

# **Public Health Scotland COVID-19 & Winter Statistical Report**

**As at 20 December 2021**

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## **This is a Management Information publication**

Published management information are non-official statistics. They may not comply with the UK Statistics Authority's Code of Practice with regard to high data quality or high public value but there is a public interest or a specific interest by a specialist user group in accessing these statistics as there are no associated official statistics available. Users should therefore be aware of the aspects of data quality and caveats surrounding these data, all of which are listed in this document. Therefore, the data presented are subject to change.

## Introduction

Since the start of the Coronavirus-19 (COVID-19) outbreak Public Health Scotland (PHS) has been working closely with Scottish Government and health and care colleagues in supporting the surveillance and monitoring of COVID-19 amongst the population. As part of our continuous review of reporting, as of 08 December 2021 Public Health Scotland has implemented changes to the COVID-19 Weekly Report to support the reader in drawing insights from a wider range of existing metrics around COVID-19 and winter pressures.

Caution should be used when making comparisons between metrics; each metric is calculated independently and may cover different time periods or cohorts of the population. The consolidated report will include the following content weekly:

### COVID-19

- Summary of tests and cases
- Contact Tracing
- Hospital and ICU admissions
- Testing in care homes
- COVID-19 vaccination status cases, hospitalisations and deaths
- Covid-19 vaccination uptake summary
- Adhoc reporting on topics such as: Covid-19 and Vaccination in pregnancy, Equality reporting etc.

### Hospital/ Wider System Pressures

- Unscheduled Care
- Waiting Times
- Delayed Discharges

Additional charts for a number of variables related to COVID-19 service use in the NHS, including some metrics previously presented in the weekly COVID-19 report, are available to view in our [interactive dashboard](#). These include breakdowns by age, sex and deprivation. The variables currently available on the dashboard include:

- Positive cases per day and cumulative total
- COVID-19 hospital admissions
- COVID-19 patients admitted to ICU admissions
- COVID-19 related contacts to NHS24 and the Coronavirus Helpline
- Community Hubs and Assessment Centres
- Scottish Ambulance Service incidents
- Contact tracing
- Health care workers
- Care homes
- Targeted community testing
- Travel outside of Scotland
- Quarantine Statistics

- NHS Protect Scotland App
- Lateral Flow Device (LFD) Testing

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.

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.

There will be no report published on 29 December 2021. The next release will be on 07 January 2022.

## Main Points

- As at 19 December 2021, there have been 806,695 confirmed COVID-19 cases; 33,444 of these were recorded in the most recent week, an increase of 29.4% from the previous week
- The proportion of cases with S gene target failure, a proxy for the Omicron variant, has exponentially increased since 23 November, and as at 20 December 2021, S gene target failure cases accounted for 57.9% of all cases reported by Pillar 2 Lighthouse Laboratory
- There has been a 67.1% increase in the number of Lateral Flow Device (LFD) asymptomatic tests carried out in the last week. There have been 16,909,624 LFD tests carried out in Scotland since 19 November 2020, of which 122,251 were positive (0.7%).
- In the week ending 12 December 2021, 25,939 individuals were recorded in the contact tracing software, from which 45,948 unique contacts have been traced
- In the week ending 14 December 2021, there were 387 admissions to hospital with a laboratory confirmed test of COVID-19. The highest number of new admissions are now in those aged 40-49
- 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 2% in the most recent week ending 05 December 2021
- In the week ending 19 December 2021 there were 21 new admissions to Intensive Care Units (ICUs) for confirmed COVID-19. This is a decrease of 12.5% from the week ending 12 December 2021

## Incidence of Variants of Concern and Variants Under Investigation

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

There are now a rapidly increasing number of cases of the new Omicron variant in Scotland, originally detected in South Africa. The proportion of cases with S gene target failure, a proxy for the Omicron variant, has exponentially increased since 23 November, and as at 20 December 2021, S gene target failure cases accounted for 57.9% of all cases reported by Pillar 2 Lighthouse Laboratory and therefore has now replaced Delta as the dominant variant of COVID-19 in Scotland.

The latest information on the Scotland cases of the new variant of concern is published daily by [Scottish Government](#). Further information can be found below within [The Omicron variant of COVID-19](#) section.

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.

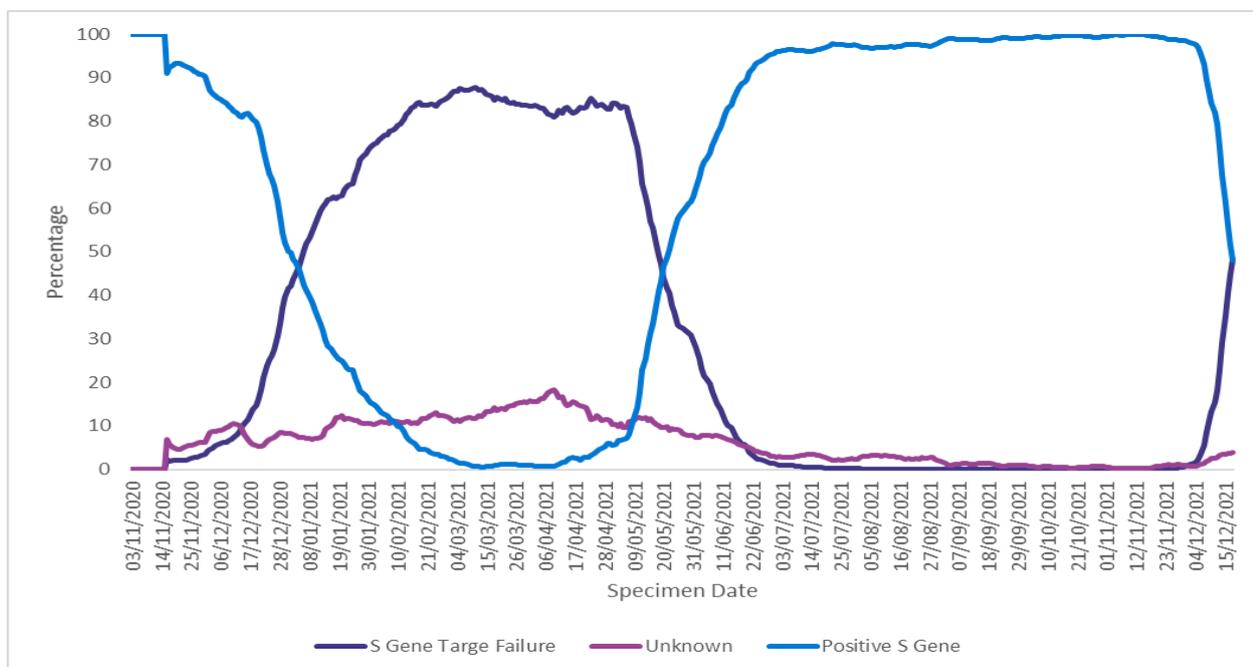
## The Omicron Variant of COVID-19

On 23 November 2021, a small number of cases of a new SARS-CoV-2 variant with 32 spike mutations was reported by South Africa to the international genomic database, GISAID. This variant was designated B.1.1.529 on 24 November 2021. On 26 November 2021, the World Health Organisation identified it as a Variant of Concern known as Omicron.

Given the number of mutations on the Omicron variant of SARSCoV-2, there are concerns of potential immune escape and/or higher transmissibility when compared to other variants. This could lead to an unexpected surge in cases, even amongst the vaccinated or recently infected. Whether Omicron leads to increased or less severe disease also is not yet known. World Health Organisation (WHO) notes that further investigations into the characteristics of the Omicron variant are required.

Like the Alpha variant of COVID-19 that was once dominant in the UK, Omicron has a mutation that leads to S gene target failure (or dropouts) in a widely-used PCR testing platform available at Pillar 2 Lighthouse Laboratories. Lighthouse Labs typically identify approximately 95% of all new cases reported daily in Scotland. Recent analysis by PHS found that since November 1, more than 97% of S gene target failures with confirmed whole genome sequence results were the Omicron variant of SAR-CoV-2. Prior to that, between July and October 2021, S gene target failure background rates in Scotland were stable and low, at less than 1 in 1,000 cases (Figure 1). These analyses show that the S gene target failure marker is currently a good proxy for monitoring change in the Omicron variant in Scotland.

**Figure 1: Proportion of cases by specimen date tested for the S gene by S gene category, 01 November 2020 to 18 December 2021**



\* S gene dropout weakpositives are S gene dropouts where the cycle threshold of the two other target genes (ORF1AB and N) have CT values greater than 30, or where one of the target genes has dropped out, and the other is greater than 30.

The strategic aims of the PHS response to the Omicron variant of COVID-19 is to 1) understand the epidemiological and clinical characteristics of this variant and the potential impact it may have on the population and services and 2) delay its spread whilst emerging knowledge informs policy development and the clinical and public health response. Since 02 December 2021, Public Health Scotland has been reporting daily updates of key data on Omicron cases in Scotland via the Scottish Government website.

The case definitions for Omicron have been updated since the last report and the following case definitions were adopted on 15 December 2021 by all 4 UK nations:

- **Confirmed:** Omicron(B.1.1.529) by sequencing or genotyping i) 417N and 681R failure; ii) 69-70 deletion plus 417N; iii) 69-70 deletion plus 501Y; iv) Q493R, v) other relevant genotyping results
- **Probable:** COVID-19 PCR positive with specimen dates from 1 December 2021 and i) S Gene Target Failure\* or ii) 69-70 deletion
- **Possible:** COVID-19 PCR positive and S Gene Target Failure from 01 November 2021 up to and including 30 November 2021, excluding those with confirmed non-Omicron variant

Case definitions are subject to revision as understanding of the epidemiology of the Omicron variant evolves and the structure of the virus is more thoroughly characterised. Currently, confirmation of cases by whole genome sequencing occurs following testing by the COVID-19 Genomics UK Consortium. Results of samples sent for whole genome sequencing in Scotland are typically available within eight to twelve days following specimen collection date.

Since the latter part of November, the Omicron variant of SARS-CoV-2 represents a rapidly growing proportion of all daily cases reported to PHS. Between 23 November 2021 (the first date when an Omicron confirmed case was identified in Scotland) and 20 December 2021, prevalence of the S gene target failure as a proportion of all new cases increased from 0.1% to 57.9% (Figure 2).

**Figure 2: Proportion of daily new cases reported by Pillar 2 Lighthouse Labs that are S gene target failures by date of report, 23 November – 20 December 2021**

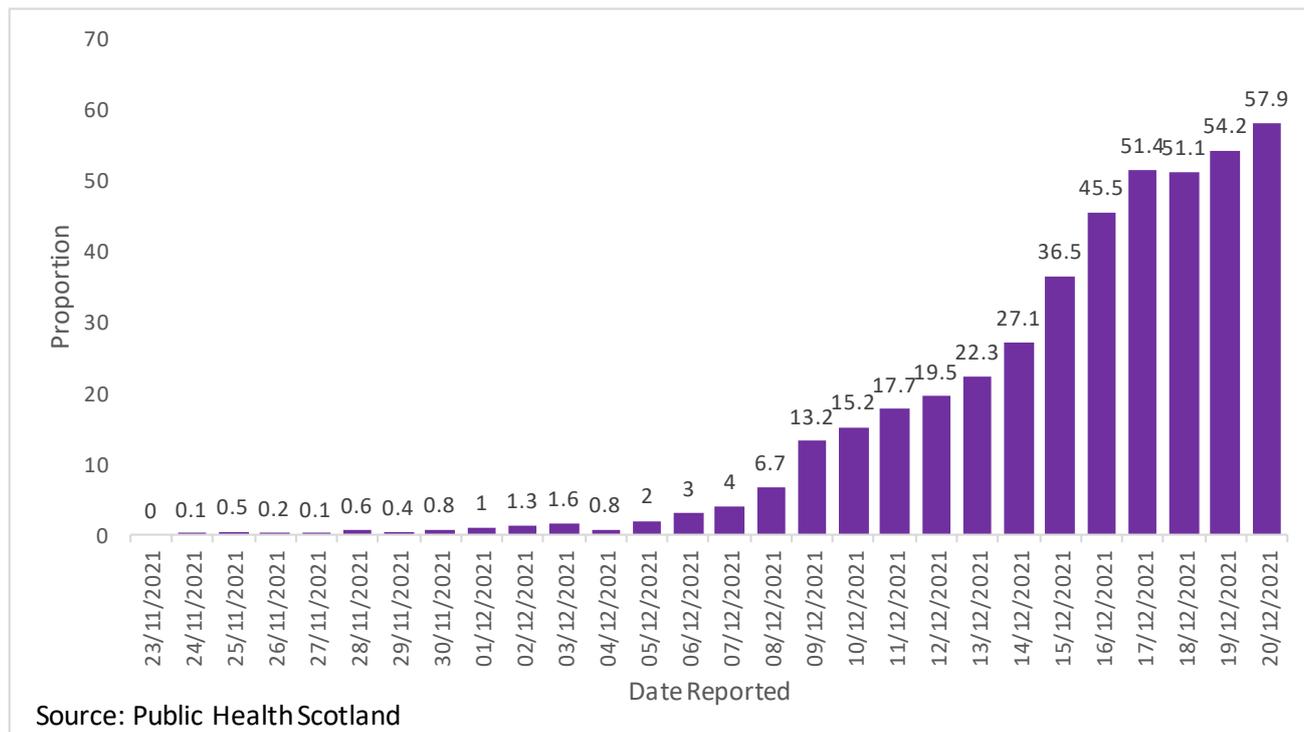
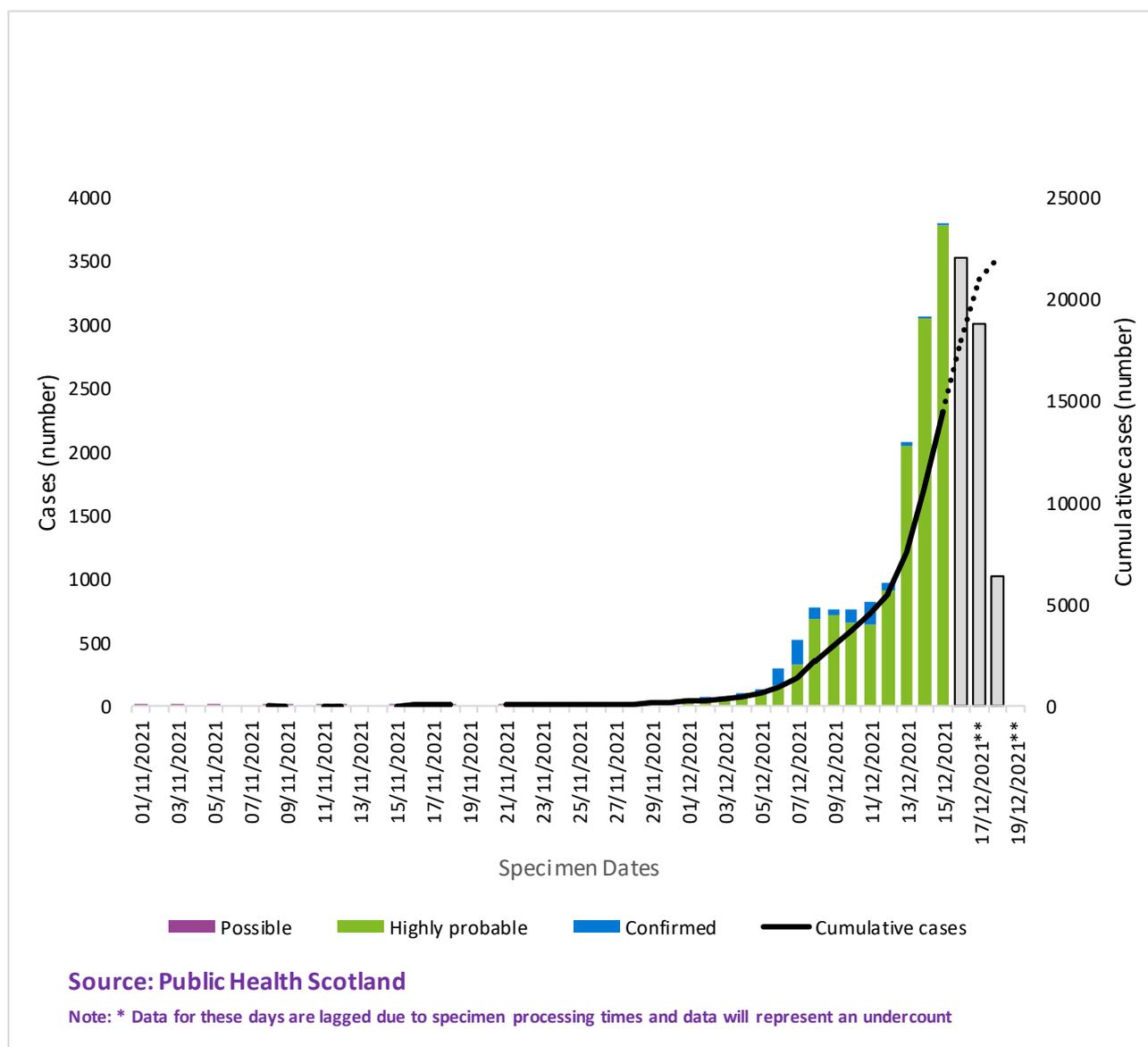


