Nebraska Statewide Infectious Disease Updates

November 12, 2024

Nebraska Updates

TUESDAY 11/12/2024

- **International and National Updates- James Lawler**
- **ICAP LTC & ALF Updates – Kate Tyner**
- **Public Health and Coalition Leader Updates**
- **Other Updates - All**

Overview

Influenza remains a serious threat to children because it can cause serious injury or death. Annual influenza vaccination for people 6 months and older is the most effective way to prevent influenza illness and associated complications, including death. Clinicians play a critical role in promoting influenza vaccination of all children, especially children younger than 5 years, those in higher risk groups, in addition to their family members and caregivers.

During this COCA Call, presenters will provide an overview of influenza prevention and treatment recommendations for the 2024-2025 season from the American Academy of Pediatrics (AAP) and the Centers for Disease Control and Prevention (CDC).

Date: Thursday, November 14, 2024

Time: 2:00 PM – 3:00 PM ET

COCA Call

CDC Clinician Outreach and Communication Activity

2024-2025 Recommendations for Influenza Prevention and Treatment in Children: An Update for Pediatric Providers

The Mendon AMTRAK Crash:
Lessons for the Rural Response System

Region VII Disaster Health Response Ecosystem

Wednesday, November 13th @ 1PM, CST

This Zoom webinar will be presented by: Josh Stilley, MD, FAEMS

When a passenger train derailed in rural northwest Missouri, a coordinated EMS and fire response was essential to taking care of the injured.

Unique elements of the rural location both aided in and hampered response efforts. This presentation will cover successes as well as lessons learned.

Objectives:

- Describe the events of the 2022 Mendon AMTRAK Derailment
- Explain principles of Mass Casualty Response to the Rural EMS setting
- Identify unique benefits and limitations of an MCI in a rural location
- Examine the role of the Rural EMS Medical Director in a Mass Casualty Event
- Discuss lessons learned to take back to your agency for implementation

This webinar is designed for physicians, nurses, first responders, healthcare coalitions, public health, emergency managers, federal and state partners and other professionals throughout Region 7 (IA, KS, MO, and NE) and beyond. Continuing education credits will be provided.

JOINTLY ACCREDITED PROVIDER
INTERPROFESSIONAL CONTINUING EDUCATION

In support of improving patient care, University of Nebraska Medical Center is jointly accredited by the Accreditation Council for Continuing Medical Education (ACCME), the Accreditation Council for Pharmacy Education (ACPE), and the American Nurses Credentialing Center (ANCC), to provide continuing education for the healthcare team.

Scan the QR Code to Register

R7DHRE

REGION VII
DISASTER HEALTH
RESPONSE ECOSYSTEM

Tiny Victories:
Pediatric Burn Response in Disasters

December 11, 2024 | 1:00PM, CST

Presented by:
Julia Slater, MD, FACS
Judy Placek, MSN, APRN, FNP-BC, CBRN

Join Dr. Julia Slater and Judy Placek for an informative webinar focusing on how to effectively manage pediatric burn injuries and the specific challenges they present in disaster scenarios. This webinar will provide a deeper understanding of the unique characteristics of the pediatric burn patient and the specific challenges they present in disaster scenarios.

Objectives:

- Identify the unique characteristics of pediatric burns and the challenges they present in disasters.
- Describe the skills necessary to accurately assess and treat pediatric burn patients, and their relevance in disasters.
- Demonstrate how to effectively utilize available resources in disaster settings, focusing on prioritizing care for pediatric burn patients with limited supplies.

This webinar is designed for physicians, nurses, first responders, healthcare coalitions, public health, emergency managers, federal and state partners and other professionals throughout **Region 7** (IA, KS, MO, and NE) and beyond. Continuing education credits will be provided.

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R7DHRE

2025 NEBRASKA PREPAREDNESS SYMPOSIA

Join us for an engaging day-long Symposia tailored for professionals involved in Emergency Preparedness/Response in healthcare (including pre-hospital), public health, emergency management and other sectors. This day-long workshop offers a comprehensive overview of critical updates and best practices to enhance your preparedness strategies and response capabilities. The Symposia will cover the latest state preparedness updates, CMS regulation updates, roles in tornado response, weather-related information resources, and integrating health equity into disaster planning and healthcare surge management. This year's symposia was designed to complement the upcoming healthcare coalitions' Regional Medical Response Surge Exercise (MRSE).

CLICK ON LOCATION NAME FOR REGISTRATION LINK

Panhandle Region (PRMRS)
Tuesday, January 14, 2025
Gering Civic Center, Gering, NE

Nebraska Plains Region (NPHCC)
Tuesday, January 28, 2025
Mid-Plains Community College, North Platte, NE

Southeast Nebraska Region (SENHCC)
Tuesday, February 11, 2025
Nebraska Innovation Campus, Lincoln, NE

Omaha Region (OMHCC)
Tuesday, March 18, 2025
Bellevue University, Bellevue, NE

Central Nebraska Region (TRIMRS)
Tuesday, March 25, 2025
The Archway, Kearney, NE

North Central & Northeast Nebraska Regional (RROMRS)
Tuesday, April 15, 2025
Divots Conference Center, Norfolk, NE

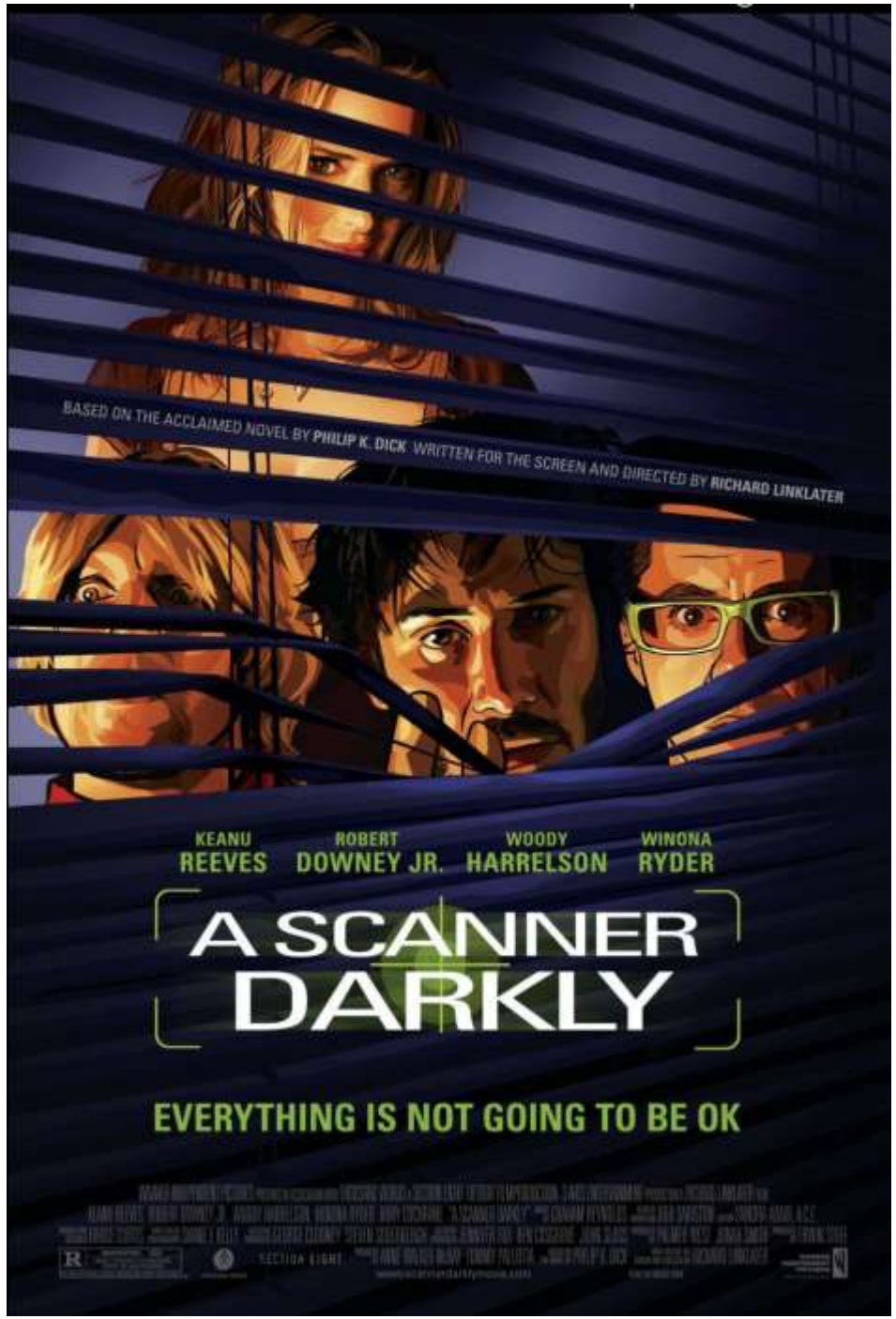
UNIVERSITY OF NEBRASKA MEDICAL CENTER
CENTER FOR PREPAREDNESS AND EMERGENCY RESPONSE SOLUTIONS

