



Coronavirus (COVID-19) Infection Survey

Results for Northern Ireland

4th June 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 the 29th May 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 in the community population (those in private residences). 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.

Proportion of people in Northern Ireland who had COVID-19

During the most recent week of the study (23rd May – 29th May), it is estimated that 2,300 people in Northern Ireland had COVID-19 (95% credible interval: 800 to 4,800). This equates to 0.12% of the population (95% credible interval: 0.04% to 0.26%) or around 1 in 800 people (95% credible interval 1 in 2,290 to 1 in 380). 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 is uncertain in the most recent week in Northern Ireland however infection rates remain low compared with earlier months in the year. In the latest six-week period, there were 16,100 swab tests taken in total from 10,885 participants. Of these, 13 participants tested positive from 13 different households. In the latest two-week period, of the 5,151 participants in the study, 7 tested positive from 7 households.

As this is a household survey, the figures do not include people staying in hospitals, care homes, students in halls of residence or other institutional settings. In these settings, rates of COVID-19 infection are likely to be different. It should be noted that the ratios outlined above do not represent a person's risk of becoming infected, since risk of infection depends on a number of factors such as contact with others or whether a person has been vaccinated.

Please note that due to lower positivity rates caution should be taken in over-interpreting any small movements in the latest trends.

Due to lower positivity rates, the following information is not available this week: sub-regional positivity estimates, age positivity estimates and incidence estimates.

Positivity over time in Northern Ireland

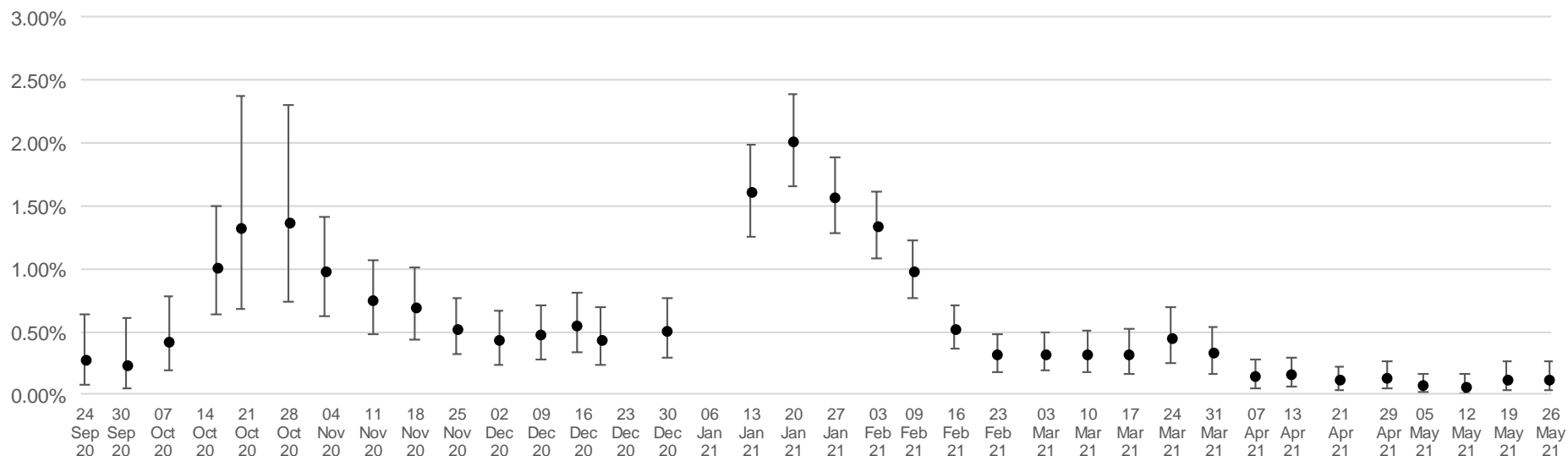
Due to relatively small number of tests and low number of positives within the sample, credible intervals are wide and therefore results should be interpreted with caution.

Modelling suggests the trend in the percentage of people testing positive is uncertain in the most recent week in Northern Ireland however infection rates remain low compared with earlier months in the year. 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.

