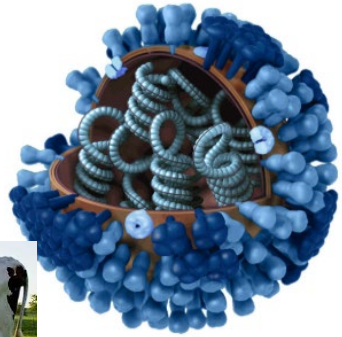
Influenza Activity



National Adult and Influenza Immunization Summit
September 19, 2024

Alicia Budd, MPH
Influenza Division, NCIRD, CDC

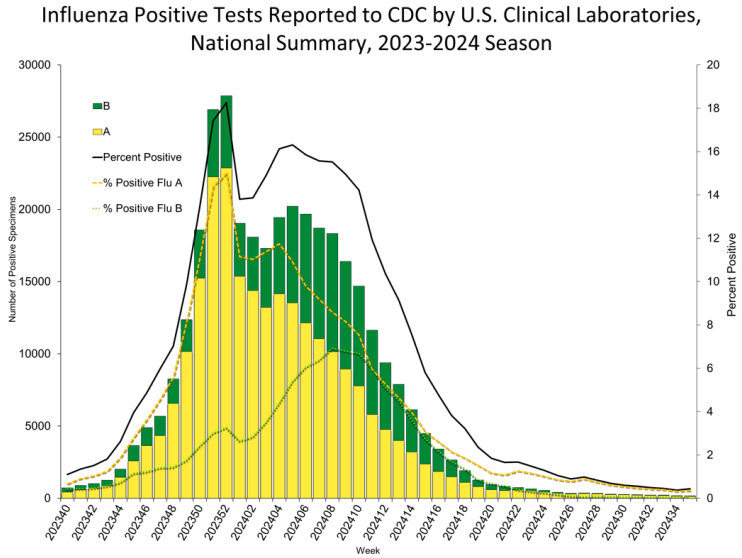
Outline

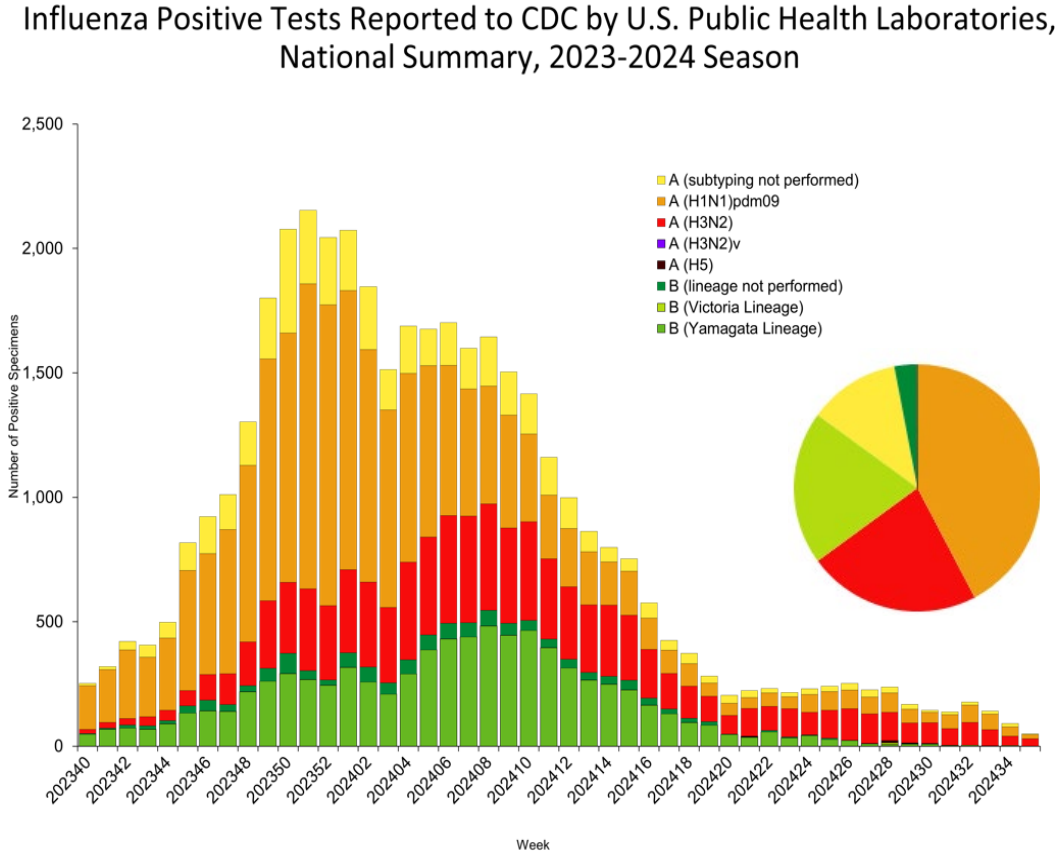
- Influenza activity
  - United States: 2023-2024 season
  - Southern Hemisphere: Summer of 2024
  - Highly Pathogenic Avian Influenza A(H5)

- 2024-2025 Preparations
  - Influenza Vaccination
  - Monitoring Activity

Influenza *Viruses* in the United States

Clinical and Public Health Laboratory Data

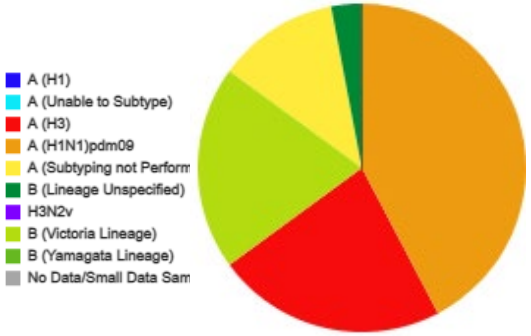




Peak % Positive Nationally

- Overall and Influenza A – week 52 (late Dec.)
- Influenza B – week 8 (mid-Feb.)

