Office for National Statistics

Statistical bulletin

Coronavirus (COVID-19) Infection Survey, UK: 5 March 2021

Estimates for England, Wales, Northern Ireland and Scotland. This survey is being delivered in partnership with University of Oxford, University of Manchester, Public Health England and Wellcome Trust.

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1 . Main points

- In England, the percentage of people testing positive for the coronavirus (COVID-19) has continued to decrease in the week ending 27 February 2021; we estimate that 248,100 people within the community population in England had COVID-19 (95% credible interval: 224,900 to 271,700), equating to around 1 in 220 people.
- In Wales, the percentage of people testing positive has continued to decrease in the week ending 27 February 2021; we estimate that 10,600 people in Wales had COVID-19 (95% credible interval: 7,300 to 14,800), equating to around 1 in 285 people.
- In Northern Ireland, the percentage of people testing positive has continued to decrease in the week ending 26 February 2021; we estimate that 5,700 people in Northern Ireland had COVID-19 (95% credible interval: 3,300 to 8,900), equating to around 1 in 325 people.
- In Scotland, the percentage of people testing positive has continued to decrease in the week ending 27 February 2021; we estimate that 15,600 people in Scotland had COVID-19 (95% credible interval: 11,000 to 21,300) equating to around 1 in 335 people.

About this bulletin

In this bulletin, we refer to the number of current COVID-19 infections within the community population; community in this instance refers to private residential households and it excludes those in hospitals, care homes and/or other institutional settings.

The positivity rate is the percentage of people who have tested positive for COVID-19 at a point in time. We use current COVID-19 infections to mean testing positive for SARS-CoV-2, with or without having symptoms, on a swab taken from the nose and throat. This is different to the incidence rate, which is a measure of only the new infections in a given time period.

All analysis was produced with our research partners at the University of Oxford.

Early management information from the Coronavirus (COVID-19) Infection Survey is made available to government decision-makers to inform their response to COVID-19. Occasionally we may publish figures early if it is considered in the public interest. We will ensure that we pre-announce any ad-hoc or early publications as soon as possible. These will include supporting information where possible to aid user understanding. This is consistent with guidance from the Office for Statistics Regulation.

Have you been asked to take part in our survey?

- For more information, please visit the CIS participant guidance page.
- If you have any further questions, please email the CIS operations team: COVID-19@ons.gov.uk.

How the data in this bulletin can be used

The data can be used for:

- estimating the number of current positive cases in the community, including cases where people do not report having any symptoms
- identifying differences in numbers of positive cases between different regions
- estimating the number of new cases and change over time in positive cases

The data cannot be used for:

- measuring the number of cases and infections in care homes, hospitals and/or other institutional settings
- providing information about recovery time of those infected

2 . Number of people who had COVID-19 in England, Wales, Northern Ireland and Scotland

During the most recent week of the study[1], we estimate that 248,100 people in England had the coronavirus (COVID-19) (95% credible interval: 224,900 to 271,700). This equates to 0.45% (95% credible interval: 0.41% to 0.50%) of the community population in England or around 1 in 220 people (95% credible interval: 1 in 240 to 1 in 200). Our modelling suggests that the percentage of people testing positive in England has continued to decrease in the week ending 27 February 2021.

In Wales, we estimate that 10,600 people had COVID-19 over the same period (95% credible interval: 7,300 to 14,800). This equates to 0.35% (95% credible interval: 0.24% to 0.49%) of the community population in Wales or around 1 in 285 people (95% credible interval: 1 in 415 to 1 in 205). Our modelling suggests that the percentage of those testing positive in Wales has continued to decrease in the week ending 27 February 2021.

In Northern Ireland, we estimate that 5,700 people had COVID-19 (95% credible interval: 3,300 to 8,900). This equates to 0.31% (95% credible interval: 0.18% to 0.48%) of the population in Northern Ireland or around 1 in 325 people (95% credible interval: 1 in 560 to 1 in 205). Our modelling suggests that the percentage of people testing positive in Northern Ireland has continued to decrease in the week ending 26 February 2021.

In Scotland, we estimate that 15,600 people had COVID-19 (95% credible interval: 11,000 to 21,300). This equates to 0.30% (95% credible interval: 0.21% to 0.40%) of the population in Scotland or around 1 in 335 people (95% credible interval: 1 in 480 to 1 in 250). Our modelling suggests that the percentage testing positive in Scotland has continued to decrease in the week ending 27 February 2021.

