Laboratory Outreach Communication System (LOCS) Call

Office of Laboratory Systems and Response (OLSR)

20 April 2026, at 3:00 P.M. ET

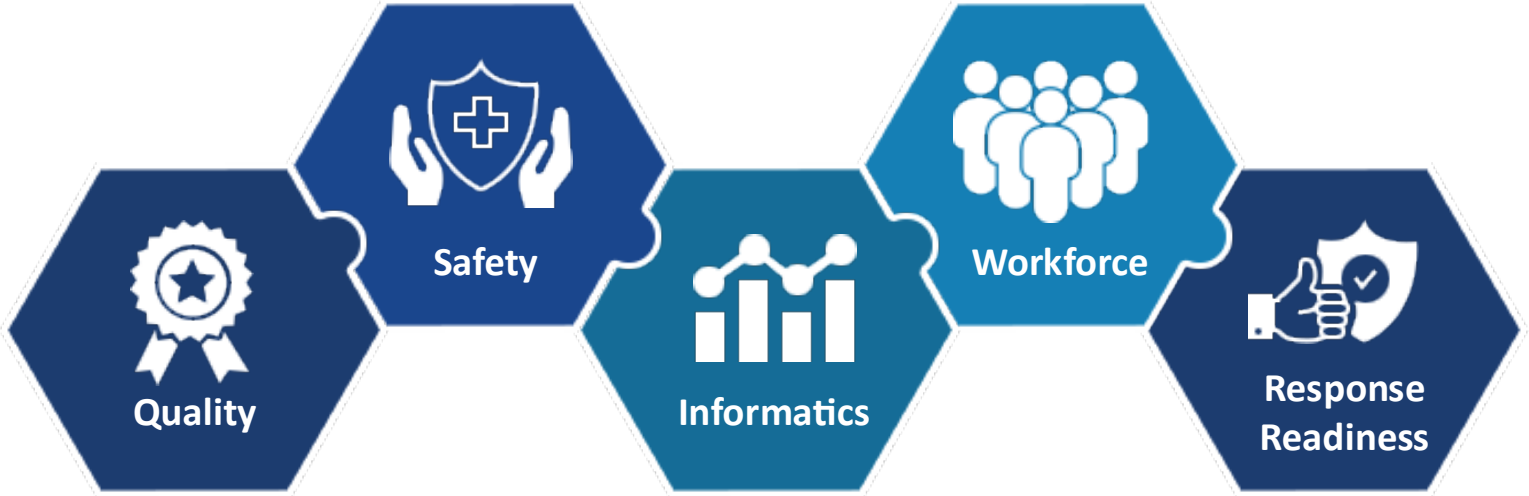
Thank you for joining, we will begin the call momentarily. This call will be recorded.


Lab Week
2026
LABORATORY
PROFESSIONALS
SAFE GUARD HEALTH.

Agenda

- **Welcome & Announcements**
  - Jasmine Chaitram, CDC, Office of Laboratory Systems and Response (OLSR)
- **Measles Update**
  - Sara Elizabeth Oliver and Jessica Prince Guerra, CDC Measles Response Team
- **Virtual Reality Training on Specimen Handling**
  - Joseph Rothschild, CDC Division of Laboratory Systems (DLS)
- **Specimen Submission to CDC**
  - Valerie Albrecht, CDC OLSR

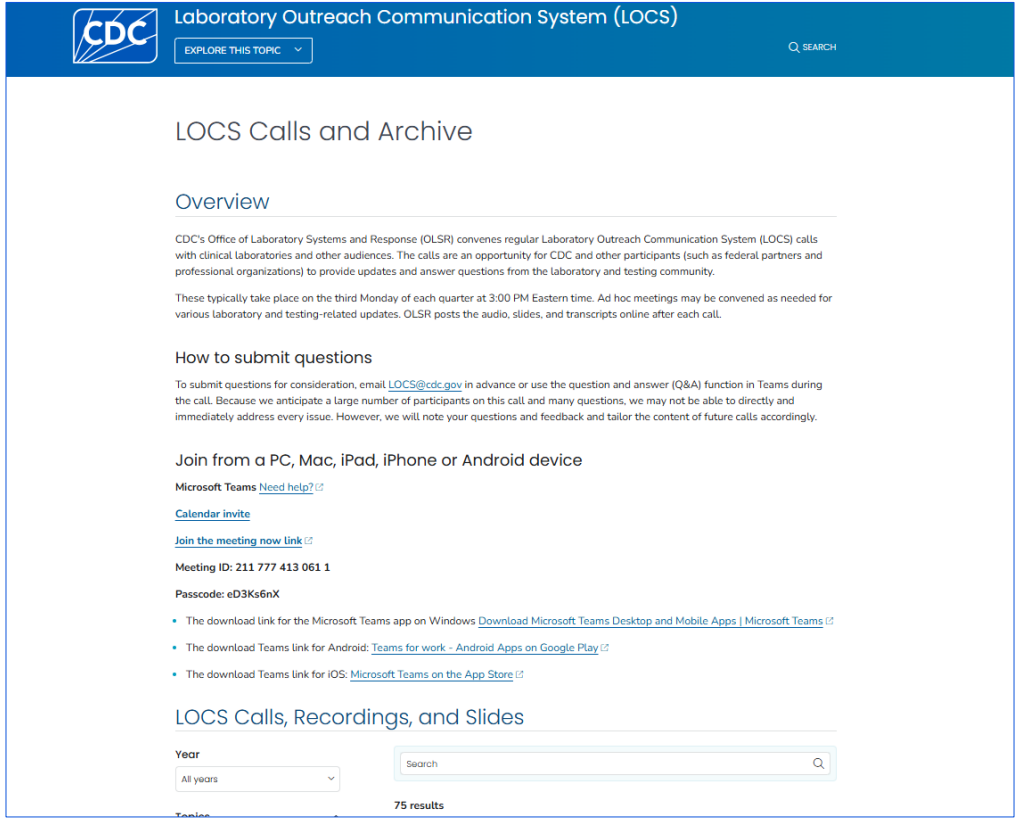
Office of Laboratory Systems and Response (OLSR)



LOCS Calls

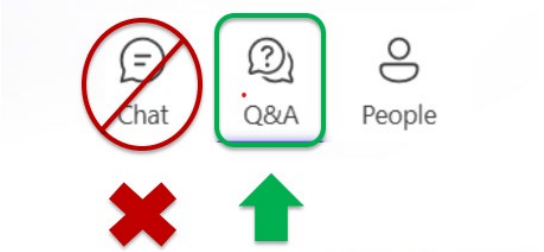
- **On this page, you find:**
  - LOCS Call Information
  - Transcripts
  - Slides
  - Audio Recordings

[LOCS Calls and Archive | LOCS | CDC]



How to Ask a Question

- **All participants are muted and chat feature is disabled**
- **Using the Microsoft Teams System**
  - Click the Q&A button in the Microsoft Teams meeting
  - Type your question in the Q&A box and submit it
  - Please do not submit a question using the chat button
  - For non-laboratory testing questions, please contact CDC-INFO at cdc-infostaff@cdc.gov
  - For media questions, please contact CDC Media Relations at media@cdc.gov
  - If you are a patient, please direct any questions to your healthcare provider



Announcements

Access to ISO 35001:2019—Biorisk Management for Laboratories

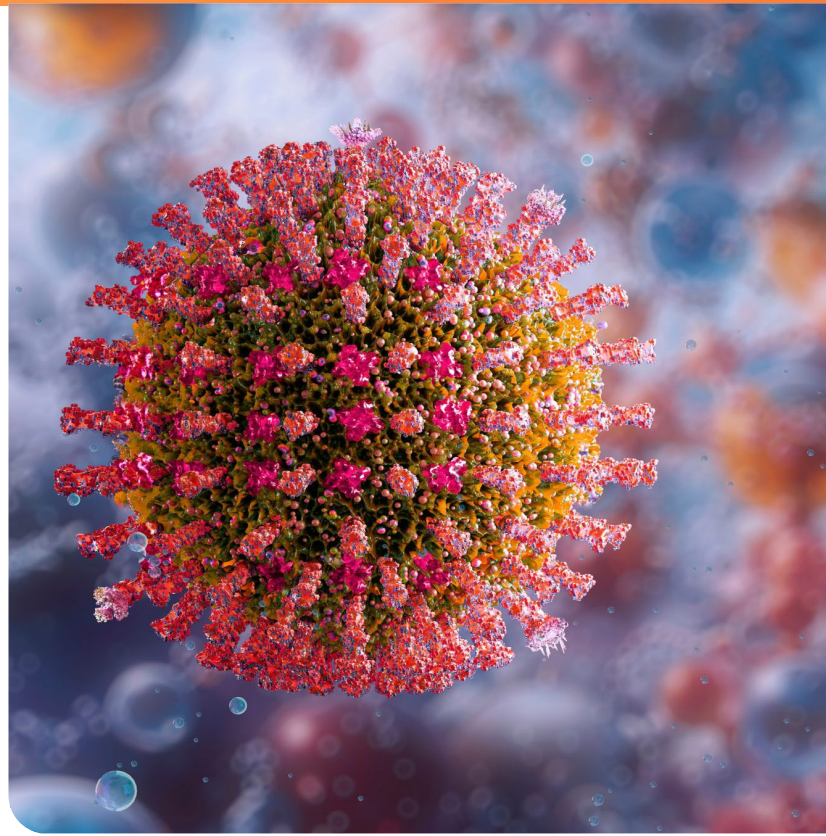
- **If your institution is interested in receiving access to ISO 35001:2019**
  - Designate a point of contact (POC) responsible for biorisk management at your institution (e.g., laboratory director, biosafety officer, etc.)
  - POC will email the DLS Biosafety mailbox (DLSBiosafety@cdc.gov) expressing interest and include your institution's name and address
  - POC will be notified if your institution is approved and coordinate distribution using the names, email addresses, and job titles of individuals who should receive access
  - If you have any questions or require further information, contact DLS at DLSBiosafety@cdc.gov

