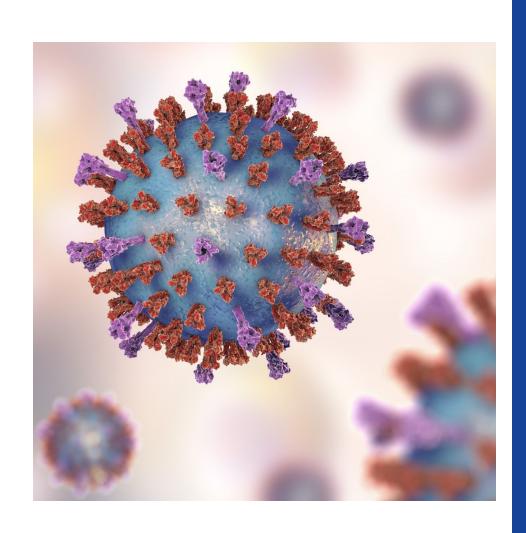


# Laboratory-Based Surveillance Plan 2023-2024



Surveillance program overviews, submission instructions and 2022-23 data summaries

# Welcome to the 2023-24 Season!

Thank you for participating in laboratory-based surveillance in Wisconsin! The participation of clinical laboratories across the state has helped Wisconsin develop one of the most robust surveillance networks in the country!

Supplies for collecting and shipping surveillance specimens, transport to the WSLH, and testing of surveillance specimens is available at **NO COST** when you send specimens using Purple Mountain Solutions. This booklet contains detailed information about the submission of clinical laboratory data and specimens for surveillance.

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# **Laboratory Testing Data Submissions**

In collaboration with other public health partners, the WSLH has developed data-driven statewide respiratory and gastrointestinal pathogen surveillance programs in Wisconsin. Weekly reporting of diagnostic testing data to WSLH is important so that public health partners know what communicable diseases are impacting community health in Wisconsin.

## **Wisconsin Respiratory Surveillance Program:**



The aim of this program is to gain situational awareness of the respiratory pathogens circulating in Wisconsin, including geographic spread and positivity rates. **All Sites** in Wisconsin performing PCR/molecular and/or rapid antigen testing for respiratory pathogens are asked to submit their testing data on a **weekly basis** (number tested, number positive) **all year round**. Refer to Table 1 for a list of pathogens for which testing data is requested.

## Wisconsin Acute Diarrheal Illness Surveillance Program:



The aim of this program is to gain awareness of the gastrointestinal pathogens effecting community health in Wisconsin. The WSLH requests that clinical labs submit gastropathogen PCR testing data for bacterial, parasitic and viral pathogens on a weekly basis (number tested, number positive), all year round. Refer to Table 1 for a list of pathogens for which testing data is requested.

# Why Submit Data?

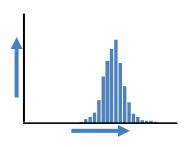
#### To determine geographic spread:

Testing numbers from around the state are broken down by region to monitor trends of respiratory pathogens in each part of the state. Regional graphs are updated weekly and can be found on the WSLH website.

www.slh.wisc.edu/wcln-surveillance/surveillance/virology-surveillance/



#### To provide situational awareness:



Testing data is used to determine when the season begins, peaks and ends for a variety of pathogens. The data can be used to identify outbreaks, detect an issue with test methods, inform medical provider differential diagnosis, and inform clinical lab staffing needs for seasonal and outbreak testing. Graphs of surveillance data are updated weekly and can be found on the WSLH website.

www.slh.wisc.edu/wcln-surveillance/surveillance/



**NREVSS Participating Labs** 

# Why Submit Data?

#### To participate in the National Respiratory and Enteric Virus Surveillance System (NREVSS)

WSLH collates all testing data collected from Wisconsin and submits it to NREVSS on a weekly basis. NREVSS is a laboratory-based system that monitors temporal and geographic circulation of a variety of viral pathogens. NREVSS data can be viewed on the CDC website at:

www.cdc.gov/surveillance/nrevss/.

Wisconsin leads the country for the number of labs participating in surveillance activities.

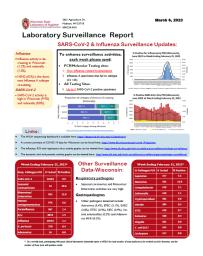




#### To participate in national influenza surveillance:

PCR/molecular and antigenic testing data for influenza gets submitted to the CDC for inclusion into the national influenza surveillance program. Influenza data can be found on CDC's FLUVIEW website at: https://www.cdc.gov/flu/weekly/index.htm.

## Wisconsin Surveillance Data Distribution:



#### WSLH Website:

Aggregate data for a variety of pathogens can be found on the WSLH website at: <a href="https://www.slh.wisc.edu/wcln-surveillance/surveillance/">www.slh.wisc.edu/wcln-surveillance/surveillance/</a>

#### WSLH Bi-Weekly Surveillance Report:

The WSLH aggregates all respiratory and enteric pathogen data and provides summary reports in the bi-weekly Laboratory Surveillance Report,

which is distributed to over 600 recipients across the state. Email WCLN@slh.wisc.edu to sign up for this report.

#### **WDPH Weekly Respiratory Virus Surveillance Report**

A data summary of respiratory viral pathogens is also sent to the Wisconsin Department of Health Services for inclusion into their Weekly Respiratory Virus Surveillance Report. This report is distributed to over 5,000 recipients on a weekly basis and can be found on the DHS website. ww.dhs.wisconsin.gov/disease/respiratory.htm.

