Public Health Scotland COVID-19 Statistical Report

As at 18 October 2021

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A Management Information release for Scotland

Contents

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 17 October 2021, there have been 609,959 confirmed COVID-19 cases; 15,448 of these were recorded in the most recent week, a decrease of 10.6% from the previous week.
- In the week ending 10 October 2021, 17,273 individuals were recorded in the contact tracing software, from which 24,522 unique contacts have been traced.
- In the week ending 17 October 2021, under the Community Testing Programme 22.7% of symptomatic and 10.6% of asymptomatic tests for COVID-19 were positive.
- In the week ending 12 October 2021, there were 594 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 03 October 2021.
- The number of new admissions to Intensive Care Units (ICUs) for confirmed COVID-19 patients has decreased from 49 in the week ending 09 October 2021, to 27 in the week ending 16 October 2021.
- In the week ending 17 October 2021 there were 80,393 people who arrived in Scotland from outside the UK, of which 3,531 were required to quarantine.

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

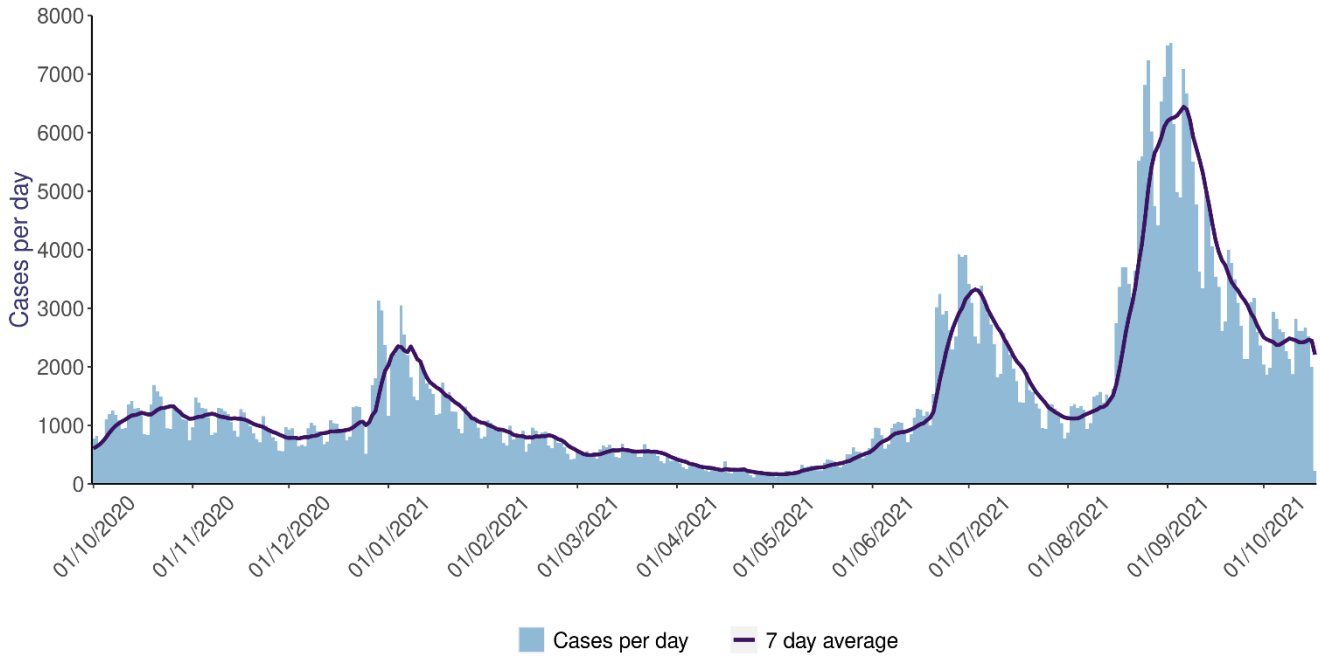
The Public Health Scotland COVID-19 Daily Dashboard publishes daily updates on the number of positive cases of COVID-19 in Scotland, with charts showing the trend since the start of the outbreak.

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 609,959 people in Scotland who have tested positive, at any site in Scotland (NHS and UK Government Regional Testing centres), for COVID-19 up to 17 October 2021.
- In the week ending 17 October 2021 there were 15,448 confirmed COVID-19 cases.[1]

1. Correct as at 17 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



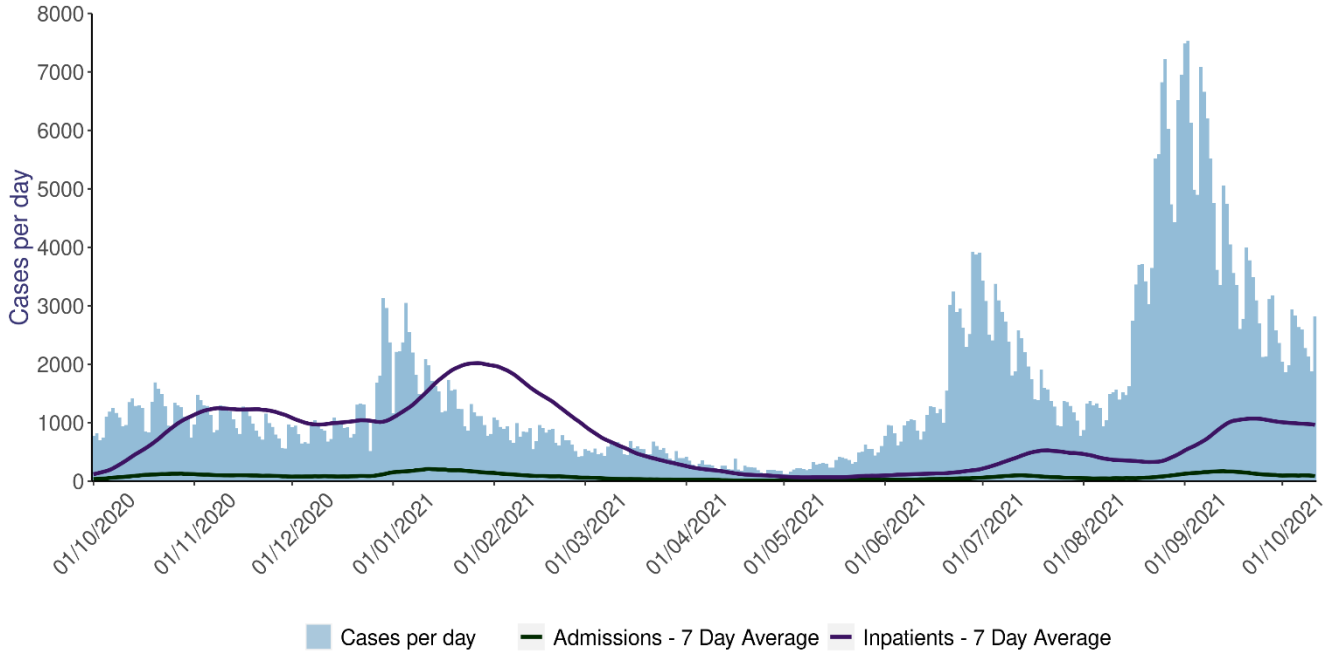
The daily dashboard also now includes data on Hospital Admissions and ICU admissions for patients with COVID-19:

- In the week ending 12 October 2021, there were 594 admissions to hospital with a laboratory confirmed test of COVID-19.
- In the week ending 16 October 2021 there were 27 new admissions to Intensive Care Units (ICUs) for confirmed COVID-19 patients.

The number of confirmed daily COVID-19 cases reduced from 2,829 to 2,813 between 05 October 2021 and 11 October 2021. During this same time period, the daily COVID-19

confirmed hospital admissions has decreased from 97 to 86 (seven-day rolling average). The seven-day average of inpatients in hospital has decreased by 3% (from 990 to 962).

Figure 2: Number of Positive Cases, Admissions and Inpatients, as at 11 October 2021[2]



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. 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 12 October 2021. The number of admissions have been increasing since week ending 17 August 2021, with a 10% decrease in new admissions in the latest week.

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

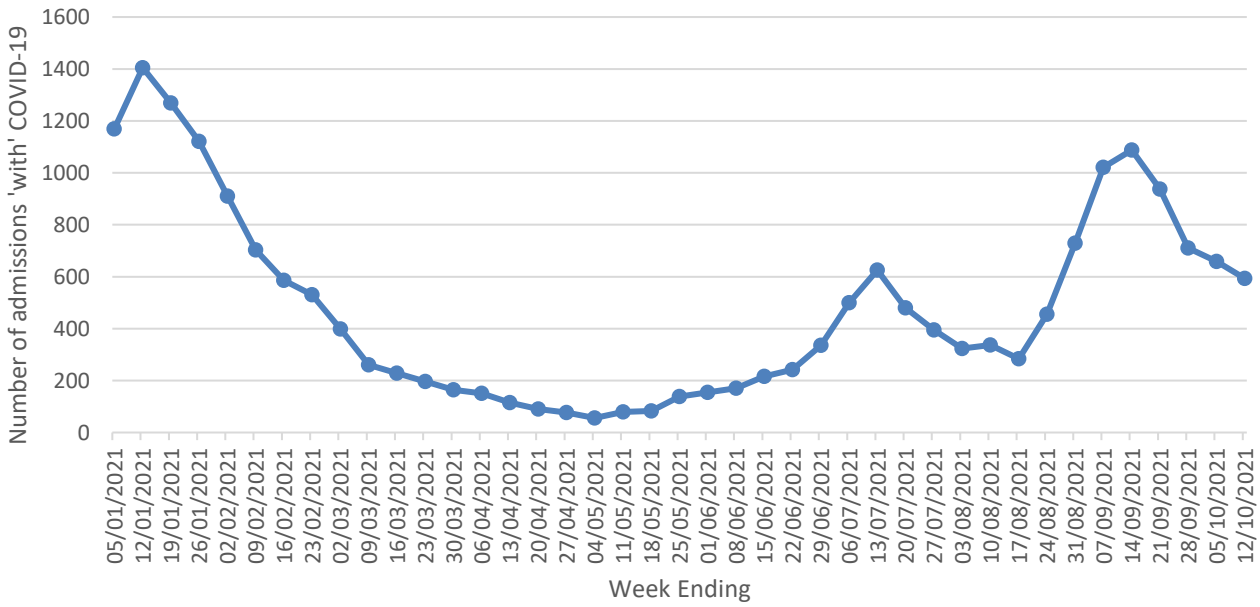


Table 1 below shows a breakdown of people admitted to hospital across all ages and by age group for the most recent four weeks. Data from 03 March 2021 is available on the Covid Statistical Report website.

