in preventing infection, hospitalisations and deaths is vaccine effectiveness.

The summary data presented in this chapter record the total number of COVID-19 cases, COVID-19 related acute hospital admissions and confirmed COVID-19 deaths by their vaccination status and does not assess the effectiveness of the vaccine or whether the vaccine has worked in these individuals. The latter requires a careful examination of each case to explore possible reasons, which could be related to the test, virus or the person (e.g. pre-existing conditions).

Summary of key results

- Following a peak in August 2021, COVID-19 cases have decreased, however have remained fairly stable over the last four weeks, from 25 September to 22 October 2021.
- In the last week from 16 October to 22 October 2021, the seven-day rolling average of COVID-19 related acute hospital admissions increased from 75.57 to 83.14 admissions per day.
- In the last four weeks from 25 September to 22 October 2021, 25.0% of COVID-19 related acute hospital admissions were in unvaccinated individuals. This is within the context of 92.2% of adults aged 18+ having had at least one dose of vaccine and vaccinated figures including the elderly and vulnerable groups.
- From 29 December 2020 to 20 October 2021, 954 individuals tested positive for SARS-CoV-2 by PCR more than 14 days after receiving their second dose of COVID-19 vaccine and subsequently died with COVID-19 recorded as a primary or contributing cause of death. This equates to 0.025% of those who have received two doses of COVID-19 vaccines.
- Age-standardised mortality rates for COVID-19 deaths are lower for people who have received two doses of a COVID-19 vaccine compared to individuals that are unvaccinated or have received one dose of a COVID-19 vaccine.

Overall results of COVID-19 cases and hospitalisations, and deaths by vaccination status

COVID-19 cases by vaccination status

[Recent studies](#) have been released by the UK Health Security Agency, formerly Public Health England (PHE), looking into the effect of vaccination against mild and severe COVID-19. [UKHSA analyses](#) show vaccine effectiveness against symptomatic disease with the Delta variant to be approximately 65 to 70% with AstraZeneca (Vaxzevria) and 80 to 95% with the Pfizer-BioNTech (Comirnaty) and Moderna (Spikevax) vaccines.

[A recent English study](#) has observed in the weeks following vaccination, that effectiveness is waning against infection for all vaccine types, between 45 to 50% effectiveness with AstraZeneca (Vaxzevria) and 68 to 71% effectiveness with Pfizer-BioNTech (Comirnaty). However, vaccine effectiveness remains high against hospitalisation and death. This study is not yet peer-reviewed.

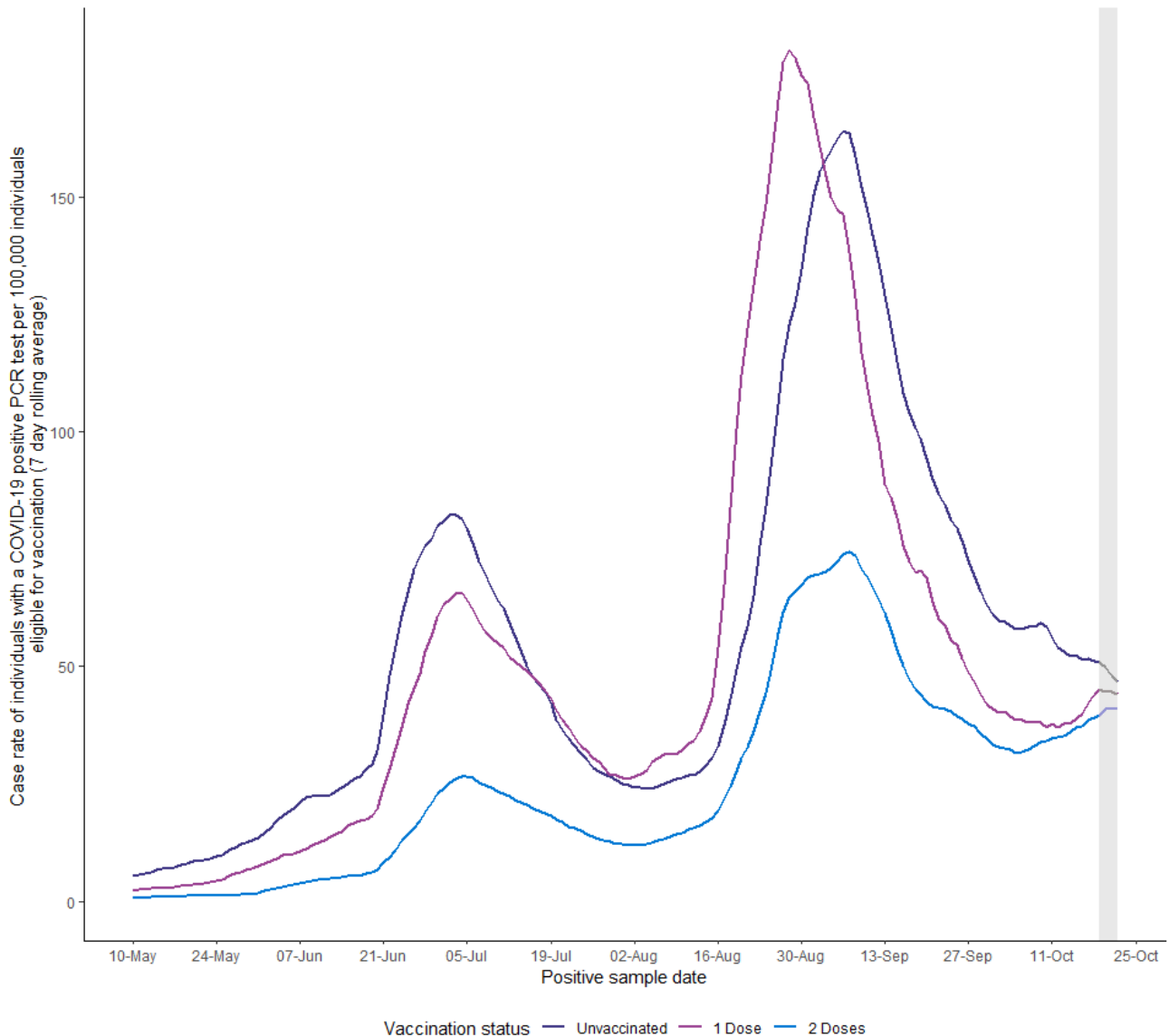
Table 23: Number of COVID-19 positive cases individuals by week and vaccination status, 25 September 2021 to 22 October 2021

Vaccination Status	Unvaccinated			1 Dose			2 Doses		
Week	No. of Cases	Total pop. unvaccinated	% Cases	No. of Cases	Total pop. with 1 dose	% Cases	No. of Cases	Total pop. with 2 doses	% Cases
25 September - 01 October 2021	7,781	1,813,584	0.43%	928	320,098	0.29%	8,795	3,783,157	0.23%
02 October - 08 October 2021	7,400	1,799,605	0.41%	848	313,224	0.27%	8,820	3,804,010	0.23%
09 October - 15 October 2021	6,574	1,778,887	0.37%	853	315,616	0.27%	9,867	3,822,336	0.26%
16 October - 22 October 2021	5,756	1,750,933	0.33%	992	327,944	0.30%	10,992	3,837,962	0.29%

Vaccination status is determined as at the date of PCR specimen date according to the definitions described in Appendix 9. The data displayed within the greyed-out section (3 days) are considered preliminary and are subject to change as more data is updated.

In the last week 16 October to 22 October 2021, the case rate in unvaccinated populations was 329 COVID-19 cases per 100,000 individuals, compared to 286 COVID-19 cases per 100,000 individuals vaccinated with two doses.

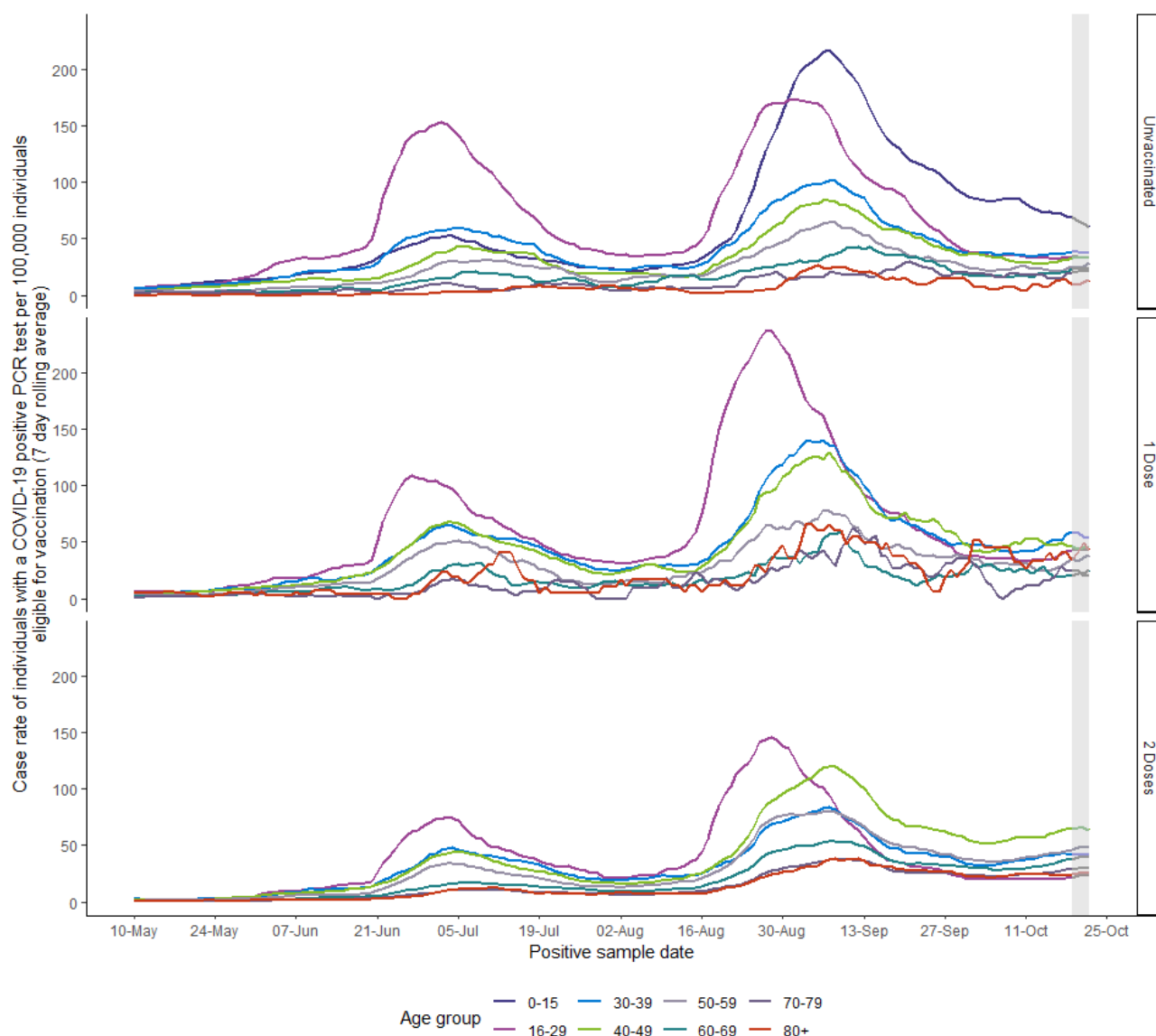
Figure 19: COVID-19 case rate per 100,000 individuals eligible for vaccination by vaccination status, seven-day rolling average from 10 May 2021 to 22 October 2021