Figure 3 shows the number of confirmed Omicron cases and those probable and possible cases that are under investigation by specimen reporting date. As of 19 December 2021, a total of 21,975 cases were reported, of which 1,111 (5.1%) were confirmed, 20,777 (94.5%) were probable and 87 (0.4%) were possible. Total cases are more than four-fold higher than on 12 December 2021, when they were 5,486.

**Figure 3: Confirmed Omicron variant of COVID-19 cases or highly probable or possible cases under investigation by specimen date (n=21,975), as of 19 December 2021 17:00h, Scotland**



\* Data for the previous 4 reporting days are subject to revision as censoring times and processing lags result in incomplete reporting for this period.

Table 1 shows the breakdown of cases by case definition and NHS Health Board. NHS Greater Glasgow and Clyde, and NHS Lanarkshire were the first Boards to identify a large number of cases following a private event in Glasgow on 20 November 2021 and a mass public gathering on 22 November 2021. However, as sustained community transmission spread overtakes smaller clusters, the distribution of cases is beginning to reflect the geospatial heterogeneity of cases generally across Scotland. As of 19 December 2021, all have had at least one confirmed, probable or possible case.

**Table 1: Omicron variant cases (n=21,975) by NHS Health Board as of 19 December 2021 17:00h, Scotland**

NHS Health Board of Residence	Confirmed	Highly probable	Possible	Total cases (confirmed, highly probable, and possible)
Ayrshire & Arran	68	1,392	4	1,464
Borders	6	200	0	206
Dumfries & Galloway	5	127	0	132
Fife	55	1,048	3	1,106
Forth Valley	60	972	2	1,034
Greater Glasgow & Clyde	345	6,155	32	6,532
Grampian	26	620	4	650
Highland	52	688	5	745
Lanarkshire	215	3,120	23	3,358
Lothian	247	5,499	10	5,756
Orkney	0	10	0	10
Shetland	0	5	0	5
Tayside	32	928	4	964
Western Isles	0	12	0	12
Unknown	0	1	0	1
<b>Total</b>	<b>1,111</b>	<b>20,777</b>	<b>87</b>	<b>21,975</b>

Across the Boards, all appropriate public health action continues to be undertaken to mitigate onward transmission and to alleviate potential future hospital pressures. In particular, all contacts of COVID-19 confirmed cases are now required to self-isolate for 10 days. Previously this applied only to Omicron cases. Predicted exponential increases in Omicron cases with disease severity similar to the Delta variant would put significant pressure on hospital systems in the coming weeks.

As of 19 December 2021, PHS identified via routine data linkage 24 people hospitalised in Scotland meeting the confirmed Omicron case definition. These figures include people who have a first positive PCR within 14 days of admission or who were diagnosed with COVID-19 during their stay in hospital. Importantly, the reason for hospitalisation is not reported to PHS. Consequently, these cases may include people admitted for non COVID-19 related reasons. Over the coming weeks, as numbers allow, a further update will be provided that describes rates of people with the Omicron variant admitted to hospital, vaccine breakthrough infections and deaths. These analyses form part of the wider COVID-19 national surveillance efforts, which can provide critical insight into vaccine effectiveness.

Table 2 compares the age and sex profile of confirmed, probable and possible case of Omicron variant of COVID-19 to the rest of the cases reported between 01 November 2021 and 19 December 2021; No marked differences are observed in the distribution of incident cases by sex (54% of Omicron confirmed cases were women versus 52% amongst all cases.) Confirmed Omicron cases in the initial weeks after the variant was detected were more frequently amongst people aged 20-39 years compared to all cases. This difference persists in recent cases and across the highly probable and possible cases also. Currently 50% (n=10,934) of confirmed, highly probable or possible Omicron cases are between the ages 20 and 39 years, whereas just over a quarter (n=48,023) of all cases are amongst those ages 20 and 39 years.

**Table 2: Confirmed, highly probable or possible cases of the Omicron variant of COVID-19 cases (n=21,950\*) and all cases since 01 November 2021 (n=178,445) by age group and sex, as of 19 December 2021 17:00h, Scotland**

Age bands	Omicron confirmed, highly probable and possible cases				All PCR confirmed covid-19 cases			
	Female	Male	Total	(%)	Female	Male	Total	(%)
<20	1,732	1,534	3,266	15%	25,453	25,801	51,254	31%
20-29	3,453	2,503	5,956	27%	11,814	9,154	20,968	13%
30-39	2,591	2,387	4,978	23%	14,772	12,283	27,055	16%
40-49	1,853	1,630	3,483	16%	14,635	13,097	27,732	17%
50-59	1,445	1,383	2,828	13%	11,008	11,471	22,479	14%
60-69	523	507	1,030	5%	4,833	5,191	10,024	6%
70-79	147	165	312	1%	1,572	1,679	3,251	2%
80+	50	47	97	0%	878	621	1,499	1%
Total	11,794 (54%)	10,156 (46%)	21,950	100%	84,965 (52%)	79,297 (48%)	164,262	100%

\* Age and sex specific data unknown for 25 Omicron confirmed, highly probable or possible cases.

Public Health Scotland continues to monitor cases on a daily basis in coordination with NHS Health Boards. Daily new and cumulative confirmed cases by NHS Health Board are published at: [Coronavirus \(COVID-19\): additional data and information - gov.scot \(www.gov.scot\)](https://www.gov.scot/publications/coronavirus-covid-19/additional-data-and-information/pages/default.aspx). Preliminary investigations are also underway in Scotland to describe potential differences between the Delta and Omicron variants in terms of evidence of immune escape, differences in transmissibility, and severity of disease.

Over the coming weeks, as numbers allow, a further update will be provided that summarises findings and presents cases by vaccination status, hospital admissions, and deaths. These analyses form part of the wider COVID-19 national surveillance efforts, which can provide insight into vaccine effectiveness.

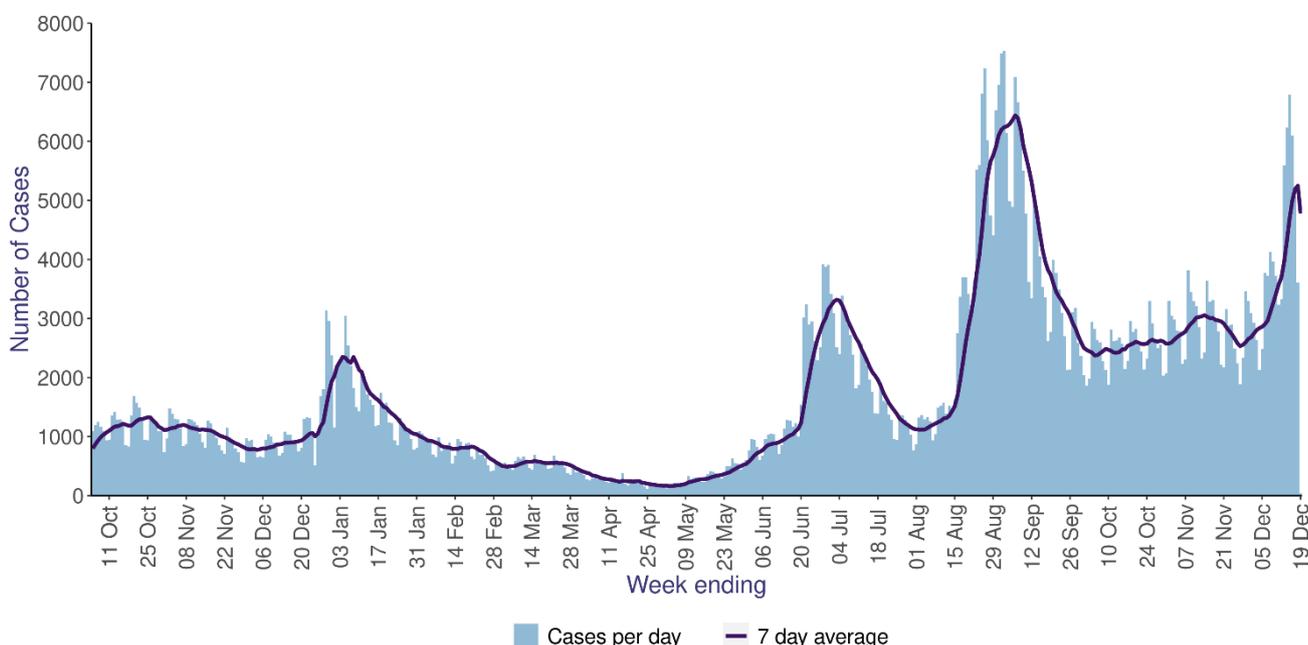
## COVID-19 Daily Data

The Public Health Scotland [COVID-19 Daily Dashboard](#) publishes daily updates (5-days per week, Monday to Friday) 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 806,695 people in Scotland who have tested positive, at any site in Scotland (NHS and UK Government Regional Testing centres), for COVID-19 up to 19 December 2021
- In the week ending 19 December 2021 there were 33,444 confirmed COVID-19 cases.<sup>1</sup>

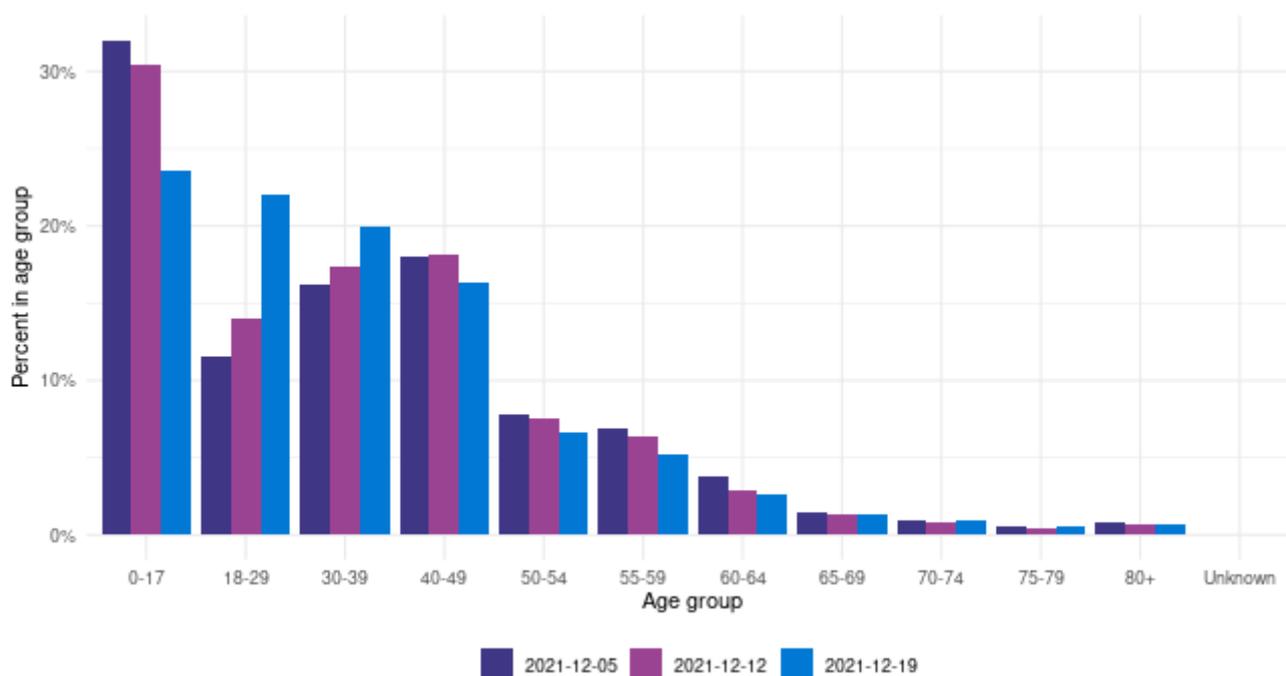
**Figure 4: Number of Positive Cases per day with 7 Day Average**



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

Figure 5 below shows the proportion of confirmed COVID-19 cases by age group for the most recent three weeks. The proportion of cases in the over 50 age groups has decreased since week ending 05 December 2021. This decrease could be explained by higher uptake of vaccinations in these age groups.

