



Coronavirus (COVID-19) Infection Survey

Results for Northern Ireland

8th July 2022

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 29th June 2022. 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.

The Covid-19 Infection Survey is moving from a survey worker data collection method to a more flexible approach for participants, introducing a digital questionnaire, and sending swab and blood sample kits via the post. Further information on what these changes mean and how the survey will continue to be valuable can be found in the recent ONS [blog post](#) . Whilst we transition to this new approach, this may mean some changes to our outputs over the next few weeks. We will communicate any necessary changes as early as possible.

Proportion of people in Northern Ireland who had COVID-19

During the most recent week of the study (23 June– 29 June 2022), it is estimated that 98,400 people in Northern Ireland had COVID-19 (95% credible interval: 82,900 to 115,100). This equates to 5.36% of the population (95% credible interval: 4.52% to 6.27%) or around 1 in 19 people (95% credible interval: 1 in 20 to 1 in 16). 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 continued to increase in the week ending 29 June in Northern Ireland, likely caused by increases in infections compatible with Omicron variants BA.4 and BA.5. In the latest six-week period, there were 11,560 swab tests taken in total from 10,154 participants. Of these, 341 participants tested positive from 279 different households. In the latest two-week period, of the 3,761 participants in the study, 179 tested positive from 141 households.

Notes:

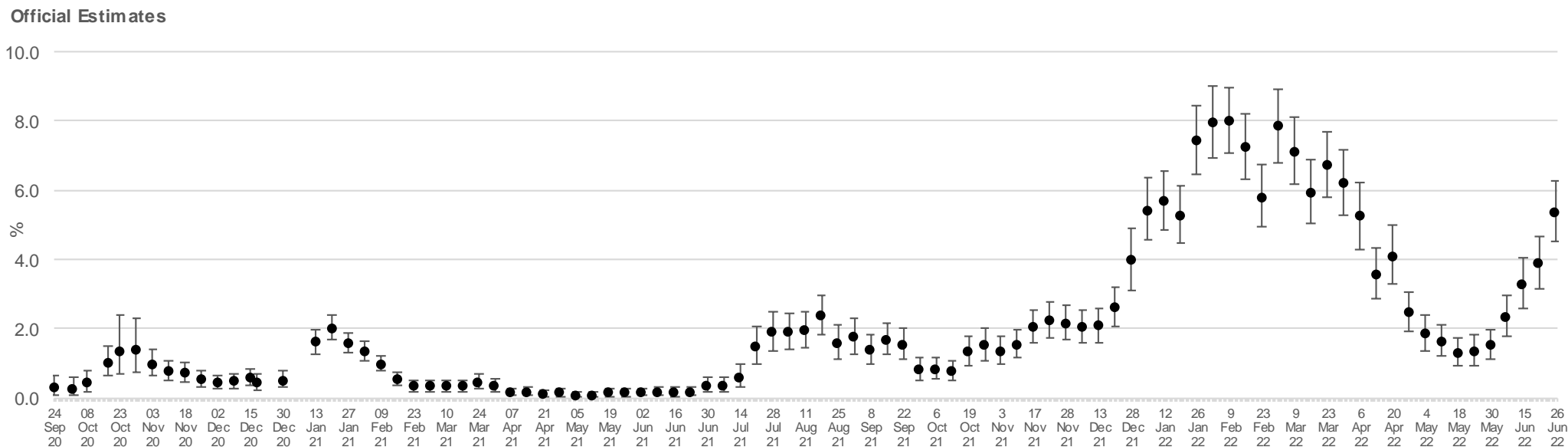
- The results in this report are provisional and subject to revision.
- As this is a household survey, the statistics refer to infections within the population living in private residential households. The figures exclude infections in hospitals, care homes and/or other communal establishments. In these 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, which are not included in the analysis. Some swabs are test failures, which are also not included in the analysis. The impact of excluding inconclusive results on the estimates of positive infections is likely to be very small and unlikely to affect the trend.
- Ratios do not represent a person's risk of becoming infected, since risk of infection depends on a number of factors including contact with others or vaccination status. The ratios presented are rounded to the nearest 100 if over 1,000, to the nearest 10 if under 1,000, to the nearest 5 if under 100 and to 1 if under 20. This may result in credible intervals that appear to be similar to the estimated average ratio.
- The reported headline positivity estimates contain all variants of COVID-19.