Scan the QR Code to Register

INTERNATIONAL & NATIONAL UPDATES

COVID-19 (and Other) Update

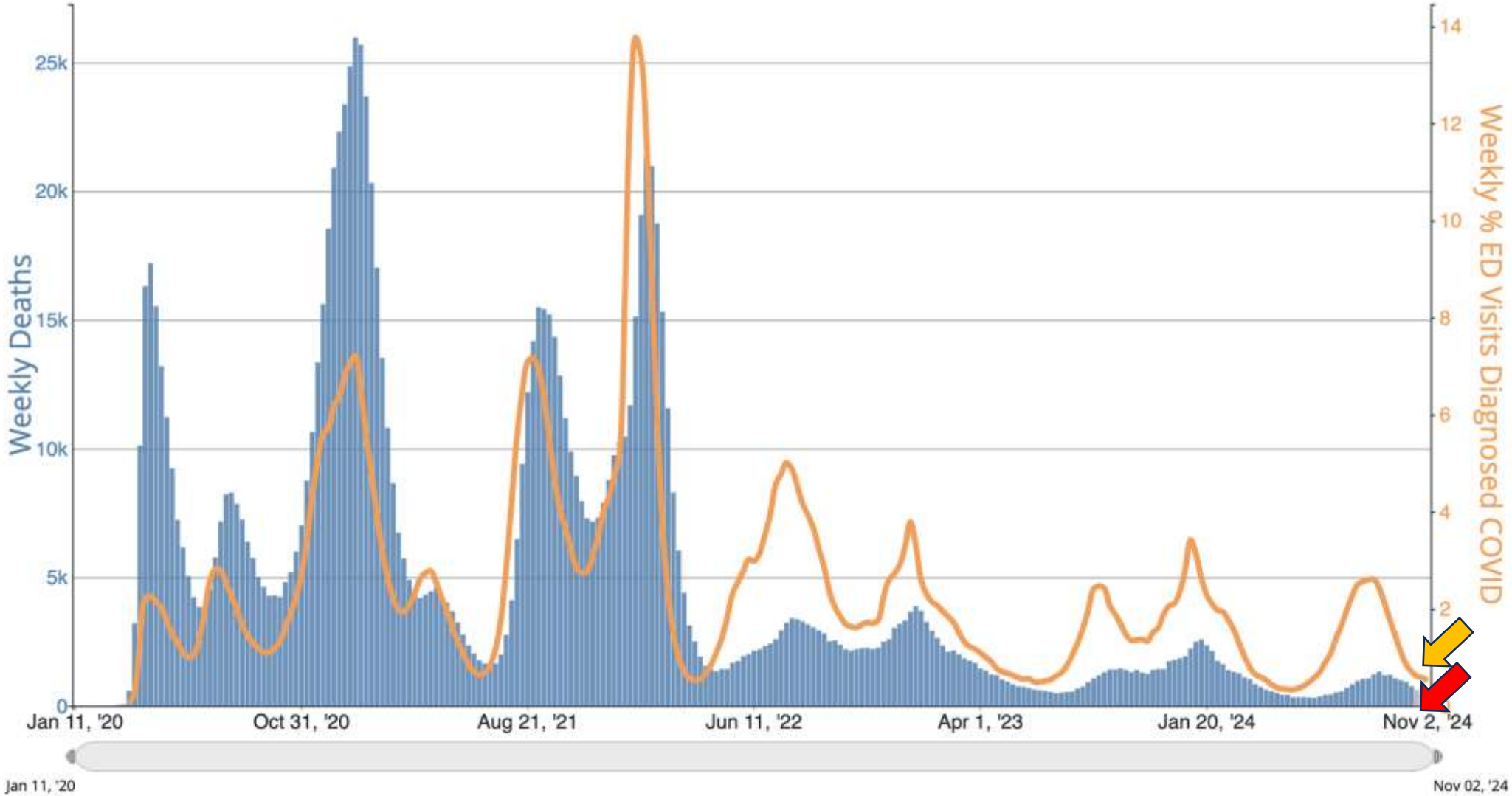
November 12, 2024



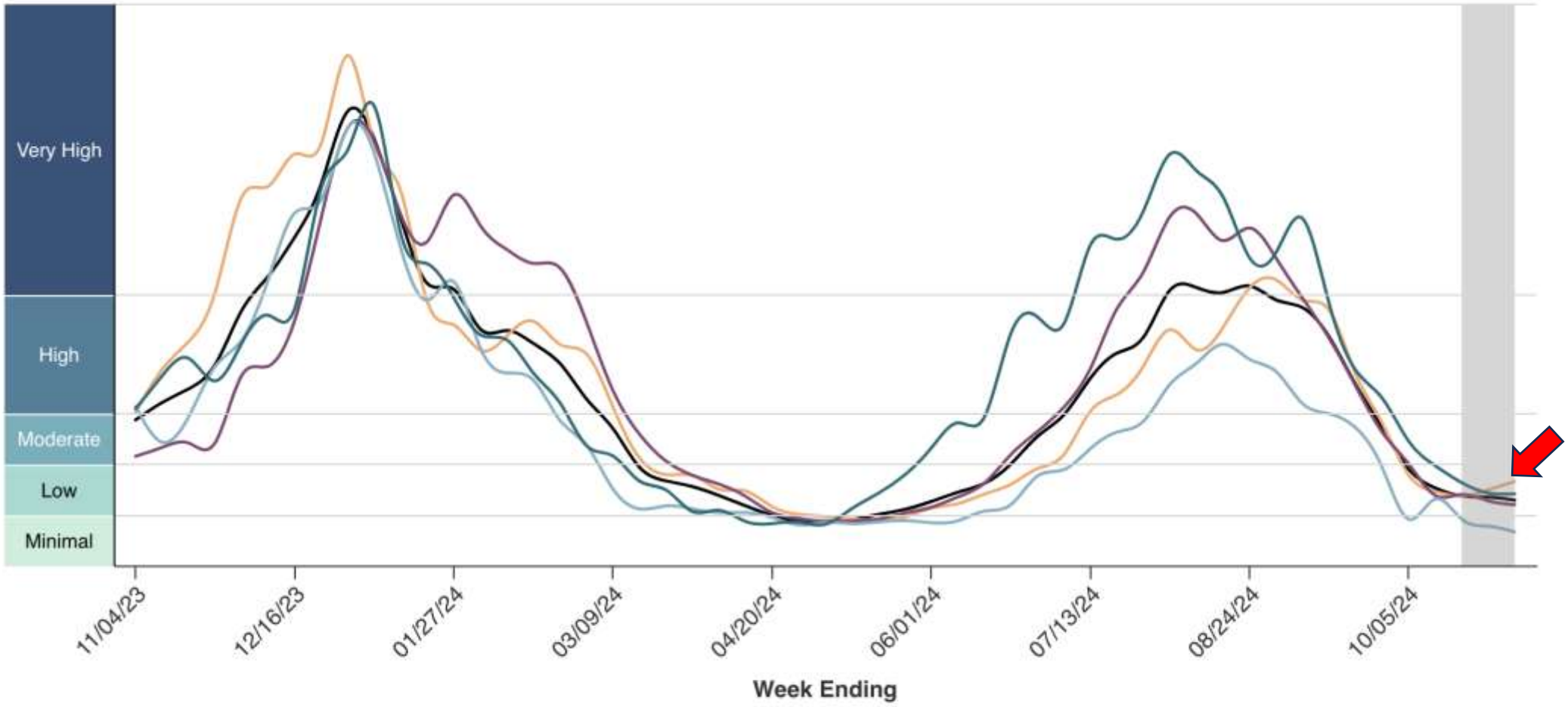
Centers for Disease Control and Prevention
CDC 24/7: Saving Lives, Protecting People™

COVID Data Tracker

Provisional COVID-19 Deaths and Percentage of Emergency Department (ED) Visits Diagnosed as COVID-19, by Week, in The United States, Reported to CDC



National Wastewater Surveillance System (NWSS)

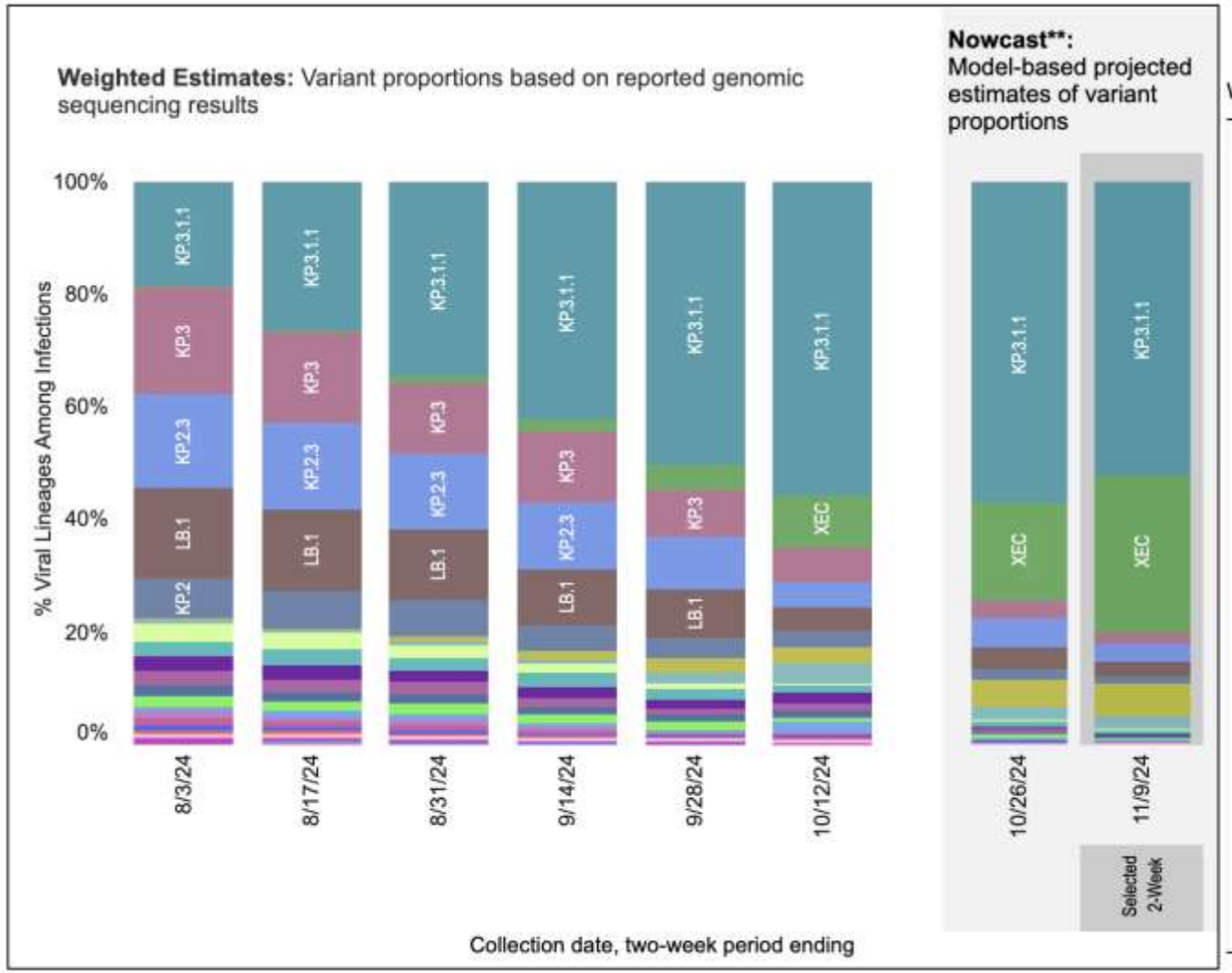


Select a geography to add or remove it from the visualization.

National Midwest South Northeast West

CDC Centers for Disease Control and Prevention
CDC 24/7: Saving Lives, Protecting People™

COVID Data Tracker

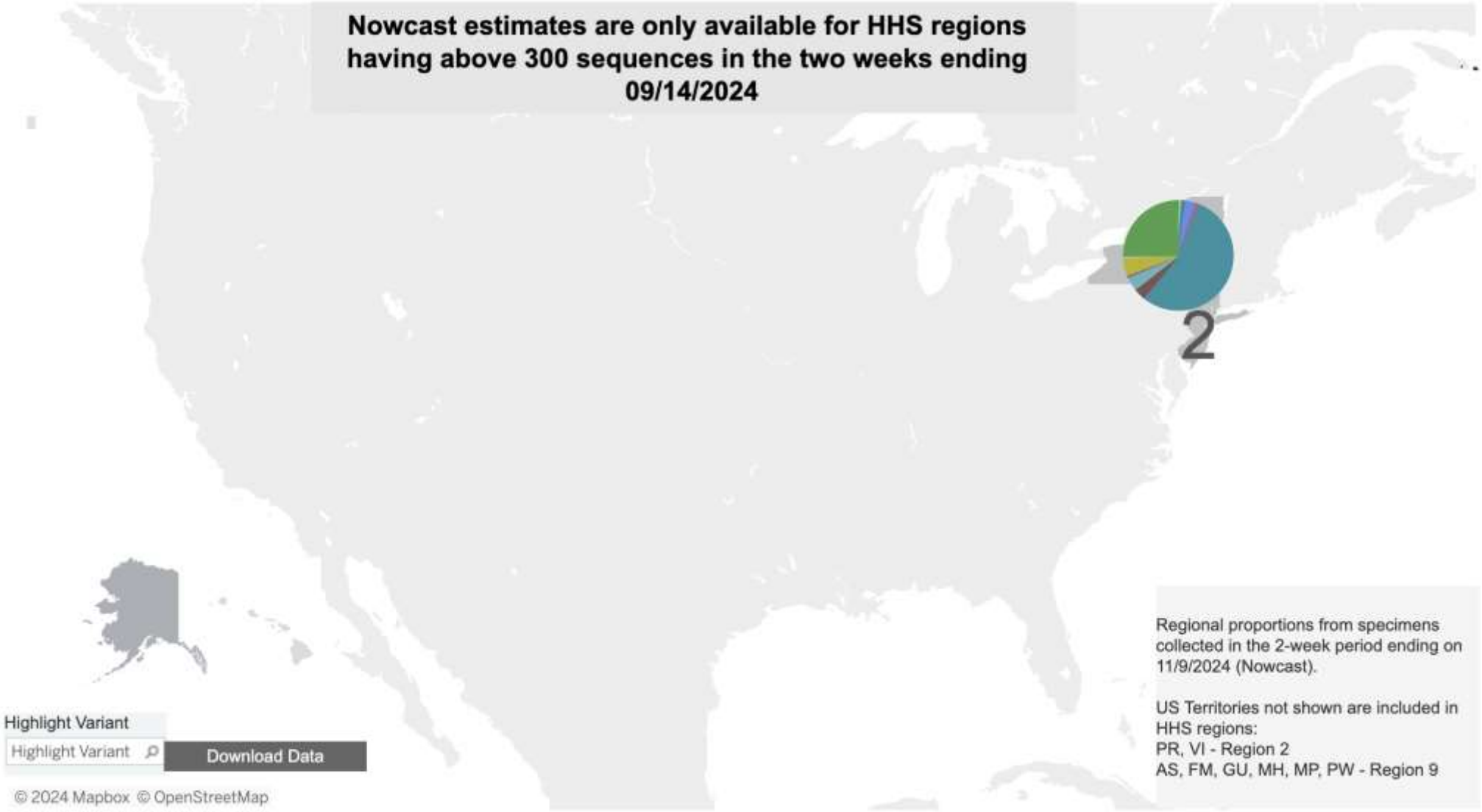


USA

WHO label	Lineage #	%Total	95%PI
Omicron	KP.3.1.1	52%	47–57%
	XEC	28%	21–36%
	MC.1	6%	3–10%
	KP.2.3	3%	3–4%
	LB.1	3%	2–4%
	LB.1.3.1	2%	1–7%
	KP.3	2%	1–2%
	KP.2	1%	1–2%
	KP.1.1.3	1%	0–1%
	JN.1.18	1%	0–1%
	LP.1	0%	0–1%
	JN.1.16.1	0%	NA
	KP.1.1	0%	NA
	JN.1	0%	NA
	KS.1	0%	NA
	KP.2.15	0%	NA
	JN.1.11.1	0%	NA
	LF.3.1	0%	NA
	KP.4.1	0%	NA

