



Updated April 21, 2021

Criteria for requesting COVID-19 sequencing at OSPHL

The Oregon State Public Health Laboratory (OSPHL) began whole genome sequencing for COVID-19 in March 2021 to support public health priorities established by the Oregon Health Authority (OHA). Only certain specimens meet criteria for requesting sequencing at OSPHL. Specimens will be sequenced as capacity allows; when capacity is exceeded, samples may be frozen and held for future sequencing.

SARS-CoV-2 sequencing is essential to understanding variants and several issues of public health importance, including COVID-19 transmissibility and vaccine effectiveness. When an [emerging variant of concern](#) is identified, it can inform public health response. However, sequencing results are of unknown clinical significance at this time.

Specimens submitted for no-cost COVID-19 sequencing must meet the criteria outlined below. OSPHL may consult with local or state public health officials to verify acceptance.

For specimens not meeting these criteria, clinicians may pursue COVID-19 sequencing at their discretion through academic and commercial laboratories.

Criteria for requesting sequencing at the Oregon State Public Health Laboratory

1. Criteria for requesting sequencing of COVID-19 positive specimens for individual cases is limited to cases with one or more of the following features:
 - a. Individual with history of international travel in the 14 days prior to the onset of COVID-19
 - b. Individual meeting CDC vaccine breakthrough case definition¹
 - c. Individual meeting CDC reinfection case definition²
 - d. Specimen with result on the Thermo Fisher TaqPath and Linea COVID-19 Assay Kit with spike gene target failure

¹ Vaccine breakthrough case definition: An individual with positive molecular or antigen COVID-19 result from a respiratory specimen \geq 14 days following completion of an FDA-authorized primary COVID-19 vaccine series. Individuals with a history of positive COVID-19 result within 45 days of the most recent positive test are excluded.

² Reinfection case definition: An individual with or without COVID-19-like symptoms \geq 90 days following initial infection AND positive molecular or antigen test for SARS-CoV-2 OR an individual with COVID-19-like symptoms 45-89 days following initial infection AND positive molecular or antigen test for SARS-CoV-2 AND no obvious alternative etiology.

If the laboratory that performed the initial COVID-19 test has also performed COVID-19 sequencing on the specimen, the specimen does not need to be forwarded to OSPHL.

2. Criteria for requesting sequencing for clusters and outbreaks are limited to clusters and outbreaks with one or more of the following features:
 - a. Unusual outbreak size or “super-spreader” event suspected
 - b. Unusual severity (e.g., high hospitalization or case fatality rate)
 - c. Index case with history of international travel in the 14 days prior to the onset of COVID-19
 - d. Long-term care facilities³ in which the facility completed the COVID-19 vaccine series > 14 days prior to onset of index case

3. Approvals

If testing is approved, state epidemiologists will notify OSPHL of the approval.

- e. For individuals with a history of international travel in the 14 days prior to onset, or for individuals with vaccine breakthrough or reinfection (criteria 1a., 1b., and 1c.)
 - i. Call the Acute and Communicable Disease Prevention Epidemiologist On-call at 971-673-1111 to provide case details and receive approval.
- f. For laboratories who have identified spike gene target failures (criterion 1d.)
 - i. Contact OSPHL at 503-693-4100. Leave a message with reception and a staff member will return your call.
- g. For all clusters and outbreaks (criteria 2a., 2b., 2c., 2d.)
 - i. The Local Public Health Authority should contact the OHA CRRU Regional Epidemiologist for their region.

4. Specimen criteria

- a. Specimens submitted must meet OSPHL’s standard criteria for specimen submission. Please follow the instructions for [COVID-19 and Influenza A/B testing](https://www.healthoregon.org/labtests), available at www.healthoregon.org/labtests.
- b. Specimens should be received at OSPHL within 7 days of specimen collection.
- c. For specimens which have been tested for COVID-19 using an FDA Emergency Use Authorization (EUA) RT-PCR assay, **only specimens with a cycle threshold (Ct) value ≤ 28** should be submitted for sequencing⁴.
- d. For specimens which have been tested using a method which does not report Ct values, submit original material if acceptable for testing at OSPHL (see 4.a.).

³ Long-term care facilities include skilled nursing facilities, assisted living facilities and residential care facilities.

⁴ Specimens with higher Ct values may not contain sufficient genetic material for sequencing.

- e. If no residual sample is available, submit the extract if available. Recollection is not typically recommended as it is unlikely to result in sufficient genetic material for sequencing.
5. Sending specimens and forms
- a. Submit each specimen with a completed COVID-19 and Influenza Test Request Form, available at www.bitly.com/phl-forms. Incomplete request forms will delay sequencing.
 - b. Transport specimens for receipt at OSPHL during expanded business hours for COVID-19 services:
 - ii. Monday–Friday, between 7:00 AM and 5:00 PM
 - iii. Saturday and Sunday, between 10:00 AM and 12:00 PM
 - c. Existing courier or shipping mechanisms should be used to transport specimens to OSPHL. If courier support is needed, contact OSPHL at 503-693-4100.
6. Resources & Questions
- a. Oregon State Public Health Laboratory:
www.healthoregon.org/phl or 503-693-4100
 - b. Acute and Communicable Disease Prevention Epidemiologist On-call:
971-673-1111
 - c. Local Public Health Authority Contact Information: www.healthoregon.org/lhddirectory
 - d. COVID Response and Recovery Unit (CRRU) Testing Branch:
ORES8.AOCTestingBranch@dhsosha.state.or.us

Document accessibility: For individuals with disabilities or individuals who speak a language other than English, OHA can provide information in alternate formats such as translations, large print, or braille. Contact the Health Information Center at 1-971-673-2411, 711 TTY or COVID19.LanguageAccess@dhsosha.state.or.us