



Coronavirus (COVID-19) Infection Survey

Results for Northern Ireland

23rd December 2021

Introduction

This report is the latest in a series of weekly publications which will detail findings for Northern Ireland from the Coronavirus (COVID-19) Infection Survey (CIS). The findings set out in this report relate to the most recent week of the study up to 16th December 2021. CIS aims to estimate how many people have the infection and the number of new cases that occur over a given time as well as estimating how many people have developed antibodies to COVID-19.

The survey over time will help track the extent of infection and transmission of COVID-19 among people living in private households. The sample includes people who would not necessarily have otherwise been tested, and is intended to estimate the number of current positive cases in the community in Northern Ireland, including cases where people do not report to having any symptoms.

It is important to note that these statistics are based on a survey sample and differ from those reported in the [Department of Health Daily Dashboard](#) which are based on all laboratory confirmed tests for COVID-19 completed in Northern Ireland.

The report has been brought forward this week in order to publish before Christmas. As a result, the report is shorter than the usual release and does not include sub-regional estimates or estimates of incidence.

The next release from CIS will be on 31st December and will also have reduced content due to the Christmas break.

Proportion of people in Northern Ireland who had COVID-19

During the most recent week of the study (10th December – 16th December), it is estimated that 37,800 people in Northern Ireland had COVID-19 (95% credible interval: 29,100 to 47,700). This equates to 2.06% of the population (95% credible interval: 1.59% to 2.60%) or around 1 in 50 people (95% credible interval: 1 in 65 to 1 in 40). This is based on statistical modelling of the trend in rates of positive nose and throat swab results.

Modelling suggests the trend in the percentage of people testing positive was uncertain in the week ending 16th December in Northern Ireland. In the latest six-week period, there were 16,762 swab tests taken in total from 11,992 participants. Of these, 284 participants tested positive from 221 different households. In the latest two-week period, of the 5,147 participants in the study, 108 tested positive from 83 households.

The reported headline positivity estimates contain both Omicron (B.1.1.529) and Delta (B.1.617.2 and its genetic descendants) variants.

As this is a household survey, the statistics refer to infections occurring in private households. The figures exclude infections reported in hospitals, care homes and/or communal establishments. In these settings, rates of COVID-19 infection are likely to be different.

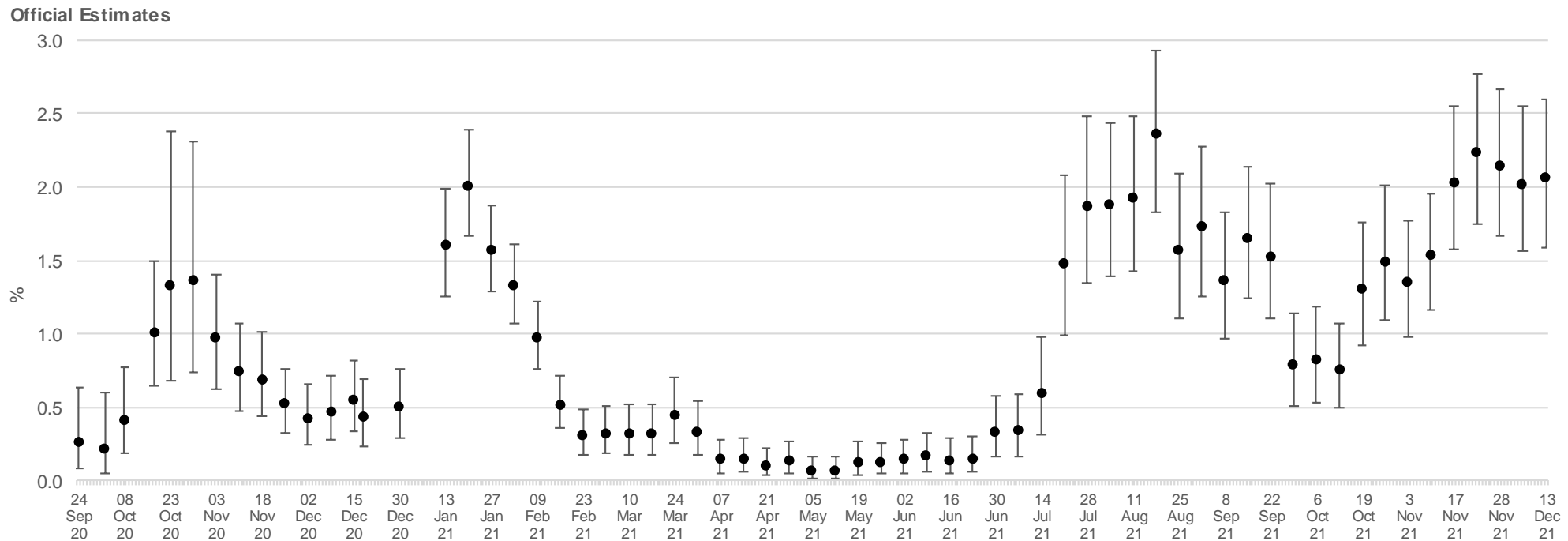
The estimates are based on confirmed positive test results. The remaining swabs are either negative which are included in the analysis or are inconclusive or test failures which are not included in the analysis. Work is ongoing with the laboratories to understand consistency in the identification of inconclusive results, that could be weak positive results. The impact of this on the estimates of positive infections is likely to be very small and unlikely to affect the trend.