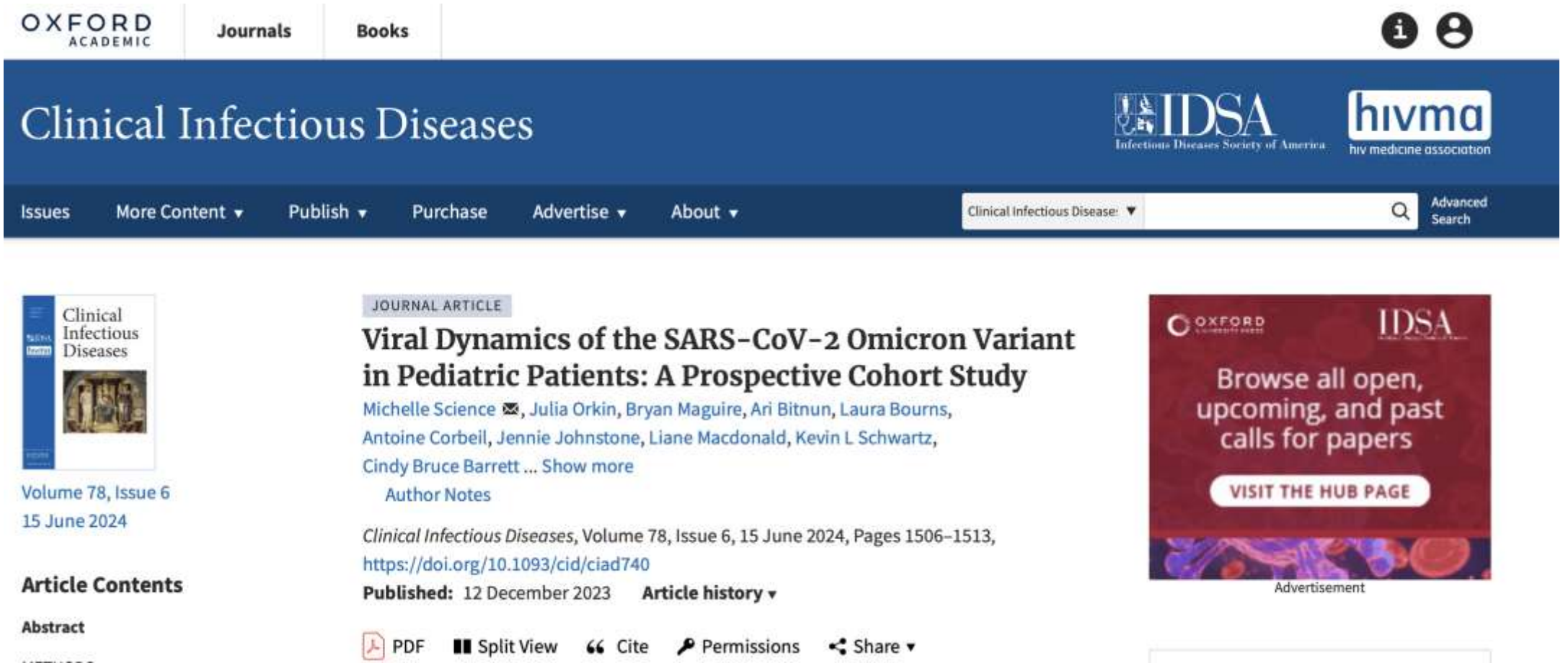
** These data include Nowcast estimates, which are modeled projections that may differ from weighted estimates generated at later dates
# Enumerated lineages are US VOC and lineages circulating above 1% nationally in at least one 2-week period. "Other" represents the aggregation of lineages which are circulating <1% nationally during all 2-week periods displayed. While all lineages are tracked by CDC, those named lineages not enumerated in this graphic are aggregated with their parent lineages, based on Pango lineage definitions, described in more detail here: https://web.archive.org/web/20240116214031/https://www.pango.network/the-pango-nomenclature-system/statement-of-nomenclature-rules.

Nowcast Estimates for 10/27/2024 – 11/9/2024 by HHS Region



Lineages called using pangolin v4.3.1, pangolin-data v1.30 and usher v0.6.3.

Updated November 6, 2024



- Prospective cohort study (children ≤ 18 years), PCR-confirmed SARS-CoV-2 infection between 1 February 2022 and 14 March 2022.

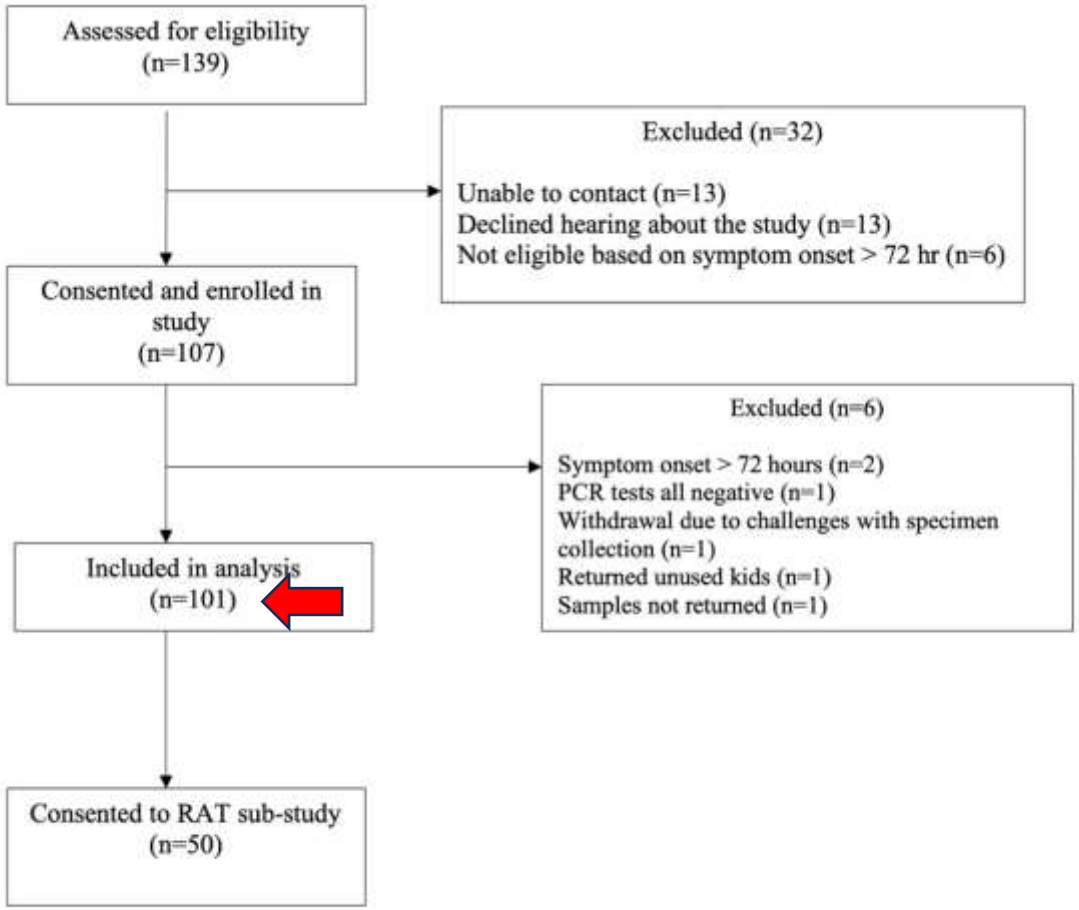


Figure 1. Participant flow chart. Abbreviations: PCR, polymerase chain reaction; RAT, rapid antigen test.

Table 1. Participant Characteristics and Multivariable Model for Predictors of Time to 2 Consecutive Non-infectious Viral Loads (<10^5 RNA Copies/mL With a Second Value <10^6 RNA Copies/mL)

Variable	Overall (n = 101)	HR (95% CI)[a]	*P*
Age, mean (SD), y	10.2 (3.8)	0.95 (.89, 1.01)	.12
Sex, male (%)	58 (57%)	0.70 (.45, 1.08)	.11
Vaccination status, n (%)			
0	18 (18%)	…	
1 dose	11 (11%)	0.65 (.27, 1.56)	.6
2+ doses	72 (71%)	0.94 (.50, 1.79)	
Omicron sublineage,[a] n (%)			
BA.1	66 (65%)	…	.40
BA.2	33 (33%)	1.23 (.77, 1.95)	
Household exposure, n/N (%)	45/99 (45%)	0.85 (.53, 1.36)	.50

Abbreviations: CI, confidence interval; HR, hazard ratio; SD, standard deviation.

[a]Using results from the 99 participants with available data on Omicron lineage.

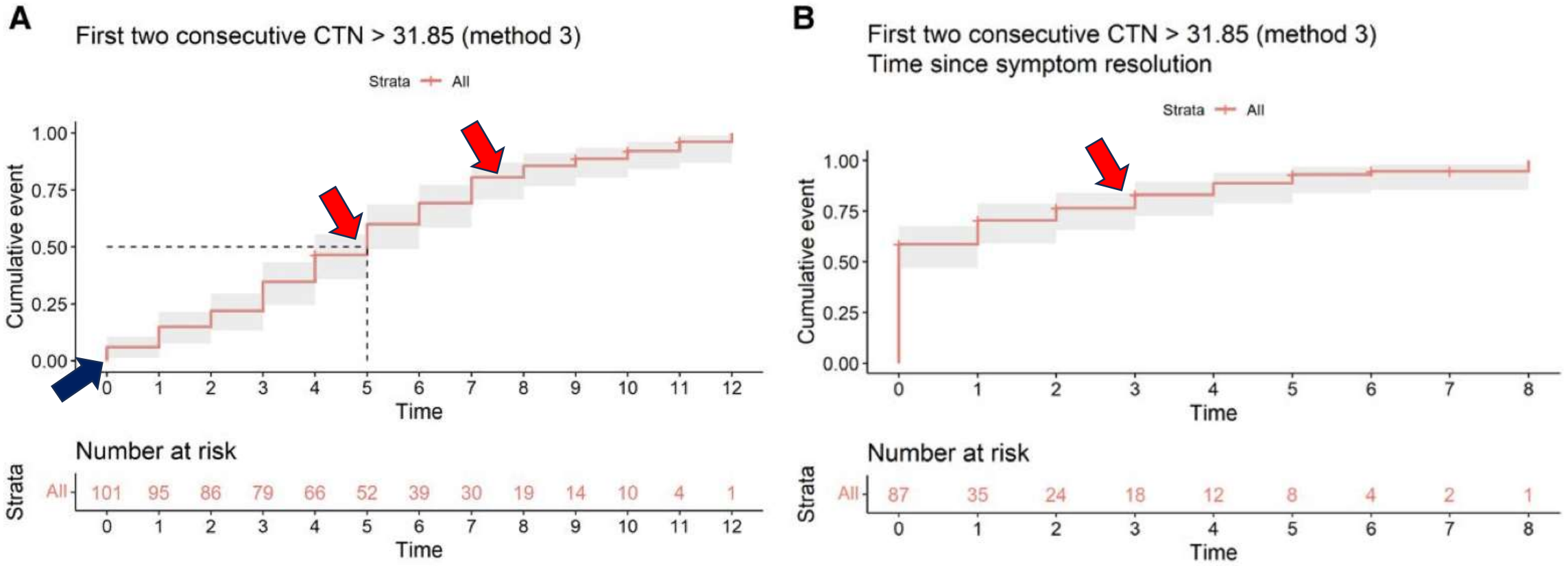


Figure 3. (*A*) Time to 2 consecutive non-infectious viral loads (<10^5 RNA copies/mL with a second value <10^6 RNA copies/mL). (*B*) Time since symptom resolution to 2 consecutive non-infectious viral loads (<10^5 RNA copies/mL with a second value <10^6 RNA copies/mL). Abbreviation: CTN, cycle threshold N-gene.