**Figure 5: Proportion of confirmed COVID-19 cases by age group, weeks ending 05 December – 19 December 2021**

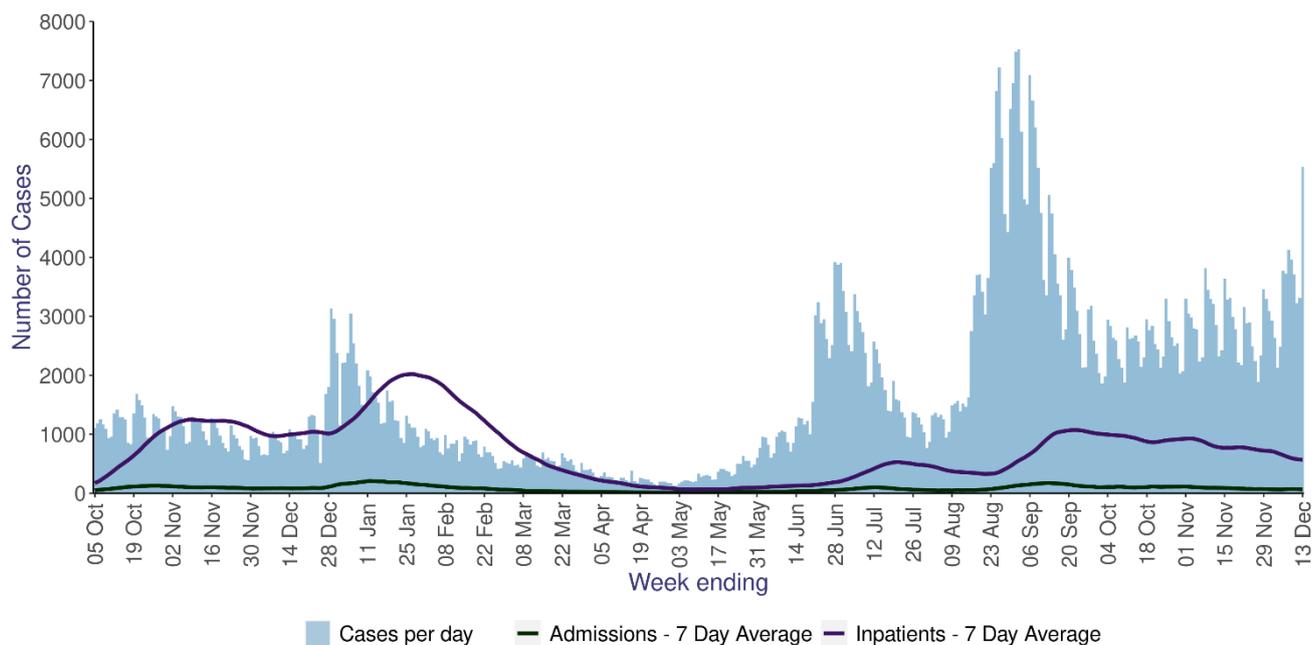


The [daily dashboard](#) also includes data on Hospital Admissions and ICU admissions for patients with COVID-19:

- In the week ending 14 December 2021, there were 387 admissions to hospital with a laboratory confirmed test of COVID-19
- In the week ending 19 December 2021 there were 21 new admissions to Intensive Care Units (ICUs) for confirmed COVID-19 patients

The number of confirmed daily COVID-19 cases increased from 3,721 to 5,537 between 07 December 2021 and 12 December 2021. During this same time period, the daily COVID-19 confirmed hospital admissions has decreased from 67 to 64 (seven-day rolling average). The seven-day average of inpatients in hospital has decreased by 9.7% (from 627 to 566).

**Figure 6: Number of Positive Cases, Admissions and Inpatients, as at 06 December 2021<sup>2</sup>**



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 and Preliminary Inpatient Data (RAPID) 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 7 below shows the weekly trend of hospital admissions with COVID-19 from week ending 05 January 2021 to 14 December 2021.

**Figure 7: Trend of hospital admissions 'with' COVID-19 in Scotland**

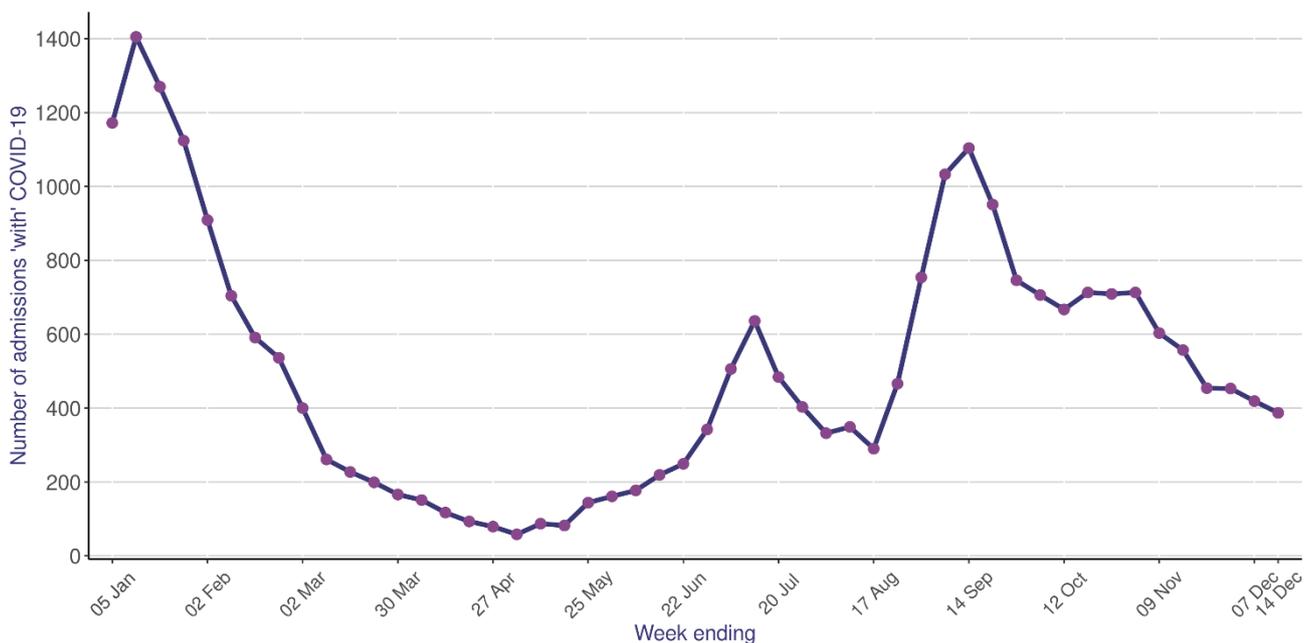


Table 3 below shows a breakdown of people admitted to hospital across all ages and by age group for the most recent four weeks. Data from 03 March 2021 is available on the [Covid Statistical Report website](#).

**Table 3: COVID-19 hospital admissions by age as at 14 December 2021<sup>3</sup>**

Age Band	17 November – 23 November	24 November – 30 November	01 December – 07 December	08 December – 14 December
Under 18	35	33	41	39
18-29	15	22	19	28
30-39	48	59	46	44
40-49	57	52	45	53
50-54	32	33	31	35
55-59	50	46	37	40
60-64	46	50	32	32
65-69	27	36	38	23
70-74	34	39	26	36
75-79	36	30	29	17
80+	74	53	75	40
<b>Total</b>	<b>454</b>	<b>453</b>	<b>419</b>	<b>387</b>

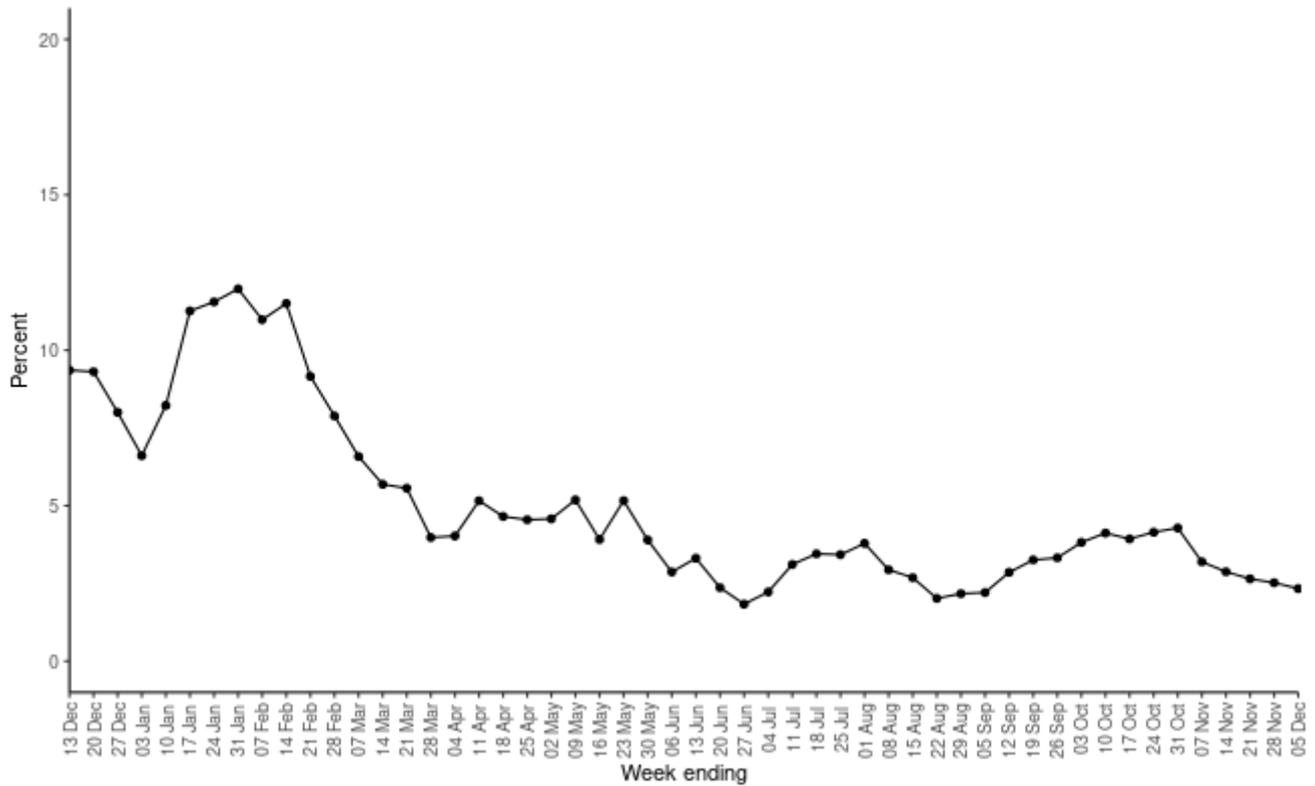
Source: RAPID (Rapid and Preliminary Inpatient Data)

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

In the latest week there has been a 7.6% decrease in the number of new admissions, with those aged 40-49 years having the highest number of admissions. Also, in the latest week approximately 38% of the hospital admissions related to patients aged 60+.

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 2% in the most recent week ending 05 December 2021 (Figure 8).

**Figure 8: Proportion of weekly cases admitted to hospital within 14 days of a first positive test**



Analysis on hospital admissions 'because of' COVID-19 is updated monthly and was last published on 01 December 2021. This report can be found [here](#).

## 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 November 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.

Since initial Omicron cases were found in Scotland, local Health Protection teams, with support from the National Contact Centre, have been delivering contact tracing as a key part of our response to tackle Omicron outbreaks, ensuring that those that need to receive public health advice are able to be notified quickly.

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 4](#).

### 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 05 December 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 12 December 2021, there were 27,053 Index Cases, of which 22,624 (83.6%) had completed contact tracing by telephone or other digital methods, and a further 63 are in progress (0.2%).

**Table 4: Contact Tracing trend information, by week ending**

	07 Nov	14 Nov	21 Nov	28 Nov	05 Dec	12 Dec
Total Index Cases <sup>1</sup>	20,010	21,608	20,946	18,455	20,642	27,053
Individuals <sup>2</sup>	19,114	20,760	20,120	17,624	19,730	25,939

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	07 Nov	14 Nov	21 Nov	28 Nov	05 Dec	12 Dec	Cumulative (from May 2020)
New/ Not yet started <sup>1</sup>	0	0	0	0	1	95	96
% New/ Not yet started	0.0	0.0	0.0	0.0	0.0	0.4	
In progress <sup>2</sup>	0	0	0	1	2	63	67
% In progress	0.0	0.0	0.0	0.0	0.0	0.2	
Complete <sup>3</sup>	17,938	19,396	18,534	16,353	18,080	22,624	679,038
% Complete	89.6	89.8	88.5	88.6	87.6	83.6	
Incomplete <sup>4</sup>	2,072	2,212	2,412	2,101	2,559	4,271	93,391
% Incomplete	10.4	10.2	11.5	11.4	12.4	15.8	

1. New – New/not yet started cases within the contact tracing system.
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

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.

Public Health Scotland works closely with National Services Scotland (NSS) and the Scottish Government to enable local NHS Boards and the National Contact Centre (NCC) to carry out COVID-19 contact tracing effectively. 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 **completed** index cases over time.

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

	07 Nov	14 Nov	21 Nov	28 Nov	05 Dec	12 Dec
Telephone	10,497	11,240	12,771	11,148	12,353	15,461
% Telephone	58.5	58.0	68.9	68.2	68.3	68.3
SMS	7,441	8,156	5,763	5,205	5,727	7,163
% SMS	41.5	42.0	31.1	31.8	31.7	31.7

1. SMS includes those cases deemed low risk and have completed the Co3 online form, every other completed case is categorised as Telephone

In the week ending 12 December 2021, 68.3% 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 9 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<sup>5</sup>**

Hours taken	Week Ending 12 December 2021		
	Number of Complete Index Cases	% of Total Complete Cases	% of Total Complete & Incomplete Cases
0-24	1,290	5.7	4.8
24-48	6,807	30.09	25.3
48-72	6,478	28.63	24.1
Over 72	4,358	19.26	16.2
Not recorded* - SMS	2,719	12.02	10.1
Not recorded* – Phone	972	4.3	3.6
<b>Total Complete Cases</b>	<b>22,624</b>	<b>100</b>	
Incomplete Cases	4,271		15.8
<b>Total Complete &amp; Incomplete Cases</b>	<b>26,895</b>		<b>100</b>

<sup>5</sup> For further information and additional notes on Contact Tracing, please see [Appendix 4 – 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. This will be implemented January 2022.

