



Indiana
Department
of
Health

CLINICIAN UPDATES

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MEDICAL DIRECTOR

3/22/2024

OUR MISSION:

To promote, protect, and improve the health and safety of all Hoosiers.

OUR VISION:

Every Hoosier reaches optimal health regardless of where they live, learn, work, or play.





Indiana
Department
of
Health

INDIANA PSYCHIATRY ACCESS PROGRAM OVERVIEW

DR. ZACHARY ADAMS
IU SCHOOL OF MEDICINE

3/22/24

Indiana Psychiatry Access Program Overview

(Provider-to-Provider Access Lines)



**Behavioral Health Access
Program for Youth (Be Happy)**



**Adolescent Addictions Access
(AAA) Program**



**Consultations for Healthcare
Providers for Addictions, Mental
Health & Perinatal Psychiatry (CHAMP)**



This program is supported by the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS) as part of an award totaling \$2,670,000 with 20% financed with non-governmental sources. The contents are those of the author(s) and do not necessarily represent the official views of, nor an endorsement, by HRSA, HHS, or the U.S. Government. For more information, please visit [HRSA.gov](https://www.hrsa.gov).





<https://medicine.iu.edu/behappy>

Providers call
(317) 278-7700

M-F, 9am – 5pm EST

behappy@iu.edu

NOT intended for use by families

Provider-to-Provider
Consultations



Educational
Opportunities



Referral Support



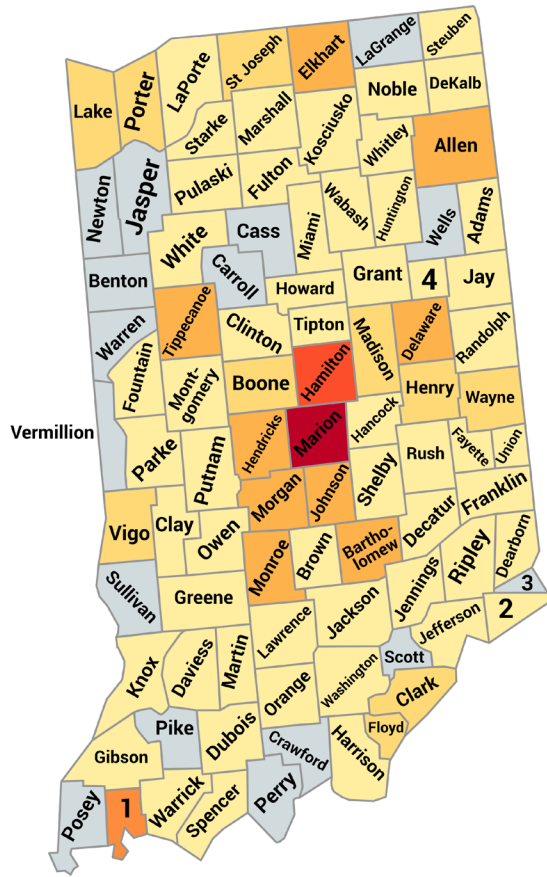
Direct Services



932 Enrolled Providers in 76 counties

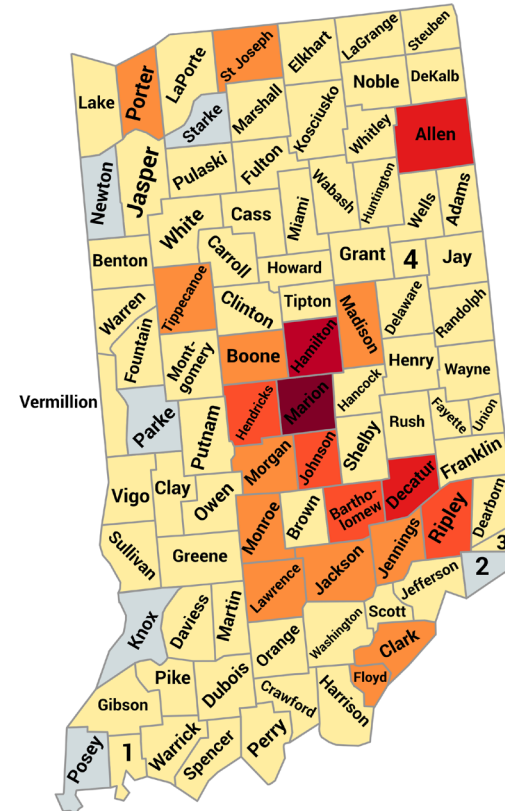
2785 calls pediatric patients in 86 counties

