

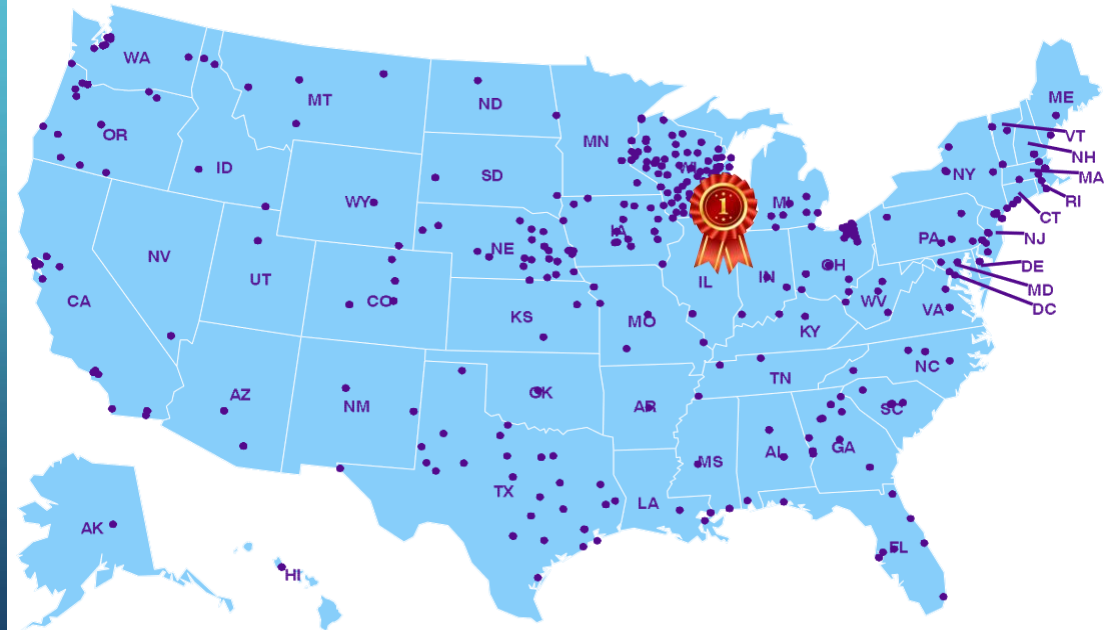
# YEAR IN REVIEW: 2024-25

ERIKA HANSON

WISCONSIN STATE LABORATORY OF HYGIENE

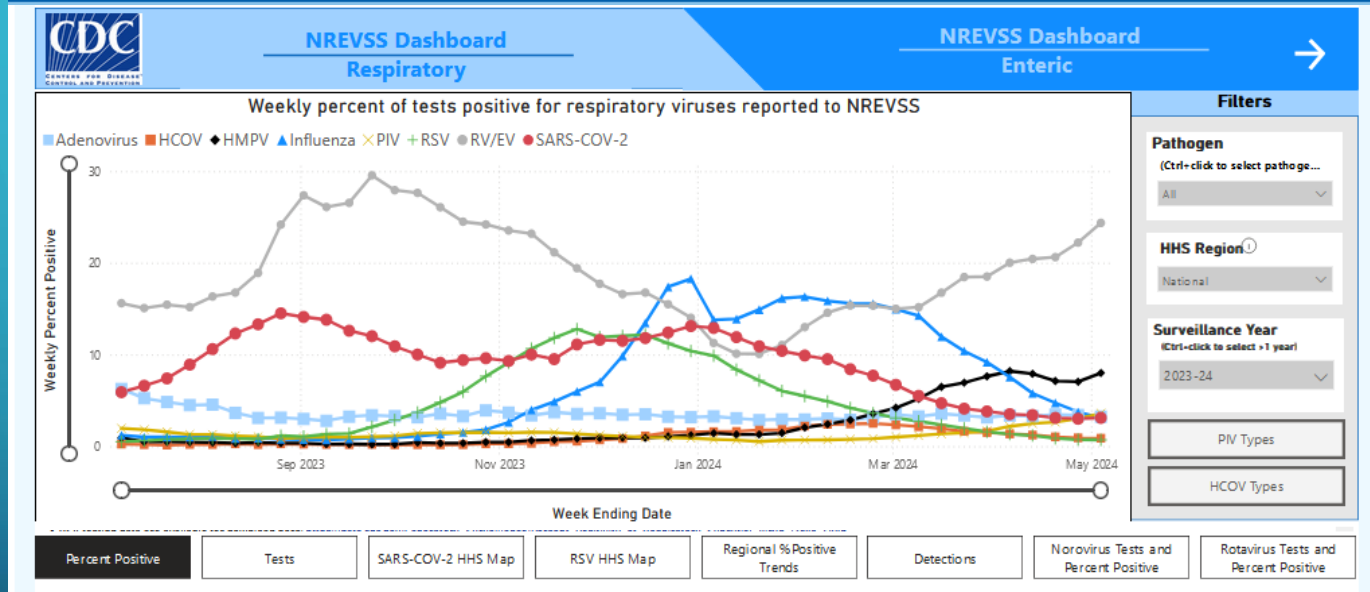
VIROLOGY TEAM LEAD

## THE NATIONAL RESPIRATORY AND ENTERIC VIRUS SURVEILLANCE SYSTEM (NREVSS)



# THANK YOU FOR YOUR PARTICIPATION!!!

## The National Respiratory and Enteric Virus Surveillance System (NREVSS)

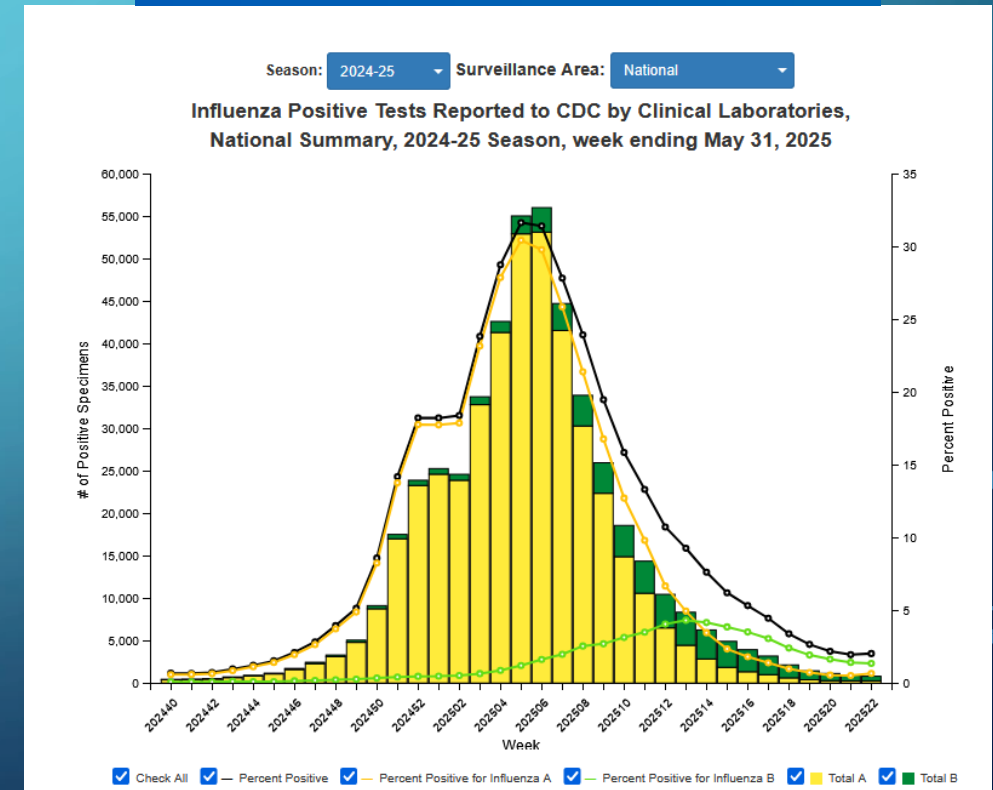


<https://www.cdc.gov/surveillance/nrevss/index.html>



## FluView

EXPLORE THIS TOPIC



# THANK YOU FOR YOUR PARTICIPATION!!!

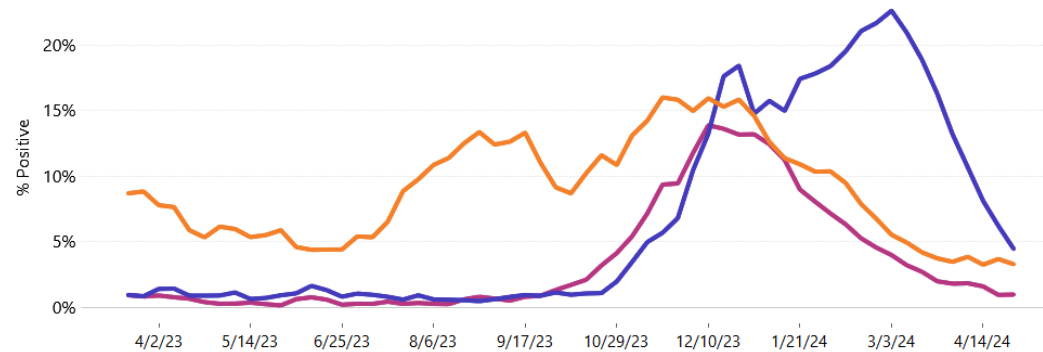
## Testing details and trajectory of positive results for COVID-19, influenza, and RSV

Week of: April 28, 2024 - May 4, 2024

	# of tests run	# of positive tests	% of tests positive	Trajectory
COVID-19	6,880	223	3.2%	↓
Influenza	6,236	275	4.4%	↓
RSV	5,056	47	0.9%	→

## Percent (%) of reported test results positive for COVID-19, influenza, and RSV by week

Data are interactive. **Hover over lines** to see more information.



# THANK YOU FOR YOUR PARTICIPATION!!!



May 13, 2024

## Laboratory Surveillance Report

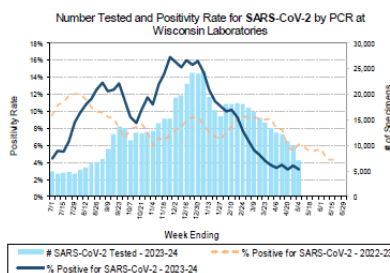
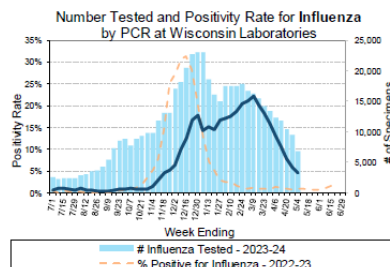
\*\* For a selection of pathogens, participating Wisconsin clinical laboratories voluntarily report to WSLH on a weekly basis the total number of tests performed, and the number of those tests with positive results.

To enhance surveillance activities, and monitor for avian influenza, each week please send:

- PCR/Molecular Testing sites:
  - All influenza positive specimens
  - Especially, Influenza A specimens:
    - That fail to subtype (Ct <35)
    - With swine, bovine or avian exposure
    - With international travel history



- All Testing Sites:
  - Up to 5 SARS-CoV-2 positive specimens



### Respiratory Snapshot:

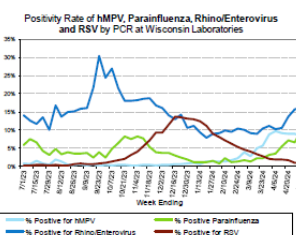
- Influenza activity is decreasing in Wisconsin (4.5%) and nationally (3.1%).
  - Influenza A is the dominant strain circulating (70.6%)
  - H3 is the dominant Influenza A subtype circulating (53.7%).
- Rhino/Enterovirus (16.2%), Parainfluenza (9.2%) and hMPV (8.4%) activities are high in Wisconsin.

### Enteric Snapshot:

- Norovirus activity is decreasing (7.9%) in Wisconsin.

### Other:

- Group A Streptococcus activity in Wisconsin is high (23.9%).



Next Page

## Laboratory Surveillance Report

### Enteric Pathogens

Week Ending 5/4/24

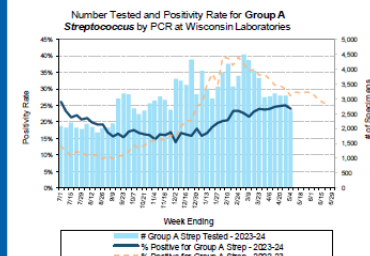
	# Tested	% Positive
Norovirus***	517	7.9%
Rotavirus	515	7.0%
Sapovirus	426	3.3%
Astrovirus	426	2.6%
Salmonella	631	2.4%
Campylobacter	651	1.8%
Adenovirus 40/41	426	1.2%
STEC	631	1.1%
Cryptosporidium	499	0.6%
Plesiomonas shigelloides	464	0.4%
Yersinia enterocolitica	534	0.4%
E. coli O157	289	0.3%
Shigella/EIEC	619	0.3%
Entamoeba histolytica	499	0.2%
Giardia	499	0.2%
Aeromonas	83	0.0%
Vibrio	534	0.0%
Cyclospora	426	0.0%

\*\*\*BioMerieux has announced an increased risk of false positive norovirus results with the BioFire FilmArray GI panel, which may increase the statewide norovirus percent positivity \*\*\*

### Respiratory Pathogens

Week Ending 5/4/24

	# Tested	% Positive
Rhinovirus/Enterovirus	1063	16.2%
Parainfluenza	772	9.2%
Human metapneumovirus	772	8.4%
Influenza	6728	4.5%
SARS-CoV-2	7119	3.2%
Seasonal coronaviruses	559	2.7%
Adenovirus	756	2.0%
RSV	5406	0.9%
Bordetella pertussis	528	0.2%



