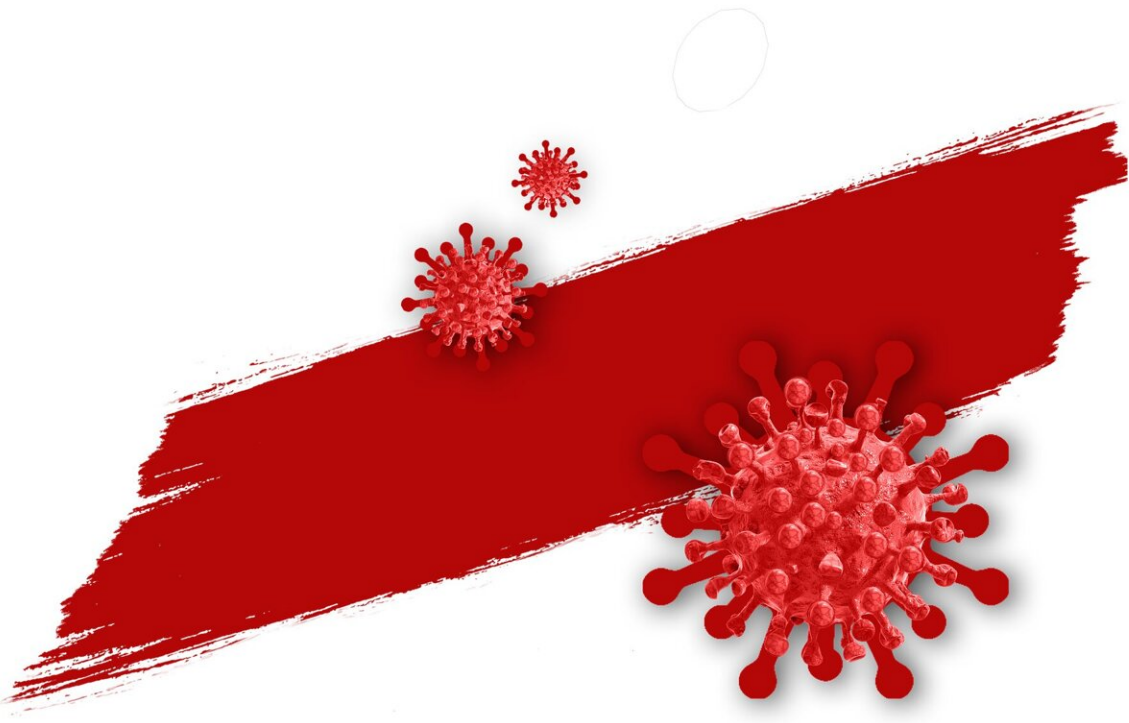


Surveillance program detects Omicron variant in North Carolina

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The first case of the Omicron COVID-19 variant in North Carolina has been discovered by a member of the Coronavirus Variant Sequencing (CORVASEQ) Surveillance Program—a partnership between the NC

Department of Health and Human Services (DHHS) Division of Health and the North Carolina Collaboratory. CORVASEQ has been up and running since the summer of 2021, and is led by UNC School of Medicine's Dirk Dittmer, Ph.D., Amir Barzin, DO, and UNC Gillings School of Global Public Health's Audrey Pettifor, Ph.D.

CORVASEQ funnels samples of SARS-CoV-2, the virus that causes COVID-19, from healthcare systems and academic institutions across the state to dedicated sequencing hubs at North Carolina universities, including the UNC Charlotte lab that found the first known case of the Omicron [variant](#) in North Carolina. The sequenced results are communicated directly to the NC DHHS and added to the world-wide database of SARS-CoV-2 variants. The program has created a methodical approach to sequencing SARS-CoV-2 samples so the information gained from the sequencing can be processed and shared with leaders and researchers across the state in real time. And by collaborating with multiple institutions, samples from all 100 counties in North Carolina get sequenced quickly, allowing researchers to track whether particular segments of the population are being more affected by Delta, Omicron or a potentially new variant. This network design ensures that all parts of the state will be represented and will benefit from these efforts.

"Sequencing SARS-CoV-2 samples will remain an important part in our fight against COVID-19 and is crucial to tracking the development and spread of new variants like Omicron," said Dirk Dittmer, Ph.D., director of the UNC Viral Genomics Core and member of the UNC Lineberger Comprehensive Cancer Center. "Mapping a virus's genomic sequence means we can ensure our tests, vaccines, and treatments will continue to be effective. In Omicron's case, we already know that it has so many mutations and that some changes to treatment protocols may need to be considered."

When it comes to testing, Melissa Miller, Ph.D., professor in the UNC Department of Pathology and Lab Medicine in the UNC School of Medicine and director of the Clinical Molecular Microbiology Laboratory at the UNC Medical Center in Chapel Hill, knows UNC is still on track.

"We know our PCR tests will detect the Omicron variant," said Miller, whose lab conducts COVID-19 diagnostic testing for the UNC Medical Center. "We work with diagnostic companies that help us compare sequences and confirm variant detection through computer analysis. Our tests will detect Omicron. We are as ready for Omicron as we can be."

Miller says her lab is currently running around 500 COVID-19 tests a day. During the height of the [pandemic](#) in mid-2020, they processed 1,500 tests daily. Earlier this year before the Delta variant peak, they ran around 300 tests a day.

Now, in addition to processing tests, Miller's lab is also sequencing positive COVID-19 samples. Whereas Dittmer's lab mainly sequences positive samples from the UNC-Chapel Hill population and other CORVASEQ participants, Miller's lab [sequences](#) samples from UNC Medical Center patients and UNC Health affiliate hospitals. Since her lab began sequencing in collaboration with the UNC Genomics Core at the beginning of 2021, they have sequenced more than 2,700 SARS-CoV-2 samples. Altogether, the CORVASEQ network has sequenced more than 10,000 samples. Since around mid-July nearly 100% of those samples have been identified as the Delta variant.

"The Delta variant overtook the Alpha variant and any other variants in the mix in a matter of two weeks in North Carolina," Miller said. "We don't know if that will be the case with Omicron yet, but we'll be working to get the quickest and most accurate picture of the virus as possible."

That's the whole goal of CORVASEQ. By increasing the quantity and quality of sequenced samples across the state, leaders and researchers will have timely and accurate information with which they can make decisions. And this program doesn't just apply to COVID-19. While CORVASEQ will most likely be utilized throughout the remainder of this pandemic, the framework has been established for future emergencies as well.

"When the state needs CORVASEQ in the future and the funding we need to operate is there, we should be able to stand up the network in a matter of weeks," Dittmer said. "All the work we've done and continue to do will be there to help us for any other pandemic or epidemic that may come our way."

In the meantime, Miller suggests to take this pandemic one variant at a time.

"Omicron shows us that there will be other variants for the foreseeable future and that COVID-19 isn't going away anytime soon," Miller said. "But it's important to maintain a level of calmness. Know that we're working to keep you safe, and take comfort in what you can do to keep yourself safe—get vaccinated and boosted, wear a mask, wash your hands, keep up with physical distancing, and get tested before and after you travel."

Provided by University of North Carolina School of Medicine

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