Virologic Surveillance – Virus Characteristics



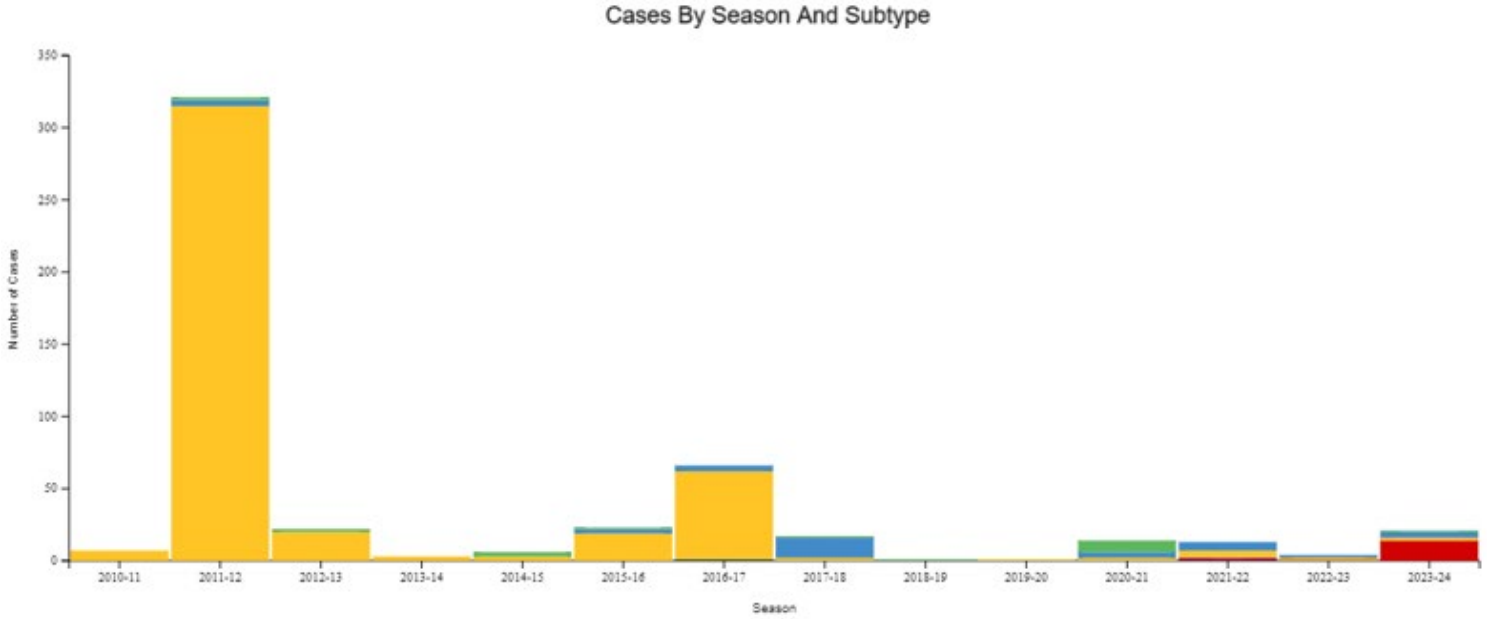
- 77% influenza A
  - 65% H1
  - 35% H3
- 23% influenza B
  - 100% Victoria lineage

Viruses Collected in the U.S. since October 1, 2023

Virus	Genetic Characterization		Antigenic Characterization	
	Number Tested	Clade/Subclade	Number Tested	Similarity to cell-grown vaccine reference virus
A/H1	1,971	24% - 6B.1A.5a.2a	574	>99% similar
		76% - 6B.1A.5a.2a.1		
A/H3	1,894	0.1% - 3C.2a1b.2a.2a.1b	665	95% similar
		0.1% - 3C.2a1b.2a.2a.3a		
		99.8% - 3C.2a1b.2a.2a.3a.1		
		0.1% - 3C.2a1b.2a.2b		
B/Victoria	1,483	100% - V1A.3a.2	463	100% similar

Antiviral Susceptibility		
Medication	**Number Tested**	**Number with Reduced Inhibition/Susceptibility**
Oseltamivir, Peramivir, Zanamivir	5,256	H1 – 6
		B - 4
Baloxavir	5,170	H3 - 1

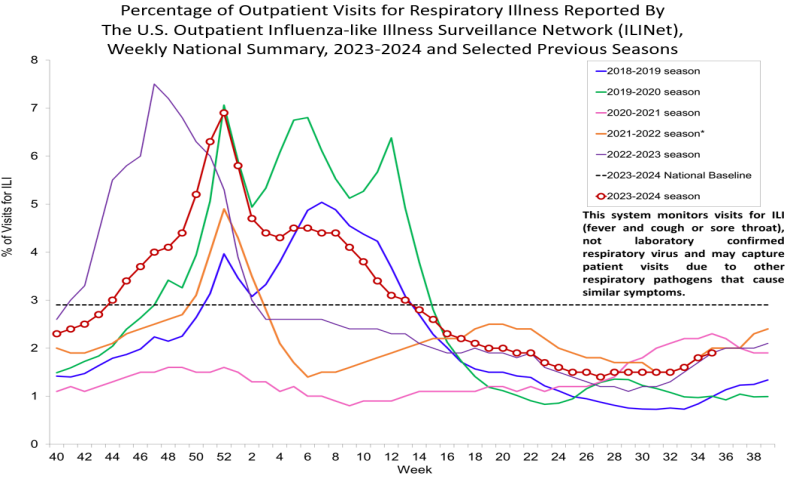
Novel Influenza A Viruses



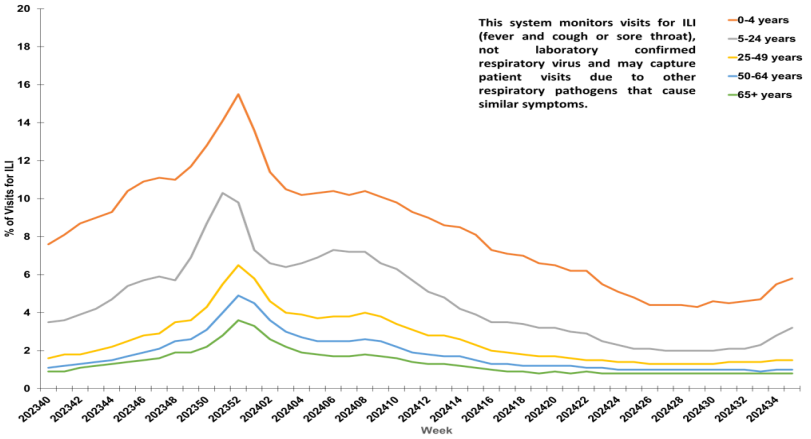
	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	Total
Influenza A H1N1v	0	2	2	0	3	1	0	1	1	0	8	0	0	1	19
Influenza A H1N2v	0	4	0	0	0	3	4	14	0	0	4	6	2	4	41
Influenza A H3N2v	7	315	20	3	3	19	61	2	0	1	2	5	1	2	441
Influenza A H7N2	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Influenza A H1v	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Influenza A H3v	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Influenza A H5	0	0	0	0	0	0	0	0	0	0	0	1	0	14	15
Total	7	321	22	3	6	23	66	17	1	1	14	13	4	21	519

Influenza-Associated *Disease* in the United States

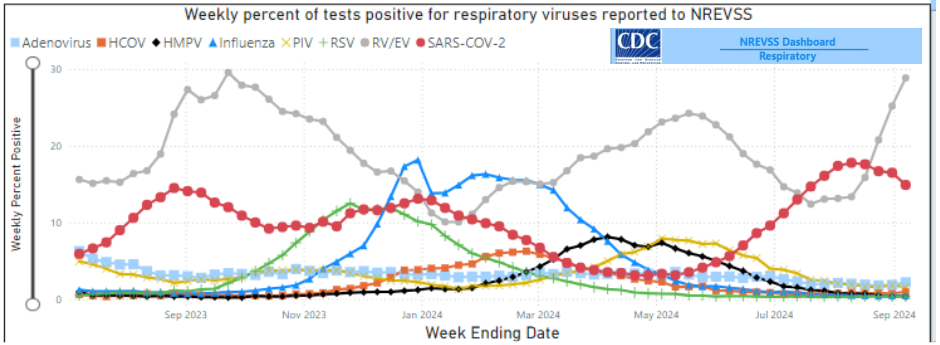
Percentage of Outpatient Visits for Respiratory Illness, Outpatient Influenza-like Illness Surveillance Network (ILINet)