**Figure 9: Trend in time (hours) between date test sample taken (specimen date) and the positive individual being called for cases completed; by week**

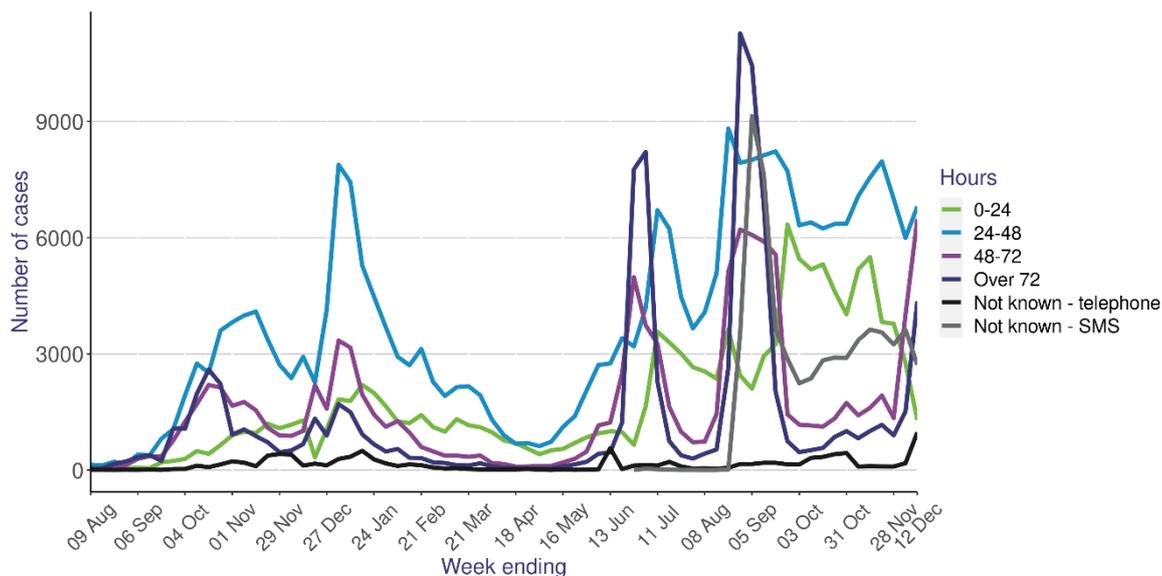


Figure 9 shows that more positive cases were contacted over 72 hours after their test sample was taken in June 2021 and August 2021, which corresponds with a rise in cases over the same period.

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<sup>5, 6</sup>**

Hours taken	Week Ending 12 December 2021		
	Number of Complete Index Cases	% of Total Complete Cases	% of Total Complete & Incomplete Cases
0-24	8,736	38.6	32.5
24-48	6,867	30.4	25.5
48-72	2,537	11.2	9.4
Over 72	794	3.5	3.0
Not recorded* – SMS	2,719	12.0	10.1
Not recorded* - Phone	971	4.3	3.6
<b>Total Complete Cases</b>	<b>22,624</b>	<b>100</b>	
Incomplete Cases	4,271		15.8
<b>Total Complete &amp; Incomplete Cases</b>	<b>26,895</b>		<b>100</b>

<sup>5</sup> For further information and additional notes on Contact Tracing, please see [Appendix 4 – Contact Tracing](#)

<sup>6</sup> 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. This will be implemented January 2022.

**Table 9: Time (hours) between case created in CMS to its closure<sup>5, 7</sup>**

Hours taken	Week Ending 12 December 2021		
	Number of Complete Index Cases	% of Total Complete Cases	% of Total Complete & Incomplete Cases
0-24	8,177	36.1	30.4
24-48	6,321	27.9	23.5
48-72	3,748	16.6	13.9
Over 72	4,264	18.9	15.9
Not recorded* – SMS	74	0.3	0.3
Not recorded* - Phone	40	0.2	0.1
<b>Total Complete Cases</b>	<b>22,624</b>	<b>100</b>	
Incomplete Cases	4,271		15.
<b>Total Complete &amp; Incomplete Cases</b>	<b>26,895</b>		<b>100</b>

5 For further information and additional notes on Contact Tracing, please see [Appendix 4 – 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. This will be implemented January 2022.

### Incomplete index cases

Table 10 and Figure 10 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 X below. Public Health information is typically sent by SMS to 99% of the incomplete index cases.

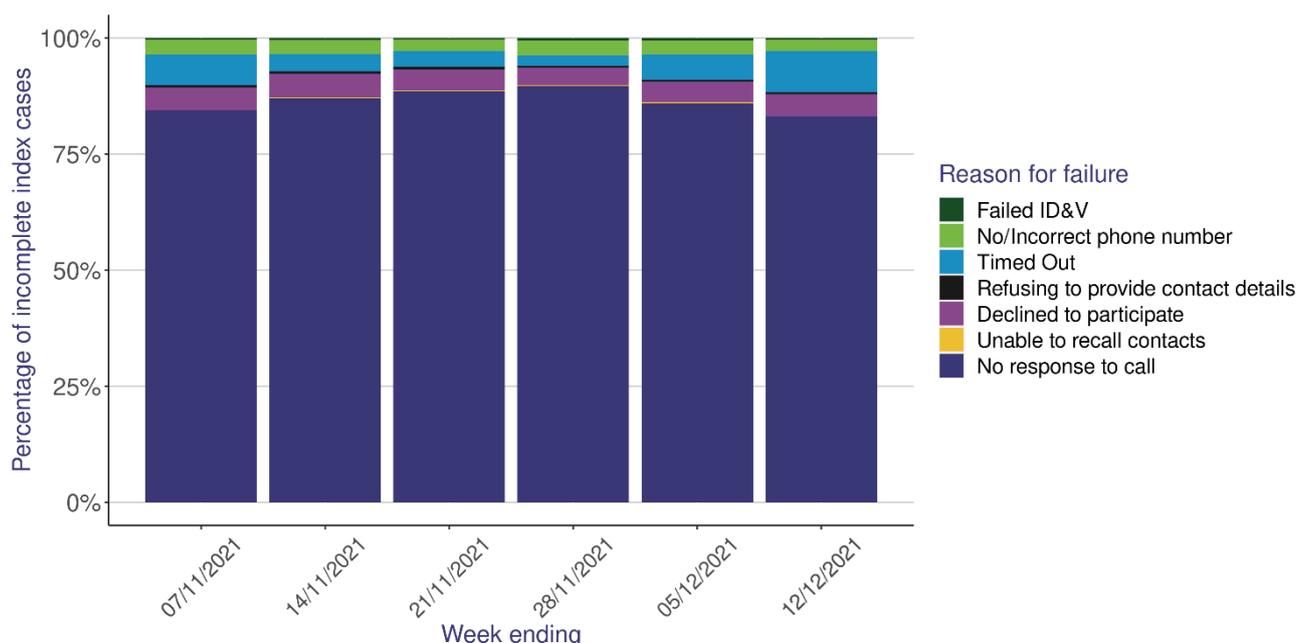
**Table 10: Number of incomplete index cases by reason**

Reason for Incompletion	Week Ending 12 December 2021	
	Number of Index Cases	% of Incomplete Index Cases
Failed ID & verification	16	0.4
No response to call	3,550	83.1
No/incorrect phone number	107	2.5
Refused to provide contact details	17	0.4
Declined to participate / unable to recall contacts	203	4.7
Timed out <sup>1</sup>	378	8.9
<b>Total incomplete cases</b>	<b>4,271</b>	<b>100.0</b>
<b>% incomplete as proportion of all index cases</b>		<b>15.8</b>

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 12 December 2021, 83.1% of incomplete index cases were due to the index case not responding to the multiple calls from Test and Protect.

**Figure 10: 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**

	07 Nov	14 Nov	21 Nov	28 Nov	05 Dec	12 Dec
Total Primary Contacts <sup>1</sup>	38,917	40,439	41,492	35,893	43,357	59,561
Unique Primary Contacts <sup>2</sup>	28,668	29,480	29,833	25,570	31,196	45,948
Average number of primary contacts per case	1.9	1.9	2	1.9	2.1	2.2

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 12 December 2021, a total of **3,445** cumulative primary contacts, pertaining to completed index cases, were not advised to self-isolate. This represents **1.1%** of the total **301,100** 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 12 December 2021, of the **45,948** unique contacts recorded, **6,613** (14.4%) went on to test positive within ten days of their contact with an index case.

## 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.

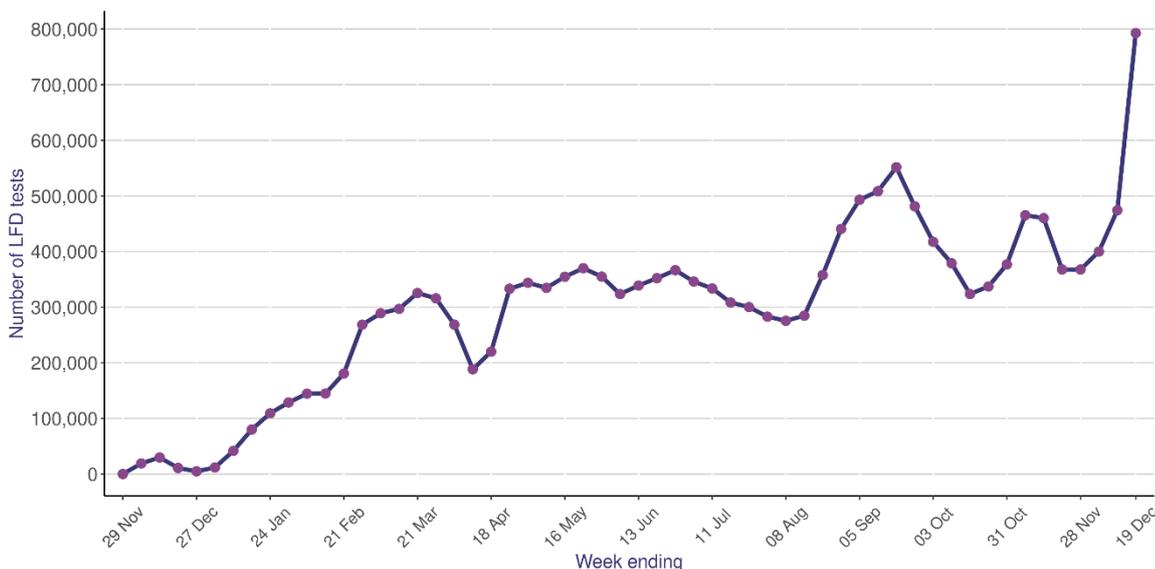
LFD testing in Scotland expanded from 26 April 2021, with everyone able to access rapid COVID-19 testing even if they had no symptoms. Any individual who receives a positive test result using a Lateral Flow Device is advised to self-isolate and arrange for a confirmatory PCR test. The PCR result will determine the number of cases of COVID-19 in Scotland. Since 19 November 2020, there have been 16,909,624 LFD tests carried out in Scotland, of which 122,251 were positive (0.7%). Figure 11 below shows the weekly trend of tests carried out from week ending 29 November 2020 to 19 December 2021.

There has been a 67.1% increase in the number of tests carried out since the week ending 12 December 2021. Table 12 shows the number of LFD tests carried out in Scotland by testing group.

More detailed information can be found within the LFD section on our [interactive dashboard](#).

For additional details on Lateral Flow Device Tests, please see - [Appendix 5 – Lateral Flow Device Testing](#)

**Figure 11: Trend of LFD tests carried out in Scotland from 29 November 2020 to 19 December 2021**



**Table 12: Number of LFD<sup>10</sup> tests by Test group 19 November 2020 – 19 December 2021**

Test Group	Test Reason	Number of tests	Number of positive tests	% LFT positive
Care Home Testing	Care Home - Visiting Professional	57,514	75	0.1%
	Care Home - Visitor	727,796	571	0.1%
	Care Home Staff	1,683,224	1,386	0.1%
Community Testing	Community Testing	101,625	900	0.9%
Education Testing	Combined School Staff	54,346	150	0.3%
	ELC Staff	313,618	1,314	0.4%
	Primary School Staff	1,499,016	4,747	0.3%
	Secondary School Pupils	928,500	8,708	0.9%
	Secondary School Staff	834,168	2,462	0.3%
	University Staff	11,937	83	0.7%
	University Students	44,660	397	0.9%
Healthcare Testing	University Testing Site	96,851	381	0.4%
	Healthcare Worker	2,819,844	5,199	0.2%
Social Care Testing	Primary Care And Independent Contractors	200,168	295	0.1%
	Children, Young People and Mental Health	1,035	0	0.0%
	NSS Portal Social Care	684,337	1,025	0.1%
	Residential Homes	14,707	21	0.1%
Universal Offer	Support Services	21,310	147	0.7%
	Attend An Event	779,055	2,199	0.3%
	High Cases In Local Area	375,635	6,563	1.7%
	Lives With Someone Who Is Shielding	54,116	868	1.6%
	Travel Within UK	175,730	837	0.5%
Workplace Testing	Universal Offer	2,353,527	50,697	2.2%
	Private Sector	23,381	70	0.3%
	Public Sector	72,087	227	0.3%
	Quarantine Hotel Staff/Security Personnel	4,591	60	1.3%
	Third Sector	2,475	9	0.4%
Other	UK Gov Other	2,281,886	26,056	1.1%
	Other	692,485	6,804	1.0%
<b>Total</b>	<b>Total</b>	<b>16,909,624</b>	<b>122,251</b>	<b>0.7%</b>

Data extracted: 20 December 2021

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](#), 5 days a week at 2pm (Monday to Friday). 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.