Measles Update, April 2026

Measles Response Team

2025 MEASLES RESPONSE

Laboratory Outreach Communications System (LOCS) Partner Call



Capt. Sara Oliver, MD

Senior Science Advisor

Jessica Prince-Guerra, PhD

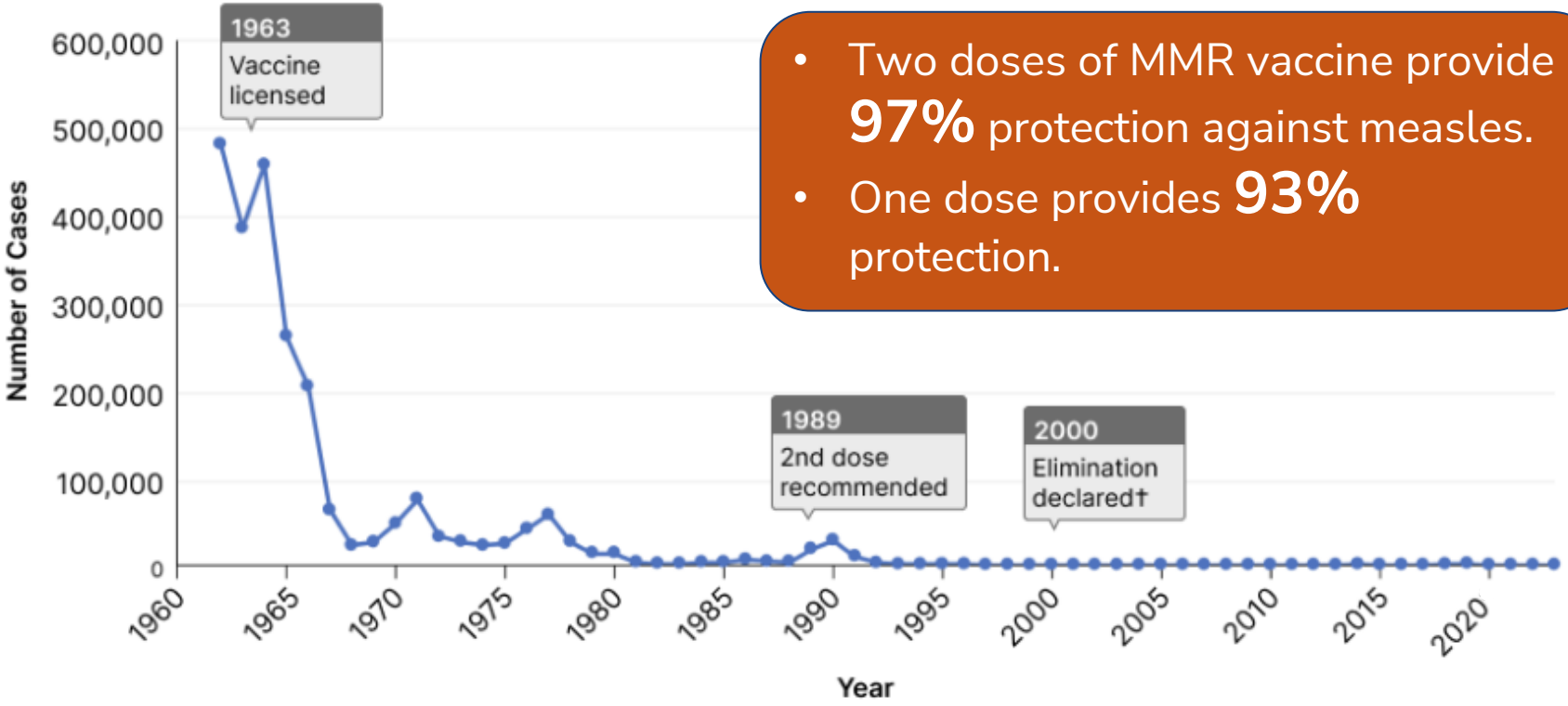
Laboratory Task Force Scientific Advisor

National Center for Immunization and Respiratory Diseases
U.S. Centers for Disease Control and Prevention

Situational Update

Update weekly from https://www.cdc.gov/measles/data-research/index.html

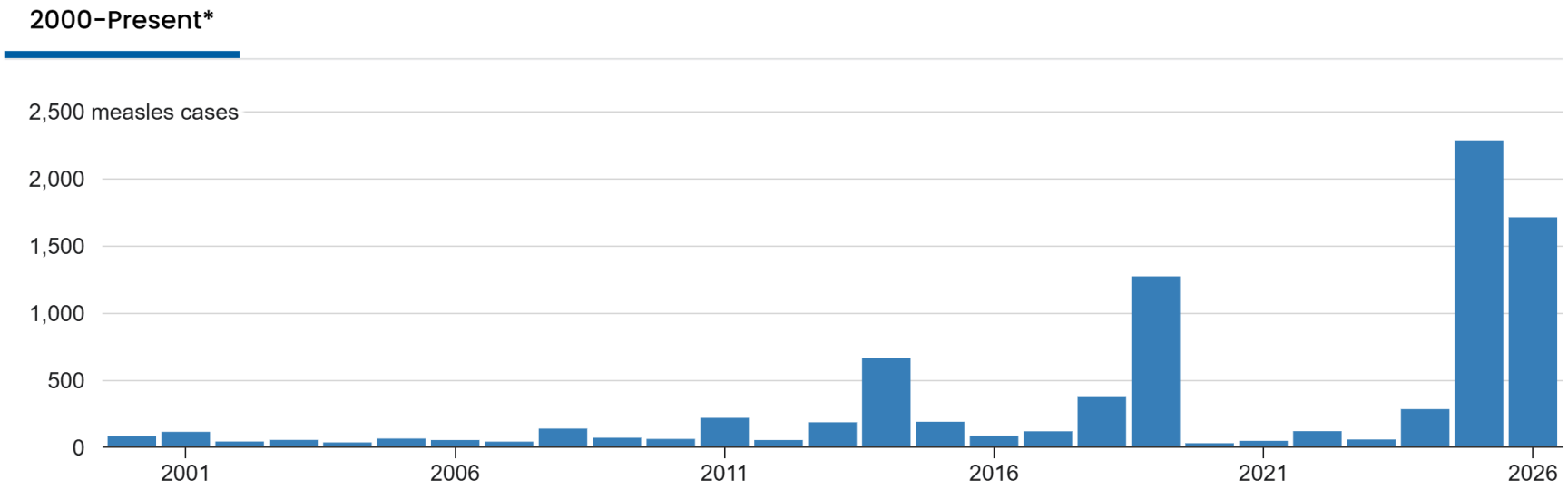
History of Measles Cases in the U.S., 1962–2023



- Two doses of MMR vaccine provide **97%** protection against measles.
- One dose provides **93%** protection.

†Measles was declared eliminated in the U.S. in 2000 by WHO/PAHO. Elimination is defined as the absence of endemic measles transmission in a region for ≥12 months in the presence of a well-performing surveillance system.

Annual Measles Cases, United States, 2000-2026

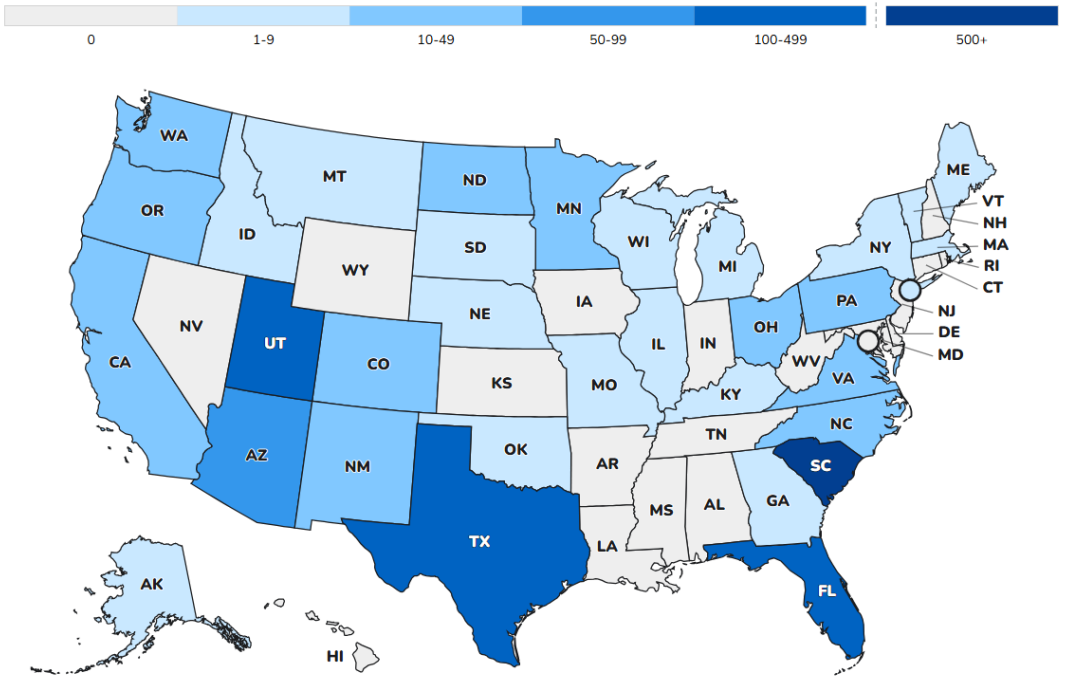


Measles Cases and Outbreaks | Measles (Rubeola) | CDC

2026 data as of April 9, 2026

AS OF APRIL 16, 2026,

1,748 confirmed measles cases have been reported across 33 jurisdictions in the United States