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

Figure 1a:

Percentage of people testing positive for COVID-19 in Northern Ireland
Official Estimates

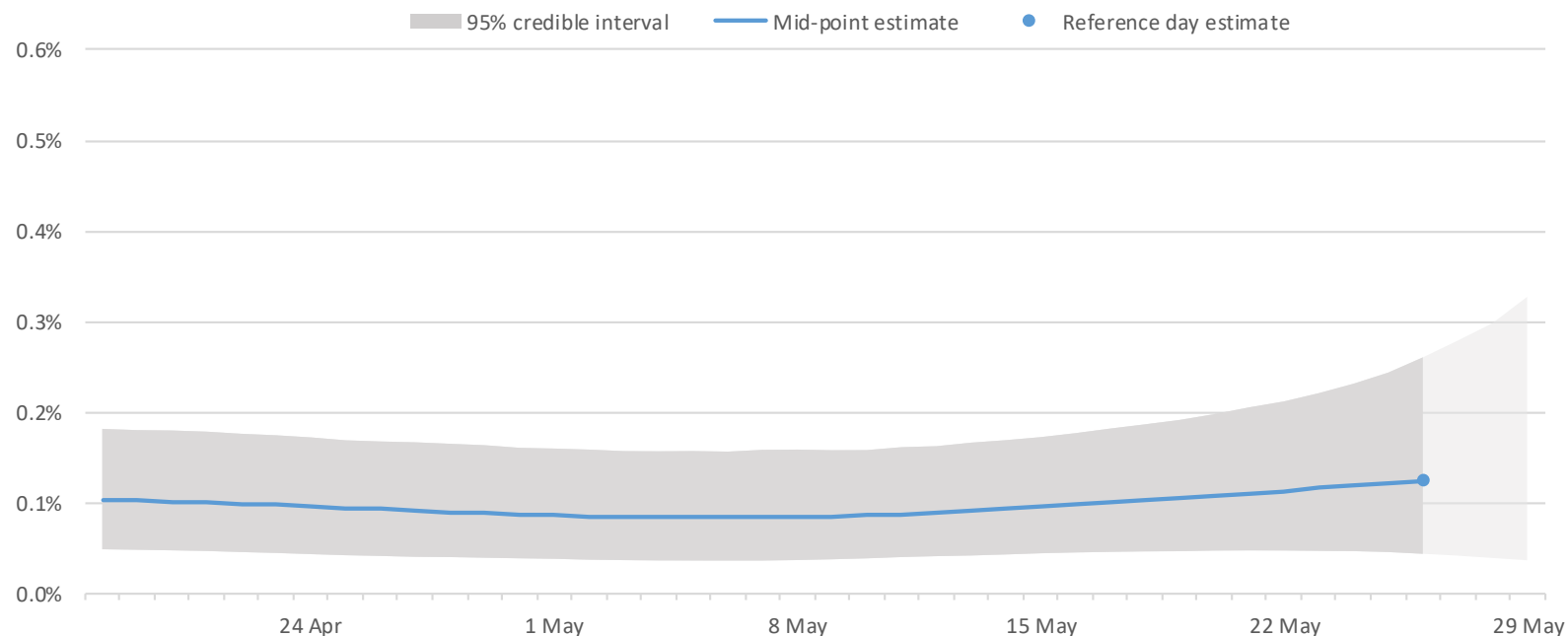


The point estimates and error bars indicated on the chart represent the official estimates reported in previous weeks based on the best information and methods at each point in time.

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 18 April 2021 to 29 May 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.