Remaining counties: Starke, Newton, Parke, Knox, Posey, Switzerland



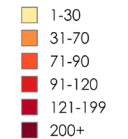
1 Vanderburgh
2 Switzerland
3 Ohio
4 Blackford

Indiana Providers Registered per County



1 Vanderburgh
2 Switzerland
3 Ohio
4 Blackford

Patients Served Per County



CAMH 2024 Webinar Schedule

Date	Topic
1/19/2024	Med Management for Anxiety/Depression
2/16/2024	Unpacking "Psychological Testing"
3/15/2024	Screening and Assessing PTSD
4/17/2024	Medication Management in Autism and Intellectual Developmental Disorders
5/17/2024	Disruptive Behavior Disorders
6/21/2024	School Mental Health Services
7/19/2024	Screening and Assessing Mood Disorders
8/14/2024	Gender Dysphoria and Sexuality
9/20/2024	Suicide Ideation/Suicide Prevention
10/18/2024	Statewide Programs for Child Mental Health
11/15/2024	Irritability / Aggression
12/18/2204	ADHD assessment / diagnosis



Direct Patient Therapy Services

- Psychologists, LCSWs
- Diagnostic clarification assessments
- Evidence-based Psychotherapy
- Referred following a phone consultation w/ Be Happy Psychiatrist



PCP Comments

- Thank you for this **AMAZING** service-I manage more mental health patients than you could ever imagine-this service makes it possible for the patients to get rapid care
- Great response time! So wonderful to be able to ask a psychiatrist for help with med management questions on difficult cases. Thank you so much.
- Wonderful service, **especially for my practice in Lafayette since not as many child psychiatrists available here.**
- So nice to have someone to ask for help. **There is a tremendous lack of services in my region of the state and as a primary care MD I end up managing more complex patients than I ever imagined.**
- Thank you a million times! **The Be Happy program is a life saver and lifeline** for many of my patients with serious mental health problems and inability to see psychiatry due to the shortage. **I can safely see them in their medical home and treat with confidence knowing these professionals are just a phone call away! THANK YOU!**



AAA

**Adolescent
Addiction
Access Program**



(317) 278-8434

M-F, 9am – 5pm EST

aaaprogram@iu.edu

[https://medicine.iu.edu/psychiatry/
clinical-care/adolescent-addiction](https://medicine.iu.edu/psychiatry/clinical-care/adolescent-addiction)

Free provider-to-provider helpline for Indiana providers caring for youth (aged 17 or younger) with Substance Use Disorders (SUD)

Timely, convenient access to evidence-based patient care services, ***including telehealth services*** delivered by our team

Referral support with up-to-date community-based SUD resources and supports



SCHOOL OF MEDICINE

DEPARTMENT OF PSYCHIATRY



Riley Hospital for Children
Indiana University Health



<https://medicine.iu.edu/champ>

Providers call
(317) 274-2400

M-F, 9am – 5pm EST

champ@iu.edu

NOT intended for use by patients

How does CHAMP work?

Providers call 317-274-2400 and after a short intake with a CHAMP health navigator, are connected to a psychiatrist. The provider will be connected to a psychiatrist within 30 minutes or at a specific callback time that works for them. At the conclusion of the conversation, the provider will receive a brief written documentation of the recommendations via encrypted email.

Who is eligible to use these services?

This program is available to any medical health care provider in the state of Indiana who work with adults 18+ patients (including physicians, nurse practitioners, psychologists, nurses, social workers, etc.). Patients, family and caregivers are NOT eligible to use CHAMP.

How can I get started with CHAMP?

We would encourage providers or clinic directors to please register the provider before calling the line. However, CHAMP navigators can register providers on the phone which will only take 1-2 minutes to gather general information about the provider and their practice.



