SARS Surveillance "Kick Off" Call
June 26, 2025

Call Summary

Quick link to Guidance: National SARS-CoV-2 Strain Surveillance (NS3)

Contact for Questions or Suggestions:
APHL Infectious Disease Contact: infectious.diseases@aphl.org
CDC Coronavirus and Other Respiratory Viruses Division (CORVD)
Natalie Thornburg, PhD nax3@cdc.gov
Clinton Paden, PhD – Bioinformatics lead fep2@cdc.gov
Lydia Atherton, DVM PhD – Sequencing lead ibz1@cdc.gov
Peter Cook, PhD – Specimen metadata lead ooj4@cdc.gov
Functional box sarsseqshipping@cdc.gov

SARS Surveillance
Presented by Natalie Thornburg, *Chief, Laboratory branch, CORVD*

SARS-CoV-2 Surveillance Goals
The 3 surveillance goals have not changed since last year. CDC needs to meet two of these goals: phenotypic characterization and national genetic surveillance. The jurisdictional surveillance goal is optional and can be considered if it matches objectives within your jurisdiction

Goal#1: Phenotypic or Viral Characterization
- How antigenically similar are the viruses that are circulating right now to vaccine composition
- CDC needs viral isolates for:
  - Animal inoculation and antigenic cartography
  - Neutralization studies with human post vaccine sera

- CDC needs this information because the virus is always evolving. This data is used by FDA VRBPAC, and CDC ACIP and provides critical information if a new formulation of the vaccine is required
- To meet this goal, CDC needs SARS-CoV-2 specimens shipped to CDC's NS3 program for sequencing, isolation and further characterization
- CDC needs these specimens even if laboratories have already sequenced them

Goal #2: National Genetic Surveillance
- National genetic surveillance helps meet the following:
  - Population-level molecular epidemiology/virus monitoring
  - Novel variant detection
- To meet national genetic surveillance goals, CDC needs approximately 3000 sequences bi-weekly
  - Can be sequenced by PHLs
  - Can be sequenced by partners
  - Can be shipped to NS3 and sequenced by CDC
- These sequences are critical to support nowcast modelling estimates
- Sequences must be high quality, with good coverage over the spike gene
- Timely sequencing is important

- Actions that must be taken by laboratories to meet this goal if performing their own sequencing:
  1. Sequence the specimen
  2. Upload to a repository
  3. Tag the sequence as baseline (instructions are in the guidance document)

Goal #3: Jurisdictional Emerging Lineage Variant Detection (Optional)

- This jurisdictional goal not necessary for national goals
- Goal is invariant to population, so is the same for every jurisdiction (90 specimens bi-weekly)
- It is a target number provided should your jurisdiction prioritize meeting this goal

Current State of SARS-CoV-2 National Surveillance

Circulation of SARS-CoV-2 ebbs and flows, but continues year-round. We tend to see a summer peak and winter peak, but this virus really requires year-round surveillance. To meet phenotypic characterization and national genetic surveillance goals, CDC needs both specimens and sequences year-round.

During times of low circulation we often see the most diversity. Sequences are more homogenous during peaks, so there is no need to ramp up sequencing during peaks. Instead of testing a percentage of specimens, it is more important to try to meet the goal number year-round.

Fast turn-around time is really important to maintain national surveillance goals and enable nowcast modeling. Many labs are generating sequences, but it is taking up to 12 weeks to get the data uploaded into the data repositories. The sequencing data is most useful in the 4-6 week window to be able to use in growth rate estimates – as variant proportions can change rapidly.

Overall, increased submission of sequences and specimen through NS3 is needed. *There is no punitive action for not contributing – but participation is very much needed and appreciated.*

- There has been a massive drop-off in SARS-CoV-2 sequences since September of last year. CDC needs approximately 2000-3000 sequences bi-weekly to be statistically comfortable - but the last couple weeks CDC has only had about 400 sequences.
- To accommodate these significantly lower numbers, CDC is currently trying to validate some new analysis methods that require less sequence data. CDC is going to have to change the way they analyze the data because they do not have enough sequences to maintain the nowcast predictive models. When there are fewer sequencing numbers, really small differences in sequence numbers can make a big difference. A jump from 100 to 300 sequences nationally can have a significant increase in ability to detect a circulating variant.
- The 90,000 sequences that were being submitted during the omicron wave were extremely high. That many sequences are not required to meet surveillance efforts, but where we are at now is not sufficient.
- Commercial lab contracts to provide sequencing data to CDC are now gone so CDC no longer has access to that data and are even more reliant on PHL sequence data or specimens sent to CDC for sequencing.