Positivity over time in Northern Ireland

Due to relatively small number of tests and low number of positives within the sample, credible intervals are wide and therefore results should be interpreted with caution.

Modelling suggests the trend in the percentage of people testing positive was uncertain in the week ending 16th December in Northern Ireland. The official estimates of the percentage of people in NI previously testing positive for COVID-19 are set out in figure 1a while the modelled trends over time in the overall population for testing positive for COVID-19, including 95% credible intervals, are shown in figure 1b (overleaf). These estimates are calculated using a regression model which adjusts the survey results to be more representative of the overall population in terms of age, sex, and region.

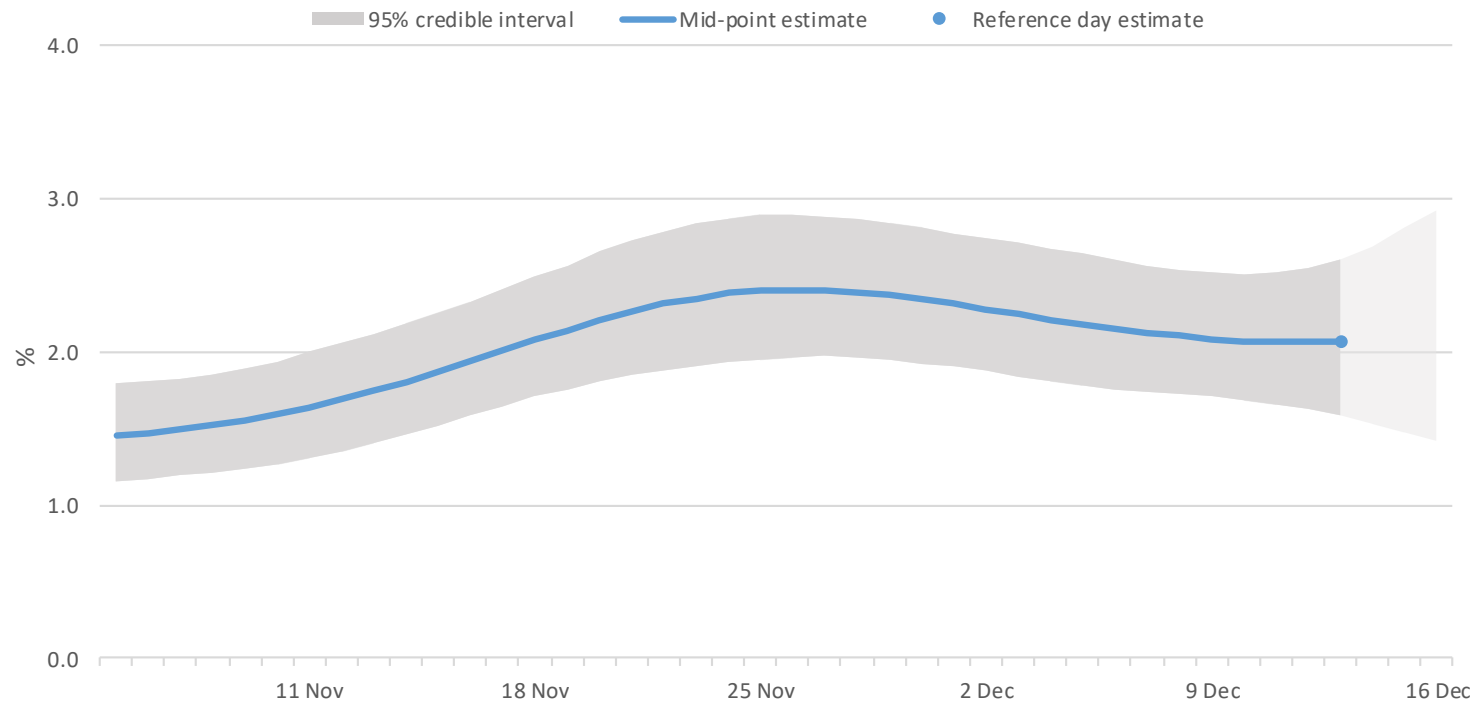
Figure 1a: Estimated percentage of the population in Northern Ireland testing positive for the coronavirus (COVID-19) on nose and throat swabs since 24 September 2020



The point estimates and error bars indicated on the chart represent the official estimates reported in previous weeks based on the best information and methods at each point in time.

Figure 1b:

Percentage of people testing positive for COVID-19 in Northern Ireland Modelled daily estimates



The area marked with light grey has a lower level of certainty due to lab results still being processed for this period
Data from 5 November 2021 to 16 December 2021

Source: Office for National Statistics – Coronavirus (COVID-19) Infection Survey

Notes:

1. These results are provisional and subject to revision.
2. All estimates are subject to uncertainty, given that a sample is only part of the wider population. The model used to provide these estimates is a Bayesian model: these provide 95% credible intervals. A credible interval gives an indication of the uncertainty of an estimate from data analysis. 95% credible intervals are calculated so that there is a 95% probability of the true value lying in the interval.
3. Official reported estimates are plotted at a reference point believed to be most representative of the given week. To improve stability in the modelling while maintaining relative timeliness of estimates, the official estimates that are reported here are based on the midpoint of the reference week.
4. Official estimates (Figure 1a) should be used to understand the positivity rate for a single point in time. This is based on the modelled estimate for the latest week and is the best and most stable estimate and is used in all previous outputs. The modelled estimate (Figure 1b) is more suited to understand the recent trend. This is because the model is regularly updated to include new test results and smooths the trend over time.