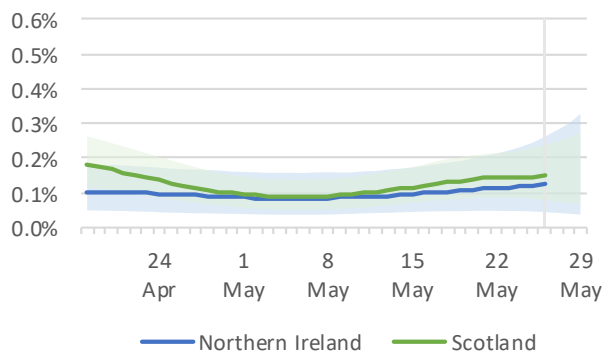
Positivity in the UK

During the most recent week of the study, based on statistical modelling of the trend in rates of positive nose and throat swab results, 0.12% of the NI population (95% credible interval: 0.04% to 0.26%) had COVID-19. It is estimated that for the same period 0.16% (95% credible interval: 0.13% to 0.19%) of the population in England had the coronavirus (COVID-19). It was estimated that 0.10% (95% credible interval: 0.03% to 0.19%) of the population in Wales and 0.15% (95% credible interval: 0.08% to 0.24%) of people in Scotland had the coronavirus.

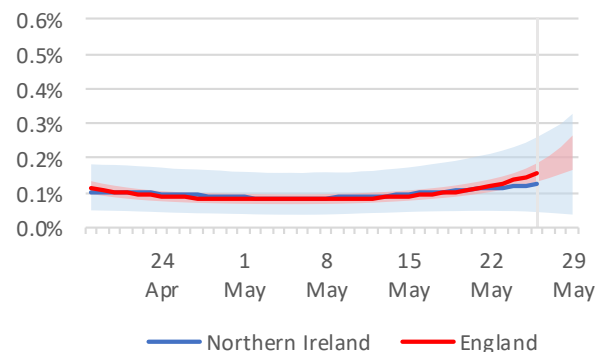
It should be noted that there is some uncertainty around the individual point estimates for the nations. Due to the relatively small number of tests and a low number of positives in and Northern Ireland in the sample, credible intervals are wide and therefore results should be interpreted with caution. 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.

Figure 2a, 2b, 2c: Modelled daily estimate of percentage of the population testing positive for the COVID-19 across the UK

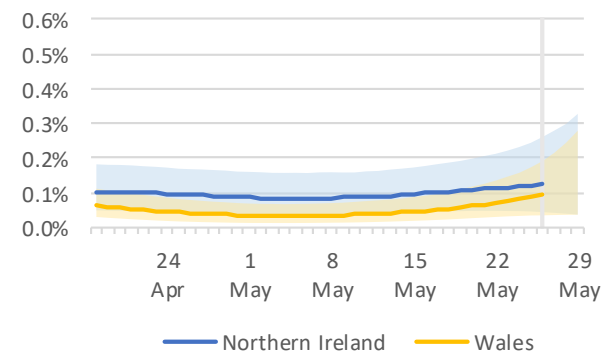
Northern Ireland vs Scotland modelled daily estimates



Northern Ireland vs England modelled daily estimates



Northern Ireland vs Wales modelled daily estimates



Variant Analysis

A new variant of the coronavirus (COVID-19) was identified in the UK in mid-November 2020. The UK variant (B.1.1.7, also now known as WHO 'Alpha') of COVID-19 has changes in one of the three genes that COVID-19 swab tests detect, known as the S-gene. This means in cases compatible with the UK variant, the S-gene is not detected by the current test and has the pattern ORF1ab+N (S gene negative) in the main variant analysis. Other variants – including both B.1.617.2 (WHO 'Delta'; first identified in India) and B.1.351 (WHO 'Beta'; first identified in South Africa) – are positive on all three genes, with the pattern ORF1ab+S+N. If there is an increase in the prevalence of any of these strains, this will show up in the analysis as an increase in cases “Not compatible with the UK variant”. The main variant analysis can therefore differentiate between these two groups of variants (ORF1ab+N positive or ORF1ab+S+N positive), but cannot differentiate between variants that have the same gene pattern for the three genes that COVID-19 swab tests detect. More information on individual variants and where they were first detected is available on the [government variant dashboard](#).

Other variants, including B.1.525 (WHO 'Eta'; first identified in Nigeria), also have the same pattern of gene positivity as the UK variant. At present these are [rare in the UK](#) so this group will continue to be described as compatible with the UK variant, but this will continue to be reviewed.

Information is also provided on viruses where a particular genetic change (mutation) called E484K has been found. This mutation is always seen in the variant B.1.351 ((WHO 'Beta'; first identified in South Africa). Laboratory data suggest that this mutation might make it easier for a virus to infect someone again, or to infect someone who has been vaccinated, but the importance of this is still uncertain.