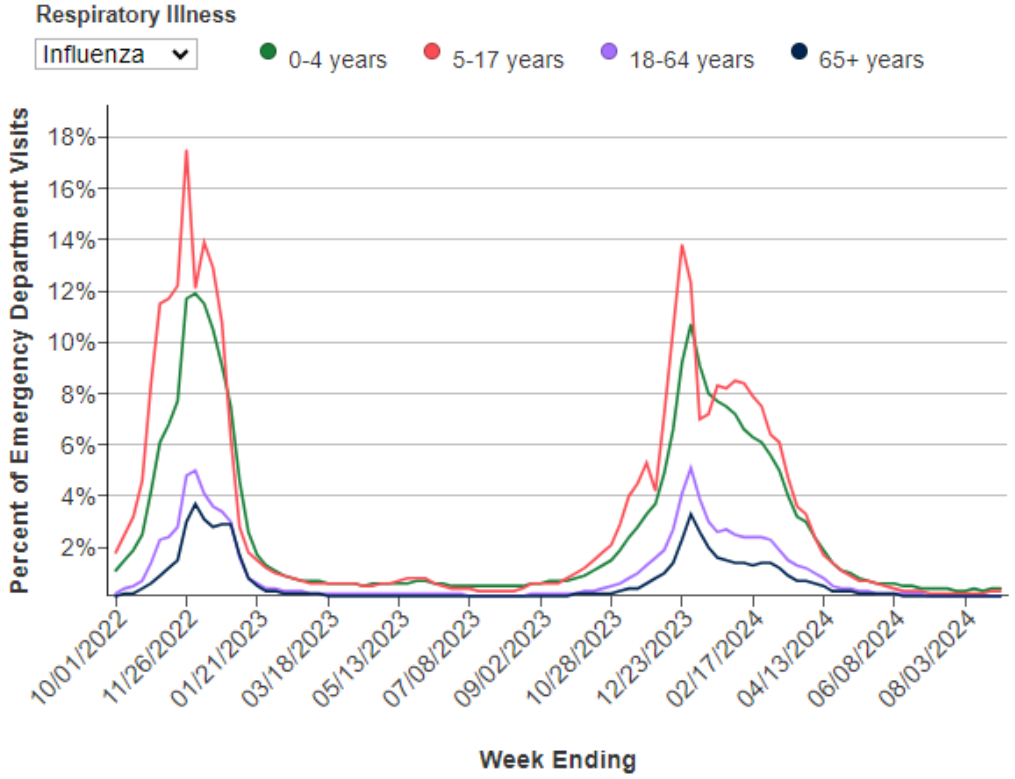
Respiratory illness referred to as ILI:
fever
+
cough or sore throat