Positivity in the UK

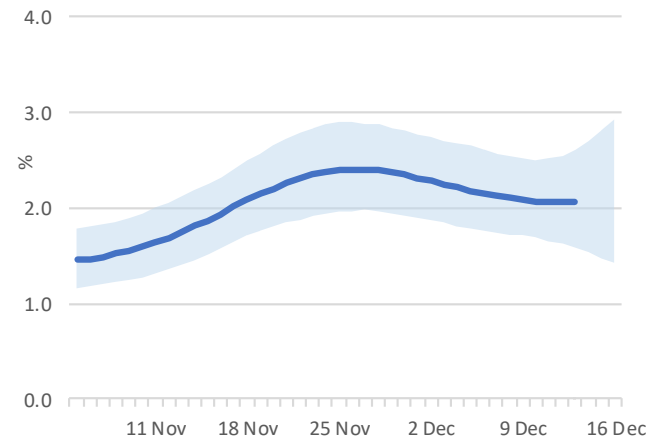
During the most recent week of the study, based on statistical modelling of the trend in rates of positive nose and throat swab results, 2.06% of the NI population (95% credible interval: 1.59% to 2.60%) had COVID-19. It is estimated that for the same period 2.21% (95% credible interval: 2.10% to 2.32%) of the population in England had COVID-19. It was estimated that 1.79% (95% credible interval: 1.46% to 2.15%) of the population in Wales and 1.45% (95% credible interval: 1.20% to 1.72%) of people in Scotland had COVID-19.

The percentage of people testing positive for COVID-19 increased in England and Scotland, and the trend was uncertain in Wales and Northern Ireland in the week ending 16 December 2021.

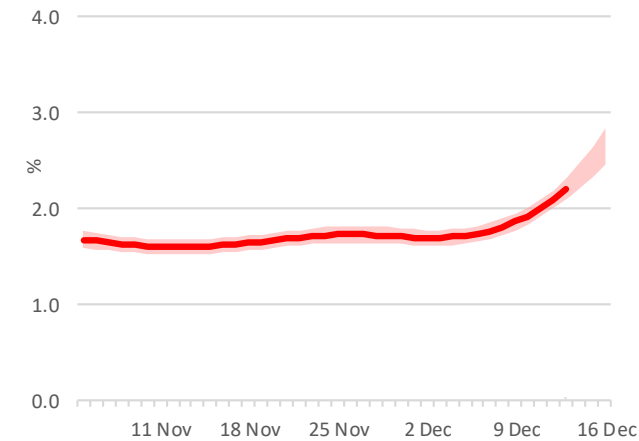
The reported headline positivity estimates contain both Omicron (B.1.1.529) and Delta (B.1.617.2 and its genetic descendants) variants.

Figure 3a, 3b, 3c, 3d: Modelled daily estimate of percentage of the population testing positive for the COVID-19 across the UK

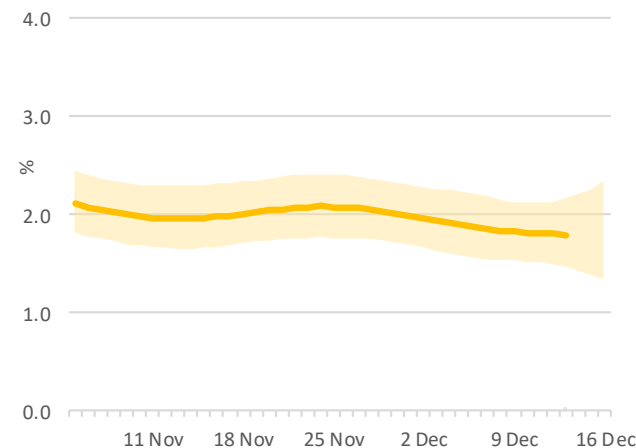
Northern Ireland modelled daily estimates



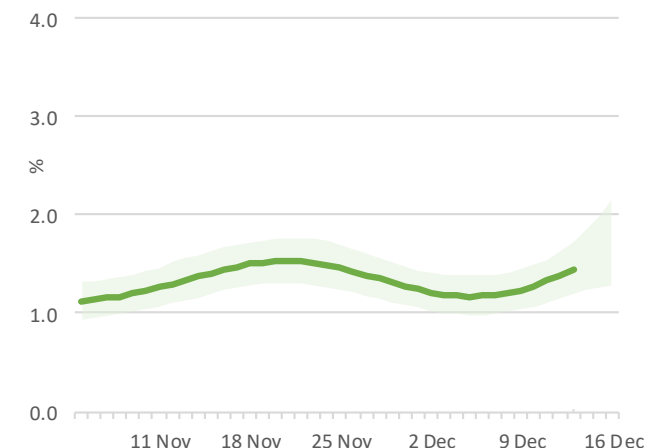
England modelled daily estimates



Wales modelled daily estimates



Scotland modelled daily estimates



It should be noted that there is some uncertainty around the individual point estimates for the nations. Due to the relatively small number of tests and a low number of positives in Northern Ireland in the sample, credible intervals are wide and therefore results should be interpreted with caution. These wide credible intervals mean that differences between the central estimates within and between nations may appear smaller or more exaggerated than what they really are.