RESPIRATORY VIRUS SURVEILLANCE REPORT
Week 21, Ending May 28, 2023
Wisconia Department of Health Services | Division of Public Health
Bureau of Communication Deseases | Co



# **Data Submission Requests**

**Table 1: Laboratory Testing Data Requests** 

Antigen Detection					
Influenza A/B	SARS-CoV-2	RSV			
Rotavirus	Rapid Strep (Group A Streptococcus)				
Respiratory Path	nogens - PCR/Molecu	ular Detection			
Influenza A/B	SARS-CoV-2	RSV			
Seasonal Coronaviruses	Human Metapneumovirus	Human Parainfluenza virus			
Rhinovirus/Enterovirus	Adenovirus	B. pertussis and parapertussis			
Group A Streptococcus					
Gastrointestinal Pa	athogens - PCR/Mole	cular Detection			
Aeromonas	Campylobacter	E. coli O157			
Plesiomonas shigelloides	Salmonella	Shigella/ Enteroinvasive E.coli (EIEC)			
Shiga-like toxin-producing <i>E. coli (STEC)</i>	Vibrio	Yersinia enterocolitica			
Rotavirus	Sapovirus	Cryptosporidium			
Cyclospora cayetanensis	Entamoeba histolytica	Giardia lamblia			

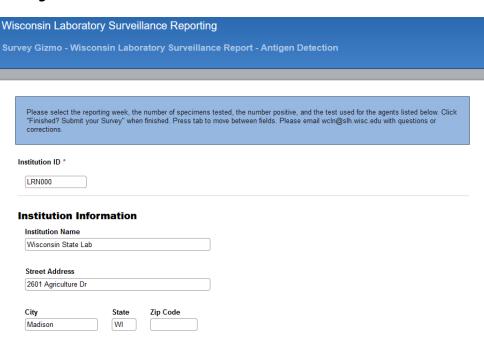


# Reporting Lab Test Results

- Access the web reporting webpage:
  - Go to the WSLH website <a href="http://www.slh.wisc.edu/wcln-surveillance/surveillance/surveillance/">http://www.slh.wisc.edu/wcln-surveillance/surveillance/</a> then click on "Click here to report Wisconsin Test Data" in the center of the page.



- Go directly to <a href="http://www.surveygizmo.com/s3/389222/Wisconsin-Laboratory-Surveillance-Reporting">http://www.surveygizmo.com/s3/389222/Wisconsin-Laboratory-Surveillance-Reporting</a>
- Enter your laboratory's identification number ("Institution ID"); this is a required field.
  - Your "Institution ID" is a series of letters (must be capitalized) and numbers (eg. LRN789). It has been added to your customized requisition form that is included with this mailing.
    - If you cannot find your "Institution ID", please contact us at <u>WCLN@slh.wisc.edu</u> or call 800-862-1013.
  - Your institution's name, address, city and telephone number will be entered automatically.
- Review the institution name, address and telephone number for accuracy.
  - If any of the information is not accurate, enter the correct information and check the box at the bottom of the form "Check here if any pre-filled information on this page was changed".





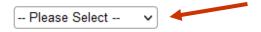
# Reporting of Lab Test Results (cont'd)

- Select the "Week Ending Date" for which you wish to report data.
  - Click on the date in the drop-down list. This is a required field.

It is critical that you select the correct week ending date!

### Week Ending - 2023/2024 Season (Saturday)

Reporting week is Sunday to Saturday



• **Check** either "Antigen Detection" or "PCR / Molecular" for the testing method for the data you would like to enter and click "**Next**".



## If you chose Antigen Detection:

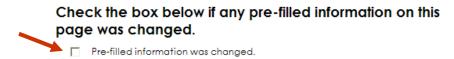
- Report the number tested and number positive for each of the listed agents for which you perform testing on-site.
- If you do not perform a test on-site and/or refer specimens to another laboratory, skip that agent/test section <u>without entering any data</u>.
- If you normally perform that testing on site, but did not test any specimens that week, enter zero "0" for the number tested.
   If the "number tested" is "0", you can skip the "number positive" field.
  - If you discontinue testing for a season (summer), please notify us so that our data accurately reflects testing in Wisconsin.
- Review for accuracy the test(s) that have been pre-marked for your institution.

	Please verify that the test(s)	ma	rked below are accurate.			
Influen	Influenza Test Used: Please check all that apply					
V	3M Rapid Detection Influenza A+B		QuickVue Influenza			
	BinaxNOW Influenza A&B		QuickVue Influenza A+B			
	Biostar OIA Flu		SAS FluAlert			
	Biostar OIA Flu A/B		TRU FLU			
	Directigen Flv A		Xpect Flv A&B			
	Directigen Flv A+B		ZstatFlv			
	Directigen EZ Flv A+B		Out of State Reference Laboratory			
	OSOM Influenza A&B					
	Other (specify):					

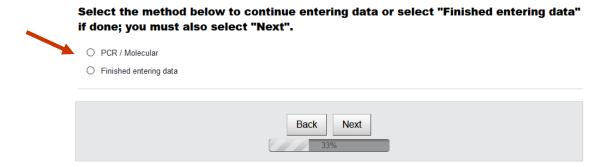


# Reporting of Lab Test Results (cont'd)

- If the marked test is **NOT** the test your facility used, click on the marked test to "un-check" it, then click on the correct test.
  - Please check the box at the bottom of the form "Check the box below if any prefilled information on this page was changed.



• **Check "**PCR / Molecular" to enter more data or check "Finished entering data" to finish, and then click "**Next**".

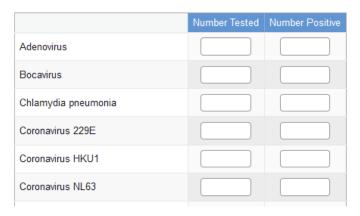


## If you chose PCR/Molecular:

- Report the number tested and number positive for each of the listed agents for which you
  provide testing on-site.
- If you do not perform a test on-site and/or refer specimens to another laboratory, skip that agent/test section <u>without entering any data</u>.
- If you normally perform that testing on site, but did not test any specimens that week, <u>enter zero "0" for the number tested</u>. If the "number tested" is "0", you can skip the "number positive" field.

#### **Respiratory Pathogens PCR testing**

Please report the number of specimens tested and the number positive.





# Reporting of Lab Test Results (cont'd)

For each molecular/PCR testing that your laboratory performs, "check" the test(s) your laboratory used.

# Gastointestinal Pathogen PCR Test Used: Please check all that apply

☐ FilmArray Gastrointestinal Panel (BioFire)	xTAG Gastropathogen Panel PCR (GPP) (Luminex)
MAX Enteric Bacteria Panel (BD)	☐ Verigine Enteric Pathogen Test (Nanosphere)
☐ Prodesse ProGastro SSCS (Hologic/GenProbe)	Other (specify):

- Check "Antigen Detection" to enter more data or check "Finished entering data" to finish.
  - Click "Next".

Select the method below to continue entering data or select "Finished entering data" if done; you must also select "Next".

Antigen Detection
Finished entering data

Back Next

## If you chose "Finished entering data":

• To save and submit your data, click on "Submit". The data you entered will not be saved or transmitted until you click "Submit".