## COVID-19 Vaccination Uptake

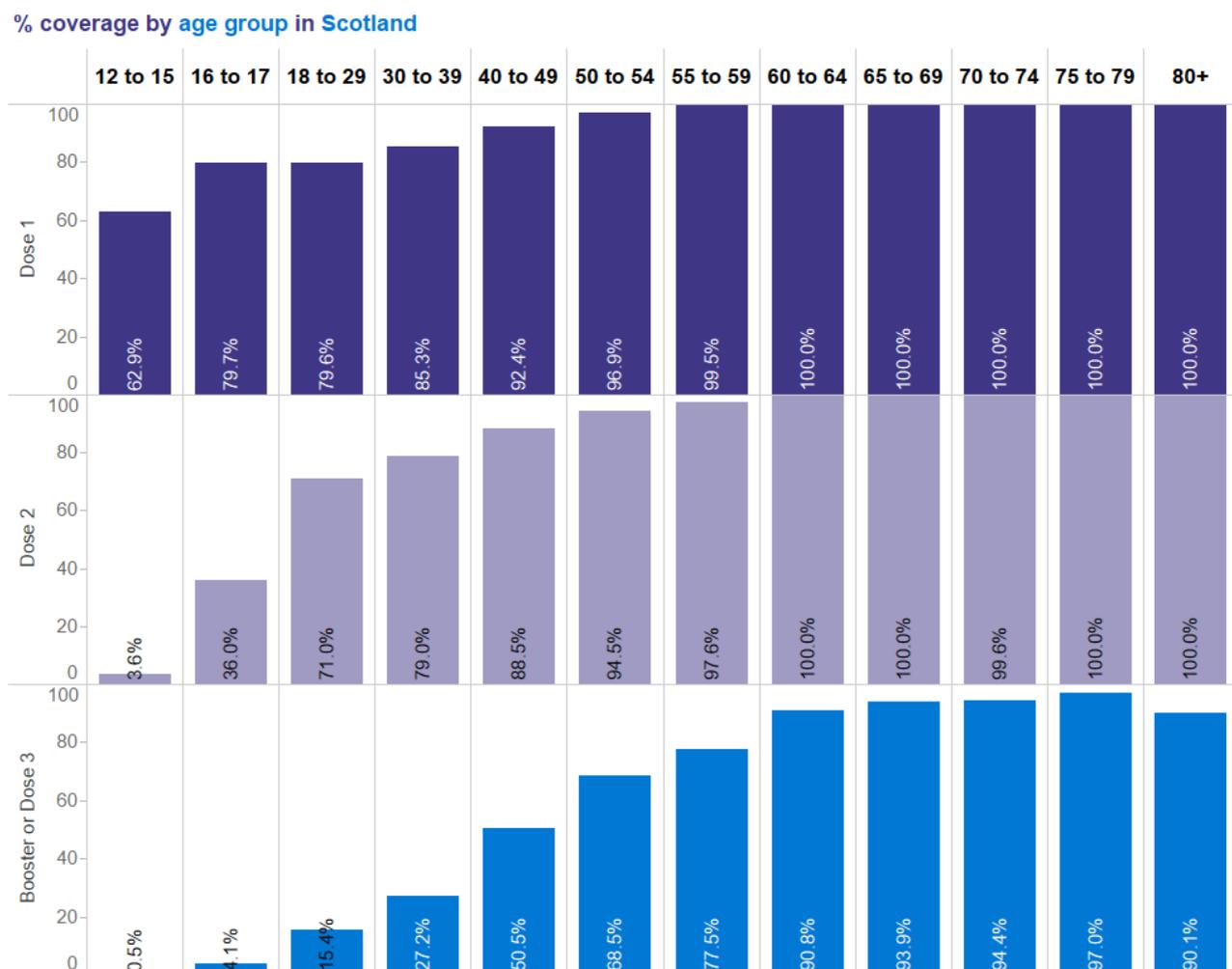
As of 20 December 2021, there has been over 10.9 million Covid-19 vaccine doses administered in Scotland, since the programme began on 08 December 2020.

- 4.37 million people protected through their first dose of the COVID-19 vaccination; 93.0% of those aged 18 and over and 91.3% of those aged 12 and over.
- 3.99 million people provided with further protection by receiving their second dose, of these, 88.9% are aged 18 and over and 83.5% of those aged 12 and over.
- 2.56 million people have received their booster/dose 3, of these, 57.6% are aged over 18 and over and 53.5% of those aged 12 and over.

More detailed age information can be in Figure 12.

Daily Vaccination uptake information is available via the [PHS Covid Daily Dashboard](#).

**Figure 12: Covid-19 Vaccine uptake – percentage coverage by age group in Scotland**



## COVID-19 Vaccine Certification

To show COVID-19 vaccine status, there are a number of options and individuals can choose to use one or more of these:

- Use the NHS Covid Status App
- Request a paper copy of your COVID-19 Status
- Download a PDF copy of your COVID-19 Status

The NHS Covid Status App was launched on 30 September 2021. It is free and offers digital proof of vaccination via a QR code for each vaccination received. You can request a vaccine certificate if you're aged 12 and over and have been vaccinated in Scotland. The record will not show any vaccinations given outside of Scotland.

- As of midnight 18 December 2021 the NHS Covid Status App has been downloaded 2,211,366 times. It is important to note a single user may choose to download the App on multiple devices, so this figure does not represent unique individuals
- Between 03 September 2021 (introduction of QR codes) and midnight 18 December 2021
  - 633,060 paper copies of COVID-19 Status have been requested. This may not represent unique users if an individual requests a second copy (for example if they have lost their paper copy)
  - 1,549,583\* PDF versions of COVID-19 Status have been downloaded. This provides a measure of the total number of times a new QR code has been generated via PDF. An individual can generate more than one successful QR code so the figure does not represent unique users

\*1st, 2nd, 3rd October data for PDFs is missing due to a technical error, we can reasonably estimate that there were 35,000 – 45,000 PDFs successfully generated PDFs in total for those three days.

## 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

- There has been an increase in the COVID-19 case rates in the last four weeks from 20 November 2021. In the last week, 11 December 2021 to 17 December 2021, the case rate in individuals with a booster or 3rd dose of a COVID-19 vaccine was 202 COVID-19 cases per 100,000 individuals compared to a case rate of over 600 per 100,000 in the unvaccinated population and individuals with one or two doses of a COVID-19 vaccine
- In the last week from 11 December 2021 to 17 December 2021, the seven-day rolling average of COVID-19 related acute hospital admissions decreased from 56.43 to 42.71 admissions per day
- In the last four weeks from 20 November 2021 to 17 December 2021, the age-standardised acute COVID-19 related hospital admission rates were lower in individuals that had received a booster or 3rd dose compared to unvaccinated individuals
- Age-standardised mortality rates for COVID-19 deaths are lower for people who have received a booster or 3rd dose of a COVID-19 vaccine compared to individuals that are unvaccinated or have received one or two doses of a COVID-19 vaccine.

## Overall results of COVID-19 Cases and Hospitalisations, and Deaths by Vaccination Status

### COVID-19 cases by vaccination status

[Recent studies](#) have been released by the UK Health Security Agency, formerly Public Health England (PHE), looking into the effect of vaccination against mild and severe COVID-19 (Alpha and Delta variants). [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. [Data from the UKHSA](#) shows that vaccine effectiveness is waning, but remains high, against hospitalisation and death.

The [first real world results](#) of the effectiveness of the booster vaccination against symptomatic disease (Delta variant) shows very high vaccine effectiveness, higher than for the primary course, at 93-94%.

[Initial analysis](#) of vaccine effectiveness against symptomatic disease with the Omicron variant have been shown to be significantly lower than compared to the Delta variant, with estimates between 70 to 75% in the early period after a booster dose

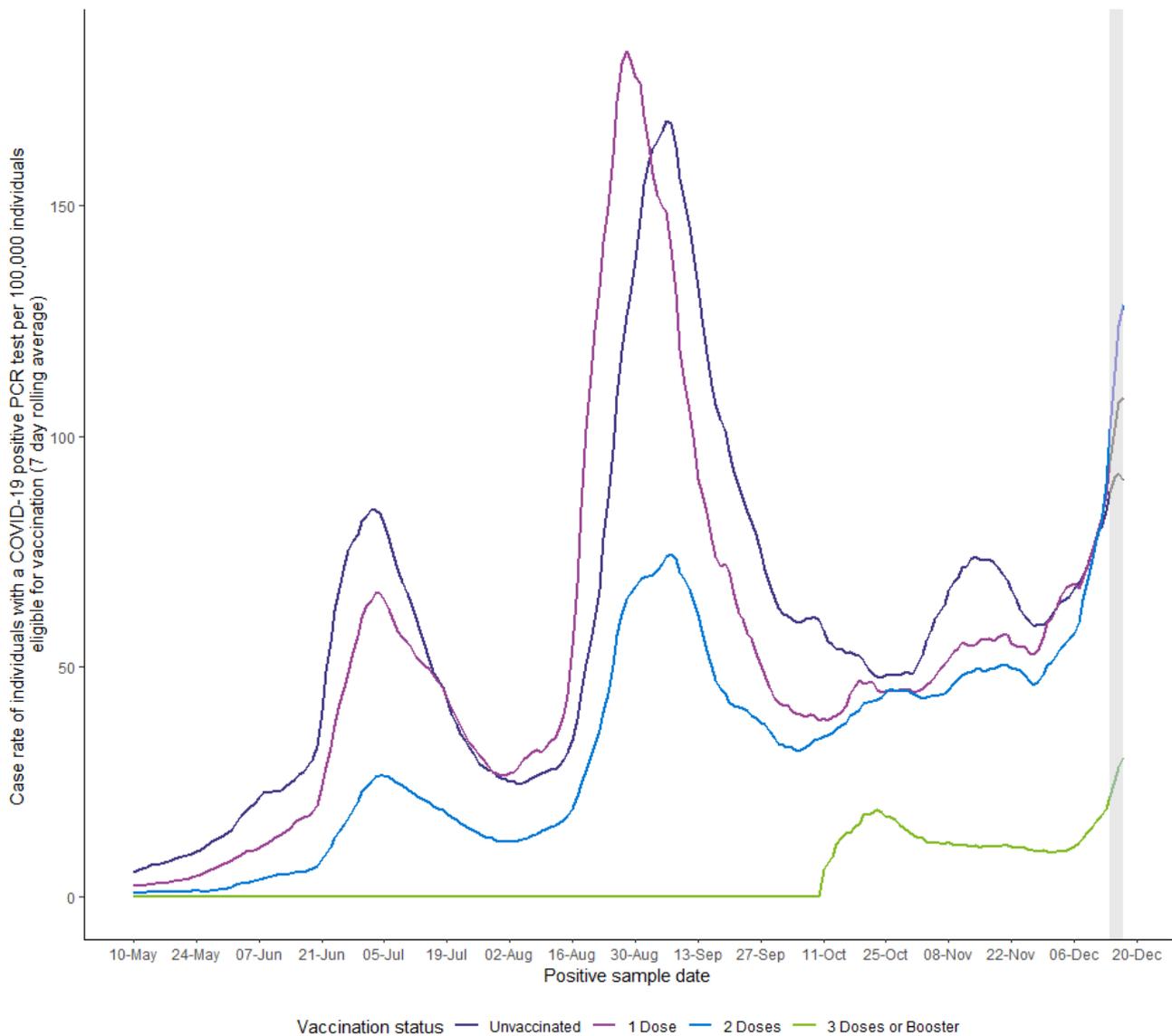
**Table 13: Number of COVID-19 positive cases individuals by week and vaccination status, 20 November 2021 to 17 December 2021**

Vaccination Status	Unvaccinated			1 Dose		
Week	No. of Cases	Total pop. unvaccinated	% Cases	No. of Cases	Total pop. with 1 dose	% Cases
20 November - 26 November 2021	6,644	1,587,063	0.42%	1,385	372,195	0.37%
27 November - 03 December 2021	7,109	1,580,991	0.45%	1,676	366,637	0.46%
04 December 2021- 10 December 2021	8,285	1,571,497	0.53%	1,944	367,764	0.53%
11 December 2021- 17 December 2021	9,908	1,565,362	0.63%	2,774	363,164	0.76%
Vaccination Status	2 Doses			Booster or 3rd Dose		
Week	No. of Cases	Total pop. with 2 doses	% Cases	No. of Cases	Total pop. with Booster or 3rd Dose	% Cases
20 November - 26 November 2021	9,255	2,743,977	0.34%	759	1,151,407	0.07%
27 November - 03 December 2021	9,906	2,530,731	0.39%	888	1,375,063	0.06%
04 December 2021- 10 December 2021	12,275	2,315,338	0.53%	1,616	1,598,044	0.10%
11 December 2021- 17 December 2021	19,666	2,102,611	0.94%	3,682	1,821,505	0.20%

*Vaccination status is determined as at the date of PCR specimen date according to the definitions described in Appendix 6. The data displayed within the greyed-out section (3 days) are considered preliminary and are subject to change as more data is updated.*

There has been an increase in the COVID-19 case rates in the last four weeks from 20 November 2021. In the last week, 11 December 2021 to 17 December 2021, the case rate in individuals with a booster or 3rd dose of a COVID-19 vaccine was 202 COVID-19 cases per 100,000 individuals compared to a case rate of over 600 per 100,000 in the unvaccinated population and individuals with one or two doses of a COVID-19 vaccine.

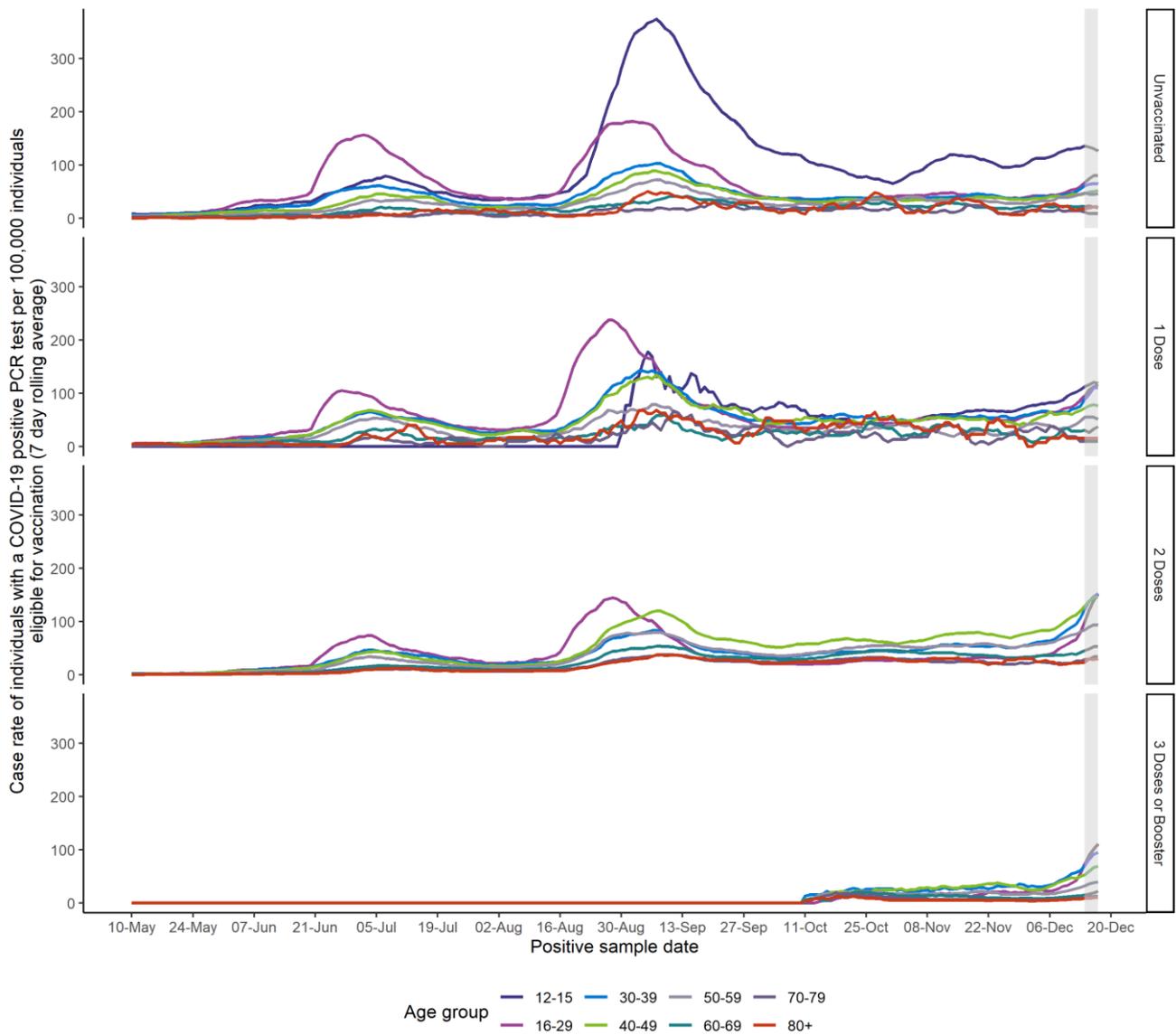
**Figure 13: COVID-19 case rate per 100,000 individuals eligible for vaccination by vaccination status, seven-day rolling average from 10 May 2021 to 17 December 2021**



*Vaccination status is determined as at the date of PCR specimen date according to the definitions described in Appendix 6. 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 individuals with a booster or 3rd dose compared to individuals that are unvaccinated or have one or two doses of a COVID-19 vaccine.