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 continued to increase in the week ending 29 June in Northern Ireland, likely caused by increases in infections compatible with Omicron variants BA.4 and BA.5. 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

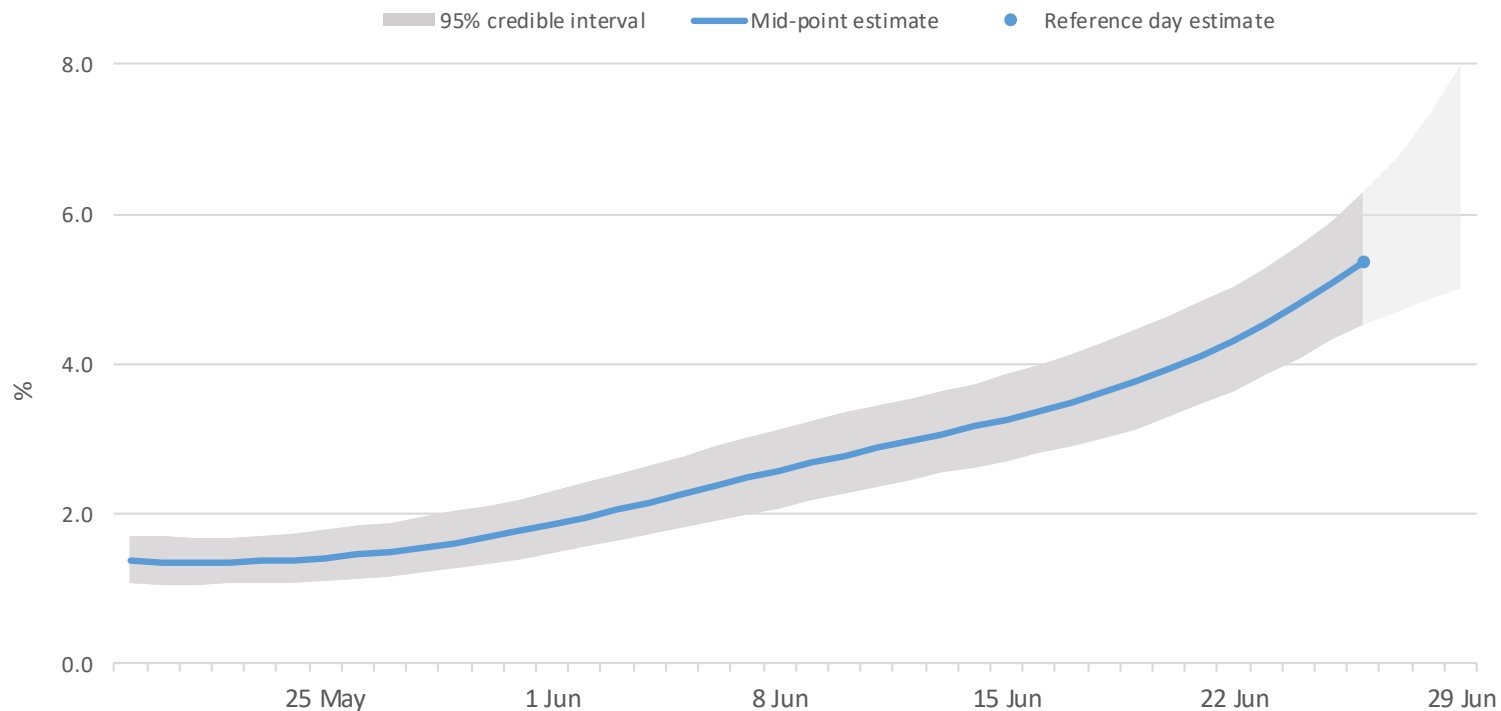


The point estimates and error bars indicated on the chart represent the official estimates reported in previous weeks based on the best information and methods at each point in time.

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 19 May 2022 to 29 June 2022

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

Notes:

1. Modelled 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. Therefore, caution should be taken in over-interpreting any small movements in the latest trends. 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. The 95% credible intervals are calculated so that there is a 95% probability of the true value lying in the interval. A wider interval indicates more uncertainty in the estimate. Overlapping credible intervals indicate that there may not be a true difference between two estimates.
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

