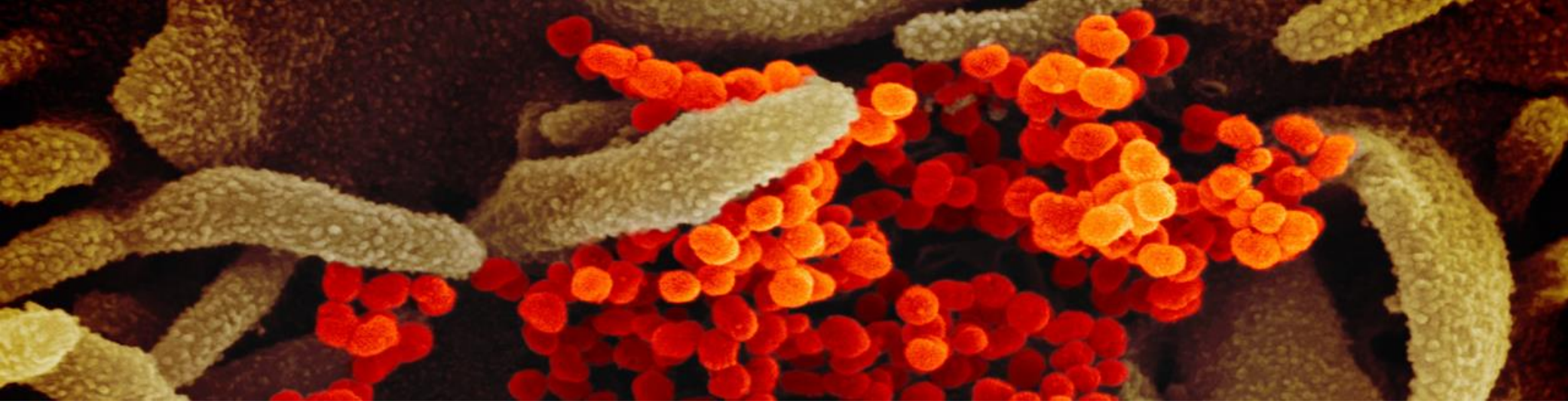


Coronavirus (COVID-19) Infection Survey

Results for Northern Ireland

16th July 2021

INFORMATION ANALYSIS DIRECTORATE

Department of Health
An Roinn Sláinte
Männystrie O Poustie
www.health-ni.gov.uk

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 10th July 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 (4th July – 10th July), it is estimated that 6,300 people in Northern Ireland had COVID-19 (95% credible interval: 3,100 to 10,700). This equates to 0.34% of the population (95% credible interval: 0.17% to 0.59%) or around 1 in 290 people (95% credible interval: 1 in 600 to 1 in 170). This is based on statistical modelling of the trend in rates of positive nose and throat swab results.

Modelling suggests the percentage of people testing positive in Northern Ireland increased in the two weeks up to 10th July 2021, but the trend is uncertain in the week ending 10th July 2021. In the latest six-week period, there were 15,139 swab tests taken in total from 10,654 participants. Of these, 27 participants tested positive from 21 different households. In the latest two-week period, of the 4,878 participants in the study, 14 tested positive from 9 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.

Sub-regional analysis

When the percentage of people testing positive is low, sub-regional estimates are subject to increased uncertainty as captured in the credible intervals. For this reason, sub-regional data had not been presented since 26 March 2021. Due to increased levels of positivity, sub-regional data for this week (4th – 10th July 2021) is available in the ONS data tables. *It should be noted that there is a higher degree of uncertainty in the sub-regional estimates and caution should be taken when interpreting or ranking them.*