Table 1: COVID-19 hospital admissions by age as at 12 October 2021[3]

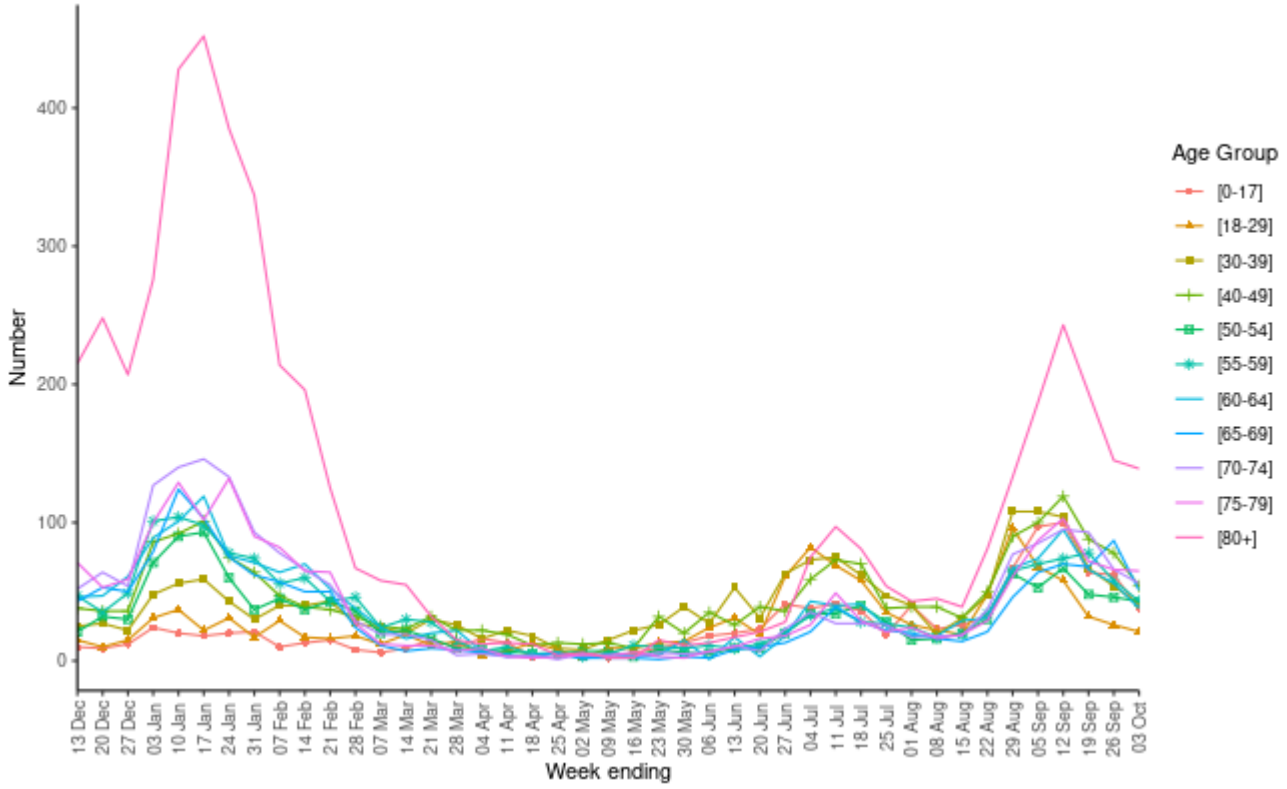
Age Band	15 September – 21 September	22 September – 28 September	29 September – 05 October	06 October – 12 October
Under 18	78	51	42	34
18-29	37	26	28	15
30-39	77	53	46	46
40-49	116	80	57	49
50-54	51	42	44	34
55-59	73	56	50	43
60-64	71	42	54	43
65-69	58	70	54	53
70-74	92	70	65	54
75-79	103	73	60	73
80+	181	148	159	150
Total	**937**	**711**	**659**	**594**

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 10% reduction in the number of new admissions, those aged 80+ years having the highest number of admissions. Also, in the latest week 56% 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 03 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

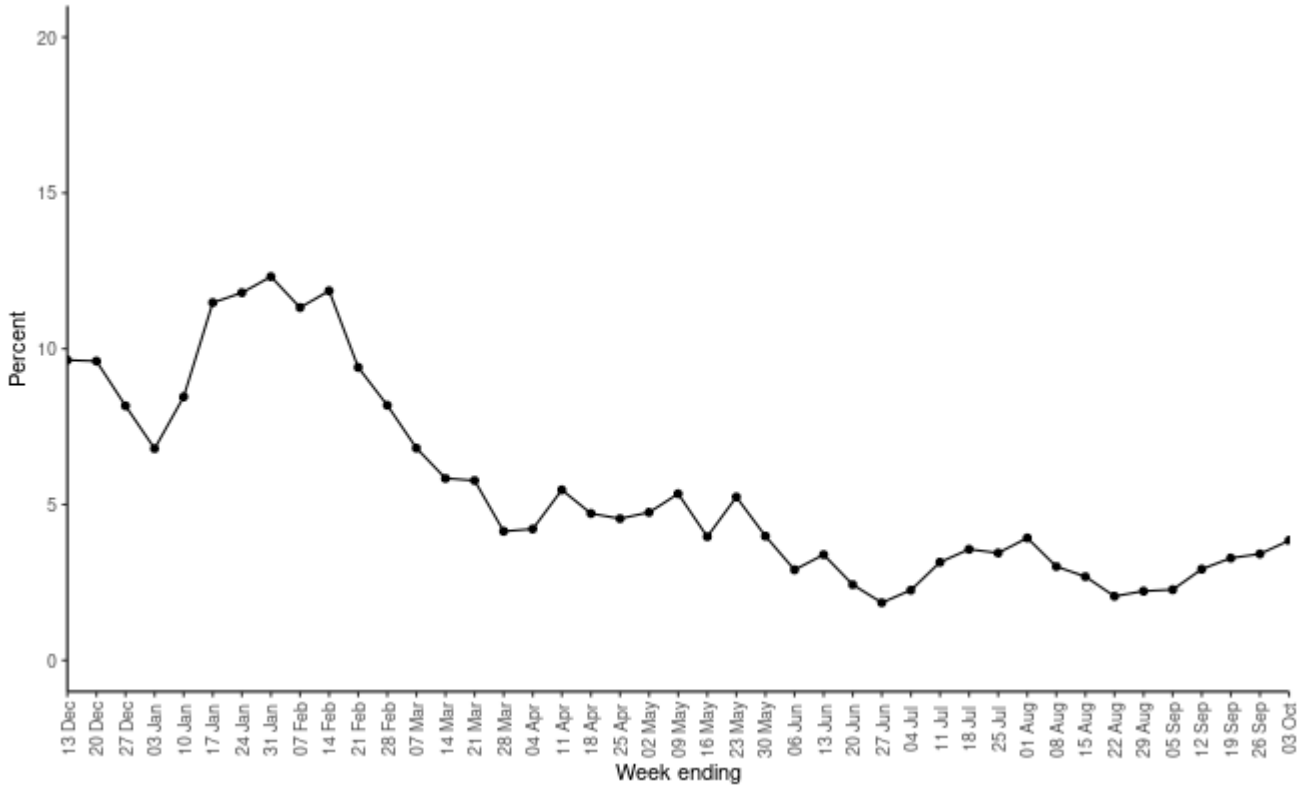


Figure 6: Proportion of weekly cases admitted to hospital within 14 days of a first positive test by age group