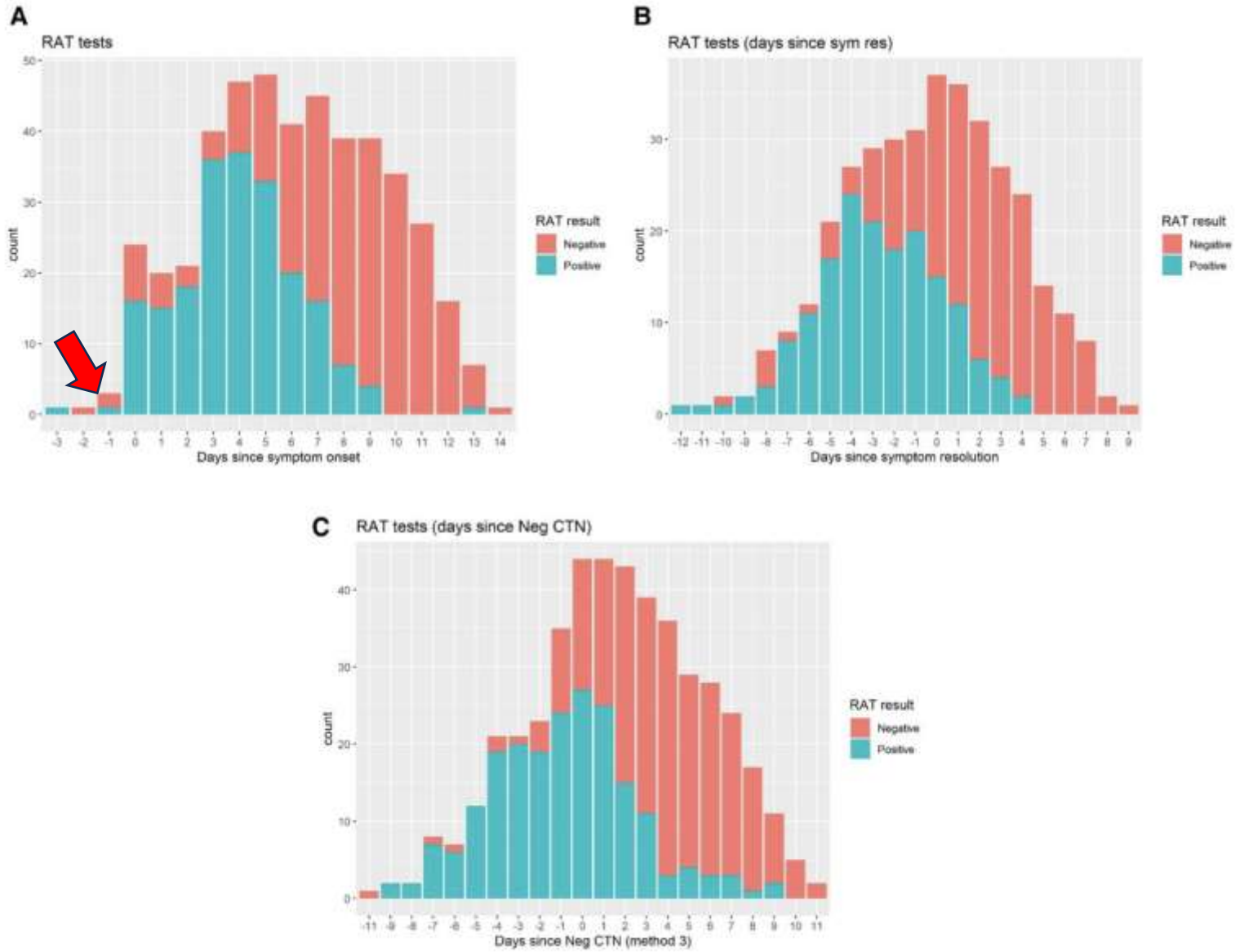
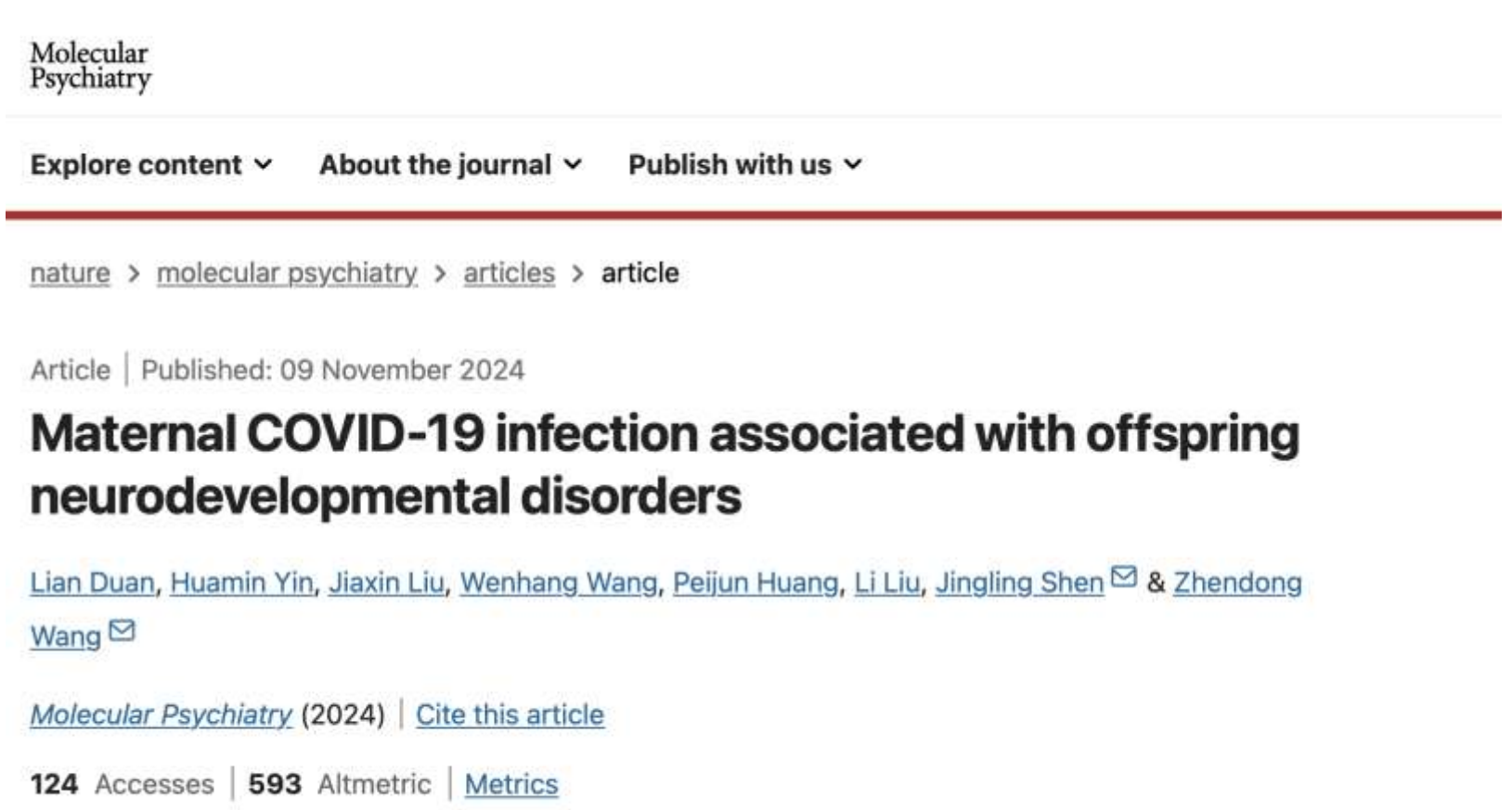


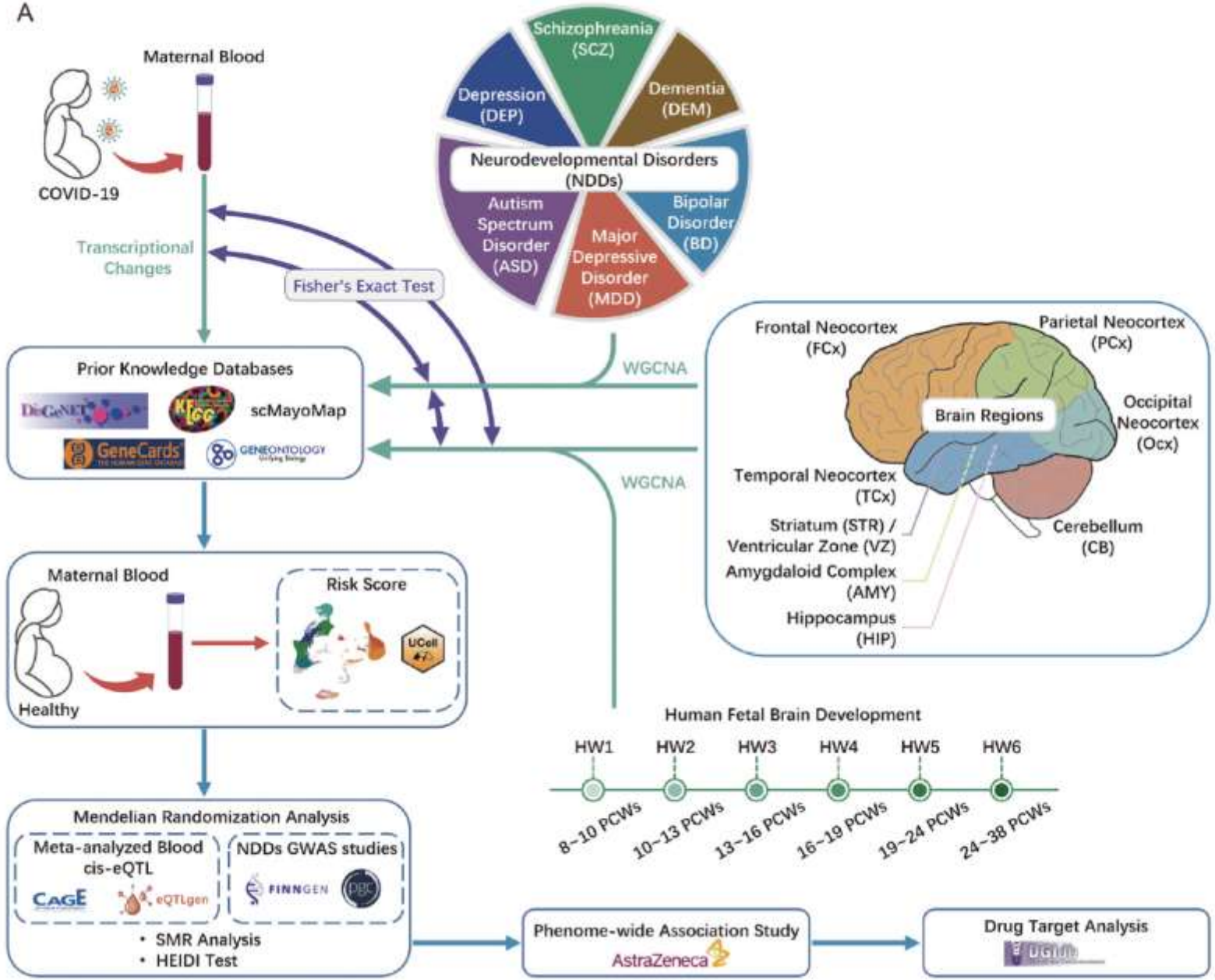
Figure 4. Rapid antigen test positivity from symptom onset (*A*), symptom resolution (*B*), and from non-infectious viral load (<10^5 RNA copies/mL) (*C*). Abbreviations: CTN, cycle threshold N-gene; Neg, negative; RAT, rapid antigen test.

Rapid antigen test positivity at symptom onset and on the day after symptom onset = **67% and 75%**

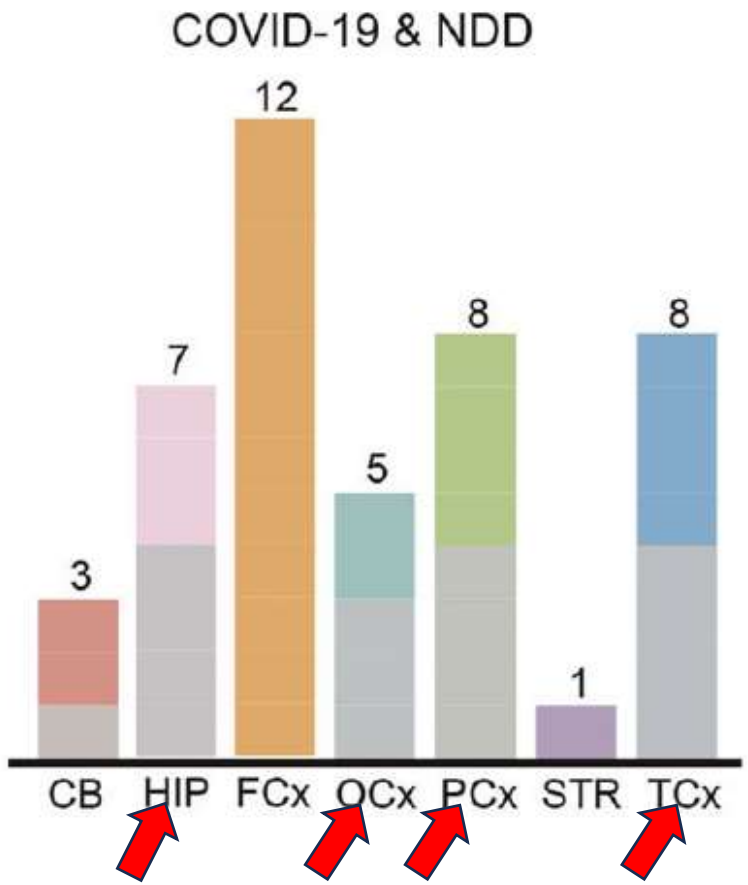


"Maternal COVID-19 infection increases the incidence of neurodevelopmental disorders (NDDs) in offspring, although the underlying mechanisms have not been elucidated. This study demonstrated that **COVID-19 infection during pregnancy disrupted the balance of maternal and fetal immune environments**, driving alterations in astrocytes, endothelial cells, and excitatory neurons."