• If you want to report data for another week, return to <a href="http://www.slh.wisc.edu/wcln-surveillance/surveillance/">http://www.slh.wisc.edu/wcln-surveillance/</a> and repeat the data entry process for the new week, starting with entering your Institution ID.

If you have questions please email WCLN@slh.wisc.edu or call WSLH customer service at 800-862-1013



# Respiratory Surveillance

Laboratory-based surveillance for influenza, SARS-CoV-2 and other respiratory pathogens is coordinated by the Wisconsin State Laboratory of Hygiene (WSLH), in collaboration with the Wisconsin Division of Public Health and the Centers for Disease Control and Prevention (CDC). This surveillance network utilizes a combination of laboratory testing data along with respiratory specimens submitted to the WSLH for additional surveillance testing and characterization. Specimen requests are modified as the level of influenza and other respiratory virus activity changes and as other circumstances require. These changes will be communicated in the bi-weekly "Laboratory Surveillance Report" which is posted at the WSLH website (http://www.slh.wisc.edu/wcln-surveillance/surveillance/).

The following is a description of the contributing elements of the laboratory-based respiratory surveillance plan for Wisconsin:

### Data Submissions:



**All Sites** in Wisconsin performing PCR/molecular or rapid antigen testing for respiratory pathogens are asked to submit their testing data on a weekly basis (number tested, number positive) as described in Table 1 found on page 3.

# **Specimen Submissions:**



**Enrolled Sentinel Surveillance Sites:** 17 labs throughout the 5 public health regions of Wisconsin are enrolled as Sentinel Surveillance sites. This surveillance network is designed to provide a consistent and randomized supply of respiratory specimens from all areas of the state. These sites provide the <u>first 3 specimens per week from patients presenting with respiratory symptoms</u> (regardless of initial test results) as described in Table 2.



Rapid Influenza Testing Sites (RIDT): Rapid influenza (antigen) testing sites account for about 50% of influenza testing in WI. These sites are asked to <u>submit all out of</u> season and early season influenza positives and the first influenza A or B positive of the season to WSLH, as described in Table 2. In addition, these sites are asked to notify WSLH of any suspected performance issues (e.g. False Positives/Negatives).



**PCR/Molecular Laboratories:** PCR/molecular testing sites include all clinical laboratories performing molecular diagnostic testing for influenza, SARS-CoV-2 or other respiratory viruses. These sites are requested to submit specimens as described in Table 2.



**University Health Clinics:** This surveillance program is used to monitor respiratory pathogens impacting student health, including influenza, SARS-CoV-2, and adenovirus. University Health sites are requested to submit <u>up to 3 specimens per week from patients presenting with respiratory symptoms</u> (regardless of initial test results) as described in Table 2. These specimens are tested at WSLH with an enhanced respiratory pathogen panel.



# What Do We Do With These Specimens?

Respiratory surveillance specimens submitted to the WSLH are tested with the CDC Influenza SARS-CoV-2 multiplex PCR assay to confirm the initial result.

#### **Influenza Positive Specimens:**

- WSLH performs the CDC influenza A subtyping and CDC B lineage on all influenza positive specimens received.
- Whole genome sequencing is performed on a selection of influenza positive specimens received at the WSLH.

#### **SARS-CoV-2 Positive Specimens:**

- Whole genome sequencing is performed on a selection of SARS-CoV-2 positive specimens received at WSLH.
- WSLH submits specimens to the National SARS-CoV-2 Strain Surveillance (NS3) program to enhance national surveillance efforts. (https://covid.cdc.gov/covid-data-tracker/#variantsgenomic-surveillance).

#### **Specimens Negative for Influenza and SARS-CoV-2:**

 An enhanced 22-target respiratory pathogen panel is performed on a selection of surveillance specimens.

# Why Submit Specimens?

# To detect novel or reassortant influenza viruses:

WSLH performs influenza A subtyping and B lineage on all influenza positive specimens received. This is important for the detection of any variant or emerging influenza viruses with pandemic potential.



#### To see what else is circulating:

WSLH performs an enhanced 22-target respiratory pathogen panel on a selection of surveillance specimens, in addition to performing influenza and SARS-CoV-2 PCR.

#### To perform genomic surveillance:



Whole genome sequencing is performed on a selection of specimens positive for SARS-CoV-2 and influenza. Sequencing is useful to detect novel variants and monitor antiviral resistance.

#### To participate in national influenza surveillance:



WSLH submits a selection of influenza positive specimens from around the state to the national influenza surveillance pipeline. These specimens are used to inform vaccine strain selection and provide CDC with vaccine candidates.



# **Specimen Submission:**

For each surveillance specimen submitted, fill out a copy of your customized respiratory surveillance requisition form (included with your mailing packet). Please be sure to check the appropriate reason for submission on the requisition form.

#### **Specimen Collection:**

All upper and lower respiratory specimens are acceptable for surveillance testing. Specimens should be collected with Dacron or polyester tipped plastic shafted swabs and placed in virus transport medium (VTM).

- If the swab was placed in virus transport medium or saline before a portion was removed for testing, submit remaining swab in virus transport medium.
- If the swab was collected and immersed in test reagent, collect a second sample for surveillance testing.

When selecting specimens to submit for influenza surveillance, please prioritize specimens from patients who are hospitalized or have international travel history. Please also submit any Influenza A specimens that are unsubtypable (Ct <35) (additional information can be found on page 12).

If you have a symptomatic patient with swine or avian contact, please contact the **Wisconsin Division of Public Health for guidance** (additional information can be found on pages 12-13).

**SWINE/PIG CONTACT** 

AVIAN/POULTRY CONTACT

INTERNATIONAL TRAVEL

HOSPITALIZED PATIENTS

INFLUENZA A UNSUBTYPABLE (Ct < 35)











#### **Order:**

Additional specimen requisition forms and supplies for collecting and shipping surveillance specimens are provided at **NO COST** and can be requested at 800-862-1088 or <a href="https://example.com/HMspecimen-receivingclinicalordersstaff@slh.wisc.edu">HMspecimen-receivingclinicalordersstaff@slh.wisc.edu</a>.

## Ship:

Transport to the WSLH, and testing of surveillance specimens is available at **NO COST** when you send specimens using **Purple Mountain Solutions** (PH: 800-990-9668). Detailed shipping instructions can be found on pages 20-21 of this packet.