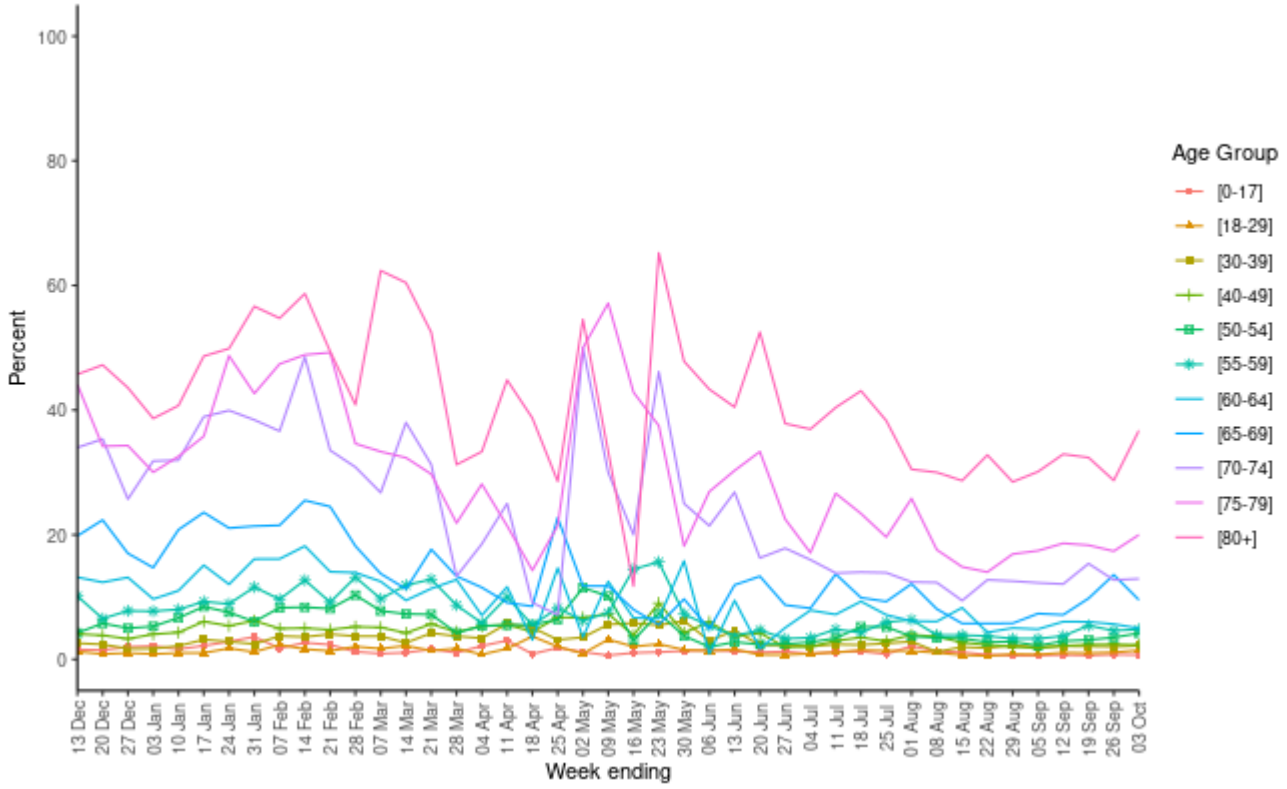
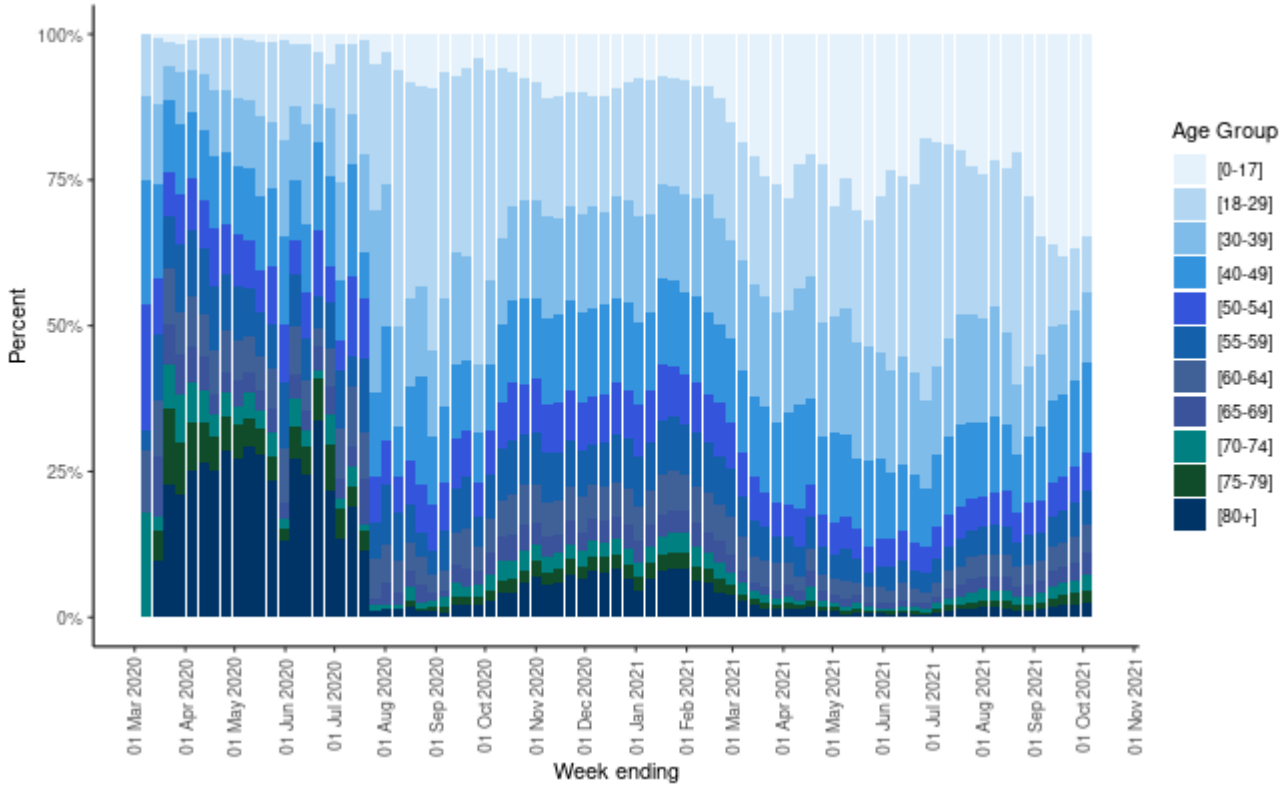


Figure 7: Distribution of confirmed COVID-19 cases by age group



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 2: Adult care home testing for week ending 18 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	569	212	2,482
Borders	49	19	562
Dumfries & Galloway	108	9	893
Fife	165	0	2,646
Forth Valley	325	101	2,081
Grampian	264	158	4,214
Greater Glasgow & Clyde	1,213	384	6,232
Highland	118	27	2,175
Lanarkshire	545	305	3,057
Lothian	946	354	4,340
Orkney	0	0	131
Shetland	0	0	224
Tayside	98	45	3,109
Western Isles	50	60	220
Scotland	**4,450**	**1,674**	**32,366**

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 3: Number of COVID-19 tests and positive results for healthcare workers for week ending 07 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	2,413	2,291	*	27	*	74
Long Stay Care of the Elderly	708	640	*	29	*	35
Long Stay Old Age Psychiatry and Learning Disability Wards	2,310	2,135	12	53	74	48
Scotland	**5,431**	**5,066**	**17**	**109**	**99**	**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 10 October 2021 (based on test date), are detailed in Table 4 below, which provides a recent time trend. A longer time trend is available on the interactive dashboard.

Table 5 provides details of the status of the index cases for each week.

In the week ending 10 October 2021, there were 17,840 Index Cases, of which 14,702 (82.4%) had completed contact tracing by telephone or other digital methods, and a further 1,039 are in progress (5.8%).

Table 4: Contact Tracing trend information, by week ending

	29 Aug	05 Sep	12 Sep	19 Sep	26 Sep	03 Oct	10 Oct
Total Index Cases[1]	41,939	46,024	38,214	26,906	21,896	17,720	17,840
Individuals[2]	41,024	44,699	37,021	26,264	21,468	17,257	17,273

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 5: Contact Tracing trend information by status, by week ending

Status of cases	29 Aug	05 Sep	12 Sep	19 Sep	26 Sep	03 Oct	10 Oct
New/ Not yet started[1]	5	109	183	32	25	302	357
% New/ Not yet started	*0.0*	*0.2*	*0.5*	*0.1*	*0.1*	*1.7*	*2.0*
In progress[2]	8	9	7	6	30	977	1,039
% In progress	*0.0*	*0.0*	*0.0*	*0.0*	*0.1*	*5.5*	*5.8*
Complete[3]	31,520	35,814	31,462	22,847	19,219	14,693	14,702
% Complete	*75.2*	*77.8*	*82.3*	*84.9*	*87.8*	*82.9*	*82.4*
Incomplete[4]	10,406	10,092	6,562	4,021	2,622	1,748	1,742
% Incomplete	*24.8*	*21.9*	*17.2*	*14.9*	*12.0*	*9.9*	*9.8*

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

Table 6: Contact method used for contact tracing of index cases trend information

	29 Aug	05 Sep	12 Sep	19 Sep	26 Sep	03 Oct	10 Oct
Telephone	26,992	24,035	22,098	18,930	15,582	13,230	13,098
% Telephone	64.4	52.2	57.8	70.4	71.2	74.7	73.4
SMS	14,947	21,989	16,116	7,976	6,314	4,490	4,742
% SMS	35.6	47.8	42.2	29.6	28.8	25.3	26.6

In the week ending 10 October 2021, 73.4% 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 7 and Figure 8 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 7: Time (hours) between date test sample taken (specimen date) and the positive index case being contacted, for cases completed[5]

Hours taken	Week Ending 10 October 2021		
	Number of Complete Index Cases	% of Total Complete Cases	% of Total Complete & Incomplete Cases
0-24	4,790	32.6	29.1
24-48	5,947	40.5	36.2
48-72	1,066	7.3	6.5
Over 72	435	3.0	2.6
Not recorded* - SMS	2,170	14.8	13.2
Not recorded* – Phone	294	2.0	1.8
Total Complete Cases	**14,702**	**100**	
Incomplete Cases	1,742		10.6
Total Complete & Incomplete Cases	**16,444**		**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 8: Trend in time (hours) between date test sample taken (specimen date) and the positive individual being called for cases completed; by week

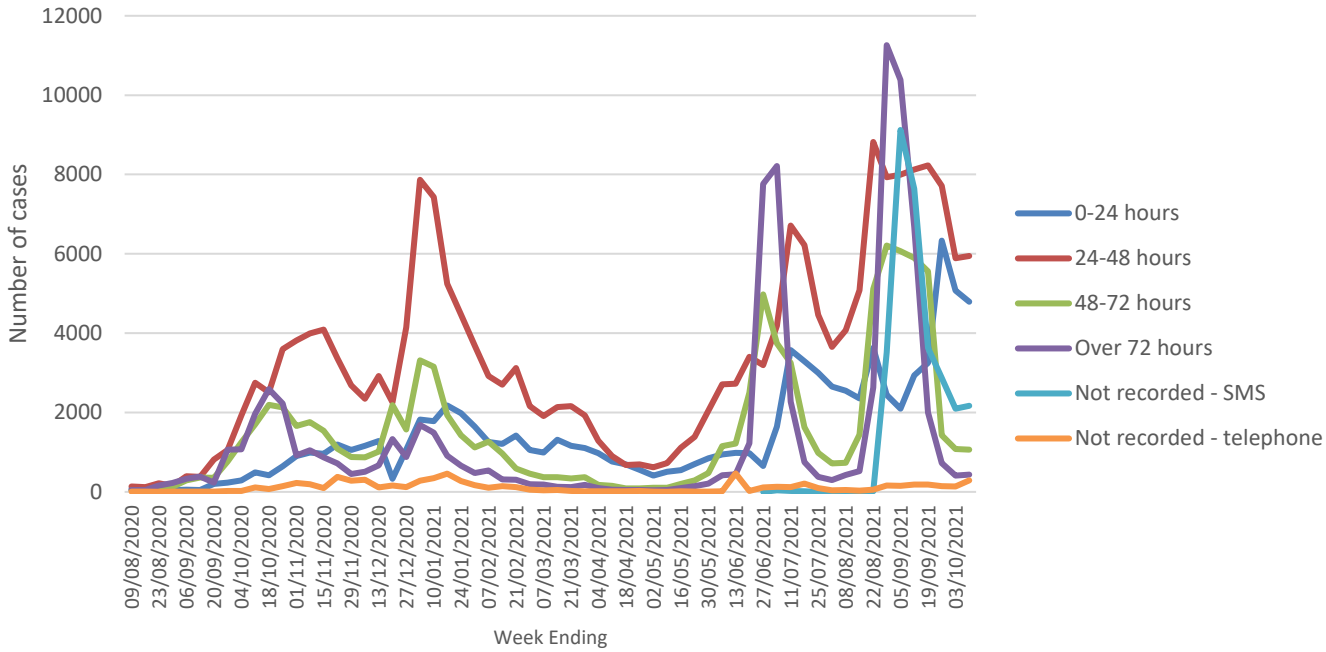


Figure 8 shows that more positive cases were contacted over 72 hours after their test sample was taken in June 2021 and August 2021, which corresponds with a rise in cases over the same period.