Figure 1: In the week up to 27 February 2021, the percentage of people testing positive has continued to decrease in England, Wales, Northern Ireland and Scotland

Estimated percentage of the population testing positive for the coronavirus (COVID-19) on nose and throat swabs from 3 May 2020

Download the data

Notes

1. 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.

2. Official reported estimates are plotted at a reference point believed to be most representative of the given week.

3. The official estimate presents the best estimate at that point in time. Modelled estimates are used to calculate the official reported estimate. The model smooths the series to understand the trend and is revised each week to incorporate new test results, providing the best indication of trend over time.

4. Survey fieldwork for the pilot study began in England on 26 April 2020. In Wales, fieldwork began on 29 June 2020, in Northern Ireland fieldwork began on 26 July 2020 and in Scotland fieldwork began on 21 September 2020.

5. Because of a delay in receiving data from the labs, Northern Ireland estimates are for the period ending 26 February 2021, which is different to the other countries that end on 27 February 2021.

About this data

These estimates are based on statistical modelling of the trend in rates of positive nose and throat swab results. The ratios presented are rounded to the nearest five.

Because of the relatively small number of tests and a low number of positives in Wales and Northern Ireland in our 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 they really are.

As this is a household survey, our figures do not include people staying in hospitals, care homes and/or other institutional settings. In these settings, rates of COVID-19 infection are likely to be different. More information about rates of COVID-19 in care homes can be found in Impact of coronavirus in care homes in England: 26 May to 19 June 2020.

About our estimates

Our headline estimate of the percentage of people testing positive in England, Wales, Northern Ireland and Scotland are the latest official estimates. We include different measures to support our estimation and the below outlines the appropriate uses of all of the approaches.

Official estimates 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 our best and most stable estimate and is used in all previous outputs. The modelled estimate 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. These modelled estimates can be found in the dataset that accompanies this bulletin.

The estimates for non-overlapping 14-day periods (which underpin our modelled official estimates) and the unweighted sample counts are included in the dataset that accompanies this bulletin. These estimates are produced using a different method of weighting to the model and are available for people who wish to compare infection levels over time in this way.

Information about how the modelled and 14-day non-overlapping estimates are calculated can be found in our methods article.

We are continuously refining and looking to improve our modelling and presentations. We would welcome any feedback via email: infection.survey.analysis@ons.gov.uk.

For information about the potential impact of false-positive and false-negative test results, see our methods article.

More about coronavirus

- Find the latest on coronavirus (COVID-19) in the UK.
- Explore the latest coronavirus data from the ONS and other sources.
- All ONS analysis, summarised in our coronavirus roundup.
- View all coronavirus data.
- Find out how we are working safely in our studies and surveys.

Notes for: Number of people in the UK who had COVID-19

1. This is based on model estimates from the reference point of the most recent week (21 to 27 February 2021), Wednesday 24 February 2021 for England, Wales and Scotland. Due to a delay receiving data from the labs, Northern Ireland model estimates are from the reference point of the most recent week (20 to 26 February 2021), Tuesday 23 February 2021. More information on reference dates can be found in Section 11: Measuring the data.

3 . Sub-national analysis of the number of people who had COVID-19

Regional analysis for England

During the week ending 27 February 2021, the North East had the highest percentage of people testing positive for the coronavirus (COVID-19).

In the data used to produce these estimates, the number of people sampled in each region who tested positive for the coronavirus (COVID-19) was low relative to England overall. This means there is a higher degree of uncertainty in the regional estimates for this period, as indicated by larger credible intervals.

The percentage of people testing positive has decreased in all regions except for the North East, East Midlands and East of England where the trend is uncertain in the week ending 27 February 2021. Caution should be taken in over-interpreting any small movements in the latest trend.

Figure 2: The percentage of people testing positive has decreased in all regions except for the North East, East Midlands and East of England where the trend is uncertain in the week ending 27 February 2021

Estimated percentage of the population testing positive for the coronavirus (COVID-19) on nose and throat swabs, daily, by region since 17 January 2021, England

Download the data

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.

The percentage of people testing positive by region was calculated using a similar modelling approach to the national daily estimates in Section 2: Number of people in England, Wales, Northern Ireland and Scotland who had COVID-19.

The analysis is conducted over a six-week period, which means specific positive cases move into and then out of the sample. This causes variability between estimates over time, which is expected given the lower number of positive tests within each region, compared with England as a whole.