# Respiratory Pathogen Submission Table

**Table 2: Respiratory Specimen Submission Requests** 

		Seas	on			
Testing Site:	Off Season (June-September)	Early Season (Fall*)	Respiratory Season (Winter/Spring*)			
	Influenza and	Other Respira	tory Viruses			
Rapid Testing	<u>ALL</u> influenza positives	The first influenza A or B of the season	Influenza A positive specimens with:  International travel history Swine exposure			
PCR/Molecular	<u>ALL</u> influenza positives	<u>ALL</u> influenza positives	One influenza-related hospitalization per week  AND  Unsubtypable influenza A positives (Ct < 35)  AND  Influenza A positive specimens with:  International travel history  Swine exposure			
Sentinel Surveillance	The first 3 respir	The first 3 respiratory specimens per week from symptomatic patients (regardless of initial test results)				
University Health	Up to 3 respiratory specimens per week from symptomatic patients (regardless of initial test results)					
		SARS-CoV-2				
All Sites	Five positive SA	RS-CoV-2 samples բ	per week for genomic surveillance			

<sup>\*</sup>Please refer to the bi-weekly "Laboratory Surveillance Report" for current influenza activity in Wisconsin



# Influenza A Unsubtypable (by PCR)

Any clinical specimen that produces a positive result for influenza A by PCR, but fails to subtype as H3 or (H1N1)pdm09, has the potential to be a novel strain of influenza virus. **Repeat Testing** is recommended in these situations.

If the influenza A specimen fails to subtype after repeat testing **AND** the influenza A Ct is <35, please send the sample to the WSLH for further testing, according to guidelines on pages 20-21.

# Influenza A Swine Variant Virus Testing

Influenza viruses normally circulate in pigs and are referred to as swine influenza viruses. Influenza viruses from swine normally do not infect humans; however, cases do occur sporadically in humans and are typically associated with close contact with infected pigs. The majority of cases have occurred in children. When one of these swine influenza viruses



infects a human it is termed a **variant** influenza virus. These variant viruses are denoted with a "v" at the end of the name (e.g. H1N1v, H1N2v and H3N2v). There have been no reports of sustained human transmission of these variant viruses as of August 2023. Public health officials are closely monitoring the current situation through enhanced surveillance activities.

The CDC has many guidance documents and information pertaining to variant influenza viruses on its website: <a href="http://www.cdc.gov/flu/swineflu/variant.htm">http://www.cdc.gov/flu/swineflu/variant.htm</a>

## **Laboratory Diagnostic Testing:**

While commercially available rapid influenza diagnostic tests (RIDTs) and molecular assays for influenza can reliably detect variant influenza A viruses, they cannot differentiate variant influenza A viruses from human influenza A viruses. Clinicians who suspect influenza virus infection in patients with close contact to swine should contact the Wisconsin Division of Public Health at 608-258-0099 for subtype-specific PCR testing at WSLH.

#### **Specimen Submission:**

- Specimen requirements for Influenza A swine variant suspects are the same as described on page 10.
- After gaining approval from WDPH, an "Enhanced Surveillance" requisition form should be requested from the WSLH, and filled out for each submitted specimen.
  - Please check "Swine Contact" under reason for submission.
  - Please contact the WSLH Customer Service Department at 800-862-1013 if you have any questions.



# **Avian Influenza Suspects**

In 2014-2015, avian influenza H5N2 and H5N8 emerged in North America commercial poultry flocks, and numerous Wisconsin commercial poultry farms were infected. In spring 2022, a very large H5N1 avian influenza outbreak emerged worldwide, including in North America. This affected many poultry farms in Wisconsin. Although there have been no documented human cases in Wisconsin, people that have close contact with sick poultry infected with avian influenza (H5Nx) are at increased risk for infection. In addition, avian influenza viruses H7N9 and H9N2 continue to cause human infections in China, mainly in persons with close contact with poultry.

# If a symptomatic patient is at increased risk of being infected with Avian Influenza notify the

# Wisconsin Division of Public Health (WDPH)

7:45 AM - 4:30 PM Monday - Friday, call 608-266-5326

After-hours, call 608-258-0099 and ask for "the communicable disease epidemiologist on-call"

### **Specimen Collection and Submission:**

- Obtain one oropharyngeal (throat) swab <u>AND</u> one nasopharyngeal (NP) swab; place in the same tube of viral transport medium (VTM).
  - Use swabs with a Dacron or polyester tip with an aluminum or plastic shaft.
  - For patients with lower respiratory illness, a lower respiratory tract specimen is also recommended (e.g. BAL).
- An "Enhanced Surveillance" requisition form should be requested from the WSLH, and filled out for each submitted specimen.
  - Please check "Avian Influenza Suspect" under reason for submission.
- Arrange transport so that specimens arrive at the WSLH within 24 hours of collection.
   Detailed shipping instructions can be found on pages 20-21 of this packet.
- Testing is usually completed within 24 hour after receipt.
- Please contact the **WSLH Customer Service Department** at 800-862-1013 if you have questions regarding laboratory testing.



## **Additional Information:**

Wisconsin Department of Health Services, Avian Influenza A Virus. Available at: https://www.dhs.wisconsin.gov/influenza/avian.htm.

The CDC has many guidance documents and information pertaining to avian influenza on its website: https://www.cdc.gov/flu/avianflu/index.htm.



# Vector-borne Pathogen Surveillance

The WSLH works with WDPH to monitor cases of vector-borne diseases in our state. WSLH will confirm species identification of key blood borne pathogens and submit specimens to CDC to monitor for drug resistance and emergence of novel pathogens. Please submit the organisms listed in Table 3 **As Detected**.



#### **Specimen Submission instructions:**

- Please fill out a WSLH requisition A with each specimen submitted.
  - Indicate the pathogen detected in the "Other Tests" field in the bottom right.
- Specimen requisition forms and supplies for shipping surveillance specimens are provided at NO COST and can be requested at 800-862-1088.
- Transport to the WSLH is available at **NO COST** when you send specimens using **Purple**Mountain Solutions. Detailed shipping instructions can be found on pages 20-21.