Vaccination status is determined as at the date of PCR specimen date according to the definitions described in Appendix 9. The data displayed within the greyed-out section (3 days) are considered preliminary and are subject to change as more data is updated.

In the last four weeks, from 25 September to 22 October 2021, COVID-19 cases have remained fairly stable following a decrease from a peak in in August 2021. There are lower rates of cases in vaccinated individuals compared to unvaccinated individuals.

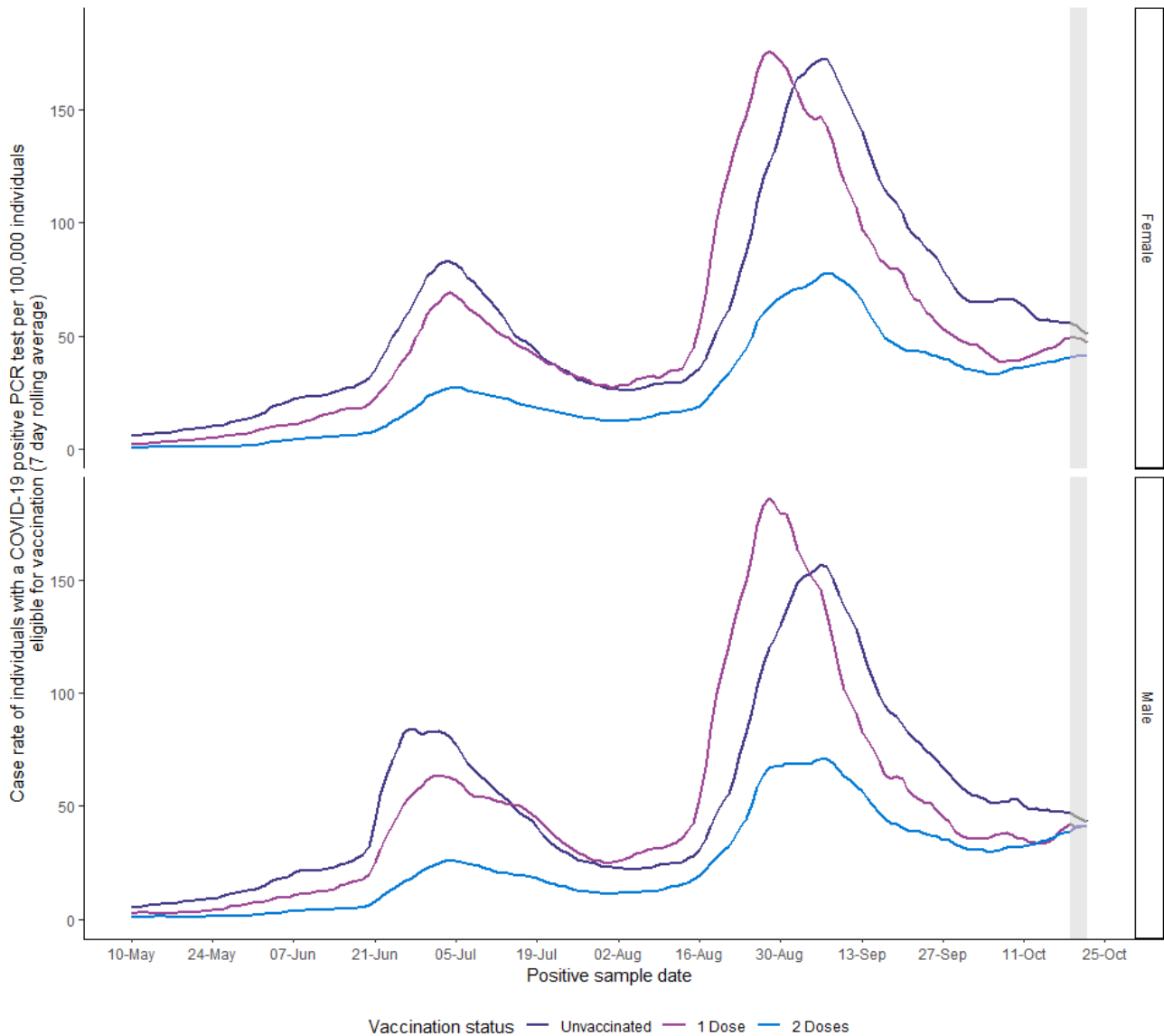
Figure 20: COVID-19 case rate per 100,000 individuals eligible for vaccination by vaccination status and age group, seven-day rolling average from 10 May 2021 to 22 October 2021



Vaccination status is determined as at the date of PCR specimen date according to the definitions described in Appendix 9. Patient age is determined as their age the date of admission. The data displayed within the greyed-out section (3 days) are considered preliminary and are subject to change as more data is updated.

Since 10 May 2021, a higher proportion of COVID-19 positive PCR cases have been in unvaccinated individuals under the age of 30 years.

Figure 21: COVID-19 case rate per 100,000 individuals eligible for vaccination by sex and vaccine status, seven-day rolling average from 10 May 2021 to 22 October 2021



Vaccination status is determined as at the date of PCR specimen date according to the definitions described in Appendix 9. The data displayed within the greyed-out section (3 days) are considered preliminary and are subject to change as more data is updated.

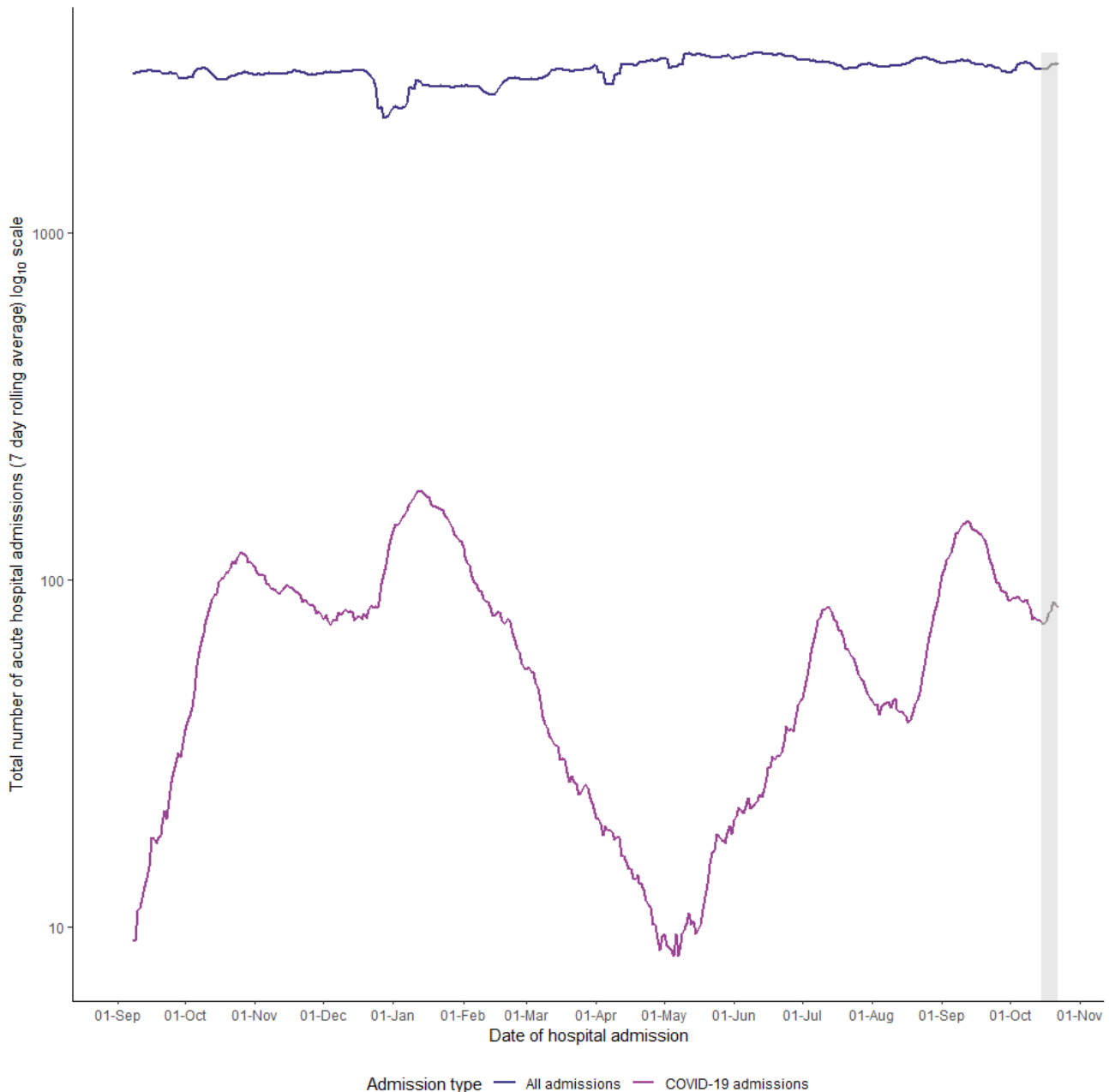
COVID-19 case rates are similar between females and males.