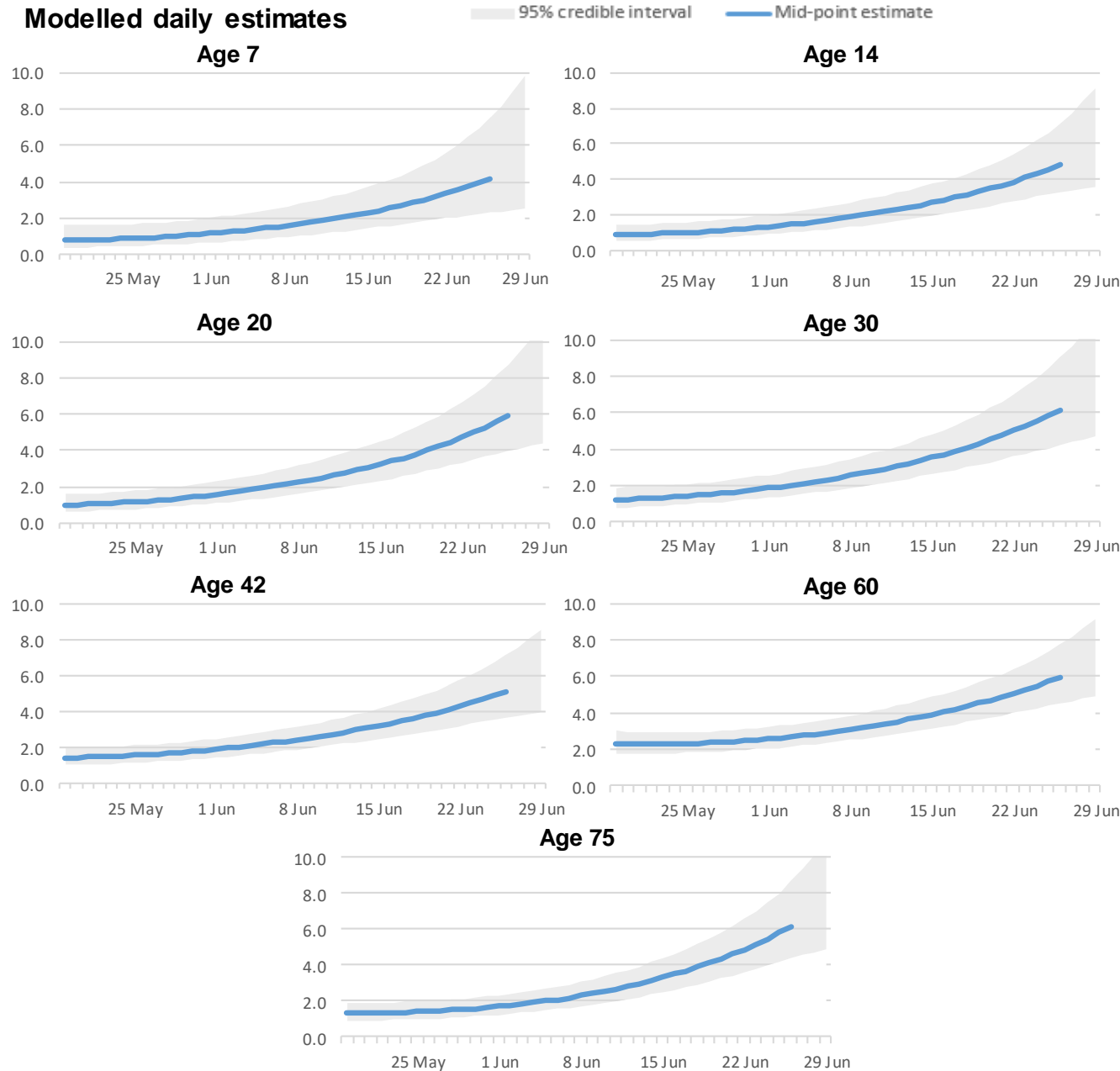
These charts present modelled positivity estimates for selected single years of age in Northern Ireland over the past 6 weeks.

In Northern Ireland, the percentage of people testing positive for COVID-19 increased across all age groups.

It should be noted that there is 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.

Figure 2 – Percentage of people testing positive for COVID-19 for reference ages in Northern Ireland (Data from 19 May 2022 to 29 June 2022)



Sub-regional analysis

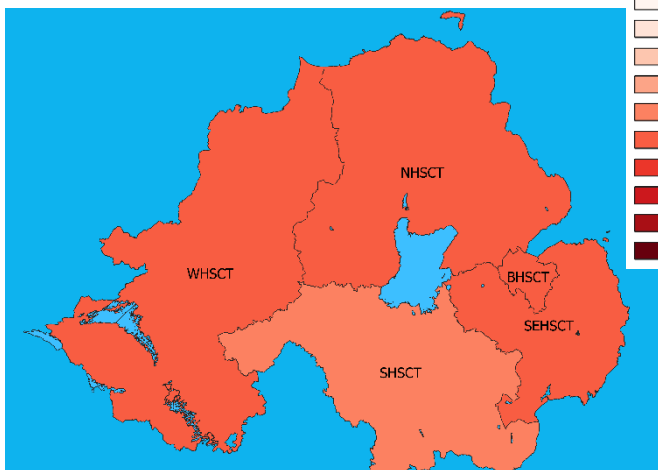
The table and maps below show the modelled estimates by Health & Social Care Trust. As the sub-regional estimates are modelled separately, they may not be directly comparable with the overall NI estimate.