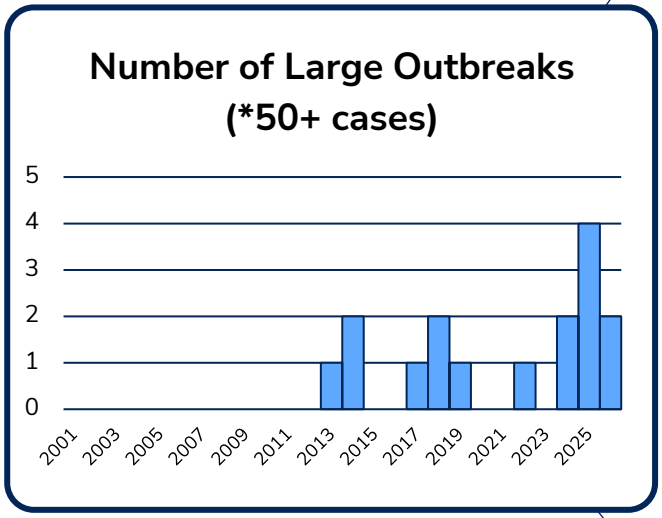


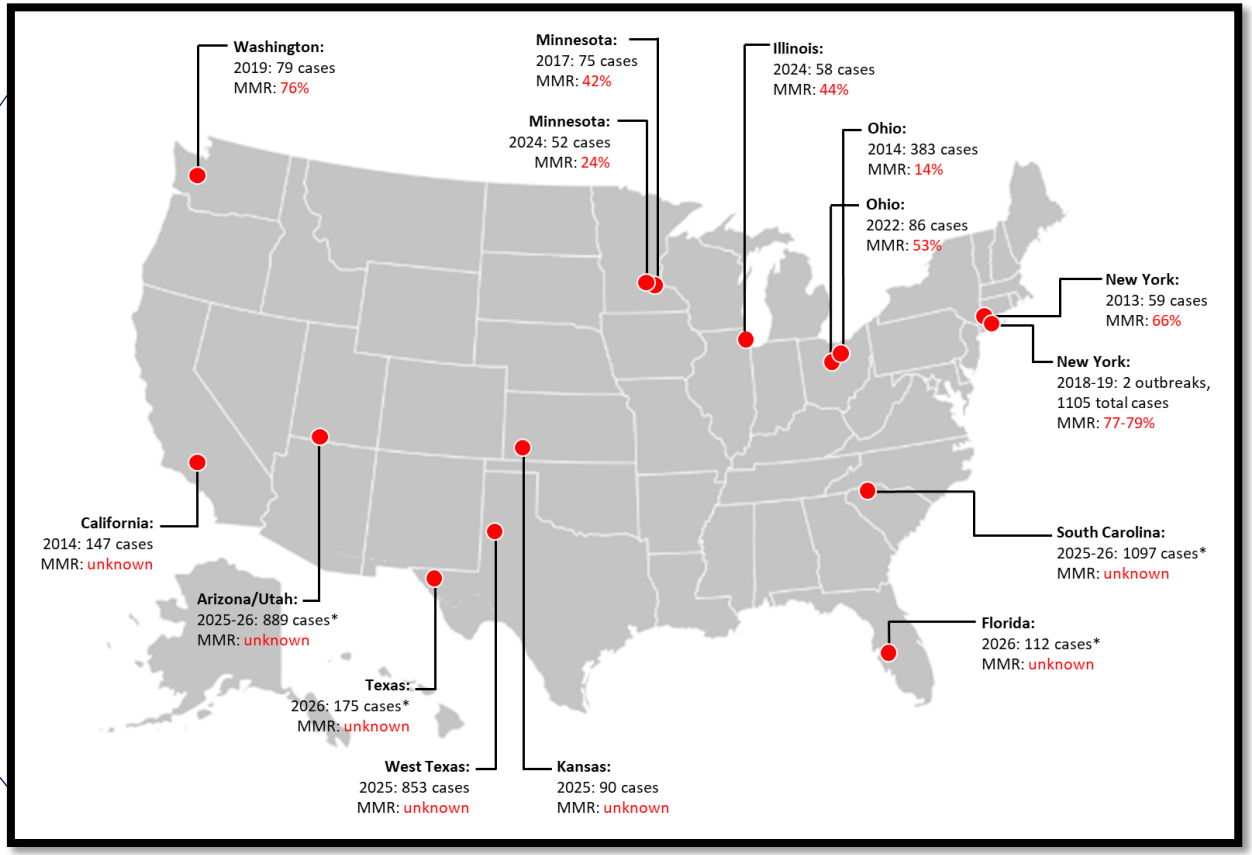
cdc.gov/measles/data-research/index.html

Epidemiology of U.S. measles cases: in 2025 (n=2,287) and in 2026 (n=1,714)

	2025 (full year of 2025)	2026 (as of April 9th, 2026)
Age		
Under 5 years	584 (26%)	354 (21%)
5-19 years	1,015 (44%)	888 (52%)
20+ years	675 (29%)	467 (27%)
Age unknown	13 (1%)	5 (0%)
Vaccination Status		
Unvaccinated or Unknown	93%	92%
One MMR dose	3%	4%
Two MMR doses	4%	4%
Hospitalizations	11% of cases (243 of 2,287) for management of measles complications	6% of cases (96 of 1,714) for management of measles complications
Deaths	2 in Texas and 1 in New Mexico	0

Nearly all large (>50 case) outbreaks more in closeknit communities with low vaccination coverage (2000 – 2026)





* Outbreaks with 50 or more measles cases, 2000-2026

Data as of April 9, 2026

Clinical Testing

Establishing a Measles Diagnosis

For clinicians seeing patients with measles compatible symptoms, consider the following:

Clinical
Case Definition

Vaccination
History

Travel or Exposure
History in Prior 21 days

Testing for measles

- Diagnostic evaluation of measles should include:
  - Both molecular testing (rRT-PCR) from NP/OP swab and serology (IgM)
  - If the testing is >3 days after rash onset, consider getting NP/OP *and* urine for rRT-PCR, to improve sensitivity
  - Consulting public health authorities early when measles is suspected can help ensure that the right tests are done, and specimens are routed appropriately

https://www.cdc.gov/measles/php/laboratories/index.html

Measles testing with RT-PCR is preferred.

Acute Disease

	Measles Tests		When to Collect?
PCR	Nasopharyngeal (NP) or Throat (OP) Swab		As soon as possible upon suspicion of measles: ideally **0-3 days** after rash onset, up to **10 days** after rash onset.
PCR	Urine		**Within 10 days** of rash onset **Collecting a urine specimen along with an NP/OP swab may improve test sensitivity, especially if at the end of the PCR detection window.*
IgM	Serum		Collect with specimen for PCR. Can be negative up to 3 days after rash onset. IgM **can be detected for 6–8 weeks** after acute measles.

Measles IgM antibody testing has limitations and should be used with RT-PCR.

Acute Disease

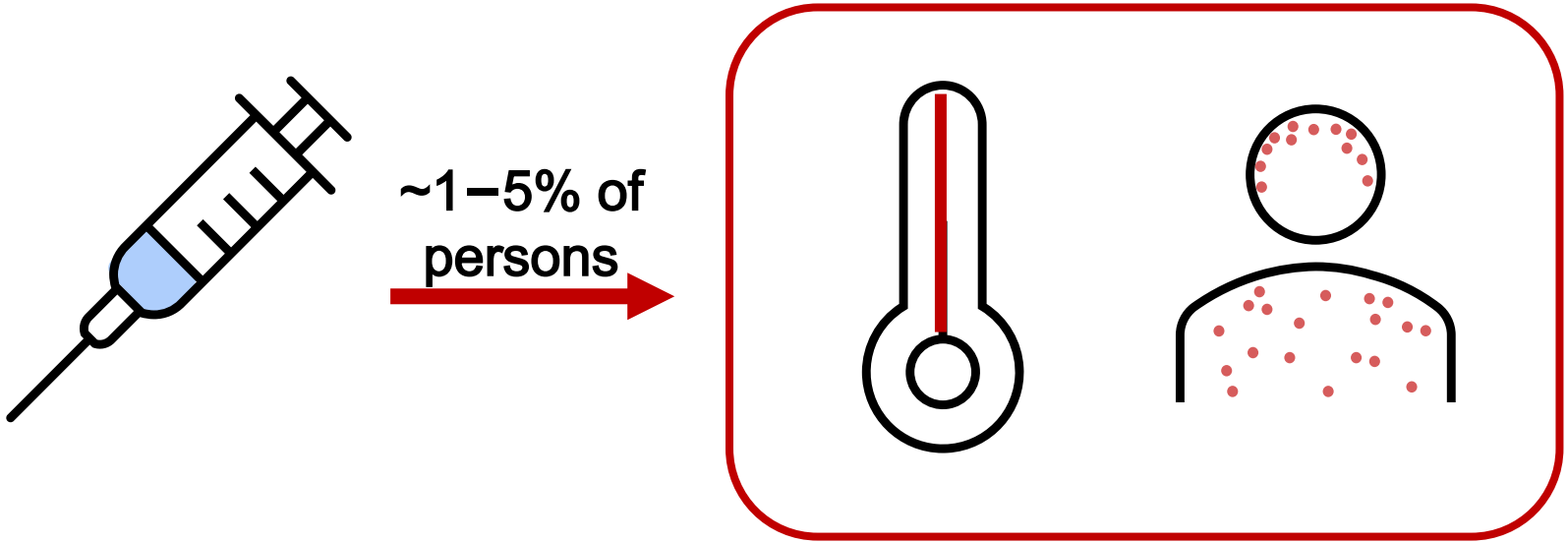
Measles Tests		When to Collect?
PCR	Nasopharyngeal (NP) or Throat (OP) Swab 	As soon as possible upon suspicion of measles: ideally **0-3 days** after rash onset, up to **10 days** after rash onset.
PCR	Urine	**Within 10 days** of rash onset **Collecting a urine specimen along with an NP/OP swab may improve test sensitivity, especially if at the end of the PCR detection window.*
IgM	**Serum** 	Collect with specimen for PCR. Can be negative up to 3 days after rash onset. IgM **can be detected for 6–8 weeks** after acute measles.

IgM testing alone can pose challenges in settings with low measles incidence.

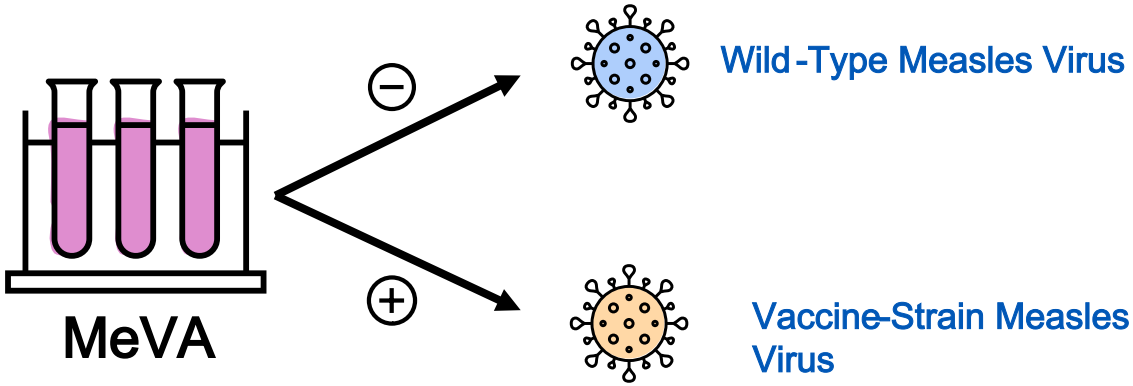
- Cross-reactivity with other causes of febrile rash illness has been documented*
- False positive results are more common when the likelihood of measles is low:
  - There isn't local active transmission and patients have not traveled†
  - Patients without known exposure have been fully vaccinated

*Jenkerson SA et al. *N Engl J Med*. 1995;332(16):1103-1104.
† Ciccone FH et al. *Rev Soc Bras Med Trop*. 2010;43(3):234-239.
Hiebert J et al. *J Clin Microbiol*. 2021;59(6):e03161-20.

After MMR vaccination, some people develop fever and rash that appears similar to a measles infection.