COVID-19 related acute hospital admissions by vaccine status

[A number of studies](#) have estimated vaccine effectiveness against hospitalisation and have found high levels of protection against hospitalisation with all vaccines against the Alpha variant. [A recent paper](#) observed effectiveness against hospitalisation of over 90% with the Delta variant with all three COVID-19 vaccines including AstraZeneca (Vaxzevria), Pfizer-BioNTech (Comirnaty), and Moderna (Spikevax). In most groups there is relatively limited waning of protection against hospitalisation over a period of at least five months after the second dose.

From 01 September 2020 to 22 October 2021, there were a total of 1,228,061 acute hospital admissions for any cause, of which 28,149 were associated with a COVID-19 PCR positive test 14 days prior, on admission, the day after admission or during their stay. Using the 90-day exclusion criteria between positive COVID-19 PCR tests associated with an acute hospital admission, 28,034 individuals were admitted to hospital, of which 89 were readmitted more than 90 days after their first admission.

Figure 22: Seven-day rolling average on a \log_{10} scale: acute hospital admissions where the individual had a COVID-19 positive PCR test 14 days prior, on admission or during their stay in hospital, compared to all acute hospital admissions, 01 September 2020 to 22 October 2021



Data displayed are on a \log_{10} scale. The data displayed within the greyed-out section (1 week) are considered preliminary and are subject to change as more data is updated.

In the last six weeks from 11 September 2021 to 22 October 2021, the number of COVID-19 related hospital admissions have increased, surpassed the peak that was seen in early July, but has since decreased. However, the number of COVID-19 related hospital admissions are small relative to all acute hospitalisations.

Table 24: Number of acute hospital admissions where individual had a COVID-19 positive PCR test 14 days prior, on admission or during their stay in hospital, by week and vaccination status, 25 September 2021 to 22 October 2021

Vaccination Status	Unvaccinated			1 Dose			2 Doses		
Week	No. of Admissions	Total pop. unvaccinated	% Admissions	No. of Admissions	Total pop. with 1 dose	% Admissions	No. of Admissions	Total pop. with 2 doses	% Admissions
60 years and over									
25 September - 01 October 2021	39	76,397	0.051%	3	14,579	0.021%	289	1,391,557	0.021%
02 October - 08 October 2021	29	76,210	0.038%	7	14,252	0.049%	305	1,392,071	0.022%
09 October - 15 October 2021	29	76,037	0.038%	4	13,900	0.029%	280	1,392,596	0.020%
16 October - 22 October 2021	34	75,813	0.045%	3	13,678	0.022%	320	1,393,042	0.023%
30 to 59 year olds									
25 September - 01 October 2021	78	479,577	0.016%	16	120,517	0.013%	120	1,870,528	0.006%
02 October - 08 October 2021	71	476,308	0.015%	8	116,124	0.007%	116	1,878,190	0.006%
09 October - 15 October 2021	44	473,547	0.009%	9	112,319	0.008%	106	1,884,756	0.006%
16 October - 22 October 2021	51	470,916	0.011%	11	109,660	0.010%	103	1,890,046	0.005%
16 to 29 year olds									

Vaccination Status	Unvaccinated			1 Dose			2 Doses		
Week	No. of Admissions	Total pop. unvaccinated	% Admissions	No. of Admissions	Total pop. with 1 dose	% Admissions	No. of Admissions	Total pop. with 2 doses	% Admissions
25 September - 01 October 2021	22	350,301	0.006%	5	175,577	0.003%	6	521,023	0.001%
02 October - 08 October 2021	27	340,570	0.008%	5	172,640	0.003%	10	533,691	0.002%
09 October - 15 October 2021	16	332,561	0.005%	3	169,439	0.002%	7	544,901	0.001%
16 October - 22 October 2021	25	327,833	0.008%	4	164,474	0.002%	10	554,594	0.002%
Under 16 year olds									
25 September - 01 October 2021	31	907,309	0.003%	1	9,425	0.011%	0	49	0%
02 October - 08 October 2021	38	906,517	0.004%	0	10,208	0%	0	58	0%
09 October - 15 October 2021	31	896,742	0.003%	0	19,958	0%	0	83	0%
16 October - 22 October 2021	19	876,371	0.002%	2	40,132	0.005%	0	280	0%

Vaccination status is determined as at the date of positive PCR test according to the definitions described in Appendix 9. The data displayed within the greyed-out section (1 week) are considered preliminary and are subject to change as more data is updated.

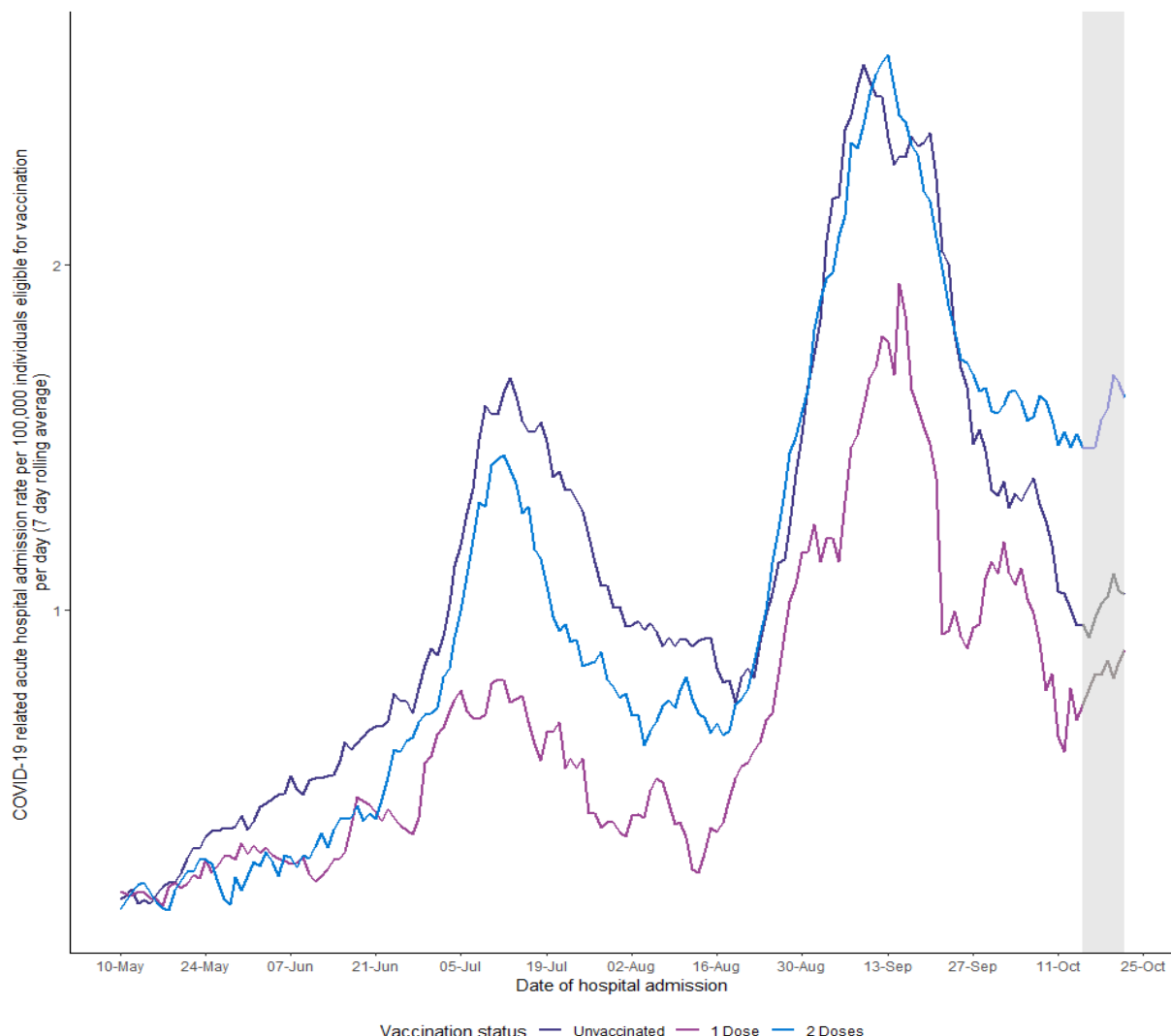
In all age groups, the rate of admissions per 100,000 were higher in unvaccinated individuals compared to vaccinated individuals.