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 8: Time (hours) between case created in CMS and the positive individual being contacted[5,6]

Hours taken	Week Ending 10 October 2021		
	Number of Complete Index Cases	% of Total Complete Cases	% of Total Complete & Incomplete Cases
0-24	11,076	75.3	67.4
24-48	853	5.8	5.2
48-72	174	1.2	1.1
Over 72	136	0.9	0.8
Not recorded* – SMS	2,170	14.8	13.2
Not recorded* - Phone	293	2.0	1.8
Total Complete Cases	**14,702**	**100**	
Incomplete Cases	1,742		10.6
Total Complete & Incomplete Cases	**16,444**		**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 9: Time (hours) between case created in CMS to its closure[5,7]

Hours taken	Week Ending 10 October 2021		
	Number of Complete Index Cases	% of Total Complete Cases	% of Total Complete & Incomplete Cases
0-24	12,053	82.0	73.3
24-48	1,692	11.5	10.3
48-72	464	3.2	2.8
Over 72	363	2.5	2.2
Not recorded* – SMS	41	0.3	0.2
Not recorded* - Phone	89	0.6	0.5
Total Complete Cases	**14,702**	**100**	
Incomplete Cases	1,742		10.6
Total Complete & Incomplete Cases	**16,444**		**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 10 and Figure 9 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.

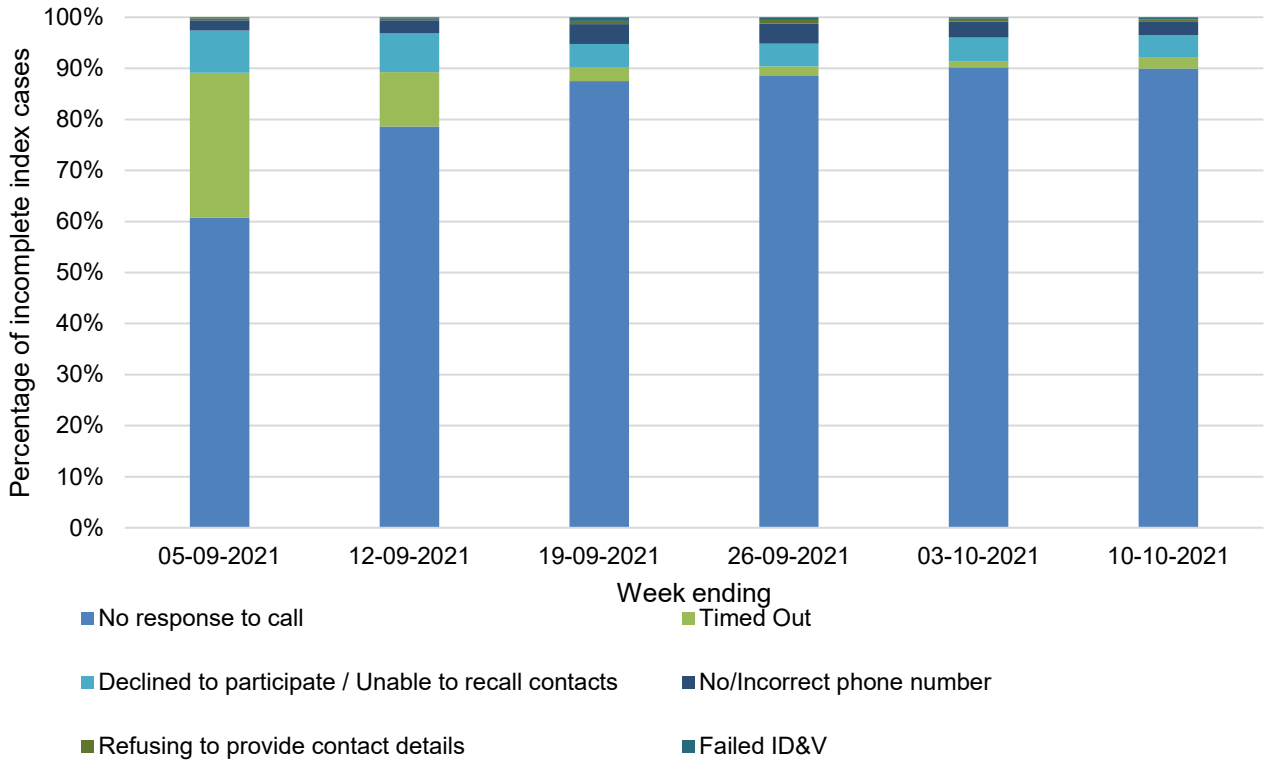
Table 10: Number of incomplete index cases by reason

Reason for Incompletion	Week Ending 10 October 2021	
	Number of Index Cases	*% of Incomplete Index Cases*
Failed ID & verification	8	*0.5*
No response to call	1,567	*90.0*
No/incorrect phone number	46	*2.6*
Refused to provide contact details	8	*0.5*
Declined to participate / unable to recall contacts	74	*4.3*
Timed out[1]	39	*2.2*
Total incomplete cases	**1,742**	***100.0***
% incomplete as proportion of all index cases		***9.8***

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 10 October 2021, 90.0% of incomplete index cases were due to the index case not responding to the multiple calls from Test and Protect.

Figure 9: 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 11 below shows the recent trend information of contacts reported to Test and Protect.

Table 11: Contact Tracing contacts trend information, by week ending

	29 Aug	05 Sep	12 Sep	19 Sep	26 Sep	03 Oct	10 Oct
Total Primary Contacts[1]	79,612	67,877	56,850	47,322	42,079	35,800	34,332
Unique Primary Contacts[2]	59,174	51,942	42,117	33,739	30,669	25,282	24,522
Average number of primary contacts per case	1.9	1.5	1.5	1.8	1.9	2.0	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 10 October 2021, a total of **3,358** cumulative primary contacts, pertaining to completed index cases, were not advised to self-isolate. This represents **1.2%** of the total **289,932** 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 10 October 2021, of the **24,522** unique contacts recorded, **4,910** (20.0%) went on to test positive within ten days of their contact with an index case.

Travel outside of Scotland cases

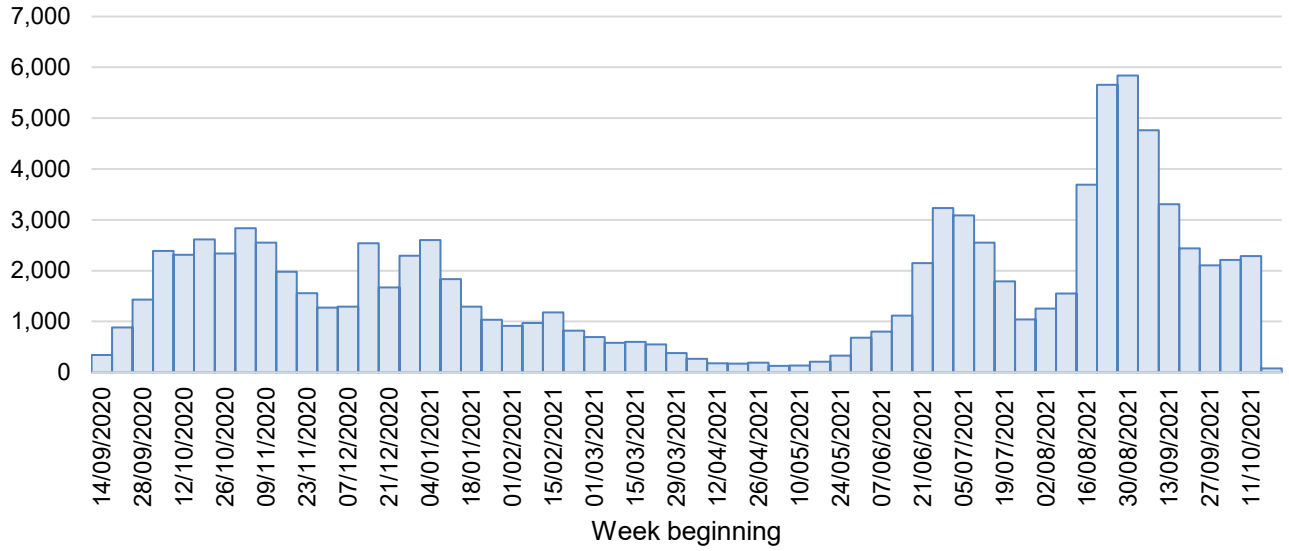
Since 28 September 2020 fields have been available to record information about whether a case has travelled outside of Scotland. In the week ending 17 October 2021, 16,038 index cases were newly created on CMS, of which 9,042 had a fully completed index case interview. Of those interviewed, **634** travelled to the UK (excluding Scotland), **334** travelled to Europe and **20** 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