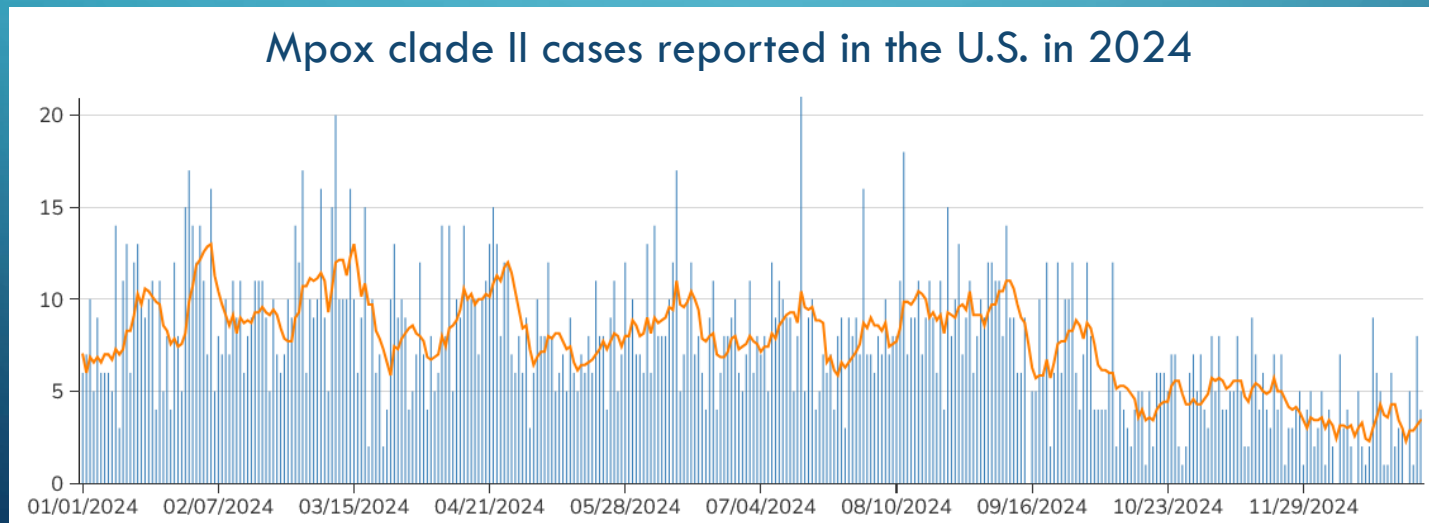
### Additional Information

- Additional information on respiratory pathogens can be found on the DHS website: <https://www.dhs.wisconsin.gov/disease/respiratory.htm>
- The WSLH SARS-CoV-2 genomic dashboard is available here: <https://dataportal.slh.wisc.edu/sc2dashboard>
- The influenza, RSV and respiratory virus activity graphs can be viewed here: <http://www.slh.wisc.edu/wcln-surveillance/surveillance/virology-surveillance/>
- The bacterial, viral and parasitic activity graphs can be viewed here: <http://www.slh.wisc.edu/wcln-surveillance/surveillance/gastroenterology-surveillance/>

To subscribe to this report, email [WCLN@slh.wisc.edu](mailto:WCLN@slh.wisc.edu)

# SUMMER OF 2024

- Increased **influenza surveillance** in response to the H5N1 outbreak in cows
  - For influenza A H5 subtyping PCR, WSLH validated:
    - Conjunctival swabs
    - A higher through-put RNA extraction platform
- In the U.S., low level transmission of **mpox clade II** is still occurring.
  - 6 cases were detected in Wisconsin in 2024





# LASSA FEVER VIRUS CASE IN IOWA

- Patient in Iowa suspected of Lassa Fever on October 27, 2024

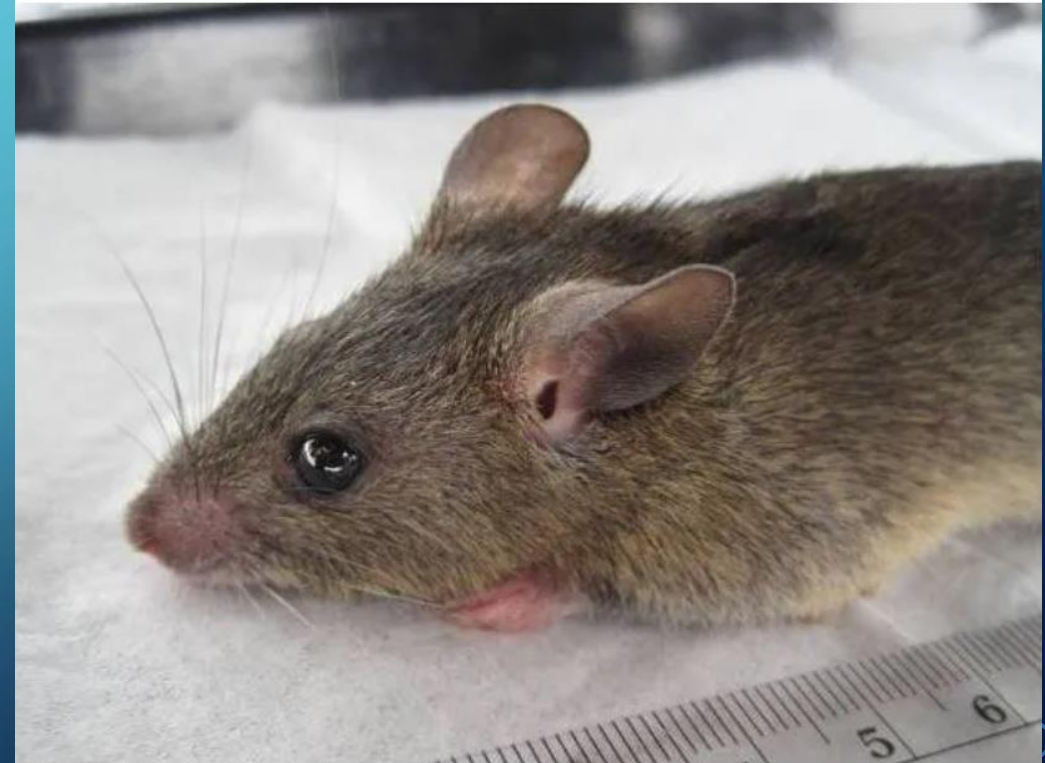
- **Lassa Fever virus:**

- Endemic in West Africa, but rare in the United States.
- Primarily transmitted to humans from the urine and droppings of infected rodents.
- Has the potential to cause significant illness, including hemorrhagic disease.

[All Posts](#) • [Public Health Preparedness & Response](#)

## How Three Public Health Laboratories Partnered to Detect One Rare Virus

March 26, 2025 • [Add Comment](#)



# OROPOUCHE

- Endemic to the Amazon region of South America
- Causes fever, headache, chills, malaise
- Spread by infected biting midges
- In 2023-24, Orochouche started spreading outside of the Amazon region

## Oropouche outbreaks in Latin America

Countries with confirmed cases in 2024



Source: Pan American Health Organization

# 2024-25 TIMELINE OF EVENTS



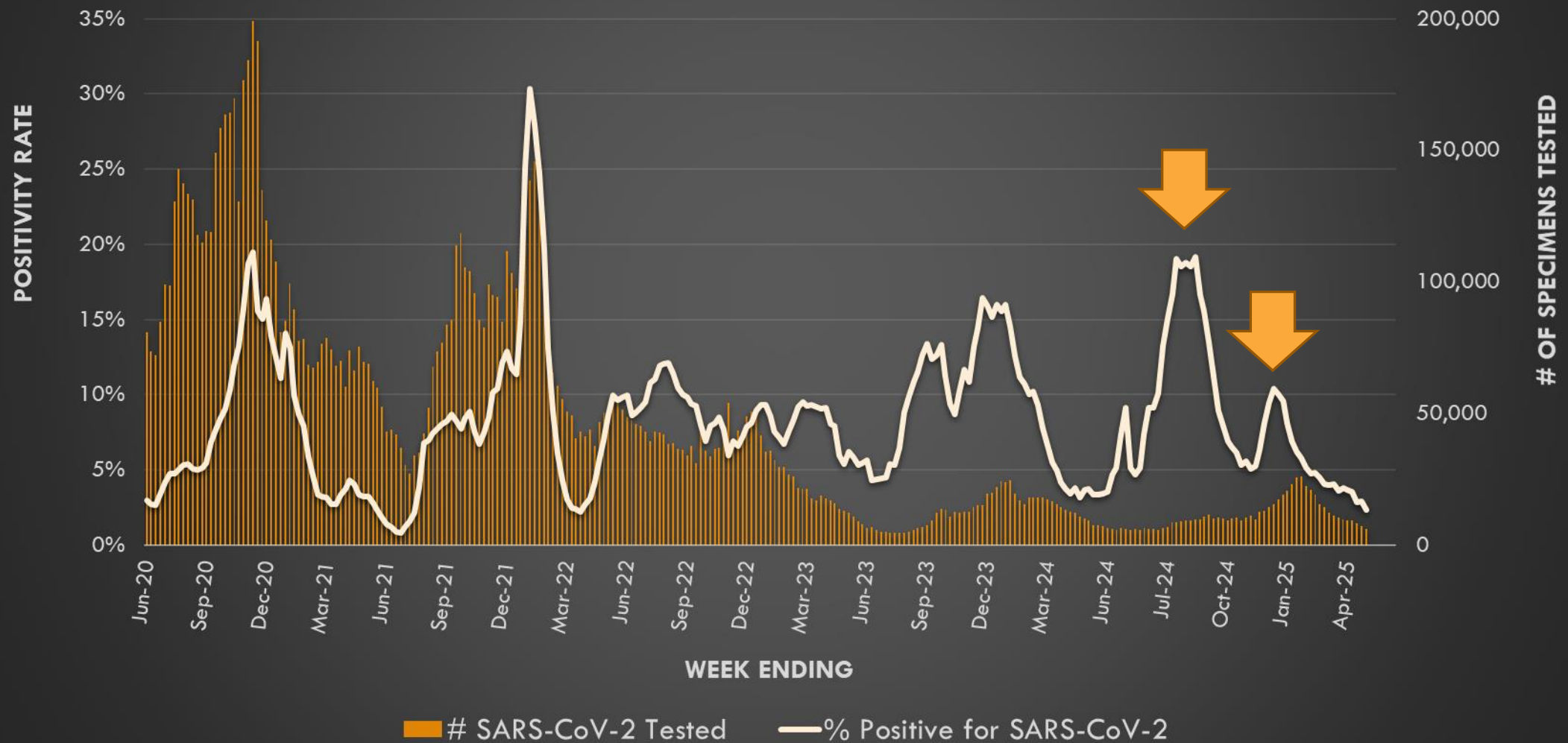
SARS-CoV-2 Peak

2024

2025



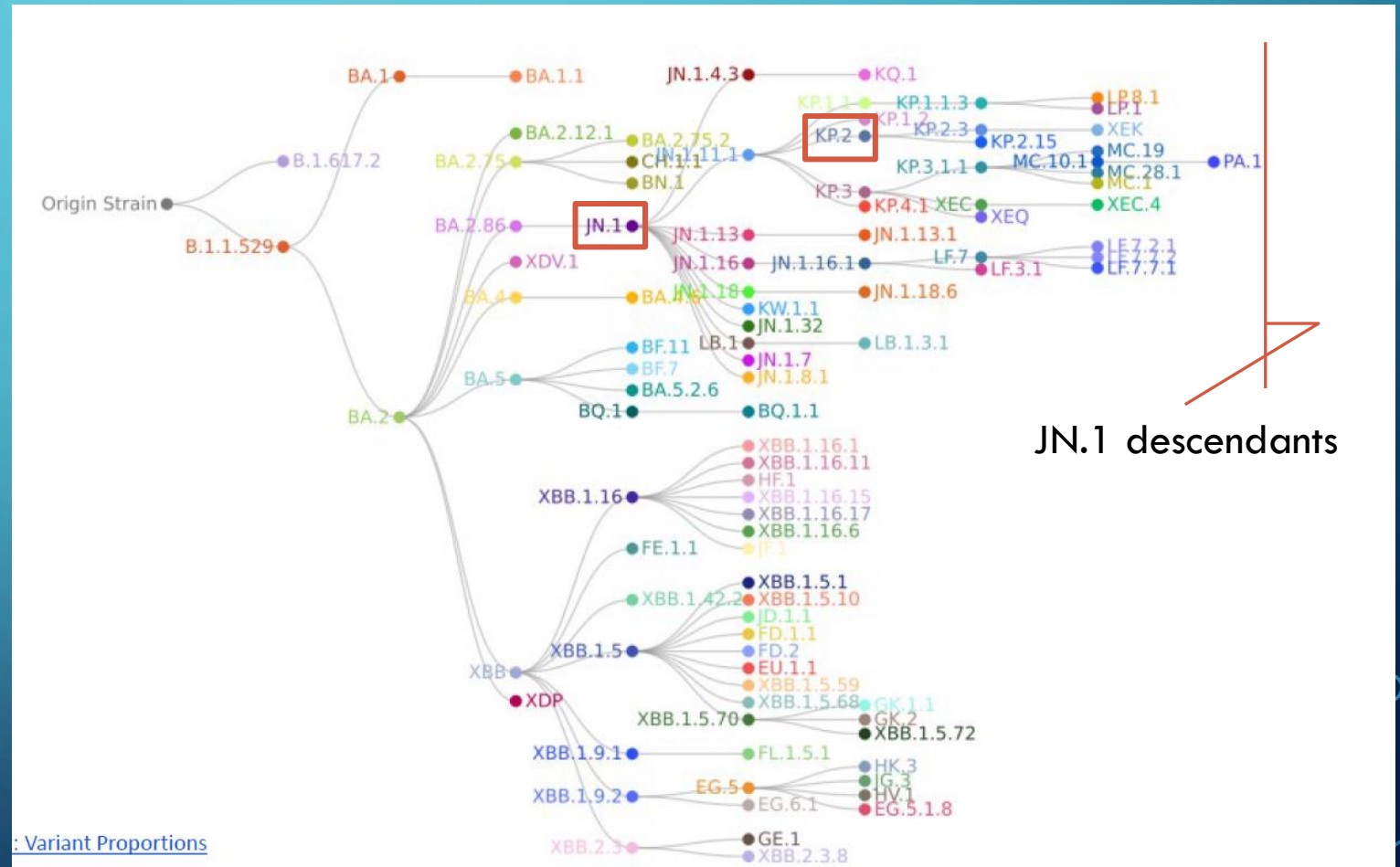
# Specimens Tested for SARS-CoV-2 by PCR at Wisconsin Laboratories from 2020-25



# SARS-COV-2 GENOMIC SURVEILLANCE – 2024-25



- All circulating viruses are JN.1 descents
- Vaccines for 2024-25
  - KP.2 lineage (Pfizer and Moderna)
  - JN.1-lineage (Novavax)
- JN.1-lineage based formula recommended for 2025-26 vaccines