For example, in the last week (16 October to 22 October 2021) for individuals ages 60 and over, 23 out of every 100,000 fully vaccinated individuals were admitted to hospital and had a COVID-19 positive PCR test 14 days prior, on admission or during their

stay in hospital, compared to 45 out of every 100,000 unvaccinated individuals in that age group. For 30-59 year olds, there were five admissions for every 100,000 fully vaccinated individuals compared to 11 per 100,000 unvaccinated individuals. Therefore, last week, individuals were 2 to 4.2 times more likely to be in hospital with COVID-19 if they were unvaccinated compared to fully vaccinated (depending on age).

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. [This section](#) of this report provides an updated analysis of hospital admissions 'because of' COVID-19.

Figure 23: Rate of acute hospital admissions where individual had a COVID-19 positive PCR test 14 days prior, on admission or during their stay in hospital, per 100,000 individuals eligible for COVID-19 vaccination by vaccination status, seven-day rolling average from 10 May 2021 to 22 October 2021

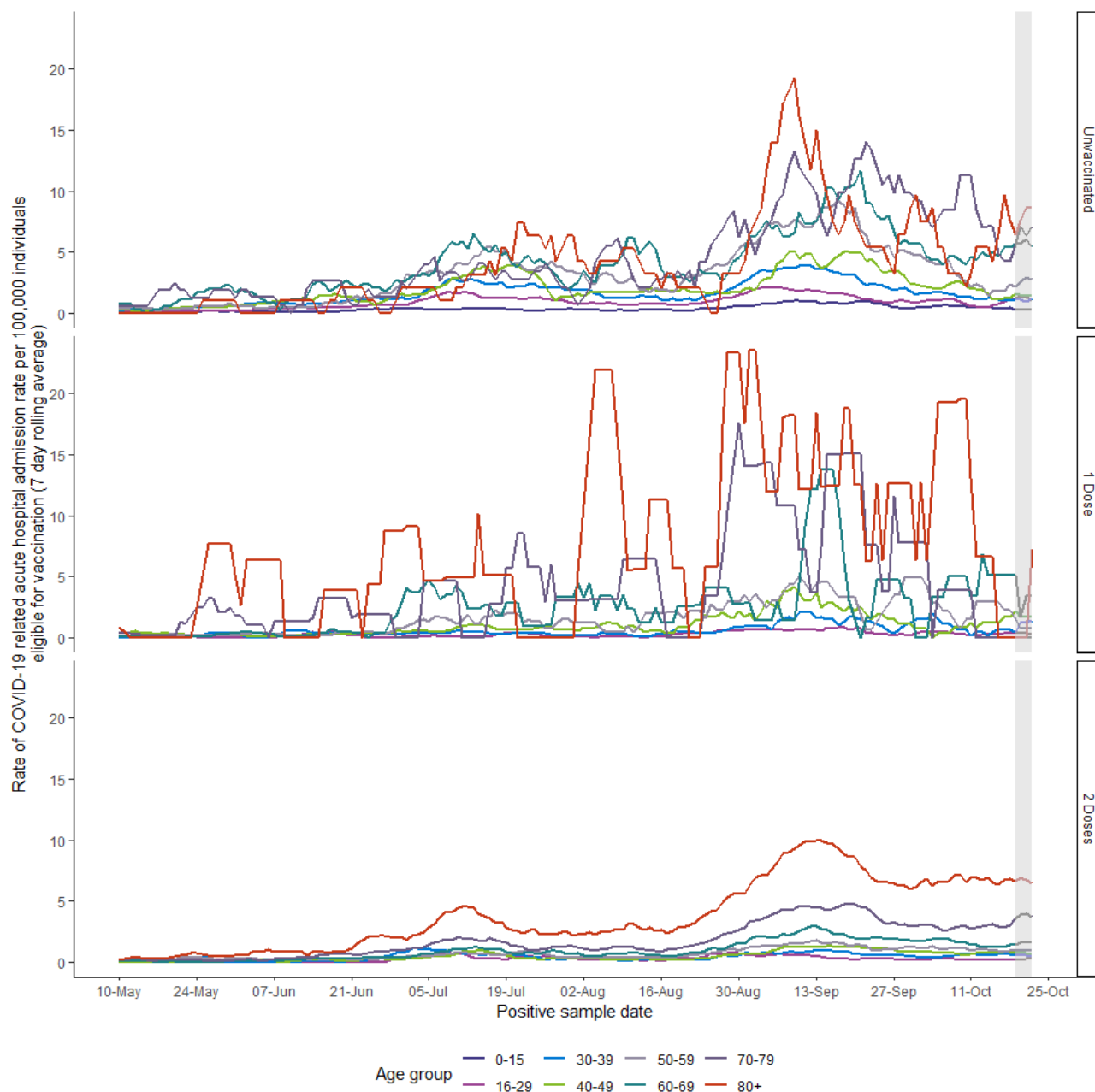


Vaccination status is determined as at the date of positive PCR test according to the definitions described in Appendix 9. The data displayed within the greyed-out section (1 week) are considered preliminary and are subject to change as more data is updated.

In the last four weeks from 25 September 2021 to 22 October 2021, 25.0% of COVID-19 related acute hospital admissions were in unvaccinated individuals. This is within the context of 92.2% of adults aged 18+ having had at least one dose of vaccine and vaccinated figures including the elderly and vulnerable groups.

Please note the acute hospital admission rates seen in this figure do not account for pre-existing risk of hospital admission due to age and comorbidities.

Figure 24: Seven-day rolling average COVID-19 related acute hospital admissions by vaccination status and by age group, 10 May 2021 to 22 October 2021



Vaccination status is determined as at the date of positive PCR test according to the definitions described in Appendix 9. Patient age is determined as their age the date of admission. The data displayed within the greyed-out section (1 week) are considered preliminary and are subject to change as more data is updated.

Overall, individuals in the oldest age groups were most likely to be hospitalised.

In groups where a very large proportion of individuals have been vaccinated (such as individuals over age 80), any small changes in COVID-19 related acute hospital admissions will result in a larger change shown in the graph, for example in the over 80 partially vaccinated group. These changes tend to be more 'step like' and less smooth.

Confirmed COVID-19 deaths by vaccination status

COVID-19 vaccines are estimated to significantly reduce the risk of mortality for COVID-19, however a small number of COVID-19 deaths are still expected in vaccinated people, especially in vulnerable individuals where the vaccine or the immune response may not have been effective. Evidence has shown that vaccination is highly effective in protecting against death from coronavirus (COVID-19).

[Data published by UKHSA](#) have shown high levels of protection (over 90%) against mortality with all three COVID-19 vaccines including AstraZeneca (Vaxzevria), Pfizer-BioNTech (Comirnaty), and Moderna (Spikevax), and against both the Alpha and Delta variants for at least five months post-second dose of vaccine. [Research from Public Health Scotland, University of Edinburgh and University of Strathclyde](#), have shown two vaccine doses, whether the AstraZeneca (Vaxzevria) or the Pfizer-BioNTech (Comirnaty) vaccine, are over 90 per cent effective at preventing deaths from the Delta variant of COVID-19. [Modelling analysis](#) from UKHSA estimates that 127,500 deaths have been prevented in England as a result of the COVID-19 vaccination programme, up to 24 September 2021.

From 29 December 2020 (21 days after the start of the vaccination programme in Scotland to account for protection to develop after the first dose) to 15 October 2021, there have been 4,707 confirmed COVID-19 related deaths with a positive PCR result and where COVID-19 was recorded as an underlying or contributory cause on the death certificate.

Of these, 73.3% (n = 3,449) were in unvaccinated individuals, 6.5% (n = 304) had received one dose of COVID-19 vaccine and 20.3% (n = 954) had received two doses. The risk of death from COVID-19 is strongly linked to age, with the most vulnerable being in the over 70s age group.

In Scotland, from the beginning of the COVID-19 vaccination programme over 3.8 million individuals had been fully vaccinated with two doses of COVID-19 vaccine. Of these, 954 individuals (0.025%) tested positive by PCR for SARS-CoV-2 more than fourteen days after receiving their second dose of COVID-19 vaccine and subsequently died with COVID-19 recorded as underlying or contributory cause of death. These individuals had several comorbidities which contributed to their deaths. Of the confirmed COVID-19 related deaths, in individuals that have received two doses of COVID-19 vaccine, 79.1% were in the 70 and over age group.

To account for differences in population size and age of the vaccination status groups over time, age-standardised mortality rates were calculated for deaths where COVID-19 was listed as an underlying or contributory cause of death on the death certificate (Table 25).