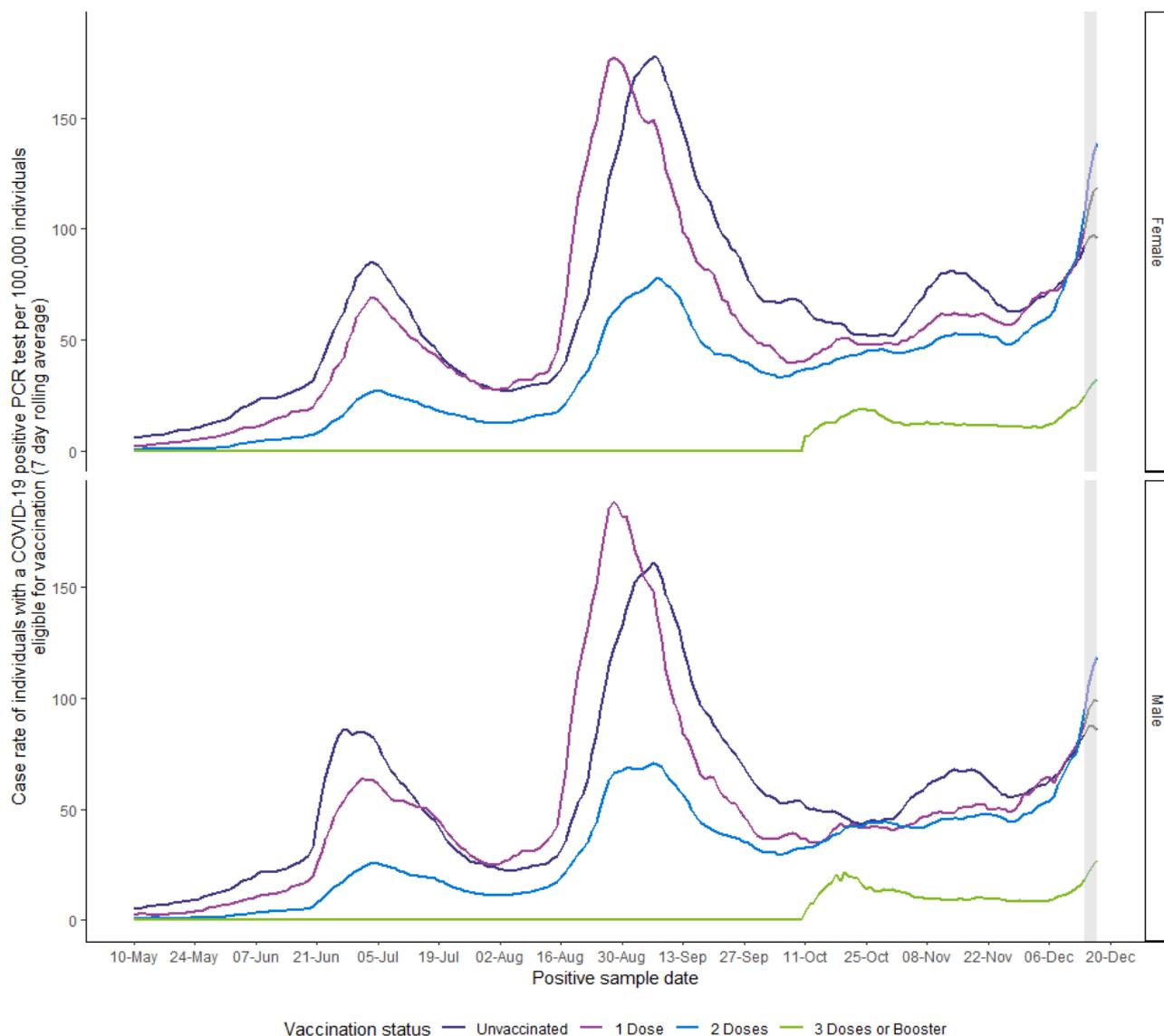
**Figure 14: COVID-19 case rate per 100,000 individuals eligible for vaccination by vaccination status and age group, seven-day rolling average from 10 May 2021 to 17 December 2021**



*Vaccination status is determined as at the date of PCR specimen date according to the definitions described in Appendix 6. Patient age is determined as their age the date of positive test. Data displayed in this figure only includes ages groups currently eligible for the vaccine e.g. 12 years and over and for 2 doses and booster/3rd dose only 16 years and over. Some clinically vulnerable individuals are eligible in these age groups but they have been excluded due to small numbers and complexity of interpretation. The data displayed within the greyed-out section 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 15: 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 17 December 2021**



*Vaccination status is determined as at the date of PCR specimen date according to the definitions described in Appendix 6. 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.

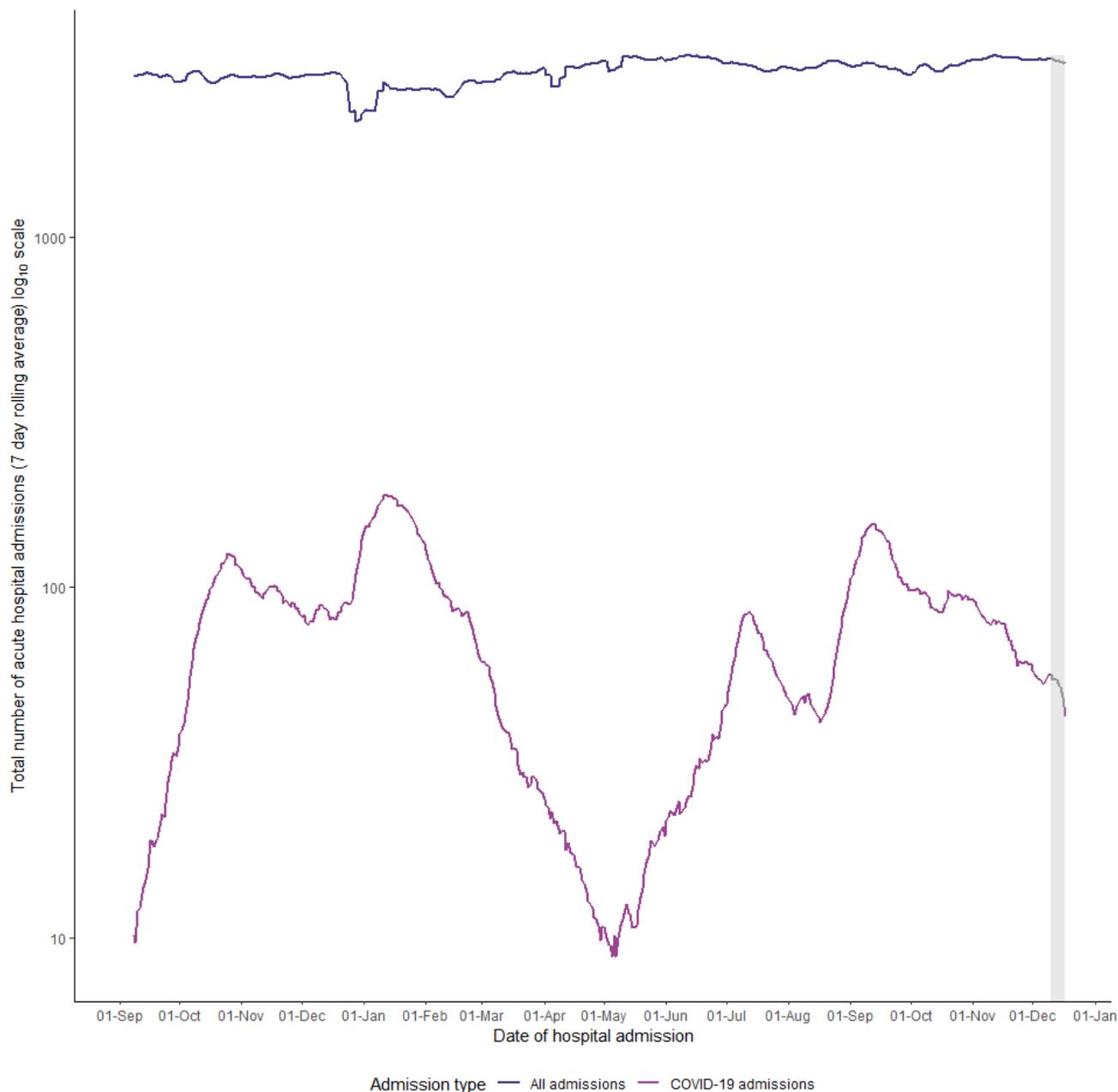
## COVID-19 related acute hospital admissions by vaccine status

[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 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.

Please note that COVID-19 related acute hospital admissions data included in this section now only includes individuals 16 years old and over.

From 01 September 2020 to 17 December 2021, there were a total of 1,409,360 acute hospital admissions for any cause, of which 32,233 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, 33,416 individuals were admitted to hospital, of which 103 were readmitted more than 90 days after their first admission.

**Figure 16: 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 17 December 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. Please note that COVID-19 related acute hospital admissions data included in this figure only includes individuals 16 years old and over.*

In the last week, 11 December to 17 December 2021, the number of COVID-19 related hospital admissions have decreased. COVID-19 related hospital admissions are small relative to all acute hospitalisations.

**Table 14: Age-standardised rate of acute hospital admissions where an individual had a COVID-19 positive PCR test up to 14 days prior, on admission, or during their stay in hospital, by week and vaccination status, 20 November 2021 to 17 December 2021**

	Unvaccinated		1 Dose	
Week	No. hospitalised	Age Standardised hospitalisation Rate per 100,000 with 95% confidence intervals	No. hospitalised	Age Standardised hospitalisation Rate per 100,000 with 95% confidence intervals
20 November - 26 November 2021	97	38.546 (20.69 - 56.40)	22	40.457 (10.94 - 69.97)
27 November - 03 December 2021	101	37.523 (20.55 - 54.49)	16	47.017 (-1.69 - 95.73)
04 December 2021- 10 December 2021	107	42.241 (24.95 - 59.53)	16	27.628 (5.93 - 49.33)
11 December 2021- 17 December 2021	76	34.535 (17.38 - 51.69)	16	22.155 (0.88 - 43.43)
	2 Doses		Booster or 3rd Dose	
Week	No. hospitalised	Age Standardised hospitalisation Rate per 100,000 with 95% confidence intervals	No. hospitalised	Age Standardised hospitalisation Rate per 100,000 with 95% confidence intervals
20 November - 26 November 2021	234	31.036 (19.87 - 42.20)	48	5.181 (2.69 - 7.67)
27 November - 03 December 2021	172	37.219 (25.71 - 48.72)	70	6.127 (3.69 - 8.56)
04 December 2021- 10 December 2021	194	37.611 (28.01 - 47.21)	46	3.146 (2.09 - 4.21)
11 December 2021- 17 December 2021	140	29.722 (14.69 - 44.75)	49	2.770 (1.79 - 3.75)

*Vaccination status is determined as at the date of positive PCR test according to the definitions described in Appendix 6. The data displayed within the greyed-out section (1 week) are considered preliminary and are subject to change as more data is updated. Age-standardised hospitalisation rates are per 100,000 people per week, standardised to the 2013 European Standard Population adjusted to only include individuals 16 years old and over. (see Appendix 6).*

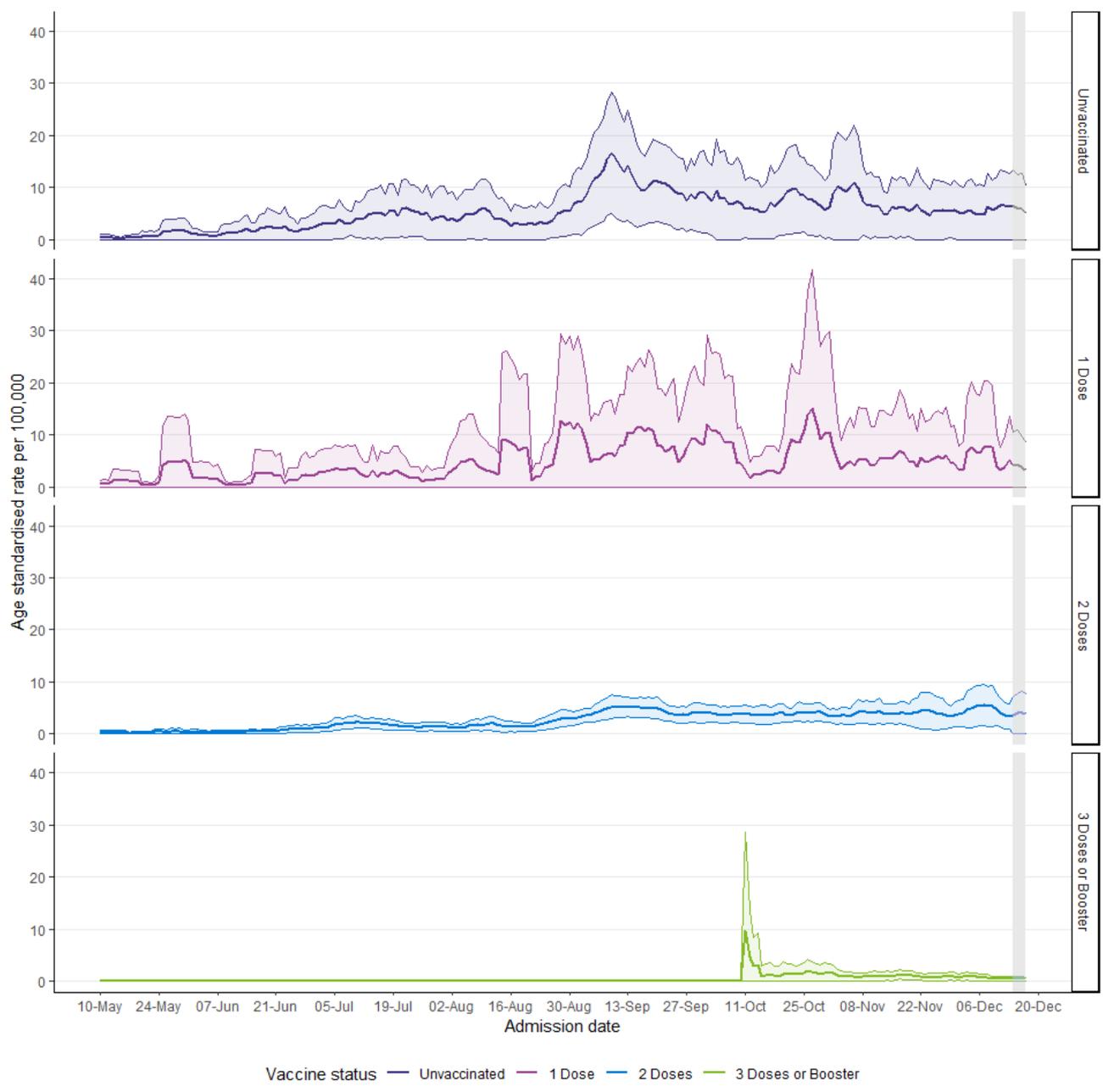
On average, unvaccinated individuals are younger than individuals with a booster or a 3rd dose of a COVID-19 vaccine. Older individuals are more likely to be hospitalised than younger individuals. To account for the different age distribution of individuals in each vaccine status, age-standardised hospitalisation rates are reported in Table 14 and Figure 17.