Indiana Provider-to-Provider Access Programs

(Available Statewide at NO COST to Providers - Mon-Fri, 9am-5pm EST)

Mental Health

Substance Use

Pediatric



(317) 278-7700
behappy@iu.edu



(317) 278-8434
aaaprogram@iu.edu



Adult



(317) 274-2400
champ@iu.edu



(317) 274-2400
champ@iu.edu



Questions?





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MEASLES UPDATES

MAKAYLA CULBERTSON, CHES
VACCINE-PREVENTABLE DISEASE
EPIDEMIOLOGIST

03/22/2024

Measles Updates

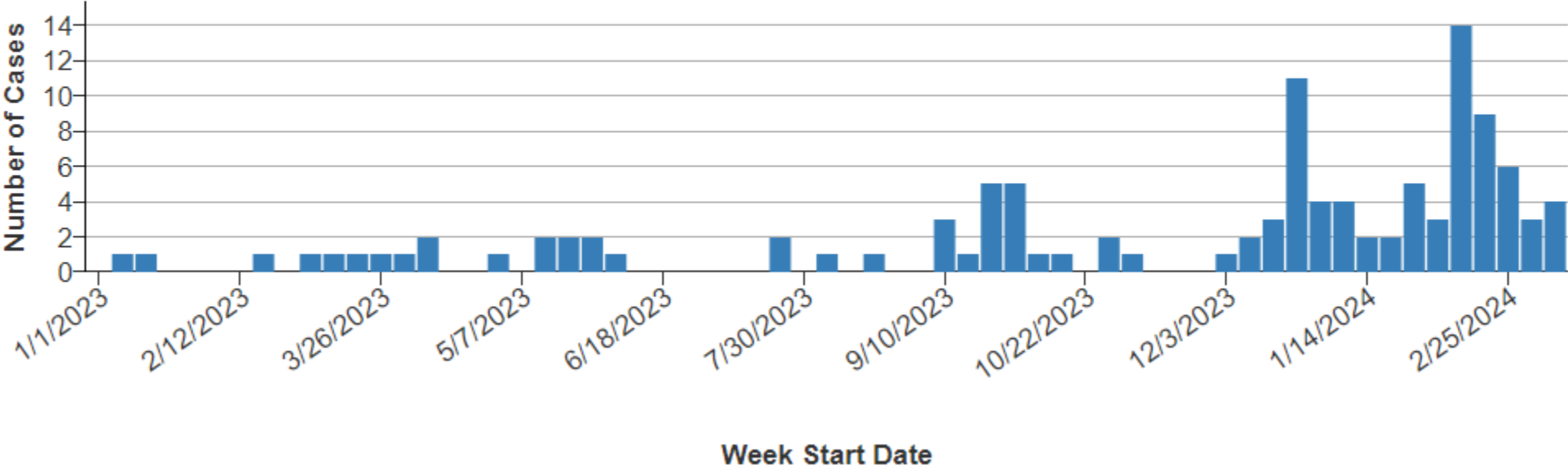
From Jan. 1 to March 14 a total of 58 measles cases and 7 outbreaks were reported by 17 jurisdictions to the CDC

- Among the 58 cases reported in 2024, 54 (93%) were linked to international travel
- Most cases have been among children aged 12 months and older who had not received MMR vaccine
- Many countries, including travel destinations such as Austria, the Philippines, Romania, and the United Kingdom are experiencing measles outbreaks
- Only 58 total cases were reported in the entire year of 2023

Measles Updates

Number of measles cases reported by week

2023-2024* (as of March 14, 2024)



Measles Updates

- To prevent measles infections and reduce the risk of community transmission from importation, all U.S. residents that plan to travel internationally should be current on their MMR vaccinations
- Healthcare providers should ensure children are current on routine immunizations, including MMR
- Given currently high population immunity against measles in most U.S. communities, the risk of widescale spread is low
- However, pockets of low coverage leave some communities at risk for outbreaks

Measles Vaccine

- CDC recommends two doses of measles-containing vaccine routinely for children, starting with the first dose at age 12 through 15 months and the second dose at age 4 through 6 years
 - This can be administered as MMR or MMRV vaccine
- For international travelers:
 - Persons aged 6 months+ who will be traveling internationally should be vaccinated with measles-containing vaccine if they are not already protected against measles, mumps, and rubella
 - Infants 6 through 11 months of age should receive one dose of MMR vaccine. Infants who get one dose of MMR vaccine before their first birthday should get two more doses according to the routinely recommended schedule
 - Persons 12 months of age and older should receive two doses of measles-containing vaccine, separated by at least 28 days