Table 25: Number of confirmed COVID-19 related deaths by vaccination status at time of test and age-standardised mortality rate per 100,000, 18 September 2021 to 15 October 2021

Vaccination Status	Unvaccinated		1 Dose		2 Doses	
Week	No. of deaths	Age Standardised Mortality Rate per 100,000 with 95% confidence intervals	No. of deaths	Age Standardised Mortality Rate per 100,000 with 95% confidence intervals	No. of deaths	Age Standardised Mortality Rate per 100,000 with 95% confidence intervals
18 September - 24 September 2021	29	8.46 (5.10 - 11.83)	8	14.87 (3.72 - 26.02)	121	2.38 (1.95 - 2.80)
25 September - 01 October 2021	22	6.78 (3.66 - 9.90)	4	8.97 (0.05 - 17.89)	114	2.23 (1.81 - 2.64)
02 October - 08 October 2021	19	5.22 (2.58 - 7.86)	0	0.00 (0.00 - 0.00)	105	2.07 (1.67 - 2.47)
09 October - 15 October 2021	15	5.17 (2.34 - 8.00)	5	11.39 (1.21 - 21.57)	117	2.28 (1.87 - 2.70)

Vaccination status is determined as at the date of positive PCR test according to the definitions described in Appendix 9. A confirmed COVID-19 related death is defined as an individual who has tested positive by PCR for SARS-CoV-2 at any time point and has COVID-19 listed as an underlying or contributory cause of death on the death certificate. Age-standardised mortality rates per 100,000 people per week, standardised to the 2013 European Standard Population (see Appendix 9). This definition is for the purposes of evaluating the impact of the COVID-19 vaccine on confirmed COVID-19 deaths. The numbers reported in this section may differ from other published COVID-19 death data. Data are based on date of registration. In Scotland deaths must be registered within 8 days although in practice, the average time between death and registration is around 3 days. More information on days between occurrence and registration can be found on the NRS website.

Age-standardised mortality rates for COVID-19 deaths shown in Table 25 are lower for people who have received two doses of a COVID-19 vaccine compared to individuals that are unvaccinated or have received one dose of a COVID-19 vaccine. This is comparable with data published by the [Office for National Statistics](#) which showed the risk of death involving COVID-19 was consistently lower for people who had received two vaccinations compared to one or no vaccination, as shown by the weekly age-standardised mortality rates for deaths involving COVID-19.

Highest Risk List (previously called Shielding List)

Shielding was introduced in March 2020 to identify people at very high risk of severe illness from COVID-19 and to protect them from coming into contact with COVID-19, by minimising interaction between them and others. Shielding measures were paused in August 2020.

Since July 2021, the term 'highest risk' list has been used to refer to those individuals who may have been asked to shield in the past. Most adults in Scotland will soon have had both doses of the COVID-19 vaccine, which means people at highest risk are now much less likely to catch COVID-19.

The 'shielding' list and the 'highest risk' list are the same. The term 'highest risk' is used rather than 'shielding' because it's highly unlikely individuals will be required to shield again.

This update provides information about those on the highest risk list and demographics of those people. The update also includes information on COVID-19 deaths recorded amongst those on the highest risk list.

Individuals are identified for the highest risk list if they have one of the following diseases or conditions:

- Solid organ transplant recipients
- People with cancer who are undergoing active chemotherapy or radical radiotherapy for lung cancer
- People with cancers of the blood or bone marrow such as leukaemia, lymphoma or myeloma who are at any stage of treatment
- People having immunotherapy or other continuing antibody treatments for cancer
- People having other targeted cancer treatments which can affect the immune system, such as protein kinase inhibitors or PARP inhibitors
- People who have had bone marrow or stem cell transplants in the last 6 months, or who are still taking immunosuppression drugs.
- People with severe respiratory conditions including all cystic fibrosis, severe asthma, severe COPD, severe bronchiectasis and pulmonary hypertension.
- People with rare diseases, including all forms of Interstitial Lung Disease/Sarcoidosis, and inborn errors of metabolism that significantly increase the risk of infections (such as SCID, homozygous sickle cell).
- People on immunosuppression therapies sufficient to significantly increase risk of infection or who have had their spleens removed.
- People who are pregnant with significant heart disease, congenital or acquired.

- People who are receiving renal dialysis treatment or with Chronic Kidney Disease stage 5 (CKD5)
- People with Down's Syndrome over the age of 18
- Or if an individual's GP or Hospital Specialist thinks they would benefit from following the highest risk advice.

The Scottish Government has and is continuing to write to all individuals who have been identified as at high risk of severe illness from COVID-19 to provide advice, information about vaccination, give details of the help and support available and to provide instructions about how to access these services.

As at 25 October 2021, there were 180,072 individuals on the highest risk list in Scotland. This equates to around 3.3% of the Scottish population. Table 26 shows the distribution of highest risk individuals by NHS Board of Residence.

Table 26: Number of individuals on the highest risk list by Board of Residence

Board of Residence	Number on highest risk list	% of population on highest risk list
NHS Ayrshire and Arran	15,610	4.2%
NHS Borders	4,473	3.9%
NHS Dumfries and Galloway	5,834	3.9%
NHS Fife	11,193	3.0%
NHS Forth Valley	11,771	3.8%
NHS Grampian	15,043	2.6%
NHS Greater Glasgow and Clyde	41,201	3.5%
NHS Highland	10,899	3.4%
NHS Lanarkshire	23,866	3.6%
NHS Lothian	25,364	2.8%
NHS Orkney	676	3.0%
NHS Shetland	749	3.3%
NHS Tayside	12,539	3.0%
NHS Western Isles	854	3.2%
Scotland	180,072	3.3%

Table 27 shows that 56% of those on the highest risk list are female (100,003) and just over half of those on the list (51%) are aged 65 and over.

Table 27: Number and rate per 100,000 population of individuals on highest risk list by Age Group and Sex

Age Group (years)	Male	Female	Total	Rate per 100,000 population
0-4	165	157	322	122
5-12	429	329	758	158
13-15	189	154	343	198
16-24	1,891	1,786	3,677	649
25-34	3,741	4,373	8,114	1,080
35-44	5,313	6,949	12,262	1,803
45-54	9,601	13,148	22,749	3,062
55-64	17,459	22,946	40,405	5,374
65-69	10,175	12,452	22,627	7,531
70-79	20,577	23,469	44,046	9,100
80+	10,504	14,240	24,744	9,110
All	80,044	100,003	180,047	3,294

There are 25 individuals whose age is unknown.

Figure 25 shows that the highest rates per 100,000 population of individuals on the highest risk list are for those aged 70-79 and 80 and over.

Figure 25: Individuals on highest risk list, rate per 100,000 population

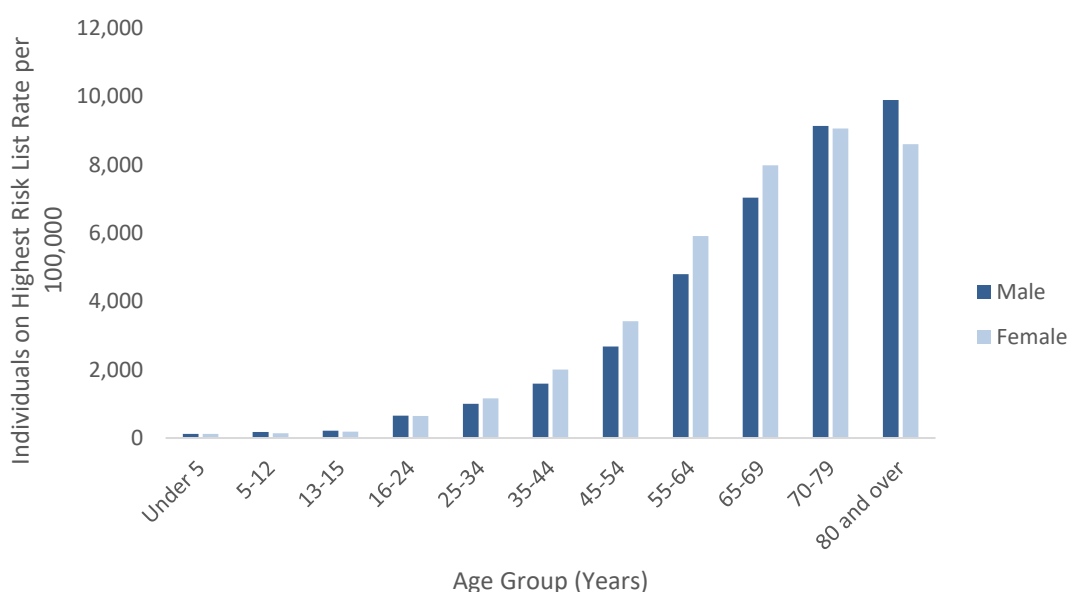
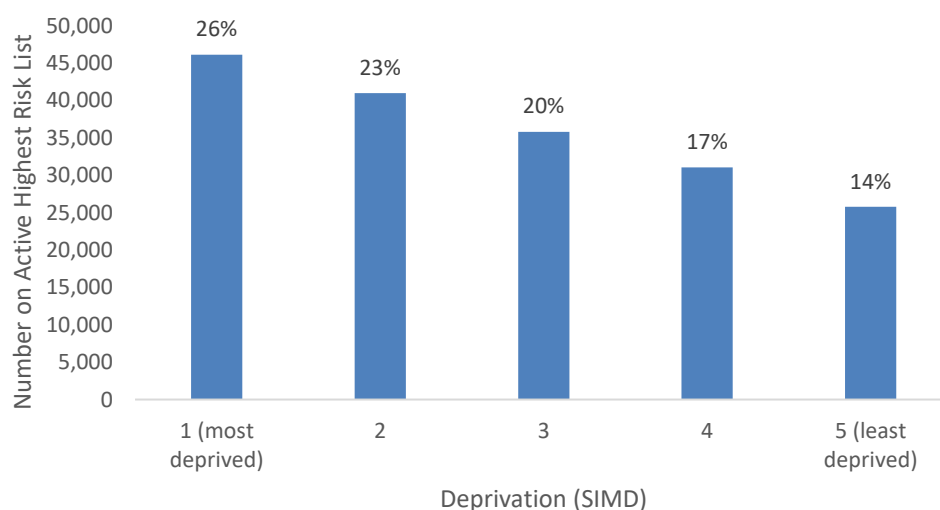


Figure 26 shows the number of highest risk individuals by deprivation quintile from the most deprived 20% of the population to the least deprived 20% of the population. The largest proportion of highest risk individuals (26%) were in the most deprived quintile, with around 14% falling into the least deprived quintile.