Table 1 & Figure 3: Percentage of people testing positive for the COVID-19 by CIS sub-region, Northern Ireland (modelled)
23 June 2022 to 29 June 2022

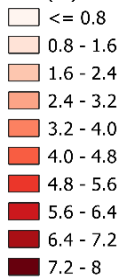
Health & Social Care Trust	% testing positive	95% Lower Credible Interval	95% Upper Credible Interval
Northern Health and Social Care Trust	5.10	4.19	6.17
Western Health and Social Care Trust	5.18	4.17	6.47
Belfast Health and Social Care Trust	5.11	4.14	6.29
South Eastern Health and Social Care Trust	5.07	4.13	6.15
Southern Health and Social Care Trust	4.89	3.92	5.98

There is a higher degree of uncertainty in the sub-regional estimates because of a smaller sample size in each sub-region, relative to the national sample. This is shown by wider credible intervals and results should be interpreted with caution.

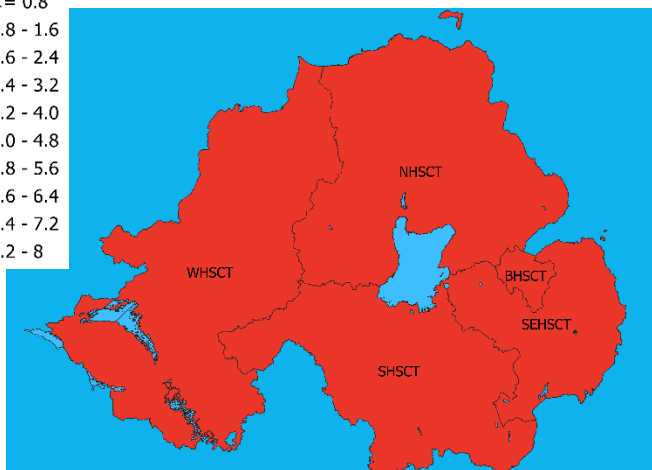
Lower credible interval



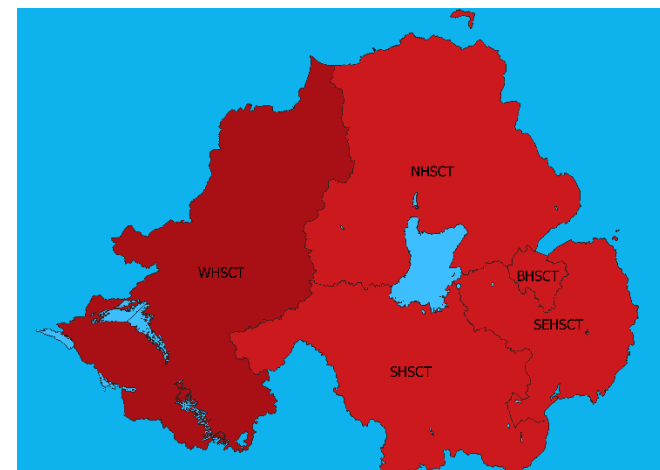
KEY (%)



% testing positive



Upper credible interval



Please note that the colour scale used in creating the Trust maps above may not be consistent with that used previously to accommodate increased levels of infections in the analysis and therefore cannot be directly compared with the previously published sub-regional maps.

Sub-regional estimates are based on a different model to our headline estimates. The sub-regional estimates are calculated as an average over a seven-day period and should not be compared with the headline positivity estimates which are for a single reference date. Therefore, the sub-regional figures may differ from the headline estimates because they are averaged over a longer time period. If a trend is changing quickly, the figures above may not reflect the change we are seeing in our headline estimates.

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, 5.36% of the NI population (95% credible interval: 4.52% to 6.27%) had COVID-19. It is estimated that for the same period 3.95% (95% credible interval: 3.78% to 4.12%) of the population in England had COVID-19. It was estimated that 4.93% (95% credible interval: 4.14% to 5.73%) of the population in Wales and 5.94% (95% credible interval: 5.24% to 6.66%) of people in Scotland had COVID-19.