Table 3. Vector-borne Pathogen Specimen Submission Requests				
Pathogen	Specimen Type	Testing Performed at WSLH		
Malaria	Positive thick and thin blood smears or residual EDTA blood	Species confirmation via microscopy and PCR.  Residual EDTA forwarded to CDC for Malarial Drug Resistance Surveillance in <i>Plasmodium falciparum</i>		
Babesia	Positive thick and thin blood smears or residual EDTA blood	Confirmation of <i>B. microti</i> by PCR. Unknown species forwarded to CDC for confirmation		
Ehrlichia (species unknown)	Residual blood and/ or nucleic acid	Forwarded to CDC for species identification (if speciation not available at your lab)		



# Wisconsin Enteric Pathogen Surveillance

The WSLH requests that clinical laboratories submit isolates, enrichment broths, or stools in enteric transport medium that were positive using a culture-independent diagnostic test (CIDT). These isolates and samples undergo testing such as whole-genome sequencing at the WSLH to generate data that is critical to the ability to recognize and respond to clusters and outbreaks of gastropathogens in Wisconsin. The resulting laboratory data is used by epidemiologists at the WDPH to rapidly determine linkage to potential food and environmental point sources.



#### Specimen submission instructions:

WSLH requests that clinical laboratories submit the pathogens listed in Table 4 As Detected.

- Fill out a WSLH requisition form A with each specimen submitted:
  - For Isolates: Select test MP00460, and indicate the pathogen(s) isolated
  - For Stool: Select test MP00XXX and indicate the pathogen(s) detected and the ID method performed.
- Specimen requisition forms and supplies for shipping surveillance specimens are provided at NO COST and can be requested at 800-862-1088.
- Transport to the WSLH, is available at NO COST when you send specimens using Purple
   Mountain Solutions (PH: 800-990-9668).
   Detailed shipping instructions can be found on pages 20-21.

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(5) Date of B	Birth (Required)		(6) Age	(7)	1 3			(private insurance a	and Medica	re onl	ny personal information to a Third Party ly, not necessary for Medicaid) for purp
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□ NonHisp	anic/Latino		☐ Asian	☐ Pacific li	land	ler	Other	Patient Signature:			
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Co	onvalescent Se	erum	Plasma (anticos)	gulant			S tool	Slide/Smear	(Site:		Tissue (Site:
Se			CSF General:		_	_	Urine	CNS:	(Site:		Wash/Aspirate (Site: Respiratory:
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Enteric Pathogen Isolate Identification

Suspect Organism

MP00460



# Wisconsin Enteric Pathogen Surveillance Submissions

Table 4. Enteric Pathogen Specimen Submissions*				
Pathogen	Specimen Type	Testing Performed at WSLH		
Aeromonas species	Isolates or stool	Identification		
Campylobacter species	Isolates or stool	Identification, antimicrobial susceptibility testing and molecular subtyping (WGS) will be performed as necessary		
Enterohemorrhagic/Shiga Toxin-Producing <i>E. coli</i> (EHEC/STEC)	Isolates, stool or enrichment broth	Identification, serotyping and molecular subtyping (WGS)		
Plesiomonas shigelloides	Isolates or stool	Identification		
Salmonella species	Isolates or stool	Identification, serotyping, antimicrobial sus- ceptibility testing and molecular subtyping (WGS)		
Shigella species and Enteroinvasive E.coli (EIEC)	Isolates or stool	Identification and antimicrobial susceptibility testing; Molecular subtyping will be performed as necessary		
Vibrio Species	Isolates or stool	Identification and referral to CDC		
Yersinia species	Isolates or stool	Identification		
Cryptosporidium species	Stool	Identification** and genotyping (and/or referral to CDC) and WGS		
Cyclospora cayetanensis	Stool	Molecular subtyping and/or referral to CDC		
Rotavirus	Stool	One positive per week for molecular subtyping/genotyping		

<sup>\*</sup>Consult with the Wisconsin Division of Public Health Foodborne Disease Epidemiologists to inquire about testing of any other organisms that are suspected of being in a cluster or outbreak of public health significance.

<sup>\*\*</sup>Stool specimens positive for *Cryptosporidium* by PCR-based methods will not be confirmed.



# **Antimicrobial Resistance Monitoring**

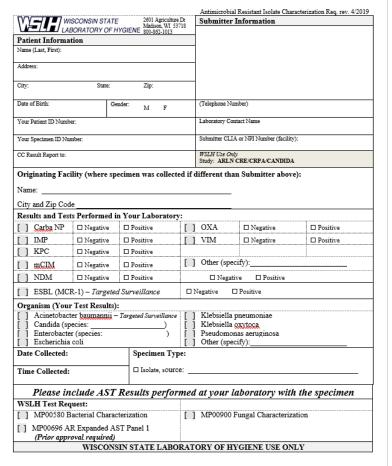


Antimicrobial resistance is increasingly becoming a public health concern as multi-drug resistant bacteria become more common. The WSLH is the Midwest Regional Laboratory for the CDC-coordinated Antimicrobial Resistance Laboratory Network (AR Lab Network). The overarching goal of AR Lab Network testing is rapid identification and containment of resistant pathogens. Data compiled from the AR Lab Network is presented to stakeholders at Wisconsin Clinical Laboratory Network regional meetings and will be shared on the WSLH website in the future.

#### **Specimen Submission instructions:**

WSLH requests that clinical laboratories submit the isolated pathogens listed in Table 5 **As Detected.** 

- Please fill out a **WSLH ARLN Requisition form** (included with your mailing packet) with each isolate submitted and include:
  - AST results
  - Any relevant phenotypic or molecular test results.
- Specimen requisition forms and supplies for shipping surveillance specimens are provided at NO COST and can be requested at 800-862-1088 or <a href="https://example.com/HMspecimenreceivingclinicalorders-staff@slh.wisc.edu">HMspecimenreceivingclinicalorders-staff@slh.wisc.edu</a>.
- Transport to the WSLH, is available at NO COST when you send specimens using Purple Mountain Solutions (PH: 800-990-9668). Detailed shipping instructions can be found on pages 20 -21.