Figure 26: Number of Individuals on highest risk list by deprivation quintile



The deprivation category of a further 276 individuals is unknown.

Individuals may be added to the highest risk list for a number of reasons as outlined above and an individual may fall into more than one of the highest risk groups. Table 29 shows the number of individuals categorised by highest risk group. Over 40% of individuals on the highest risk list have been identified as having a severe respiratory condition (i.e. cystic fibrosis, severe asthma, severe COPD, severe bronchiectasis and pulmonary hypertension).

Table 28: Number of Individuals by highest risk group

Highest Risk Group	Number on Highest Risk list
Group 1 (Transplant)	6,857
Group 2 (Cancer)	25,353
Group 3 (Respiratory)	72,237
Group 4 (Rare disease)	11,077
Group 5 (Immunosuppression)	35,931
Group 6 (Pregnant with heart disease)	81
Group 7 (Clinician identified)	51,734
Total Individuals	180,072

An individual may fall into more than one highest risk group, but is only counted once in the total. Individuals are categorised as 'clinician identified' if no other group is specified.

Since the highest risk list was established in March 2020, 25,049 individuals on the list have subsequently died. Of those, 2,305 have died with a mention of COVID-19 on their death certificate. Figure 27 shows the weekly trend of deaths from those on the highest risk list. During June – September 2020 there was a low number of deaths with a mention of COVID-19. Between November 2020 and February 2021, around 18% of recorded deaths involving persons on the highest risk list were COVID-related, since August 2021 this figure is about 9%.

Figure 27: Number of deaths of those on the highest risk list by mention of COVID-19 (by date of death)

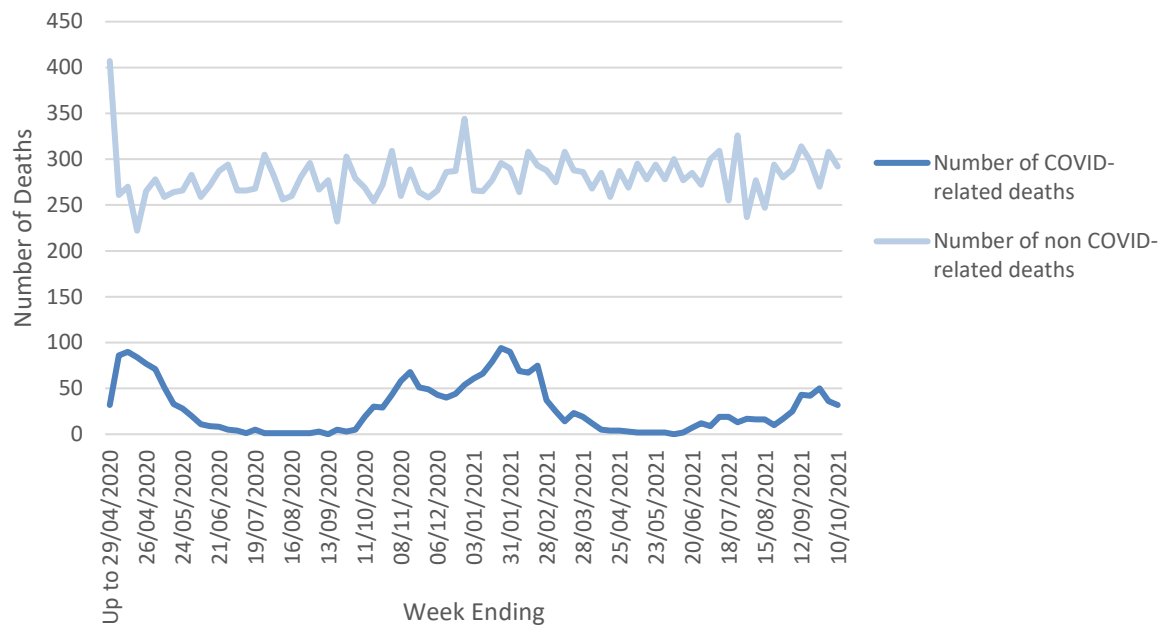


Table 29 shows the number and percentage of COVID-related deaths for those individuals on highest risk list who tested positive for COVID. Since August 2020, around 11% of individuals who tested positive for COVID-19 on the highest risk list subsequently died with a mention of COVID-19 on their death certificate. This varies by highest risk group with 14% of individuals in the Rare Disease group identified as having a COVID-related death after testing positive for COVID-19 and 13% in the Cancer and Respiratory group

Table 29: Number and percentage of COVID-related deaths for those individuals on highest risk list who tested positive for COVID

	Group 1 (Transplant)		Group 2 (Cancer)		Group 3 (Respiratory)		Group 4 (Rare disease)	
Month of positive COVID test	COVID-related deaths for individuals on highest risk list with a positive test	% of COVID-related deaths following positive test	COVID-related deaths for individuals on highest risk list with a positive test	% of COVID-related deaths following positive test	COVID-related deaths for individuals on highest risk list with a positive test	% of COVID-related deaths following positive test	COVID-related deaths for individuals on highest risk list with a positive test	% of COVID-related deaths following positive test
Aug-20	0	0%	2	22%	1	6%	0	0%
Sep-20	2	9%	6	16%	12	12%	4	24%
Oct-20	6	11%	28	15%	107	18%	21	27%
Nov-20	7	14%	45	22%	103	20%	18	18%
Dec-20	9	14%	52	21%	105	19%	18	20%
Jan-21	15	17%	63	20%	205	23%	34	25%
Feb-21	7	16%	34	20%	79	20%	19	25%
Mar-21	4	12%	11	14%	29	16%	4	16%
Apr-21	0	0%	2	5%	4	5%	0	0%
May-21	2	13%	0	0%	4	7%	0	0%
Jun-21	3	7%	5	5%	16	7%	1	2%
Jul-21	10	12%	15	8%	34	8%	4	5%
Aug-21	11	8%	17	6%	33	5%	6	5%

Sep-21	20	9%	29	6%	75	6%	17	8%
Total	78	10%	267	13%	734	13%	133	14%

	Group 5 (Immunosuppression)		Group 7 (Clinician identified)		Total	
Month of positive COVID test	COVID-related deaths for individuals on highest risk list with a positive test	% of COVID- related deaths following positive test	COVID-related deaths for individuals on highest risk list with a positive test	% of COVID- related deaths following positive test	COVID-related deaths for individuals on highest risk list with a positive test	% of COVID- related deaths following positive test
Aug-20	0	0%	1	6%	4	8%
Sep-20	2	3%	11	13%	27	10%
Oct-20	27	9%	70	16%	217	15%
Nov-20	22	9%	81	17%	245	17%
Dec-20	39	12%	79	16%	247	16%
Jan-21	44	12%	146	21%	426	20%
Feb-21	25	14%	57	17%	179	17%
Mar-21	10	9%	13	9%	56	11%
Apr-21	3	7%	2	3%	11	5%
May-21	3	7%	2	3%	8	4%
Jun-21	9	5%	17	7%	38	5%
Jul-21	21	6%	23	6%	83	6%
Aug-21	30	5%	33	5%	98	4%
Sep-21	35	4%	57	5%	179	5%

Total	229	6%	533	11%	1627	11%
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The table shows a count of the number and percentage of COVID-related deaths for those individuals on highest risk list who tested positive for COVID by group and month of positive test. The same individual may be counted in one or more of the highest risk groups, so the figures for different groups should not be summed.

Figures for Group 6 (Pregnant with heart disease) are not shown separately due to the small number of cases but are included in the total figures.

COVID-19 across the NHS

Charts for a number of measures related to COVID-19 service use in the NHS were presented in the report up until 15 July 2020. Up to date data for these measures are available to view in our [interactive dashboard](#).

This includes:

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

Wider Impact of COVID-19

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

- Individuals being reluctant to use health services because they do not want to burden the NHS or are anxious about the risk of infection.
- The health service delaying preventative and non-urgent care such as some screening services and planned surgery.
- Other indirect effects of interventions to control COVID-19, such as changes to employment and income, changes in access to education, social isolation, family violence and abuse, changes in the accessibility and use of food, alcohol, drugs and gambling, or changes in physical activity and transport patterns.

More detailed background information on these potential impacts is provided by the Scottish Public Health Observatory in a section on [Covid-19 wider impacts](#).

The surveillance work stream of the Public Health Scotland social and systems recovery cell aims to provide information and intelligence on the wider impacts of COVID-19 on health, healthcare, and health inequalities that are not directly due to COVID-19. The [wider impact dashboard](#) can be viewed online and includes the following topics:

- Hospital and unscheduled care
- Healthcare for cardiovascular disease
- Healthcare for mental health
- New cancer diagnoses
- Uptake of pre-school immunisations
- Coverage of health visitor child health reviews
- Infant feeding
- Child development
- Women booking for antenatal care
- Terminations of pregnancy
- Births and babies
- Excess deaths

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

Weekly National Seasonal Respiratory Report

Since 14 October 2020 Public Health Scotland has also published a weekly report on epidemiological information on seasonal influenza activity in Scotland. Due to COVID health care services are functioning differently now compared to previous flu seasons so the consultation rates are not directly comparable to historical data.

This is available to view here:

[Weekly national seasonal respiratory report - Week 36 2021 - Weekly national seasonal respiratory report - Publications - Public Health Scotland](#)

Surveillance of influenza infection is a key public health activity as it is associated with significant morbidity and mortality during the winter months, particularly in those at risk of complications of flu e.g. the elderly, those with chronic health problems and pregnant women.