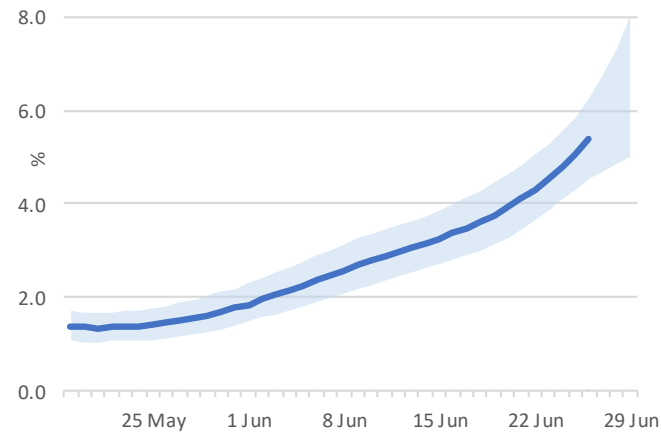
In the most recent week*, the percentage of people testing positive for coronavirus (COVID-19) continued to increase in England, Wales, Scotland and Northern Ireland, likely caused by increases in infections compatible with Omicron variants BA.4 and BA.5.

The reported headline positivity estimates contain all variants of COVID-19.

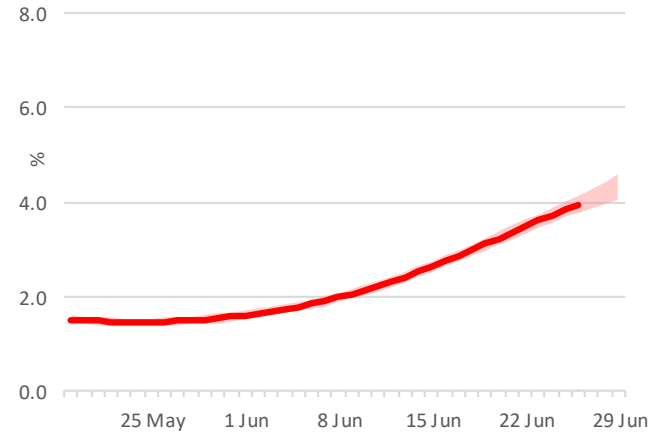
** The reference week is 23 to 29 June 2022 and the reference day is Sunday 26 June 2022 for England and Northern Ireland. The reference week is 24 to 30 June 2022 and the reference day is Monday 27 June 2022 for Wales and Scotland.*

Figure 4a, 4b, 4c, 4d: Modelled daily estimate of percentage of the population testing positive for the COVID-19 across the UK

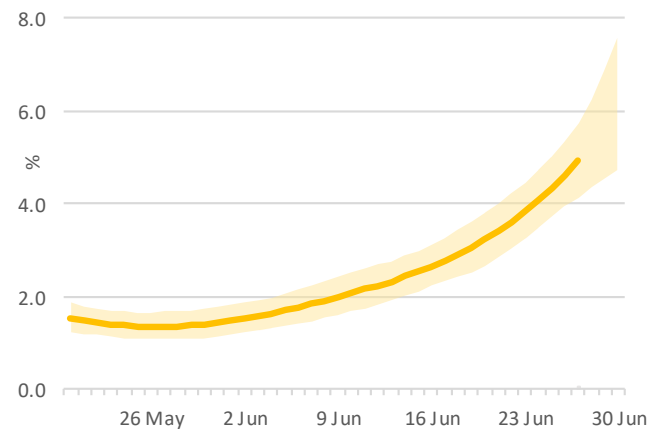
Northern Ireland modelled daily estimates



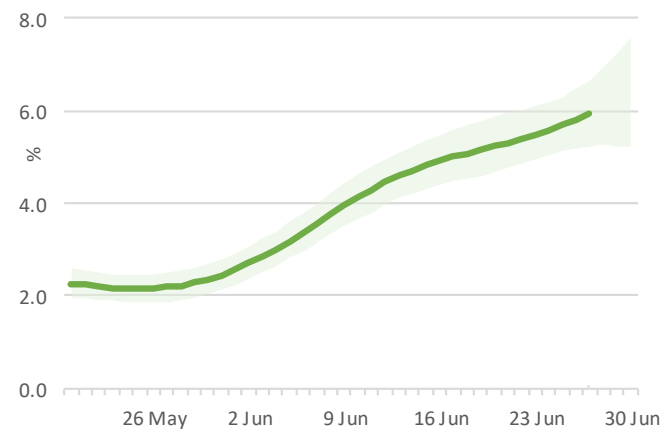
England modelled daily estimates



Wales modelled daily estimates



Scotland modelled daily estimates



Due to the relatively smaller number of tests in Northern Ireland, Wales and Scotland in the sample, credible intervals are wider and therefore results should be interpreted with caution. 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](#).