Estimates for non-overlapping 14-day periods (which underpin our modelled estimates) for regions in England are available in our dataset and provide an alternative measure over time for context.

Sub-regional analysis for the UK

The percentage testing positive varies across sub-regions of the UK. In Figure 3, we have presented modelled estimates for the most recent week of data (between 21 February 2021 and up to 27 February 2021) at the sub-regional level.

The analysis in this section presents modelled estimates at the sub-regional level for the UK. In the data used to produce these estimates, the number of people sampled in each sub-regional area who tested positive for coronavirus (COVID-19) was lower relative to their respective overall national samples. This means there is a higher degree of uncertainty in these estimates; caution should be taken and the uncertainty of the estimates and wide credible intervals taken into account when interpreting or ranking them. As the percentage of people testing positive decreases and sample sizes become smaller, we may not be able to produce sub-regional estimates or may need to combine sub-regions in order to produce estimates.

Figure 3: The percentage testing positive varies across sub-regions of the UK

Estimated percentage of the population testing positive for the coronavirus (COVID-19) on nose and throat swabs, by sub-regional geography, UK, from modelling the most recent seven days, 21 February 2021 up to 27 February 2021

Download the data

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. The credible intervals can be found in the dataset that accompanies this bulletin.

3. Because of a delay in receiving data from the labs, Northern Ireland estimates are for the period ending 26 February 2021, which is different to the other countries that end on 27 February 2021.

4 . Age analysis of the number of people who had COVID-19

Age analysis by category for England

Our age categories separate children and young people by school age:

- "age two years to school Year 6" includes those children in primary school and below
- "school Year 7 to school Year 11" includes those children in secondary school
- "school Year 12 to age 24 years" includes those young adults who may be in further or higher education

This means that 11- to 12-year-olds have been split between the youngest age categories depending on whether they are in school Year 6 or 7 (birthday before or after 1 September).

Similarly, 16- to 17-year-olds are split depending on whether they are in school Years 11 or 12 (birthday before or after 1 September).

In the data used to produce these estimates, the number of people sampled in the different ages who tested positive for COVID-19 was lower relative to England overall. This means there is a higher degree of uncertainty in estimates for individual age groups over this period, as indicated by larger credible intervals. The credible intervals can be found in the dataset that accompanies this bulletin.

Between 21 and 27 February 2021, the percentage of people testing positive in England has decreased in all age groups except School Year 7 to School Year 11 where trends remain uncertain.

Figure 4: The percentage testing positive in England has decreased in all age groups except School Year 7 to School Year 11 where the trend is uncertain

Estimated percentage of the population testing positive for the coronavirus (COVID-19) on nose and throat swabs, daily, by age group since 17 January 2021, England

Download the data

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.

Age analysis by single year of age over time by country

For the first time, we are able to present modelled daily estimates of the percentage testing positive for the coronavirus (COVID-19) by single year of age over time for all four UK countries; England, Wales, Northern Ireland and Scotland from 17 January 2021. This data is modelled differently to the modelled age group analysis presented above and is therefore not comparable.

In the data used to produce these estimates, the number of people sampled in the different ages who tested positive for COVID-19 was lower relative to their respective national sample. This means there is a higher degree of uncertainty in estimates for individual age groups over this period, as indicated by larger credible intervals. The credible intervals can be found in the dataset that accompanies this bulletin.

Figure 5 shows the percentage of people testing positive for COVID-19 by single year of age from 17 January 2021 to 27 February 2021, for each for the four UK countries.

Figure 5: The percentage testing positive for COVID-19 by single year of age over time for the four UK countries

Estimated percentage of the population testing positive for the coronavirus (COVID-19) on nose and throat swabs, daily, by age group since 17 January 2021, UK

Download the data

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. These data are modelled differently to previous modelled daily estimates of the percentage testing positive by age for England and are therefore not comparable.

4. Because of a delay in receiving data from the labs, Northern Ireland estimates are for the period ending 26 February 2021, which is different to the other countries which end on 27 February 2021.

Estimates for non-overlapping 14-day periods (which underpin our modelled estimates) by age group are available in our dataset, and are provided as an alternative measure over time for context.

5 . Incidence rate in England

Incidence (the number of new infections in a set period of time), helps us understand the rate at which infections are growing within the population and supports our main measure of prevalence to provide a fuller understanding of the coronavirus (COVID-19). We have estimated incidence by directly measuring when a participant in our study who has previously tested negative, subsequently tests positive, and comparing this with the number of participants who remain negative.