The spectrum of influenza illness varies from asymptomatic illness to mild/moderate symptoms to severe complications including death. In light of the spectrum of influenza illness there is a need to have individual surveillance components which provide information on each aspect of the illness. There is no single flu surveillance component that can describe the onset, severity and impact of influenza or the success of its control measures each season across a community. To do so requires a number of complimentary surveillance components which are either specific to influenza or its control, or which are derived from data streams providing information of utility for other HPS specialities (corporate surveillance data). Together, the influenza surveillance components provide a comprehensive and coherent picture on a timely basis throughout the flu season. Please see the [influenza page on the HPS website](#) for more details.

Scottish Intensive Care Society COVID-19 Report

The 8th report from the Scottish Intensive Care Society Audit Group (SICSAG) relating to patients admitted to intensive care units and high dependency units across Scotland with laboratory confirmed Covid 19, was published on the 13th October 2021 and available to view here:

<https://www.sicsag.scot.nhs.uk/publications/main.htm>

Contact

Public Health Scotland

phs.covid19data&analytics@phs.scot

Further Information

COVID surveillance in Scotland

[Scottish Government](#)

[Daily Dashboard by Public Health Scotland](#) [National Records of Scotland](#)

UK and international COVID reports

[Public Health England](#)

[European Centre for Disease Prevention and Control](#)

[WHO](#)

The next release of this publication will be 03 November 2021.

Open data

Data from this publication is available to download from the [Scottish Health and Social Care Open Data Portal](#).

Rate this publication

Let us know what you think about this publication via the link at the bottom of this [publication page](#) on the PHS website.

Appendices

Appendix 1 – Background information

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

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

There are a number of coronaviruses that are transmitted from human-to-human which are not of public health concern. However, COVID-19 can cause respiratory illness of varying severity.

On the 30 January 2020 the World Health Organization [declared that the outbreak constitutes a Public Health Emergency of International Concern](#).

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

Further information for the public on COVID-19 can be found on [NHS Inform](#).

Appendix 2 – World Health Organisation (WHO): Contact tracing in the context of COVID-19

The WHO initially produced guidance on "*enhanced criteria to adjust public health and social measures in the context of Covid-19*" in May 2020. The relevant extract from the criteria about the effectiveness of contact tracing within the context of public health surveillance at that time was:

At least 80% of new cases have their close contacts traced and in quarantine within 72 hours of case confirmation	These indicate that the capacity to conduct contact tracing is sufficient for the number of cases and contacts
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Source: <https://apps.who.int/iris/rest/bitstreams/1277773/retrieve>

In response to questions about whether the Scottish Government had been incorrectly comparing Scottish performance with the WHO "standard" (on the basis that counting in Scotland might start at the wrong point in the process), an assessment was undertaken at the start of 2020, and is available within Appendix 2 of the [Weekly Covid-19 Statistical report \(publication date 27 January 2021\)](#).

Please note this "standard" has subsequently been replaced with further [WHO guidance issued in February 2021](#), reflecting the evolution of the state of the pandemic. This revised guidance now focuses on targeted approaches to contact tracing based on transmission patterns, engaging communities, and prioritising follow-up of high risk cases when it is not possible to identify, monitor and quarantine all contacts.

Appendix 3 – Hospital Admissions Notes

Hospital Admissions

RAPID(Rapid and Preliminary Inpatient Data)

COVID-19 related admissions have been identified as the following: A patient's first positive PCR test for COVID 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 PCR test is after their date of discharge from hospital, they are not included in the analysis.

In the data presented here, an admission is defined as a period of stay in a single hospital. There may be multiple admissions for a single patient if they have moved between locations during a continuous inpatient stay (CIS), or if they have been admitted to hospital on separate occasions.

RAPID is a daily submission of people who have been admitted and discharged to hospital. Figures

are subject to change as hospital records are updated. It can take 6-8 weeks or longer before a record is finalised, particularly discharge details.

Hospital Inpatients (Scottish Government Data)

Number of patients in hospital with recently confirmed COVID-19

This measure (available from 11 September 2020 and first published 15 September 2020) includes patients who first tested positive in hospital or in the 14 days before admission. Patients stop being included after 28 days in hospital (or 28 days after first testing positive if this is after admission). Further background on this new approach is provided in [this Scottish Government blog](#).

This is based on the number of patients in beds at 8am the day prior to reporting, with the data extract taken at 8am on the day of reporting to allow 24 hours for test results to become available. Where a patient has not yet received a positive test result they will not be included in this figure. Patients who have been in hospital for more than 28 days and still being treated for COVID-19 will stop being included in this figure after 28 days.

All patients in hospital, including in intensive care, and community, mental health and long stay hospitals are included in this figure.

Appendix 4 – RAPID Hospital Admissions

COVID-19 related admissions have been identified as the following: A patient may have tested positive 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 has tested positive after their date of discharge from hospital, they are not included in the analysis.

The number reported does not take into account the reason for hospitalisation. Therefore, people that were admitted for a non COVID-19 related reason (and tested positive upon admission) may be included.

Total specimen dates may not equal reported new cases due to denotifications.

These data include admissions to acute hospitals only and do not include psychiatric or maternity/obstetrics specialties.

RAPID – Please note a three-day time lag is applied to recent records being incomplete. Data are updated daily and figures are subject to change.

Total figures for COVID-19 related admissions published by PHS are updated daily and figures are subject to change, and so total figures presented here will not match data published elsewhere.

Appendix 5 – Healthcare Worker Testing

Number of Staff not tested – declined a test

The number of staff who were offered a test and actively declined to take it.

Staff not tested for operational reasons

The number of staff who were not able to be tested for operational/capacity reasons e.g. issues with test availability, staff unable to be tested due to work pressures etc.

Number of Staff not tested for other reasons

The number of the staff present on wards in the reporting week who were not tested. They were eligible for testing (excluding those who declined and those who were not tested for operation reasons). This should be the remainder of eligible staff not recorded in the other groupings.

Appendix 6 – Contact Tracing

Background

On 26 May 2020, the Scottish Government set out the strategy for Test and Protect - Scotland's approach to implementing the 'test, trace, isolate, support' strategy. This strategy was designed to minimise the spread of COVID-19. On 22 June 2021, that [strategy](#) was refreshed in order to progress Scotland's recovery to "Beyond Level 0".

Public Health Scotland works closely with National Services Scotland (NSS) and the Scottish Government to support local NHS Boards and the National Contact Centre (NCC) to carry out COVID-19 contact tracing. The approach to contact tracing has adapted as restrictions and policy have changed throughout the pandemic in order to best meet the needs of the Scottish population. As numbers of new cases have increased, the method has changed from attempting to phone all new cases and contacts - to prioritising the highest risk situations for telephone calls and sending public health advice by SMS text to all others who have tested positive for COVID-19 and their close contacts.

The introduction of SMS messaging was designed to get the best public health advice about isolation to cases and contacts as quickly as possible, this is especially pertinent when daily case numbers are very high. The approach was part of a deliberate decision to manage resources through an agreed framework and is in keeping with the evidence-informed advice of the European Centre for Disease Control.

On 8 August 2021, a refreshed framework was implemented to take account of the wider societal re-opening and personal freedoms reintroduced as Scotland moved 'Beyond Level 0'. It sets out how fluctuations within new case numbers will be managed and ensures the Test and Protect system is able to flex during times of increased caseloads. It achieves this by using digital contact tracing tools, when required, to make best use of resources and contact tracing teams to ensure that public health information is shared with those at greatest risk of contracting or passing COVID-19 to others.

All positive results are reported to the contact tracing system, assessed and followed up as needed. However, an individual can have multiple tests. In many cases, there is no follow up for a repeat positive test (because the person was already contact traced when their first positive result was reported). To reflect this, Test and Protect data only includes details on the number of individuals whose positive test resulted in contact tracing being undertaken. The number of individuals who tested positive is more comparable with the figures given in the COVID-19 Confirmed Cases section of this report, which reports on new positive cases.

Definitions

An **index case** is generated for each positive result with a test date on or after 28 May 2020. This includes tests derived from Scottish laboratories and from UK Government laboratories.

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

A **contact** may be contacted more than once if multiple positive cases list them as a contact.

Completed cases are cases which are marked as completed in the case management system, which means that all contacts have been followed up and completed. It excludes cases marked as failed, excluded, in progress or new. In the latest weeks there will be cases which are still open either because contact tracing is still underway (particularly for the latest week) or the NHS Board is still managing the case as part of an open outbreak.

Weekly data presented from Monday to Sunday in order to be consistent. Figures are provisional and may change as the test and protect tool is updated by contact tracers.

Individuals unable to be contacted

This information is only available for index cases that have been recorded on the CMS. The CMS went live on 22 June 2020 with NHS Boards migrating on a phased approach with all Boards using CMS from 21 July 2020. Prior to a Board migrating to CMS, data was recorded in a Simple Tracing Tool which did not give the level of granularity required to report on these measures. These data are developmental and an extensive data quality assurance exercise is underway and data may be revised in subsequent publications. Please note the methodology has changed as of 1 November 2020, a refined method has now been applied to identify unique indexes.

Contact tracers will contact index cases by telephone, and by default all close contacts will receive an automated SMS. This approach ensures high quality calls can continue to be prioritised for index cases. Even when SMS is defaulted to, in these scenarios, a number of close contacts are still telephoned, following clinical risk assessment, particularly if they are linked to complex cases. When close contacts of index cases are contacted via SMS text message, the GOV.UK Notify Service is used which means it is known if the SMS has been received by the mobile phone, not just that it has been sent. Where the SMS is not received, a contact tracer will attempt to contact the individual through other means. The case will not be marked as complete unless someone has spoken to the individual.