# 2024-25 TIMELINE OF EVENTS

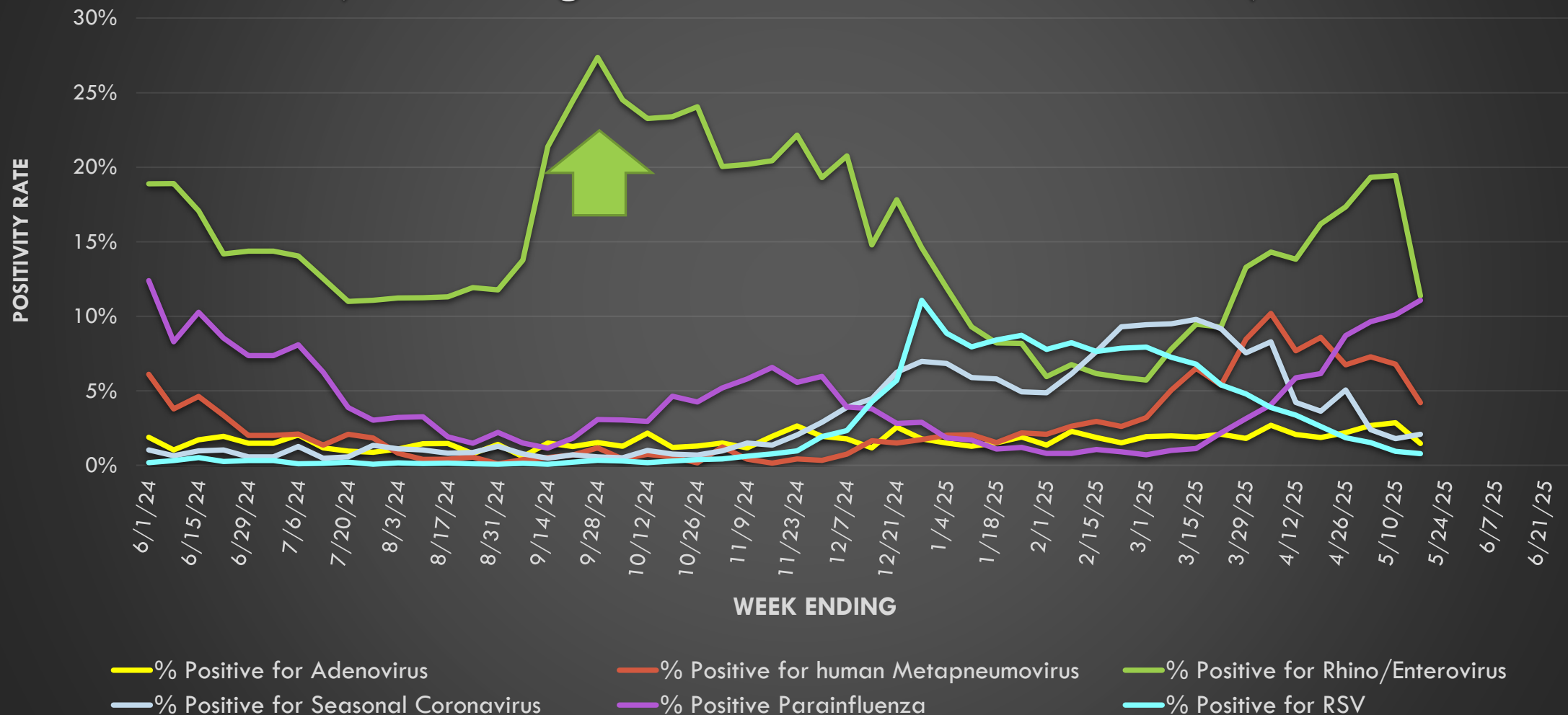


SARS-CoV-2 Peak  
Rhino/Enterovirus Peak

2024

2025

## Positivity of Respiratory Specimens by PCR in WI (Excluding Influenza and SARS-CoV-2)



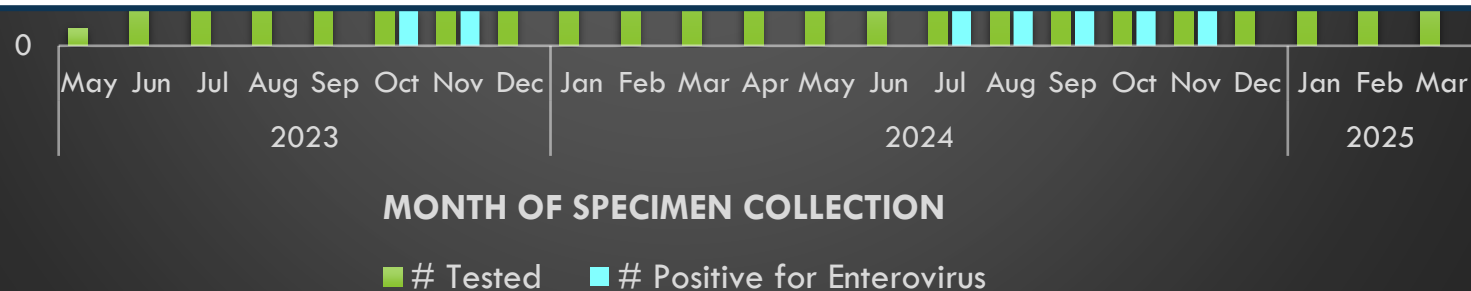
# DIFFERENTIATION OF RHINO/ENTEROVIRUS SPECIMENS

## Rhinovirus/Enterovirus Differentiation at WSLH

35

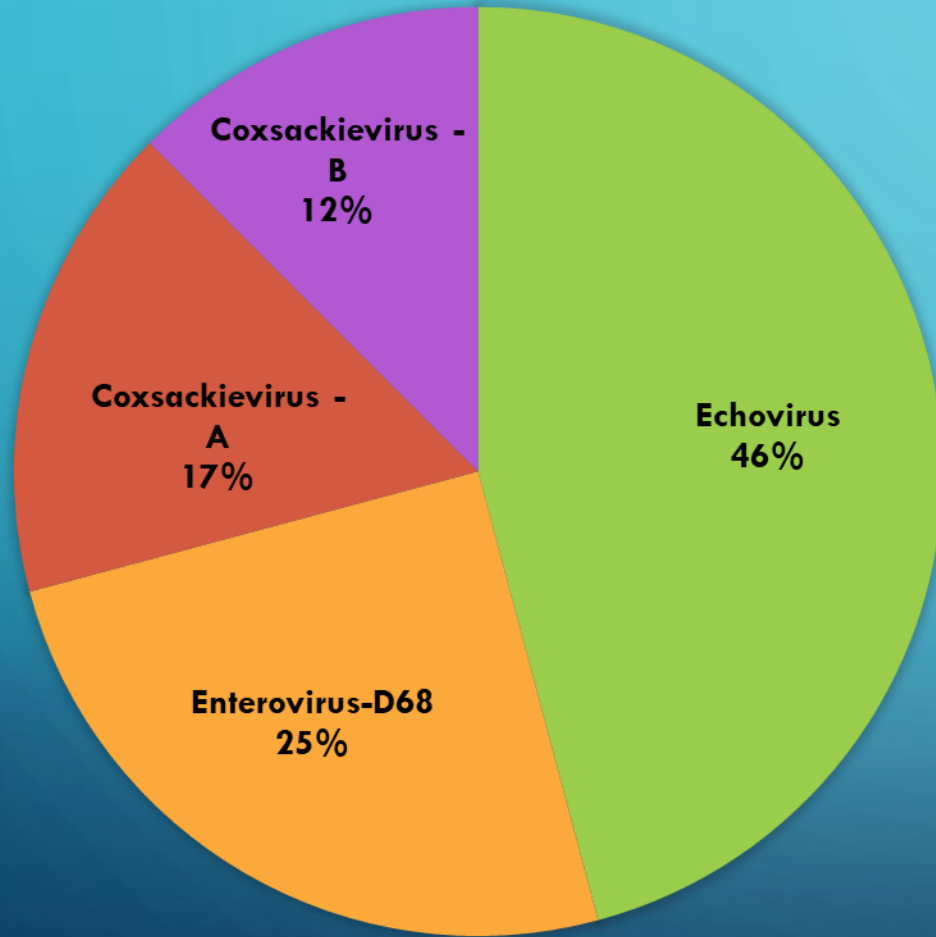


**Thank you for submitting Enterovirus positive CSF specimens!!!**

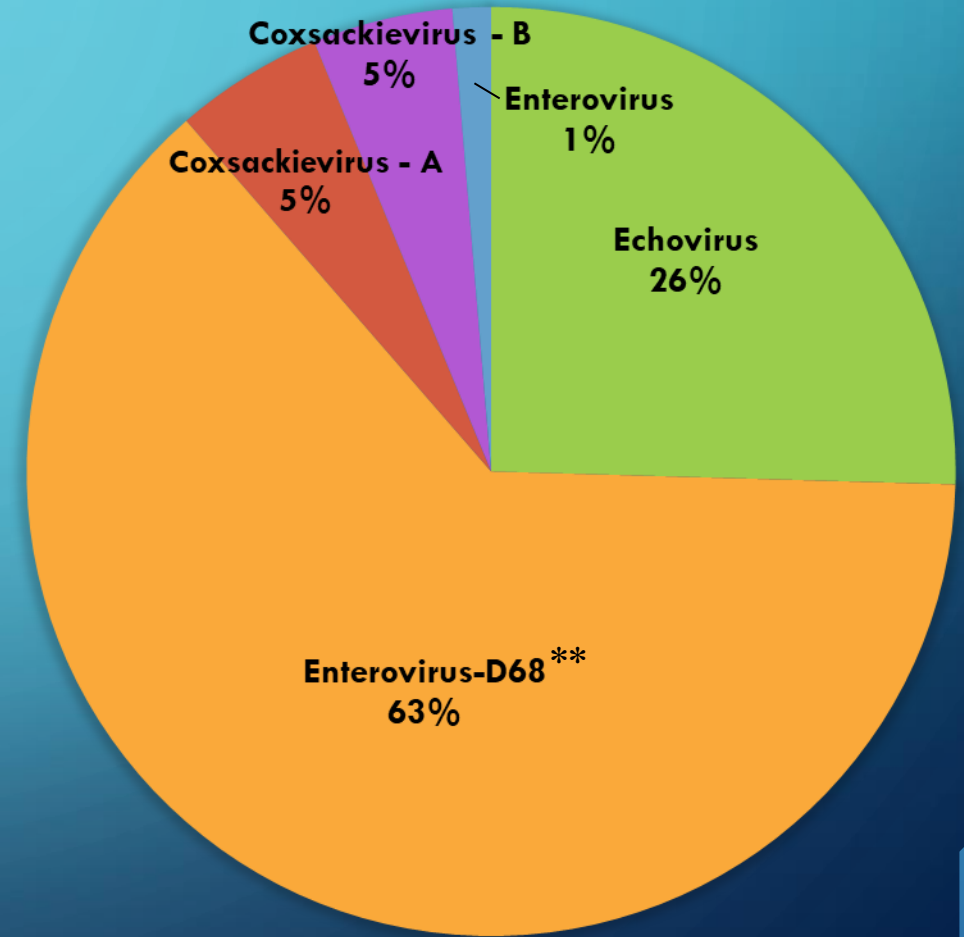




## WISCONSIN ENTEROVIRUS TYPES - 2023-24



## NATIONAL ENTEROVIRUS TYPES - 2024



\*\*Some reporting sites test ONLY for Enterovirus-D68 (not any other Enterovirus types)