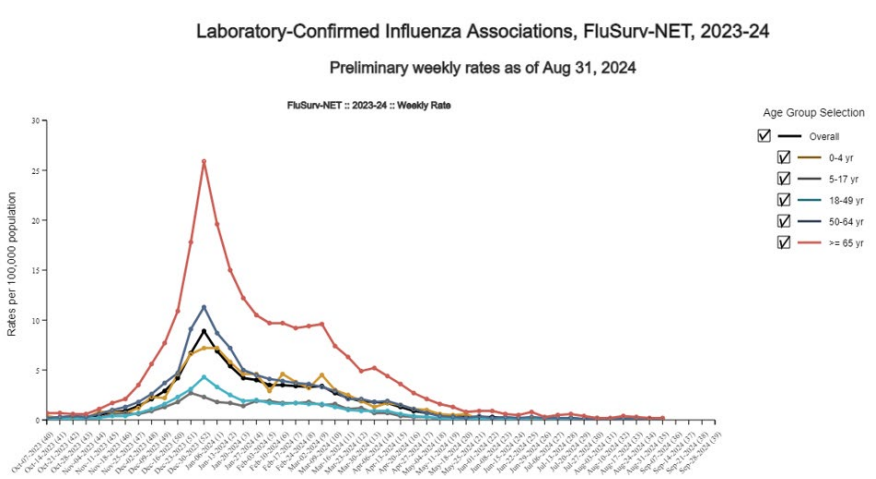
Syndromic data need context

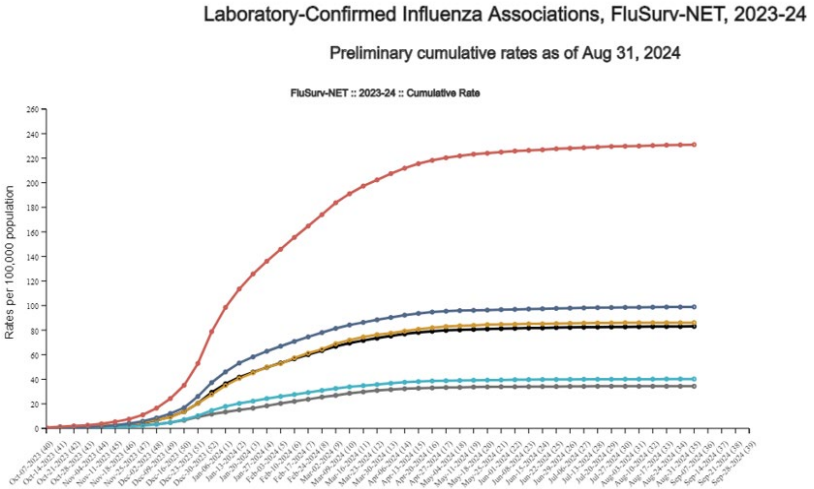


ED Influenza Discharge Diagnoses: NSSP

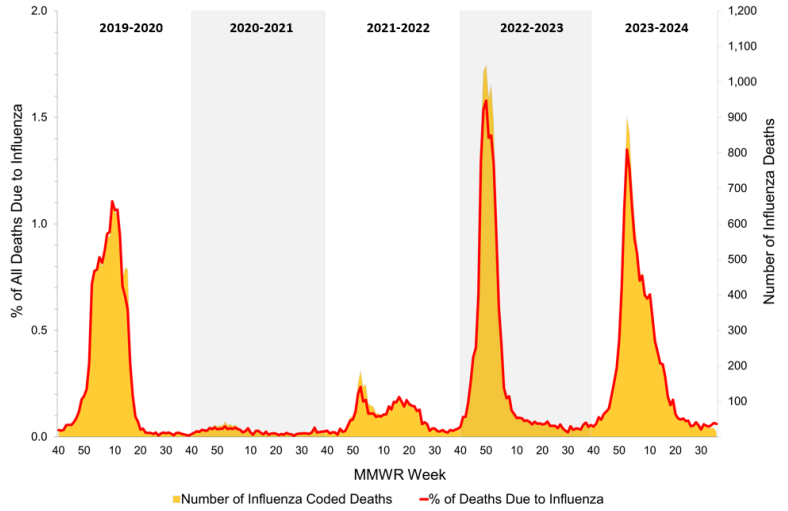


Influenza Associated Hospitalizations: FluSurv-NET

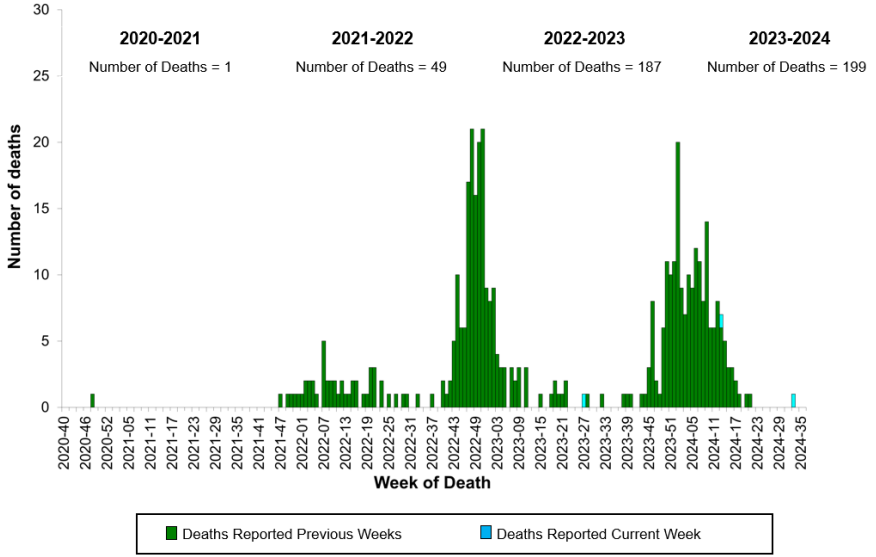




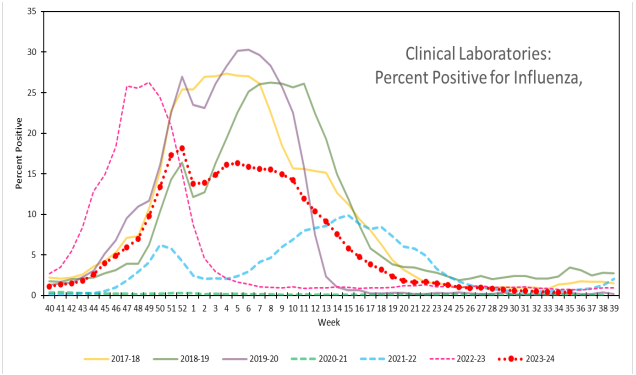
NCHS Mortality Surveillance System

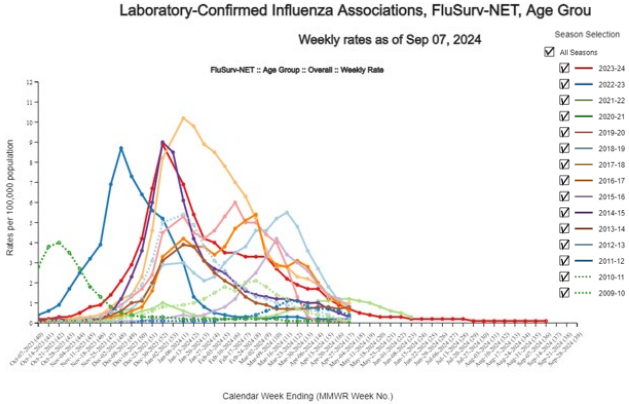


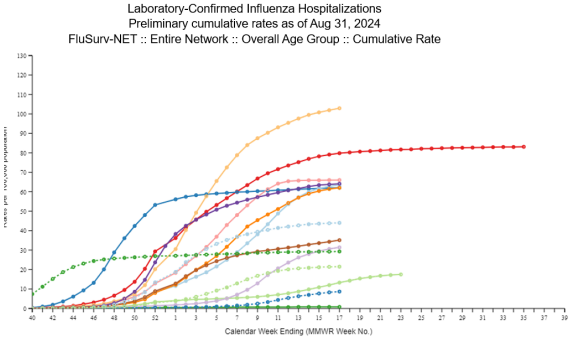
Influenza-Associated Pediatric Mortality

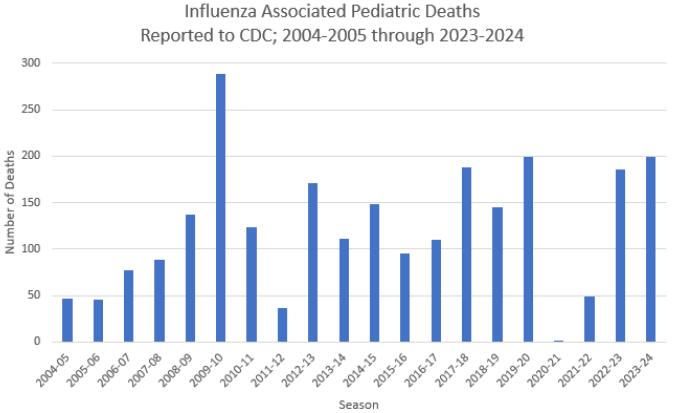


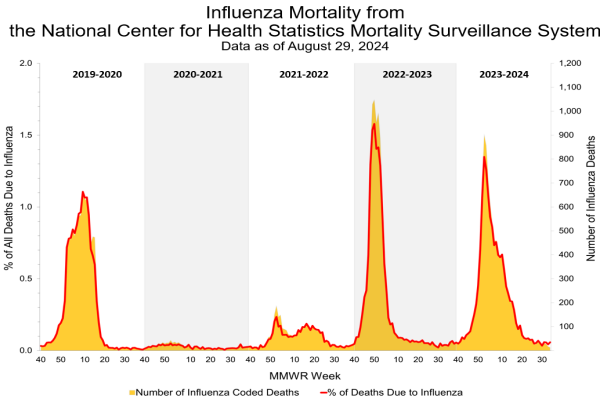
2023-2024 level of activity and timing was within the pre-COVID range of “normal”