Currently, the variants under surveillance in the UK are:

- Omicron, including sublineages BA.1, BA.2, BA.3, BA.4 and BA.5

The [Coronavirus \(COVID-19\) Infection Survey: technical dataset](#) includes weekly analysis of the genetic lineages of coronavirus seen in the samples that are sequenced. Of the COVID-19 positives successfully sequenced, in the latest week available (week ending 26 June 2022) 42.8% were Omicron BA.5, 37.6% were Omicron BA.2, 17.8% were Omicron BA.4 and there were no Omicron BA.1 (or its sub-lineages) sequences identified.

In response to an increase in the COVID-19 Omicron variants BA.4 and BA.5, the main variant analysis has been reintroduced in this bulletin. The following analysis is not based on genome sequencing but is based on whether the S gene is detected in the swab tests.

The genome sequencing analysis shows that almost all infections where the S-gene is not detected are now Omicron variants BA.4 and BA.5. For this reason, cases with gene patterns ORF1ab + N are now labelled as "compatible with Omicron BA.4 and BA.5 variants" in the main variant analysis, although other variants such as Omicron BA.1 may still be having a very small impact. The main variant analysis is not directly comparable with the sequence data. It measures the percentage of the population with a positive test compatible with the Omicron BA.4 and BA.5 variants or the BA.2 variant.

The Omicron variants BA.4 and BA.5 have changes in one of the three genes that the coronavirus survey swab test detects, which means the S-gene is no longer detected. When there is a high viral load (for example, when a person is most infectious), not detecting the S-gene in combination with detecting the other two genes (ORF1ab and N-genes) is a reliable indicator of the Omicron variants BA.4 and BA.5. However, as the viral load decreases (for example, if someone is near the end of their recovery from the infection), not detecting the S-gene is a less reliable indicator of these Omicron variants.

The Omicron variant BA.2 does not have changes in the S gene, and therefore all three genes, or the S-gene and either ORF1ab or N, will usually be detected in infections with this variant.

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 the [Coronavirus \(COVID-19\) Infection Survey methods article](#) provides more detail about how the virus' genetic material is sequenced.

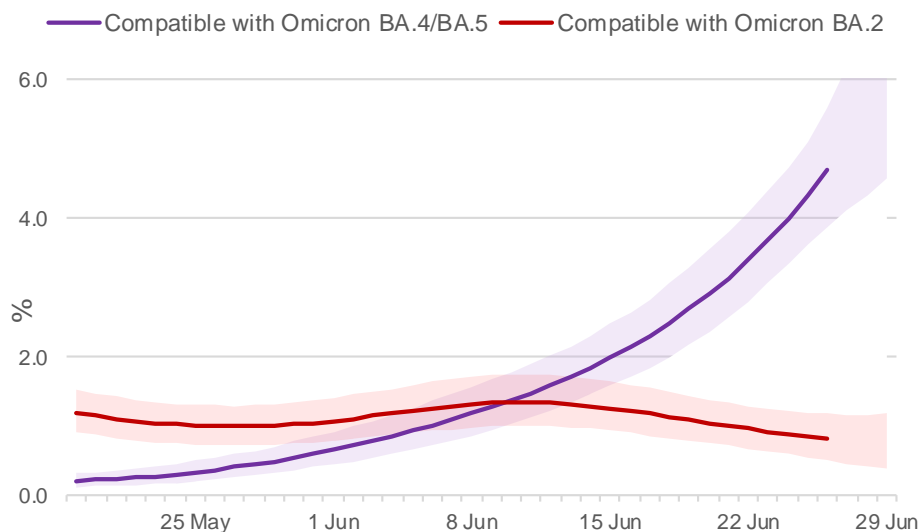
Variant analysis continued

In the week ending 29 June 2022 (30 June 2022 for Wales and Scotland), the percentage of people with infections compatible with Omicron variants BA.4 and BA.5 continued to increase in Northern Ireland as well as across the rest of the UK.

In the same week, the percentage of people with infections compatible with the Omicron variant BA.2 decreased in England, Northern Ireland and Scotland, and the trend was uncertain in Wales.

Figure 5: Modelled percentage of positive cases compatible with Omicron BA.4 and BA.5 variants and Omicron BA.2 variant

Northern Ireland (Data from 19 May to 29 June 2022)



Compatible with Omicron BA.4 and BA.5 variant = gene pattern ORF1ab + N

Compatible with Omicron BA.2 variant = gene pattern S + ORF1ab + N, S + ORF1ab and S + N

The area to the right of the mid-point estimate has a lower level of certainty due to lab results still being processed for this period.

Data should be treated with caution. There is a higher degree of uncertainty in the estimates for Northern Ireland, Wales and Scotland in comparison with England, as shown by wider confidence intervals. There are further uncertainties given that not all cases that are positive on the ORF1ab and N-genes will be the Omicron BA.4 or BA.5 variant, and not all cases that have a detectable S-gene will be the Omicron BA.2 variant.