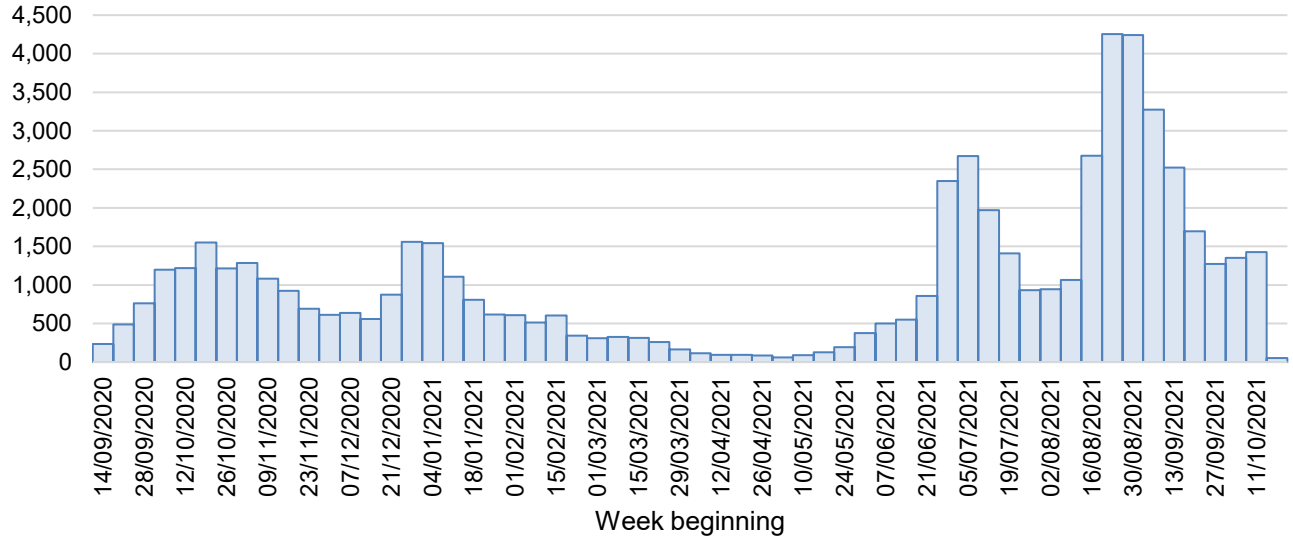
The Protect Scotland App was launched on 10 September 2020. It is free and designed to protect individuals and reduce the spread of coronavirus. The app alerts individuals if they have been in close contact with another app user who tests positive for coronavirus. If they test positive, it can help in determining contacts that may have otherwise been missed while keeping individual's information private and anonymous. As of 18 October 2021 the total number of people who have downloaded the app is **2,292,621** with the number of contact notifications at **96,981** (see Figure 10).

Figure 10: Weekly number of contact notifications sent from the Protect Scotland App from 14 September 2020 to 18 October 2021



As of 18 October 2021, **59,643** 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 11).

Figure 11: Weekly number of exposure key uploads to the Protect Scotland App from 14 September 2020 to 18 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.

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 12: Quarantine Statistics by date (22 June 2020 to 17 October 2021) [9]

	Week Ending 17 October 2021	Cumulative
Number of people arriving in Scotland	80,393	1,325,070
Number of people requiring to quarantine in a hotel (anywhere in the UK)	*	22,263
Number of people requiring to quarantine at home	3,529	474,613
Number of people contacted by National Centre	2,786	134,721

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

Table 13: Number of people contacted by National Centre by status (22 June 2020 to 17 October 2021) [9]

	Week Ending 17 October 2021	Cumulative
Successful contacts made	2,279	124,385
Unable to contact individual	255	10,084
In progress	252	252

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 12,722,617 LFD tests carried out in Scotland, of which 81,604 were positive (0.6%). Table 14 shows the number of LFD tests carried out in Scotland by testing group, and Table 15 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 14: Number of LFD[10] tests by Test group 19 November 2020 – 17 October 2021

Test Group	Test Reason	Number of tests	Number of positive tests	% LFT positive
Care Home Testing	Care Home - Visiting Professional	47,710	57	0.1%
	Care Home - Visitor	510,100	349	0.1%
	Care Home Staff	1,406,787	1,113	0.1%
Community Testing	Community Testing	89,866	822	0.9%
Education Testing	Combined School Staff	43,886	80	0.2%
	ELC Staff	259,570	892	0.3%
	Primary School Staff	1,249,616	2,947	0.2%
	Secondary School Pupils	773,635	6,680	0.9%
	Secondary School Staff	681,504	1,556	0.2%
	University Staff	8,242	46	0.6%
	University Students	25,547	203	0.8%
	University Testing Site	96,464	380	0.4%
Healthcare Testing	Healthcare Worker	2,462,037	3,793	0.2%
	Primary Care And Independent Contractors	164,671	208	0.1%
Social Care Testing	Children, Young People and Mental Health	896	0	0%
	NSS Portal Social Care	569,947	719	0.1%
	Residential Homes	13,083	16	0.1%
	Support Services	12,285	76	0.6%
Universal Offer	Attend An Event	409,757	1,126	0.3%
	High Cases In Local Area	170,827	3,665	2.1%
	Lives With Someone Who Is Shielding	25,723	545	2.1%
	Travel Within UK	94,658	460	0.5%
	Universal Offer	1,175,730	28,829	2.5%
Workplace Testing	Private Sector	14,985	30	0.2%
	Public Sector	58,250	139	0.2%
	Quarantine Hotel Staff/Security Personnel	3,594	42	1.2%
	Third Sector	382	1	0.3%
	UK Gov Other	1,896,873	22,976	1.2%
Other	Other	455,992	3,854	0.8%
Total	**Total**	**12,722,617**	**81,604**	**0.6%**

Data extracted: 18 October 2021

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

Table 15: Number of LFD[10] tests, up until 17 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	940,512	5,856	0.6%
NHS Borders	265,246	1,352	0.5%
NHS Dumfries & Galloway	365,117	1,881	0.5%
NHS Fife	784,186	6,065	0.8%
NHS Forth Valley	701,961	4,441	0.6%
NHS Grampian	1,588,612	7,175	0.5%
NHS Greater Glasgow & Clyde	2,336,223	19,152	0.8%
NHS Highland	834,183	3,585	0.4%
NHS Lanarkshire	1,332,775	10,125	0.8%
NHS Lothian	2,022,968	14,342	0.7%
NHS Orkney	57,365	136	0.2%
NHS Shetland	78,877	242	0.3%
NHS Tayside	1,042,772	5,815	0.6%
NHS Western Isles	91,469	136	0.1%
Unknown	280,351	1,301	0.5%
Total	**12,722,617**	**81,604**	**0.6%**

Data extracted: 18 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 16: Targeted Community Testing (18 January 2021 to 17 October 2021)

Symptoms	Week Ending 17 October 2021			Cumulative		
	Number of Tests	Number Positive	% positive	Number of Tests	Number Positive	% positive
Asymptomatic	10,646	1,132	10.6	438,585	33,545	7.7
Symptomatic[11]	10,419	2,364	22.7	331,578	68,691	20.7
All[12]	**21,977**	**3,754**	17.1	**792,860**	**107,233**	13.5

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

12 In week ending 17 October 2021, 912 tests were of unknown symptomatic status of which 258 were positive.

Table 17: 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	838	136	16.2
NHS Borders	649	116	17.9
NHS Dumfries and Galloway	770	130	16.9
NHS Fife	876	168	19.2
NHS Forth Valley	2,274	436	19.2
NHS Grampian	996	142	14.3
NHS Greater Glasgow and Clyde	2,909	416	14.3
NHS Highland	73	0	0.0
NHS Lanarkshire	7,470	1,406	18.8
NHS Lothian	3,844	550	14.3
NHS Tayside	1,263	254	20.1
Unknown Health Board	15	0	0.0
Total	**21,977**	**3,754**	**17.1**

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

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

- In August 2021, COVID-19 cases increased and surpassed the peak that was seen in early July 2021 and has been declining since early September 2021. The rate of increase in cases in August 2021 was less among fully vaccinated individuals compared to partially or unvaccinated individuals.
- In the last week from 09 October 2021 to 15 October 2021, the seven-day rolling average of COVID-19 related acute hospital admissions decreased from 86.29 to 74.43 admissions per day.
- In the last four weeks from 18 September 2021 to 15 October 2021, 28.1% 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 13 October 2021, 832 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 an underlying or contributory cause of death. This equates to 0.022% 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.

Data Sources and Limitations

13 For further information, please see - Appendix 9 – Data Sources and Limitations

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 (UKHSA), 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 Scottish 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