# 2024-25 TIMELINE OF EVENTS



SARS-CoV-2 Peak

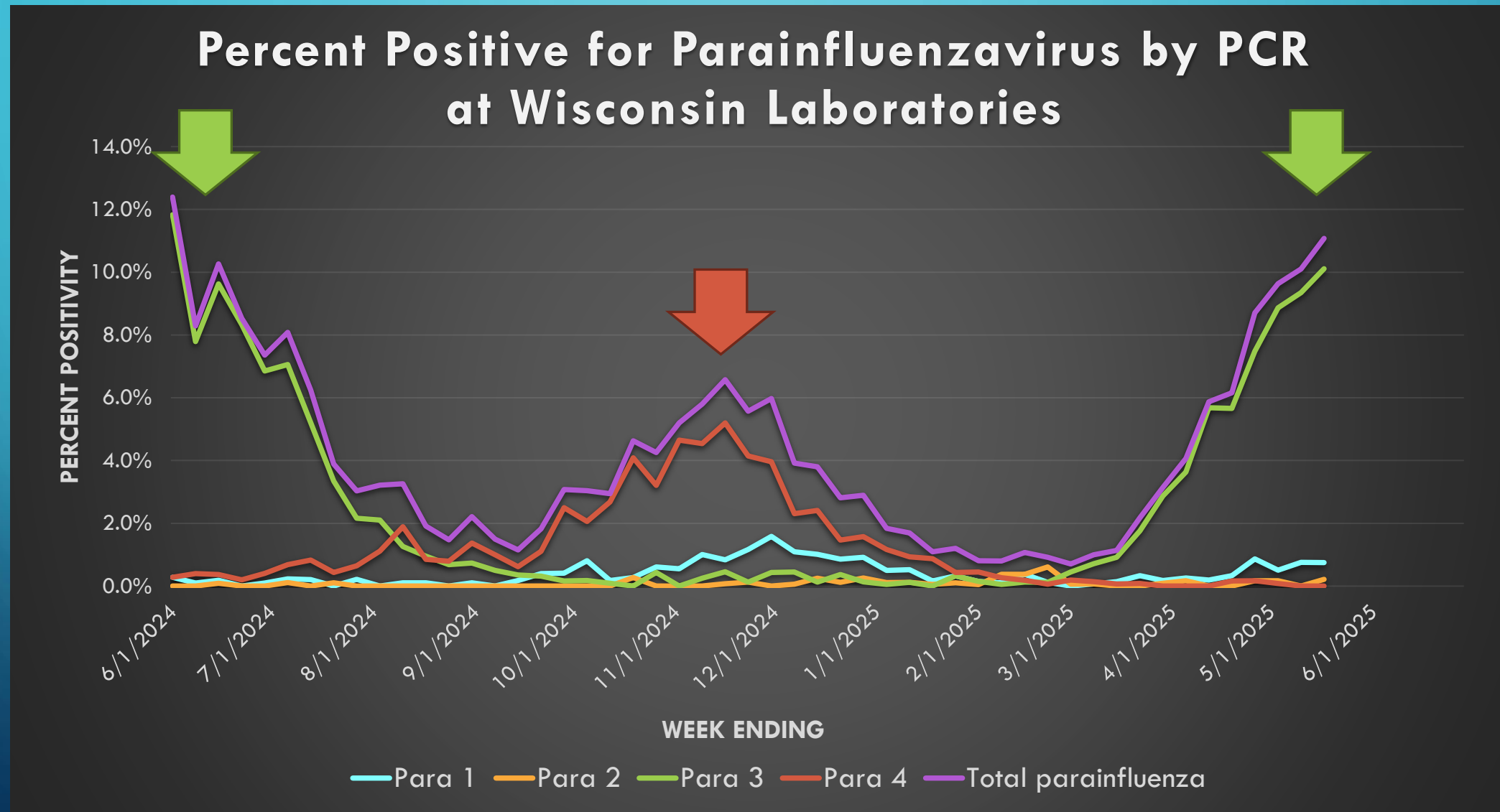
Rhino/Enterovirus Peak

Parainfluenza Peak

2024

2025

# PARAINFLUENZA POSITIVITY BY TYPE



# 2024-25 TIMELINE OF EVENTS



SARS-CoV-2 Peak

Rhino/Enterovirus Peak

Parainfluenza Peak

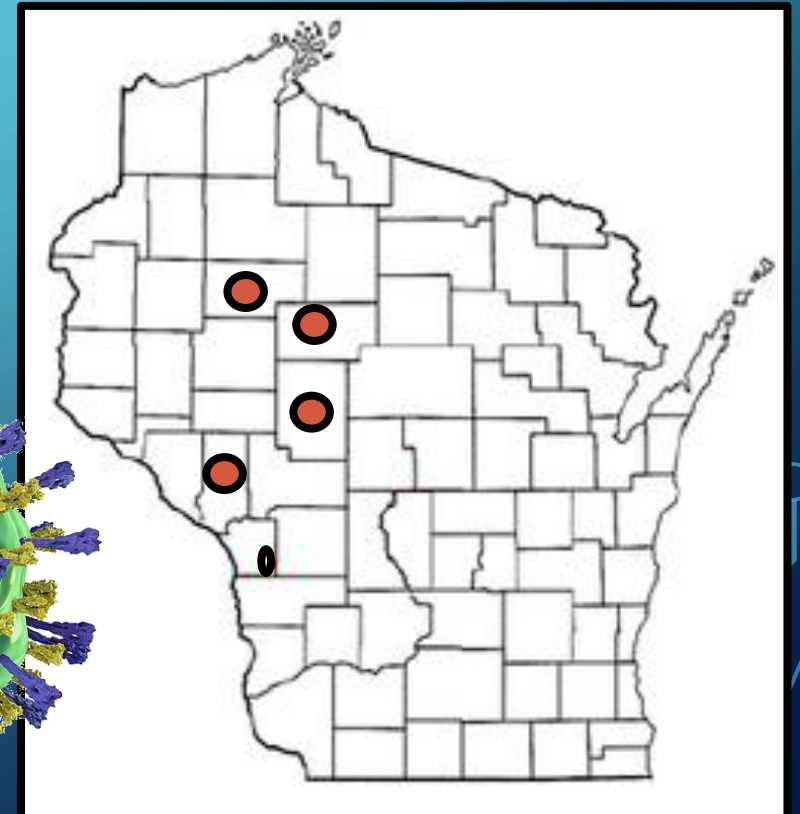
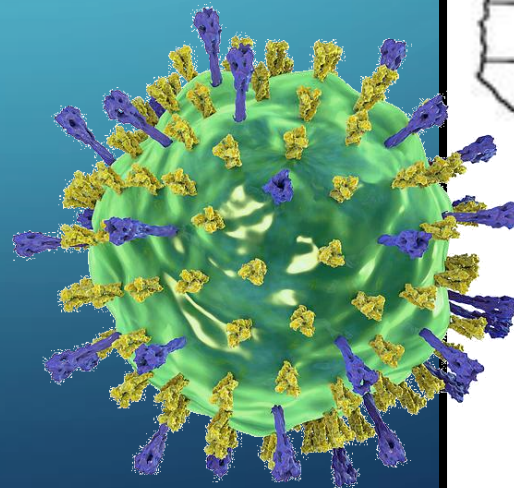
2024

2025

7 mumps cases

# MUMPS CLUSTER

- 7 cases of laboratory-confirmed mumps reported in Wisconsin.
  - Affected counties included: Clark, Taylor, Rusk and Trempealeau
  - Cases ranged from Mid-December to Mid-March





# 2024-25 TIMELINE OF EVENTS



SARS-CoV-2 Peak  
Rhino/Enterovirus Peak

Parainfluenza Peak  
H5N1 Case

2024

2025



WISCONSIN DEPARTMENT  
of HEALTH SERVICES

FOR IMMEDIATE RELEASE

December 18, 2024

Contact

Elizabeth Goodsitt, 608-266-1683

Jennifer Miller, 608-266-1683

## DHS Reports Presumptive Positive Human Case of Highly Pathogenic Avian Influenza (HPAI) in Wisconsin

The Wisconsin Department of Health Services (DHS) has detected the first presumptive positive human case of [Highly Pathogenic Avian Influenza A \(H5N1\)](#), also known as bird flu, in Barron County. The human case follows an [infected flock of commercial poultry](#) identified in Barron County. The person had exposure to the infected flock. The case was identified through testing at the Wisconsin State Lab of Hygiene (WSLH) and is pending confirmation at CDC (Centers for Disease Control and Prevention).

- WSLH tested 32 avian influenza suspects in the 2024-25 season (44 specimens)
  - 20 were negative for influenza
  - 16 influenza A (H1pdm09)
  - 7 influenza A (H3)
  - 1 influenza A (H5)

# HIGHLY-SUSPECT AVIAN INFLUENZA TESTING

- Clinicians who suspect **influenza virus infection in symptomatic patients** with known exposure to the following should contact DPH to request testing at the WSLH –
  - Ill or dying animals or their products
  - Confirmed H5N1 positive flock/herd
  - Person with a probable or confirmed case of H5N1
- Other requests can be sent to WSLH as normal influenza surveillance
  - Indicate the risk factor on your normal respiratory surveillance form (e.g. bovine exposure)



# 2024-25 TIMELINE OF EVENTS



SARS-CoV-2 Peak  
Rhino/Enterovirus Peak

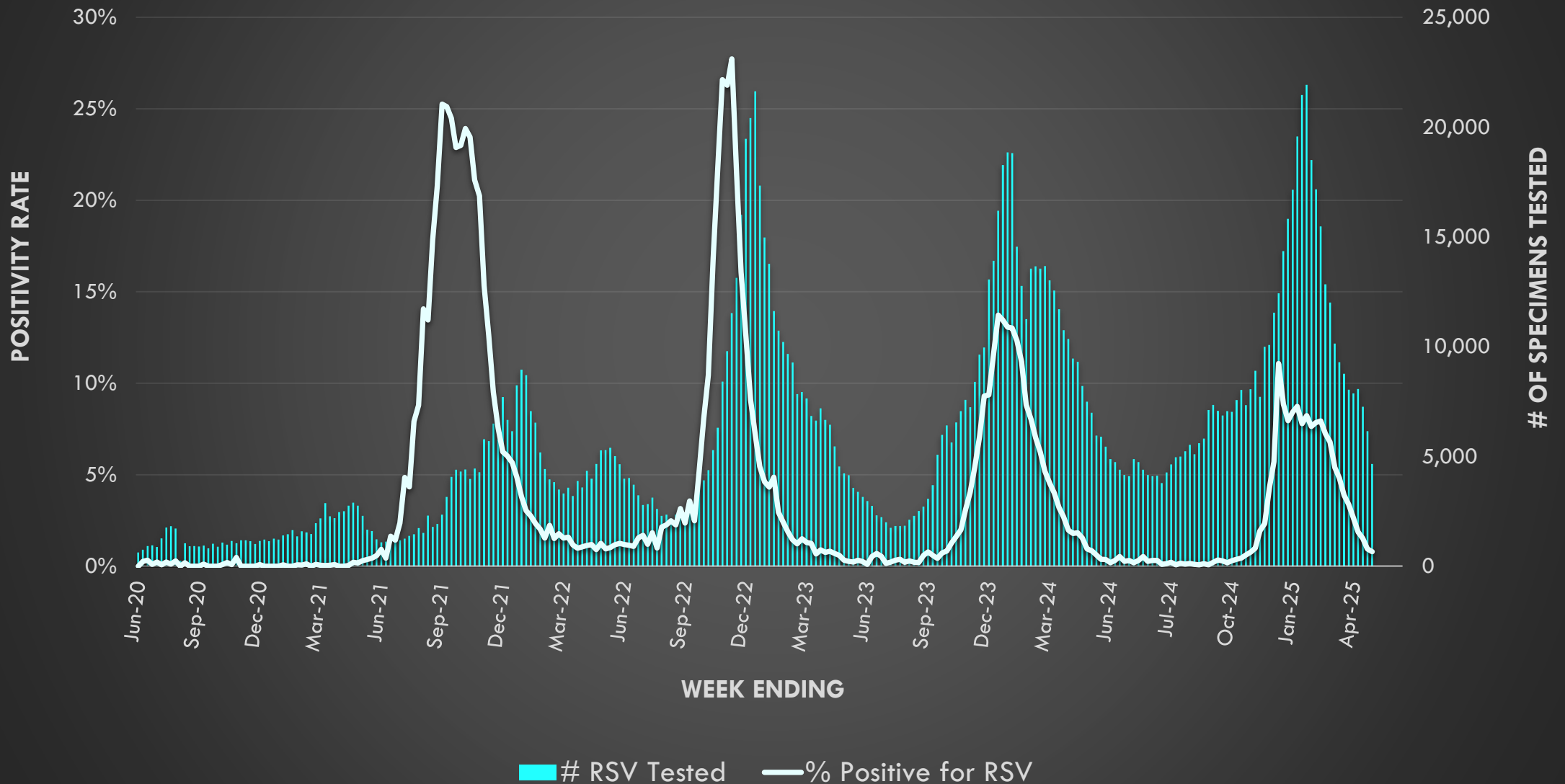
Parainfluenza Peak

H5N1 Case  
RSV peak

2024

2025

# Positivity Rate and Number of Specimens Tested for RSV by PCR at Wisconsin Laboratories from 2020-25





# RSV GENOMIC SURVEILLANCE

- Monitoring RSV genome after introduction of RSV preventatives in 2023
  - Nirsevimab (Monoclonal Ab preventative for infants)
  - Vaccination (for older adults)
- New CDC program started in 2024
  - Requesting 40 RSV positive specimens per year from each state
- WSLH is also performing whole genome sequencing on RSV positive specimens