Appendix 7 – Quarantine Statistics

Number of people arriving in Scotland

Number of Passenger Locator Forms received, as notified to Public Health Scotland by the Home Office. Passenger Locator Forms indicate intention to travel; passengers may not have actually arrived in the UK. Multiple forms for the same traveller may also be counted

Number of people requiring to quarantine in a hotel (anywhere in the UK)

From 15 February 2021 any person arriving directly from a high risk country into the UK with a Scottish residence or any arriving directly into Scotland from a non high-risk listed country. Count is based on Passenger Locator Form data received from Home Office.

Number of people requiring to quarantine at home

From 30 June 2020 – 14 February 2021. Any persons who are required to quarantine in Scotland (all countries prior to 30 June 2020; high risk countries from 30 June 2020), adults aged 18 and over only. From 15 February 2021 this is anyone arriving from a non-high risk country and did not arrive directly into Scotland. Count is based on Passenger Locator Form data received from Home Office.

Number of people contacted by National Contact Centre (NCC)

Sample of people who are passed to NCC for follow-up to provide advice and support. Some contacts made relate to arrivals from the previous week; therefore contacts can sometimes exceed arrivals.

Up to the 23 June 2021, a sample of those individuals quarantining at home were contacted by the NCC. These calls, along with any in progress, have now been paused in order to prioritise contact tracing. Since 13 July 2021, these call have resumed.

Successful contacts made

People who were successfully contacted by NCC

Unable to contact individual

Calls could not be completed because the individual could not be contacted (invalid phone number or no response to call). Where appropriate details of individuals are passed to Police Scotland for further follow up. Includes not completed due to quarantine ending before NCC could contact individual.

Appendix 8 – Lateral Flow Device Testing

UK Gov other includes any LFD result which has come through the UK Government route (NHS Digital) which has the test site code "Other". Please note the universal offer results up to 28 July 2021

are reported via this method. From 28 July 2021 onwards, universal offer results are reported separately as Universal Offer.

The Attend An Event, High Cases In Local Area, Lives With Someone Who Is Shielding, Travel Within UK and Universal Offer categories only include data from 28 July 2021 onwards. From this date these categories are now options when entering a non-work LFD result via the UK Gov portal. Please note that it is up to the user to select the Attend An Event, High Cases In Local Area, Lives With Someone Who Is Shielding or Travel Within UK category, these are not part of any defined testing programme such as Community Testing or University Testing.

University Testing Site tests are tests which took place at a university testing site, generally in the 2020/21 academic year, though there are still a small number of tests each week in this category. Tests in the university students and university staff categories are tests via the UK Gov portal for someone entering a test to attend their place of work/education, these tests are from 28th July 2021 onwards and will be for the 2021/22 academic year.

For information regarding LFD testing during term time as part of the Schools Asymptomatic Testing Programme, please visit the [COVID-19 Education Surveillance Report](#).

Please note bulk uploading functionality is not yet available so data is likely to be an undercount. Data will be update and revised in future publications.

Other is any result entered via the [gov.uk website](#) where “none of the above” has been selected. Please note anyone requesting a LFD test via the general population offer, will currently report their results via this category.

Those within **Unknown** in the table reporting tests by [NHS Board of Residence](#) (Table 12) is any test that had an invalid or missing postcode.

Appendix 9 – Data Sources and Limitations

Due to delays in reporting, figures are subject to change as records are updated. A marker (greyed-out block) has been applied where data is preliminary and caution should be taken in their interpretation.

The definitions described below are being used for the purposes of evaluating the impact of the COVID-19 vaccine on COVID-19 cases, COVID-19 related acute hospital admissions and confirmed COVID-19 deaths. The numbers reported in this section use test data, accounting for potential reinfections, and may differ from other sections and elsewhere which only count the number of new COVID-19 cases.

COVID-19 PCR test results

All positive COVID-19 PCR test results and associated demographics of an individual are extracted from the Test and Protect database (Corporate Data Warehouse) which contains test results from Electronic Communication of Surveillance in Scotland (ECOSS). Data included in this analysis is reported up until the Friday of the previous week. Non-Scottish residents are excluded from the dataset.

COVID-19 cases are identified as the following: An individual that has tested positive for COVID-19 by PCR. If an individual tests positive more than once, the repeat positive PCR test is only counted if the positive PCR test is more than 90 days apart. Records with missing CHI numbers are excluded as these data cannot be linked to vaccination status.

Denominators used are from the COVID-19 vaccination data that provides information on vaccine eligibility for the 16 and over population, and for vaccinated individuals under the age

of 18. Given the small number of individuals eligible for vaccination under 16, the denominator for unvaccinated under 16s is from the NRS mid-2020 population estimates. Population data are extracted from Community Health Index (CHI) dataset representing all those currently registered with a GP practice in Scotland. These are different denominators than those in the Public Health Scotland COVID-19 Daily Dashboard and may over-estimate the population size as they will include, for example, some individuals who are no longer residents in Scotland.

Vaccination status

Vaccination status for all individuals who test positive for COVID-19 by PCR is extracted from the data used to produce the PHS vaccine uptake/daily dashboard. Vaccine records include the number of doses and date of vaccination. Individuals are listed as unvaccinated if there is no vaccination record linked to their unique CHI identifier at the time of analysis. Vaccination status is taken at date of specimen for COVID-19 cases, acute hospital admissions, or death and assigned to number of doses according to the case definitions described below.

COVID-19 vaccination status is defined as per the following:

- **Unvaccinated:** An individual that has had no doses of COVID-19 vaccine and has tested positive for COVID-19 by PCR or has had one dose of COVID-19 vaccine and has tested positive less than or equal to 21 days after their 1st dose of COVID-19 vaccine.
- **Dose 1:** An individual that has had one dose of COVID-19 vaccine and has tested positive for COVID-19 by PCR more than 21 days after their 1st dose of COVID-19 vaccine or less than or equal to 14 days after their second dose of COVID-19 vaccine.
- **Dose 2:** An individual that has had two doses of COVID-19 vaccine and has tested positive for COVID-19 by PCR more than 14 days after their 2nd dose of COVID-19 vaccine.

Acute hospital admissions

Hospital admission data is extracted from the Rapid and Preliminary Inpatient Data (RAPID) dataset at 16:00 on Monday 25 October 2021. RAPID is a daily submission of people who have been admitted and discharged to hospital. Figures are subject to change as hospital records are updated. Data included in this analysis is reported up until the Friday of the previous week.

In the data presented here, 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. Therefore, there may be multiple admissions for a single patient if they have moved between locations during a continuous inpatient stay (CIS), or if they have been admitted to hospital on separate occasions.

COVID-19 related acute hospital admissions have been identified as the following: An individual that has tested positive for COVID-19 by PCR:

- Up to 14 days prior to hospital admission
- On the day of, or day following admission (if no discharge date is available)
- In between hospital admission and discharge (if there is a valid discharge date available).

Where an individual has more than one PCR positive test, positive results are only included for the first PCR positive test associated with a hospitalisation, or if the positive PCR test is more than 90 days after the previous PCR positive test that was eligible for inclusion. Using these criterion, all records of hospitalisation occurring within 90 days of a previous positive test are excluded. Therefore, if a positive PCR test result for an individual meets these criteria for multiple hospital stays, for example, an individual is admitted twice within a week, only the earliest hospital admission is included in the analysis.

If a patient tested positive after their date of discharge from hospital, they are not included in the analysis unless they are readmitted to hospital and meet the criteria described above.

The number of reported acute hospitalisations does not take into account the reason for hospitalisation. Therefore, people that were admitted for a non-COVID-19 related reason (and tested positive upon admission) may be included and result in an overestimation of COVID-19 related acute hospitalisations.

Confirmed COVID-19 deaths

Death data were extracted from the SMRA dataset at 16:00 on Thursday 21 October 2021. Data included in these analysis are reported up until the last date of death registration for the previous week.

A confirmed COVID-19 related death is defined as an individual who has tested positive by PCR for SARS-CoV-2 at any time point and has COVID-19 listed as a underlying or contributory cause of death on the death certificate. Vaccine status is determined at time of most recent specimen date.

Age-standardised mortality rates are used to allow comparisons of mortality rates between populations that have different age distributions. The 2013 European Standard Population is used to standardise rates. For more information see the ONS methods. Denominators used to calculate age-standardised mortality rates are the same as the cases and hospitalisations rate figures and tables described above.

Appendix 10 – Hospital admissions

1. The SMR01 dataset comprises episode-based patient records relating to all inpatients and day cases discharged from non-obstetric, non-psychiatric specialties and excluding geriatric long stay records. Data are updated on a monthly basis and include clinical and non-clinical data.
2. Analyses are based on month of admission.
3. Average length of stay is the mean length of stay (in days) of a patients entire continuous inpatient stay (CIS). A CIS is an unbroken period of time that a patient spends as an inpatient. However, a patient may change consultant, significant facility, specialty, and/or hospital during a continuous inpatient stay.
4. A COVID-19 hospital admission 'with' COVID-19 is defined as: A patient's first positive PCR test for COVID up to 14 days prior to admission to hospital, on the day of their admission or during their stay in hospital.
5. A COVID-19 hospital admission 'because of' COVID-19 is defined as an admission with a diagnosis of COVID-19 in the primary diagnostic position within the first episode of the CIS.

6. ICD-10 COVID-19 diagnostic codes used: U07.1 and U07.2.
7. The six NHS Boards included in the analysis are: NHS Ayrshire & Arran, NHS Dumfries & Galloway, NHS Grampian, NHS Greater Glasgow & Clyde, NHS Lothian and NHS Tayside.