When enrolled on the survey, participants are swabbed weekly for five weeks and then move to monthly swabbing. Increasing the Coronavirus (COVID-19) Infection Survey sample size to 150,000 participants per fortnight enabled the majority of participants to be swabbed weekly, providing us with regular and timely updates on the number of new infections and the "time at risk". The proportion swabbed monthly has now increased and we have reviewed our estimation of incidence, determining options that will adapt our approach to reflect changes in data capture and survey design. We committed to regular reviews of our methods and survey design as part of our ongoing quality assurance process to ensure our estimates remain of the highest quality possible and continue to meet our user needs. This review ensures we will continue to provide an accurate estimate of incidence and to make sure our statistics continue to be of high quality. We will confirm a date for publication of our reviewed estimates nearer the time.

6 . Percentage of those testing positive compatible with the new UK variant

A new variant of the coronavirus (COVID-19) was identified in the UK in mid-November 2020. The new UK variant 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 new UK 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 new UK variant in COVID-19 . 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 new UK variant.

In contrast, the South African and Brazilian variants have an S-gene that is detectable with the current test and will therefore be included in the "not compatible with new UK variant" group of COVID-19 where the virus level is high enough to identify this. Which of these types of COVID-19 are compatible with these variants cannot be identified from the swab polymerase chain reaction (PCR) test alone. You can read more about the new UK variant in our recent blog.

Since 24 December 2020, we have reported on the percentage of people testing positive compatible with the new UK variant that was identified in mid-November. Because of the continued decrease in overall percentages testing positive for COVID-19 across the UK, we have removed the new variant charts from this week's publication. The percentage of people testing positive compatible with the new UK variant by UK country and regions of England are provided in the accompanying dataset.

We will continue to monitor the trends in different variants over the coming weeks and will reintroduce charts into the bulletin if there is a variant that appears to be affecting the trends in the percentage of people testing positive for COVID-19.

The percentage testing positive compatible with the new UK variant decreased in England, Wales and Northern Ireland in the week ending 27 February 2021. In Scotland, the trend testing positive compatible with the new UK variant is uncertain.

7 . Test sensitivity and specificity

The estimates provided in Section 2 to 6 are for the percentage of the private-residential population testing positive for the coronavirus (COVID-19), otherwise known as the positivity rate. We do not report the prevalence rate. To calculate the prevalence rate, we would need an accurate understanding of the swab test's sensitivity (true-positive rate) and specificity (true-negative rate).

While we do not know the true sensitivity and specificity of the test, our data and related studies provide an indication of what these are likely to be. In particular, the data suggest that the false-positive rate is very low, under 0.005%. We do not know the sensitivity of the swab test. However, other studies suggest that sensitivity (the rate of true-positive test results) may be somewhere between 85% and 98%.

You can find more information on sensitivity and specificity in our methods article. You can find more information on the data suggesting that our test's false-positive rate is very low in a paper written by academic partners at the University of Oxford.

8 . COVID-19 Infection Survey data

Coronavirus (COVID-19) Infection Survey
Dataset | Released 5 March 2021
Findings from the Coronavirus (COVID-19) Infection Survey, UK.

9 . Collaboration

The Coronavirus (COVID-19) Infection Survey analysis was produced by the Office for National Statistics (ONS) in collaboration with our research partners at the University of Oxford, the University of Manchester, Public Health England (PHE) and Wellcome Trust. Of particular note are:

- Sarah Walker - University of Oxford, Nuffield Department for Medicine: Professor of Medical Statistics and Epidemiology and Study Chief Investigator
- Koen Pouwels - University of Oxford, Health Economics Research Centre, Nuffield Department of Population Health: Senior Researcher in Biostatistics and Health Economics
- Thomas House - University of Manchester, Department of Mathematics: Reader in Mathematical Statistics

10 . Glossary

Community

In this bulletin, we refer to the number of coronavirus (COVID-19) infections within the community. Community in this instance refers to private households, and it excludes those in hospitals, care homes and/or other institutional settings.

Confidence interval

A confidence interval gives an indication of the degree of uncertainty of an estimate, showing the precision of a sample estimate. The 95% confidence intervals are calculated so that if we repeated the study many times, 95% of the time the true unknown value would lie between the lower and upper confidence limits. A wider interval indicates more uncertainty in the estimate. Overlapping confidence intervals indicate that there may not be a true difference between two estimates. For more information, see our methodology page on statistical uncertainty.

