Enhanced Surveillance of COVID-19 in Scotland
Population-based seroprevalence surveillance

A Management Information release for Scotland

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About this release

This dashboard release by Public Health Scotland provides the latest results and methodologies of the serology surveillance programme. Tableau recommend that the dashboard is accessed using Firefox, Chrome, Safari, Microsoft Edge and Internet Explorer 11 (or newer) browsers. The serology workstream aims to estimate the proportion of people who have antibodies to coronavirus ("seroprevalence") in the general population of Scotland and to see if this changes over time. Antibodies can be used to identify individuals who have had COVID-19 infection in the past or have developed antibodies as a result of vaccination.

Main Points

- The proportion of people attending community healthcare settings who had antibodies is estimated to be 95.3% (95% CI: 95%-96.5%) across the 5-week period up to and including week beginning 25 April 2022.
- At NHS Board level, proportions were highest in NHS Forth Valley (99.8%, 95% CI: 96.2%-100%) and lowest in NHS Tayside (91.7%, 95% CI: 87.2%-95.3%).
- By age-group, proportions were highest in those aged 60+ years (100%, 95% CI: 98.4%-100%) and lowest in those aged 00 - 19 years (89.4%, 95% CI: 86.8%-92.4%).
- Proportions among males (93.3%, 95% CI: 91.4%-95%) were similar to females (97.1%, 95% CI: 95.8%-98.7%) in this time period.

Interpretation

- We suggest that, when interpreting the results, there is a focus on the confidence intervals rather than the point estimates.
- This suggests that, overall among those attending community healthcare settings, we can be reasonably confident that COVID-19 seroprevalence lies between 95%-96.5% during the 5-week period up to and including week beginning 25 April 2022. Our results are from a sample of individuals attending community healthcare settings and there is uncertainty whether these individuals are representative of the general population.

Background

Public Health Scotland (PHS), in partnership with NHS Boards, is leading national surveillance and research studies that include the use of serology (the study of a part of the blood called serum). COVID-19 is caused by the new coronavirus known as SARS-CoV-2. When the body is infected with coronavirus, it produces antibodies to help fight the virus, and these may be detected by blood tests. The detection of antibodies provides an indication that someone has had COVID19 in the past or have developed antibodies as a result of vaccination, and provides a way of monitoring what proportion of people have had the virus. We use serology methods to detect these antibodies.
The PHS serology surveillance programme uses existing blood samples within community healthcare and other settings. The serology work stream aims to estimate the proportion of people who have antibodies to coronavirus ("seroprevalence") in the general population of Scotland and to see how this changes over time.

Since week commencing 20 April 2020, blood samples, originally collected for other clinical reasons in community healthcare settings, have been obtained from regional biochemistry and immunology laboratories across Scotland. Six NHS boards (NHS Grampian, NHS Greater Glasgow & Clyde, NHS Highland, NHS Lanarkshire, NHS Lothian and NHS Tayside) have provided weekly data since the beginning of the programme. An additional five NHS Boards (NHS Dumfries & Galloway, NHS Fife, NHS Forth Valley, NHS Orkney and NHS Shetland) joined the programme at later dates. Approximately 700 samples are collected each week. Laboratories select specific numbers of samples by age and sex to achieve a representative sample based on the age and sex structure of the general population in that NHS board. Samples are anonymised and sent to the Scottish Microbiology Reference Laboratory in Inverness for testing. Seroprevalence rates have been adjusted for the accuracy of the antibody test and weighted to the population structure. The results presented here cover the phase of the project between week commencing 20 April 2020 and week commencing 25 April 2022 (i.e. up to and including 30 April 2022). Up until this point, a total of 69,598 samples had been received from the 11 participating NHS boards.

Samples originally collected from blood donors have been retrieved and tested by the Scottish National Blood Transfusion Service (SNBTS) since week commencing 29 June 2020. Approximately 500 samples are collected each week from 12 NHS Boards (excluding Shetland and Western Isles). Seroprevalence rates have been adjusted for the accuracy of the antibody test and weighted to the population structure. The results presented here cover the phase of the project between week commencing 29 June 2020 and week commencing 28 March 2022) when 46,429 samples had been collected by SNBTS.

Samples originally collected from pregnant women at their antenatal booking appointment (approximately week 12 of pregnancy) and sent for Down's Syndrome, Edwards' syndrome, or Patau's syndrome screening at the Western General Hospital, Edinburgh, have been anonymised and sent to NHS Lanarkshire for testing. Approximately 600 samples are collected each week from across Scotland. Seroprevalence rates have been adjusted for the accuracy of the antibody test and weighted to the age structure of a reference population (maternities in Scotland in 2019-20). The results presented here cover the phase of the project between week commencing 16 November 2020 and week commencing 28 March 2022 when 46,924 samples had been collected.

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Data from this publication are available from the publication page on our website.
The next release of this publication will be 8 June 2022.

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