- Omicron BA.4 and BA.5 variant-compatible positives are defined as those that are positive on the ORF1ab-gene and N-gene, but not the S-gene. This group includes a small number of Omicron BA.1 and BA.1.1.
- Omicron BA.2 variant-compatible positives are defined as those that are positive on the S-gene, in addition to one or both of the ORF1ab-gene and N-gene.
- Not all infections positive on the S-gene will be the Omicron BA.2 variant, and some infections with pattern ORF1ab+N will also be the Omicron BA.2 variant where the S-gene was not detected for other reasons, such as low viral load.

Number of new COVID-19 infections in the UK

The incidence rate is a measure of new polymerase chain reaction (PCR)-positive cases per day per 10,000 people in a given time period. In the week ending 15 June 2022, the number of new PCR-positive COVID-19 cases per day increased in England, Wales, Northern Ireland and Scotland.

Table 2: Official reported estimates of COVID-19 incidence rate per 10,000 people per day, 9 to 15 June 2022

Country	Estimated COVID-19 incidence rate per 10,000 people per day	95% Lower credible interval	95% Upper credible interval
England	40.1	37.9	42.3
Wales	38.3	30.6	47.1
Scotland	76.5	66.9	87.3
Northern Ireland	51.5	41.9	62.6

Please note that these estimates are only available up to the week ending 15 June 2022 and are therefore not directly comparable with the most recent positivity estimates which are more up-to-date.

The reference date used for the official estimates of incidence of PCR-positive cases is 14 days before the positivity reference day, meaning that there is a two-week lag between the incidence estimate and the positivity estimate. This is necessary as estimates later than this date are more likely to change as additional data is received.

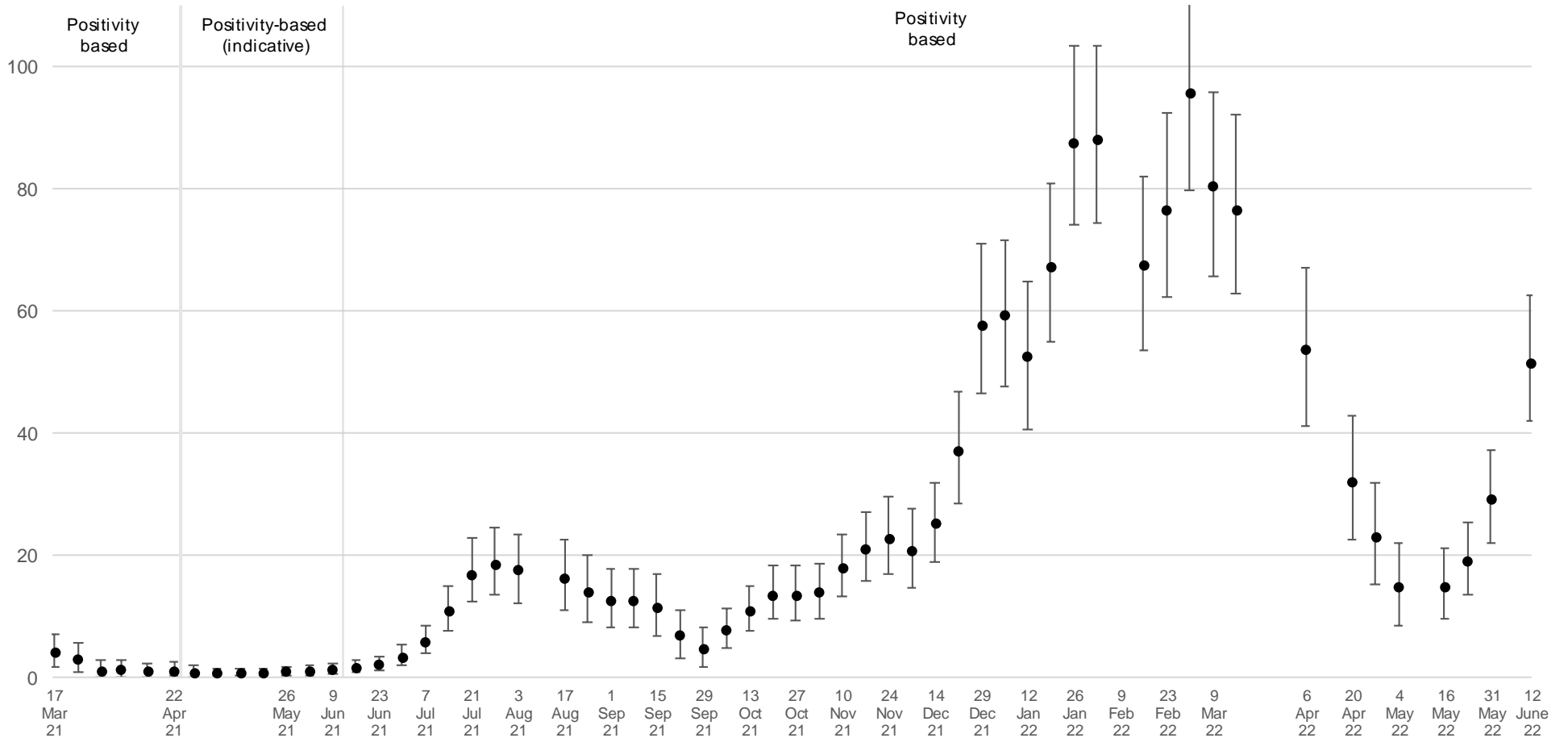
Credible intervals are wider for Wales, Northern Ireland and Scotland because of relatively smaller sample sizes, and care should be taken in interpreting results.