Credible interval

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.

False-positives and false-negatives

A false-positive result occurs when the tests suggest a person has COVID-19 when in fact they do not. By contrast, a false-negative result occurs when the tests suggest a person does not have COVID-19 when in fact they do. For more information on false-positives and false-negatives, see our methods article.

Incidence rate

The incidence rate is an estimate of how often new cases of COVID-19 occur over a given period of time. In our study, we have previously calculated this by dividing the number of times a person has a positive test for the first time in the study, having first tested negative, by the total time everyone is in the study. We included the time people are in the study between successive negative tests for those who never have a positive test and the time up to halfway (or maximum of seven days, whichever is later) between their last negative and first positive test for those who have a positive test. This reflects the fact that we do not actually know when a person first becomes positive, only when we tested them. People who are positive when they join the study are not included in this calculation. We are currently reviewing our methods for calculating incidence as part of our ongoing quality assurance process.

11 . Measuring the data

Data presented in this bulletin come from the Coronavirus (COVID-19) Infection Survey, which looks to identify the percentage of the population testing positive for COVID-19 and whether they have symptoms or not. The survey helps track the current extent of infection and transmission of COVID-19 among the population as a whole. This section of the bulletin provides a short summary of the study data and data collection methods. Our methodology article provides further information around the survey design, how we process data and how data are analysed. The study protocol specifies the research for the study.

Analysing the data

All estimates presented in this bulletin are provisional results. As swabs are not necessarily analysed in date order by the laboratory, we have not yet received test results for all swabs taken on the dates included in this analysis. Estimates may therefore be revised as more test results are included.

We continue to develop our analysis methods, and these quality enhancements may lead to minor changes in estimates, for example, the positive test counts across the study period.

Reference dates

We aim to provide the estimates of positivity rate (the percentage of those who test positive) and incidence that are most timely and most representative of each week. We decide the most recent week we can report on based on the availability of test results for visits that have already happened, accounting for the fact that swabs have to be couriered to the labs, tested and results returned. On most occasions, the reference data align perfectly, but sometimes this is not feasible. This week, the reference week for England, Wales and Scotland is 21 to 27 February 2021. For Northern Ireland, the reference week is 20 to 26 February 2021.

Within the most recent week, we provide an official estimate for positivity rate based on a reference point from the modelled trends. For positivity rates, we can include all swab test results, even from the most recent visits. Therefore, although we are still expecting further swab test results from the labs, there was sufficient data for the official estimate for infection to be based on a reference point after the start of the reference week. To improve stability in our modelling while maintaining relative timeliness of our estimates, we are reporting our official estimates based on the midpoint of the reference week. This week, the reference day for England, Wales and Scotland positivity rates is Wednesday 24 February 2021. For Northern Ireland, the reference day for positivity rates is Tuesday 23 February 2021.

Response rates

At the beginning of the survey, our sample was largely made up of people in England who have taken part in previous Office for National Statistics (ONS) surveys and had agreed to future contact regarding research. The likelihood of enrolment decreases over time and response rate information for those initially asked to take part in these first two phases can be considered as relatively final. In England, we expanded our sampling at the end of July to invite a random sample of households from a list of addresses. Response rates for the expansion period cannot be regarded as final response rates to the survey since those who are invited are not given a time limit in which to respond; and should not be compared with response rates for those that have taken part in a previous survey, as this is a different mode of sampling.

Fieldwork began in Wales on 29 June, and the initial sample was made up of people who had taken part in previous ONS surveys and had agreed to future contact regarding research. At the beginning of October, the survey in Wales was expanded to invite a random sample of households from a list of addresses. Fieldwork began in Northern Ireland on 26 July, and the initial sample was made up of people who had taken part in previous ONS and NISRA surveys and had agreed to future contact regarding research. In Scotland, fieldwork began on 21 September and the initial sample was taken from a random sample of households from a list of addresses.

Response rates for Wales, Northern Ireland and Scotland cannot be regarded as final response rates to the survey since those who are invited are not given a time limit in which to respond; and different modes of sampling are not comparable.

Response rates for each nation are found in the dataset that accompanies this bulletin. We provide response rates separately for the different sampling phases of the study.