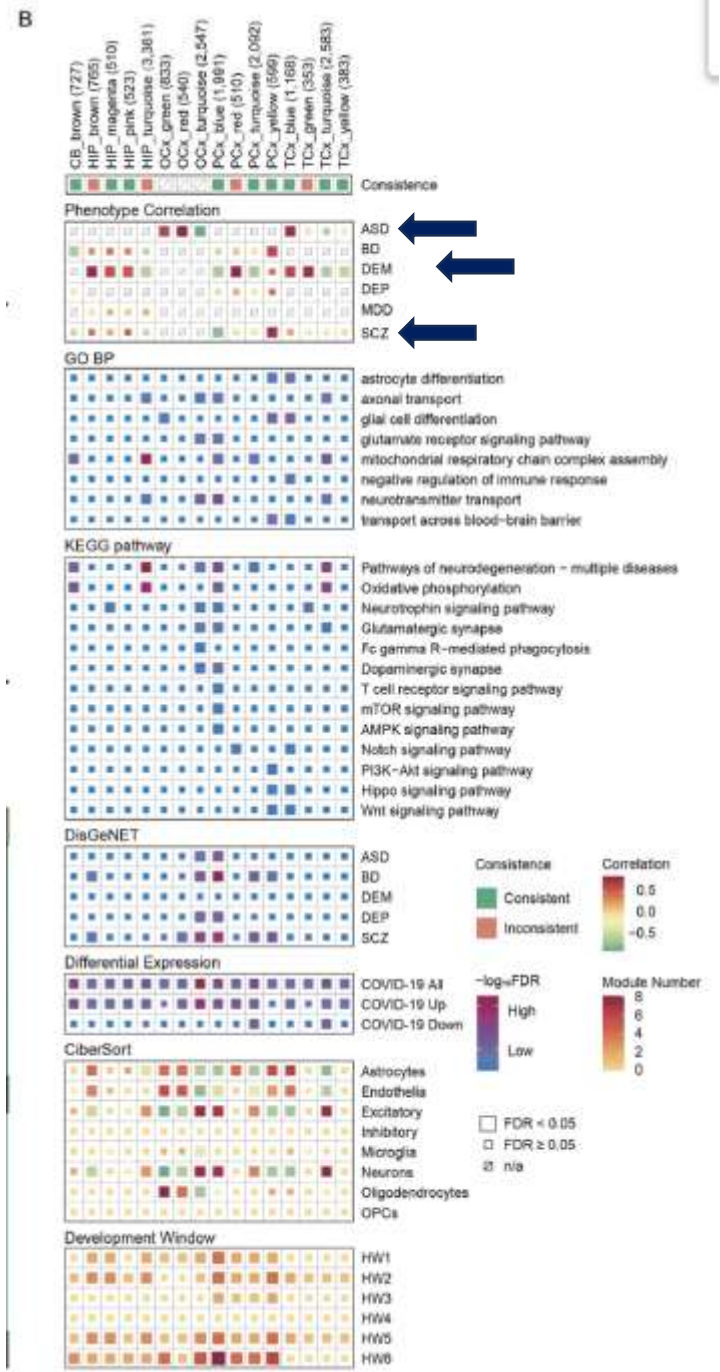
Bold added for emphasis


A
Maternal Blood
COVID-19
Transcriptional Changes
Fisher's Exact Test
Schizophreania (SCZ)
Dementia (DEM)
Depression (DEP)
Neurodevelopmental Disorders (NDDs)
Autism Spectrum Disorder (ASD)
Major Depressive Disorder (MDD)
Bipolar Disorder (BD)
Prior Knowledge Databases
DisGeNET
KEGG
scMayoMap
GeneCards
GENEONTOLOGY
WGCNA
WGCNA
Frontal Neocortex (FCx)
Parietal Neocortex (PCx)
Occipital Neocortex (Ocx)
Brain Regions
Temporal Neocortex (TCx)
Striatum (STR) / Ventricular Zone (VZ)
Amygdaloid Complex (AMY)
Hippocampus (HIP)
Cerebellum (CB)
Maternal Blood
Healthy
Risk Score
UCell
Human Fetal Brain Development
HW1
HW2
HW3
HW4
HW5
HW6
8~10 PCWs
10~13 PCWs
13~16 PCWs
16~19 PCWs
19~24 PCWs
24~38 PCWs
Mendelian Randomization Analysis
Meta-analyzed Blood cis-eQTL
CAGE
eQTLgen
NDDs GWAS studies
FINNGEN
PBC
• SMR Analysis
• HEIDI Test
Phenome-wide Association Study
AstraZeneca
Drug Target Analysis
DGIdb

A

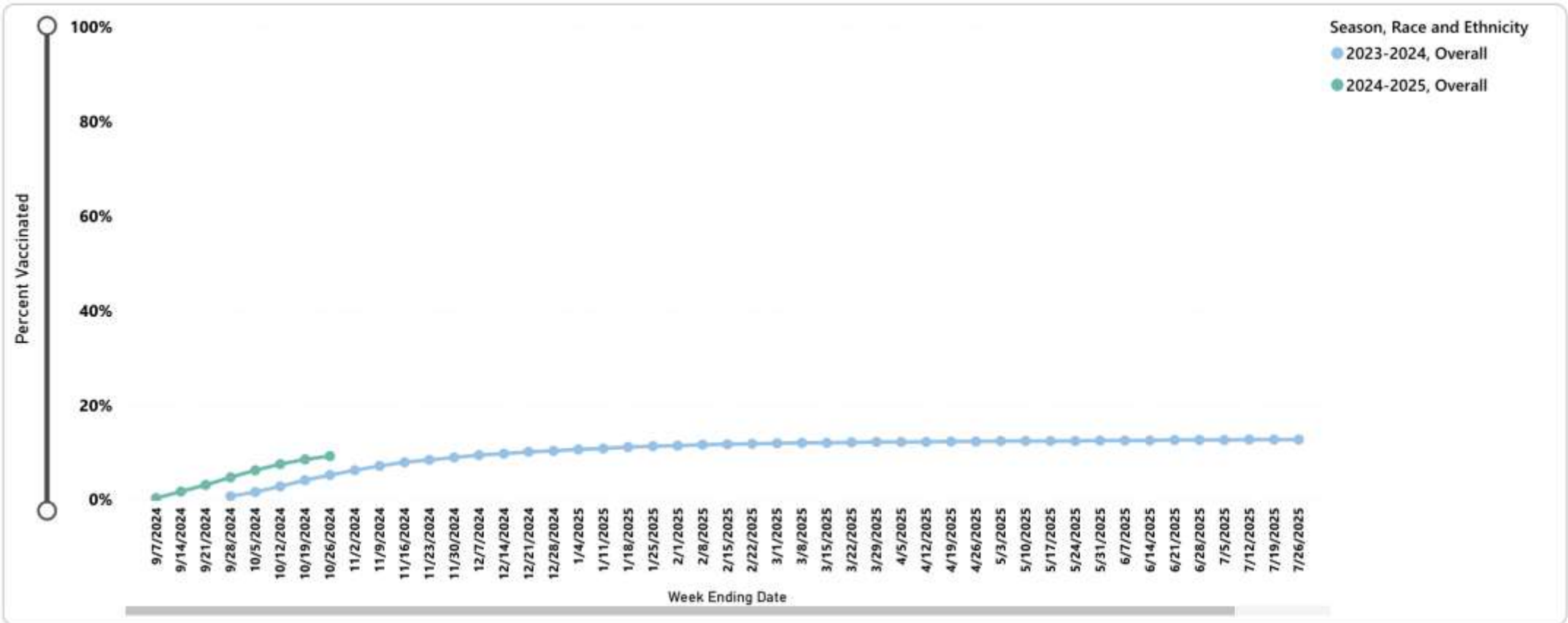

COVID-19 & NDD
12
7
8
8
5
3
1
CB
HIP
FCx
OCx
PCx
STR
TCx

B

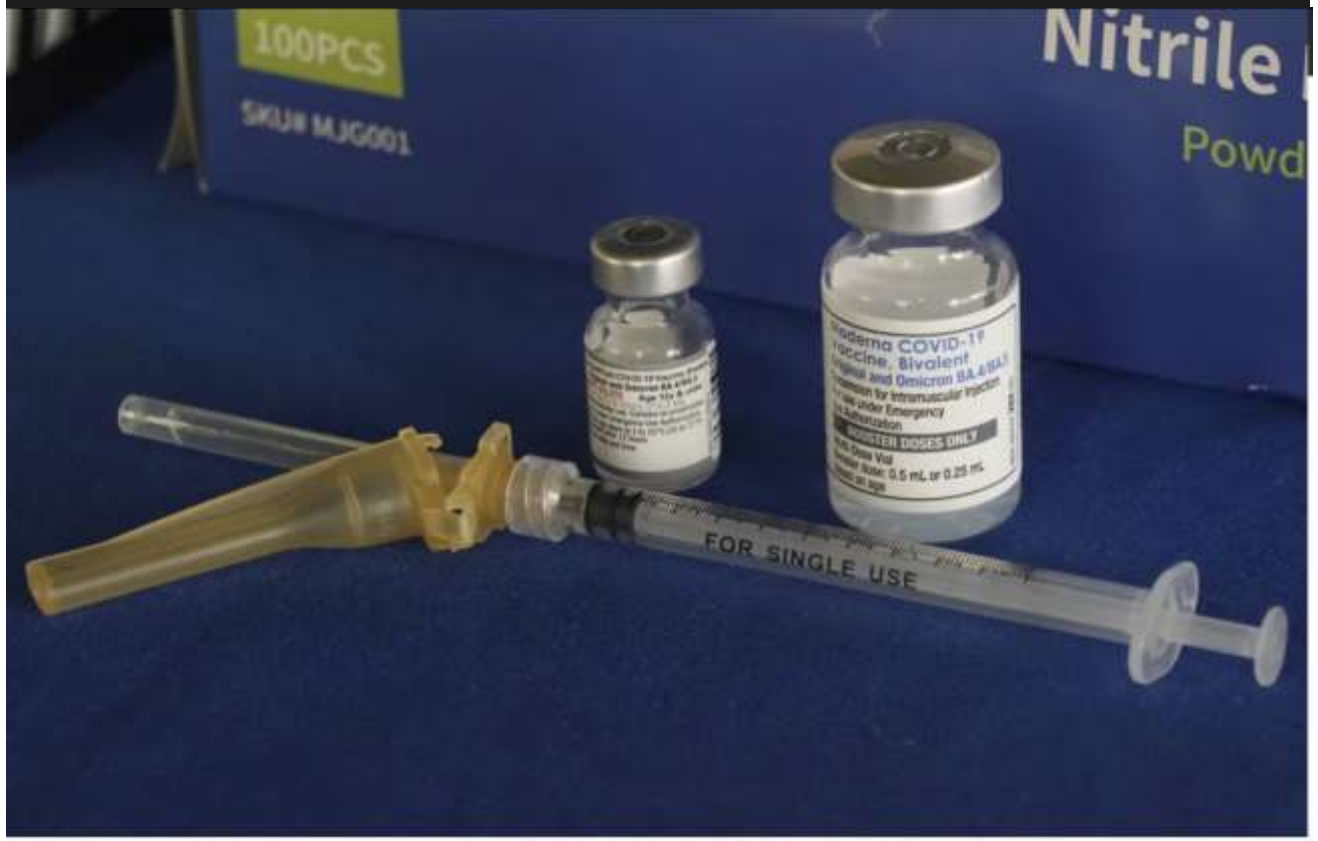

CB_brown (727)
HIP_brown (765)
HIP_magenta (510)
HIP_pink (523)
HIP_turquoise (3,361)
OCx_green (833)
OCx_red (540)
OCx_turquoise (2,547)
PCx_blue (1,961)
PCx_red (510)
PCx_turquoise (2,092)
PCx_yellow (599)
TCx_blue (1,168)
TCx_green (353)
TCx_turquoise (2,583)
TCx_yellow (383)
Consistence
Phenotype Correlation
ASD
BD
DEM
DEP
MDD
SCZ
GO BP
astrocyte differentiation
axonal transport
glial cell differentiation
glutamate receptor signaling pathway
mitochondrial respiratory chain complex assembly
negative regulation of immune response
neurotransmitter transport
transport across blood-brain barrier
KEGG pathway
Pathways of neurodegeneration - multiple diseases
Oxidative phosphorylation
Neurotrophin signaling pathway
Glutamatergic synapse
Fc gamma R-mediated phagocytosis
Dopaminergic synapse
T cell receptor signaling pathway
mTOR signaling pathway
AMPK signaling pathway
Notch signaling pathway
PI3K-Akt signaling pathway
Hippo signaling pathway
Wnt signaling pathway
DisGeNET
ASD
BD
DEM
DEP
SCZ
Consistence
Consistent
Inconsistent
Correlation
0.5
0.0
-0.5
Differential Expression
COVID-19 All
COVID-19 Up
COVID-19 Down
-log10FDR
High
Low
Module Number
8
6
4
2
0
CiberSort
Astrocytes
Endothelia
Excitatory
Inhibitory
Microglia
Neurons
Oligodendrocytes
OPCs
FDR < 0.05
FDR ≥ 0.05
n/a
Development Window
HW1
HW2
HW3
HW4
HW5
HW6

- (1) COVID-19 infection during pregnancy was significantly associated with an increased risk of offspring NDDs;
- (2) the effect of maternal COVID-19 infection on offspring NDDs was primarily reflected in modules representing shared molecular processes among disorders, which were mainly associated with astrocytes, endothelia, and excitatory neurons;
- (3) maternal COVID-19 infection adversely affected fetal neurodevelopment throughout the entire development process rather than at a specific developmental window;
- (4) the COVID-19-induced NDD-based risk score revealed specific susceptibility of CD4 proliferating T cells;
- (5) SMR analysis demonstrated the causal relationship between the transcriptional changes in the key potential genes and the risk of NDDs.