# 2024-25 TIMELINE OF EVENTS



SARS-CoV-2 Peak

Rhino/Enterovirus Peak

Parainfluenza Peak

H5N1 Case

RSV peak

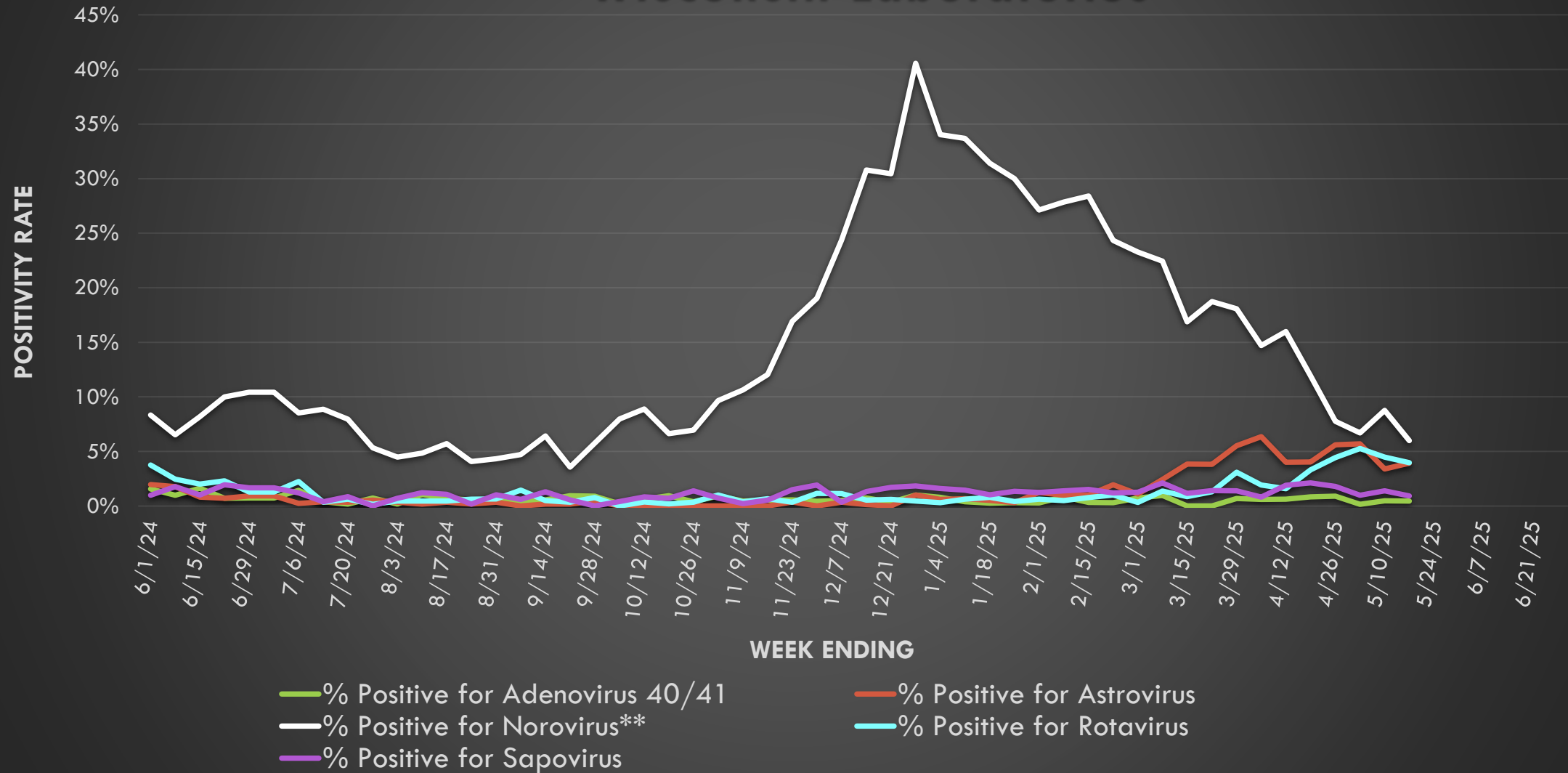
SARS-CoV-2 Peak #2

Noro Peak

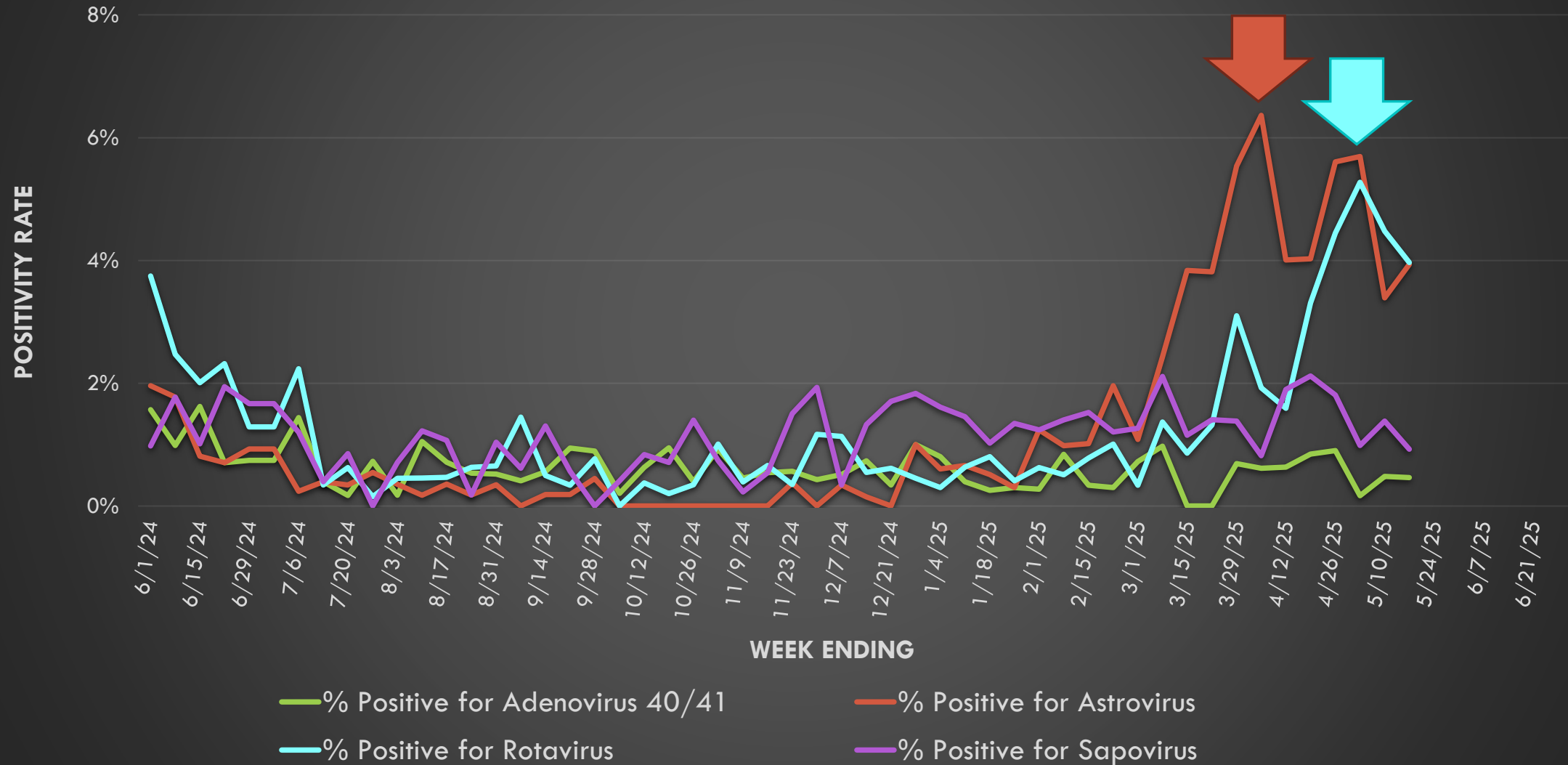
2024

2025

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



## Positivity Rate of Viral Enteric Pathogens by PCR at Wisconsin Laboratories (Excluding Norovirus)



# 2024-25 TIMELINE OF EVENTS

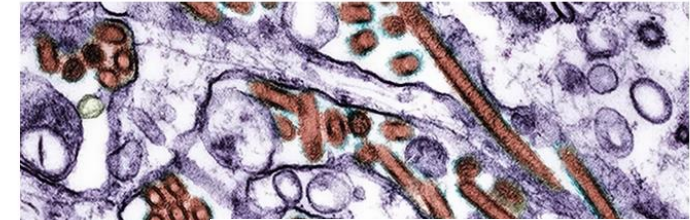


SHOTS - HEALTH NEWS

## First bird flu death reported in the U.S., according to the CDC

JANUARY 6, 2025 · 7:34 PM ET

By Will Stone



## California Declares State of Emergency for Bird Flu Response

Dec 20, 2024 | Influenza | ★★★★★





# Accelerated Subtyping of Influenza A in Hospitalized Patients

## AT A GLANCE

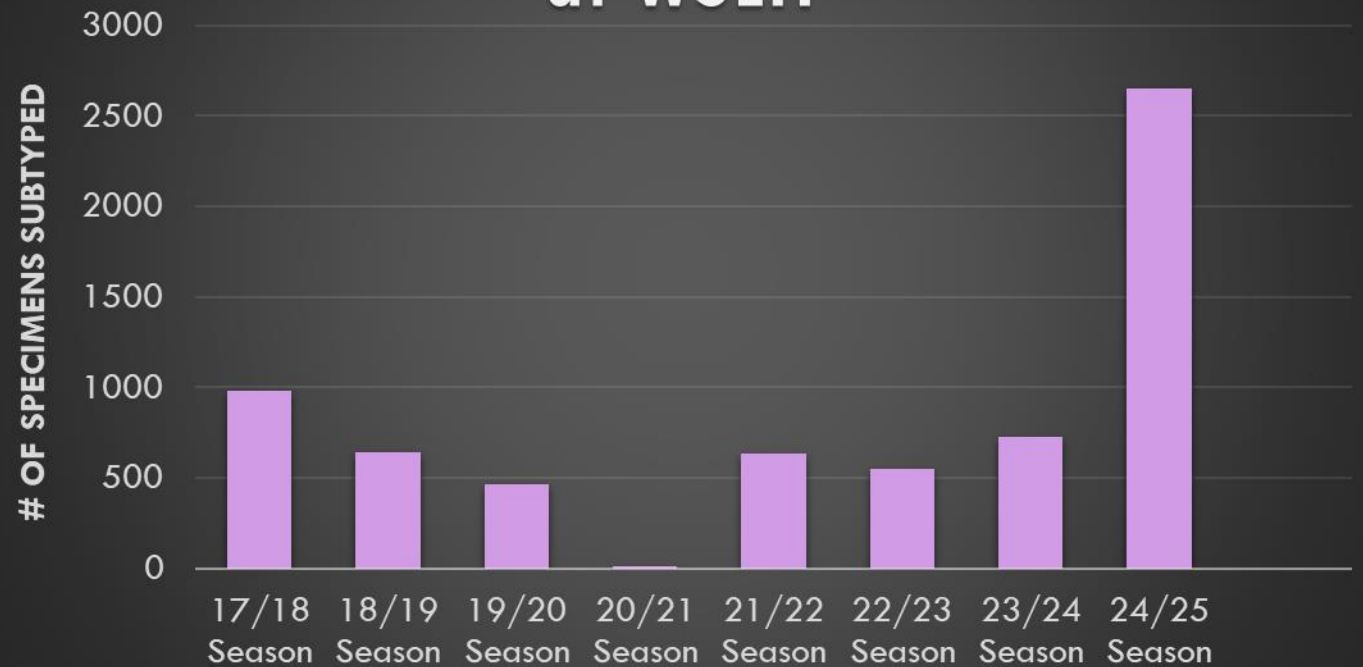
Distributed via the CDC Health Alert Network

