



## **MISSOURI STATE PUBLIC HEALTH LABORATORY**

### **SUBMISSION OF POSITIVE SARS-CoV-2 SPECIMENS FOR VARIANT SURVEILLANCE**

Updated 4/2023

Since 2014, CDC's Advanced Molecular Detection (AMD) Program has been integrating next-generation sequencing and bioinformatics capabilities into the U.S. public health system. The Missouri Department of Health and Senior Services (DHSS) and Missouri State Public Health Laboratory (MSPHL) are applying these resources as part of our response to the COVID-19 pandemic.

By participating in the CDC-led consortium SARS-CoV-2 Sequencing for Public Health Emergency Response, Epidemiology, and Surveillance (SPHERES), public health experts in MO and nationwide will be able to monitor important changes in the virus as it continues to circulate as well as advance public health research in the areas of transmission dynamics, host response, and evolution of the virus.

#### **WHY IS THIS IMPORTANT?**

Routine analysis of genetic sequence data enables scientists and public health experts to identify and characterize variant viruses—either new ones identified here or those already identified abroad—and to investigate how variants impact COVID-19 disease severity and how variants impact the effectiveness of vaccines and therapeutics. Surveillance of emerging variants can help detect variants with:

- Ability to spread more quickly in people
- Ability to cause either milder or more severe disease in people
- Ability to evade detection by specific diagnostic tests
- Decreased susceptibility to therapeutics that employ monoclonal antibodies
- Ability to evade natural or vaccine-induced immunity

**\*\*IT IS CRITICAL THAT WE CONTINUE VARIANT SURVEILLANCE FOR SARS-CoV-2\*\***

#### **SELECTION CRITERIA:**

- Specimens submitted for SARS-CoV-2 variant analysis should have a previous positive viral diagnostic test, such as RT-PCR, other nucleic acid amplification test, or an antigen test.
- Specimens being submitted for SARS-CoV-2 variant analysis should have a RT-PCR Ct value that is  $\leq 28$  (Not required if Ct value is not available)
- All positive SARS-CoV-2 specimens that meet the above criteria may be sent to the MSPHL for sequencing analysis

### **PROMOTING HEALTH AND SAFETY**

The Missouri Department of Health and Senior Services' vision is optimal health and safety for all Missourians, in all communities, for life.

## POSSIBLE RESULTS

Due to federal regulation, the MSPHL is unable to provide result reports for SARS-CoV-2 variant sequencing surveillance to the submitter or patient. SARS-CoV-2 variant surveillance sequencing is intended for public health surveillance purposes only and cannot be used for diagnostic or individual clinical patient management. This method is not FDA cleared or CLIA-regulated, and therefore sequencing results for individual patients cannot be provided to the submitter.

DHSS will continue to work closely with Missouri's local public health agencies, medical providers, and laboratories to promptly detect and respond to SARS-CoV-2 variants. Variant surveillance data for Missouri, regionally, and in the United States is available on the CDC webpage at [CDC Data Tracker Variant Proportions](#).

## SUBMISSION REQUIREMENTS

Specimens should meet the required MSPHL submission criteria for COVID-19 testing available at <https://health.mo.gov/lab/ncov.php>, and must be received by the MSPHL within 72 hours of collection, **or** have been stored frozen -70°C and shipped frozen using dry ice.

## SPECIMEN SUBMISSION

Submission of specimens to the MSPHL for testing and identification of variant SARS-CoV-2 viruses requires adherence to the following criteria:

- Complete a MSPHL Test Request Form (TRF) for each specimen. The TRF is available online at <http://health.mo.gov/lab/>.
  - In the "MOLECULAR (PCR)" section of the TRF, check "Other" and specify "SCV2 Sequencing"
- On the TRF, indicate what test was used to generate the positive result and the Ct values, if available.
- Contain at least 500 µL of Viral Transport Media (VTM), Universal Transport Media (UTM), or saline
- Specimens should be shipped to the MSPHL within 72 hours of collection on freezer packs. If this is not possible, the specimen **must** be frozen and shipped to the MSPHL on dry ice.

## TEMPORARY STORAGE OF SPECIMENS

If specimens cannot be submitted within 72 hours of collection. Store the specimens at -70°C pending shipment and ship on dry ice.

## **PACKING FOR SHIPMENT OF SPECIMENS**

- Place dry ice/freezer packs in Styrofoam box. Dry ice is required for specimens to remain frozen during shipping.
- Place specimen tube inside ziptop biohazard bag and seal
- Fold Test Request Form and slide into pocket on outside of bag
- Place the bags inside Styrofoam box with dry ice/freezer packs
- Close lid on Styrofoam box
- Place Styrofoam box inside cardboard box and tape cardboard box shut
- Affix shipping label to the outside of box and write: **SARS-CoV-2 Variant Surveillance Project** on box

**\*\*DO NOT USE ICE MADE WITH WATER WHEN SHIPPING SPECIMENS\*\***

## **SHIPMENT OF SPECIMENS**

The MSPHL will provide all shipping materials and cover shipping costs. Please contact the MSPHL to have collection kits sent to your facility.

**\*\*Please use these collection kits for SARS-CoV-2 Surveillance specimens only\*\***

Specimens may be sent to the MSPHL via the MSPHL Courier System. If utilizing the MSPHL Courier, samples should be sent out **no later than** the Thursday courier pickup each week.

[GIS map of courier drop off locations Monday-Friday](#)

[List of courier drop off locations by county Monday-Friday](#)

[Sunday Courier Locations](#)

If you do not have access to the MSPHL Courier, samples may be sent via FedEx. If utilizing FedEx to send in samples, ensure that they will not arrive in Jefferson City on Saturday, Sunday, or a holiday. Please contact the Molecular Unit at the MSPHL and a FedEx shipping account number will be provided for your facility to use.

## **DO NOT SHIP CLINICAL SPECIMENS VIA UPS**

### **Please send all specimens to this address:**

Missouri State Public Health Laboratory  
101 North Chestnut Street  
Jefferson City, MO 65102  
Phone# 573-751-3334, Fax # 573-526-2754