COVID-19 Vaccination Coverage, Pregnant Persons



An Idaho health department isn't allowed to give COVID-19 vaccines anymore. Experts say it's a first



FILE - A syringe lies next to vials of COVID-19 booster vaccines at an inoculation station in Jackson, Miss., Friday, Nov. 18, 2022. (AP Photo/Rogelio V. Solis, File)

Choose time period: Last 30 Days

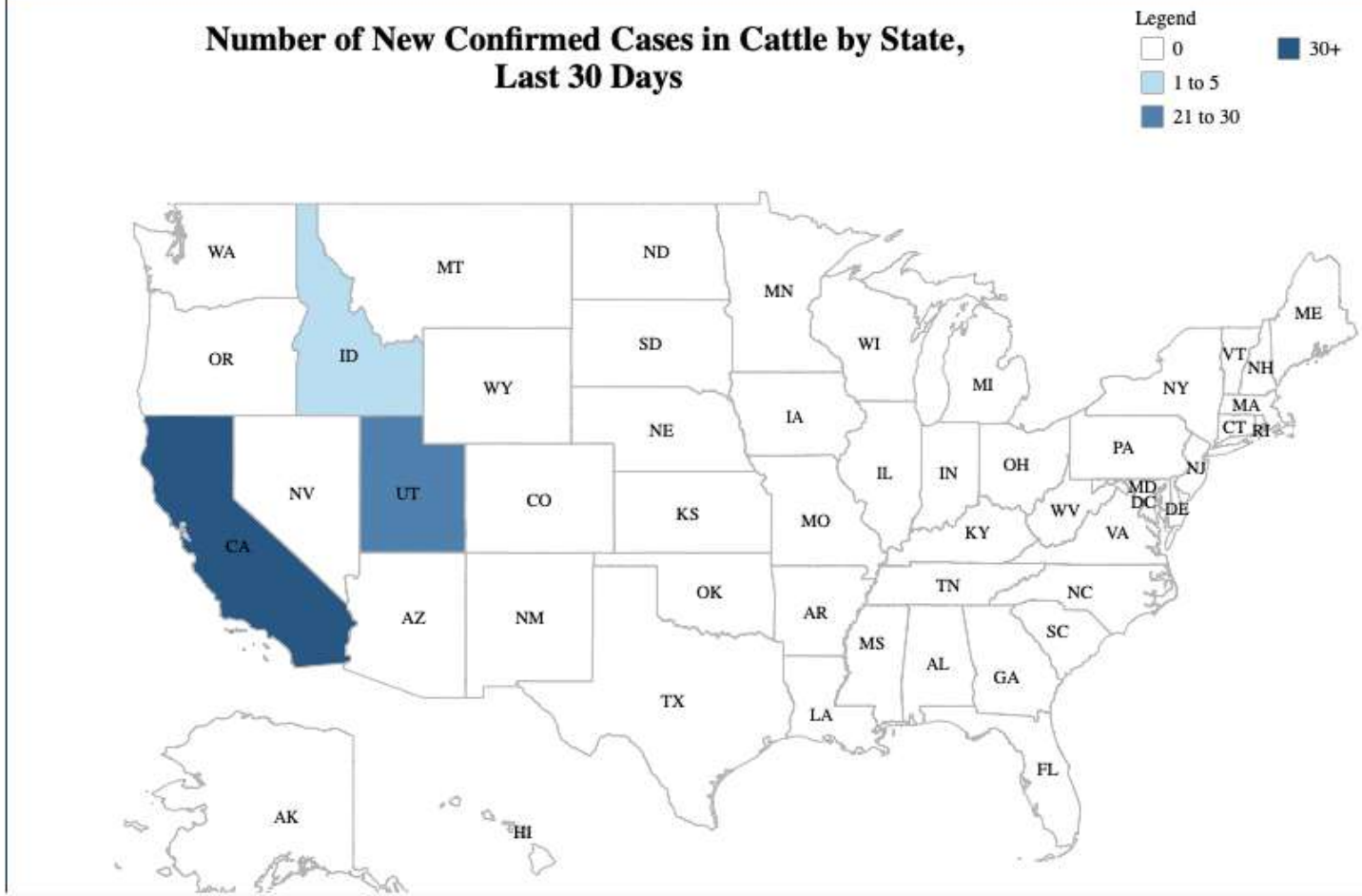
Choose species: Cattle

Situational Update

Click for International Exports

In the Last 30 Days, in Cattle, there were:
175 New Confirmed Cases in **3** States

Number of New Confirmed Cases in Cattle by State, Last 30 Days



State	Cattle	Poultry	Unknown	State Total
California	21	0	0	21
Colorado	1	9	0	10
Michigan	2	0	0	2
Missouri	0	0	1	1
Texas	1	0	0	1
Washington	0	11	0	11
Source Total	**25**	**20**	**1**	**46**

Livestock Health Alert

November 8, 2024: H5N1 Bird Flu Confirmed in 259 Dairies in California

SACRAMENTO, CA — Following an investigation by the California Department of Food and Agriculture (CDFA) and rapid disease detection by California Animal Health and Food Safety Laboratory System (CAHFS), the U.S. Department of Agriculture's (USDA) National Veterinary Services Laboratories (NVSL) has confirmed H5N1 Bird Flu in 259 dairies in Central California. CDFA has implemented a surveillance strategy with the goal of finding affected farms as early as possible. Early detection provides the opportunity to work with farms to quickly implement enhanced biosecurity, cow care, and employee protection.

Bird Flu in Humans

As of November 6, 2024, the California Department of Public Health (CDPH) has confirmed twenty-one (21) human cases of bird flu and 1 additional probable case with dairy cow exposure that meets the Council of State and Territorial Epidemiologists (CSTE) probable case definition in California. All individuals had contact with animals at different farms and all have experienced mild symptoms, including eye redness or discharge

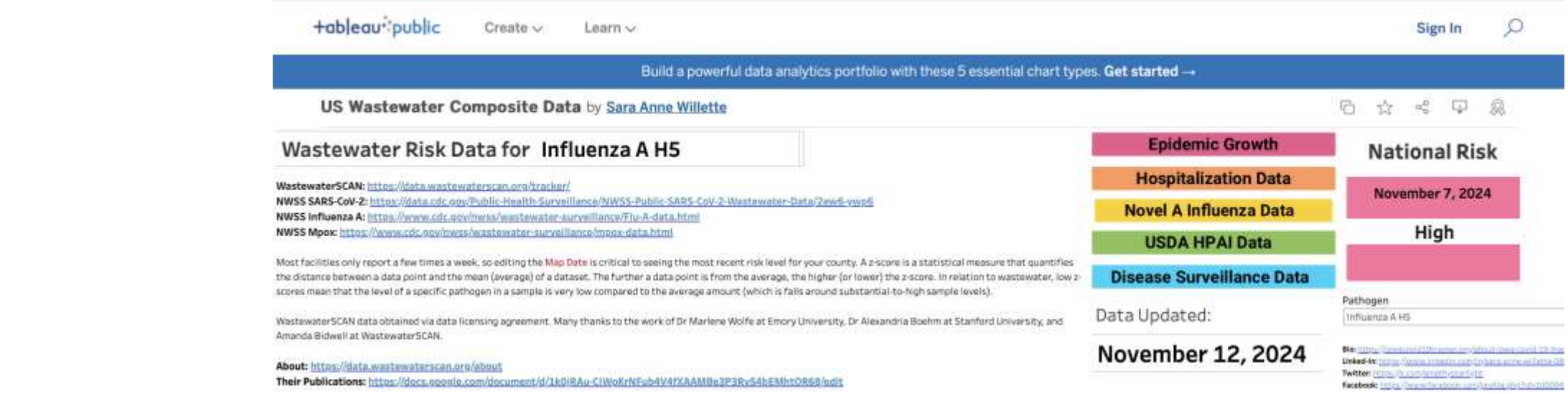
Clinical Signs

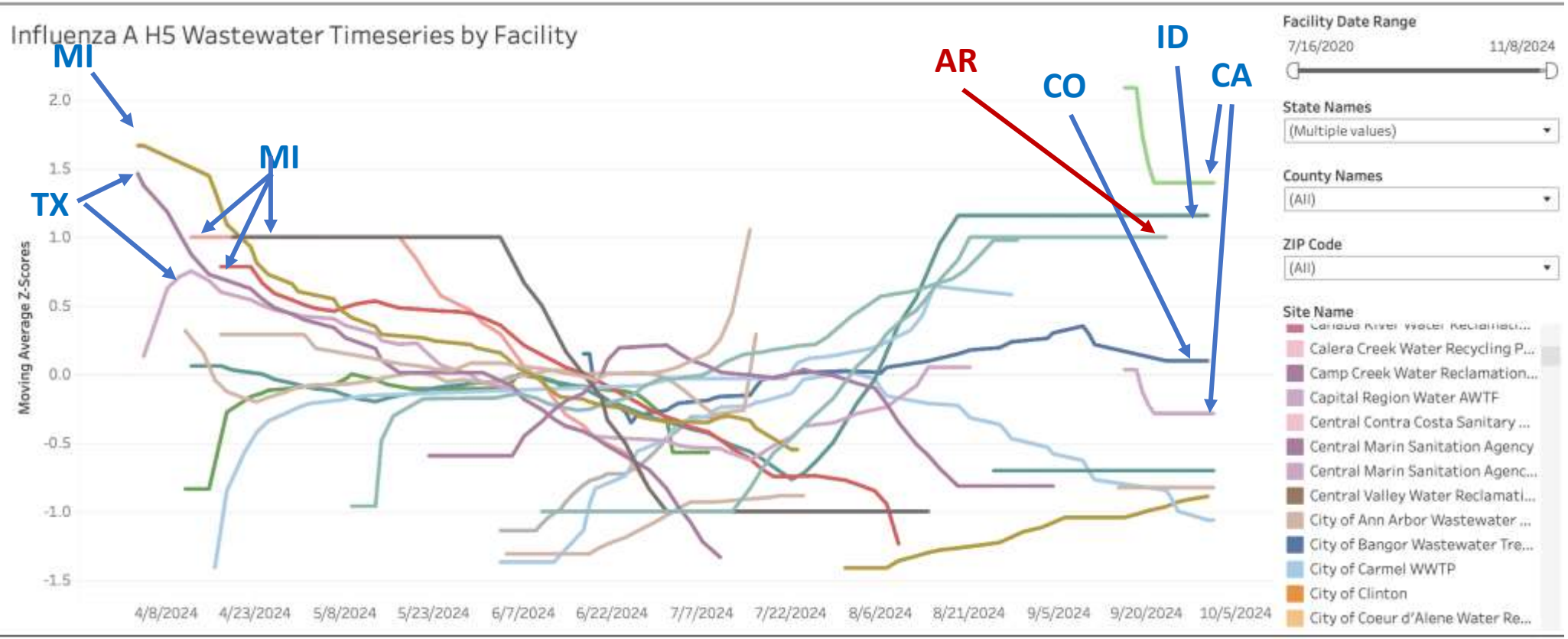
USDA Builds on Actions to Protect Livestock and Public Health from H5N1 Avian Influenza

Press Release

WASHINGTON, October 30, 2024

…USDA is working closely with state and private veterinary groups, which include practitioners who will play a vital role in carrying out this effort. USDA plans to first sample milk in bulk at the regional level, with additional testing at the farm level if necessary, until herds in an area are determined to be free of the virus. USDA will continue to work with state and private veterinarians on the final details of implementation, and will share guidance documents soon.





