

# Concurrent Resurgence of RSV and other Respiratory Viruses 2022

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# Disclosures

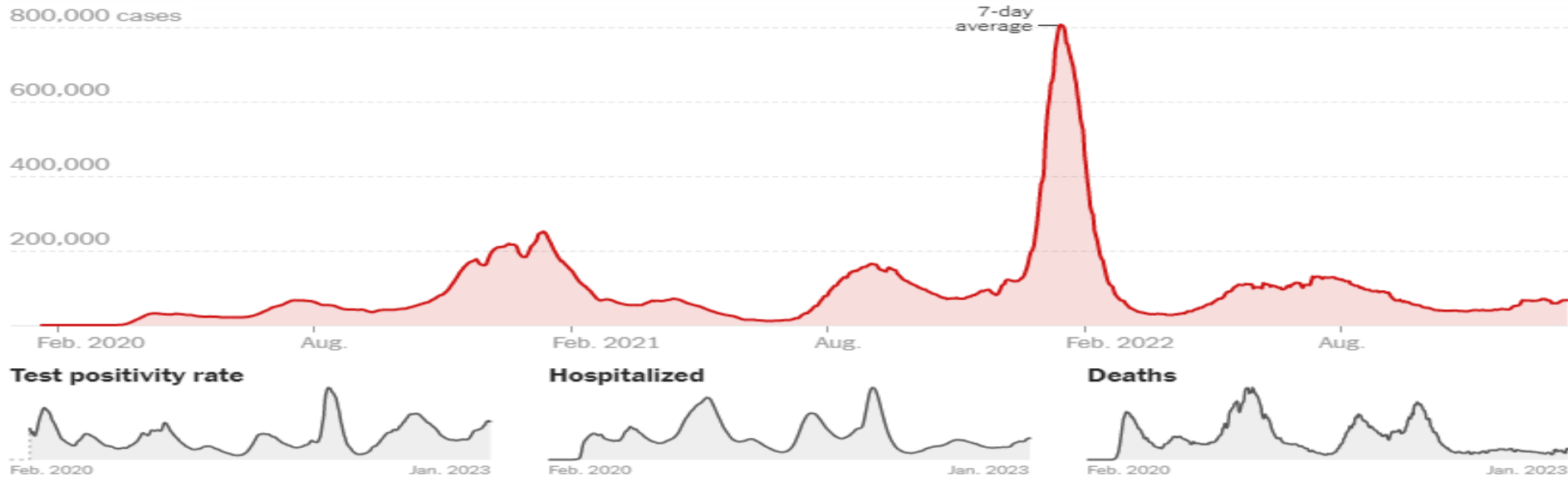
## COVID/Respiratory Virus Research Funding:

- NIH/NIAID: Pediatric SARS-CoV-2 and MIS-C Long-term Outcomes Study (PECOS)
- NIH/NICHHD: PREVAIL - Discovery and Clinical Validation of Host Biomarkers of Disease Severity in Children with COVID-19 (CNH with UCSF, Emory and Cornell Universities)
- HEPRA/DC DOH: COVID-19 and Highly Contagious Respiratory Virus Preparedness
- Pfizer: Phase 1/Phase 3 SARS-COV-2 RNA Vaccine Candidate Against COVID-19 in Healthy Children  $\geq 5$  TO  $< 12$  Years of Age

# COVID in the United States as of January 10, 2023

## New reported cases

All time Last 90 days



	DAILY AVG. ON JAN. 9	PER 100,000	14-DAY CHANGE
Cases	67,012	20	+2%
Test positivity	15%	—	+14%
Hospitalized	47,191	14	+17%
In I.C.U.s	5,627	2	+15%
Deaths	467	<1	+10%

# CDC Health Alert Network November 4, 2022

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## Increased Respiratory Virus Activity, Especially Among Children, Early in the 2022-2023 Fall and Winter

