

## **Health Advisory** SARS-CoV-2 Variants and Sequencing Requests May 12, 2021

### Background

New variants of the SARS-CoV-2 virus have been identified globally. Several variants of concern and variants of interest have been identified in the United States; none have been identified as variants of high consequence to date. Tracking this information is critical as variants of concern are more transmissible than the ancestral variants and may cause more severe disease. See the below table for additional information, or visit <https://www.cdc.gov/coronavirus/2019-ncov/cases-updates/variant-surveillance/variant-info.html>.

### SUMMARY POINTS

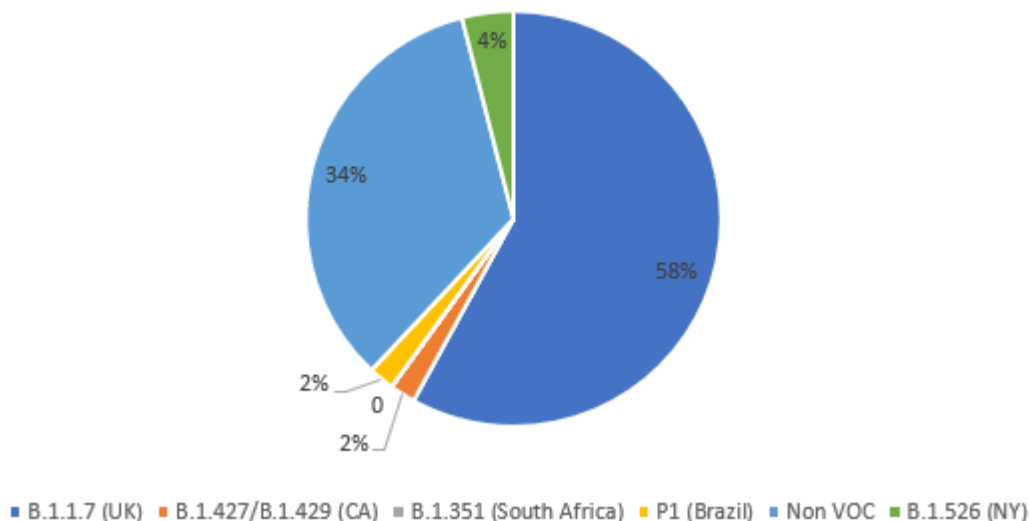
The following will be prioritized for sequencing:

- COVID-related hospitalization or death in a fully vaccinated person
- Cluster of 5 or more cases, especially if cases are vaccinated
- International travel within 14 days prior to symptom onset
- Recurrent COVID-19 infection

### Local Variant Surveillance

A combination of laboratories (CDC, academic, and commercial laboratories) are sequencing SARS-CoV-2 samples from Philadelphia residents. Multiple SARS-CoV-2 variants have been identified with the UK variant of concern (B.1.1.7 lineage) most frequently reported. Recent data reported by CDC indicates that 33% of Pennsylvania's COVID-19 specimens submitted for sequencing were the B.1.1.7 variant. This variant has been found to be more infectious when compared to the wild-type lineage; however, all three vaccines currently authorized the United States retain their efficacy against B.1.1.7. Other variants identified in Philadelphia include the P.1, B.1.351 and B.1.427/B.1.429 strains although detected at much lower levels than B.1.1.7 to date. Surveillance data is incomplete and based on the information available to PDPH at the time of release.

Variants Sequenced in Philadelphia



## Variant Sequencing Requests

As part of enhanced surveillance, the Philadelphia Department of Public Health (PDPH) is working with healthcare providers to coordinate sequencing for COVID-19 cases that meet the following criteria:

- Clusters of 5 or more linked cases occurring within 14 days
- Individuals with recurrent COVID-19 infection (new onset of symptoms and positive test at least 90 days after initial diagnosis)
- COVID-related hospitalization or death occurring in a fully vaccinated individual ( $\geq 14$  days after final dose in series)
- International travel within 14 days of symptom onset. If a case is staying in Philadelphia temporarily, please provide a local address.

These criteria could change based on the clinical spectrum and epidemiology associated with SARS-CoV-2 variants. Requests can be submitted via REDCap (<https://redcap.phila.gov/surveys/?s=9X8CLHMNNY>). Sequencing will be considered only for cases that have a PCR test with a cycle threshold (ct) value  $\leq 28$  or relative light unit (RLU) value  $\leq 1000$ . The original specimen must be available to send to PDPH.

Demand for sequencing will exceed available resources and not all requests will be sequenced. Sequencing of SARS-CoV-2 is not for diagnostic purposes and is performed strictly for public health surveillance purposes. Healthcare providers may email [COVIDTesting@phila.gov](mailto:COVIDTesting@phila.gov) for additional assistance.

**Table 1. Description of Selected SARS-CoV-2 Variants**

Name (Pango lineage)	Classification	First Detected	Attributes
B.1.526 / B.1.526.1	Variant of Interest	New York (Nov. 2020) / New York (Oct. 2020)	Demonstrated reduction in neutralization by convalescent and post-vaccination sera
B.1.525	Variant of Interest	United Kingdom / Nigeria (Dec. 2020)	May demonstrate reduction in neutralization by convalescent and post-vaccination sera
P.2	Variant of Interest	Brazil (Apr. 2020)	May demonstrate reduction in neutralization by convalescent and post-vaccination sera
B.1.1.7	Variant of Concern	United Kingdom	~50% increased transmissibility; Likely increased disease severity; Minimal impact on neutralization by convalescent and post-vaccination sera
P.1	Variant of Concern	Japan/Brazil	Demonstrated reduction in neutralization by convalescent and post-vaccination sera
B.1.351	Variant of Concern	South Africa	~50% increased transmissibility; demonstrated reduction in neutralization by convalescent and post-vaccination sera
B.1.427 / B.1.429	Variant of Concern	California	~20% increased transmissibility; demonstrated reduction in neutralization by convalescent and post-vaccination sera