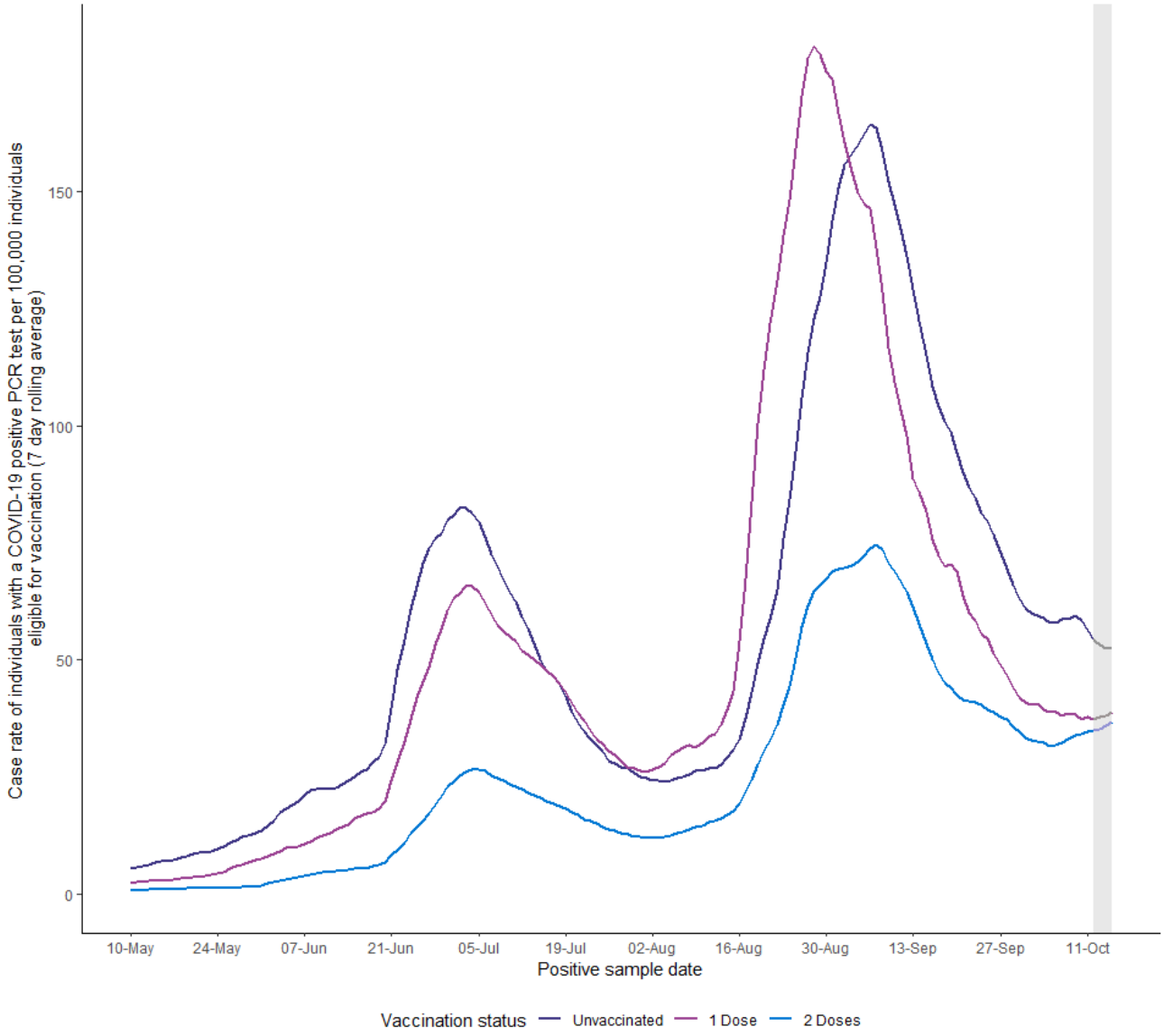
Table 18: Number of COVID-19 positive cases individuals by week and vaccination status, 18 September 2021 to 15 October 2021

	Unvaccinated			1 Dose			2 Doses		
Week/Vaccination Status	No. of Cases	Eligible or Vaccinated	% Cases	No. of Cases	Eligible or Vaccinated	% Cases	No. of Cases	Eligible or Vaccinated	% Cases
18 September - 24 September 2021	10,470	1,831,358	0.57%	1,332	331,615	0.40%	10,534	3,752,475	0.28%
25 September - 01 October 2021	7,780	1,811,180	0.43%	930	320,522	0.29%	8,793	3,783,746	0.23%
02 October - 08 October 2021	7,398	1,797,196	0.41%	852	313,664	0.27%	8,815	3,804,588	0.23%
09 October - 15 October 2021	6,569	1,776,482	0.37%	857	316,062	0.27%	9,850	3,822,904	0.26%

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, the case rate in unvaccinated populations was 370 COVID-19 cases per 100,000 individuals, compared to 258 COVID-19 cases per 100,000 individuals vaccinated with two doses.

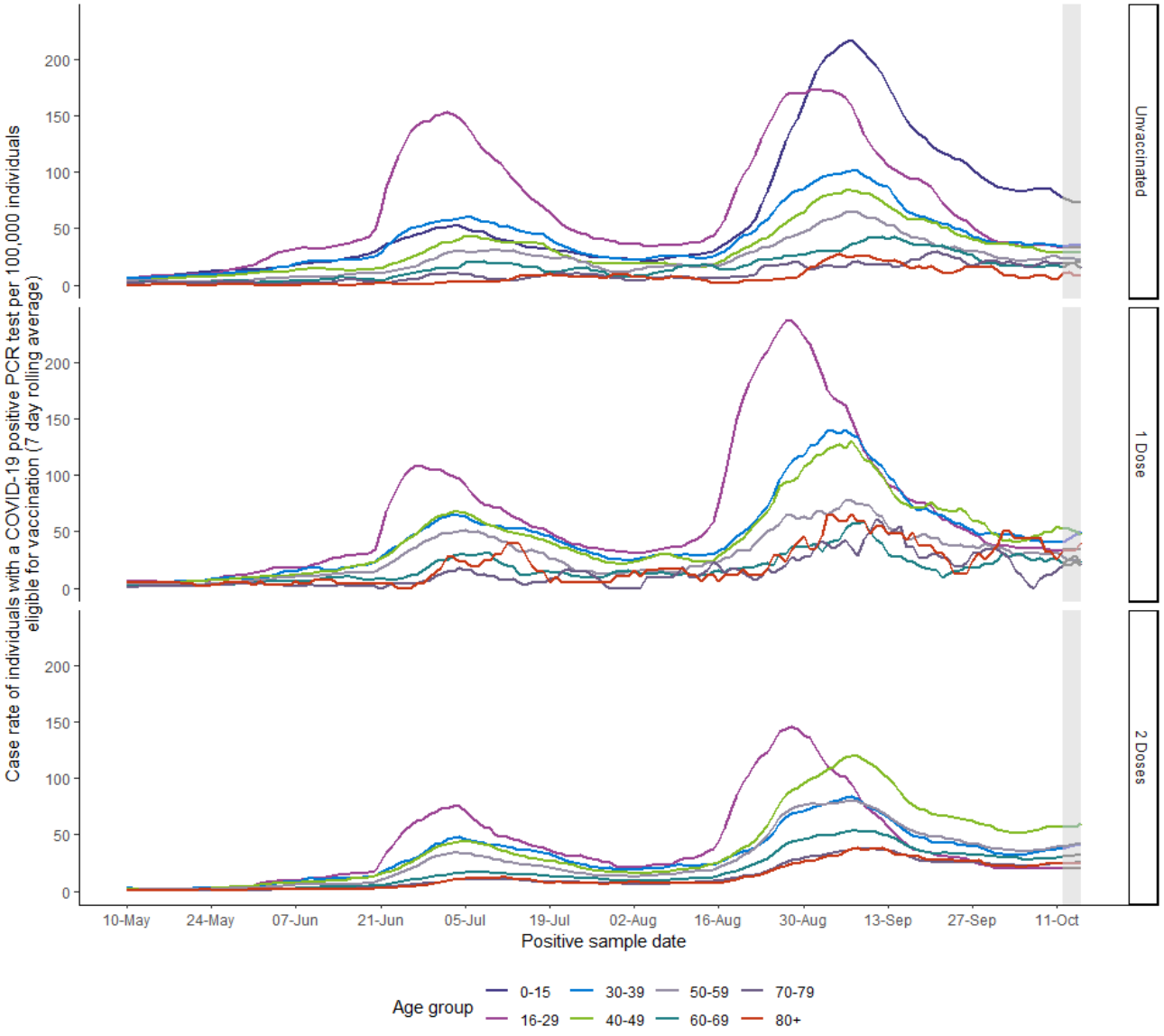
Figure 12: COVID-19 case rate per 100,000 individuals eligible for vaccination by vaccination status, seven-day rolling average from 10 May 2021 to 15 October 2021.



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.

There are lower rates of cases in vaccinated individuals compared to unvaccinated individuals.

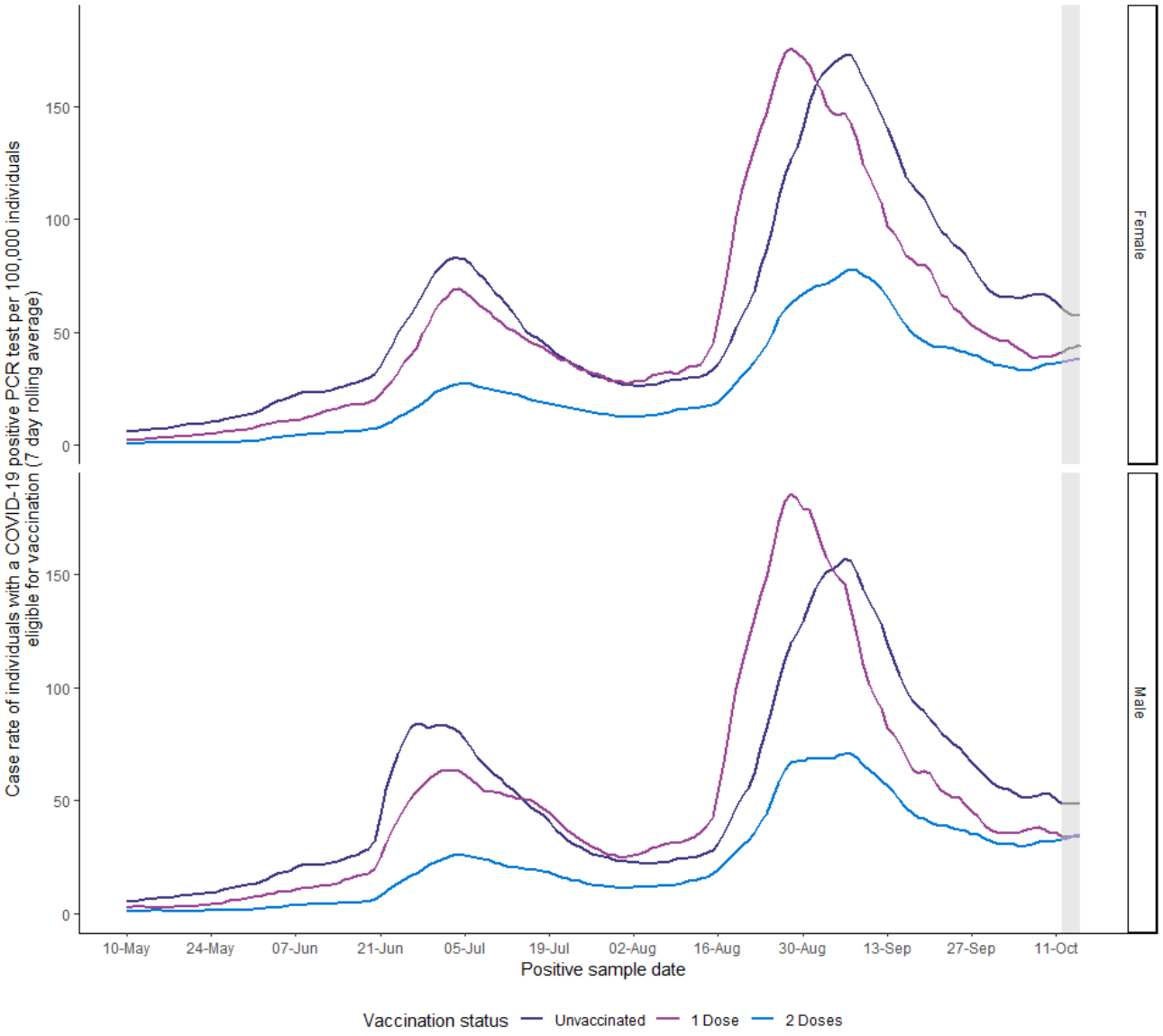
Figure 13: COVID-19 case rate per 100,000 individuals eligible for vaccination by vaccination status and age group, seven-day rolling average from 10 May 2021 to 15 October 2021



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 14: 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 08 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.