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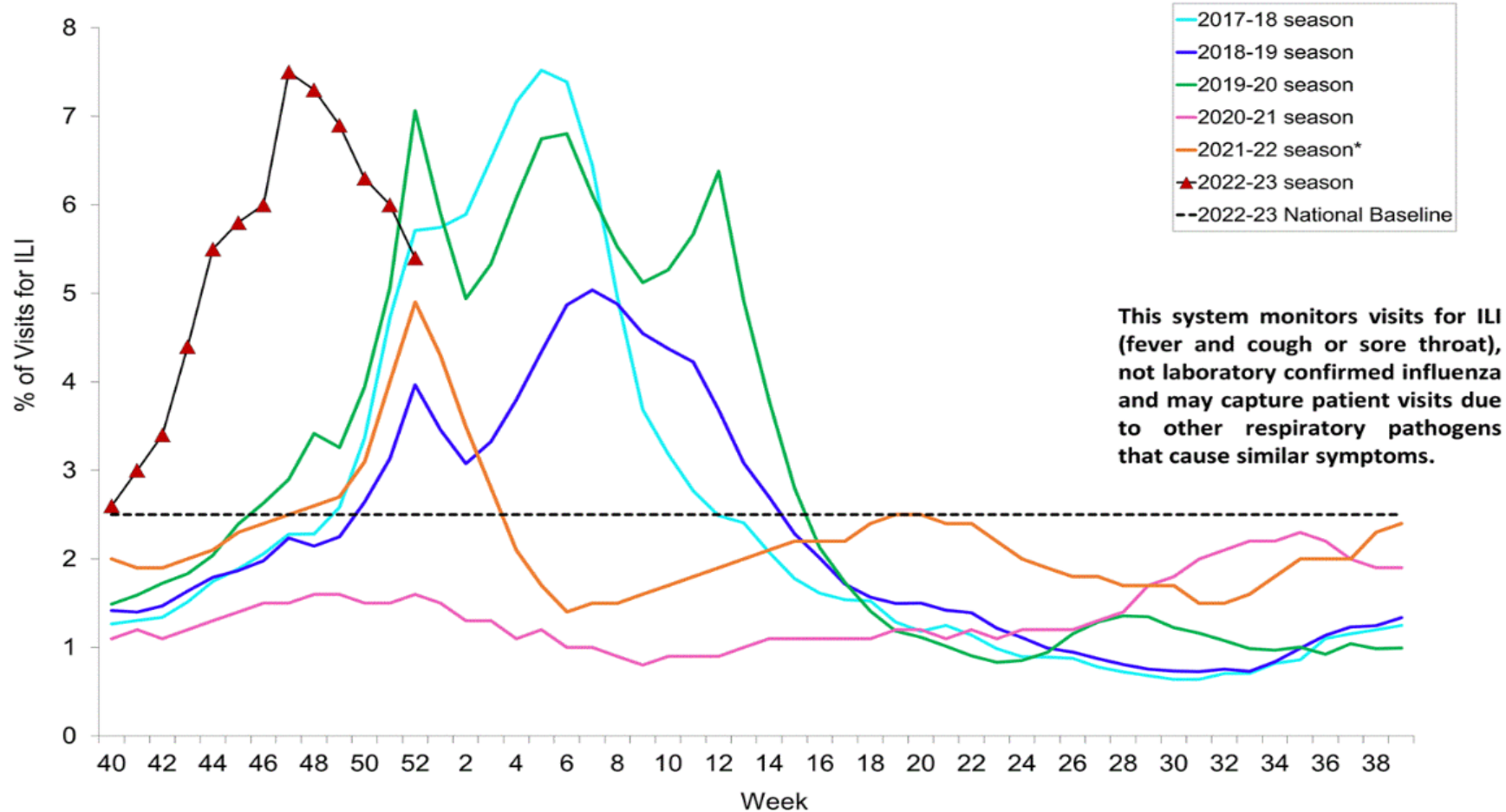
### Summary

The Centers for Disease Control and Prevention (CDC) is issuing this Health Alert Network (HAN) Health Advisory about early, elevated respiratory disease incidence caused by multiple viruses occurring especially among children and placing strain on healthcare systems. Co-circulation of respiratory syncytial virus (RSV), influenza viruses, SARS-CoV-2, and others could place stress on healthcare systems this fall and winter. This early increase in disease incidence highlights the importance of optimizing respiratory virus prevention and treatment measures, including prompt vaccination and antiviral treatment, as outlined below.