Positivity over time in Northern Ireland

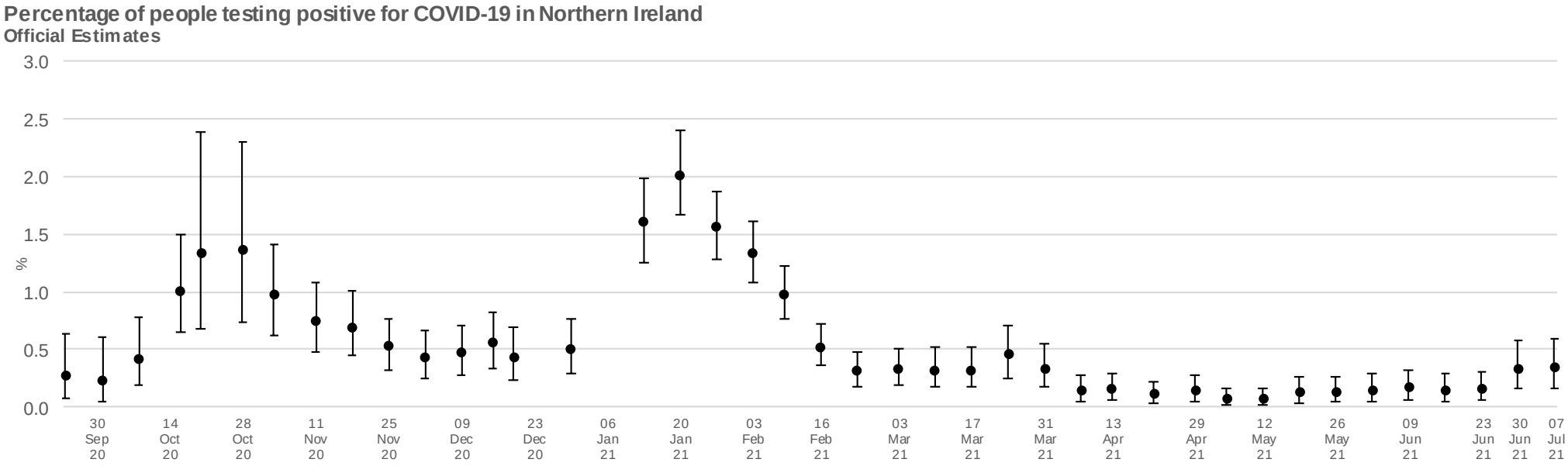
Due to relatively small number of tests and low number of positives within the sample, credible intervals are wide and therefore results should be interpreted with caution.

Modelling suggests the percentage of people testing positive in Northern Ireland increased in the two weeks up to 10th July 2021, but the trend is uncertain in the week ending 10th July 2021. 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.

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

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:

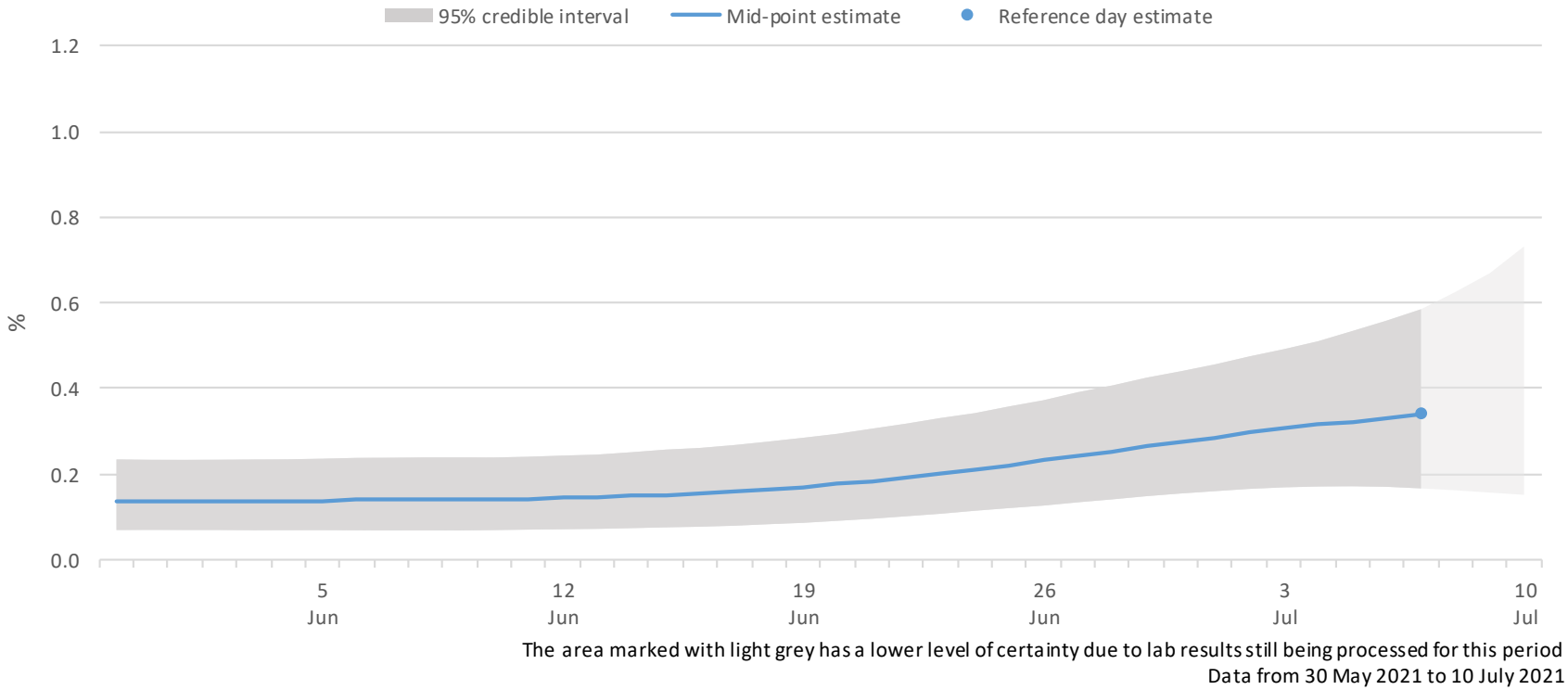


The point estimates and error bars indicated on the chart represent the official estimates reported in previous weeks based on the best information and methods at each point in time.

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

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 30 May 2021 to 10 July 