Measles Confirmed in Indiana – Lake County

- Case of measles was confirmed in the Lake County area in an unvaccinated individual
 - No secondary cases identified
 - There is no longer a risk to the public from this case
- First case in Indiana since 2019
- IDOH sent a press release and IHAN alert regarding this case

https://events.in.gov/event/idoh_news_release_health_department_reports_first_measles_case_in_5_years

Measles Testing Guidance for Providers

Measles testing should be performed for patients who:

- Meet the clinical case definition for measles (generalized maculopapular rash; and fever $\geq 101^{\circ}$ F; and cough, coryza, or conjunctivitis) AND
- Within the 21 days prior to symptom onset, had an elevated risk of exposure to measles including:
 - Had a known exposure to measles, or
 - Traveled internationally or to an area with known measles cases, or
 - Had contact with someone with a febrile rash illness, particularly if those individuals had traveled internationally or to an area with known measles cases.

Measles Testing Guidance for Providers

- Clinicians should consult public health authorities regarding testing if:
 - Measles is strongly suspected based on clinical presentation in patients with no known increased risk of measles exposure, particularly if the patient has no evidence of immunity to measles
 - Patients have had a known measles exposure and present with atypical signs or symptoms
- To avoid false positive results, testing is **discouraged** for patients with clinical presentation inconsistent with measles and no known increased risk of exposure to measles

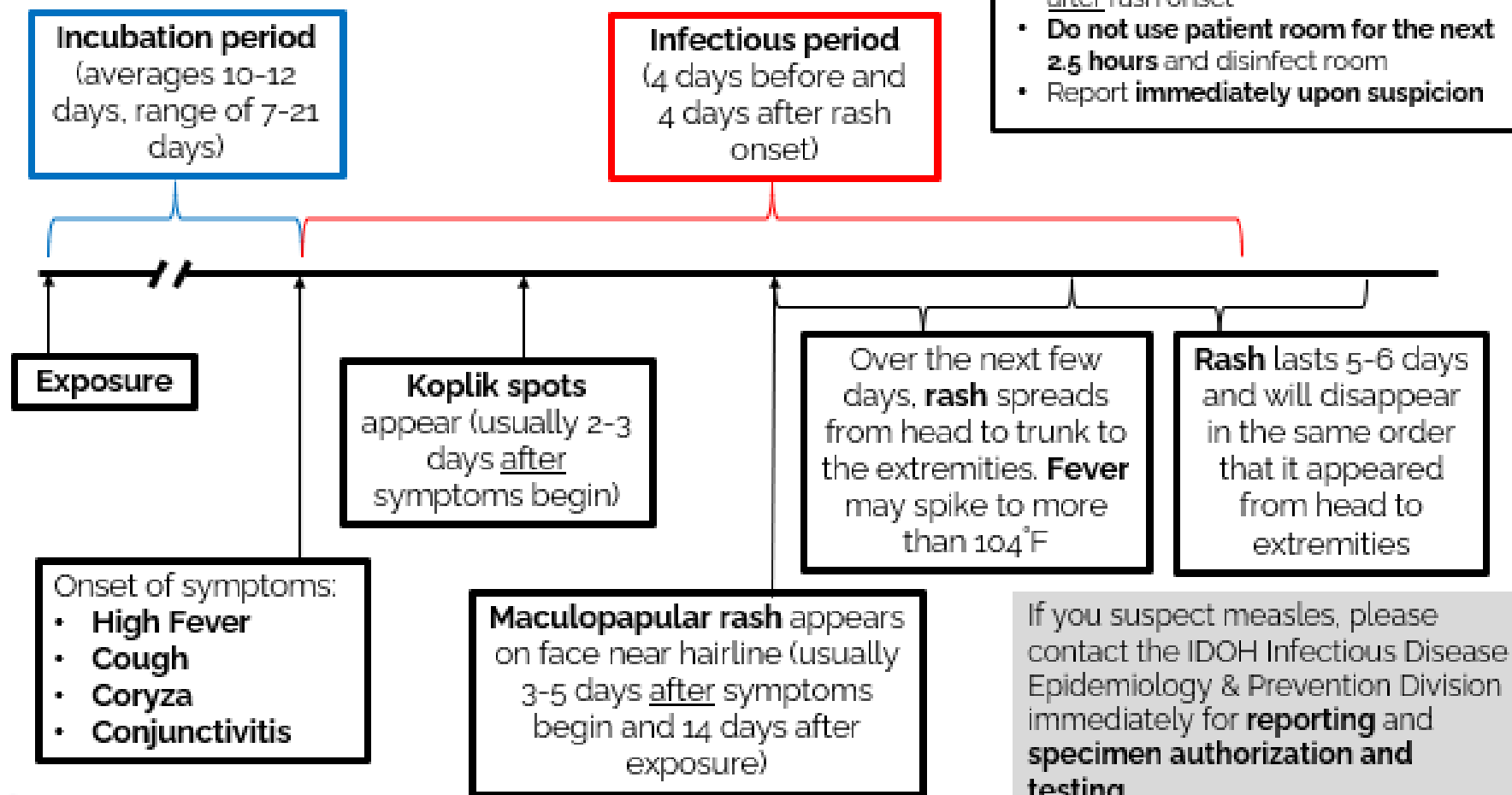
Measles Testing Authorization – General Guidance