# US Influenza Activity Higher and Earlier than Prior 5 Seasons

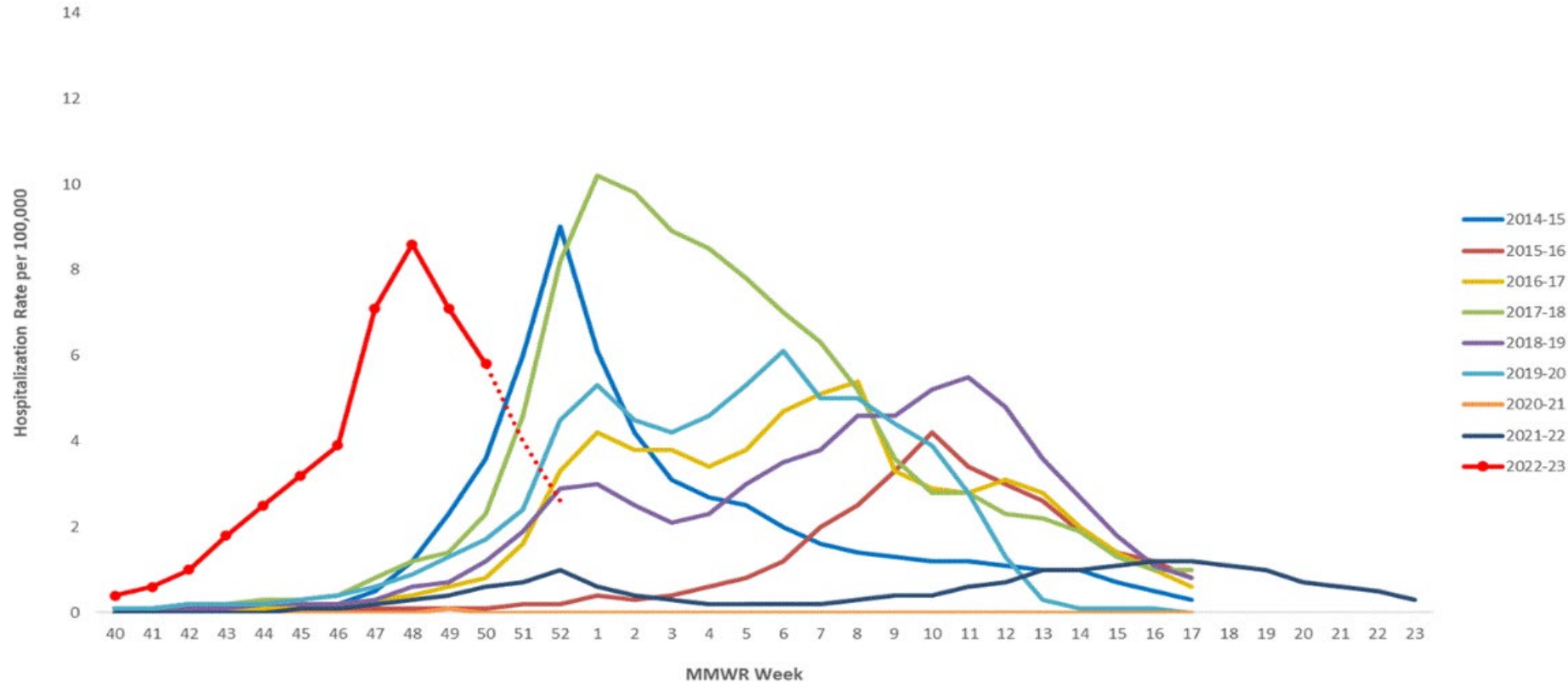
Percentage of Outpatient Visits for Respiratory Illness Reported By The U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Weekly National Summary, 2022-2023\* and Selected Previous Seasons



This system monitors visits for ILI (fever and cough or sore throat), not laboratory confirmed influenza and may capture patient visits due to other respiratory pathogens that cause similar symptoms.

