Health Advisory

KITSAP PUBLIC HEALTH DISTRICT

March 30, 2021

SARS-CoV-2 sequencing: Information for clinicians and healthcare facilities

Actions Requested

- **Review recently updated CDC guidance on SARS-CoV-2 variants** (https://www.cdc.gov/coronavirus/2019-ncov/cases-updates/variant-surveillance/variant-info.html).
- **Consider submitting lab specimens** that meet the Washington State Department of Health's case categories listed below.
- **Contact Kitsap Public Health at (360) 728-2235 to coordinate submission of a specimen for sequencing**. The following specimen types can be submitted for sequencing: (a) RNA extract (preferred); (b) nasal swab, nasopharyngeal swab, or mid-turbinate swab in VTM/UTM or transport medium; and (c) lower respiratory tract fluid (BAL, tracheal aspirate, or sputum) if the patient is intubated. More details listed below.

For questions, call our COVID Program Manager, (360) 728-2235.

Background

Today, March 30th, Kitsap Public Health announced the first COVID-19 variant (B.1.1.7) confirmed in Kitsap County. The Washington State Department of Health (DOH) has increased whole genome sequencing capacity to track SARS-CoV-2 variants of concern and other emerging variants. DOH is working toward sequencing a geographically representative sample representing at least 5% of positive SARS-CoV-2 RT-PCR tests in Washington State. DOH has additional capacity to sequence individual specimens to investigate situations such as vaccine breakthrough cases, suspected reinfections, cases associated with international travel, outbreaks concerning for variants, and unusual clinical syndromes (e.g., unexpected symptoms or unexpectedly severe disease). More detail on these categories is provided below. Whole genome sequencing can also be used to identify possible transmission patterns via phylogenetic analysis for complex outbreaks. Clinicians, clinical laboratory staff, and other healthcare staff can assist public health authorities by identifying cases for sequencing. It is often astute clinicians who connect the dots and identify the first cases of new infectious and noninfectious conditions. We appreciate your partnership as we learn more about genetic variants of SARS-CoV-2.

Information on cases prioritized for sequencing:

Currently, DOH is prioritizing the following case categories for sequencing:

- **Vaccine breakthrough cases** in which the individual is fully vaccinated (≥14 days have elapsed between the final vaccine dose and the specimen collection date).
- Any **suspected reinfection case**, regardless of whether the prior sample is available. A suspected reinfection case is defined as a repeat PCR positive test ≥90 days after the initial PCR positive test.
- **Unusual clinical presentations** of COVID-19, such as critical illness or death in a previously healthy child or young adult, unusual symptoms or laboratory findings, or other unusual cases identified by clinicians.

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- Any individual reporting **international travel** in the 14 days prior to symptom onset (or specimen collection date if the individual is asymptomatic).
- Suspected cases of **zoonotic transmission**.
- **Outbreaks with a suspected variant of concern** based on features such as a linked case with a known variant of concern, recent travel, high attack rate, unexpected proportion of cases with severe illness, cases with reinfection or vaccine breakthrough, suspected unusual mechanism of transmission (e.g., longer-range airborne transmission, brief exposure to an infected individual, suspected outdoor transmission, suspected fomite or foodborne transmission, etc.), or other unusual features identified by clinicians, laboratorians, or other healthcare staff.

Reporting of sequencing results

At this time, sequencing is conducted for public health surveillance using laboratory methods that are not CLIA-approved. Individual sequencing results will be available to public health authorities in the state reportable disease database (WDRS) but will not be reported to patients, clinicians, or labs. Aggregate results for the entire state are described weekly in a publicly accessible report.

How to submit a specimen for sequencing

Clinicians and healthcare facilities should contact Kitsap Public Health to coordinate submission of a specimen for sequencing. Please note that **all cycle threshold (Ct) values must be <30** in order to submit a specimen for sequencing (unless the test platform does not provide Ct values; in this situation any sample can be submitted). The following specimen types can be submitted for sequencing:

- RNA extract (preferred)
- Nasal swab, nasopharyngeal swab, or mid-turbinate swab in VTM/UTM or transport medium
- Lower respiratory tract fluid (BAL, tracheal aspirate, or sputum) if the patient is intubated

Please follow the instructions on the attached one pager to submit your specimen for collection.

Attachments

KPHD Provider SARS Co-V-2 Sequencing Request Form

Resources

- CDC guidance on SARS-CoV-2 variants: https://www.cdc.gov/coronavirus/2019-ncov/cases-updates/variant-surveillance/variant-info.html
- DOH COVD variants report: https://www.doh.wa.gov/Emergencies/COVID19/Variants

Kitsap Public Health District

How to submit a SARS-CoV-2 specimen for sequencing

Please ensure that the specimen meets all of the reporting criteria:

- ☐ Cycle threshold (Ct) value <30 (unless the platform does not provide CT values)
- ☐ The specimen is one of the following types
    - RNA extract (preferred)
    - Nasal swab, nasopharyngeal swab, or mid-turbinate swab in VTM/UTM or transport medium
    - Lower respiratory tract fluid (BAL, tracheal aspirate, or sputum) if the patient is intubated

To submit your specimen, please complete questions 1-5 below. Once you have the information, call KPHD at (360) 728-2235. Alert the switchboard that you are calling to submit a specimen for sequencing.

1. For which of the below options has sequencing been requested:
    - ☐ Suspected reinfection
    - ☐ Suspected vaccine breakthrough
    - ☐ International travel
    - ☐ Outbreak investigation with a suspected variant of concern
    - ☐ Other reason – please be prepared to provide more information for any of these reasons
        - ☐ Unusual clinical presentation
        - ☐ Suspected Zoonotic transmission
2. Laboratory Information
    a. Laboratory Name: _____
    b. Laboratory Contact Name: _____
    c. Laboratory Contact Phone Number: _____
    d. Specimen Accession Number: _____
3. Patient Information
    a. Patient First Name: _____
    b. Patient Last Name: _____
    c. Patient Date of Birth: _____
    d. Patient Sex: _____
    e. Patient Address: _____
    f. Patient Phone Number: _____
4. Specimen Information
    a. Date of Collection: _____
    b. Specimen Type:
        - ☐ RNA extract
        - ☐ Original specimen in VTM/UTM
        - ☐ Other: _____
5. PCR Targets and Cycle Threshold Values
    a. Target & CT value(s)

After you've called and provided the information above, KPHD will send you an email with a packing insert attached. You will be responsible for coordinating with the lab to have the specimen frozen at <-70 °C and shipped on dry ice to the WA DOH Public Health laboratory (shipping information will be provided on the packing insert).