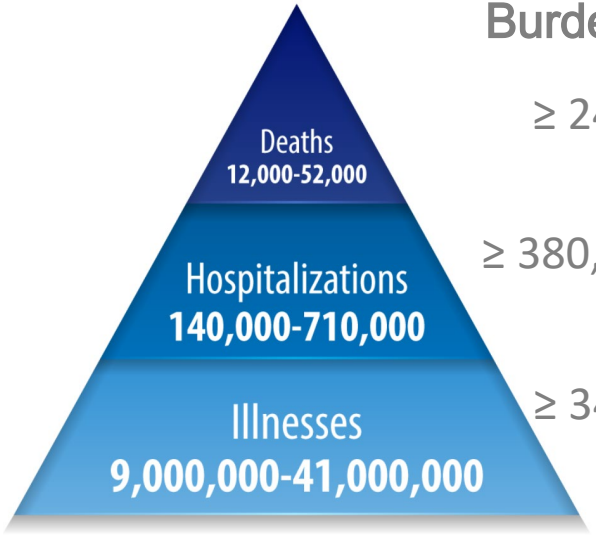








2023-2024 Burden and Severity



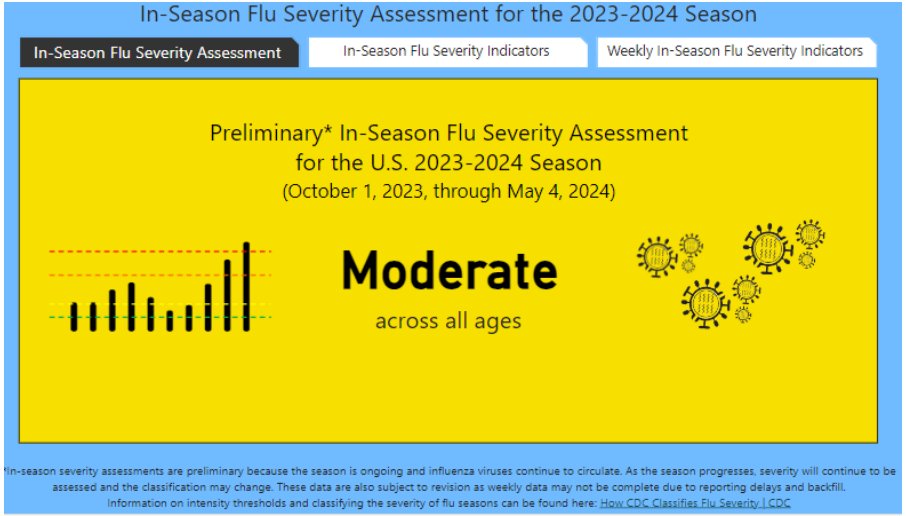
Estimated Range from 2010 – 2023*

2023 – 2024 Burden Estimates

≥ 24,000 deaths

≥ 380,000 hospitalizations

≥ 34 million illnesses



https://www.cdc.gov/flu/about/burden/preliminary-in-season-estimates.htm

https://www.cdc.gov/flu/about/classifies-flu-severity-inseason.htm

Data as of May 4, 2024.

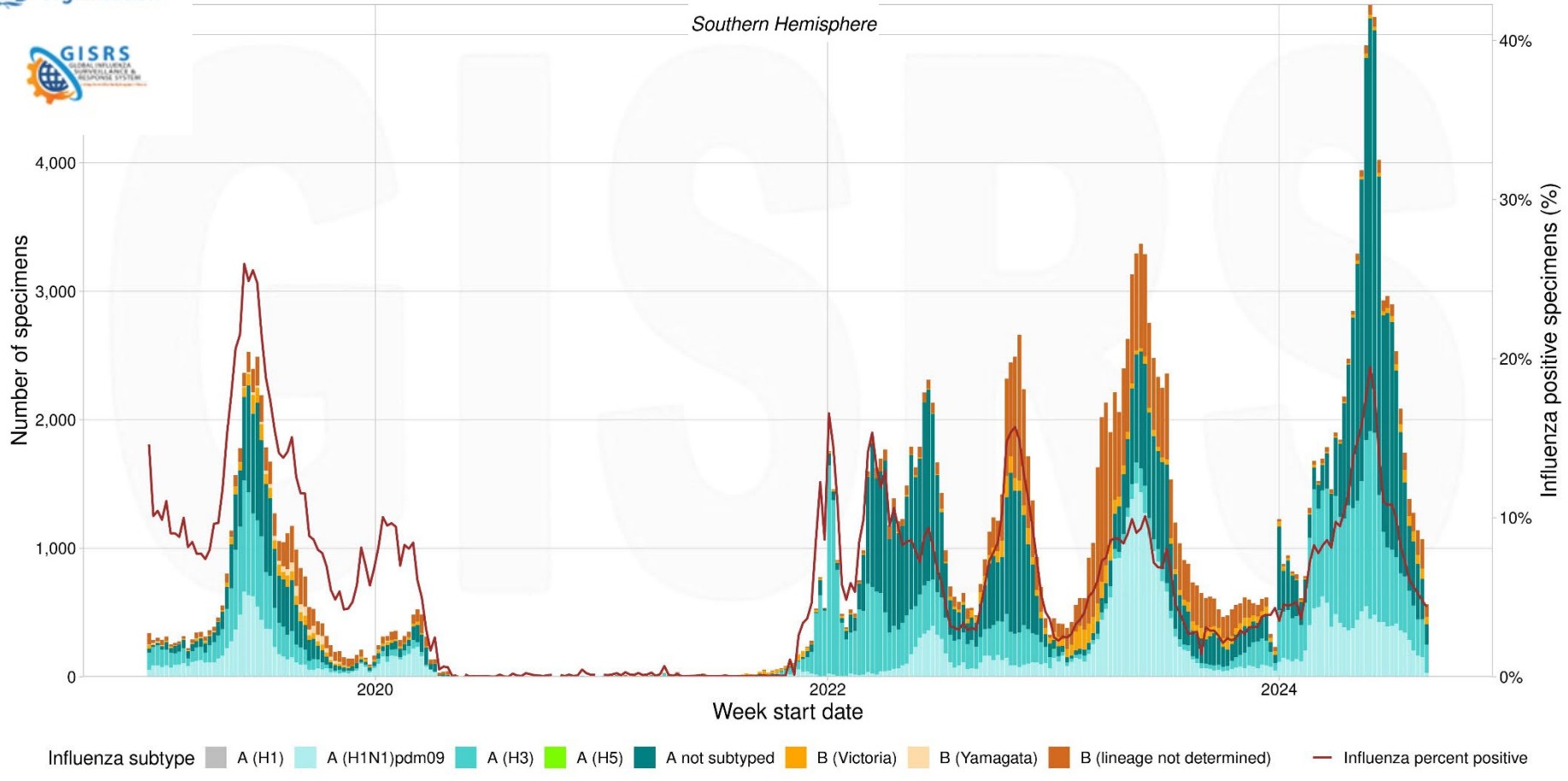
https://www.cdc.gov/flu/about/classifies-flu-severity-inseason.htm

International Influenza Activity

World Health Organization

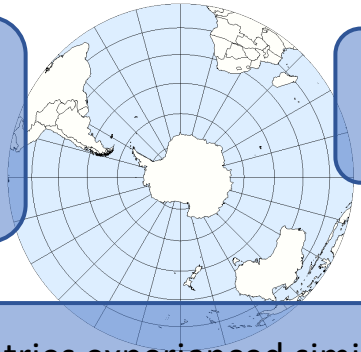
GISRS

Virus detections by subtype reported to FluNet, 31 December 2018 to 26 August 2024



Southern Hemisphere influenza season – Summary

Most activity occurs between **April and September** of each year. This season timing in most countries similar to pre-COVID; some experienced earlier increases.



Influenza **A(H3N2)** was the **most common virus** circulating during the 2024 SH season.

Most countries experienced similar activity levels compared to pre-COVID seasons.