In the past four weeks, from 20 November 2021 to 17 December 2021, the age-standardised rate of hospital admissions per 100,000 were lower in individuals that had received a booster or 3rd dose compared to unvaccinated individuals. In the last week in an age-standardised population, individuals were 12.5 times more likely to be in hospital with COVID-19 if they were unvaccinated compared to individuals that had received a booster or 3rd dose of a COVID-19 vaccine.

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.

The [PHS Weekly Statistical Report](#), published 01 December 2021, provides an updated 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 August 2021 and does not provide a breakdown by vaccine status. It was estimated that in August 2021, 68% of admissions were 'because of' COVID-19 and the remaining 32% were 'with' COVID.

**Figure 17: Age-standardised hospitalisation rate of acute hospital admissions where an individual had a COVID-19 positive PCR test up to 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 17 December 2021**

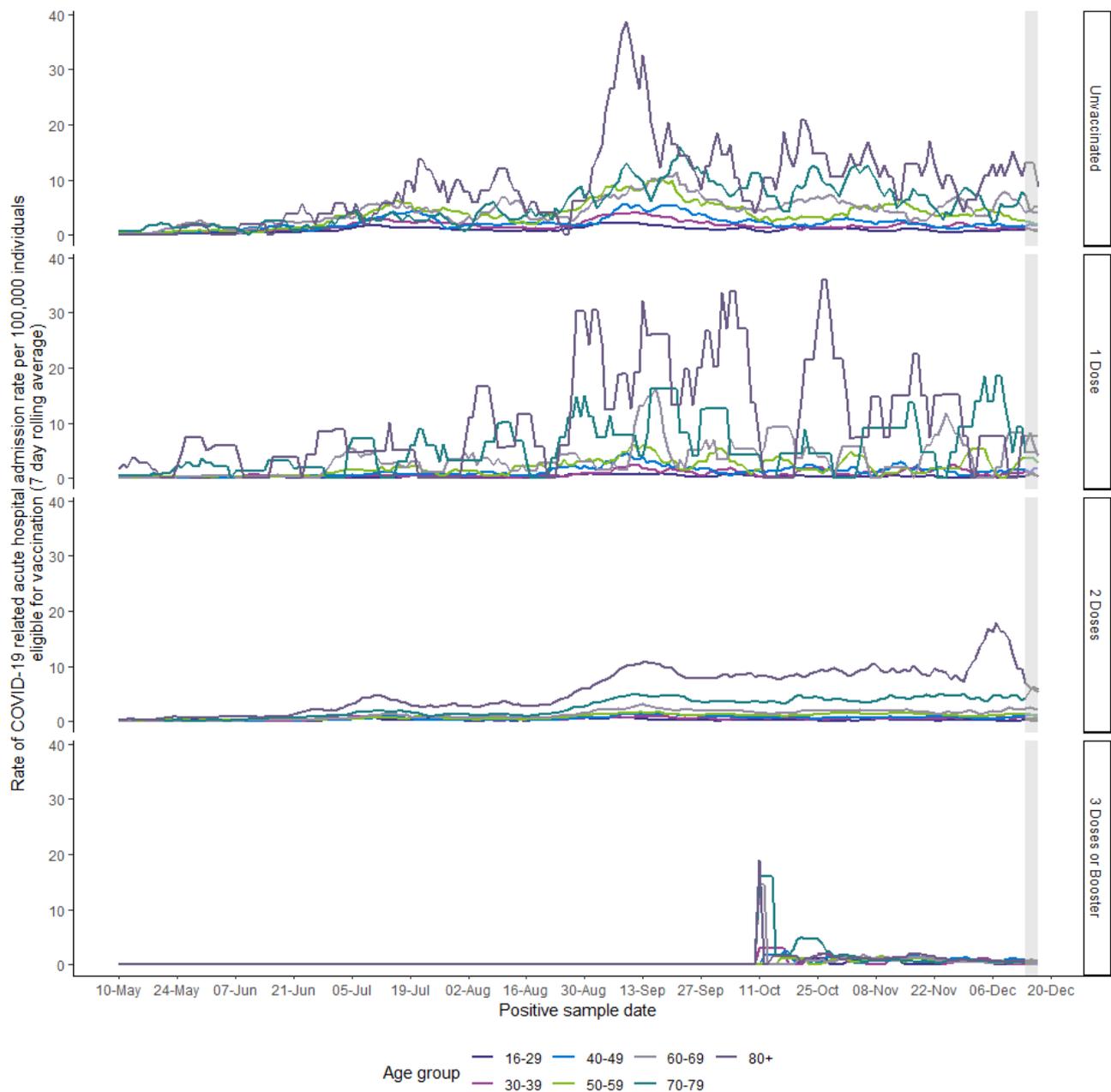


*Vaccination status is determined as at the date of positive PCR test according to the definitions described in Appendix 6. The data displayed within the greyed-out section (1 week) are considered preliminary and are subject to change as more data is updated. 95% confidence intervals are shown as the shaded regions. Age-standardised hospitalisation rates are per 100,000 people per week, standardised to the 2013 European Standard Population adjusted to only include individuals 16 years old and over. (see Appendix 6).*

Age standardised rates adjusted to only include individuals 16 years old and over, are calculated values by combining rates from different age groups relative to the European standard age distribution population. These calculations have associated 95% confidence intervals shown in the shaded areas of the figure. Smaller populations have wider associated confidence intervals (see 1 dose Age-standardised rate (ASR)) whereas larger populations have narrower associated confidence intervals (see 2 doses ASR).

The age standardised rate of acute hospital admissions for individuals that had received two doses, a booster or a 3rd dose of a COVID-19 vaccine are lower than individuals that have received one dose of a COVID-19 vaccine or are unvaccinated.

**Figure 18: Seven-day rolling average COVID-19 related acute hospital admissions by vaccination status and by age group, 10 May 2021 to 17 December 2021**



*Vaccination status is determined as at the date of positive PCR test according to the definitions described in Appendix 6. Patient age is determined as their age the date of admission. Please note that COVID-19 related acute hospital admissions data included in this figure only includes individuals 16 years old and over. The data displayed within the greyed-out section are considered preliminary and are subject to change as more data is updated.*

Overall, the highest rates of acute hospital admissions were in the oldest age groups. 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. [Research from Public Health Scotland, University of Edinburgh and University of Strathclyde](#) have shown two vaccine doses, whether the AstraZeneca (Vaxzevria) or the Pfizer-BioNTech (Comirnaty) vaccine, are over 90 per cent effective at preventing deaths from the Delta variant of COVID-19.

Findings from [a Scottish study](#), show that people who have received two doses of COVID-19 vaccine are far better protected against death from the virus than those who are unvaccinated. However, there are certain characteristics which can make people more vulnerable, including being aged 80 or over, having multiple underlying health conditions, and being male. [Results](#) show that adults aged 18-64 who are double vaccinated have almost four times increased protection against dying from COVID-19 compared to those who are unvaccinated. The figures are even more stark for those who are older, with double vaccinated adults aged 65-79 experiencing 15.5 times greater protection against death than their unvaccinated peers, and for adults over 80, this increased to 30 times higher.

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 10 December 2021, there have been 5,592 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, 64.0% (n = 3,579) were in unvaccinated individuals, 6.0% (n = 335) had received one dose of COVID-19 vaccine, 29.2% (n = 1,635) had received two doses of COVID-19 vaccine and 0.8% (n = 43) had received a booster or 3rd dose of a COVID-19 vaccine of COVID-19 vaccine. The risk of death from COVID-19 is strongly linked to age, with the most vulnerable being in the over 70s 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 15).

**Table 15: Number of confirmed COVID-19 related deaths by vaccination status at time of test and age-standardised mortality rate per 100,000, 13 November 2021 to 10 December 2021**

	Unvaccinated		1 Dose	
Week	No. of deaths	Age Standardised Mortality Rate per 100,000 with 95% confidence intervals	No. of deaths	Age Standardised Mortality Rate per 100,000 with 95% confidence intervals
13 November - 19 November 2021	13	5.15 (1.48 - 8.83)	2	5.62 (0.00 - 13.47)
20 November - 26 November 2021	20	9.88 (4.53 - 15.22)	1	2.94 (0.00 - 8.71)
27 November - 03 December 2021	15	7.95 (3.19 - 12.71)	4	8.93 (0.00 - 17.98)
04 December 2021- 10 December 2021	15	5.51 (1.94 - 9.09)	6	17.22 (3.36 - 31.09)
	2 Doses		Booster or 3rd Dose	
Week	No. of deaths	Age Standardised Mortality Rate per 100,000 with 95% confidence intervals	No. of deaths	Age Standardised Mortality Rate per 100,000 with 95% confidence intervals
13 November - 19 November 2021	75	5.18 (3.94 - 6.42)	4	0.10 (0.00 - 0.20)
20 November - 26 November 2021	65	5.44 (4.01 - 6.88)	11	0.43 (0.09 - 0.76)
27 November - 03 December 2021	56	6.46 (4.58 - 8.33)	12	0.37 (0.10 - 0.63)
04 December 2021- 10 December 2021	55	9.31 (6.67 - 11.95)	8	0.26 (0.05 - 0.46)

*Vaccination status is determined as at the date of positive PCR test according to the definitions described in Appendix 6. 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 6). 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 15 are lower for people who have received a booster or 3rd dose of a COVID-19 vaccine compared to individuals that are unvaccinated or have received one or two doses of a COVID-19 vaccine.

## Hospital/Wider System Pressures

NHS services across NHS Scotland are subject to increased demand during the winter period. The information presented in this section aims to support the reader in drawing insights from a wider range of existing metrics around COVID-19 and winter pressures.

## Unscheduled Care

As individuals in Scotland make contact with Unscheduled Care Services, data about who they are, where they have come from, what is wrong with them and what happens to them are collected, mainly to inform their care. This provides a good picture of the potential unscheduled care journeys that an individual may travel through.

Pressures on unscheduled care services are a familiar sight during the winter. Increased incidence of respiratory infections, alongside an increased acuity of illness and demands on primary care leads to increased demand on unscheduled care.

NHS inform is Scotland's digital health and care resource, providing the up to date standardised information on COVID-19 from a health perspective. Information is provided in a range of languages and alternative formats ([www.nhsinform.scot/coronavirus](http://www.nhsinform.scot/coronavirus)).

Additional information can be found on the [wider impacts dashboard](#) and also in our [interactive dashboard](#).

## NHS 24

During COVID-19 there has been a rapid reconfiguration of primary and community care services. As part of this NHS 24's 111 service has been reconfigured as an in-hours (as well as out-of-hours) route for COVID-19 triage for rapid access to care via local COVID-19 assessment hubs. In addition to this, from 1st December 2020, the national Redesign of Urgent Care Programme introduced new pathways from NHS 24 to Flow Navigation Centres, with the aim of reducing the numbers of people attending A&E and diverting to more appropriate care closer to home. This is available as part of a 24/7 service, further increasing NHS 24 in-hours activity (Monday to Friday, 8am to 6pm).

Information on COVID-19 related contacts to NHS24 and the Coronavirus Helpline are presented in our [interactive dashboard](#) which supplements this report.

## Primary Care Out of Hours (OOH)

Across Scotland, NHS Boards provide Primary Care Out of Hours (OOH) services for patients' when their registered GP practice is closed. Information is available via the [Wider Impacts](#) dashboard.

## Scottish Ambulance Service (SAS)

Key statistics on unscheduled care operational measures across Scotland, including trends in the number of unscheduled care incidents, responses, conveyances to hospital, response times and hospital turnaround times is available from the [Scottish Ambulance Service \(SAS\)](#) weekly unscheduled care operational statistics release.

## Accident & Emergency (A&E) Activity

Additional information on Accident and Emergency (A&E) performance is available via the weekly [A&E activity and Waiting Times](#) publication, which provides an update of key statistics on attendances at Accident and Emergency (A&E) services across Scotland. Accident and Emergency waiting times and activity reporting on performance against the 4 hour waiting time standard, and the target to reduce attendances at Emergency Departments.

Large decreases in attendances at A&E services in NHS Scotland were observed in spring 2020 winter 2020/21 due to the measures put in place to respond to COVID-19. Since spring 2021 attendances at A&E have been rising and are getting closer to the pre-COVID levels. However, from the summer of 2021 performance against the four hour standard has dropped below 80% and has remained at this rate for a prolonged period of time.

## Emergency Admissions

The information presented in this section aims to provide a better understanding of the underlying trends in emergency admissions during this period.

Figure 19 below shows the overall weekly trend of emergency acute hospital admissions (including COVID-19) from week ending 05 January 2021 to 14 December 2021. The number of emergency admissions have generally been decreasing since week ending 09 November 2021.