ONS have published a [blog](#) where more can be read about the UK variant.

It should be noted that there is considerable uncertainty around these estimates due to the small numbers of UK variant compatible positives detected in Northern Ireland and also given that not all cases that are positive on the ORF1ab and N-genes will be the UK variant.

Variant Analysis (continued)

This analysis looks at the percentage of people in the population testing positive for COVID-19 that are compatible with the UK variant, those that test positive but are not compatible with the UK variant and those that test positive but where the virus is too low to be identifiable as either the new or existing variants of COVID-19. In the most recent week in Northern Ireland, the trend is uncertain.

Northern Ireland modelled estimates - new variant compatible, not compatible with new variant and not identifiable

Date	% testing positive UK variant compatible *	% testing positive not compatible with UK variant **	% testing positive, virus too low for variant to be identifiable ***
18 th Apr – 24 th Apr 2021	0.07%	0.01%	0.03%
25 th Apr – 1 st May 2021	0.07%	0.01%	0.03%
2 nd May – 8 th May 2021	0.07%	0.01%	0.03%
9 th May – 15 th May 2021	0.08%	0.01%	0.02%
16 th May – 22 nd May 2021	0.09%	0.01%	0.02%
23 rd May – 29 th May 2021	0.10%	0.01%	0.03%

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

** Positives that are not compatible with the UK variant are defined as those that are positive on the S-gene, N-gene and ORF1ab-gene.

*** Positives where the virus is too low for the variant to be identifiable are defined as those that are positive with all other gene patterns.

These definitions are regardless of cycle threshold (Ct) value.

Please note that the variant analysis is modelled separately to the overall NI estimate thus the figures presented above may not sum to the overall NI estimate.

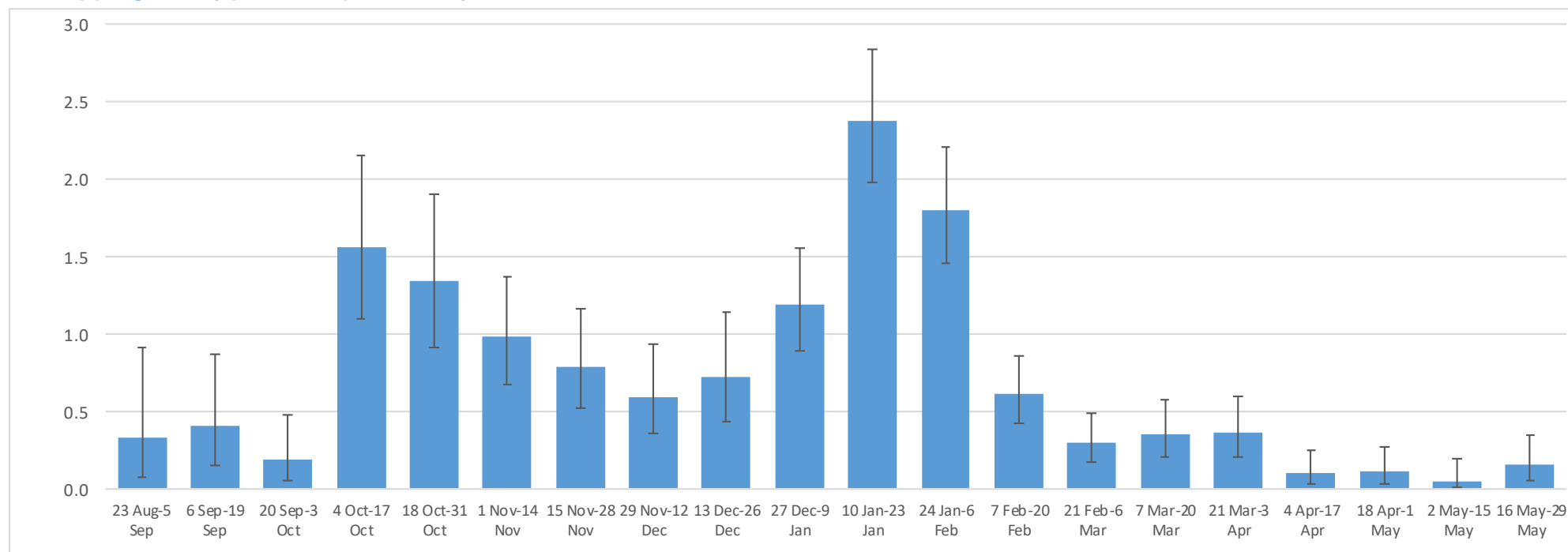
Source: Office for National Statistics – Coronavirus (COVID-19) Infection Survey