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 by age over time

These charts present modelled positivity estimates for selected single years of age in Northern Ireland over the past 6 weeks.

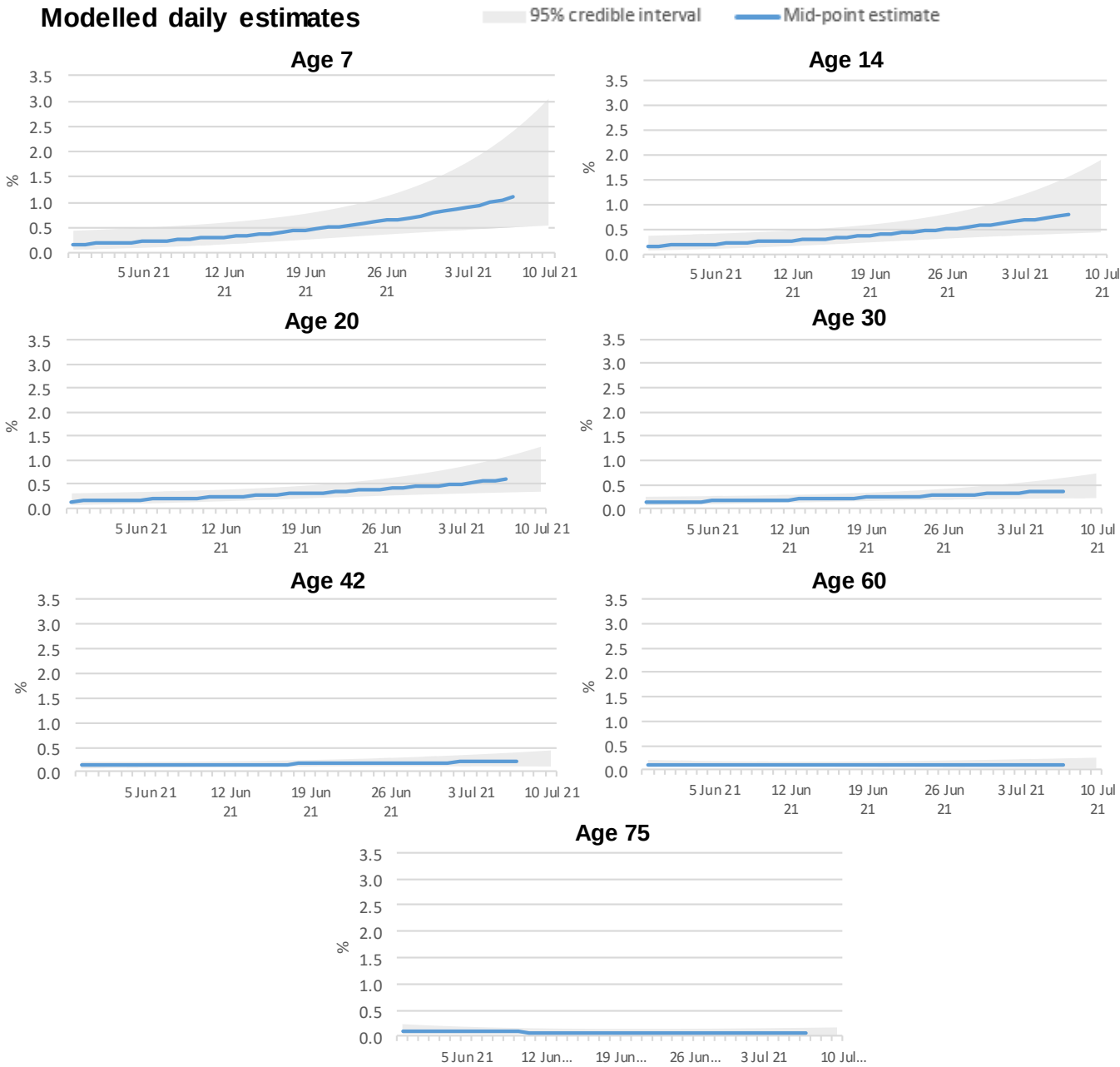
The trend suggests there are possible signs of an increase across younger age-groups, with rates remaining low in the older age-groups.