# US Influenza Hospitalizations Higher and Earlier than Past 5 Seasons

Weekly Rate of Laboratory-Confirmed Influenza Hospitalizations among cases of all ages, 2015-16 to 2022-23, MMWR Week 52



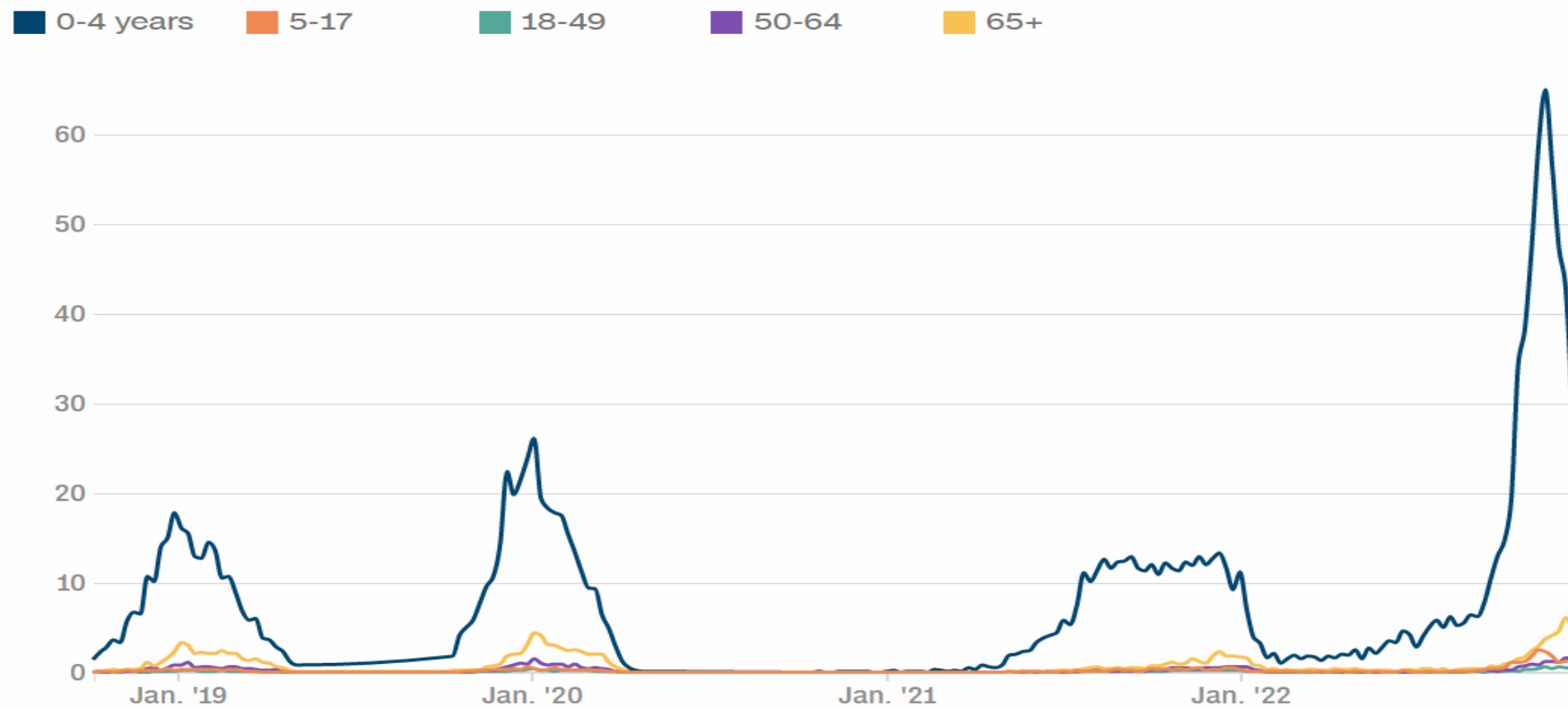
\*\*In this figure, weekly rates for all seasons prior to the 2022-23 season reflect end-of-season rates. For the 2022-23 season, rates for recent hospital admissions are subject to reporting delays and are shown as a dashed line for the current season. As hospitalization data are received each week, prior case counts and rates are updated accordingly.