Variant Analysis

The [World Health Organization \(WHO\) have defined names for Variants of Concern](#). These are variants that the UK government has under surveillance. You can find out more in the [SARS-CoV-2 variants of concern and variants under investigation in England briefing document \(PDF, 2.51MB\)](#).

UK Variants of Concern:

- Alpha: B.1.1.7
- Beta: B.1.351
- Gamma: P.1
- Delta: B.1.617.2 and its genetic descendants
- Omicron: B.1.1.529 (which includes sublineages BA.1, BA.2 and BA.3)

The Omicron variant (B.1.1.529) of COVID-19 has changes in one of the three genes that coronavirus swab tests detect, known as the S-gene. This means in cases compatible with the Omicron variant, the S-gene is no longer detected by the current test. When there is a high viral load (for example, when a person is most infectious) absence of the S-gene in combination with the presence of the other two genes (ORF1ab and N-genes) is a reliable indicator of the Omicron variant (B.1.1.529). However, as the viral load decreases (for example, if someone is near the end of their recovery from the infection), the absence of the S-gene is a less reliable indicator of the Omicron variant.

Infections compatible with the Delta variant have been the most common since the end of May 2021 in England, and since the end of July 2021 in all four UK countries. In the four weeks up to 6 December 2021, results showed that over 94% of all coronavirus (COVID-19) infections, where a genetic sequence could be obtained, were genetically compatible with the Delta variant or its descendants.

More information on how variants from positive tests on the survey are measured can be found in the ONS [Understanding COVID-19 Variants blog](#) and in the [methodology article](#).