Wastewater Risk Scores

Risk Level	Minimum	Maximum
Minimal		-3.000
Very Low	-3.000	-2.211
Low	-2.211	-1.474
Moderate	-1.474	-1.106
Concerning	-1.106	-0.737
Substantial	-0.737	-0.044
High	-0.044	0.737
Very High	0.737	1.106
Excessive	1.106	1.474
Dizzying	1.474	2.211
Astronomical	2.211	3.000
Welcome to Hell	3.000	

A z-score is a statistical measure that quantifies the distance between a data point and the mean (average) of a dataset. The further a data point is from the average, the higher (or lower) the z-score. In relation to wastewater, low z-scores mean that the level of a specific pathogen in a sample is very low compared to the average amount (which is falls around moderate-to-high sample levels).

Morbidity and Mortality Weekly Report (*MMWR*)

Serologic Evidence of Recent Infection with Highly Pathogenic Avian Influenza A(H5) Virus Among Dairy Workers — Michigan and Colorado, June–August 2024

Weekly / November 7, 2024 / 73(44);1004–1009

Alexandra M. Mellis[1]; Joseph Coyle[2]; Kristen E. Marshall[3,4]; Aaron M. Frutos[1,5]; Jordan Singleton[5,6]; Cara Drehoff[3,5]; Angiezel Merced-Morales[1]; H. Pamela Pagano[1]; Rachel O. Alade[5,7]; Elizabeth B. White[1]; Emma K. Noble[1]; Crystal Holiday[1]; Feng Liu[1]; Stacie Jefferson[1]; Zhu-Nan Li[1]; F. Liani Gross[1]; Sonja J. Olsen[1]; Vivien G. Dugan[1]; Carrie Reed[1]; Sascha Ellington[1]; Sophia Montoya[3]; Allison Kohnen[3]; Ginger Stringer[3]; Nisha Alden[3]; Peter Blank[2]; Derick Chia[2]; Natasha Bagdasarian[2]; Rachel Herlihy[3]; Sarah Lyon-Callo[2]; Min Z. Levine[1] (VIEW AUTHOR AFFILIATIONS)

TABLE 2. Potential risk factors for serologic evidence of infection with highly pathogenic avian influenza A(H5) among dairy workers (N = 115) — Colorado and Michigan, 2024

Characteristic	No. (%) Seronegative n = 107; 93% of total	Seropositive n = 8; 7% of total	p-value*
Spanish-language survey	75 (70)	8 (100)	0.10
State			
Colorado	64 (60)	6 (75)	0.5
Michigan	43 (40)	2 (25)	—
No. of days since exposure, median (IQR)	49 (47–59)	49 (49–51)	>0.9
Antibody titers			
HI GMT: influenza A, H5† median (IQR)	5 (5–5)	49 (40–80)	—
MN GMT: influenza A, H5† median (IQR)	5 (5–10)	49 (40–63)	—
MN titers: seasonal influenza A, H1§ median (IQR)	80 (20–320)	30 (18–110)	—
Seasonal flu vaccination received¶	20 (19)	1 (13)	>0.9
Job tasks after cows became ill			
Breeding cows	29 (27)	1 (13)	0.7
Changing or cleaning bedding	36 (34)	2 (25)	>0.9
Checking milk quality	28 (26)	4 (50)	0.2
Cleaning the milking parlor	41 (38)	8 (100)	<0.001
Feeding cows	45 (42)	1 (13)	0.14
Helping with calving	40 (37)	3 (38)	>0.9
Milking cows	61 (57)	7 (88)	0.14
Moving or hauling cattle	53 (50)	3 (38)	0.7
Moving or hauling milk	13 (12)	2 (25)	0.3
Number of job tasks, median (IQR)	5 (2–8)	5 (3–7)	0.7
Removing manure or dung	66 (62)	5 (63)	>0.9
Vaccinating cows	47 (44)	4 (50)	>0.9
Working in maternity pens	46 (43)	3 (38)	>0.9
Working with calves	44 (41)	2 (25)	0.5
Reported contact with cows with bird flu**			
Yes	68 (64)	1 (13)	0.007
No or unknown	39 (36)	7 (88)	—

TABLE 3. Characteristics of illnesses reported by dairy workers, by seropositivity to highly pathogenic avian influenza A(H5) (N = 115) — Colorado and Michigan, 2024

Reported signs and symptoms*	Serologic test result, no. (%) Negative n = 107	Positive n = 8
Any self-reported illness	42 (39)	4 (50)
No. of days from exposure† to onset, median (IQR)	15 (4 to 27)	−5 (−11 to 1)
Cough	13 (31)	0 (—)
Diarrhea	6 (15)	1 (25)
Difficulty breathing	7 (17)	0 (—)
Fatigue	21 (50)	0 (—)
Fever (≥100.4°F [≥38°C])	7 (17)	0 (—)
Feverishness or chills	15 (37)	1 (25)
Headache	19 (45)	1 (25)
Muscle aches	19 (45)	0 (—)
Nausea or vomiting	4 (9.5)	0 (—)
Rash	4 (9.5)	0 (—)
Red, draining, or itching eyes	26 (62)	3 (75)
Runny nose or nasal congestion	20 (48)	1 (25)
Seizure	0 (—)	0 (—)
Sneezing	13 (31)	1 (25)
Sore throat	24 (57)	1 (25)

* Defined as an affirmative response to the question, "Since cows have started to get sick, have you been sick" (Michigan) or "Since [the date of detection per farm], did you develop any symptoms?" (Colorado). Individual symptoms were then elicited, including fever (measured ≥100.4°F [≥38°C]), feverishness/chills, cough, fatigue or tiredness/sluggishness, sore throat, runny or stuffy nose, sneezing, nausea/vomiting, diarrhea, headache, rash, muscle/body aches, red/draining or itching eyes, difficulty breathing/shortness of breath, or seizures. Symptoms were only elicited among persons who reported illnesses.

† Defined as the worker-reported date when cows first began showing symptoms of bird flu on this dairy farm (Michigan), or the quarantine date (Colorado).

BARRON'S

HEALTHCARE

Canadian Teenager Is Hospitalized in Country's First Bird Flu Case

By Josh Nathan-Kazis Follow

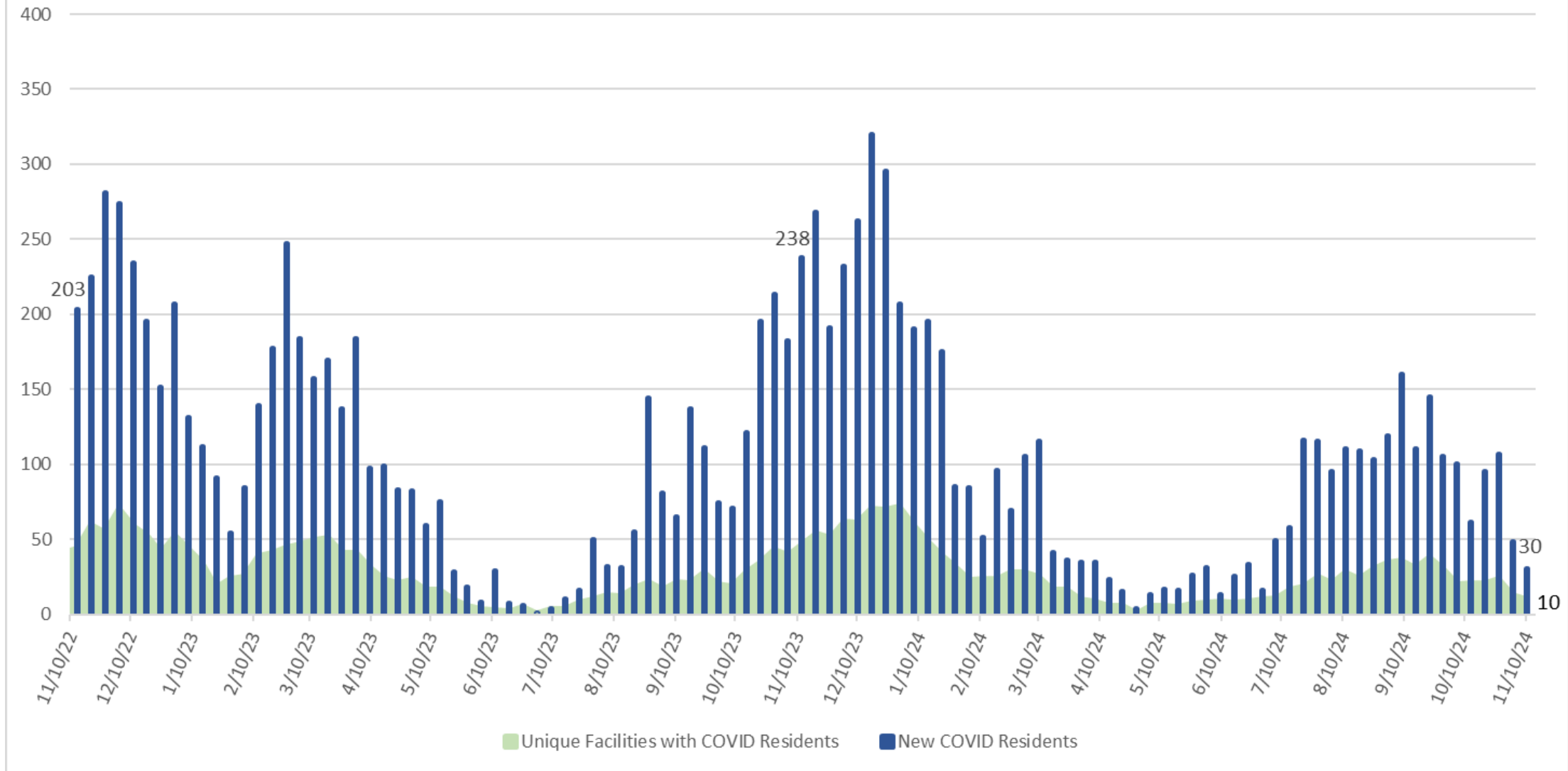
Nov 11, 2024 11:37 am EST

Public-health officials in Canada said over the weekend that a teenager had been hospitalized with H5 avian influenza, the latest in a series of potentially worrying developments tied to the virus.

Federal and State Veterinary Agencies Share Update on HPAI Detections in Oregon Backyard Farm, Including First H5N1 Detections in Swine