# RSV Infections/Hospitalizations Markedly Higher than Prior 5 Seasons

- Hospitalization rates for children < 5 years more than twice as high as any season since 2018-2019 — when the CDC began tracking data specific to kids.

## RSV hit young children hard this season

Hospitalization rates per 100,000 children younger than 5 spiked in late 2022 but have since declined closer to historical levels



Data through Dec. 24, 2022.

Source: [US Department of Health and Human Services](#)

Graphic: Curt Merrill and Matt Stiles, CNN

## Possible Reasons for Large Surge of Other Respiratory Viruses Dec 2022/Jan 2023

- Lack of circulation 2020-2021, small oddly timed summer peak RSV 2022
  - Correlates with easing of measures used to prevent SARS CoV2 transmission, less social distancing, less masking
- Immunity Gap
  - Lack of Immunity due to decreased exposure to viruses for young infants and children
  - Waning/Lower levels of immunity in older children and adults due to lack of natural boosting (lack of circulation)
  - Older children/ family members more likely to get infected and pass on to younger children





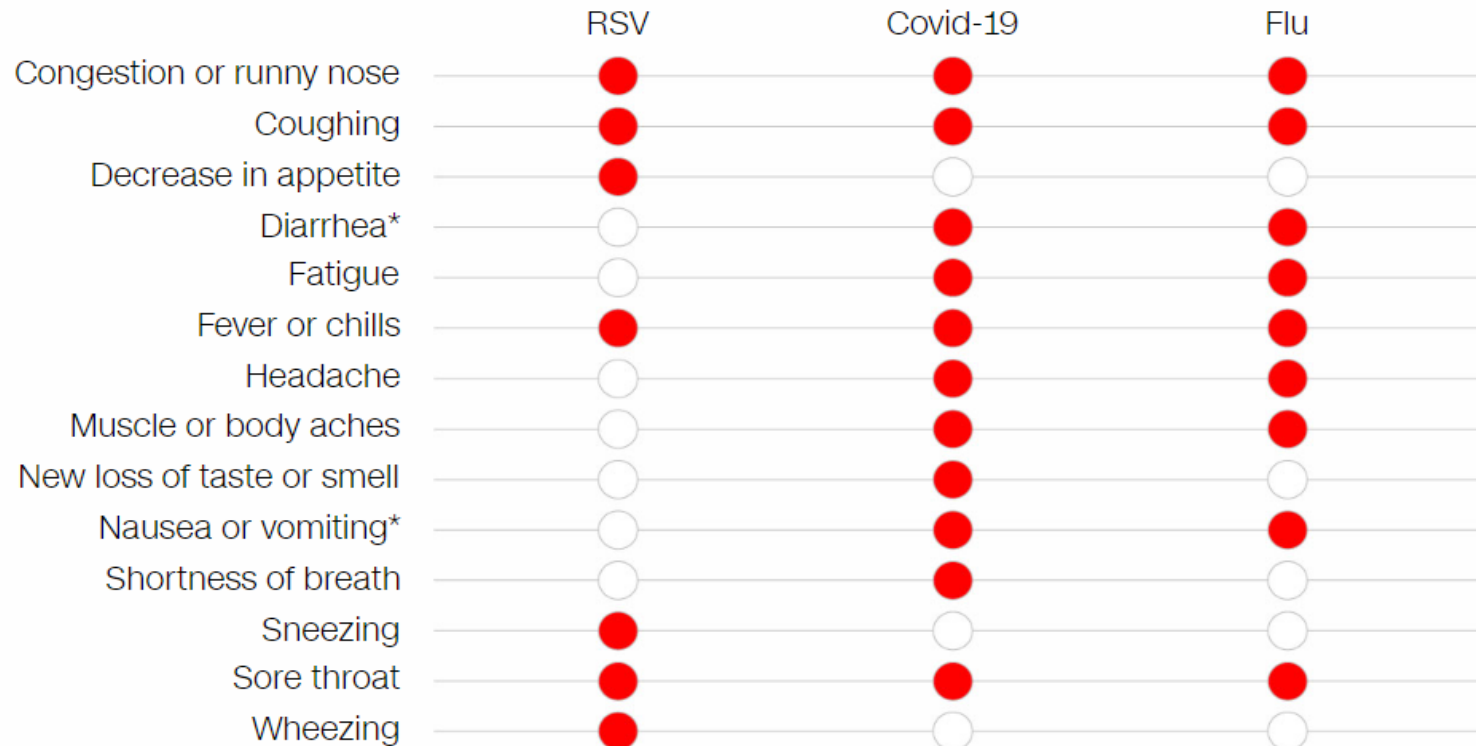
# Summary

- During the initial two years of the COVID pandemic, with stricter social distancing measures, there were essentially no other viruses co-circulating with SARS-CoV-2
- Since a return to more normal social interactions and fewer mandates for masking, there has been a large resurgence of multiple co-circulating viruses, in addition to ongoing circulation of SARS CoV-2 virus
- In the recent past weeks:
  - The total number of pts testing positive for influenza, RSV, rhino/enterovirus, and/or COVID-19 continued to decline
    - Rhino/enterovirus continued to decrease
    - COVID-19 continued to decrease