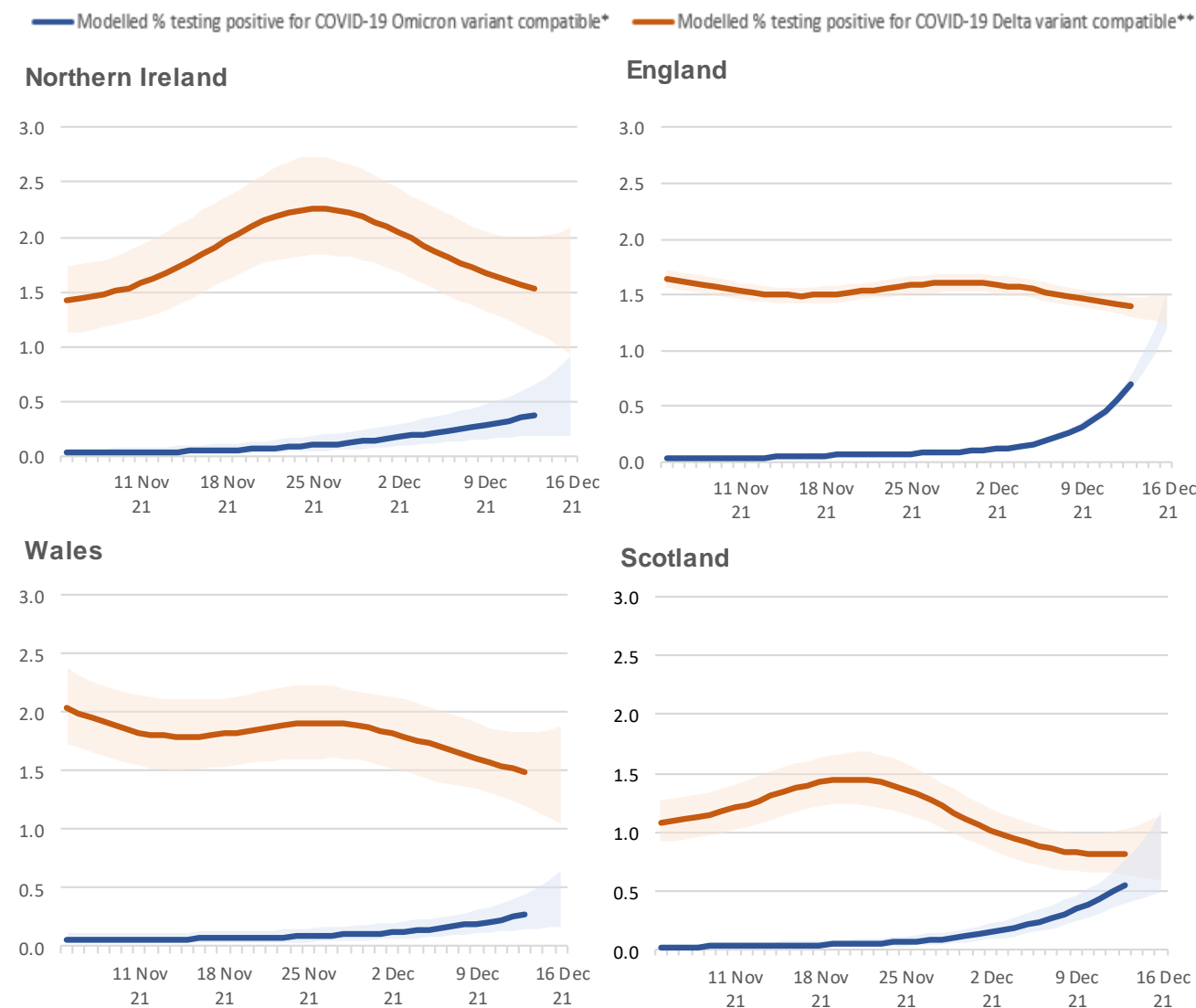
Variant analysis across the UK

In the week ending 16 December 2021, the percentage of cases compatible with the Omicron variant (B.1.1.529) increased in all four UK countries. In the same week, the percentage of cases compatible with the Delta variant (B.1.617.2 and its genetic descendants) has decreased in England, Wales and Northern Ireland, and the trend was uncertain in Scotland.

Data should be treated with caution. In particular, there are small numbers of positives detected in Wales, Northern Ireland and Scotland leading to considerable uncertainty surrounding these estimates. There are further uncertainties given that not all cases that are positive only on the ORF1ab and N-genes (denoted Omicron-compatible) will be the Omicron variant.

[Recent analysis on the predictors of Omicron \(B.1.1.529\) positivity](#) published on 21 December suggests that positive cases among school age children are much less likely to be compatible with Omicron (B.1.1.529) than positive cases among adults. Therefore, positivity in school age children is still primarily driven by infections with Delta (B.1.617.2 and its genetic descendants). More information on the analysis of predictors of Omicron (B.1.1.529) positivity is available in the ONS [statement](#).

Figure 4a, 4b, 4c, 4d: Modelled percentage of positive cases compatible with the Delta variant and compatible with the Omicron variant across the UK