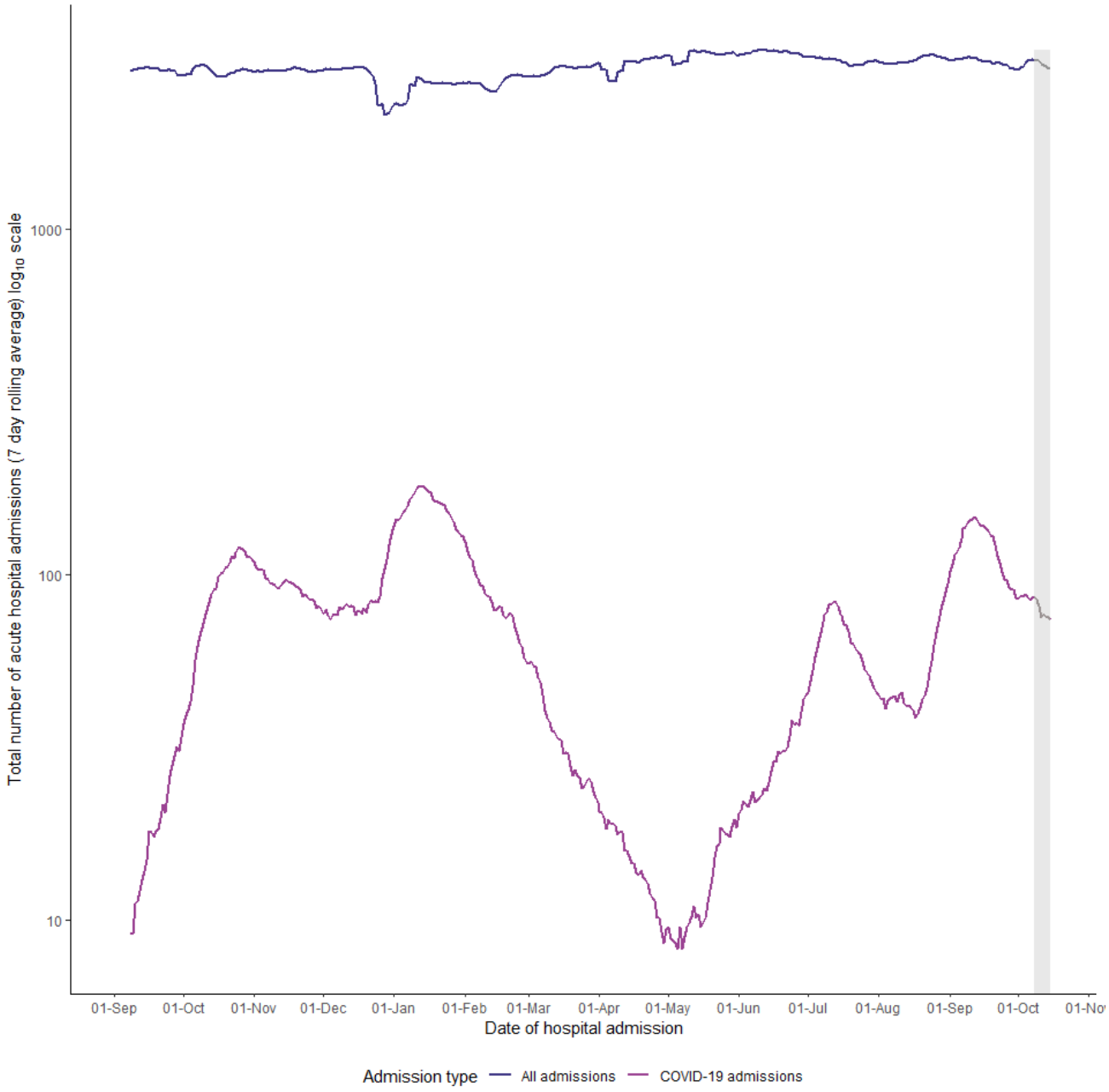
COVID-19 case rates are similar between females and males.

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 15 October 2021, there were a total of 1,206,312 acute hospital admissions for any cause, of which 27,145 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, 27,145 individuals were admitted to hospital, of which 86 were readmitted more than 90 days after their first admission.

Figure 15: 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 15 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 four weeks from 18 September 2021 to 15 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 19: 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, 18 September 2021 to 15 October 2021

Week/Vaccination Status	Unvaccinated			1 Dose			2 Doses		
	No. of Admissions	Eligible or vaccinated	% Admissions	No. of Admissions	Eligible or vaccinated	% Admissions	No. of Admissions	Eligible or vaccinated	% Admissions
60 years and over									
18 September - 24 September 2021	47	75,102	0.063%	6	15,036	0.040%	331	1,392,019	0.024%
25 September - 01 October 2021	37	74,957	0.049%	2	14,714	0.014%	280	1,392,486	0.020%
02 October - 08 October 2021	29	74,769	0.039%	5	14,386	0.035%	297	1,393,002	0.021%
09 October - 15 October 2021	29	74,593	0.039%	5	14,033	0.036%	275	1,393,531	0.020%
30 to 59 year olds									
18 September - 24 September 2021	112	482,908	0.023%	12	126,204	0.010%	118	1,860,979	0.006%
25 September - 01 October 2021	78	478,995	0.016%	16	120,725	0.013%	120	1,870,371	0.006%
02 October - 08 October 2021	71	475,724	0.015%	8	116,337	0.007%	114	1,878,030	0.006%
09 October - 15 October 2021	44	472,960	0.009%	9	112,537	0.008%	103	1,884,594	0.005%
16 to 29 year olds									

Week/Vaccination Status	Unvaccinated			1 Dose			2 Doses		
	No. of Admissions	Eligible or vaccinated	% Admissions	No. of Admissions	Eligible or vaccinated	% Admissions	No. of Admissions	Eligible or vaccinated	% Admissions
18 September - 24 September 2021	26	364,915	0.007%	4	182,070	0.002%	11	499,432	0.002%
25 September - 01 October 2021	22	349,918	0.006%	5	175,659	0.003%	6	520,840	0.001%
02 October - 08 October 2021	27	340,185	0.008%	5	172,734	0.003%	10	533,498	0.002%
09 October - 15 October 2021	16	332,186	0.005%	3	169,535	0.002%	7	544,696	0.001%
Under 16 year olds									
18 September - 24 September 2021	48	908,433	0.005%	0	8,305	0%	0	45	0%
25 September - 01 October 2021	30	907,310	0.003%	1	9,424	0.011%	0	49	0%
02 October - 08 October 2021	38	906,518	0.004%	0	10,207	0%	0	58	0%
09 October - 15 October 2021	30	896,743	0.003%	0	19,957	0%	0	83	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.

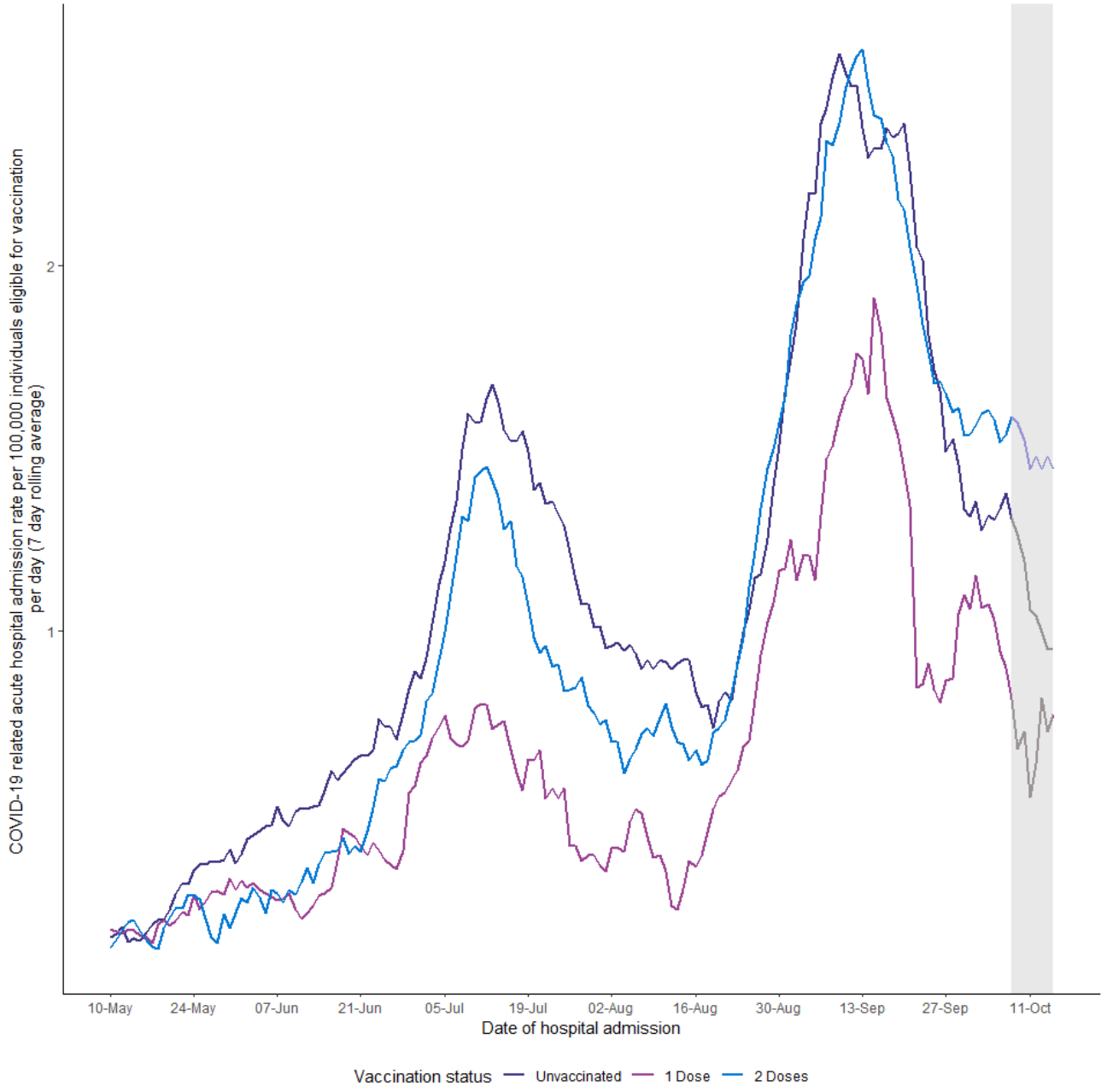
For example, in the last week from (09 October to 15 October 2021) for individuals ages 60 and over, 20 out of every 100,000 fully vaccinated individuals were admitted to hospital and had a COVID-19 positive PCR test 14 days prior, on admission or during their