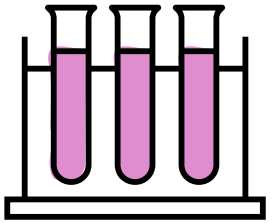
Measles Vaccine Assay (MeVA) detects vaccine-strain measles virus and can distinguish between detection of vaccine strain vs wild-type virus



MeVA testing should be performed when there is epidemiologic risk of measles infection in a recent vaccine recipient.

- Testing a person with mild fever and rash after recent vaccination is not necessary if there is no epidemiologic risk of measles

- If there is epidemiologic risk (international travel, local outbreak, known exposure), MeVA should be performed after standard RT-PCR

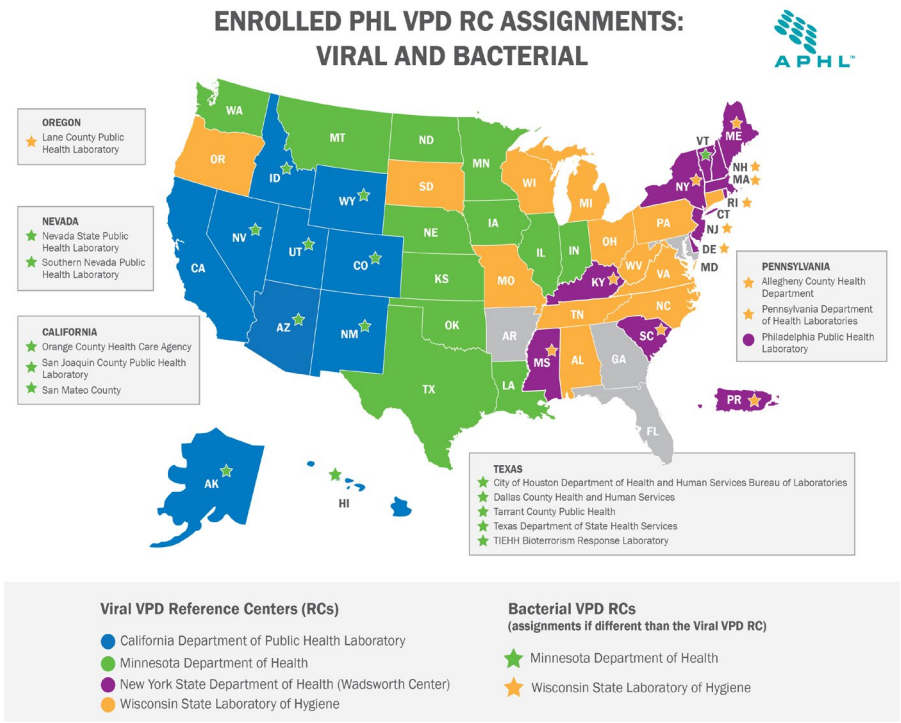


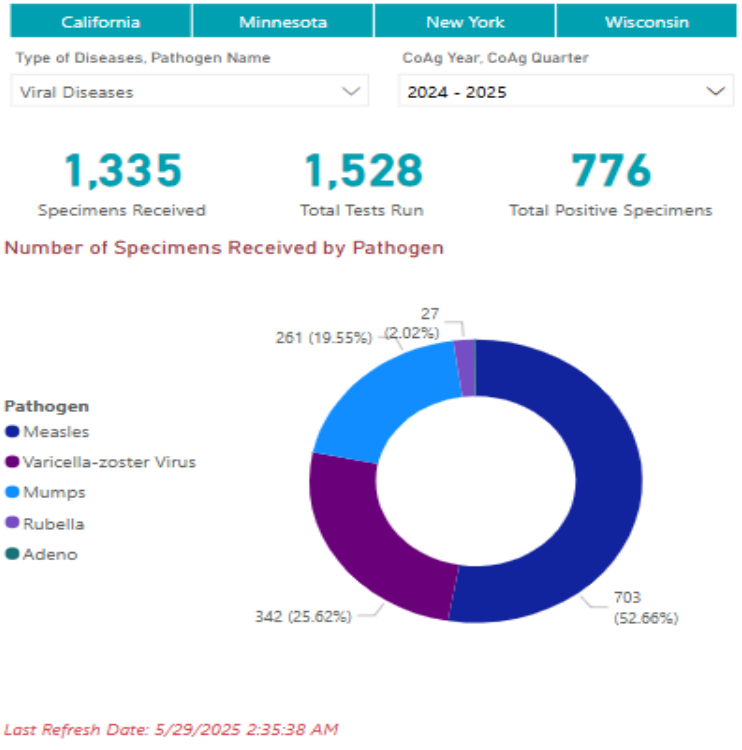
VPD surveillance and testing

- **Four national Vaccine Preventable Diseases Reference Centers (VPD RCs) established in 2013 to provide**
  - standardized diagnostic testing
  - genetic characterization for select VPDs to support jurisdictions & CDC

- **VPD RC services have expanded and diversified**
  - measles vaccine specific PCR assay (MeVa)
  - mumps (molecular) and VZV (serology and molecular testing)
  - adenovirus and enterovirus surveillance
  - genetic characterization of measles and mumps

Viral Vaccine Preventable Diseases Reference Centers and Testing





[Vaccine Preventable Diseases]

Questions about measles lab testing

https://www.cdc.gov/measles/php/laboratories/index.html

Questions about measles lab testing

Submitting specimens

In addition to the information found on the CDC Infectious Diseases Laboratories Test Directory entry for each test, follow the guidance below for specimen collection and shipping. The instructions also include points of contact for the tests.

Specimen shipping to CDC

If instructed to send specimens to CDC from within the Unites States, you must download and complete the CDC Specimen Submission Form (50.34). Please fill out a form for each specimen submitted. Submitters are encouraged to use the CDC Specimen Test Order and Reporting (CSTOR) Web Portal to submit specimens.

Provide the following for **domestic** and **international** shipments:

Measles – Recommendations for Testing for Clinicians

Measles is a mandatory, immediately notifiable disease. Please report confirmed and probable cases of measles to your local health department.						
	Preference	**Test**	**Specimen**	**Indication**	**Timing**	**Notes**
	Preferred Test	RT-PCR	**Nasopharyngeal (NP) or throat (OP) swab** *(preferred)* Urine can be	Acute Disease	• A specimen for detection of virus should be collected as soon as possible upon suspicion of measles. • Specimen should be ideally collected within 3 days after rash onset but can be collected up to 10 days	• NP/OP swab collected <3 days after rash onset is the preferred specimen. Ideally, RT-PCR should be performed for all suspect measles cases identified within 10 days of rash onset. • Collecting a urine specimen along with an NP/OP swab may improve test sensitivity, especially if at the end of

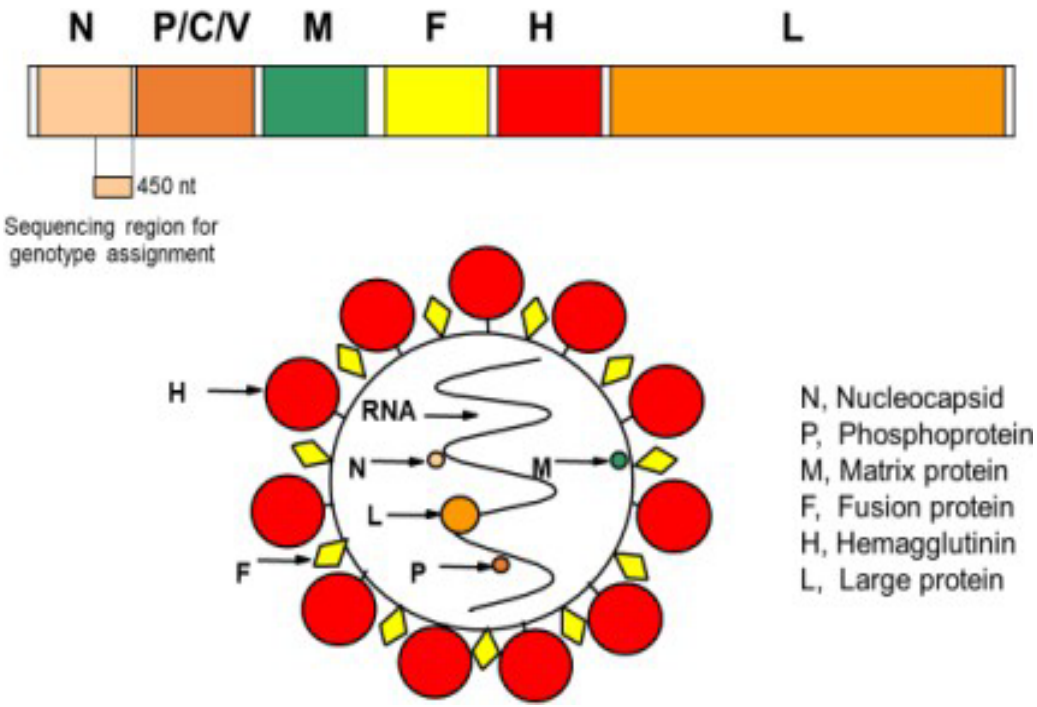
https://www.cdc.gov/measles/php/laboratories/index.html

Measles Virus (15,894 nucleotides)

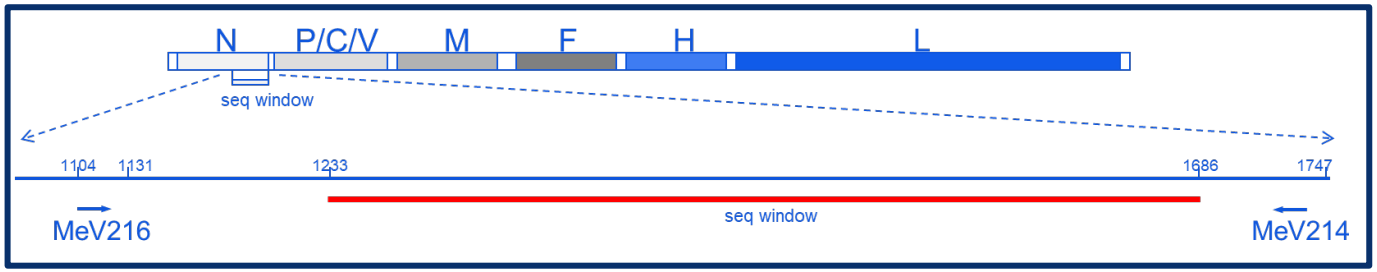
Measles virus is more conserved than other RNA viruses.