Sub-regional geographies

We have presented modelled estimates for the most recent week of data at the sub-regional level. To balance the granularity with the statistical power, we have grouped together groups of local authorities into COVID-19 Infection Survey sub-regions. The geographies are a rules-based composition of local authorities, and local authorities with a population over 200,000 have been retained where possible.

The boundaries for these COVID-19 Infection Survey sub-regions can be found on the Open Geography Portal.

Other Coronavirus Infection Survey (CIS) analysis

Our recent release, Coronavirus (COVID-19) Infection Survey: antibody data for the UK, includes analysis on the likelihood of testing positive for COVID-19 antibodies in England, Wales, Northern Ireland and Scotland.

We have also provided more detailed analysis on the characteristics and behaviours of those with COVID-19 in our recent article, Coronavirus (COVID-19) Infection Survey: characteristics of people testing positive for COVID-19 in England, including those testing positive by patient facing or non-patient facing roles and the number of socially distanced contacts.

Laboratory confirmed cases in the UK

Public Health England (PHE) presents data on the total number of laboratory-confirmed cases in the UK, which capture the cumulative number of people in the UK who have tested positive for COVID-19. These statistics present all known cases of COVID-19, both current and historical, for the UK, and by nation, by regions of England, and because of the large sample size, by local authority. Further information can be found on the Coronavirus Dashboard. A summary for each nation: England, Wales, Northern Ireland and Scotland is also available.

Testing and tracing systems

Each nation of the UK has a testing and tracing system: for England, Wales, Northern Ireland and Scotland. These ensure that anyone who develops symptoms of COVID-19 can quickly be tested to find out if they have the virus. Some nations also include targeted asymptomatic testing of NHS and social care staff and care home residents. Additionally, it helps trace close recent contacts of anyone who tests positive for COVID-19 and, if necessary, notify them that they must self-isolate. We have recently published an article that compares the methods used in the COVID-19 Infection Survey and NHS Test and Trace in England.

In comparison with Public Health data and Testing and Tracing data, the statistics presented in this bulletin take a representative sample of the community population (those in private residential households), including people who are not otherwise prioritised for testing. This means that we can estimate the number of people in the community population with COVID-19 who do not report any evidence of symptoms.

Other studies

This study is one of a number of studies that look to provide information around the coronavirus pandemic within the UK.

COVID Symptom Study (ZOE app and King's College London), UK

The COVID Symptom Study app allows users to log their health each day, including whether or not they have symptoms of COVID-19. The study aims to predict which combination of symptoms indicate that someone is likely to test positive for COVID-19. The app was developed by the health science company ZOE with data analysis conducted by King's College London. Anyone over the age of 18 years can download the app and take part in the study. Respondents can report symptoms of children.

The study estimates the total number of people with symptomatic COVID-19 and the daily number of new cases of COVID-19 based on app data and swab tests taken in conjunction with the Department of Health and Social Care (DHSC). The study investigates the "predictive power of symptoms", and so the data do not capture people who are infected with COVID-19 but who do not display symptoms.

Unlike the data presented in this bulletin, the COVID Symptom Study is not a representative sample of the population. It is reliant on app users and so captures only some cases in hospitals, care homes and other communities where few people use the app. To account for this, the model adjusts for age and deprivation when producing UK estimates. The larger sample size allows for detailed geographic breakdown.

Real-time Assessment of Community Transmission-1 and -2 (REACT-1 and -2), England

Like our study, the Real-time Assessment of Community Transmission-1 REACT-1 survey (PDF), led by Imperial College London, involves taking swab samples to test for COVID-19 antigens to estimate the prevalence and transmission of the virus that causes COVID-19 in the community. Each round of the study currently involves around 160,000 participants aged five years and over, selected from a random cross-section sample of the general public from GP registration data. Trends in infection by characteristics, such as age, sex, ethnicity, symptoms and key worker status, are also possible through the study. Here are the latest REACT findings from 18 February 2021 (PDF).

One of the main differences from our COVID-19 Infection Survey is that the REACT surveys do not require follow-up visits, as the study is interested primarily in prevalence at a given time point. Consequently, the incidence rate cannot be calculated from the REACT studies.

In addition, the REACT-2 study uses antibody finger-prick tests to track past infections and monitor the progress of the pandemic. Estimates in this bulletin and the REACT study use different tests and different methods, for example, the REACT estimates are based on self-administered and self-read finger prick tests, whereas tests in this survey are carried out by a trained nurse, phlebotomist or healthcare assistant.

