



Coronavirus Disease 2019 (COVID-19)

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Large-Scale Geographic Seroprevalence Surveys

Updated Aug. 14, 2020

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CDC wants to learn more about the percentage of people in the United States who have been infected with SARS-CoV-2, the virus that causes COVID-19 and to better understand how the virus is spreading through the U.S. population over time. Because infected people can have mild illness or may not get medical care or testing, CDC also wants to use this information to estimate the number of people who have been previously infected with SARS-CoV-2 and were not included in official case counts. To help answer those questions and others, CDC is collaborating with public health and private partners on a variety of seroprevalence surveys of different sizes, locations, populations studied, and purposes.



Seroprevalence surveys use [serology tests](#) to identify people in a population or community that have antibodies against an infectious disease. Antibodies are specific proteins made in response to infections. Antibodies are detected in the blood of people who are tested after infection; they show an immune response to the infection. Antibody test results are especially important for detecting previous infections in people who had few or no symptoms. It is not known yet if having antibodies to the virus that causes COVID-19 can protect someone from getting infected again, or, if they do, how long this protection might last. CDC and its partners plan to study this issue.

CDC is conducting seroprevalence surveys called “large-scale geographic seroprevalence surveys” in locations across the United States. The first seroprevalence surveys began in areas that first reported community transmission of SARS-CoV-2 in the United States; they are now being expanded to more regions. Descriptions of these surveys are provided below.

Commercial Laboratory Survey

CDC is partnering with commercial laboratories to conduct a large-scale geographic seroprevalence survey that has tested de-identified clinical blood specimens from, Connecticut, South Florida, the New York City metro area, Missouri, Utah and Western Washington State for SARS-CoV-2 antibodies. CDC, in partnership with state and local health departments, plans to expand this seroprevalence survey to an additional four states, including California, Louisiana, Minnesota, Pennsylvania and Utah.

The survey includes people who had blood specimens tested for reasons unrelated to COVID-19, such as for a routine or sick visit blood test by commercial laboratories in participating areas from each of the 10 sites. CDC aims to test about 1,800 samples collected from each of these 10 areas, approximately every 3–4 weeks. Researchers are looking to see what percentage of people tested already have antibodies against SARS-CoV-2, and how that percentage changes over time in each area.

More on the methodology used in this study is available online, [Seroprevalence of antibodies to SARS-CoV-2 in Six Sites in the United States, March 23-May 3, 2020](#)  .

Interpreting Serology Results from This Survey

There are limitations of this survey that should be considered when interpreting the results.

- People who have blood taken for routine screening or sick visits may not represent people from the total population in an area.
- Some results may be false positive results (the test result is positive, but the person does not really have antibodies to SARS-CoV-2), or false negative results (the person has antibodies to SARS-CoV-2, but the test doesn't detect them). False positive results are more likely change the survey results if it is an area where the percentage of individuals previously infected is relatively low; it could make it look like more people are infected in the community than really are.
- Results from seroprevalence surveys should **not** be interpreted to mean that people who have tested positive for having SARS-CoV-2 antibodies are immune. We do not know whether having SARS-CoV-2 antibodies provides protection against getting infected again. Other studies are planned to learn more about SARS-COV-2 antibodies, including how long they last, whether or not they provide protection against getting infected again, and if you get infected again, whether they can make that illness milder.
- While some seroprevalence surveys can look at risk factors for infection, such as a person's occupation or underlying health conditions, this seroprevalence survey was not designed to be able to provide that information. This survey will help us better understand the percentages of people who were previously infected with SARS-CoV-2 in the areas studied (that is called seroprevalence). CDC also will use this information to estimate the number of people in the areas sampled who have been previously infected with SARS-CoV-2, including those that may not have been reported in official case counts. Some of those people may not have been counted because they had mild illness or no symptoms and did not get medical care or testing.
- Finally, some seroprevalence surveys can show how long antibodies last in people's bodies following infection; this survey was not designed to provide that information.

Results from ten sites

CDC has received results from all of Connecticut, Louisiana, Minnesota, Missouri, the New York City metro area, Philadelphia, San Francisco Bay area, South Florida, Utah and Western Washington State from blood samples collected by commercial laboratories as part of routine patient care. In addition, CDC has results from a 2nd and 3rd later, time period, which are included on the interactive website.

As more data become available, tables and data charts will be added to this page to show the early antibody test results for patient specimens tested in these areas.

- This survey will continue to collect additional samples from selected areas over time.
 - Results from a 2nd period of specimen collection ("Round 2") are shown for 8 of 10 sites.
 - Results from a 3rd period of specimen collection ("Round 3") are shown for 7 of 10 sites.
- The survey will expand to include testing of samples from patients in additional geographic areas.
- The interactive dashboard below will be regularly updated as new seroprevalence survey results become available.

[View Results](#)

Blood Donor Survey

Preliminary results are expected in the coming weeks.

About this survey

CDC is conducting a nationwide COVID-19 [seroprevalence survey](#) in 25 U.S. metropolitan areas to understand the percentage of people in the United States who may have been infected with SARS-CoV-2, the virus that causes COVID-19.

This is the largest nationwide COVID-19 seroprevalence survey to date, and it will be conducted in collaboration with the National Institutes of Health, the Food and Drug Administration (FDA), Vitalant Research Institute (VRI), and large blood collection organizations, including Vitalant, American Red Cross, Bloodworks Northwest, New York Blood Center, OneBlood, The Blood Center, Versity, Blood Bank of Hawaii, Carter Blood Care, and Banco de Sangre de Servicios Mutuos.

This seroprevalence survey will expand an ongoing National Institute of Allergy and Infectious Diseases and National Heart, Lung and Blood Institute (NHLBI) funded project with VRI that involves the [NHLBI REDS \(Recipient Epidemiology and Donor Evaluation Study\)](#) [↗](#) program. The SARS-CoV-2 REDS project plans to test existing blood donation samples from Boston, MA; Los Angeles, CA; Minneapolis, MN; New York City, NY; San Francisco, CA; and Seattle, WA for SARS-CoV-2 antibodies each month for 6 months from March through August 2020.

[Learn More](#)

CDC Seroprevalence Survey Types

CDC is collaborating with public health and private partners on a variety of surveys of different sizes, locations, populations studied, and purposes. The seroprevalence surveys CDC is conducting include:

- [Large-scale Geographic Seroprevalence Surveys](#)
- [Community-level Seroprevalence Surveys](#)
- [Special Populations Seroprevalence Surveys](#)

[Learn more](#)

Last Updated Aug. 14, 2020

Content source: [National Center for Immunization and Respiratory Diseases \(NCIRD\), Division of Viral Diseases](#)