# **Antimicrobial Resistance Specimen Submissions**

Table 5. Ar	Table 5. Antimicrobial Resistance Specimen Submissions				
Pathogen	Resistance Traits	Testing Performed at WSLH			
Pan-resistant organisms	Resistant to all drugs tested in your laboratory	Identification, antimicrobial susceptibility testing, AR-targeted PCR and referral to CDC as necessary			
<ul> <li>Candida:</li> <li>C. auris,</li> <li>C. haemulonii,</li> <li>Invasive C. glabrata</li> <li>Unusual* and/or hard to ID Candida</li> </ul>	N/A	Identification, antimicrobial susceptibility testing and referral to CDC as necessary			
Enterobacteriaceae	Resistant to any carbapenems	Identification, antimicrobial susceptibility testing, carbapenemase screen, AR -targeted PCR and referral to CDC as necessary			
Staphylococcus aureus	Non-susceptible to vancomycin	Identification, antimicrobial susceptibility testing and referral to CDC as necessary			
Pseudomonas aeruginosa	<ul> <li>Resistant to carbapenems other than ertapenem AND</li> <li>Non-susceptible to cefepime and/or ceftazadime</li> </ul>	Identification, antimicrobial susceptibility testing, carbapenemase screen, AR -targeted PCR and referral to CDC as necessary			
Acinetobacter baumanii	Resistant to any carbapenems	Identification, antimicrobial susceptibility testing, AR-targeted PCR and referral to CDC as necessary			
Aspergillus fumigatus isolates from invasive infections	N/A	Isolates will be forwarded to the Maryland Department of Health for surveillance of azole resistance			

<sup>\*</sup>Any species other than C. albicans, C. parapsilosis, C. dubliniensis, C. lusitaniae, C. tropicalis, or C. krusei



# Wisconsin Invasive Bacterial Surveillance

The Wisconsin Invasive Bacterial Laboratory Surveillance program is a partnership between WSLH and other public health and clinical partners, and monitors invasive bacterial infections in the state. The WSLH requests the submission of isolates of invasive pathogens listed in Table 6 **As Detected.** 

#### **Specimen submission instructions:**

- Isolates should be from sterile body sites (CSF, Blood, etc...).
  - In the absence of an isolate, please submit CSF specimens which have been determined to contain these pathogens by a cultureindependent diagnostic test (CIDT).
- Please fill out a WSLH requisition A with each specimen submitted and indicate the pathogen isolated/detected.
- Specimen requisition forms and supplies for shipping surveillance specimens are provided at NO COST and can be requested at 800-862-1088.
- Transport to the WSLH, is available at **NO COST** when you send specimens using **Purple**Mountain Solutions. Detailed shipping instructions can be found on pages 20-21.

Table 6. Invasive Bacteria Specimen Submission Requests**				
Pathogen	Specimen Type	Testing Performed at WSLH		
Haemophilus influenzae	Isolates or CSF	Identification and serotyping		
Listeria monocytogenes	Isolates	Identification and molecular subtyping (WGS)		
Neisseria meningitidis	Isolates or CSF	Identification, antimicrobial susceptibility testing and serogrouping		
Streptococcus pneumoniae	Isolates or CSF	Identification, antimicrobial susceptibility testing and serotyping*  *serotyping performed upon request on:  CSF isolates  Isolates non-susceptible to clinically relevant drugs  Possible failure of therapy or vaccine or outbreak related isolates		
Gram negative isolates from sterile body sites that are unidentifiable using commercial systems	Isolates	Phenotypic and sequenced based identification will be performed		

<sup>\*\*</sup>Consult with the Wisconsin Division of Public Health Epidemiologists to inquire about testing of any other organisms that are suspected of being in a cluster or outbreak of public health significance.





# Shipment of Specimens

## **Order Supplies:**

Specimen collection and shipping supplies including:

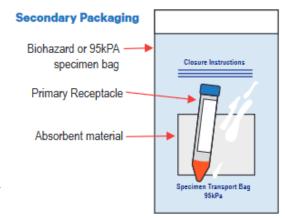
- Requisition sheets
- Specimen collection kits
- Mailers and ice packs



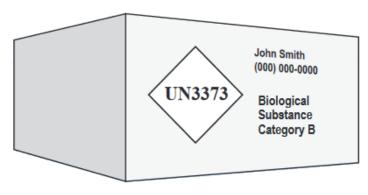
## **Specimen Packaging:**

Triple package specimens as "Biological substance, Category B / UN 3373" if classified as Category B.

- Ensure the specimen cap is on tight and the specimen is not leaking.
- Securely tape the cap of the specimen container, and wrap specimen with absorbent material.
- Place the specimen vial into a biohazard bag.
- Place the completed requisition form into the outer sleeve of the bag.
- Place the bagged specimen and form in the Styrofoam mailer with a frozen kool-pak and cushioning.
- Replace lid on the Styrofoam box. Close and securely tape the cardboard box shut.
- Attach the WSLH address label to the package:



Wisconsin State Lab of Hygiene
Specimen Receiving, Communicable Disease Division
2601 Agriculture Drive
Madison, WI 53718



- Attach the "Biological substance, Category B / UN 3373" label to the package.
- Attach your return address label
- Include the name and telephone number of the person who knows the content of the package (REQUIRED)



# Shipment of Specimens (Cont'd)

### **Shipping Arrangements:**

Transport of surveillance specimens or other specimens requested by WSLH is available at **NO COST** when you send specimens using **Purple Mountain Solutions** (https://purplemountainsolutions.com/)

- The WSLH has a contract with Purple Mountain Solutions for shipment of specimens to the WSLH, with charges billed to the WSLH.
- This account is for surveillance specimens or others requested by WSLH. Funding is not available for transport of other samples.
- You are not required to ship via Purple Mountain Solutions, only if you wish to have the transport charges billed to the WSLH.
- Specimens will be picked up during regular working hours, but you must confirm the time with Purple Mountain Solutions.
- Specimens will be delivered to the WSLH the following day. If you must ship on Fridays or on the day before a holiday, please include extra coolant.
- All package preparation should be completed before the courier arrives.
- Contact Purple Mountain Solutions directly to arrange for a pick-up. Orders must be placed by noon for same day pickup.

Phone #: 800-990-9668

 Same day delivery may be available for specific high priority specimens. However, preapproval from WSLH is necessary.

# **Biosafety Considerations**

#### Evaluate biosafety at your testing site using a risk assessment:



Review your testing practices and lab environment and consider the following strategies to minimize potential staff exposures to aerosols when performing testing.

ple Mountain Solutions, Inc.