It should be noted that there is considerable uncertainty around these estimates due to the small numbers of new variant compatible positives detected in Northern Ireland and also given that not all cases that are positive on the ORF1ab and N-genes will be the new variant.

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 (16th May to 29th May 2021) was 0.15% (95% confidence interval: 0.05% to 0.34%) or around 1 in 650 people (95% confidence interval 1 in 1,870 to 1 in 290).

Figure 3: Estimated percentage of the population in Northern Ireland testing positive for the coronavirus (COVID-19) by non-overlapping 14-day periods up to 29 May 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 in the community, by which we mean 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

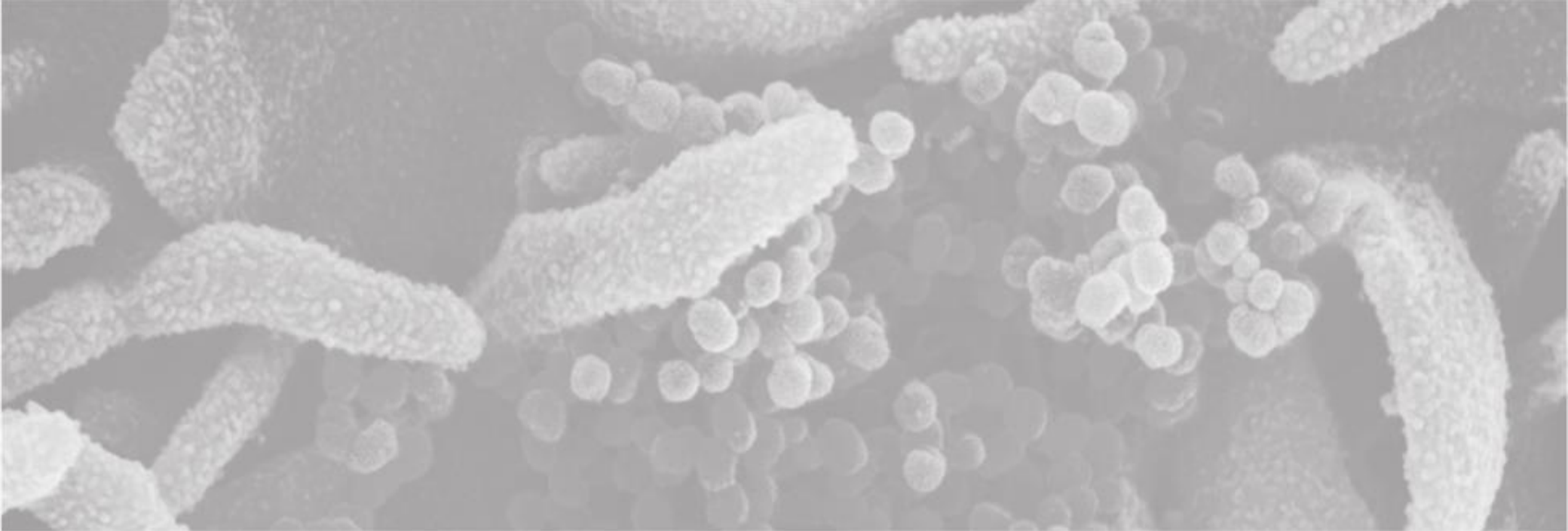
The results are based on nose and throat swabs provided by participants to the study. As well as looking at incidence overall, the survey will be used to examine the characteristics of those testing positive for COVID-19 and the extent to which those infected experience symptoms.

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



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