N450 sequencing determines the genotype and the distinct sequence ID (DSId)

Only B3 and D8 wild-type genotypes detected since 2021



Measles N450 genotyping



- Targets a 450-nucleotide fragment of the nucleoprotein (N) gene of the measles virus
  - Global standard method for genotyping measles viruses

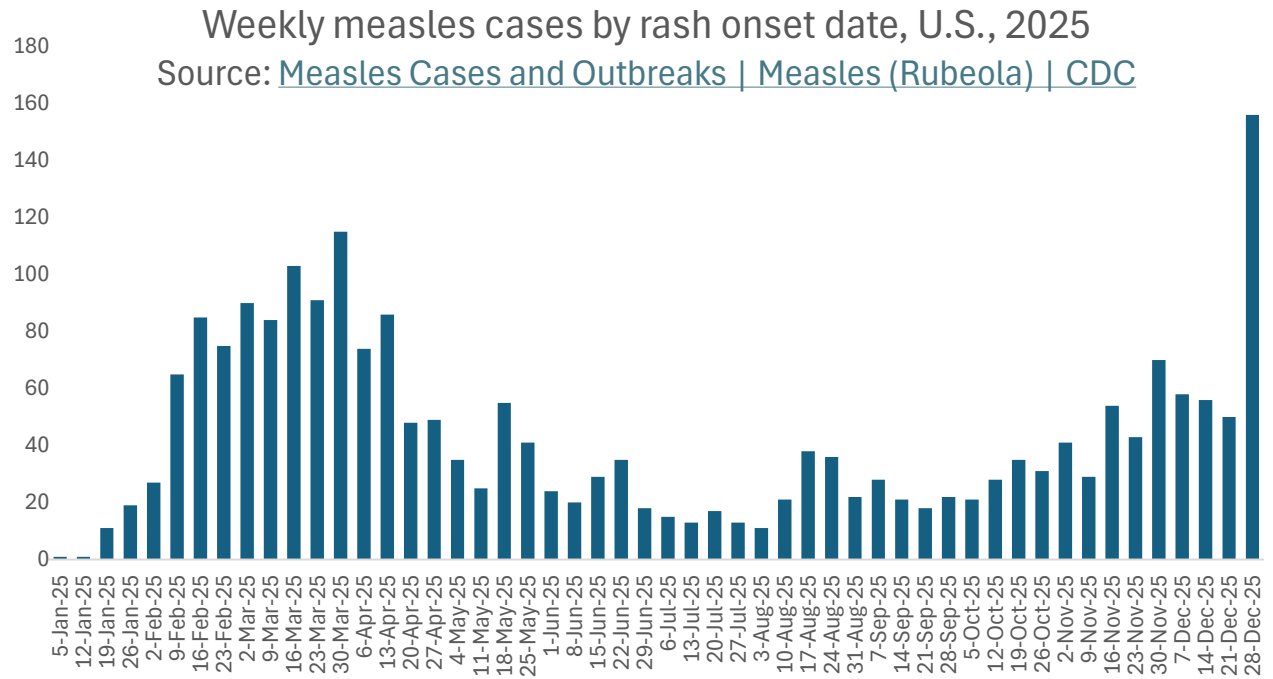
- Distinct Sequence Identifier (DSId) is assigned to each sequence
  - Unique integer assigned to each unique sequence of the measles virus N-450 region.
  - Assigned using the Measles Nucleotide Surveillance database (MeaNS2)

- Identifies variations within genotypes to help track transmission patterns and support epidemiological investigations.

- **There are limitations to N450 genotyping. In the past the diversity within N450 sequencing data was sufficient to discern between chains of transmission. However, there has been an overall global consolidation in measles genotypes over time with only D8 and B3 genotypes in global circulation.**

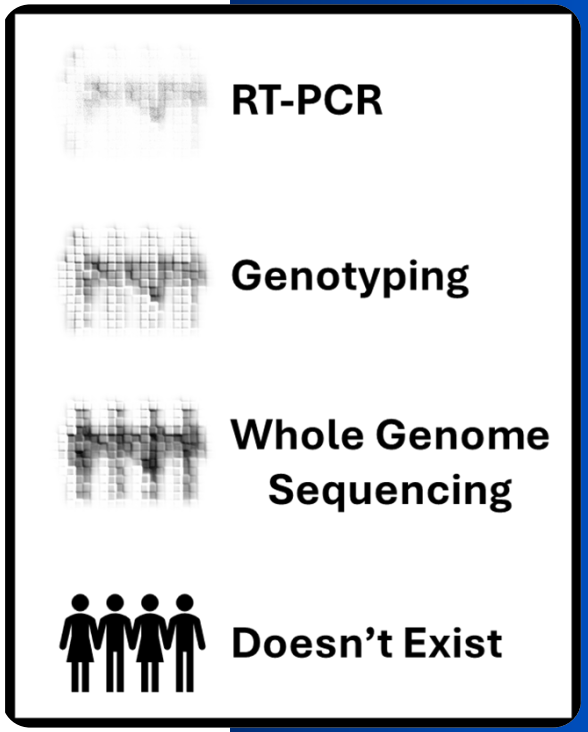
Measles Cases Reported in 2025

- A majority of cases sequenced during 2025 were the same N450 sequence, genotype D8-9171

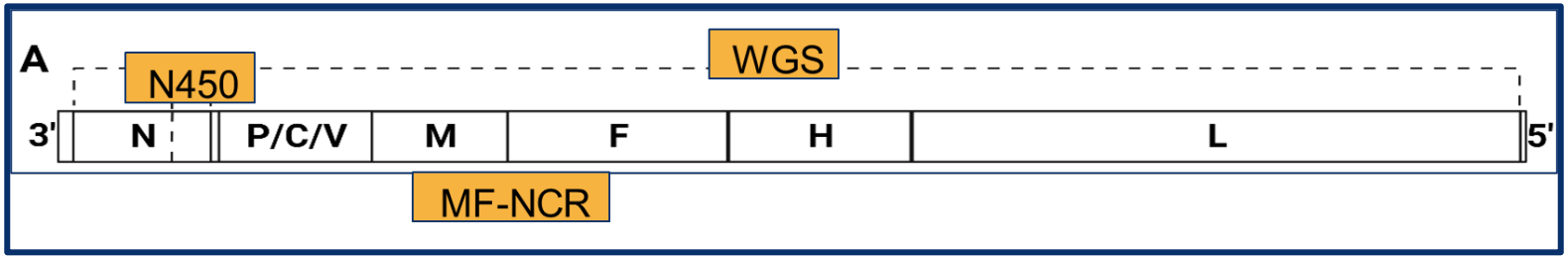


Whole genome sequencing can help but is best interpreted in combination with epidemiological information

- Whole genome sequencing allows for better resolution of transmission chains than genotype alone.
- Highly distinct sequences provide additional support for ruling out transmission links.
- Similar or identical sequences ***may*** suggest a possible link; however, epidemiologic data are critical for confirmation.
- Widespread and repeated introductions from the same lineage make it challenging to identify separate transmission chains



Measles Whole Genome Sequencing (WGS)



- **Goal of sequencing beyond N450:** Improve resolution by acquiring additional base changes that may differentiate genetic lineages.

- **MeV sequencing challenges**
  - Important that the sequence that is generated is highly accurate due to the slow rate of evolution; viruses across outbreaks may be genetically very similar.
  - The MF-NCR, a known variable region in the genome, is technically difficult to sequence and assemble, but may provide greater resolution for the analysis. We are still investigating how much resolution that region will add.
  - Analyses of transmission dynamics are very sensitive to sampling bias and as more sequences are added, the phylogenetic tree topology can change. Therefore, a comprehensive and wholistic analysis is the most accurate way to analyze the outbreaks.

Thank you.

For more information, contact CDC
1-800-CDC-INFO (232-4636)
TTY: 1-888-232-6348 https://www.cdc.gov/
Follow us on social **@CDCgov**

Virtual Reality Training on Specimen Handling

Joseph Rothschild, CDC Division of Laboratory Systems (DLS)

OneLab VR

VR Specimen Handling Scenarios

In these vitual scenarios, learners will:

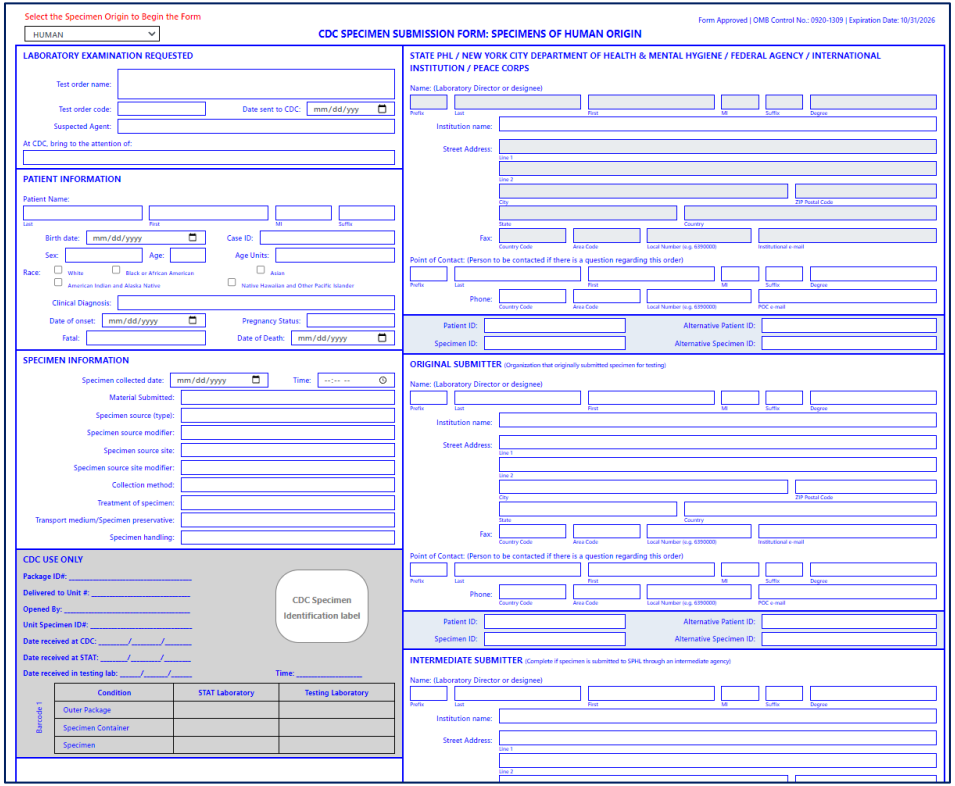
- Demonstrate standard precautions when handling blood, urine, and respiratory specimens.
- Assess and sort human blood, urine, and respiratory specimens for processing.

reach.cdc.gov/onelabvr

Specimen Submission to CDC

Valerie Albrecht, CDC Office of Laboratory Systems and Response

CDC 50.34 form will Retire October 2026



Select the Specimen Origin to Begin the Form

HUMAN

CDC SPECIMEN SUBMISSION FORM: SPECIMENS OF HUMAN ORIGIN

Form Approved | OMB Control No.: 0920-1309 | Expiration Date: 10/31/2026

LABORATORY EXAMINATION REQUESTED

Test order name:

Test order code:

Date sent to CDC: mm/dd/yyy

Suspected Agent:

At CDC, bring to the attention of:

PATIENT INFORMATION

Patient Name: Last First MI Suffix

Birth date: mm/dd/yyyy

Case ID:

Sex:

Age:

Age Units:

Race: White; Black or African American; Asian; American Indian and Alaska Native; Native Hawaiian and Other Pacific Islander

Clinical Diagnosis:

Date of onset: mm/dd/yyyy

Pregnancy Status:

Fatal:

Date of Death: mm/dd/yyyy

SPECIMEN INFORMATION

Specimen collected date: mm/dd/yyyy

Time: --:-- --

Material Submitted:

Specimen source (type):

Specimen source modifier:

Specimen source site:

Specimen source site modifier:

Collection method:

Treatment of specimen:

Transport medium/Specimen preservative:

Specimen handling:

CDC USE ONLY

Package ID#: _____

Delivered to Unit #: _____

Opened By: _____

Unit Specimen ID#: _____

Date received at CDC: _____/_____/_____

Date received at STAT: _____/_____/_____

Date received in testing lab: _____/_____/_____

Time: _____

CDC Specimen Identification label

Barcode 1

Condition	STAT Laboratory	Testing Laboratory
Outer Package		
Specimen Container		
Specimen		

STATE PHL / NEW YORK CITY DEPARTMENT OF HEALTH & MENTAL HYGIENE / FEDERAL AGENCY / INTERNATIONAL INSTITUTION / PEACE CORPS

Name: (Laboratory Director or designee) Prefix Last First MI Suffix Degree

Institution name:

Street Address: Line 1 Line 2 City ZIP Postal Code State Country

Fax: Country Code Area Code Local Number (e.g. 6390000) Institutional e-mail

Point of Contact: (Person to be contacted if there is a question regarding this order) Prefix Last First MI Suffix Degree

Phone: Country Code Area Code Local Number (e.g. 6390000) POC e-mail

Patient ID: Alternative Patient ID:

Specimen ID: Alternative Specimen ID:

ORIGINAL SUBMITTER (Organization that originally submitted specimen for testing)

Name: (Laboratory Director or designee) Prefix Last First MI Suffix Degree

Institution name:

Street Address: Line 1 Line 2 City ZIP Postal Code State Country

Fax: Country Code Area Code Local Number (e.g. 6390000) Institutional e-mail

Point of Contact: (Person to be contacted if there is a question regarding this order) Prefix Last First MI Suffix Degree

Phone: Country Code Area Code Local Number (e.g. 6390000) POC e-mail

Patient ID: Alternative Patient ID:

Specimen ID: Alternative Specimen ID:

INTERMEDIATE SUBMITTER (Complete if specimen is submitted to SPHL through an intermediate agency)

Name: (Laboratory Director or designee) Prefix Last First MI Suffix Degree

Institution name:

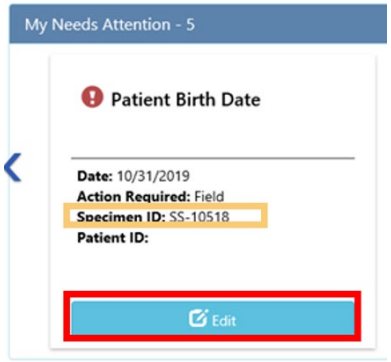
Street Address: Line 1 Line 2

CDC Specimen Test Order and Reporting

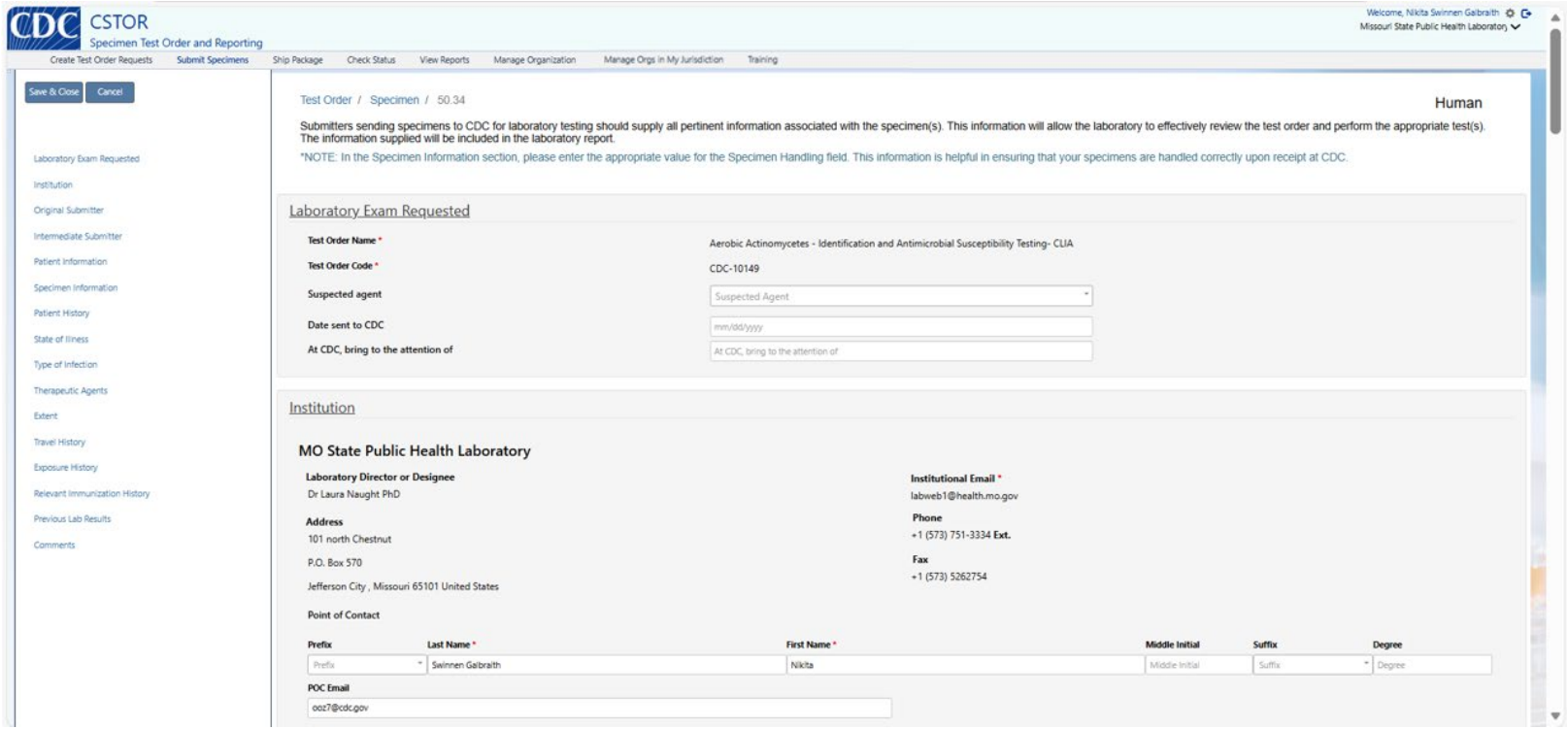
CSTOR
CDC Specimen Test Order and Reporting

Create Test Order Requests | Submit Specimens | Ship Package | Check Status | View Reports | Manage Organization

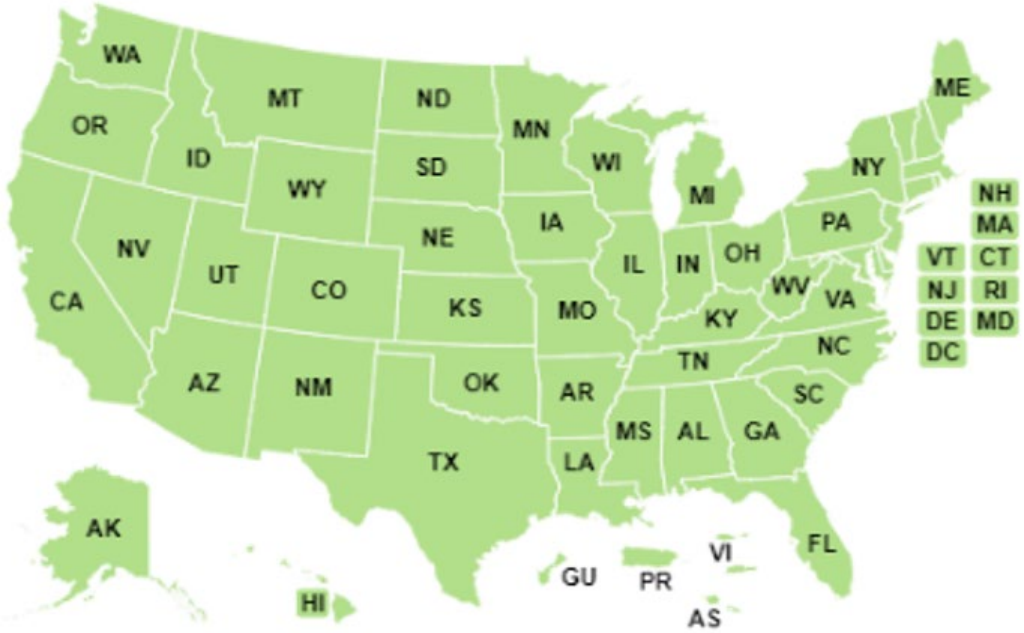
- A web portal that streamlines the process to request test orders, submit specimen information, and receive reports from the CDC
- Online alternative to using the 50.34 form
- Provides a way to centralize test order approvals, specimen data, shipment status, and CDC reports
- Over 115 external organization connected with almost 1000 users