    - Influenza continued to decrease (Influenza A is the predominant strain)
    - RSV made a small rebound, continued monitoring indicated

# Co-Circulating Respiratory Viruses and Symptom Overlap

## RSV, Covid-19 and flu share common symptoms

Covid-19 and flu have similar symptoms, though loss of smell and shortness of breath are unique to Covid-19. Respiratory Syncytial Virus Infection (RSV) shares many of these symptoms, but can include decrease in appetite, sneezing and wheezing.



\*Diarrhea and vomiting are common in children with flu, but are less common in adults.

Source: CDC list of symptoms for RSV, Covid-19 and flu.

Graphic: Will Mullery, CNN



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## Specific Considerations for Healthcare Providers from CDC:

1. Recommend and offer vaccinations against influenza and COVID-19 for all eligible persons aged 6 months or older

2. Use diagnostic testing to guide treatment and clinical management

3. Treat patients with suspected or confirmed influenza who meet clinical criteria with influenza antivirals

- Oral oseltamivir (generic and Tamiflu®) 5-day course, all ages
  - Outpatients with severe, complicated, or progressive illness
  - Hospitalized influenza patients
  - Consider for acute uncomplicated in otherwise healthy if within first 48 hours
- Oral baloxavir marboxil (Xofluza®) - single dose (FDA approved for):
  - Acute uncomplicated influenza in otherwise healthy patients 5-12 years of age
  - Patients  $\geq 12$  years, at high risk of developing influenza-related complications
- Other choices: Inhaled zanamivir Relenza® ( $\geq 7$  years), Single dose IV peramivir ( $\geq 6$  mos)

4. Treat outpatients and hospitalized patients with confirmed SARS-CoV-2 infection who are at increased risk for severe illness and meet age- and weight-eligibility requirements