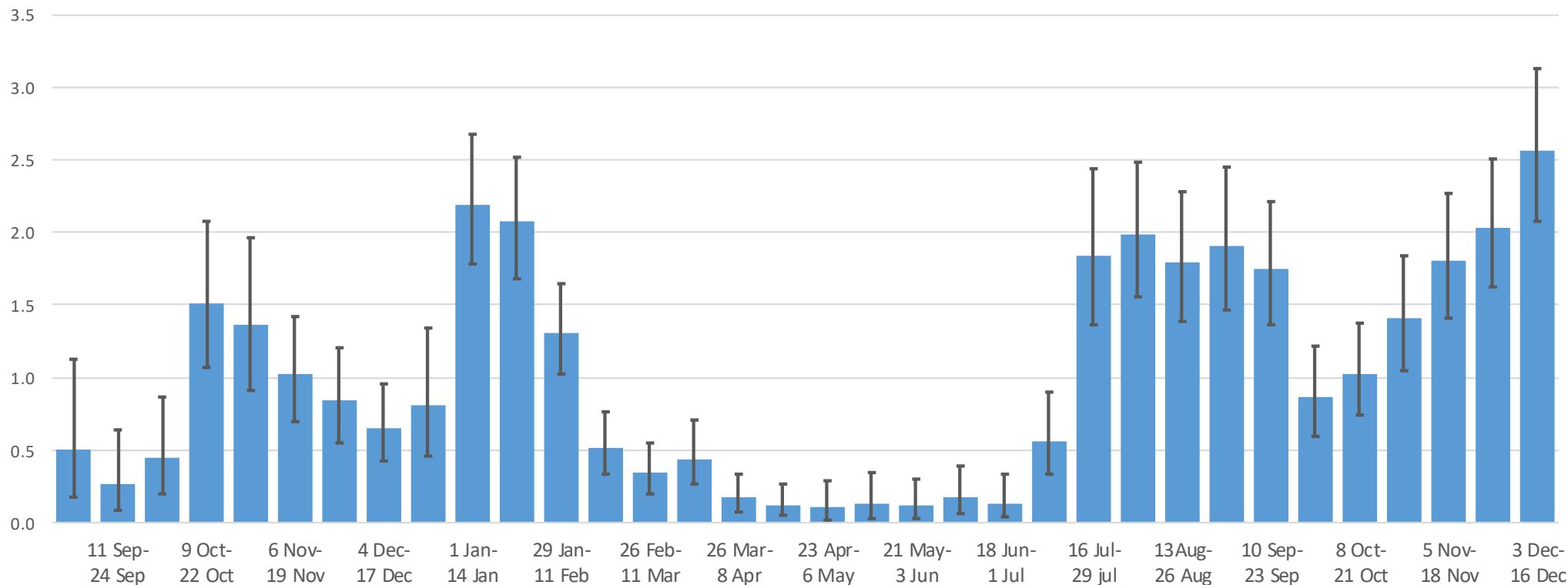
* Omicron variant compatible positives are defined as those that are positive on the ORF1ab-gene and N-gene, but not the S-gene.

** Delta variant compatible positives are defined as those that are positive on the ORF1ab, N-gene and S-gene, as well as N+S and ORF+S.

Appendix 1 – Non-overlapping 14 day weighted positivity estimates in Northern Ireland

The estimates for non-overlapping 14-day periods (which underpin the modelled official estimates) are presented in the chart below and are provided for context. These 14-day estimates are different from and cannot be directly compared with the modelled estimates presented earlier in this report. The weighted percentage testing positive in NI in the latest 14-day period (3rd December to 16th December 2021) was 2.56% (95% confidence interval: 2.07% to 3.13%) or around 1 in 40 people (95% confidence interval 1 in 50 to 1 in 30).

Figure 5: Estimated percentage of the population in Northern Ireland testing positive for the coronavirus (COVID-19) by non-overlapping 14-day periods up to 16 December 2021



Source: Office for National Statistics – Coronavirus (COVID-19) Infection Survey, Department of Health Information Analysis Directorate

Notes:

1. All results are provisional and subject to revision.
2. These statistics refer to infections reported among the population living in private households. These figures exclude infections reported in hospitals, care homes and/or other institutional settings.
3. It should be noted that averaging positivity rates over the past 14-day period can mask changes in the positivity rates that have occurred in the most recent week.