Specimen Data Entry Form via CSTOR

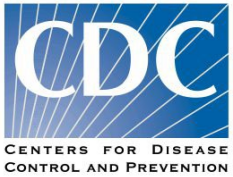


CSTOR Onboarded SPHLs



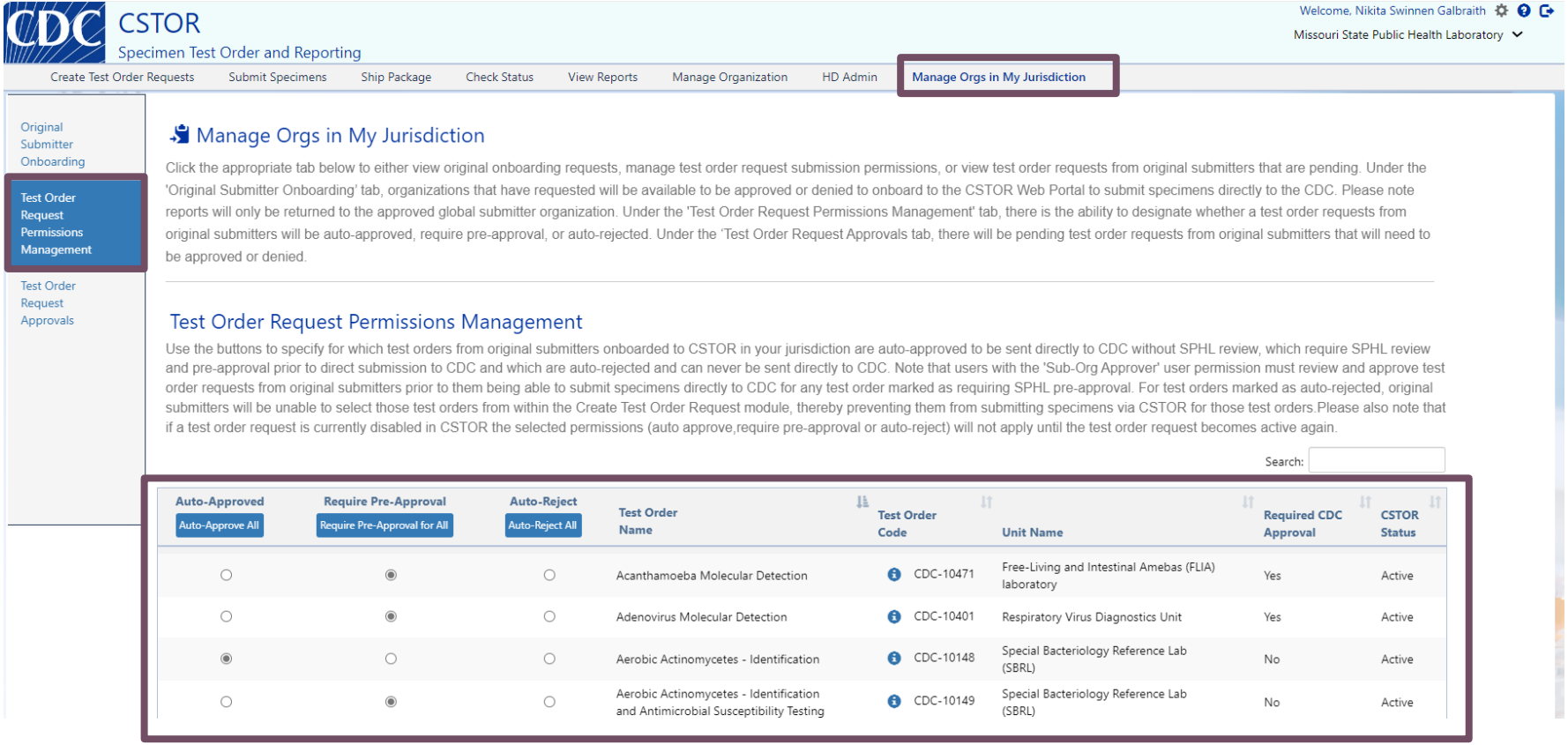
Original Submitter CSTOR Onboarding Goals

- **For CDC**
  - Higher quality, more secure data submissions coming to CDC
  - Streamlined submissions and report delivery through centralized hub
- **For SPHLs**
  - More visibility into submissions from original submitters in your jurisdiction, leading to easier distribution of CDC reports to original submitters
- **For Original Submitters**
  - Faster, smoother workflow to receive SPHL approval and submit specimens to CDC (for specimens the SPHL approves to go directly to CDC) and access reports



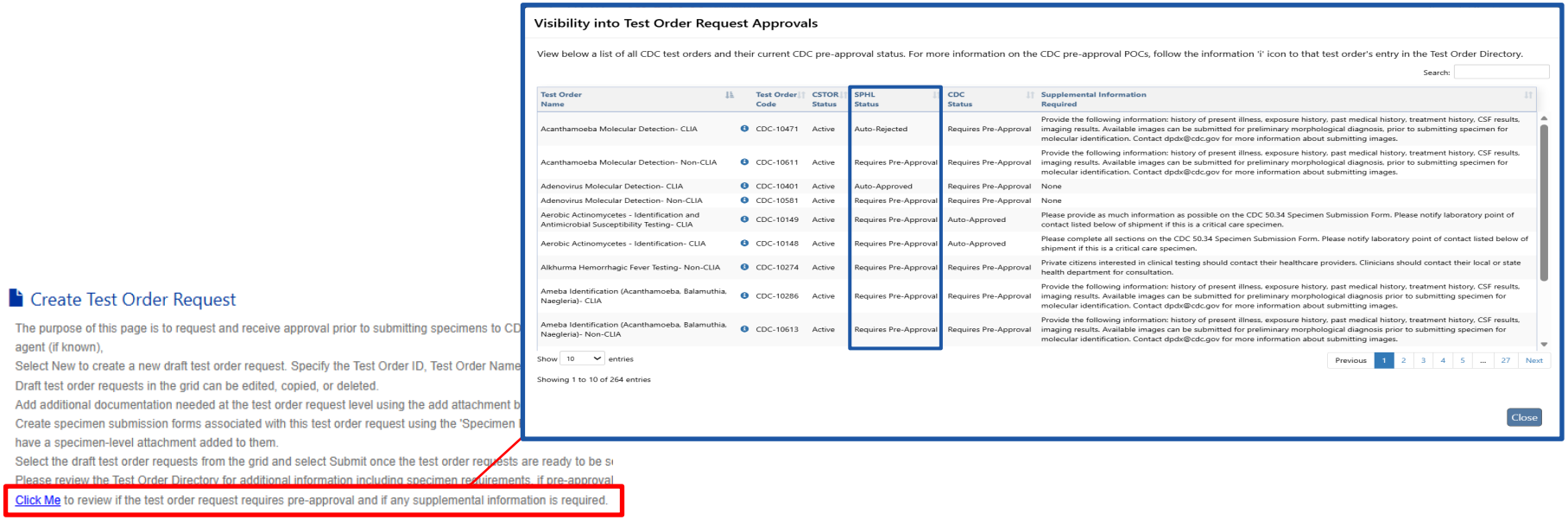
COSO Submissions– SPHL TO Request Permissions

- CSTOR Lab Administrators can manage approvals required at the TO level



Tabular List of TORs that Require SPHL Pre-approval

- Visibility for Sub-Org users on whether a test order requires state public health laboratory (SPHL) pre-approval, is auto-approved, or is auto-rejected



Visibility into Test Order Request Approvals

View below a list of all CDC test orders and their current CDC pre-approval status. For more information on the CDC pre-approval POCs, follow the information 'i' icon to that test order's entry in the Test Order Directory.

Search:

Test Order Name	Test Order Code	CSTOR Status	SPHL Status	CDC Status	Supplemental Information Required
Acanthamoeba Molecular Detection- CLIA	CDC-10471	Active	Auto-Rejected	Requires Pre-Approval	Provide the following information: history of present illness, exposure history, past medical history, treatment history, CSF results, imaging results. Available images can be submitted for preliminary morphological diagnosis, prior to submitting specimen for molecular identification. Contact dpdx@cdc.gov for more information about submitting images.
Acanthamoeba Molecular Detection- Non-CLIA	CDC-10611	Active	Requires Pre-Approval	Requires Pre-Approval	Provide the following information: history of present illness, exposure history, past medical history, treatment history, CSF results, imaging results. Available images can be submitted for preliminary morphological diagnosis, prior to submitting specimen for molecular identification. Contact dpdx@cdc.gov for more information about submitting images.
Adenovirus Molecular Detection- CLIA	CDC-10401	Active	Auto-Approved	Requires Pre-Approval	None
Adenovirus Molecular Detection- Non-CLIA	CDC-10581	Active	Requires Pre-Approval	Requires Pre-Approval	None
Aerobic Actinomycetes - Identification and Antimicrobial Susceptibility Testing- CLIA	CDC-10149	Active	Requires Pre-Approval	Auto-Approved	Please provide as much information as possible on the CDC 50.34 Specimen Submission Form. Please notify laboratory point of contact listed below of shipment if this is a critical care specimen.
Aerobic Actinomycetes - Identification- CLIA	CDC-10148	Active	Requires Pre-Approval	Auto-Approved	Please complete all sections on the CDC 50.34 Specimen Submission Form. Please notify laboratory point of contact listed below of shipment if this is a critical care specimen.
Alkhurma Hemorrhagic Fever Testing- Non-CLIA	CDC-10274	Active	Requires Pre-Approval	Requires Pre-Approval	Private citizens interested in clinical testing should contact their healthcare providers. Clinicians should contact their local or state health department for consultation.
Ameba Identification (Acanthamoeba, Balamuthia, Naegleria)- CLIA	CDC-10286	Active	Requires Pre-Approval	Requires Pre-Approval	Provide the following information: history of present illness, exposure history, past medical history, treatment history, CSF results, imaging results. Available images can be submitted for preliminary morphological diagnosis prior to submitting specimen for molecular identification. Contact dpdx@cdc.gov for more information about submitting images.
Ameba Identification (Acanthamoeba, Balamuthia, Naegleria)- Non-CLIA	CDC-10613	Active	Requires Pre-Approval	Requires Pre-Approval	Provide the following information: history of present illness, exposure history, past medical history, treatment history, CSF results, imaging results. Available images can be submitted for preliminary morphological diagnosis prior to submitting specimen for molecular identification. Contact dpdx@cdc.gov for more information about submitting images.

