

COVID-19 “UK VARIANT” PRESENCE IN WISCONSIN

In late 2020, public health agencies in the United Kingdom discovered a new strain of SARS-CoV-2, the virus that causes COVID-19. This strain is commonly referred to as the “UK variant” and designated as VUI 202012/01 or B.1.1.7. It contains a mutation in the S gene (spike protein) portion of the SARS-CoV-2 virus.

Importance to Public Health

As is common in respiratory viruses, random mutations naturally occur in the genetic code of the SARS-CoV-2 virus; several other “variant” strains have been reported since the beginning of the pandemic. The majority have had no effect on the infectiousness or severity of the disease; however, this newly-identified variant has been associated with increased viral transmission. The Centers for Disease Control and Prevention (CDC) and the Wisconsin Department of Health Services (DHS) have been monitoring for this variant, which has been identified in multiple areas of the United States, including Wisconsin.

What We Are Doing

Any mutation in the genetic code of the virus has the potential to cause a “false-negative” test result if the mutation occurs in the gene sequence targeted by PCR-based tests (NAATs). To reduce this risk, Wisconsin Diagnostic Laboratories utilizes PCR tests that target up to three different SARS-CoV-2 genes, one of which is the S gene. Because our tests detect multiple SARS-CoV-2 targets, a single mutation is prevented from causing a “false-negative” result—even if the S gene does not amplify in a SARS-CoV-2 containing specimen, the other two targets will. Results that yield only one positive target are repeated, reviewed by a medical director and forwarded to the state for sequencing.

Providers may contact DHS to request subtyping—if approved by the department, DHS will request that WDL send the sample to the Wisconsin State Laboratory of Hygiene (**samples are kept for seven days from the date of initial result**). Clinicians wishing to obtain whole genome sequencing will contact the DHS Bureau of Communicable Diseases at DHSDPHBCD@dhs.wisconsin.gov. DHS provides the criteria in Health Alert #25 at: <https://content.govdelivery.com/accounts/WIDHS/bulletins/2b3ef9e>. Whole genome sequencing can be performed on residual specimens obtained for diagnostic purposes, but testing laboratories must be notified of cases of interest as early as possible so that specimens can be saved for sequencing prior to being discarded.

The Bottom Line

Sequencing is done in support of public health efforts—please note that **individual patient results will not be returned to the submitting provider** from the WSLH. Currently, WDL actively participates in a surveillance program with the state, whereby it provides randomized positive samples to the DHS for sequencing.

All COVID-19 tests currently utilized by Wisconsin Diagnostic Laboratories are capable of detecting infections caused by the “UK variant” SARS-CoV-2 strain. Our laboratory works with public health laboratories and test manufacturers to continually monitor for variant virus strains or mutations that have the potential to impact our test performance.