January 16, 2025, 10:00 AM ET

CDCHAN-00520

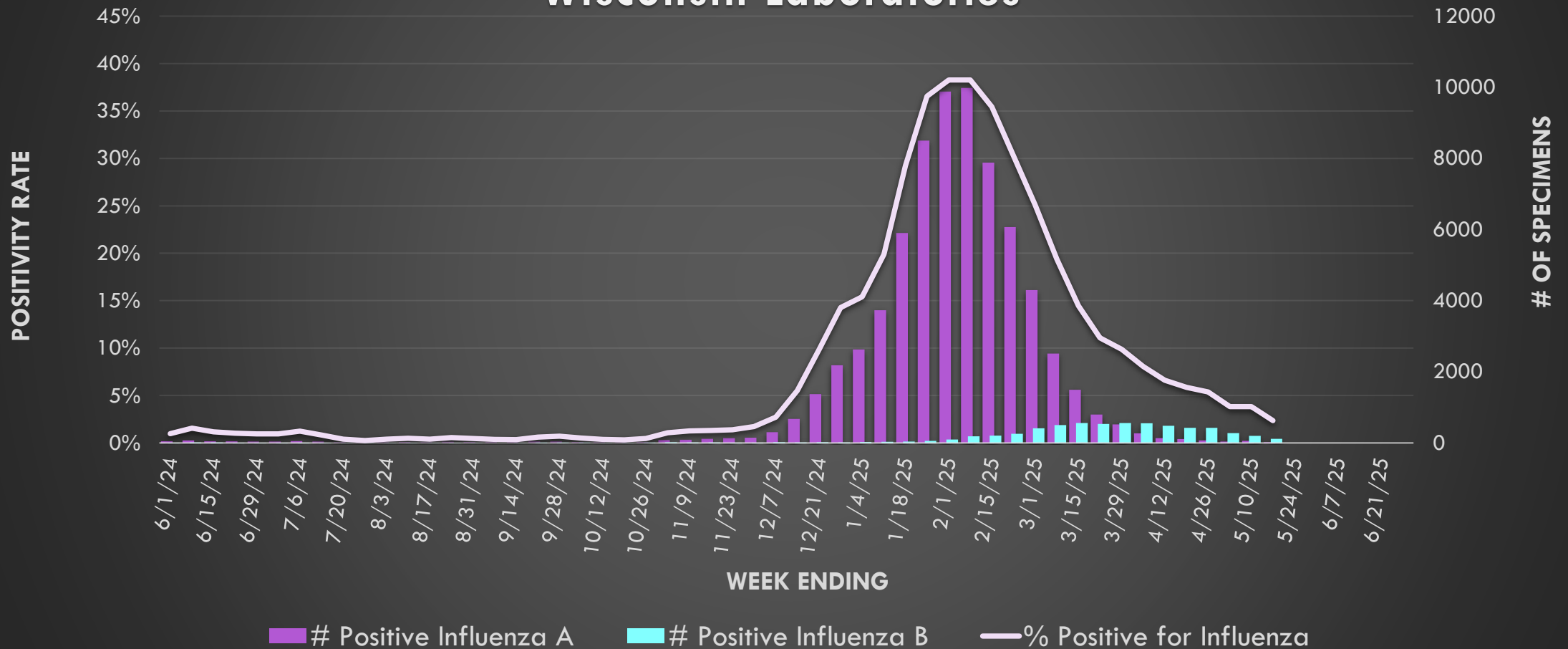


## Influenza A subtyping performed at WSLH



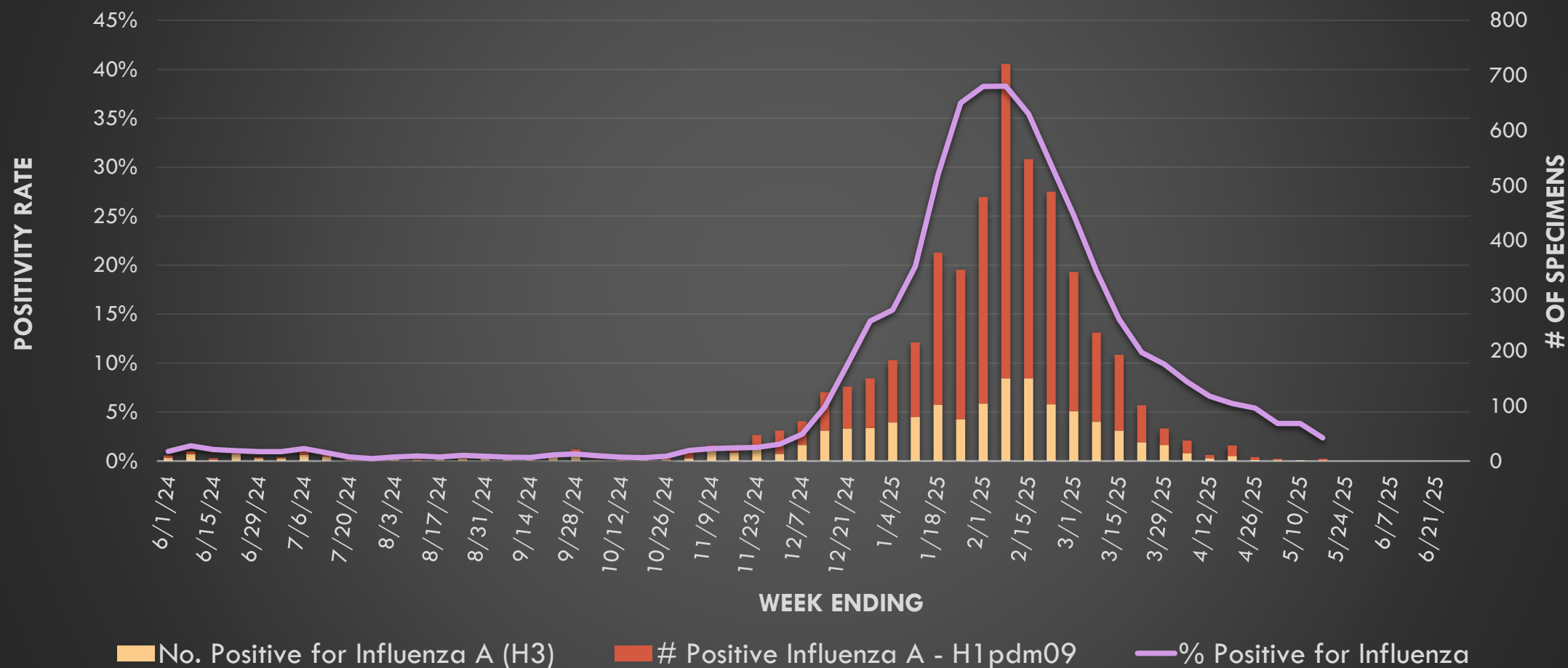
# INFLUENZA VIRUS POSITIVITY BY TYPE

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



# INFLUENZA A VIRUS POSITIVITY BY SUBTYPE













Influenza A Specimens Subtyped by PCR at Wisconsin Laboratories



# INFLUENZA SEASON 2024-25

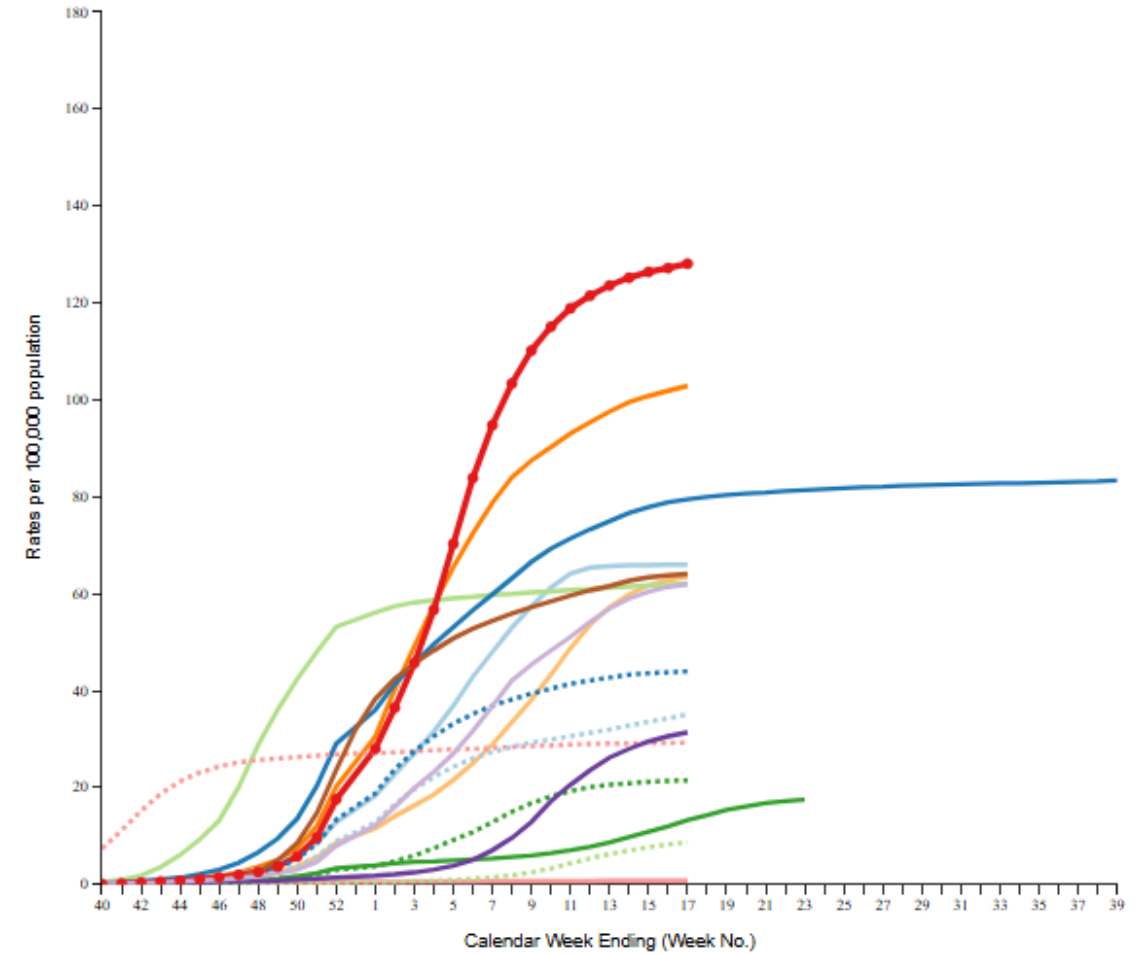
- High severity for all age groups – first time since 2017-18 season

## Preliminary 2024-2025 In-Season Flu Severity Classifications (as of April 12, 2025):

All Ages			Children		
<b>High Severity</b>			<b>High Severity</b>		
 Influenza-like Illnesses Peak Week Value	 Flu Hospitalization Rate Peak Week Value	 Flu Deaths Peak Week Value	 Influenza-like Illnesses Peak Week Value	 Flu Hospitalization Rate Peak Week Value	 Flu Deaths Peak Week Value
7.9%	23.4 /100,000	2.7 %	14.0 %	8.0 /100,000	4.9 %
Adults			Older Adults		
<b>High Severity</b>			<b>High Severity</b>		
 Influenza-like Illnesses Peak Week Value	 Flu Hospitalization Rate Peak Week Value	 Flu Deaths Peak Week Value	 Influenza-like Illnesses Peak Week Value	 Flu Hospitalization Rate Peak Week Value	 Flu Deaths Peak Week Value
6.1%	13.9 /100,000	3.0 %	3.7 %	82.6 /100,000	2.7 %

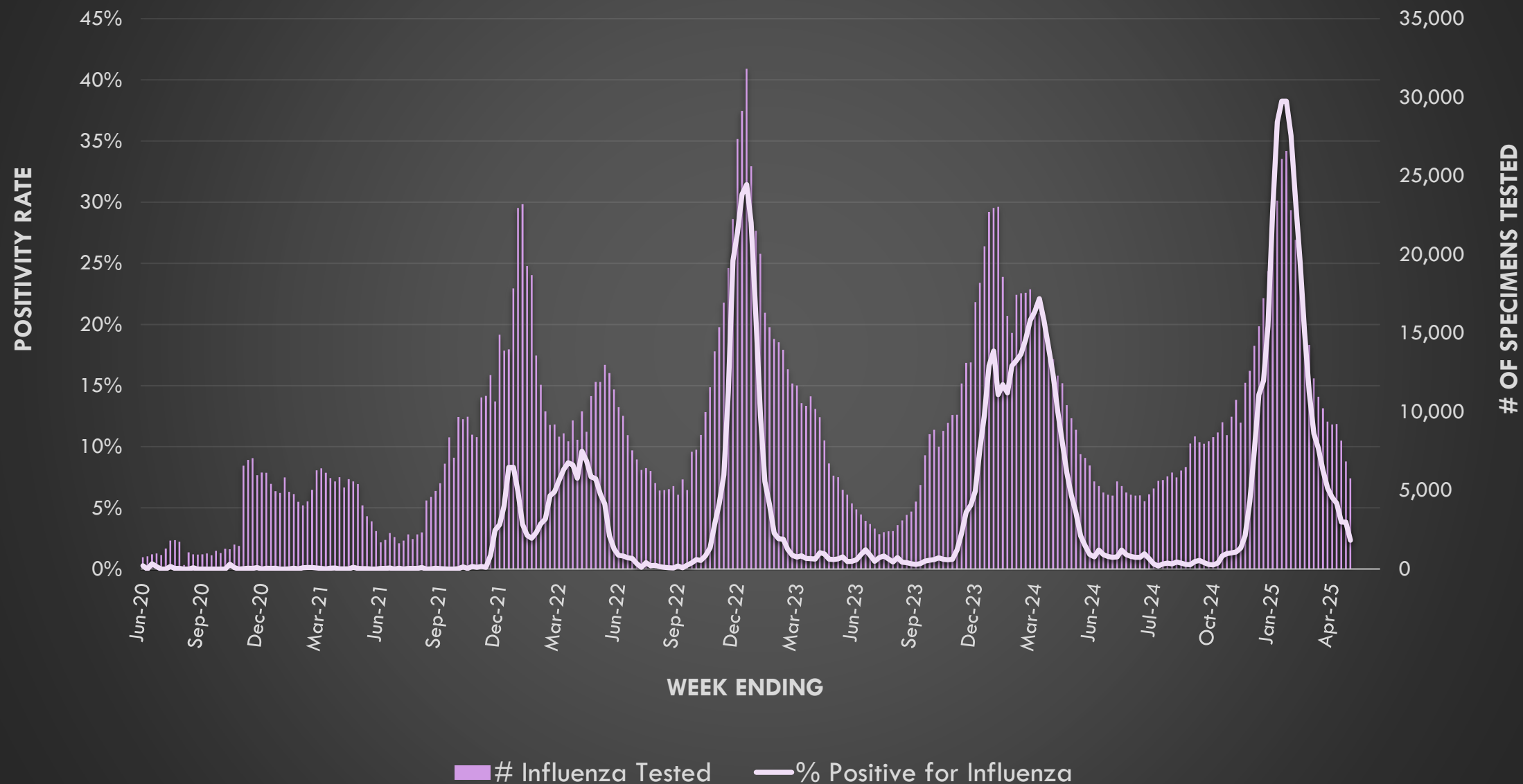
Below Seasonal Threshold Low Severity Moderate Severity High Severity Very High Severity

Laboratory-Confirmed Influenza Hospitalizations  
Preliminary cumulative rates as of May 03, 2025  
FluSurv-NET :: Entire Network :: Overall Age Group :: Cumulative Rate



☒ All Seasons  
☒ 2018-19  
☒ 2012-13  
☒ 2024-25  
☒ 2017-18  
☒ 2011-12  
☒ 2023-24  
☒ 2016-17  
☒ 2010-11  
☒ 2022-23  
☒ 2015-16  
☒ 2009-10  
☒ 2021-22  
☒ 2014-15  
☒ 2019-20  
☒ 2013-14





# Positivity Rate and Number of Specimens Tested for Influenza by PCR at Wisconsin Laboratories from 2020-25





# INFLUENZA STRAIN CHARACTERIZATION WISCONSIN 2024-25



	Antigenic Characterization	HA Genetic Group	Similarity to vaccine reference virus
H1N1pdm09	A/ <u>Wisconsin</u> /67/2022-LIKE (H1N1)pdm09	6B.1A 	>99%
H3N2	A/MASSACHUSETTS/18/2022-LIKE (H3N2)	3C.2A.1b 	62%
B-Victoria	B/AUSTRIA/1359417/2021-LIKE	VIA.3 	99%
B-Yamagata	No confirmed cases since 2022!		
 Included in the 2024-25 influenza vaccine			

# FLU VACCINE SELECTION 2025-26

- **Egg-based vaccines**

- A/Victoria/4897/2022 (H1N1)pdm09-like virus
- A/Croatia/10136RV/2023 (H3N2)-like virus\*
- B/Austria/1359417/2021 (B/Victoria lineage)-like virus

- **Cell culture- or recombinant-based vaccines**

- A/Wisconsin/67/2022 (H1N1)pdm09-like virus
- A/District of Columbia/27/2023 (H3N2)-like virus\*
- B/Austria/1359417/2021 (B/Victoria lineage)-like virus