Southern Hemisphere activity in the summer
may give some indication about, but is not necessarily a predictor of,
what will happen in the upcoming Northern Hemisphere Season because:

- Different influenza viruses predominating in different parts of the world
- Possibly variations in population immunity

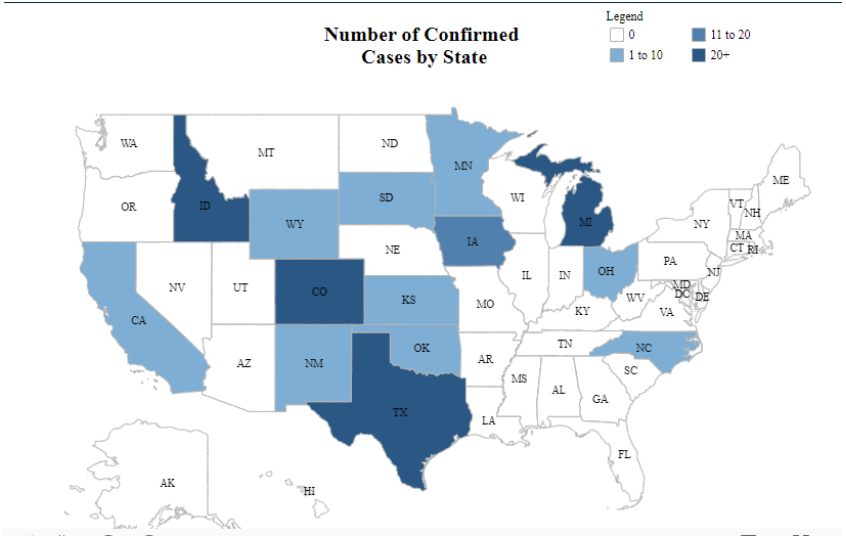
CDC Influenza

Highly Pathogenic Avian Influenza (HPAI) A/H5

CDC Influenza

H5N1 Situation Update – Dairy Herds

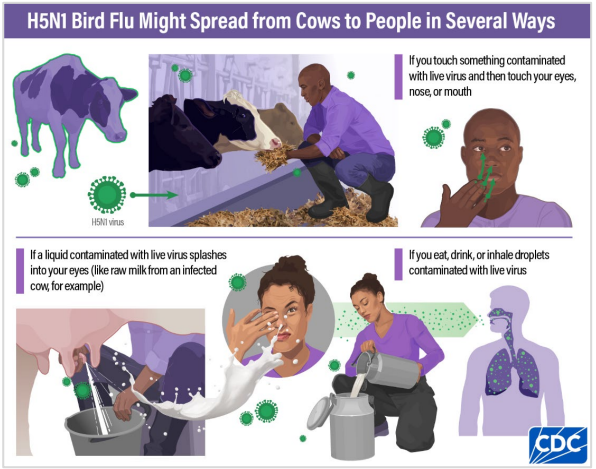
- To date, USDA confirmed HPAI A(H5N1) in dairy herds in **>200 farms across 14 states**
  - Dairy cow illness was observed in early 2024
  - Significant decreases in milk production and quality
  - **March 25, 2024**: USDA first reported HPAI A(H5N1) confirmed in cows from Texas and Kansas



Highly Pathogenic Avian Influenza (HPAI) Detections in Livestock | Animal and Plant Health Inspection Service (usda.gov)

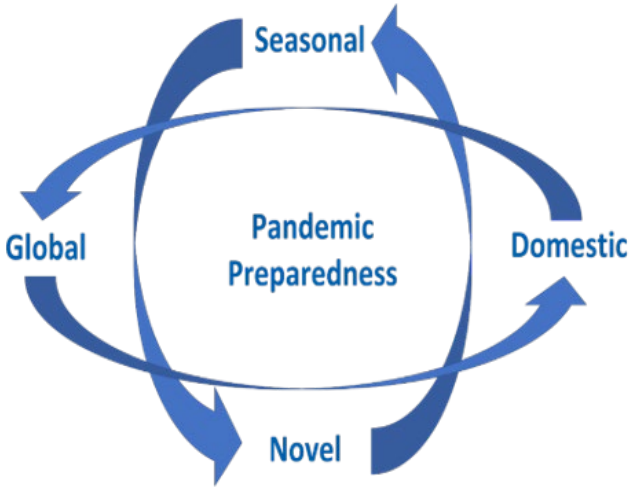
HPAI A(H5) Human Cases, United States, 2022-2024

- **Human cases (n=15)**, 14 cases in 2024
  - **Associated with dairy cattle exposures: 4**
    - March - July 2024: 4 cases in dairy farm workers (Texas, Michigan (2), Colorado) with exposure to infected or presumed infected dairy cattle
    - All cases were clinically mild, offered antivirals, not hospitalized
  - **Associated with poultry exposures: 10**
    - April 2022: 1 case depopulating poultry (Colorado)
    - July 2024: 9 cases in workers depopulating poultry (Colorado)
    - All cases were clinically mild, offered antivirals, not hospitalized
  - **Missouri Case: 1**
    - September 2024: Patient hospitalized, had underlying medical conditions, given antivirals, discharged and recovered
    - No immediate known animal exposure
- **No human-to-human transmission**



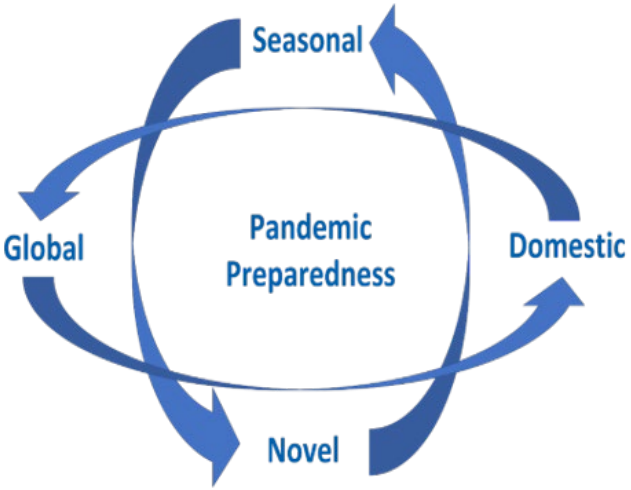
A/H5N1 Response Summary

- Overall risk to the general public remains low
  - Greater risk for people with close, prolonged, or unprotected exposures to infected animals, or to environments contaminated by infected animals
- Continued readiness posture
  - Concerning genetic changes in the virus
  - Impact to current diagnostics, treatments, CVVs
- Continued Reassessment of Risk
  - Overall public health risk
  - Potential pandemic risk (IRAT)
- Ongoing One Health collaborations
  - USDA APHIS, FDA, ASPR, NIAID and USG interagency



What does this mean for front line public health and clinicians?