**Figure 19: Trend of all Emergency Acute Hospital Admissions in Scotland**



Table 16 below shows a breakdown of Emergency Admissions to acute hospital across all ages and by age group for the period 17 November 2021 to 14 December 2021.

**Table 16: Emergency Hospital Admissions by age as at 14 December 2021<sup>3</sup>**

Age Band	17 November – 23 November	24 November – 30 November	01 December – 07 December	08 December – 14 December
Under 18	1,564	1,490	1,460	1,389
18-29	759	770	742	683
30-39	838	794	786	795
40-49	973	856	850	828
50-54	602	612	575	574
55-59	778	762	690	682
60-64	772	764	833	732
65-69	760	837	778	789
70-74	992	1,056	1,025	970
75-79	949	1,013	1,035	923
80+	2,186	2,229	2,257	2,235
<b>Total</b>	<b>11,173</b>	<b>11,183</b>	<b>11,031</b>	<b>10,600</b>

Source: RAPID (Rapid and Preliminary Inpatient Data)

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

In the latest week there has been a 3.9% decrease in the number of emergency admissions, with those aged 80+ years having the highest number of admissions. Also, in the latest week 53.3% of the hospital admissions related to patients aged 60+.

## Waiting Times

Waiting times are important to patients and are a measure of how the NHS is responding to demands for services. Measuring and regular reporting of waiting times highlights where there are delays in the system and enables monitoring of the effectiveness of NHS performance throughout the country.

Public Health Scotland routinely publish a range of statistics on [Waiting Times](#), including: waiting times for diagnostic tests, new outpatient appointments, inpatient and day case treatments.

These statistics continue to be affected by the COVID-19 (Coronavirus) pandemic. At the start of the outbreak, many services were paused or reduced and there were fewer referrals. Boards started to resume relevant services, from June 2020. However, as a second wave of COVID-19 cases emerged through the Autumn and winter months, many Boards had to temporarily pause non-urgent diagnostic tests during the months of January and February 2021. Access to services has generally increased since then but some Boards may have been temporarily impacted by a return to high infection rates in recent months as lockdown restrictions eased.

## Delayed Discharges

Timely discharge from hospital is an important indicator of quality. It is a marker for person-centred, effective, integrated and harm free care.

For most patients, following completion of health and social care assessments, the necessary care, support and accommodation arrangements are put in place in the community without any delay and the patient is appropriately discharged from hospital.

A delayed discharge occurs when a patient aged 18 years and over, clinically ready for discharge, cannot leave hospital because the other necessary care, support or accommodation for them is not readily accessible and/or funding is not available, for example to purchase a care home place.

Public Health Scotland publish monthly statistics on [Delayed Discharges](#) in Scotland. These figures provide the number of hospital bed days associated with delayed discharges and the number of discharges from hospital following a period of delay. Information is also provided on the number of people experiencing a delay in discharge from hospital at the monthly census point.

Delayed Discharge figures in NHS Scotland have been affected by measures put in place to respond to COVID-19. The marked fall in delayed discharges during 2020 is likely due to patients being moved out of hospital to increase capacity.

## 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
- Accident and Emergency attendances
- NHS 24 completed contacts
- Out of hours cases
- Scottish Ambulance Service
- Excess deaths
- Outpatient appointments
- Healthcare for cardiovascular disease
- Healthcare for mental health
- Women booking antenatal care
- Healthcare for birth and babies
- Termination of pregnancy
- Child health
- Cancer
- Substance use
- Injuries

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.

## Contact

### Public Health Scotland

[phs.covid19data&analytics@phs.scot](mailto:phs.covid19data&analytics@phs.scot)

## Further Information

### COVID surveillance in Scotland

[Scottish Government](#)

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

### UK and international COVID reports

[Public Health England](#)

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

[WHO](#)

### Weekly National Seasonal Respiratory Report

[Weekly national seasonal respiratory report - Week 49 2021 - Weekly national seasonal respiratory report - Publications - Public Health Scotland](#)

The next release of this publication will be 07 January 2022.

## 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.

## Early access details

### Pre-Release Access

Under terms of the "Pre-Release Access to Official Statistics (Scotland) Order 2008", PHS is obliged to publish information on those receiving Pre-Release Access ("Pre-Release Access" refers to statistics in their final form prior to publication). Shown below are details of those receiving standard Pre-Release Access.

### Standard Pre-Release Access:

Scottish Government Health Department  
NHS Board Chief Executives  
NHS Board Communication leads

## 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.

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.

RAPID is a daily submission of people who have been admitted and discharged to hospital. These data include admissions to acute hospitals only and do not include psychiatric or maternity/obstetrics specialties. 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.

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.

### 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: Contact Tracing

### 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 5: Lateral Flow Device Testing**

UK Gov other includes any LFD result which has come through the UK Government route (NHS Digital) which has the test site code "Other". Please note the universal offer results up to 28 July 2021 are reported via this method. From 28 July 2021 onwards, universal offer results are reported separately as Universal Offer.

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

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

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

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

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

## Appendix 6: Data Sources and Limitations

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

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

### COVID-19 PCR test results

All positive COVID-19 PCR test results and associated demographics of an individual are extracted from the Test and Protect database (Corporate Data Warehouse) which contains test results from 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** for the 16 and over population are taken from the COVID-19 vaccination database. The denominator under 16 year olds 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. This is a particular issue for the denominator for the unvaccinated cohort, because for vaccinated individuals we know they were resident in Scotland at the time of their vaccination whereas for the unvaccinated cohort there will be a mixture of people who have chosen not to have the vaccine and those who are no longer

resident in Scotland. This means that the rates of COVID infection and harm for the unvaccinated groups will be underestimated, whereas the rates for the vaccinated groups will be more accurate.

**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 or more:** An individual that has had at least 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.

**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.

Hospital admission data is extracted from the Rapid and Preliminary Inpatient Data (RAPID) dataset on Monday 20 December 2021.

**Confirmed COVID-19 deaths** Death data were extracted from the SMRA dataset on Thursday 18 November 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 an underlying or contributory cause of death on the death certificate. Vaccine status is determined at time of most recent specimen date.

**Age standardised hospitalisation and mortality rates** are used to allow comparisons of hospitalisation and 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.

**Vaccine Wastage:** 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.

**From:** [redacted]

**Sent:** 21 December 2021 19:27

**To:** First Minister <[firstminister@gov.scot](mailto:firstminister@gov.scot)>; Cabinet Secretary for Health and Social Care <[CabSecHSC@gov.scot](mailto:CabSecHSC@gov.scot)>; Deputy First Minister and Cabinet Secretary for Covid Recovery <[DFMCSCR@gov.scot](mailto:DFMCSCR@gov.scot)>

**Cc:** Cabinet Secretary for Net Zero, Energy and Transport <[CabSecNetZET@gov.scot](mailto:CabSecNetZET@gov.scot)>; Cabinet Secretary for Education and Skills <[CabSecES@gov.scot](mailto:CabSecES@gov.scot)>; Minister for Children & Young People <[MinisterCYP@gov.scot](mailto:MinisterCYP@gov.scot)>; Minister for HE, FE, Youth Employment and Training <[MinisterHEFEYET@gov.scot](mailto:MinisterHEFEYET@gov.scot)>; Minister for Mental Wellbeing & Social Care <[MinisterMWSC@gov.scot](mailto:MinisterMWSC@gov.scot)>; Minister for Public Health, Women's Health & Sport <[MinisterPHWS@gov.scot](mailto:MinisterPHWS@gov.scot)>; Minister for HE, FE, Youth Employment and Training <[MinisterHEFEYET@gov.scot](mailto:MinisterHEFEYET@gov.scot)>; First Minister Covid Briefing Unit <[FMcovidbriefingunit@gov.scot](mailto:FMcovidbriefingunit@gov.scot)>; Communications Health & Social Care <[CommunicationsHealth&SocialCare@gov.scot](mailto:CommunicationsHealth&SocialCare@gov.scot)>; [redacted]

**Subject:** Official Sensitive PRE-RELEASE STATISTICS - RESTRICTED until noon on WEDNESDAY 22 December. PHS Weekly COVID-19 & Winter statistical report; [redacted]

First Minister

Cabinet Secretary for Health and Social Care

Deputy First Minister and Cabinet Secretary for Covid Recovery

Copy: as above

1.1 Please find attached submission which includes a briefing pack on:

- the latest Public Health Scotland (PHS) weekly Covid-19 & Winter statistical report (Annex 1) - a copy of the report is also attached.
- [redacted]

**Priority: Urgent. These reports will be published at noon on Wednesday 22 December.**

**Please do not share this email with others that are not on this pre-release access list without checking with either me, [redacted], or [redacted] first.**

**Please note that these statistics (and any conclusions drawn from the statistics) are restricted to Ministers and officials on the copy list until publication at noon on Wednesday 22 December. If Ministers or officials wish to share, discuss or seek further briefing on these statistics or any conclusions drawn from the statistics with anyone not on the copy list, please contact those named above.**

**Access to these statistics is given under Pre-release Access legislation so that Ministers and the Scottish Government can comment on an informed basis at the time of release. Recipients must not seek to change the format, content or timing of the publication of the official statistics unless an error is identified in which case it should be communicated to the lead analyst. It is acceptable to provide comments to the lead analyst on the format, timing or content.**

Thanks

[redacted]

From: [redacted]  
Health & Social Care Analysis  
21 December 2021

First Minister  
Deputy First Minister and Cabinet Secretary for Covid Recovery  
Cabinet Secretary for Health and Social Care

**PUBLIC HEALTH SCOTLAND COVID-19 & WINTER STATISTICAL REPORT, RELEASED AT NOON ON 22<sup>ND</sup> OF DECEMBER 2021**

**Purpose**

1. To inform the First Minister, Deputy First Minister and Cabinet Secretary for Health and Social Care of the latest results from the Public Health Scotland (PHS) weekly COVID-19 & Winter statistical report, [redacted] and [redacted].

**Priority**

2. **Urgent.** The reports are EMBARGOED so please treat as official sensitive until public release at noon on 22 December.

**Publication**

Annex 1 contains briefing on the weekly COVID-19 & Winter statistical report which brings together the latest data on COVID-19 and winter pressures. This week's report includes detailed analysis on Omicron, including breakdowns by case definition (confirmed, probable, possible) and NHS Health Board. It also includes the age and sex profile of all confirmed, probable or possible cases. Over the coming weeks, as numbers allow, a further update will be provided that summarises findings and presents cases by vaccination status, hospital admissions, and deaths. The section on COVID-19 cases, hospitalisations and deaths has been updated to also include booster/3<sup>rd</sup> dose vaccination status. The next release of this publication will be 7 January 2022.

3. [redacted]

4. [redacted]

**Handling**

5. Communications and policy officials have access to the full details of the publications and are able to advise on specific issues and answer questions. Communications colleagues will advise on media lines and whether they plan to issue a ministerial statement.

**Conclusion**

6. The First Minister, Deputy First Minister and Cabinet Secretary for Health and Social Care are asked to note the statistics being released on 22 December, and that advice on proposed handling arrangements and lines to take will follow.

[redacted], Health & Social Care Analysis, COVID Public Health Directorate

Copy List:	For Action	For Comments	For Information		
			Portfolio Interest	Constit Interest	General Awareness
Cabinet Secretary for Net Zero Energy and Transport Minister for Public Health, Women's Health and Sport Minister for Mental Wellbeing and Social Care Minister for Higher Education, Further Education, Youth Employment and Training, Cabinet Secretary for Education and Skills, Minister for Children and Young People, First Minister Covid briefing unit Permanent Secretary Health and Social Care Directors DG Education and Justice Director of ELC Director of Learning Director of Advanced Learning and Science DCMO Health COVID19 [redacted]					

## ANNEX 1

Public Health Scotland COVID-19 & Winter Statistical Report – As at 22 December 2021

**Lead Minister** – Cabinet Secretary for Health and Social Care

**Link to publication (as of publication date):** <https://publichealthscotland.scot/publications/>

**Contacts: Analyst:** [redacted]

**Policy:** [redacted]

**Communications:** [redacted]

### Publication background

This weekly publication by Public Health Scotland brings together the latest data on COVID-19 and winter pressures, across a range of topic areas.

This week's report provides an analysis up to the 19 December 2021.

Additional statistics around the wider impacts of the virus on the healthcare system and more detailed breakdowns of data previously presented in the weekly COVID-19 report are provided in an interactive dashboard, which also includes data at Health Board and Partnership level.

**Next update due:** 7 January 2022

[redacted]

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

- [redacted]
- [redacted]
- In the last four weeks from 20 November 2021 to 17 December 2021, the age-standardised acute COVID-19 related hospital admission rates were lower in individuals that had received a booster or 3rd dose compared to unvaccinated individuals
- [redacted]

Please see the full Public Health Scotland Covid-19 Statistical Report for further detail.

## **Policy Background**

[redacted]

### **COVID-19 related acute hospitalisations**

- This is an important cohort analysis that further builds our knowledge and provides clear evidence on the protective effective of vaccination.
- Vaccination is weakening the link between new cases and hospitalisations and serious illness.
- We shouldn't be complacent about hospitalisation for anyone, no matter what age they are.
- It reinforces the need to put in place a range of measures to address increasing incidence of the Delta variant including the continued use of enhanced testing, contact tracing and outbreak management.
- In line with the latest JCVI advice, where vaccine supply allows, we are bringing forward the second dose of vaccine from 12 to 8 weeks – this will be prioritised in areas which are affected by the Delta variant.
- We continue to vaccinate as many people as we can daily in line with supply.
- The analysis in the PHS weekly report complements the publication on Monday 14 June 2021 in The Lancet by the University of Edinburgh which showed that the Delta variant is associated with a higher risk of hospitalization than other variants. It also showed that double dose vaccination continues to provide a high level of protection against infection with and hospitalisation from the virus.
- However, it should be noted there are some differences between the analysis in the PHS weekly report and The Lancet:
  - The PHS weekly report analysis includes all admissions to hospital (whereas the Lancet report was a subset) and includes hospital testing (i.e. through NHS Labs, whereas the Lancet paper used only lighthouse results). This will mean there will be more elderly people in the PHS report cohort who will have been tested in hospital (and hence through the NHS Labs) – elderly people are more likely to have had 2 doses, which may explain why the PHS report includes a higher proportion of hospital admissions in people who have received 2 doses.
  - The Lancet work also ran off the de-duplicated ECOSS file (which means each person only has a positive test counted once – this can impact on the date of positive test compared to hospital admission); whereas the PHS weekly report counts all positive tests (around the time of the hospital admission).
  - The PHS weekly report is using hospital admissions as the basis for defining its cohort (and then looking at the vaccination status of those people); whereas the lancet report comes at it from the perspective of the community population, and the risk of then being admitted to hospital.

[redacted]

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