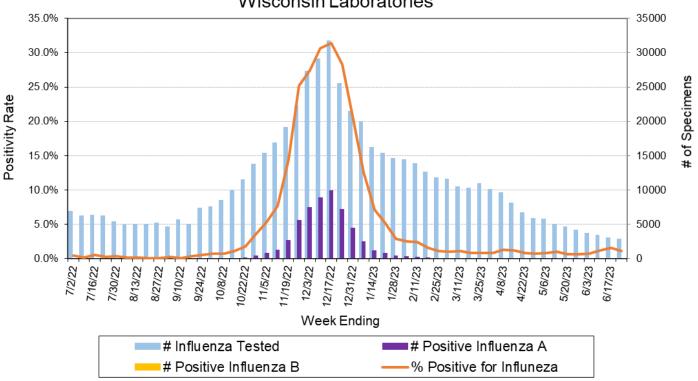
- Use a biosafety cabinet or benchtop splatter-shield.
- Use personal protective equipment (e.g. safety glasses, gloves, lab coat)
- Locate your testing in a less-heavily trafficked area to sequester the testing and reduce potential exposures.
- If possible, review recent history of travel including that outside the U.S.
- An online laboratory risk assessment tool is available here: www.cdc.gov/ safelabs/resources-tools/biosafety-resources-and-tools.html



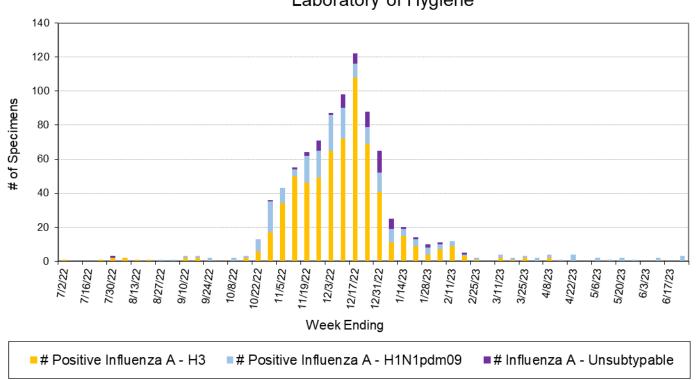


# Surveillance Graphs for 2022-23 Season

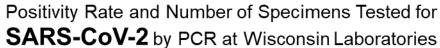
# Number Tested and Positivity Rate for **Influenza** by PCR at Wisconsin Laboratories