\* - Updated Vaccine strains for 2025-26 season

# 2024-25 TIMELINE OF EVENTS



SARS-CoV-2 Peak  
Rhino/Enterovirus Peak

Parainfluenza Peak

H5N1 Case  
RSV peak

SARS-CoV-2 Peak #2  
Noro Peak

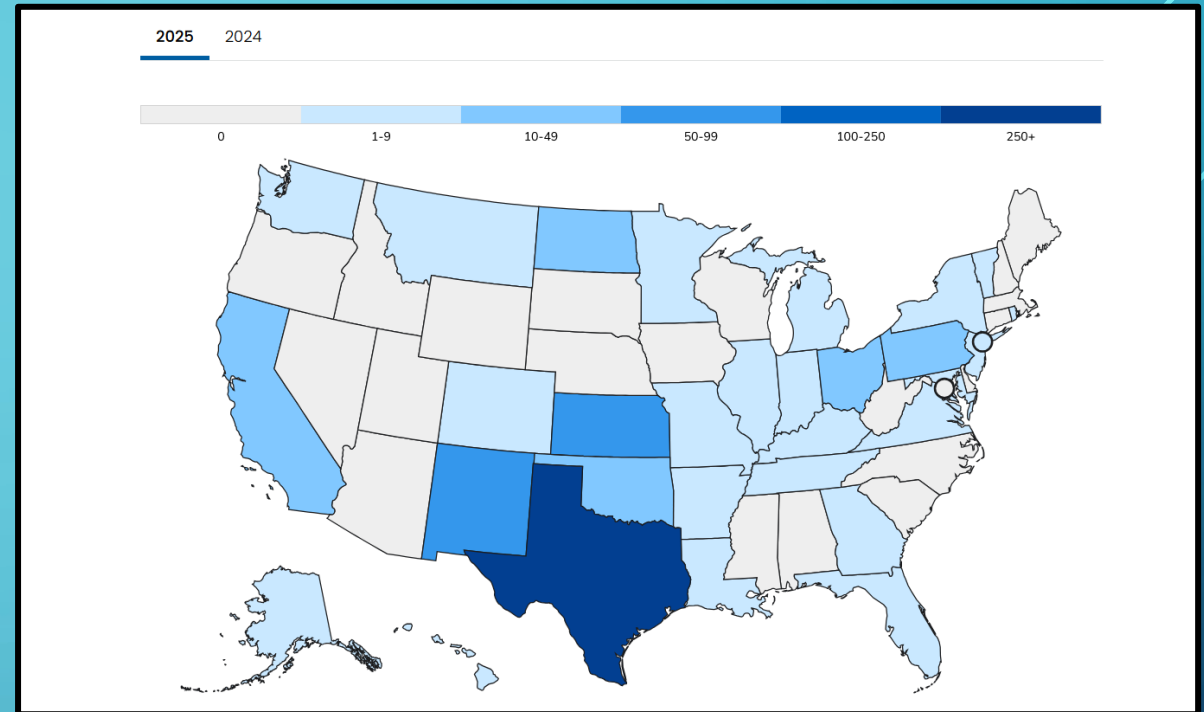
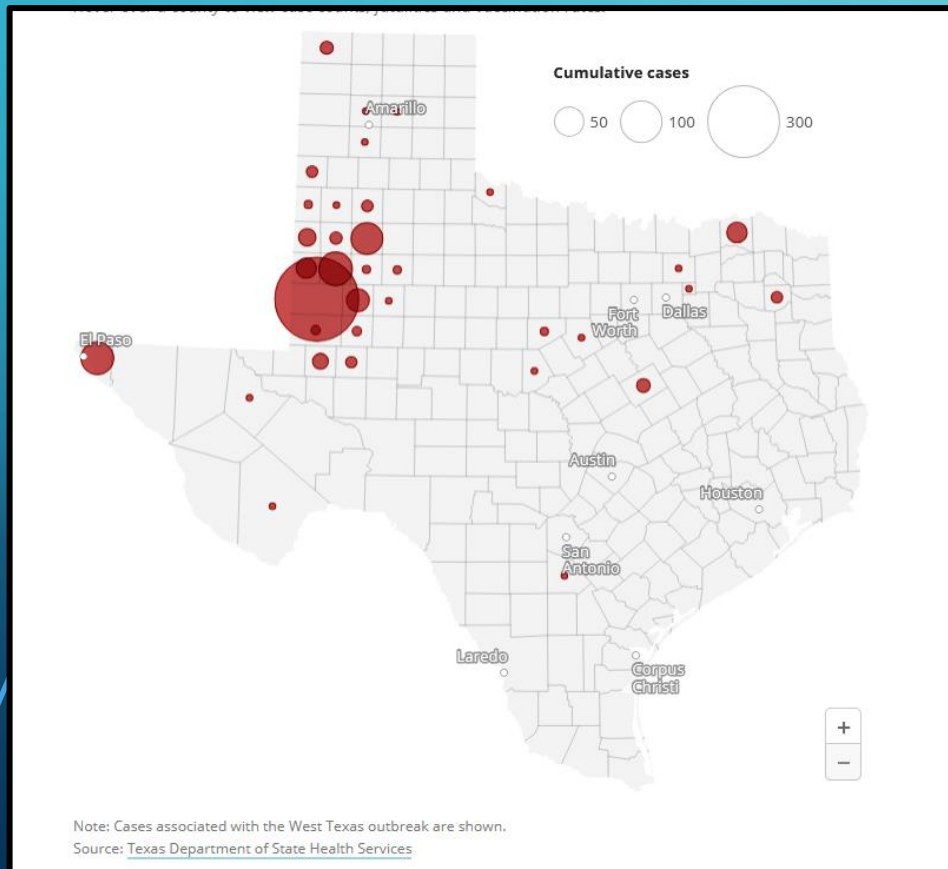
Influenza Peak

Measles Outbreak in Texas!

2024

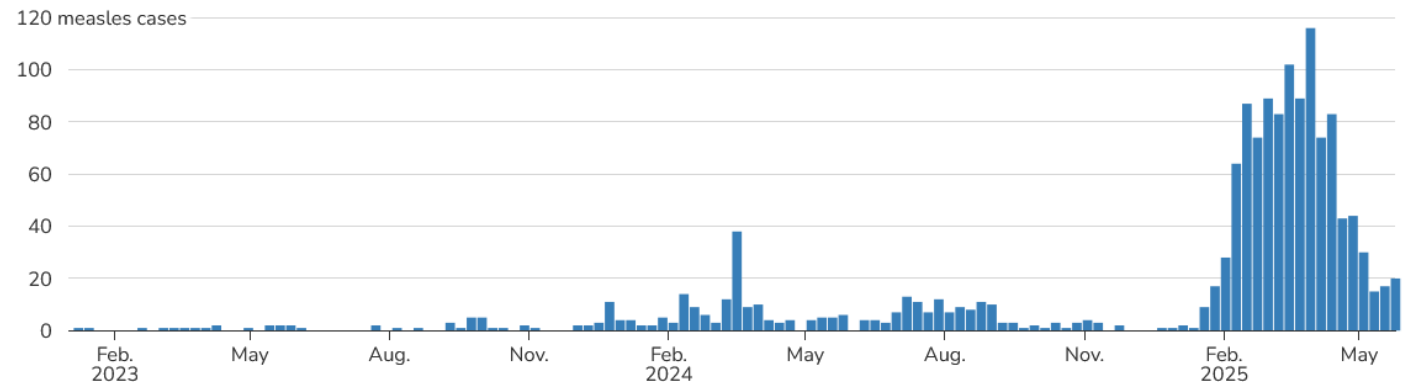
2025

# MEASLES IN TEXAS (AND 32 OTHER STATES)



## Weekly measles cases by rash onset date

2023–2025\* (as of May 29, 2025)



