Updated Guidelines for SARS-CoV-2 Variant Strain Surveillance and Submission

Date: March 9, 2022

Public Health Message Type: ☐ Alert ☐ Advisory ☒ Update ☐ Information

Intended Audience: ☒ All public health partners ☒ Healthcare providers ☒ Infection preventionists ☒ Local health departments ☐ Schools/Childcare centers ☐ ACOs ☐ Animal health professionals ☒ Other: Clinical laboratories

Key Points:

- Multiple variants of the virus that cause COVID-19 have been circulating both in the United States and globally during this pandemic. In collaboration with the SARS-CoV-2 Interagency Group (SIG) established by the Department of Health and Human Services (HHS), CDC has developed a classification scheme for variants of SARS-CoV2: Variants Being Monitored, Variants of Interest, Variants of Concern, and Variants of High Consequence.
- To date, no variants of high consequence have been identified in the United States. Omicron (B.1.1.529) has been the predominant variant of concern in N.J. since late December 2021. Omicron lineage (BA.2) is increasing in N.J. and represented 12/7% of surveillance specimens in the week ending 2/19/22.
- Monitoring SARS-CoV-2 to detect and monitor new variants is a key strategy in the White House's National COVID-19 Preparedness Plan. Rapid virus genomic sequencing data combined with phenotypic data are further used to determine whether COVID-19 tests, treatments, and vaccines authorized or approved for use in the United States will work against emerging variants.
- Whole genomic sequencing is being performed at the Division of Public Health and Environmental Laboratories (PHEL) for epidemiological surveillance purposes; results will not be reported to submitters. Due to limited sequencing capacity, only a subset of the submitted specimens may be sequenced. If a variant of concern is identified, additional guidance will be provided as appropriate.

Action Items:

NJDOH requests that SARS-CoV-2 – positive specimens (RT-PCR CT values ≤28 preferred if available) be sent to PHEL for sequencing if collected within the 7 days prior to shipment and if they meet the following criteria:

1. Recent travel to and/or from countries outside the United States that have reported an emerging variant of concern or interest or close contacts of cases with such travel, OR
2. Cases associated with an outbreak or cluster of concern (up to 5 specimens), OR
3. COVID-related hospitalization or death in someone who is fully vaccinated whether or not they have received a booster dose.

In addition, clinicians may send a subset of SARS-CoV-2 – positive specimens (RT-PCR CT values ≤28 preferred if available) to PHEL for sequencing if collected within the 7 days prior to shipment and if they meet the following criteria:

4. Suspected reinfection (recurrence of symptoms) and positive test result ≥90 days after the initial RT-PCR positive test result (not antigen or serology), OR
5. Vaccine breakthrough case defined as a U.S. resident who has SARS-CoV-2 RNA or antigen detected on a respiratory specimen collected ≥14 days after completing the primary series of an FDA-authorized COVID-19 vaccine or after receipt of a recommended booster dose.

Clinicians and infection preventionists should notify the local health department (LHD) of cases meeting criteria 2-3. Infection preventionists should provide this information in CDRSS. Non-hospital clinicians should call their LHD.

Providers and laboratories performing sequencing or targeted variant detection (such as allele specific PCR or other methods) **should report** all sequencing results to NJDOH via secure email to CDS.COV.DM@doh.nj.gov or fax to (609) 826-5972. For electronic laboratory reporting (ELR) of sequencing results in HL7 format, contact NJELR.ADMIN@doh.nj.gov.

How to submit specimens for sequencing to PHEL:

- Refer to the most recent PHEL Technical Bulletin posted at https://www.nj.gov/health/phel/ for guidance on acceptable specimen types and specimen submission using the Online Electronic Ordering and Reporting Portal or the SRD-1 requisition form.
- Only submit specimens with a RT-PCR Ct value of ≤28, if known/available.
- Store respiratory specimens at 2-8°C for up to 72 hours after collection. If a delay in testing or shipping is expected, specimens must be stored at -70°C or below and shipped on dry ice.
  - If samples have been refrigerated for greater than 72 hours after time of collection, consider collecting a new specimen for submission.
  - If unable to store at -70°C and/or ship on dry ice, samples may be stored at -20°C and shipped on frozen ice packs. This may lessen the quality of sequencing and samples may not be tested.
- For sequencing requests using PHEL's Online Ordering and Reporting Portal, select the order choice "SARS-CoV-2 Whole Genome Sequencing: Variant Identification".
  - Fill out the required fields marked with an asterisk and select one of the criteria above as the reason for submission in the "NR2-Reason for Submission" field. Print the completed form to be sent with the sample to PHEL.
- For sequencing requests, using the SRD-1 requisition form, check 'Other' category and write-in "SARS-CoV-2 RNA Sequencing" for the test requested.
  - Include information related to sequencing approval criteria (#1-5 above) in the Pertinent Clinical Information box on the SRD-1 form. If the sequencing criteria are not indicated on the submission form, the sample may not be considered for sequencing.
- For **each** sample, submit a requisition form that indicates the test requested and the reason for sequencing.
- Alert SARS.sequencing@doh.nj.gov upon shipping a specimen for sequencing with the number of samples being shipped, reason for shipping, and estimated date/time of delivery. Questions can be sent to SARS.sequencing@doh.nj.gov.

References and Resources:

CDC Guidance on Variants
CDC Variant Proportions
NJ PHEL Supplemental Technical Bulletin
NJ Weekly Variant Surveillance Reports