It should be noted that there is very high uncertainty around these trends due to the relatively smaller number of people included in this analysis, so caution should be taken in interpreting the results. In addition, caution should be taken in over-interpreting any small movements in the latest trend.

Estimates in the most recent week have a lower level of certainty due to lab results still being processed for this period.

As the percentage of people testing positive decreases, the positivity estimates by single year of age will be subject to increased uncertainty as captured in the credible intervals. This will continue to be monitored over the coming weeks.

Figure 2 – Percentage of people testing positive for COVID-19 for reference ages in Northern Ireland *(Data from 30th May to 10th July 2021)*

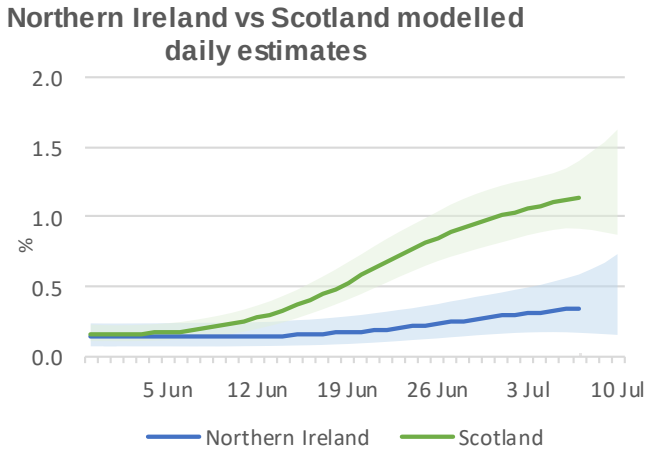


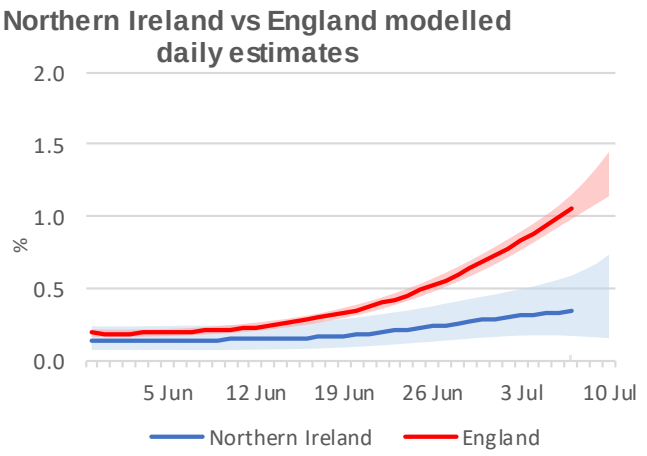
Positivity in the UK

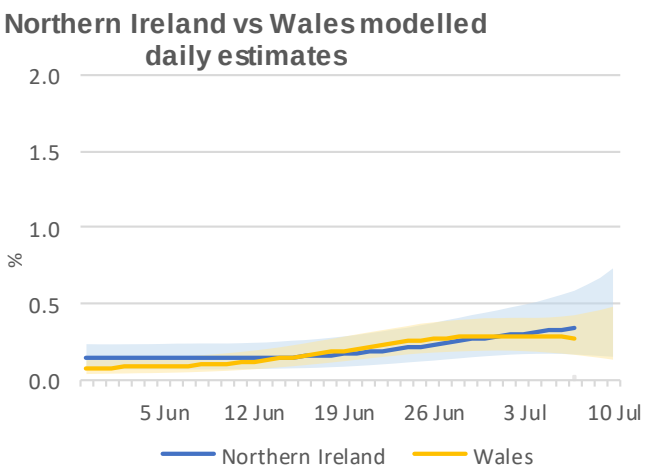
During the most recent week of the study, based on statistical modelling of the trend in rates of positive nose and throat swab results, 0.34% of the NI population (95% credible interval: 0.17% to 0.59%) had COVID-19. It is estimated that for the same period 1.06% (95% credible interval: 0.98% to 1.15%) of the population in England had the coronavirus (COVID-19). It was estimated that 0.28% (95% credible interval: 0.16% to 0.42%) of the population in Wales and 1.14% (95% credible interval: 0.91% to 1.40%) 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 3a, 3b, 3c: Modelled daily estimate of percentage of the population testing positive for the COVID-19 across the UK







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

Variant Analysis

A new variant of the coronavirus (COVID-19) was identified in the UK in mid-November 2020. The Alpha variant (B.1.1.7, previously known as the UK variant) 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 Alpha 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 (Delta) and B.1.351 (Beta) – are positive on all three genes, with the pattern ORF1ab+S+N. Based on recent information from genomic sequencing and national testing programmes, it is likely that most ORF1ab+S+N cases in the UK will be the Delta variant. Therefore, 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 “Compatible with the Delta 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. It is possible that some Delta variant infections do not test positive on the three genes, particularly if there is a low viral load. These numbers are expected to be small, but it is possible that some Delta cases may be categorised as Alpha compatible.

More information on individual variants and where they were first detected is available on the government variant dashboard.

Other variants, including B.1.525 (Eta), also have the same pattern of gene positivity as B.1.1.7 (Alpha). At present these are rare in the UK so this group will continue to be described as compatible with the Alpha variant, but this will continue to be reviewed.

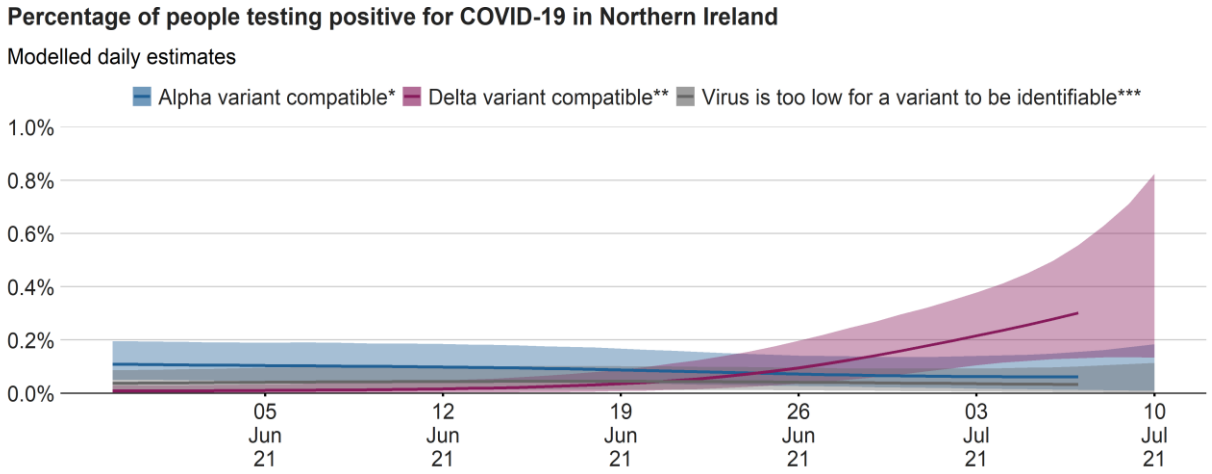
ONS have published a blog where more can be read about COVID-19 variants.

It should be noted that there is considerable uncertainty around these estimates due to the small numbers of Alpha 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 Alpha variant.

Variant Analysis (continued)

In the week ending 10th July in Northern Ireland, the percentage of people testing positive whose results are compatible with the Delta variant (B.1.617.2) increased whilst the rates are low for those whose results are compatible with the Alpha variant (B.1.1.7) and those where the virus is too low for the variant to be identifiable.

Figure 4: Northern Ireland modelled estimates by variant



The area to the right of the line where the central estimate ends has a lower level of certainty due to lab results still being processed for this period.