Clinical Features	+	Epidemiologic Risks →	Actions
Patient has: <ul style="list-style-type: none"> Generalized maculopapular rash AND Fever (≥ 101 F or < 101 F with fever-reducing meds) AND At least one of the following: cough, coryza (runny nose), or conjunctivitis 	+	Patient has any of the following: <ul style="list-style-type: none"> 0 doses of MMR vaccine or Known measles exposure in 21 days before symptom onset or International travel or travel to area with known measles transmission in 21 days before symptom onset or Contact with someone with febrile rash illness in 21 days before symptom onset 	High suspicion for measles. Authorize specimen for testing at IDOHL.

Measles Testing Authorization – General Guidance

Clinical Features	+	Epidemiologic Risks →	Actions
Patient has: <ul style="list-style-type: none"> • No maculopapular rash OR • No fever OR • None of the following: cough, coryza, or conjunctivitis 	+	Patient has none of the following in the 21 days before symptom onset: <ul style="list-style-type: none"> • Known measles exposure in 21 days before symptom onset or • International travel or travel to area with known measles transmission in 21 days before symptom onset or • Contact with someone with febrile rash illness in 21 days before symptom onset 	Low suspicion for measles. Measles testing usually not authorized at IDOHL.

Measles Infection Timeline



- Reminders for providers**
- Collect NP swab if within 3 days of rash onset
 - Collect serum for serology testing (IgM, IgG)
 - Tell patient to **self-isolate for 4 days after** rash onset
 - **Do not use patient room for the next 2.5 hours** and disinfect room
 - Report **immediately upon suspicion**

If you suspect measles, please contact the IDOH Infectious Disease Epidemiology & Prevention Division immediately for **reporting** and **specimen authorization and testing**.

During business hours: 317-233-7125 (8:15 a.m. - 4:45 p.m., M-F)
After business hours: 317-233-1325
Fax: 317-234-2812



**Infectious Disease
Epidemiology &
Prevention Division**

Measles Testing with IDOHL

- Measles should be reported to IDOH **immediately upon suspicion**
- Authorization is **required** for measles testing at IDOHL:
 - Consultation with an epidemiologist available 24/7
 - Business hours: 317-233-7125
 - After Hours: 317-233-1325
- Measles submission instructions:
 - Measles PCR: https://www.in.gov/isdh/files/CLI_Measles.pdf
 - Measles serology: https://www.in.gov/isdh/files/CLI_MeaslesSerology.pdf

Measles Resources

- [IDOH Measles Webpage](#)
- [CDC Measles Webpage](#)
- [Measles Testing at IDOH Laboratory](#)

Questions?

Makayla Culbertson

Vaccine-Preventable Disease

Epidemiologist

mculbertson@health.in.gov





Respiratory infections




Indiana
Department
of
Health

What's happening near you

[Reset](#)

Moderate overall respiratory illness activity in Indiana

Based on healthcare visits for [fever and cough](#) or [sore throat](#):


 Now is the time to get your recommended vaccinations to reduce your risk of serious illness and protect yourself with other preventive actions.