State Specific SARS-CoV-2 Reports

CDC generated state-specific reports this year. They were sent to the laboratory directors, so please check with your director or APHL if you have not seen the report for your jurisdiction.

- As a reminder, Table 1 from the NS3 Guidance Document shows the target numbers for sequencing and target numbers for specimen shipping for each state.
- CDC also has sequence quality recommendations in the guidance document. These are not requirements, but lower quality data cannot be used for national surveillance efforts. CDC can assist with troubleshooting if labs are experiencing lower quality sequence data.

SARS-CoV-2 Support from CDC

- Reagent Opportunity - CDC has some resources available temporarily to help support laboratories with SARS-CoV-2 sequencing through the International Reagent Resource (IRR). **All orders must be placed by September 16, 2025** (the money expires at the end of the fiscal year). The supplies **MUST BE USED for SARS-CoV-2 sequencing.** Labs can request access to CORVD reagents in IRR. Please see additioanl information at the end of this document.
- Funding - last year CDC did put $22 million worth of funds into ELC (Program J) to support SARS-CoV-2 sequencing. Please review whether funds may be available to your laboratory.

RSV Surveillance Goals Reminder
With the availability of monoclonal antibody treatments, CDC needs to make sure the virus isn't drifting to ensure continued efficacy. RSV surveillance does not need to be as nearly as robust as it does for SARS-CoV-2. CDC uses the New Vaccine Surveillance Network (NVSN), which consists of 7 sites, to support RSV surveillance. However, it is still requested that PHLs ship a small number of RSV positive specimens to CDC (up to 10 RSV positive specimens each quarter).

Questions & Answers

Q: Is it safe to say that the US is maintaining its national genomic surveillance program for SARS-CoV-2? Via NS3 and other means?
A: With current sequence submissions, there is insufficient power to maintain the goal level of surveillance, but CDC is continuing to try to achieve adequate surveillance. Changes in approaches and goals will likely need to be made.

Q: Is baseline surveillance still feasible?
A: If people are still getting tested, yes!

Q: Are there any changes to recommendations of sequence databases to submit to, particularly after GISDAID has started removing data access to certain groups (e.g. Outbreak.info)?
A: CDC continues to pull data from multiple repositories; this is for laboratories to decide. CORVD still pulls data from GISAID, and also from NCBI (GenBank, BioSample, SRA).

Q: Can the "no research" restriction be reconsidered if ELC funding continues in the future? It currently feels restrictive, and for some, it's unclear where the line is between genomic analysis for public health purposes and what might be considered research
A: (this question is under consideration)

Q: Regarding the ELC funds — how would we be able to track them? We're seeing money allocated in J that we're trying to account for, but it doesn't appear in CAMP. Should we be looking in the award portal?
A: (this question is under consideration; more information will be provided when available.)

SARS-CoV-2 Sequencing Reagents Available from IRR – Ordering Instructions

CDC has reagents available through the International Reagent Resource (IRR) to support SARS-CoV-2 sequencing. All orders must be placed by **September 16, 2025**. Below are the three ordering scenarios and the steps required for each:

Ordering Options

1. SPHL has an existing IRR account and can see the item(s) in the catalog:

- Log in to your IRR account and search for the desired item(s).
- If the item(s) are visible, you may place the order directly through the system.
- Your order will be routed to CORVD for approval.

2. SPHL has an existing IRR account, but the catalog item(s) are not visible:

- Send an email with the following information to Lydia Atherton (ibz1@cdc.gov) to request access to the CORVD domestic level BK:
    - Lab Site
    - Point of Contact
    - IRR Account Number

3. SPHL does not have an existing IRR account:

- Register for an IRR account here
- After registering, send Lydia Atherton (ibz1@cdc.gov) an email with the following details so that your access can be approved and subsequent order tracked:
    - Lab Site
    - Registration Point of Contact
    - IRR Account Registration Date

Please ensure your requests are submitted well before the deadline to allow time for processing and approval. If you have any questions or need assistance, feel free to contact Lydia Atherton directly. Please also see this letter provided for related information on product warranty dates.