Methodology

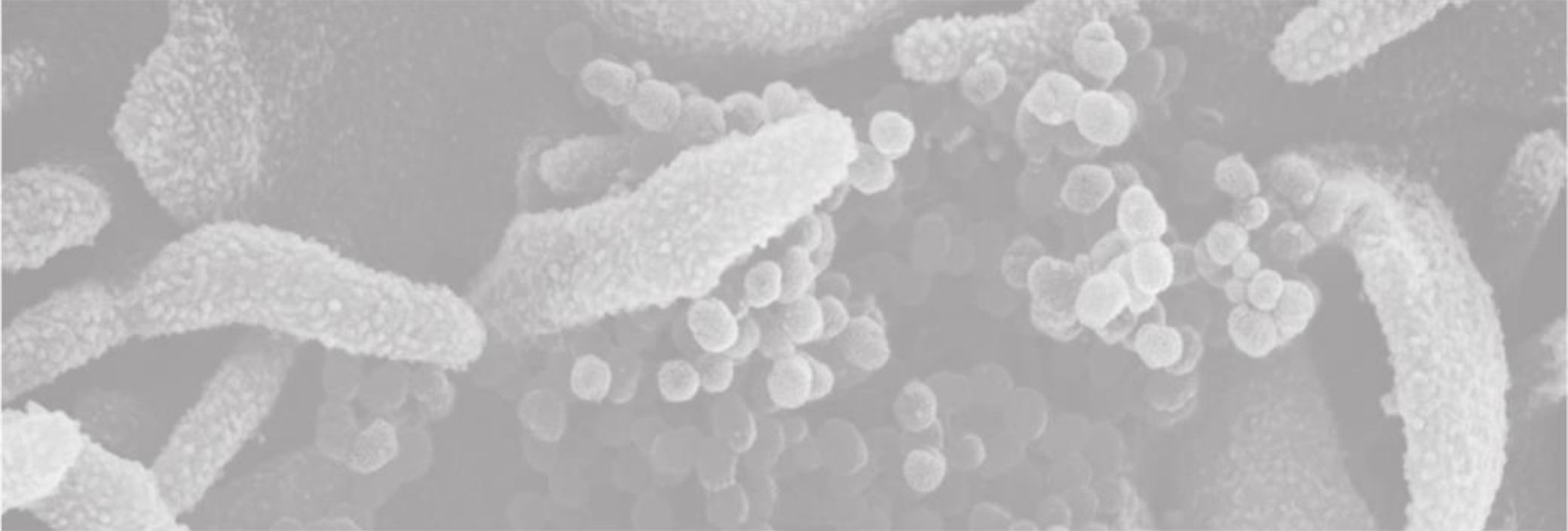
The results are based on nose and throat swabs provided by participants to the study. As well as looking at incidence overall, the survey will be used to examine the characteristics of those testing positive for COVID-19 and the extent to which those infected experience symptoms.

Extending the COVID-19 Infection Survey to Northern Ireland has been achieved by a collaboration between the Department of Health, Public Health Agency (PHA), Northern Ireland Statistics and Research Agency (NISRA) and the Office for National Statistics (ONS) and its various survey partners. Fieldwork commenced in Northern Ireland on 27th July 2020. It is important to note that there is a significant degree of uncertainty with the estimates. This is because, despite a large sample of participants, the number of positive cases identified is small. Estimates are provided with 95% confidence intervals to indicate the range within which we may be confident the true figure lies.

The results are for private households only and do not apply to those in hospitals, care homes or other institutional settings.

The Office for National Statistics (ONS) publishes [weekly statistical bulletins and references tables, including results for England, Wales, Scotland and Northern Ireland](#) on its website. Further detail for Northern Ireland is available in the ONS [data tables](#).

Further information about quality and methodology can be found on the [ONS website](#).



INFORMATION
ANALYSIS
DIRECTORATE



Department of
Health

An Roinn Sláinte

Mánnystrie O Poustie

www.health-ni.gov.uk