
Provider Alert COVID-19 Variants-Whole Genomic Sequencing Test Availability May 5, 2021

Viruses constantly change through mutations that create new strains of virus over time. Some virus variants emerge and then disappear, while others persist or become common. Most variants do not have a meaningful impact. Public health becomes concerned about a SARS-CoV-2 variant when it affects COVID-19 transmission, severity, testing, treatment, or vaccine effectiveness.

As the COVID-19 pandemic has progressed, understanding the variants of SARS-CoV2 circulating in a community has become increasingly important. Variant testing is performed using whole genome sequencing (WGS) of the virus from a respiratory sample of a patient with COVID-19. WGS is now more readily available for priority cases.

In Santa Barbara County, we are streamlining our process to send priority samples to the California Department of Public Health (CDPH), and are pleased to be partnering with UC Santa Barbara, now an important part of the COVIDNet network of laboratories participating in WGS, supporting CDPH. In addition, a small number of local samples of public health importance may be sent for Health Officer designated accelerated testing, either through CDPH and/or UCSB.

We encourage physicians to submit samples for WGS. In particular, we are interested in samples from patients who are critically ill and any patient hospitalized with what appears to be a vaccine failure (infection >2 weeks after completion of vaccination series).

- Please call the Public Health Lab at **(805) 681-5255** for instructions on submittal of samples to be forwarded to CDPH or UCSB for WGS.

Information to be included:

- Fully vaccinated – Yes/No (Yes = 14 days post final vaccine)
- Acute symptoms that could be explained by COVID-19 infection? – Yes/No
- Hospitalized at time of report – Yes/No
- If hospitalized, requiring ICU level of care at any time during hospital stay – Yes/No

- If hospitalized, requiring mechanical ventilation at any time during hospital stay – Yes/No
- Patient died of illness – Yes/No

Priority samples for variant testing include:

- Hospitalized cases of vaccine breakthrough (confirmed infection, >2wks after completion of vaccine series)
- Severe disease, hospitalized or critically ill
- Others at the discretion of the Health Officer or designee (e.g. travel from area with high levels of circulating Variant of Concern)

Please note that most WGS results are not available quickly and are less likely to affect the individual care of a particular patient at the time of illness. Monoclonal antibody (MAB) therapy would be one important exception, whereby providers should use local variant surveillance trends and ideally consultation with infectious disease physicians to guide decisions regarding MAB treatment, as some MAB therapies have been shown to have little or no effect on some Variants of Concern.

FAQ's

- **Should a provider wait for variant testing results to help determine clinical care and public health recommendations?**
 - No. While understanding circulating variants is important from a public health and epidemiologic perspective, the important recommendations for quarantine of contacts, and for isolation of a person with COVID-19 do not change, regardless of the variant testing result. Any person in Santa Barbara County who is diagnosed with COVID-19 should follow their provider's medical recommendations, seek medical care urgently if any severe symptoms develop, and remain isolated for at least 10 days after symptoms begin. Those with more severe illness, including a need to be hospitalized, should be isolated for 20 days. At this time, there is no change to these recommendations based on the variant involved.
- **My patient meets criteria for state variant testing. How can I arrange for testing?**
 - Only original respiratory (NP, nasal or OP) swabs in VTM (viral transport media) can be accepted. Samples in MTM or saline cannot be accepted, nor can samples from antigen testing or rapid testing which does not involve VTM.
- **My patient was diagnosed with COVID-19 using a rapid antigen test or a rapid Abbott IDNow POC test. Can I send this swab for variant testing?**
 - No. Only samples with a positive PCR result, and with an original respiratory swab in at least 800uL of VTM can be accepted for WGS.