Date	% testing positive compatible with Alpha variant*	% testing positive compatible with Delta variant **	% testing positive, virus too low for variant to be identifiable ***
30th May – 5th Jun 2021	0.11%	0.01%	0.04%
6th Jun – 12th Jun 2021	0.10%	0.01%	0.04%
13th Jun – 19th Jun 2021	0.09%	0.02%	0.04%
20th Jun – 26th Jun 2021	0.08%	0.06%	0.04%
27th Jun – 3rd Jul 2021	0.07%	0.16%	0.04%
4th Jul – 10th Jul 2021	0.06%	0.30%	0.03%

* Alpha 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 compatible with Delta 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.

Notes

1. Due to the low number of positive results there is a greater degree of uncertainty in the percentage of people testing positive by variant category for Northern Ireland, Scotland and Wales than for England.

2. Data should be treated with caution. There are uncertainties given that not all cases that are positive on the ORF1ab and N-gene will be the Alpha variant, and not all cases that are positive on all three of the ORF1ab, N-gene and S-gene will be the Delta variant.

3. The definitions are regardless of cycle threshold (Ct) value.

4. Cases where the virus is too low for the variant to be identifiable are likely to be people very recently infected or those who are recovering from their infection; people who get new infections after vaccination may also be in this group.

5. 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.

Number of new COVID-19 infections

ONS recently completed a review on this topic and estimates of the incidence rate are now included in the ONS data tables.

The incidence method uses several weeks' data to provide the latest estimate of new infections. Following the review, the reference date used for the official estimates of incidence of PCR-positive cases has changed to 14 days prior to the end of the positivity reference date, with credible intervals provided until 7 days after the incidence reference date. Previously the incidence reference date was 10 days prior to the end of the positivity reference date. This change was necessary as estimates later than this date are more likely to change as additional data is received. Estimates of incidence are therefore not the latest figure as there is a time lag of 2 weeks between the incidence estimate and the positivity estimate.

While the estimates are useful, they can be volatile and subject to change as more data become available. This is particularly the case with the most recent estimates so it is important to be cautious when using them. When incidence is low, it may not be possible to produce a reliable estimate. In these instances ONS recommend focussing on the upper credible interval, which gives an upper bound to the incidence of new infections. For more information on how estimates of incidence are calculated please see COVID-19 Infection Survey: methods and further information.

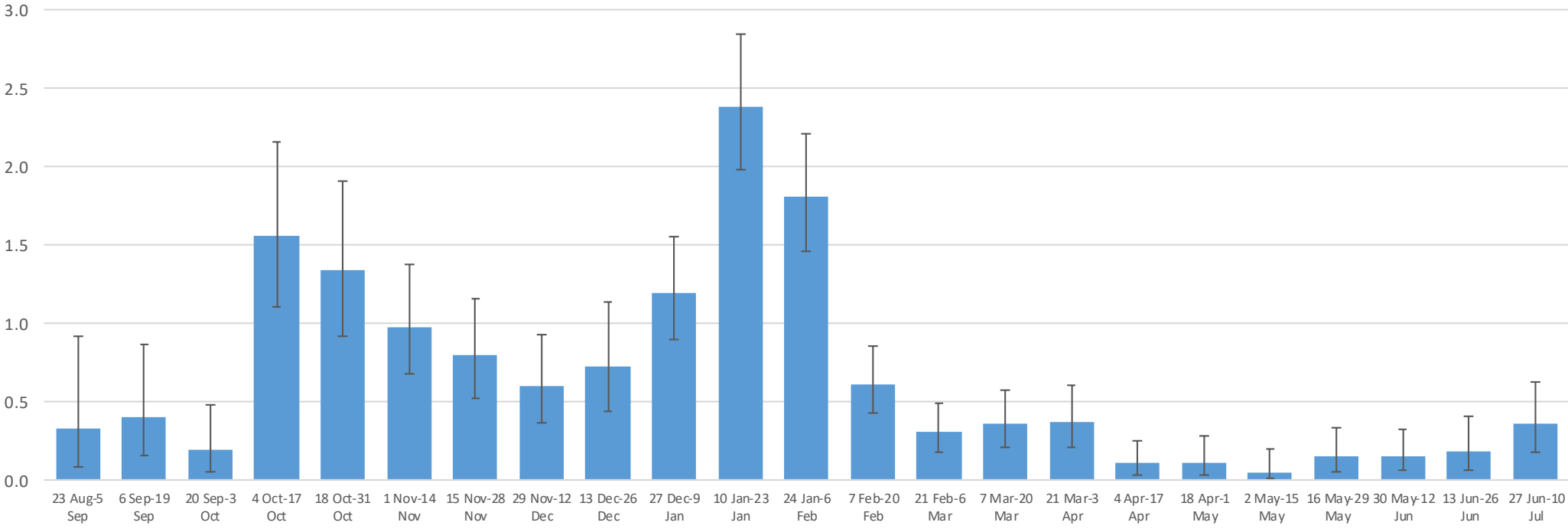
The incidence rate is a measure of new polymerase chain reaction (PCR)-positive cases in a given time period. **In the week ending 26 June 2021, the number of new PCR-positive COVID-19 increased in England and Scotland. In Northern Ireland, the number increased in the two weeks up to 26 June 2021, but in both Northern Ireland and Wales the trend is uncertain in the week ending 26 June 2021.**