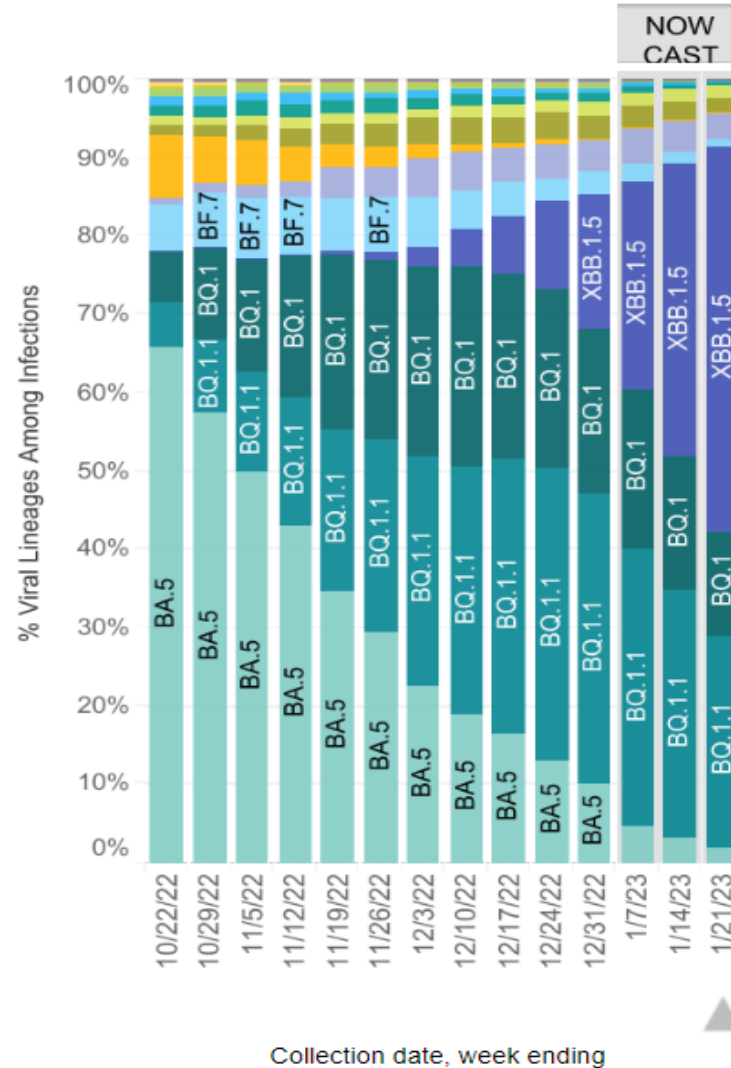
- Paxlovid ( $\geq 12$  years,  $\geq 40$  kg)
- IV remdesivir 3-day outpatient infusion for younger, smaller

# The Crystal Ball: Omicron Variants - What is Next?

United States: 1/15/2023 – 1/21/2023 NOWCAST

USA					
WHO label	Lineage #	US Class	%Total	95%PI	
Omicron	XBB.1.5	VOC	49.1%	37.5-60.8%	
	BQ.1.1	VOC	26.9%	20.9-33.9%	
	BQ.1	VOC	13.3%	10.1-17.4%	
	XBB	VOC	3.3%	2.7-4.1%	
	BA.5	VOC	2.0%	1.5-2.8%	
	BN.1	VOC	1.8%	1.4-2.5%	
	BA.2.75	VOC	1.6%	1.2-2.2%	
	BF.7	VOC	1.0%	0.8-1.4%	
	BA.5.2.6	VOC	0.4%	0.3-0.5%	
	BA.2	VOC	0.2%	0.1-0.3%	
	BF.11	VOC	0.2%	0.1-0.2%	
	BA.4.6	VOC	0.1%	0.0-0.1%	
	BA.2.75.2	VOC	0.0%	0.0-0.1%	
	B.1.1.529	VOC	0.0%	0.0-0.0%	
	BA.4	VOC	0.0%	0.0-0.0%	
	BA.1.1	VOC	0.0%	0.0-0.0%	
BA.2.12.1	VOC	0.0%	0.0-0.0%		
Delta	B.1.617.2	VBM	0.0%	0.0-0.0%	
Other	Other*		0.0%	0.0-0.0%	

United States: 10/16/2022 – 1/21/2023



# Acknowledgements:

## Children's National Teams for Emerging Infectious Diseases Response

### Special Pathogens Isolation Unit and Response Team



### Infectious Diseases and Infection Control Divisions



### MIS-C Taskforce

- Infectious Diseases: DeBiasi
- Cardiology: Harahsheh, Krishnan
- Rheumatology: Srinivasalu, Tavis, Sule
- Hematology: Suvankar,
- Critical Care: Bell, Sharron
- Hospitalist Medicine: Smith, Parikh
- Emergency Medicine: Pershad, Kline
- Lab Medicine: Delaney, Campos

### Congenital Zika Program



### Acute Flaccid Myelitis Taskforce