- Monitoring those exposed for illness
- Reminding providers to ask/asking about animal exposures
- Conducting outreach and education to people working with, exhibiting and/or exposed to animals and related animal byproducts
- Maintaining/enhancing virologic surveillance
  - Getting in/submitting more specimens
  - Subtyping influenza A positives



2024-2025 Preparations

- Vaccination
- Monitoring activity

Advisory Committee on Immunization Practices (ACIP): Influenza Vaccine Recommendations

Prevention and Control of Seasonal Influenza with Vaccines: Recommendations of the Advisory Committee on Immunization Practices — United States, 2024–25 Influenza Season

https://wcms-wp.cdc.gov/mmwr/volumes/73/rr/rr7305a1.htm

2024–2025 ACIP Influenza Statement

Core recommendation (unchanged)

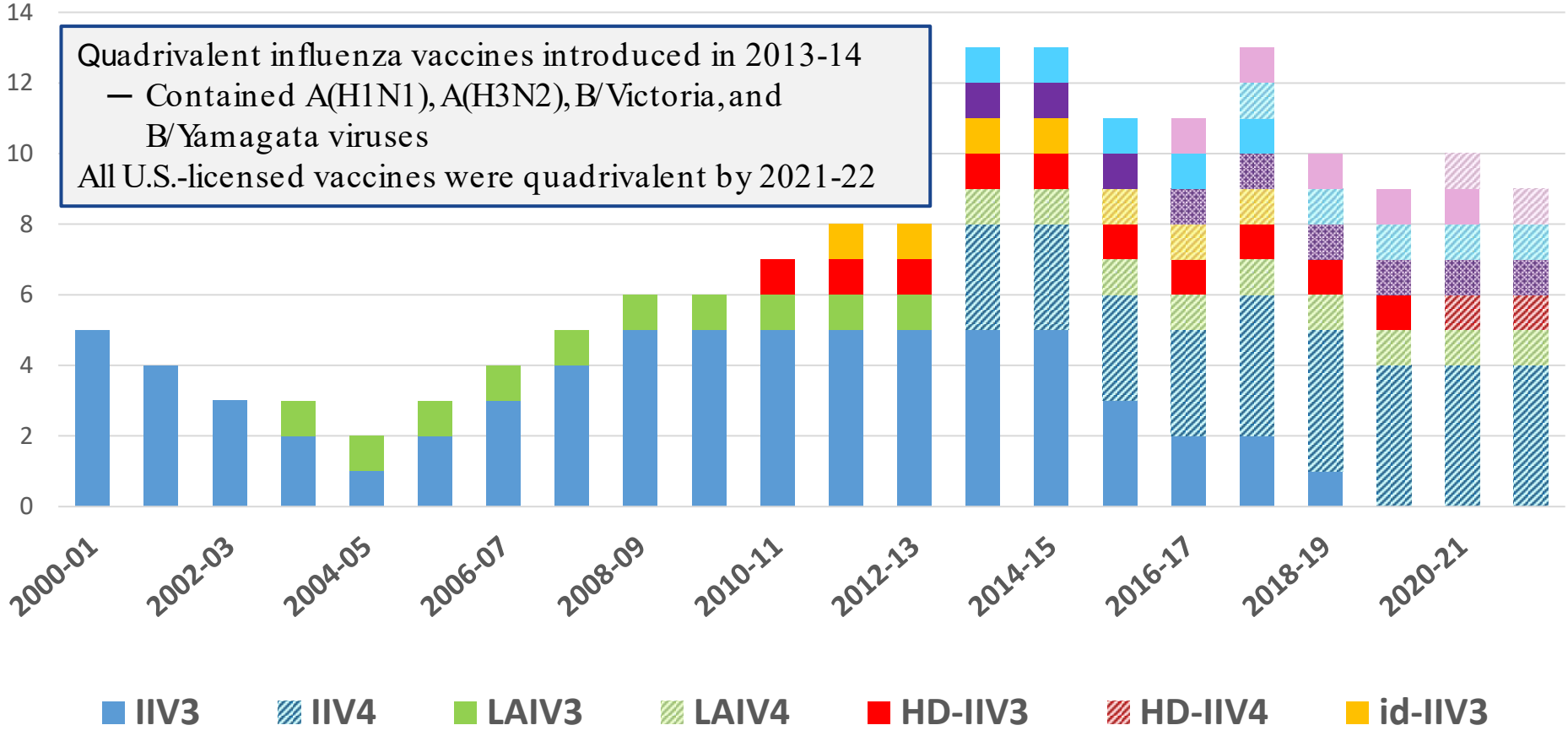
- Annual influenza vaccination is recommended for all persons aged 6 months and older who do not have contraindications.
  - Children 6 months – 8 years who have not had at least 2 doses of flu vaccine before July 1, 2024 need 2 doses at least 4 weeks apart for 2024-2025

2024–2025 ACIP Influenza Statement : Key Updates (1)

- All influenza vaccines available in the U.S. with be ***trivalent***
- Vaccine Strains
  - **A/H1pdm09** – no change
    - A/Victoria/4897/2022 (H1N1)pdm09-like virus (egg, LAIV)
    - A/Wisconsin/67/2022 (H1N1)pdm09-like virus (cell, recombinant)
  - ***A/H3N2*** *– updated*
    - A/Thailand/8/2022 (H3N2)-like virus (egg, LAIV)
    - A/Massachusetts/18/2022(H3N2) – like virus (cell, recombinant)
  - **B/Victoria** – No change
    - B/Austria/1359417/2021-like virus (egg, LAIV, cell, recombinant)

U.S. Seasonal Influenza Vaccines, 2000-01 through 2021-22

Number of unique products available by season



2024–2025 ACIP Influenza Statement: Key Updates (2)

- New recommendation for solid organ transplant (SOT) recipients
  - Previously: SOT recipients should receive an age-appropriate inactivated or recombinant influenza vaccine (i.e., an IIV or RIV)
  - *UPDATE:* All persons should receive an age-appropriate influenza vaccine (i.e., one approved for their age), with the exception that *solid organ transplant recipients aged 18 through 64 years on immunosuppressive medication regimens may receive either HD-IIV3 or aIIV3 as an acceptable option*
    - There is no preference for high dose or adjuvanted over other age-appropriate IIV3s or RIV3

Influenza Vaccines by Approved Age Indication, United States, 2024–25

Vaccine type		0 through 6 months	6 through 23 months	2 through 17 years	18 through 49 years	50 through 64 years	≥65 years
IIV3s	Standard-dose, unadjuvanted inactivated (IIV3)		Afluria (Seqirus) Fluarix (GlaxoSmithKline) FluLaval (ID Biomedical of Quebec/GlaxoSmithKline) Fluzone (Sanofi Pasteur)				
	Cell culture-based inactivated (ccIIV3)		Flucelvax (Seqirus)				
	Adjuvanted inactivated (aIIV3)						Fluad*† (Seqirus)
	High-dose inactivated (HD-IIV3)						Fluzone High-Dose*† (Sanofi Pasteur)
RIV3	Recombinant (RIV3)				Flublok* (Protein Sciences/Sanofi Pasteur)		
LAIV3	Live attenuated (LAIV3)			FluMist (MedImmune/AstraZeneca)			

IIV3=trivalent inactivated influenza vaccine **RIV3**=trivalent recombinant influenza vaccine **LAIV3**=trivalent live attenuated influenza vaccine