A chart outlining incidence estimates for Northern Ireland can be found in Appendix 2. Please note that these estimates are only available up to the week ending 26th June and are therefore not directly comparable with the most recent positivity estimates which are more up-to-date.

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 (27th June to 10th July 2021) was 0.35% (95% confidence interval: 0.18% to 0.62%) or around 1 in 280 people (95% confidence interval 1 in 560 to 1 in 160).

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 10 July 2021



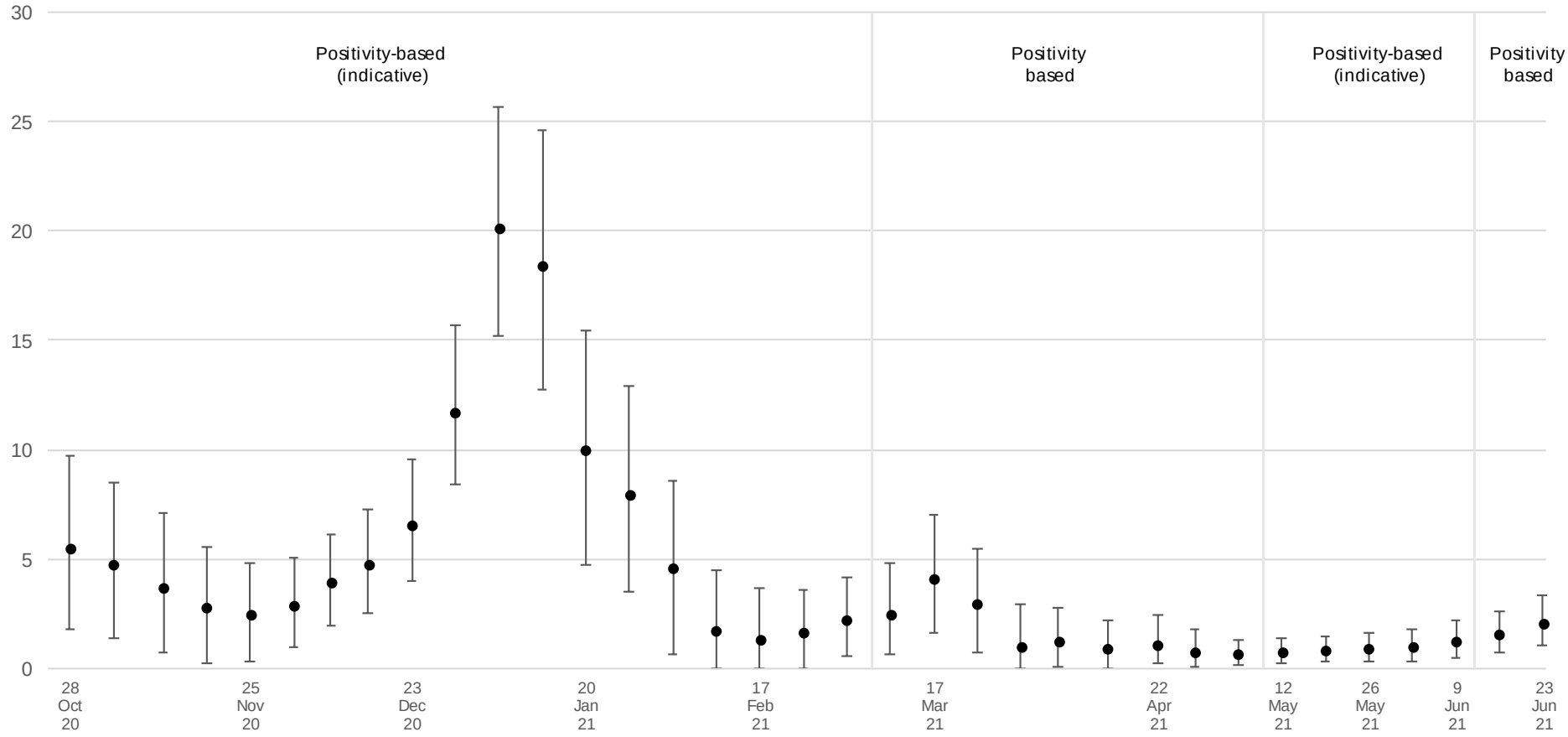
Source: Office for National Statistics – Coronavirus (COVID-19) Infection Survey, Department of Health Information Analysis Directorate