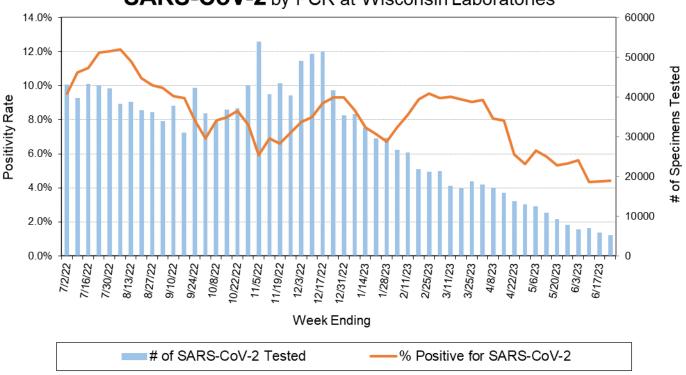


# Influenza A Specimens Subtyped at the Wisconsin State Laboratory of Hygiene

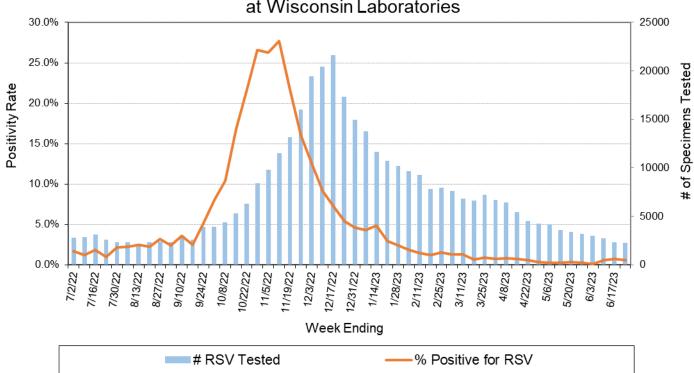






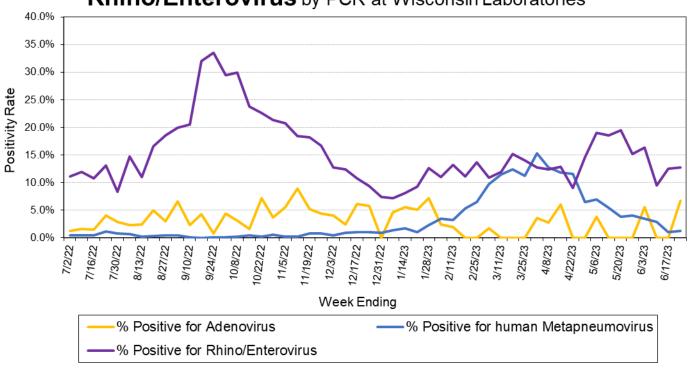




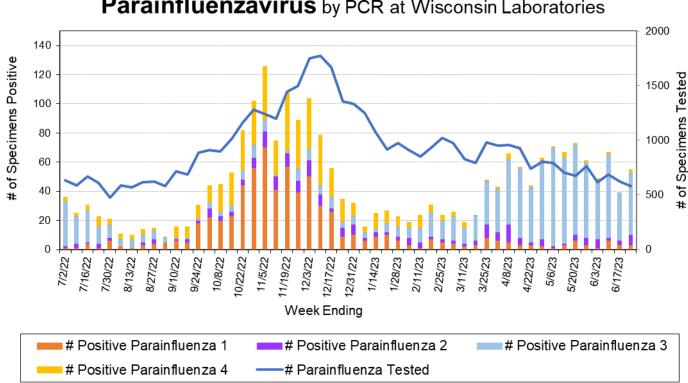




# Positivity Rate of **Adenovirus**, **hMPV** and **Rhino/Enterovirus** by PCR at Wisconsin Laboratories

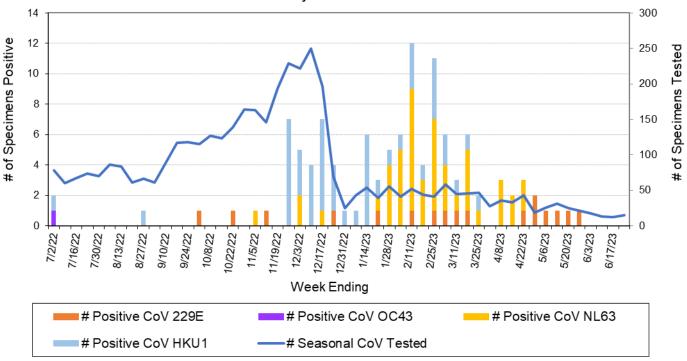


# Number of Specimens Tested and Positive for **Parainfluenzavirus** by PCR at Wisconsin Laboratories

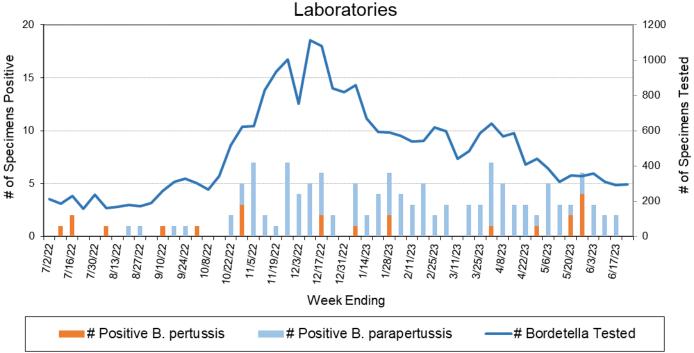




# Number of Specimens Tested and Positive for **Seasonal Coronaviruses** by PCR at Wisconsin Laboratories

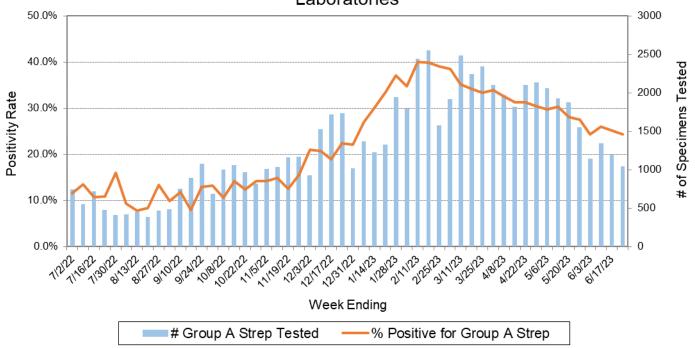


# Number of Specimens Tested and Positive for **Bordetella pertussis** and **parapertussis** by PCR at Wisconsin

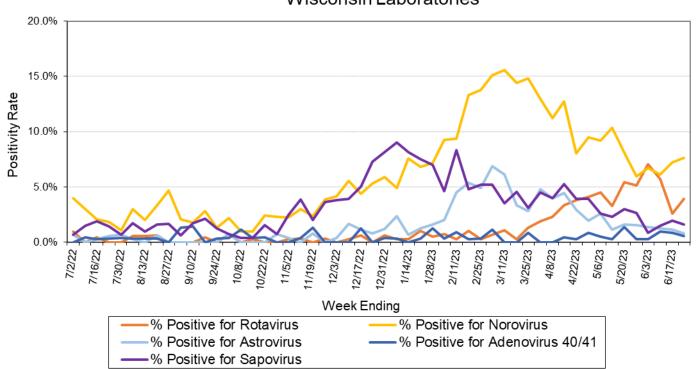




# Positivity Rate and Number of Specimens Tested for **Group A**\*\*Streptococcus\*\* by Rapid Antigen Test at Wisconsin \*\*Laboratories\*\*



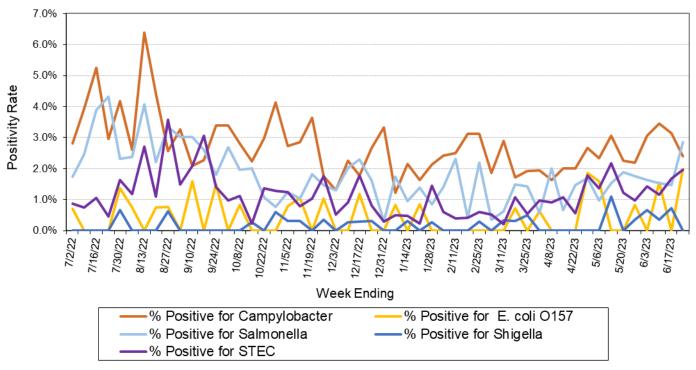
# Positivity Rate of **Viral Enteric Pathogens** by PCR at Wisconsin Laboratories



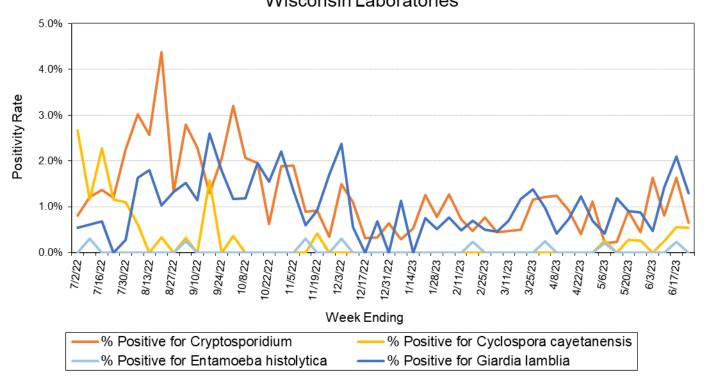


# Positivity Rate of **Bacterial Enteric Pathogens** by PCR at

Wisconsin Laboratories



# Positivity Rate of **Parasitic Enteric Pathogens** by PCR at Wisconsin Laboratories







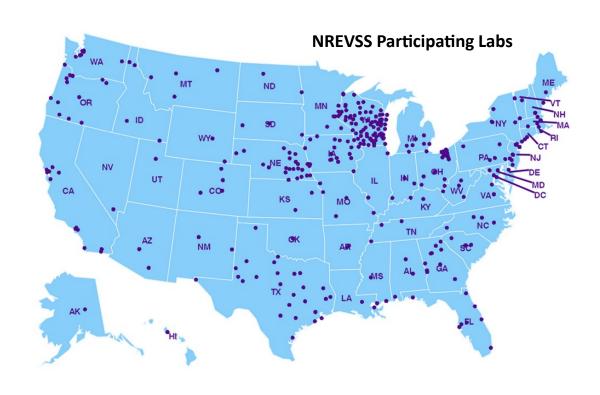








# THANK YOU FOR YOUR PARTICIPATION IN LABORATORY-BASED SURVELLANCE!!





Communicable Disease Division 2601 Agriculture Drive Madison, WI 53718

Customer Service: 800-862-1013