Public Health England (PHE) surveillance

PHE also publish an estimate of the prevalence of antibodies in the blood in England using blood samples from healthy adult blood donors. PHE provide estimates by region and currently do not scale up to England. Estimates in this bulletin and those published by PHE are based on different tests; PHE estimates are based on testing using the Euroimmun assay method, while blood samples in our survey are tested for antibodies by research staff at the University of Oxford using a novel ELISA. For more information about the antibody test used in this bulletin, see the COVID-19 Infection Survey protocol.

12 . Strengths and limitations

These statistics have been produced quickly in response to developing world events. The Office for Statistics Regulation, on behalf of the UK Statistics Authority, has reviewed them against several important aspects of the Code of Practice for Statistics and regards them as consistent with the Code's pillars of trustworthiness, quality and value.

The estimates presented in this bulletin contain uncertainty. There are many sources of uncertainty, including uncertainty in the test, in the estimates and in the quality of data collected in the questionnaire. Information on the main sources of uncertainty are presented in our methodology article.

13 . Related links

COVID-19 Infection Survey (Pilot): methods and further information
Methodology article | Updated 21 September 2020
Information on the methods used to collect the data, process it, and calculate the statistics produced from the Coronavirus (COVID-19) Infection Survey (pilot).

Coronavirus (COVID-19) Infection Survey: characteristics of people testing positive for COVID-19 in England
Article | Updated fortnightly
Characteristics of people testing positive for COVID-19 from the COVID-19 Infection Survey, including antibody data by UK country, and region and occupation for England.

Coronavirus (COVID-19) Infection Survey: antibody data for the UK
Article | Updated fortnightly
Antibody data by UK country and English regions from the Coronavirus (COVID-19) Infection Survey. This survey is being delivered in partnership with University of Oxford, University of Manchester, Public Health England and Wellcome Trust.

Coronavirus (COVID-19) latest insights
Interactive tool | Updated as and when data become available
An interactive tool to explore the latest data and trends about the coronavirus (COVID-19) pandemic from the ONS and other sources.

Coronavirus (COVID-19) latest data and analysis Web page | Updated as and when data become available
Latest data and analysis on the coronavirus pandemic in the UK and its effect on the economy and society.

Coronavirus (COVID-19) roundup
Web page | Updated as and when data become available
Catch up on the latest data and analysis related to the coronavirus pandemic and its impact on our economy and society.

Deaths registered weekly in England and Wales, provisional
Bulletin | Updated weekly
Provisional counts of the number of deaths registered in England and Wales, including deaths involving COVID-19, by age, sex and region, in the latest weeks for which data are available.

Comparing methods used in the Coronavirus (COVID-19) Infection Survey and NHS Test and Trace, England: October 2020
Article | Released 6 October 2020
The methods used in the COVID-19 Infection Survey and NHS Test and Trace in England and why the data cannot be directly compared.

COVID-19 Schools Infection Survey Round 2, England: December 2020
Bulletin | 1 March 2021
Initial estimates of staff and pupils testing positive for coronavirus (COVID-19) from the COVID-19 Schools Infection Survey across a sample of schools, within selected local authority areas in England.

New survey results provide first snapshot of the current number of COVID-19 infections in England
Blog | Released 14 May 2020
A large study jointly led by the Office for National Statistics (ONS), in partnership with the Universities of Oxford and Manchester, Public Health England (PHE), and Wellcome Trust, is tracking infections within a representative sample of people of all ages across England. This blog explains what these mean, why they are important and how to compare this survey with other COVID-19 estimates.

COVID-19 Infection Survey
Article | Updated 14 May 2020
Whether you have been invited to take part, or are just curious, find out more about our COVID-19 Infection Survey and what is involved.

Coronavirus and higher education students: England
Bulletin | Released 27 January 2021
Experimental statistics from a pilot of the Student COVID-19 Insights Survey in England. Includes information on the behaviours, plans, opinions and well-being of higher education students in the context of guidance on the coronavirus (COVID-19) pandemic.

[The prevalence of long COVID symptoms and COVID-19 complications]
Article | Released 16 December 2020
The Office for National Statistics (ONS) has announced plans for estimating the prevalence of, and risk factors for, "long COVID" symptoms and health complications following coronavirus (COVID-19) infection. An initial set of early experimental results has also been released.