stay in hospital, compared to 39 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 nine per 100,000 unvaccinated individuals. Therefore, last week, individuals were 1.8 to 5 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.

PHS Weekly Statistical Report, published 29 September 2021, included analysis of hospital admissions 'because of' COVID-19 (where COVID-19 is the primary cause of admission) in comparison to admissions 'with' COVID-19 (where COVID-19 is not the primary reason for admission, but the individual has tested positive by PCR). This was based on aggregated data for six NHS Boards up to June 2021 and does not provide a breakdown by vaccine status. It was estimated that in June 2021, 72% of admissions were 'because of' COVID-19 rather than 'with' COVID-19.

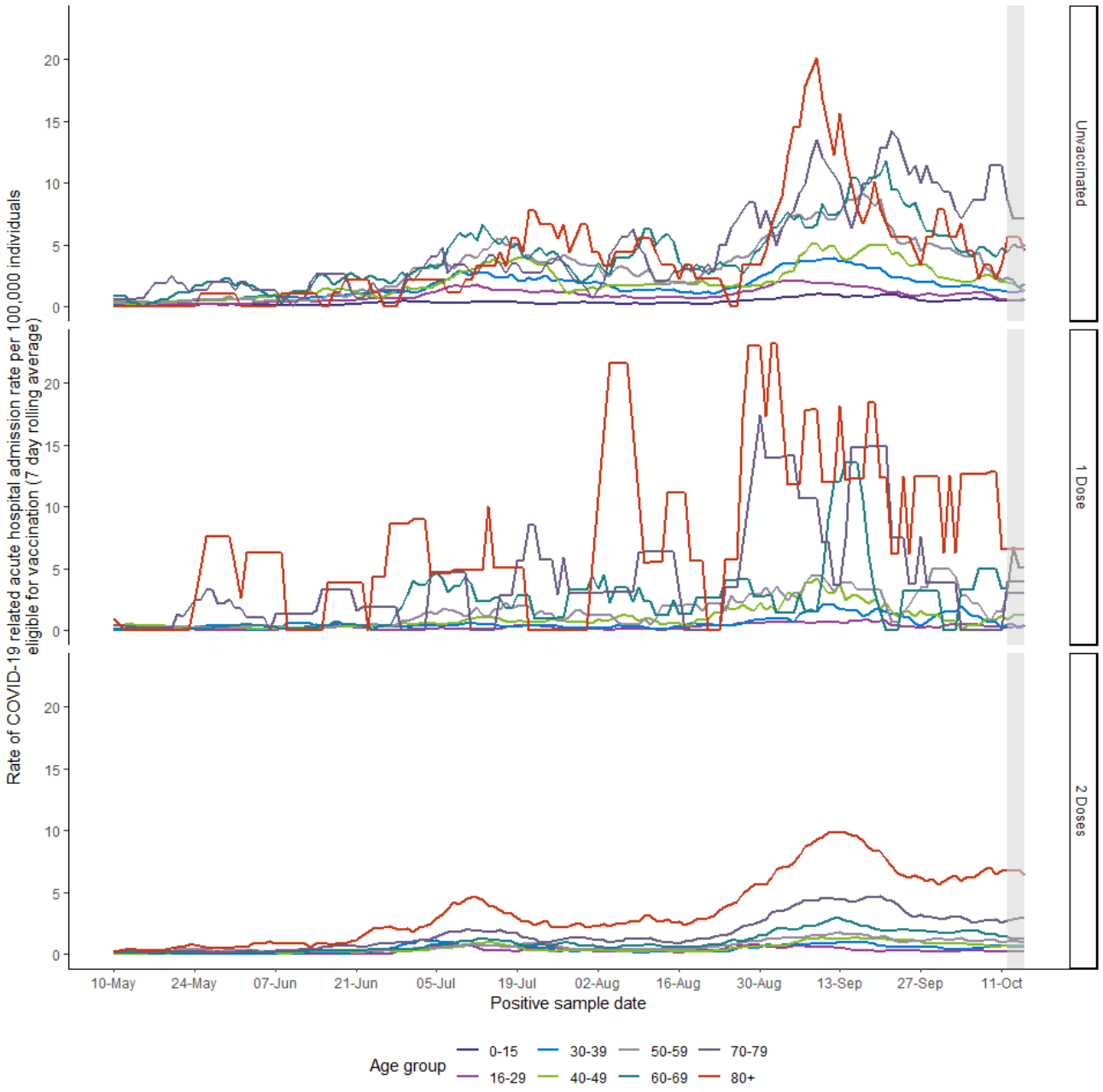
Figure 16: Rate of acute hospital admissions where individual had a COVID-19 positive PCR test 14 days prior, on admission or during their stay in hospital, per 100,000 individuals eligible for COVID-19 vaccination by vaccination status, seven-day rolling average from 10 May 2021 to 15 October 2021



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.

From the 18 September 2021 to 15 October 2021, 28.6% of COVID-19 related acute hospital admissions were in unvaccinated individuals. As seen in Table 19, those with two doses who are hospitalised are more likely to be aged 60 years or over. Whereas hospitalised unvaccinated individuals are more likely to be under 60 years old.

Figure 17: Seven-day rolling average COVID-19 related acute hospital admissions by vaccination status and by age group, 10 May 2021 to 15 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. 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 08 October 2021, there have been 4,565 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, 75.2% (n = 3,434) were in unvaccinated individuals, 6.5% (n = 299) had received one dose of COVID-19 vaccine and 18.2% (n = 832) 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, 832 individuals (0.022%) 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, 79.2% 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 20).

Table 20: Number of confirmed COVID-19 related deaths by vaccination status at time of test and age-standardised mortality rate per 100,000, 11 September 2021 to 08 October 2021

Week/Vaccination Status	Unvaccinated		1 Dose		2 Doses	
	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
11 September - 17 September 2021	26	**7.73** (4.47 - 10.98)	4	**5.13** (0.00 - 10.70)	101	**1.94** (1.55 - 2.31)
18 September - 24 September 2021	29	**8.63** (5.19 - 12.06)	8	**14.72** (3.69 - 25.75)	121	**2.37** (1.94 - 2.80)
25 September - 01 October 2021	22	**6.87** (3.71 - 10.03)	4	**8.88** (0.05 - 17.71)	114	**2.22** (1.81 - 2.63)
02 October - 08 October 2021	19	**5.29** (2.62 - 7.97)	0	**0.00** (0.00 - 0.00)	100	**1.96** (1.57 - 2.35)

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 3 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.

COVID-19 Vaccine Wastage

Given the scale of the Covid-19 vaccination programme, some vaccine wastage has been unavoidable for a variety of reasons including logistical issues, storage failure and specific clinical situations.

The initial planning assumption for the vaccination programme was that there would be around 5% vaccine wastage. Table 21 below shows the trend of the percentage of vaccines wasted by calendar month between April – September 2021.

In September 2021, the percentage of vaccines wasted was 3.2%. The top reasons for doses wasted in this month were: excess stock (46%), expired shelf life of stock (44%) other reasons (10%).

Excess stock is defined: Where a vaccination team reach the end of an allotted shift or job, and have surplus vaccines that cannot be returned to stock, or used before it expires. This includes any unused doses in opened vials at the end of a clinic.

Table 21: Number of COVID-19 Vaccination doses wasted by Month[1,2,3,4,5]

Measure	April-21	May-21	June-21	July-21	Aug-21	Sept-21
Number of doses administered[1]	937,233	1,162,784	1,140,673	641,177	568,203	303,931
Number of doses wasted[2]	2,995	8,289	6,381	16,150	17,457	10,089
Percentage wasted[3] (%)	0.3	0.7	0.6	2.5	2.9	3.2

Source: NSS Service Now, COVID-19 Vaccine Wastage.

Data correct at 13/10/21

1. The number of vaccine doses administered. This includes 1st and 2nd doses.

2. The total number of vaccine doses which could not be administered and therefore wasted.
3. % Wasted is measured as:

$$\frac{(\text{Number of Doses Wasted} \times 100)}{(\text{Number of Doses Wasted} + \text{Administered})}$$

4.Excludes GP practice information.

5.Excludes wastage from clinical trials

Data Sources and Limitations

The single source of vaccination wastage data for Scotland is through an NSS Service Now wastage form, which is populated by health board clinicians which can impact timeliness and accuracy.

It is important to note, that these statistics do not include wastage of vaccines in GPs practices. Therefore, the Scotland level figures reported above may be an under estimate.

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 form 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

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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 27 October 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

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 us 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

Date of extraction and analysis

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 dataset at 16:00 on Monday 18 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 14 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.