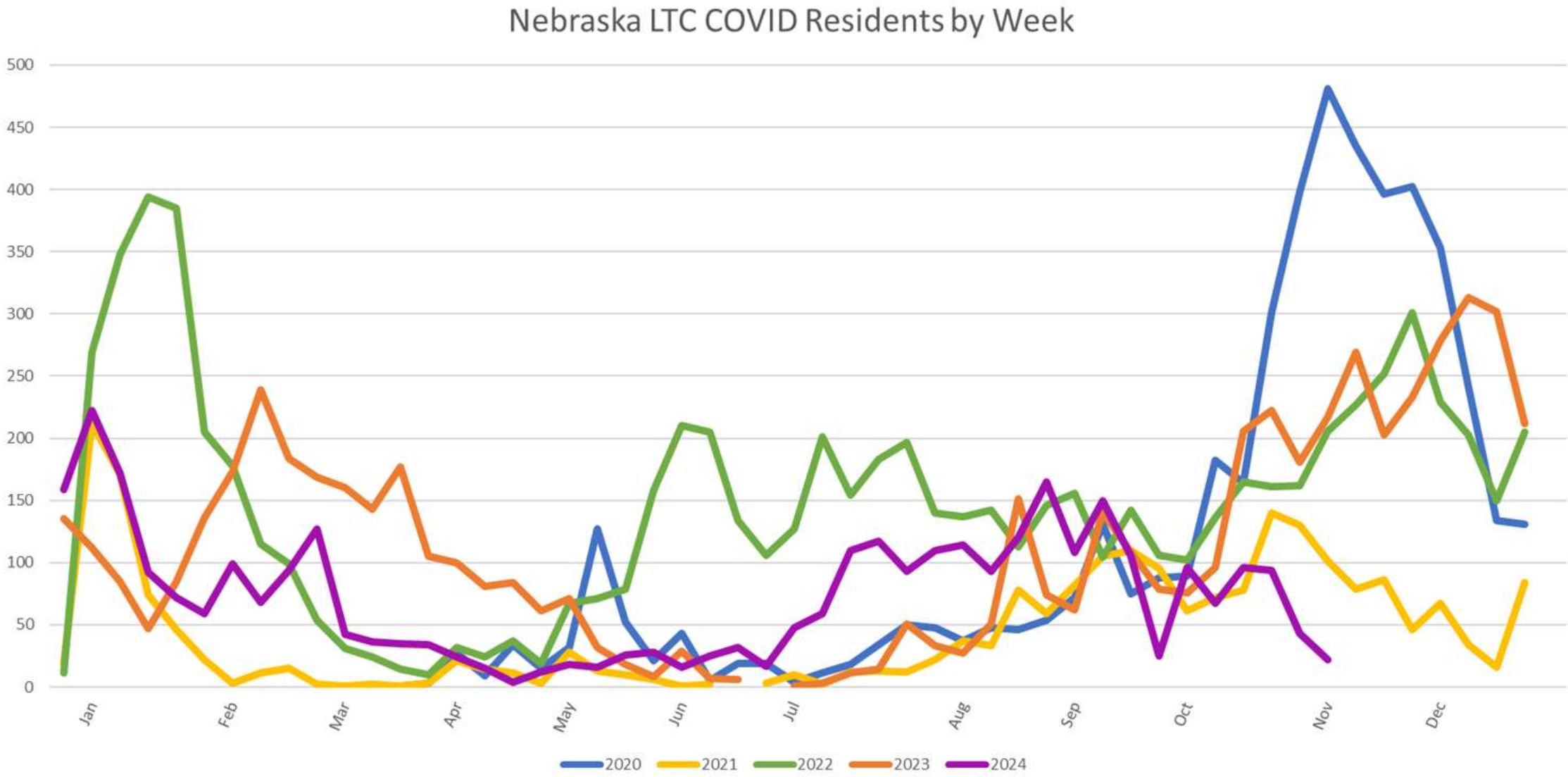
ICAP LTC & ALF - KATE TYNER

Nebraska LTC - Facilities with at Least One COVID Resident & Total COVID Residents by Week



Source: Unofficial Counts Compiled by Nebraska ICAP based on data reported by facilities and DHHS; Actual Numbers may vary slightly

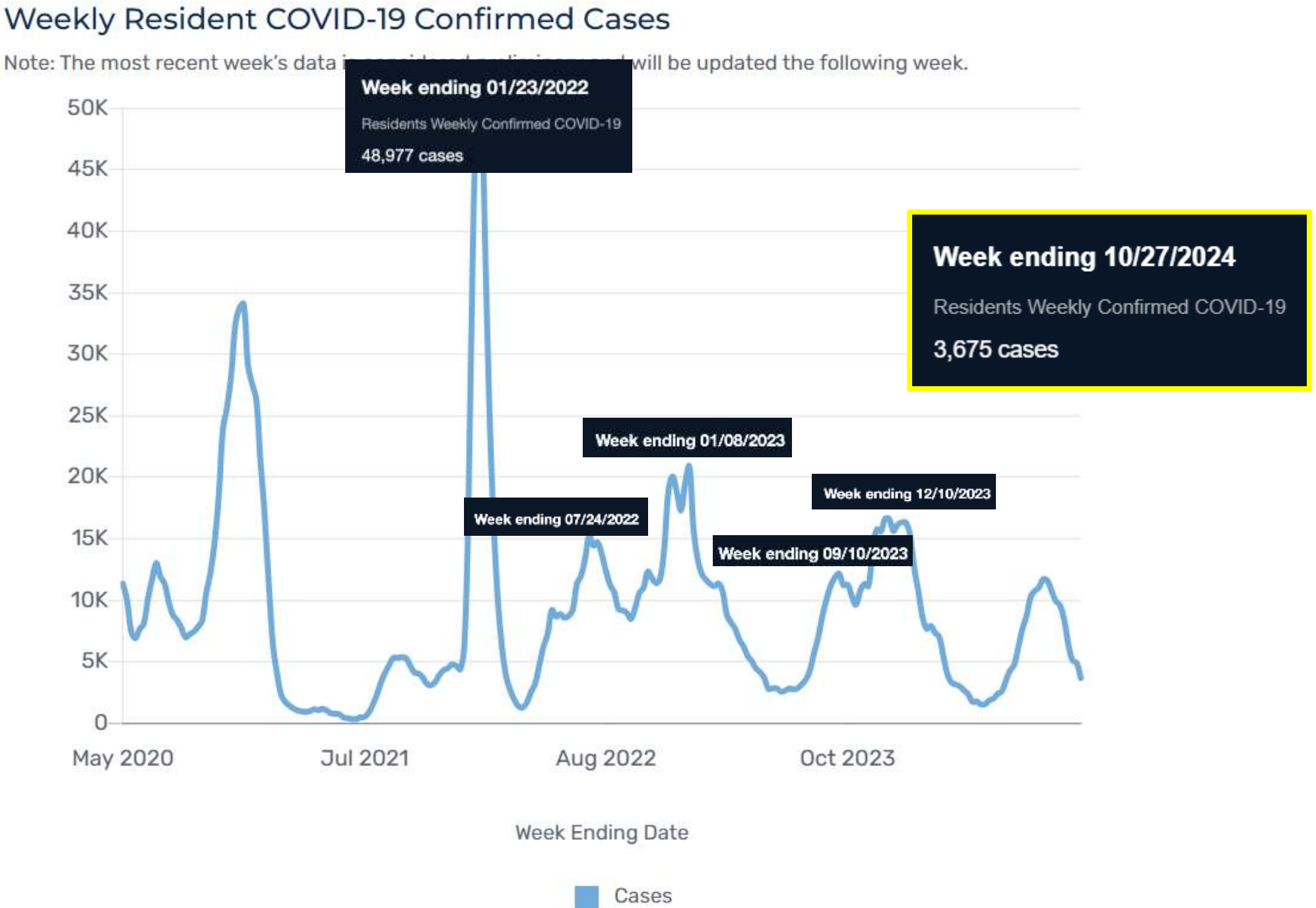
Slide Credit: Dan German



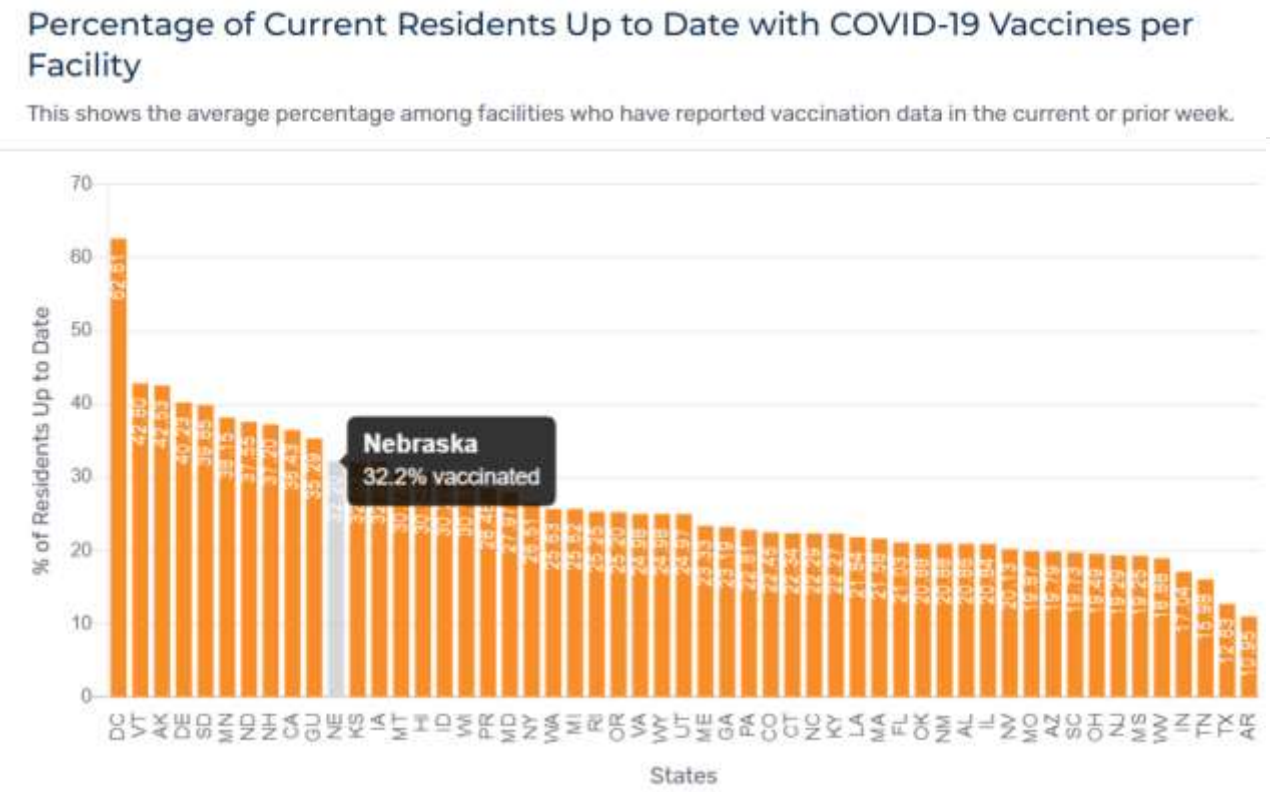
Slide Credit: Dan German

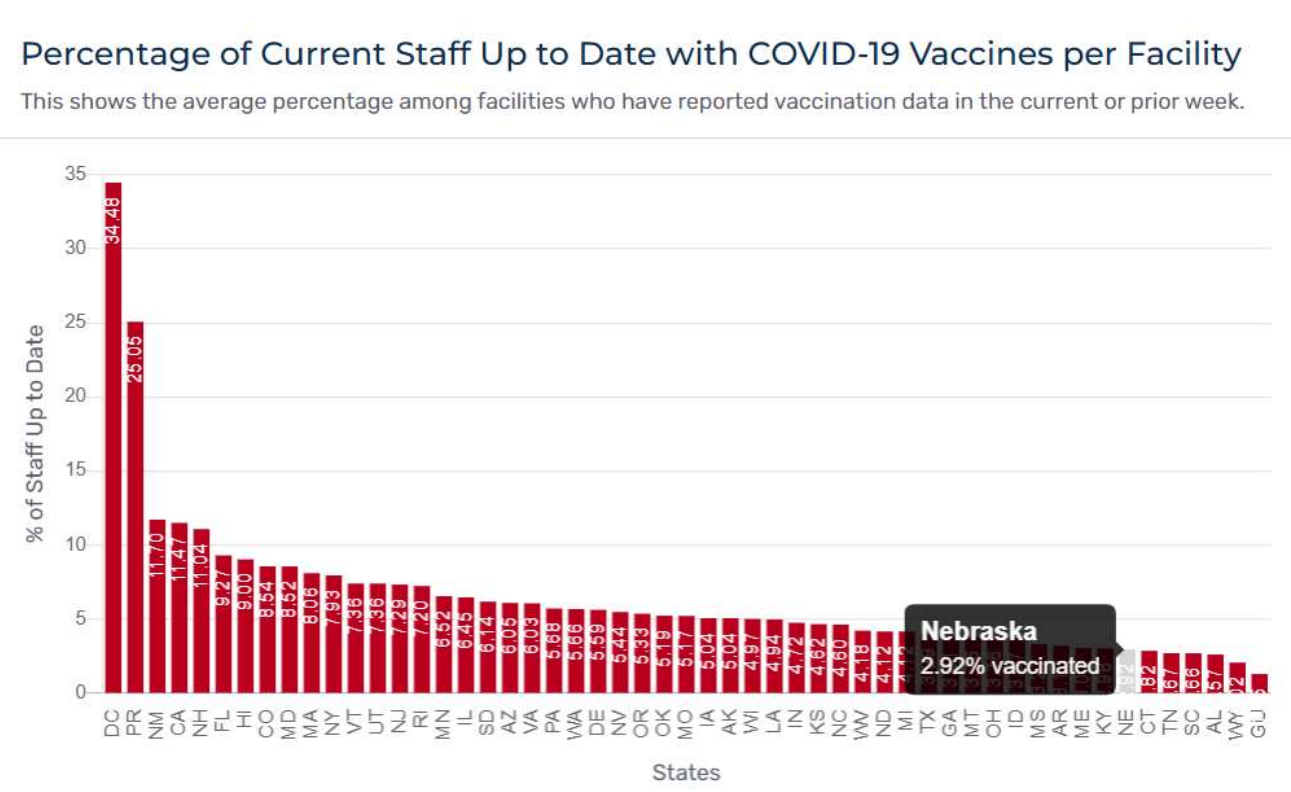
CMS data

Nationwide CMS



CMS Nursing Home Data





CMS Nursing Home Data 10/27/24

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