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.

Appendix 2 – Number of new COVID-19 infections in Northern Ireland

Figure 6 Incidence rate per 10,000 persons per day in Northern Ireland
Official Estimates



The point estimates and error bars indicated on the chart represent the official estimates and respective credible intervals reported for each week
Data from 28 October 2020 to 23 June 2021

Methodology

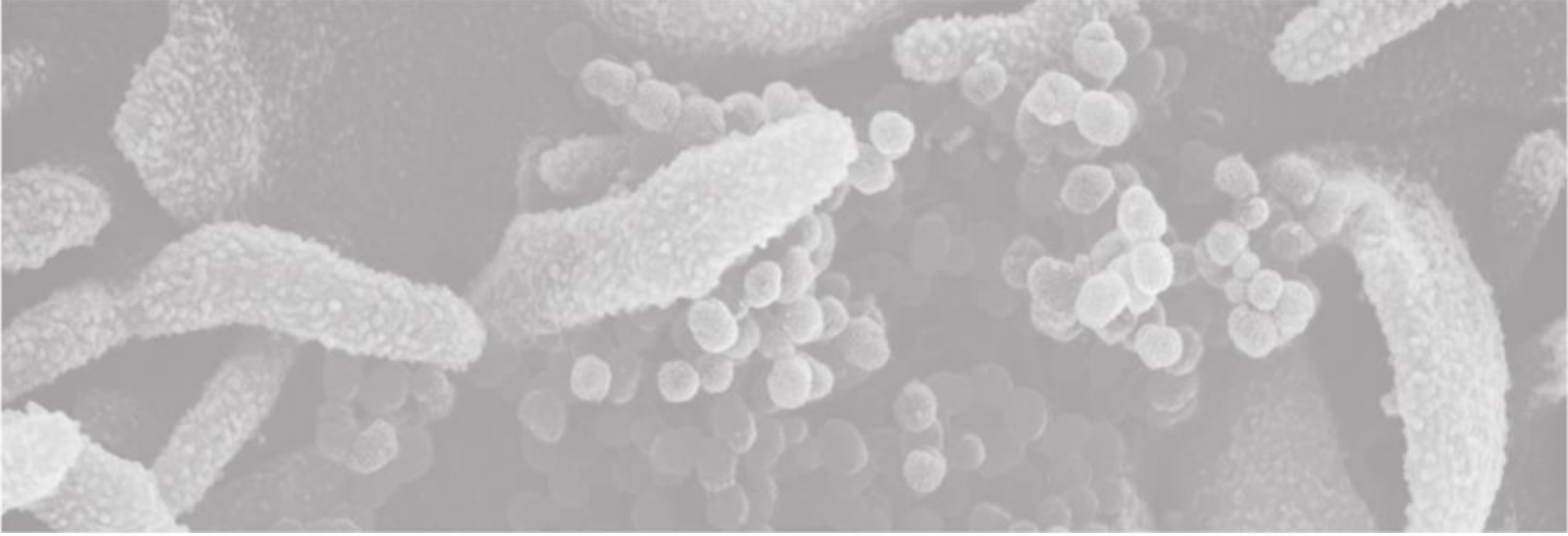
The results are based on nose and throat swabs provided by participants to the study. As well as looking at incidence overall, the survey will be used to examine the characteristics of those testing positive for COVID-19 and the extent to which those infected experience symptoms.

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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