Show 10 entries

Showing 1 to 10 of 264 entries

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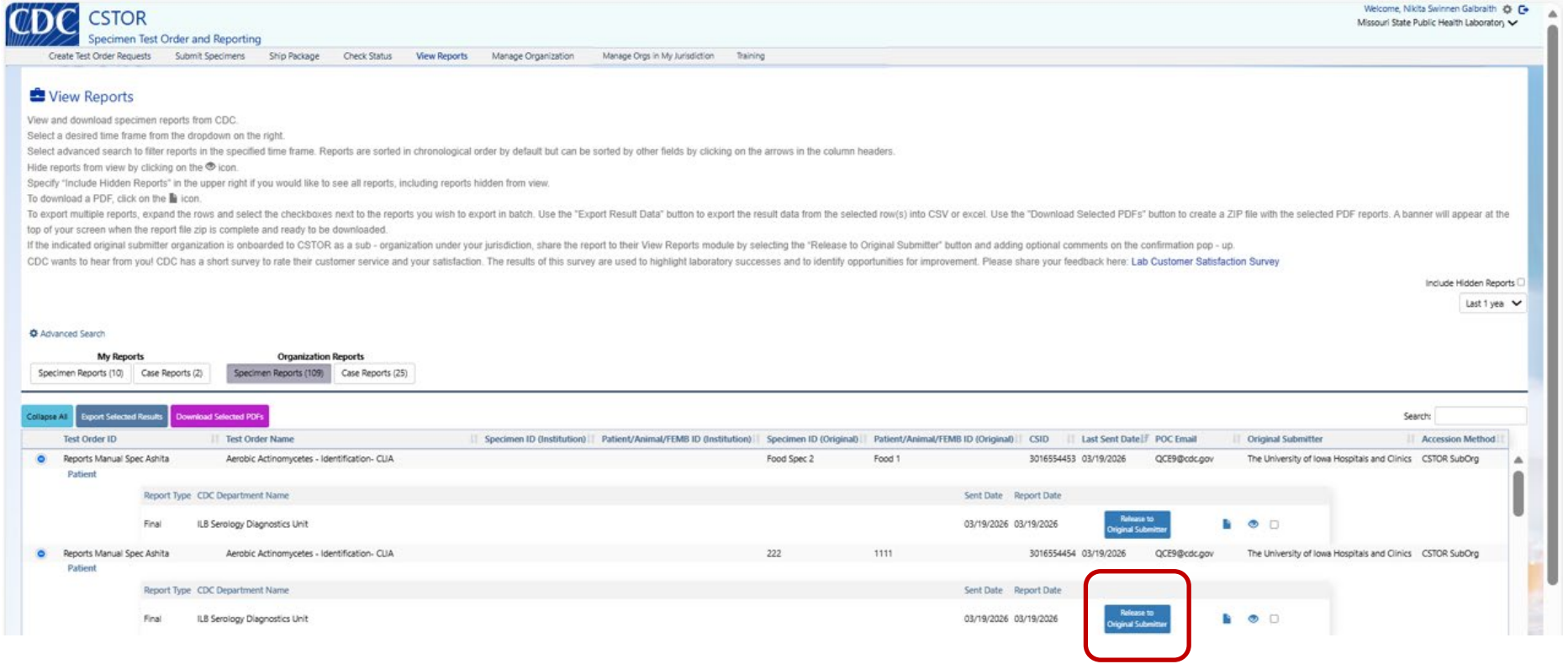
Close

Create Test Order Request

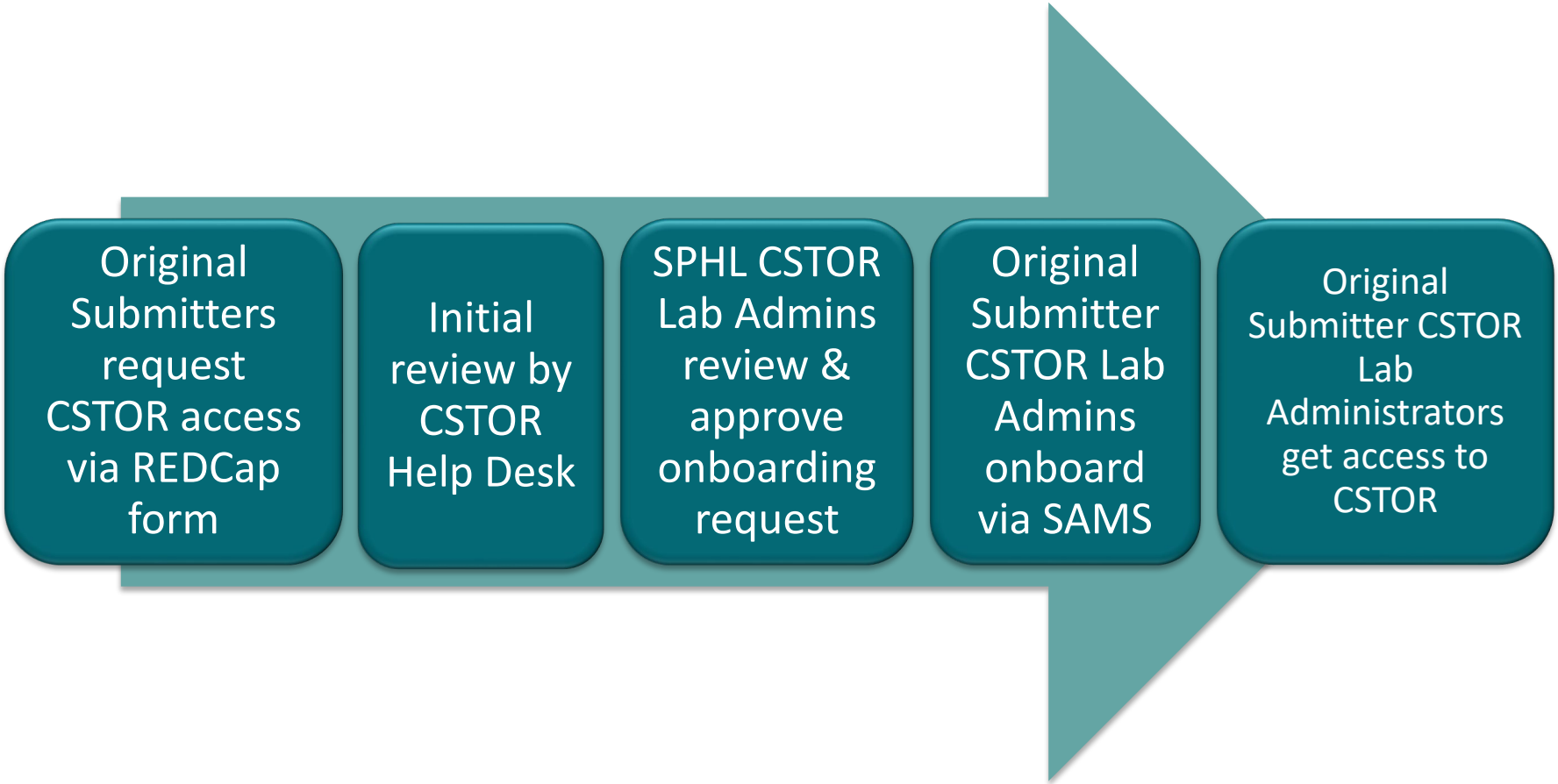
The purpose of this page is to request and receive approval prior to submitting specimens to CD
agent (if known),
Select New to create a new draft test order request. Specify the Test Order ID, Test Order Name
Draft test order requests in the grid can be edited, copied, or deleted.
Add additional documentation needed at the test order request level using the add attachment b
Create specimen submission forms associated with this test order request using the 'Specimen
have a specimen-level attachment added to them.
Select the draft test order requests from the grid and select Submit once the test order requests are ready to be s
Please review the Test Order Directory for additional information including specimen requirements, if pre-approval

Click Me to review if the test order request requires pre-approval and if any supplemental information is required.

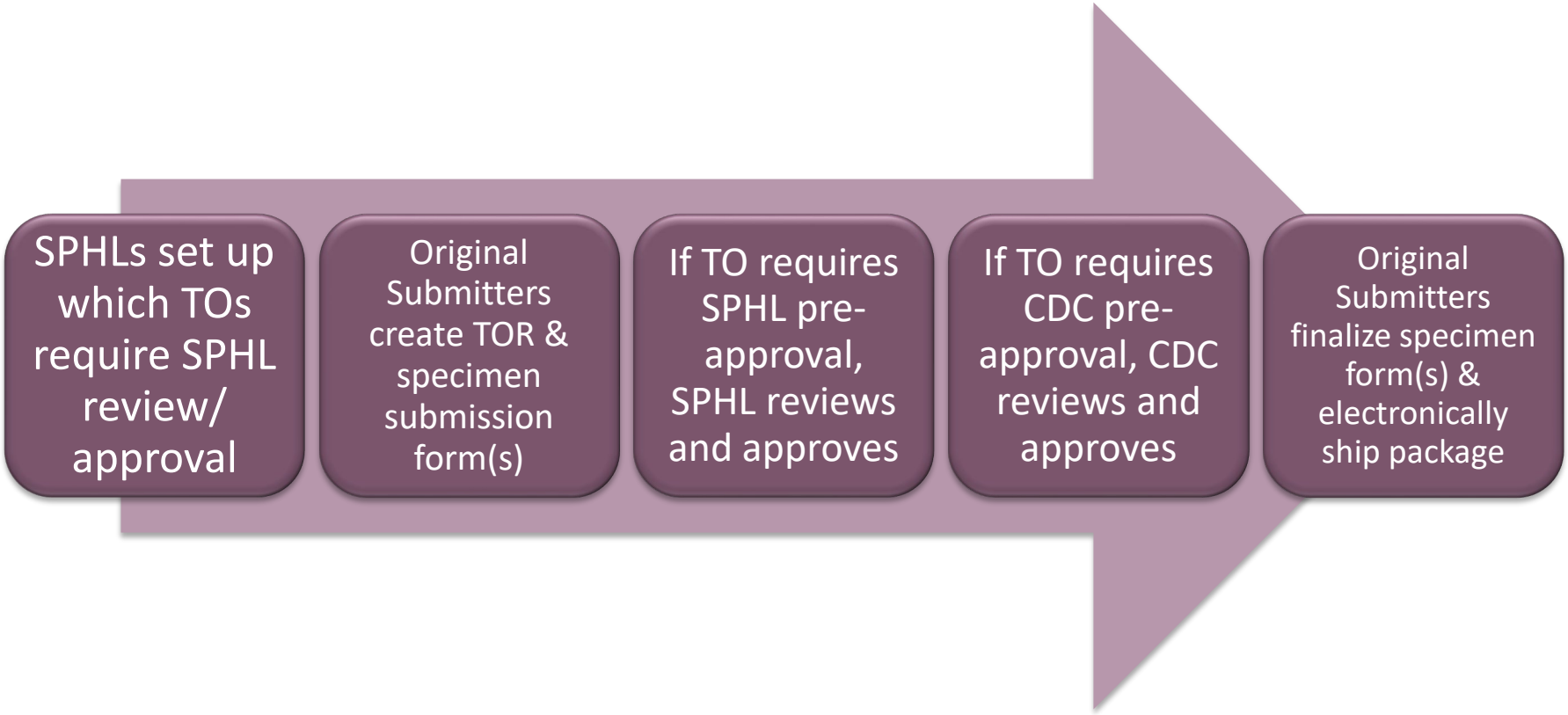
Option to Release Report to Original Submitter



COSO - Workflow



COSO Submissions-Workflow



Questions?

- If you have any questions, concerns, feedback, or to request additional support, email the CSTOR Help Desk:

cstor@cdc.gov

Next Scheduled Call: July 20 at 3pm


Lab Week
2026
LABORATORY
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Thank you!

For more information, contact CDC
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