MISSISSIPPI STATE DEPARTMENT OF HEALTH

MSDH SARS-CoV-2 Enhanced Surveillance Submission Recommendations

A. Surveillance Overview:

The Mississippi State Department of Health (MSDH) is seeking collaboration from external partners in support of SARS-CoV-2 enhanced surveillance. The current objectives of the MSDH's SARS-CoV-2 sequencing are:

- Investigating virus transmission dynamics and introductions of novel genetic variants that might have different transmissibility, pathogenicity, clinical outcomes, vaccine or treatment resistance or potential re-infection;
- Investigating the relationship between clades/lineages and epidemiological data such as transmissibility and disease severity or risk groups to guide public health action;
- Assessing relatedness of viral strains within epidemiological clusters and supporting contact tracing and other public health interventions.

B. Submission Requests for Surveillance Testing:

1. The MSDH requests that laboratories performing SARS-CoV-2 molecular or antigen testing submit up to 20 SARS-CoV-2 positive specimens every week to the Mississippi Public Health Laboratory (MPHL) to assist with enhanced virus surveillance.
    - The specimens should have been collected within the same week as the shipment and should represent the variety of geographic, demographic (e.g., age, race) and clinical characteristics (e.g. disease severity and outcome) served by the facility.
    - Facilities that utilize direct swabs for testing must collect a second respiratory specimen that is immediately placed in an appropriate transport media (VTM, UTM or sterile saline) from the patient for submission to the MPHL. Do not submit previously tested direct swabs or swabs without transport media.
2. The MSDH requests that laboratories performing SARS-CoV-2 molecular or antigen testing submit specimens meeting at least one of the below criteria immediately to the MPHL:
    - Suspected re-infection identified by Polymerase Chain Reaction (PCR) testing. Re-infection is defined as the following:
        - Persons with or without COVID-19–like symptoms ≥90 days after initial infection/illness with no evidence of another cause of infection AND a positive PCR.
        - Persons with COVID-19–like symptoms 45–89 days after initial infection/illness with no evidence of another cause of infection AND a positive PCR.
    - Multitarget PCR assay (e.g., ThermoFisher TaqPath COVID-19 Combo kit), with S gene dropout (S gene negative) and other gene target(s) positive with Cycle Thresholds ≤30.
    - Vaccinated individuals with subsequent laboratory-confirmed SARS-CoV-2 infection ≥2 weeks following receipt of the second dose in a 2-dose series, or ≥2 weeks following receipt of one dose of a single-dose vaccine.

- Known or suspected outbreak event

NOTE: A minimum of 3 specimens/maximum of 5 specimen may be submitted from an individual outbreak for surveillance testing

C. Specimen Requirements for Surveillance Testing:

1. Respiratory specimens, including nasopharyngeal, oropharyngeal, nasal mid-turbinate, and anterior nares (nasal swab) specimens placed immediately after collection into a sterile transport tube containing 2-3mL of either viral transport medium (VTM), a Universal Transport Medium (UTM) appropriate for viruses or sterile saline.
   Note: The MPHL cannot accept direct swabs for surveillance testing.
2. Submit the original specimen or at least 500 µL of the original specimen in a screw cap tube.
3. Label the tube with a minimum of the patient's first and last name and Date of Birth.
4. Package specimens as Category B. Specimens may be shipped refrigerated if within 72 hours of collection or frozen on dry ice if more than 72 hours after collection. Please contact the MPHL Training Office at 601-576-7582 if assistance is needed with a dry ice shipment.
5. Complete a MSDH SARS-CoV-2 Virus Surveillance form, 1198- S for each specimen.

D. Surveillance Testing:

Specimens submitted for surveillance that confirm positive by PCR (Ct<30) will be further testing using whole genome sequencing. The confirmation PCR result will be reported back to the submitter. Surveillance sequencing results will be reported back to the MSDH Office of Epidemiology; surveillance testing is not intended to replace clinical diagnosis but is performed for additional virus characterization that is essential to guide the public health pandemic response.

E. Assistance Requests:

The MSDH can provide participating sites with a shipper, ice packs and a small amount of respiratory specimen collection devices to facilitate this surveillance activity. Please contact the MPHL at Labtraining@msdh.ms.gov if your facility is interested in obtaining surveillance supplies.