Not approved for age group *Egg-based* *Not egg-based*

*Preferred for ages ≥65 years †Acceptable for solid organ transplant recipients 18-64 yrs taking immunosuppressive medications

Flu Vaccine Campaign Timeline

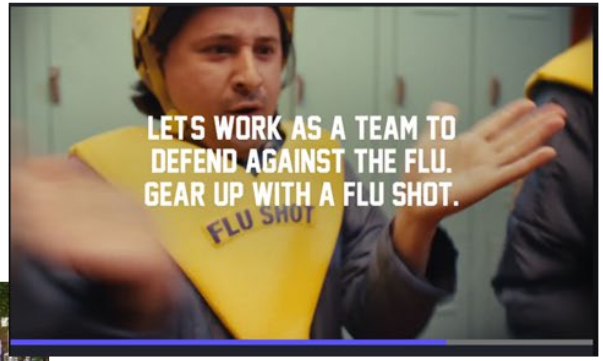
Activity	July	August	September	October	November	December	January
Publication of R & R		Aug. 29					
Key Points/Surveillance Updates/Burden Estimates		Ongoing					
CDC Digital Flu Campaign Wild to Mild Launch and Promotion			Sept.-End of Season				
Ad Council Campaign Launch and Promotion (to include 1-2 press events)			Sept. – End of Season				
Ad Council Media Tour							
NFID Annual News Conference			Sept. 25				
Technical Report on 2023-2024 Flu Season Summary							
WHO Southern Hemisphere influenza vaccine composition for the 2025 season							
National Influenza Vaccination Week						Dec. 2-6	

2024-2025 Vaccination Campaign: Key Objectives

- Elevate ***perceived severity of flu*** among priority audiences
- Educate audiences on the **benefits of flu vaccination** in protecting against serious illness
- Help **address barriers to flu vaccination** by correcting misinformation/misconceptions

Ad Council, AMA and CDC Collaboration

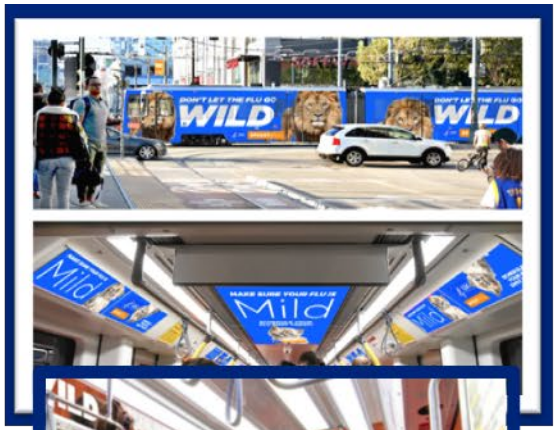
- **Overview**: encourage the American public to get vaccinated against flu
- **Priority Audiences**: general public with an emphasis on Black and LatinX/Hispanic adult audiences.

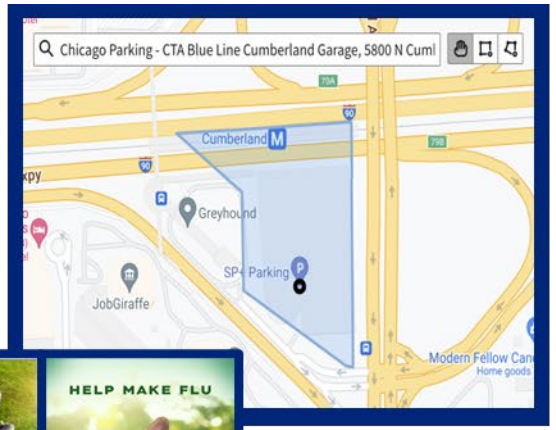


Wild to Mild 2.0

- ***CDC's Overarching Goal***: increase flu vaccination rates and encourage uptake, particularly among pregnant people and parents of children 6 months to 17 years
- ***Campaign Objective***: Educate audiences on the benefits of flu vaccination in protecting from/reducing serious illness

Wild to Mild Trains: High Impact Extensions





Reaches commuters, visitors, and foot traffic in/around the train stations. Engages a captive audience, giving them something to look at and think about while commuting.

San Francisco

The surrounding landscape includes digital out-of-home ads at train stops along the full network.

Las Vegas

Atlanta

Custom built geo-fences around train routes deliver ads after riders leave the train station, as well as capture those within the defined area or up to thirty days after the visit.

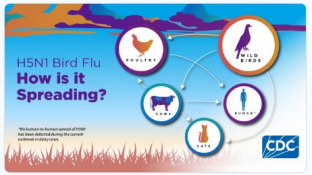
Chicago

Wild to Mild Sharable Resources

- Digital assets available at: [Flu Resource Center | Flu Resource Center | CDC]
- Inquiries about the communications campaign can be sent to CDCflucomms@cdc.gov

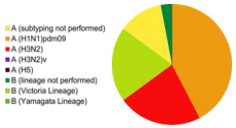
Monitoring Activity

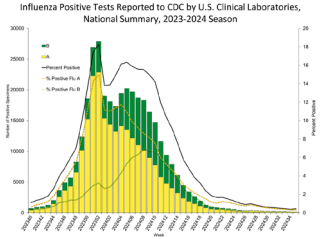
- Details about seasonal influenza activity
  - FluView and FluView Interactive
    - https://www.cdc.gov/fluview/surveillance
- HPAI A(H5) activity
  - Monitoring data in humans
    - https://www.cdc.gov/bird-flu/h5-monitoring/
  - General information
    - https://www.cdc.gov/bird-flu/situation-summary/index.html
- Influenza, COVID and RSV highlights on same page
  - CDC's respiratory illness data channel
    - https://www.cdc.gov/respiratory-viruses/data/index.html



Summary

Summary

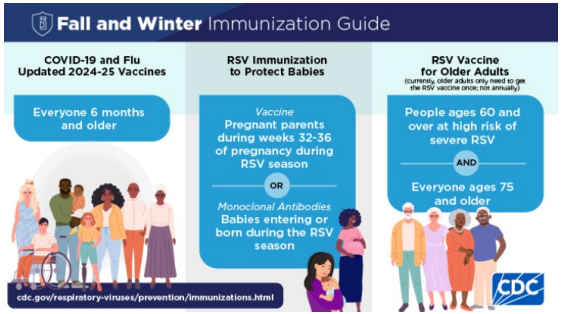




- 2023-2024 season was back within the pre-COVID range of “normal”
  - Influenza is unpredictable but FluView will keep you up to date

- Highly pathogenic avian influenza (HPAI) A/H5 risk to the general public remains low but maintaining vigilance is important
  - Testing for influenza among symptomatic patients
  - Subtyping of influenza A positive specimens from patients with severe illness (hospitalized/ICU)
  - Asking patients about animal exposures

- Influenza vaccine recommendation changes are minimal
  - Need to improve flu vaccination coverage
  - Consider all three vaccines this fall/winter



For more information, contact CDC
1-800-CDC-INFO (232-4636)
TTY: 1-888-232-6348 www.cdc.gov

ABudd@cdc.gov

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.