# 2024-25 TIMELINE OF EVENTS



SARS-CoV-2 Peak

Rhino/Enterovirus Peak

Parainfluenza Peak

H5N1 Case

RSV peak

SARS-CoV-2 Peak #2

Noro Peak

Influenza Peak

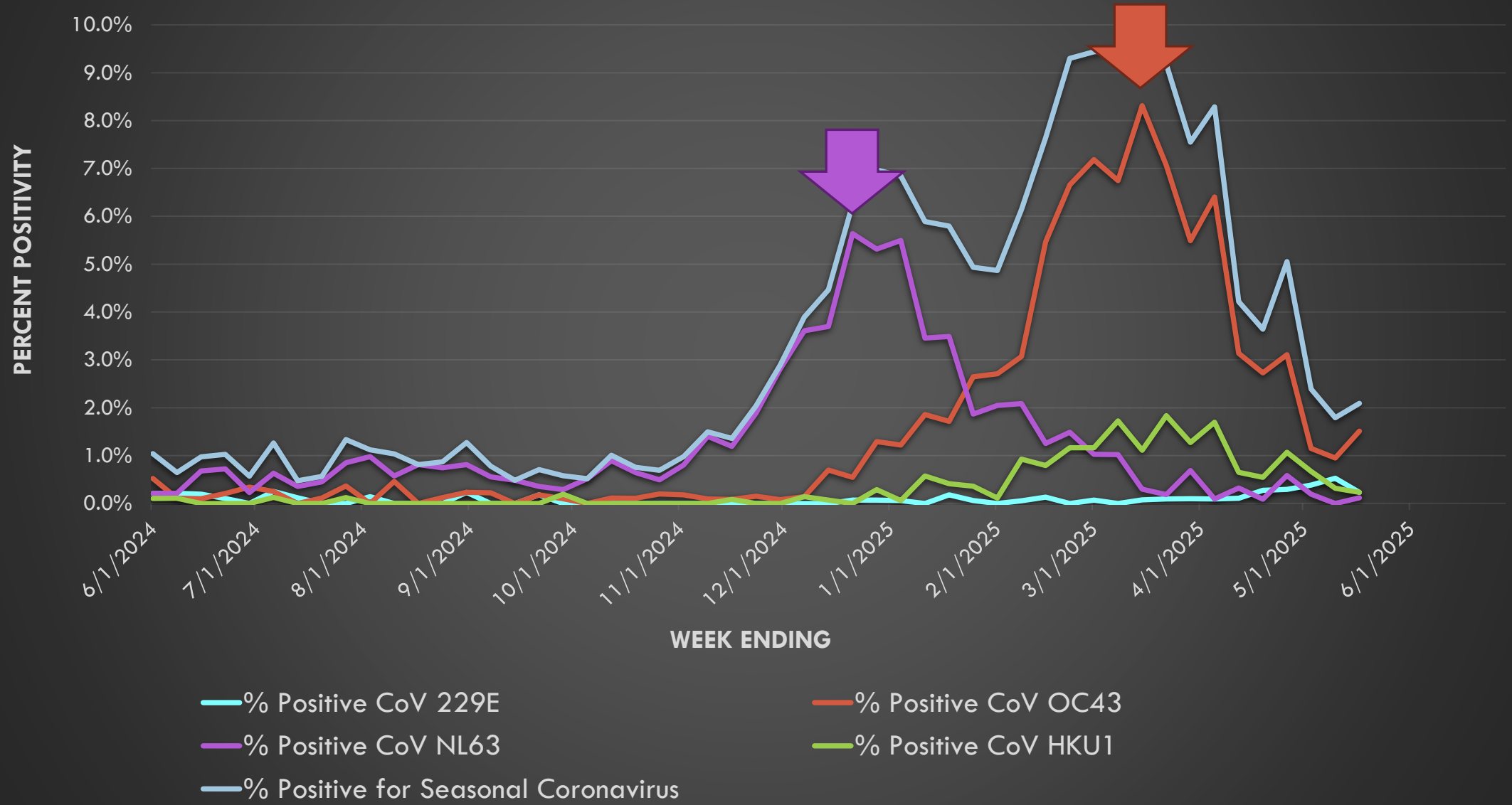
Seasonal CoV Peak

2024

2025



# POSITIVITY OF SEASONAL CORONAVIRUS BY TYPE



# 2023-24 TIMELINE OF EVENTS



SARS-CoV-2 Peak

Rhino/Enterovirus Peak

Parainfluenza Peak

H5N1 Case

RSV peak

SARS-CoV-2 Peak #2

Noro Peak

Influenza Peak

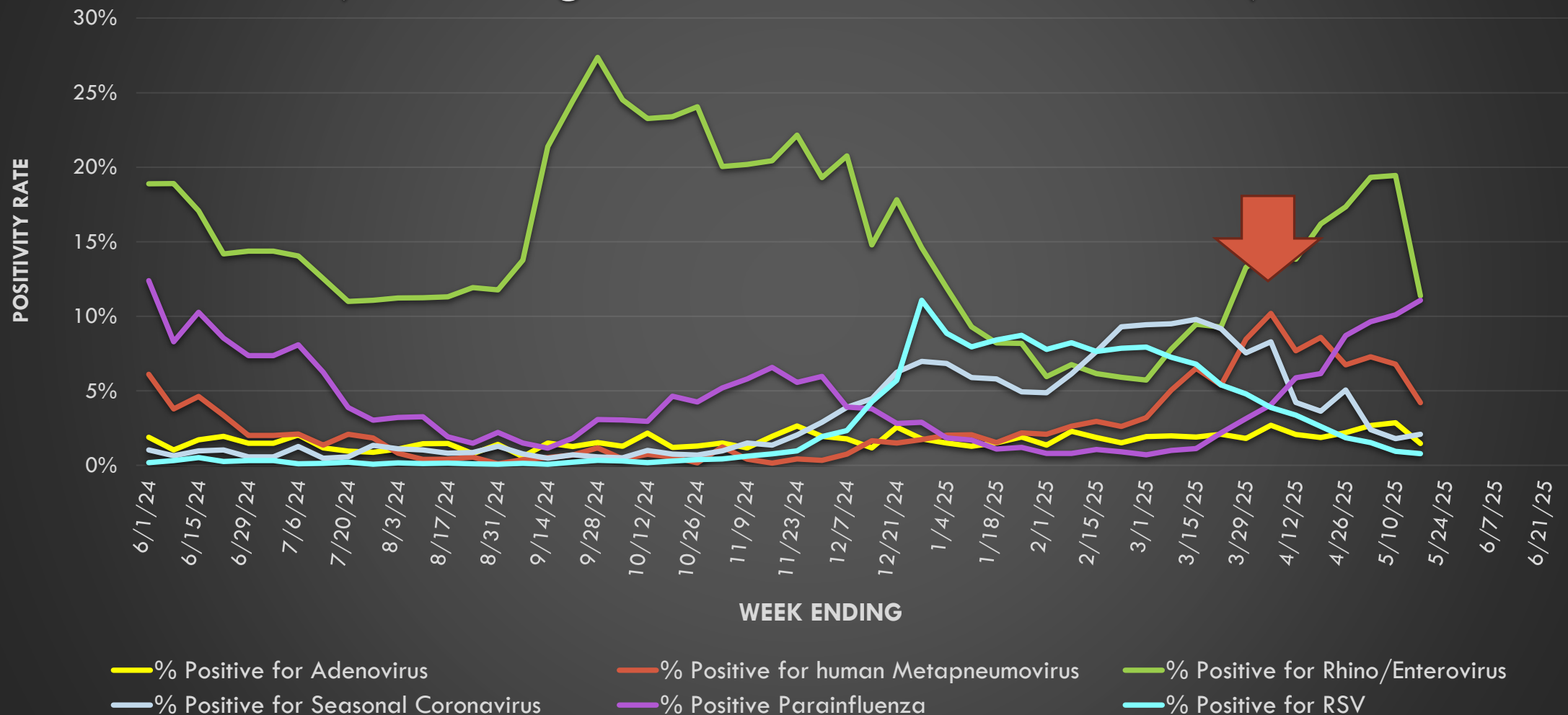
Seasonal CoV Peak

hMPV Peak

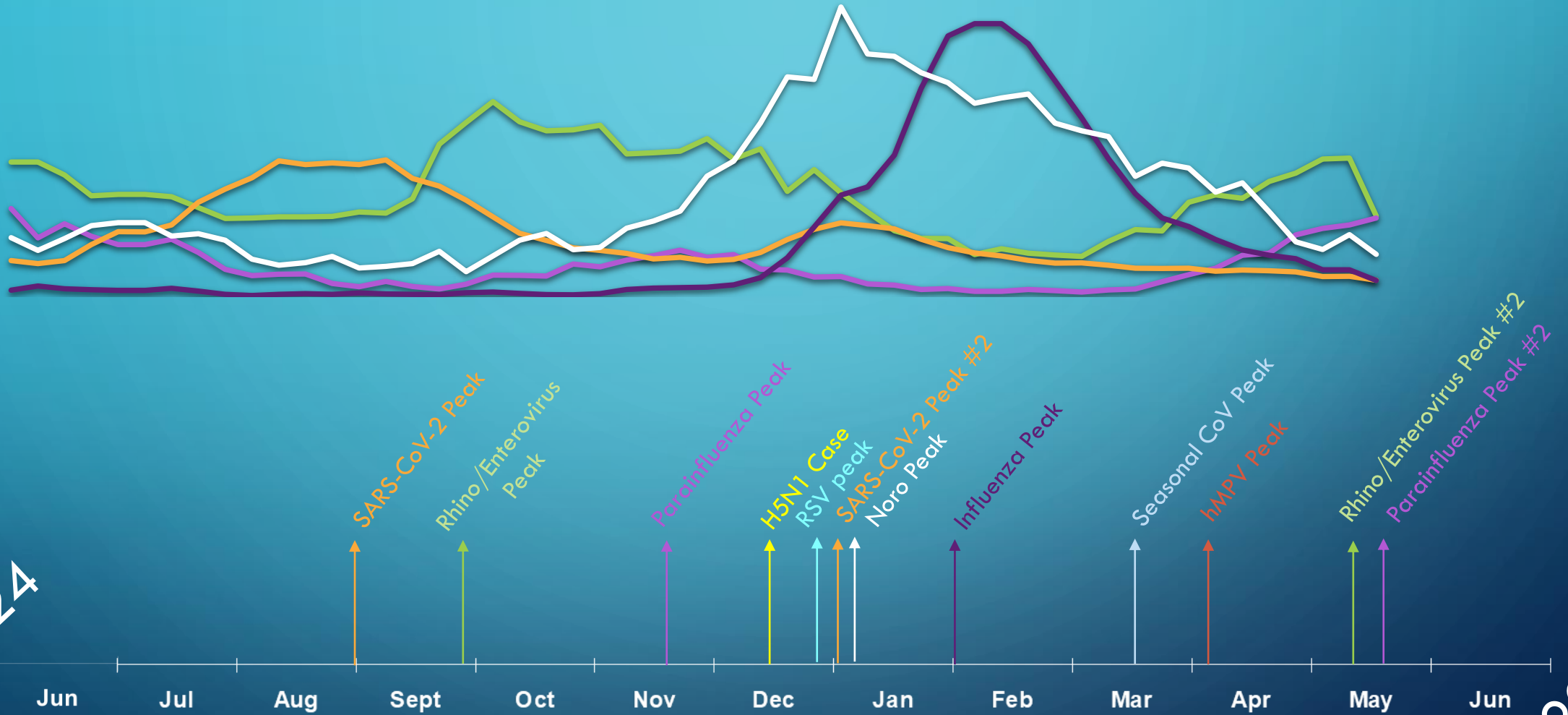
2024

2025

## Positivity of Respiratory Specimens by PCR in WI (Excluding Influenza and SARS-CoV-2)



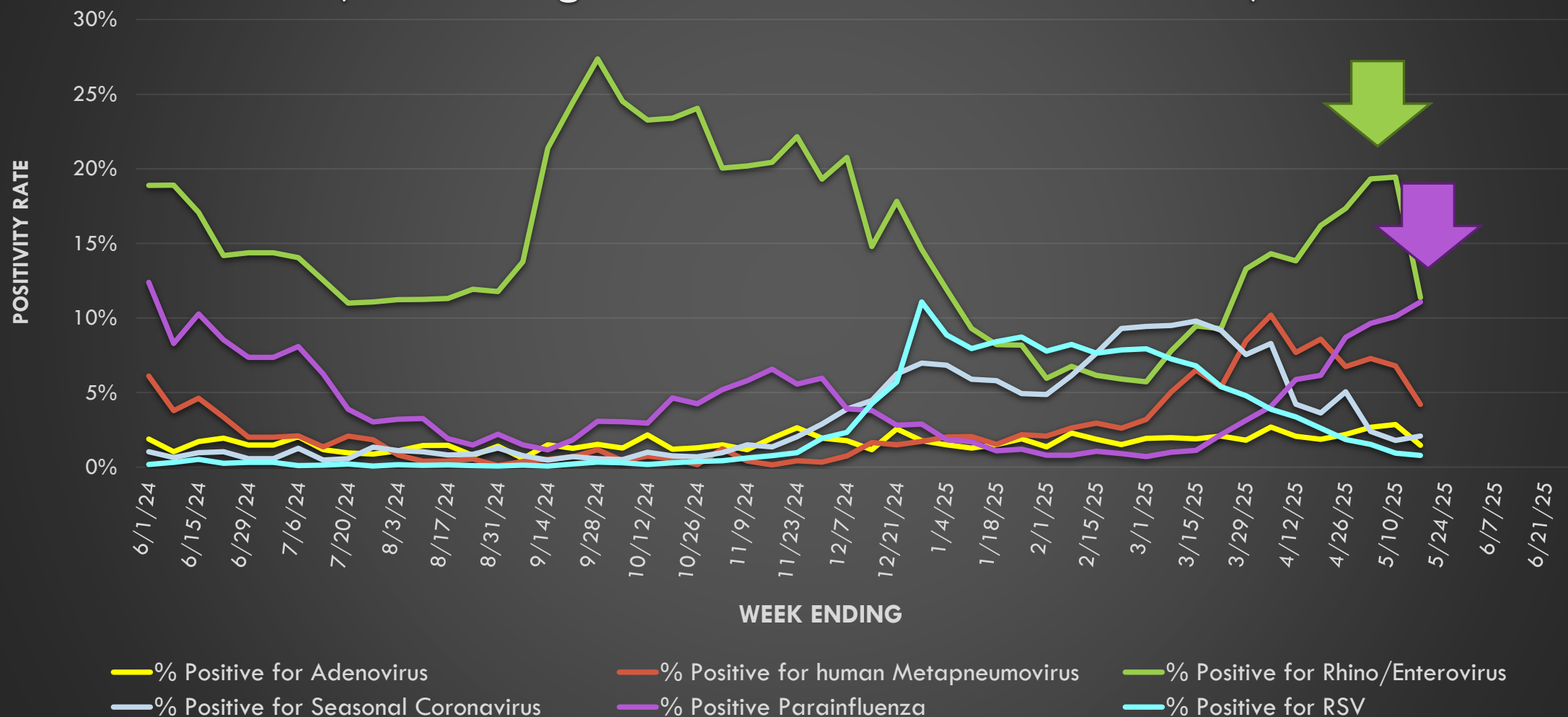
# 2023-24 TIMELINE OF EVENTS



2024

2025

## Positivity of Respiratory Specimens by PCR in WI (Excluding Influenza and SARS-CoV-2)





# THANK YOU FOR YOUR DATA AND SPECIMEN SUBMISSIONS!

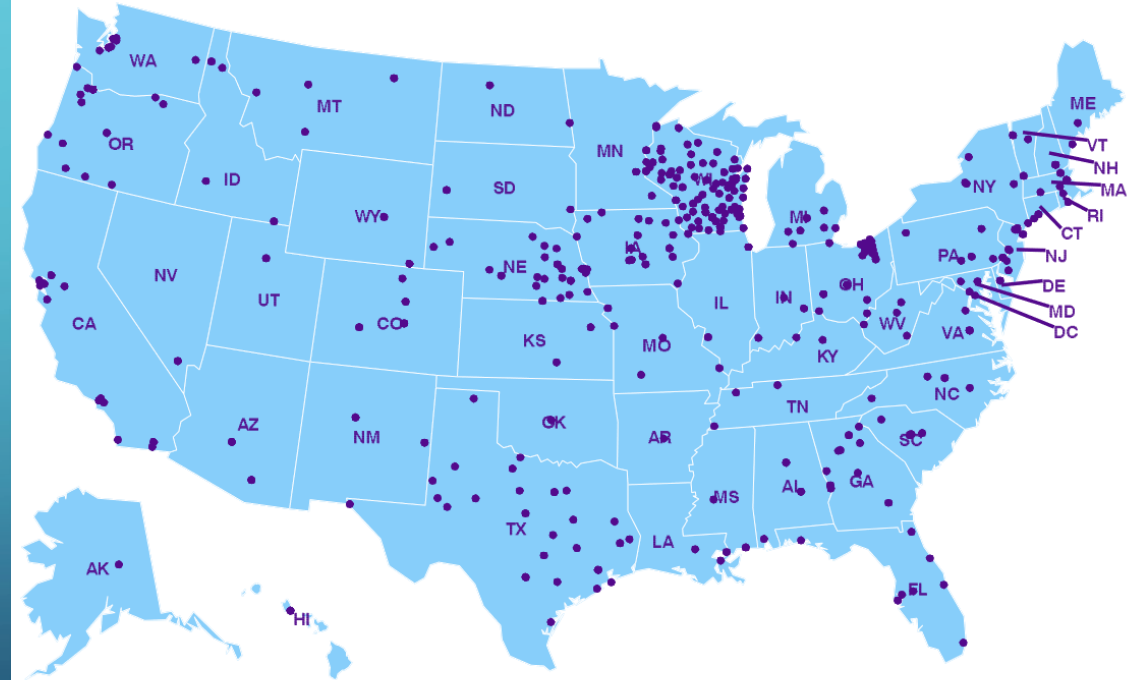
For more information about Virology Surveillance in Wisconsin including:

- Laboratory-based surveillance plan
- Link to report testing data
- Specimen submission instructions
- Surveillance graphs for a variety of pathogens

VISIT

[www.slh.wisc.edu/wcln-surveillance/surveillance](http://www.slh.wisc.edu/wcln-surveillance/surveillance)

## THE NATIONAL RESPIRATORY AND ENTERIC VIRUS SURVEILLANCE SYSTEM (NREVSS)



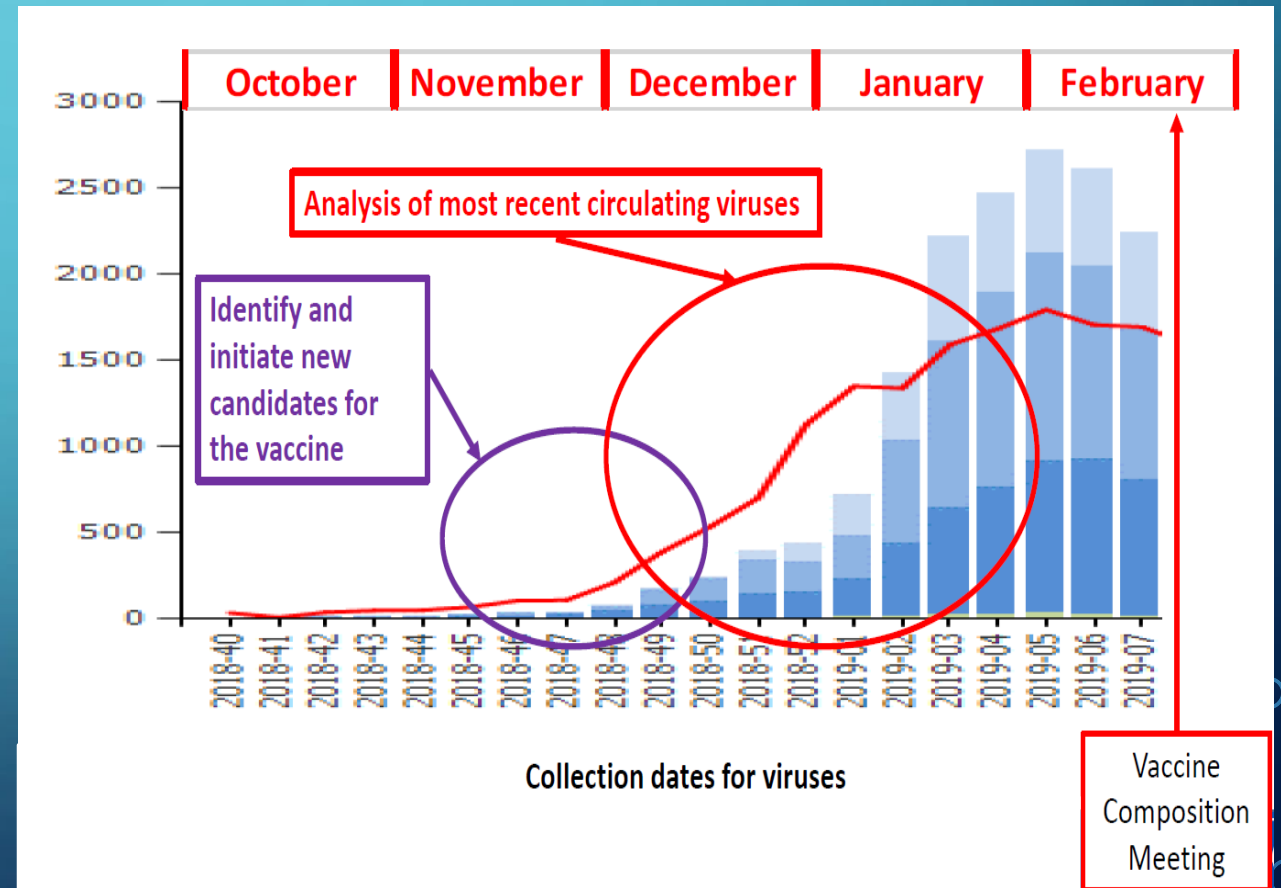
<https://www.cdc.gov/surveillance/nrevss/labs/map-H.pdf>

# AVIAN INFLUENZA - WI RESPONSE

- Avian influenza Suspects:
  - Specimen Collection and Submission:
    - Collect a nasopharyngeal (NP) swab
    - For patients with conjunctivitis, a conjunctival swab should be collected along with a an NP specimen.
  - 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.
  - Testing is usually completed within 24 hour after receipt.



- Early season positives are critical:
  - Inform vaccine strain selection.
  - Provide samples to make candidate vaccine viruses



# SUMMER OF 2024

- 25 cases were confirmed in 2024.
- Most who become ill experience mild symptoms



WISCONSIN DEPARTMENT  
*of* HEALTH SERVICES

FOR IMMEDIATE RELEASE

August 29, 2024

Contact

Elizabeth Goodsitt, 608-266-1683

Jennifer Miller, 608-266-1683

## DHS Reports First Deaths in State This Year Due to West Nile Virus

Wisconsinites encouraged to protect themselves from mosquito bites to avoid illness

The Wisconsin Department of Health Services (DHS) has confirmed two Wisconsinites have died and another was hospitalized because of [West Nile virus \(WNV\)](#) illness. The first three human cases of WNV in our state this year have been reported in residents of Outagamie, Fond du Lac, and Brown counties. In addition, WNV has also been [detected](#) this year in mosquitoes, animals, and healthy blood donors whose blood screened positive for WNV.