While the incidence estimates are useful, they can be volatile and subject to change as more data become available. For more information on how estimates of incidence are calculated please see [COVID-19 Infection Survey: methods and further information](#).

A chart outlining incidence estimates for Northern Ireland can be found in Appendix 1.

Appendix 1 – Number of new COVID-19 infections in Northern Ireland

Figure 6: Official reported estimates of COVID-19 incidence rate per 10,000 people per day



The point estimates and error bars indicated on the chart represent the official estimates and respective credible intervals reported for each week. Data from 14 March 2021 to 15 June 2022.

Methodology

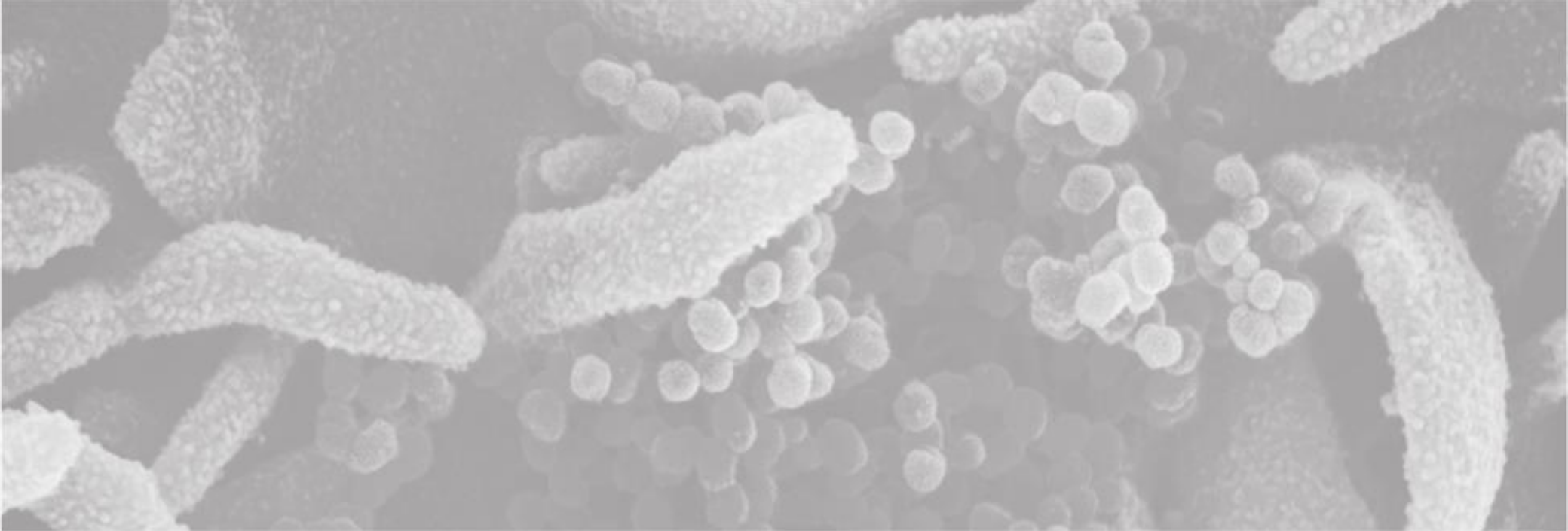
The results are based on nose and throat swabs provided by participants to the study. As well as looking at incidence overall, the survey will be used to examine the characteristics of those testing positive for COVID-19 and the extent to which those infected experience symptoms.

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 and/or other communal establishments.

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 [Coronavirus \(COVID-19\) Infection Survey datasets](#).

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



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