Find more respiratory illness data, including a national overview


[Weekly Viral Respiratory Illness Snapshot](#) >

Illness trends in Marion County, Indiana

Based on visits to [emergency departments](#):

 Flu
DECREASING


 RSV
NO CHANGE

 COVID-19
DECREASING

Low COVID-19 hospitalization levels in Marion County, Indiana

Based on [inpatient admissions for COVID-19](#):

- If you are at [high risk of getting very sick](#) from COVID-19, talk with a healthcare provider about additional prevention actions.

 [COVID-19 Situation in Marion County, Indiana](#) >



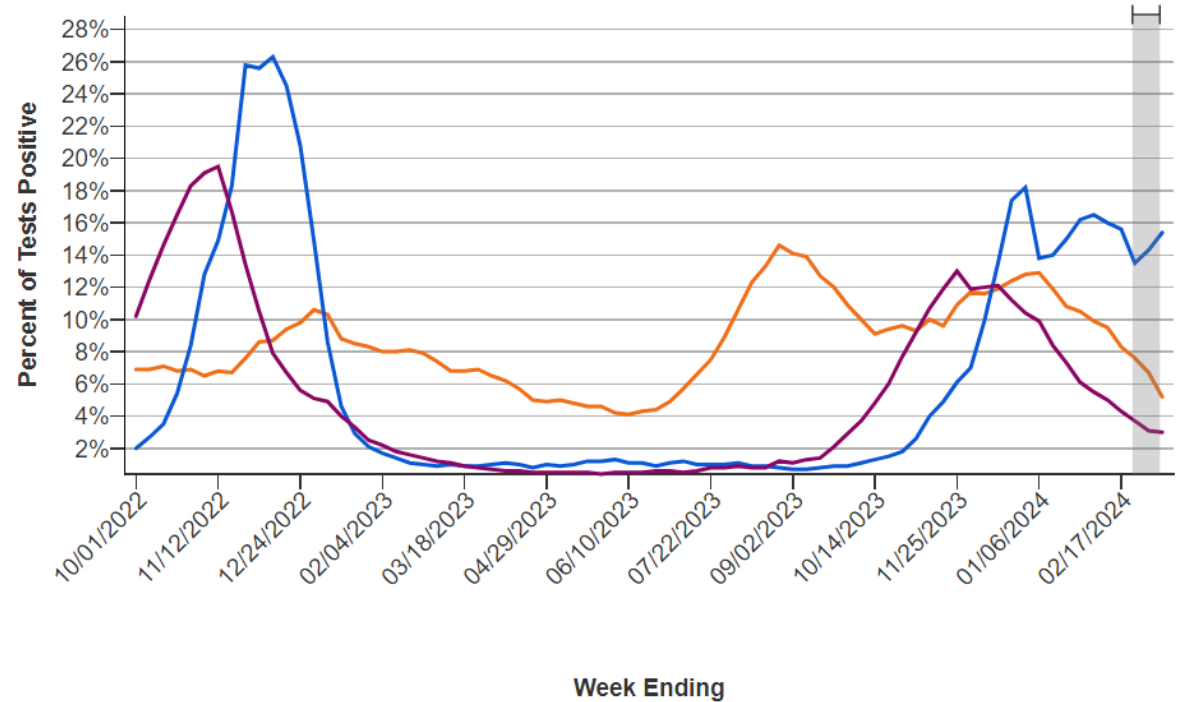
Percent of Tests Positive for Respiratory Viruses (national)

[Respiratory Virus Activity Levels \(cdc.gov\)](https://www.cdc.gov/respiratory/activity/)



Percent of Tests Positive for Respiratory Viruses

Weekly percent of tests positive for the viruses that cause COVID-19, influenza, and RSV at the national level. Preliminary data are shaded in gray.



● COVID-19 ● Influenza ● RSV

Data presented through: 03/09/2024; Data as of: 03/14/2024

[Dataset on data.cdc.gov](https://data.cdc.gov) | [Link to Dataset](#)



Indiana Influenza Dashboard

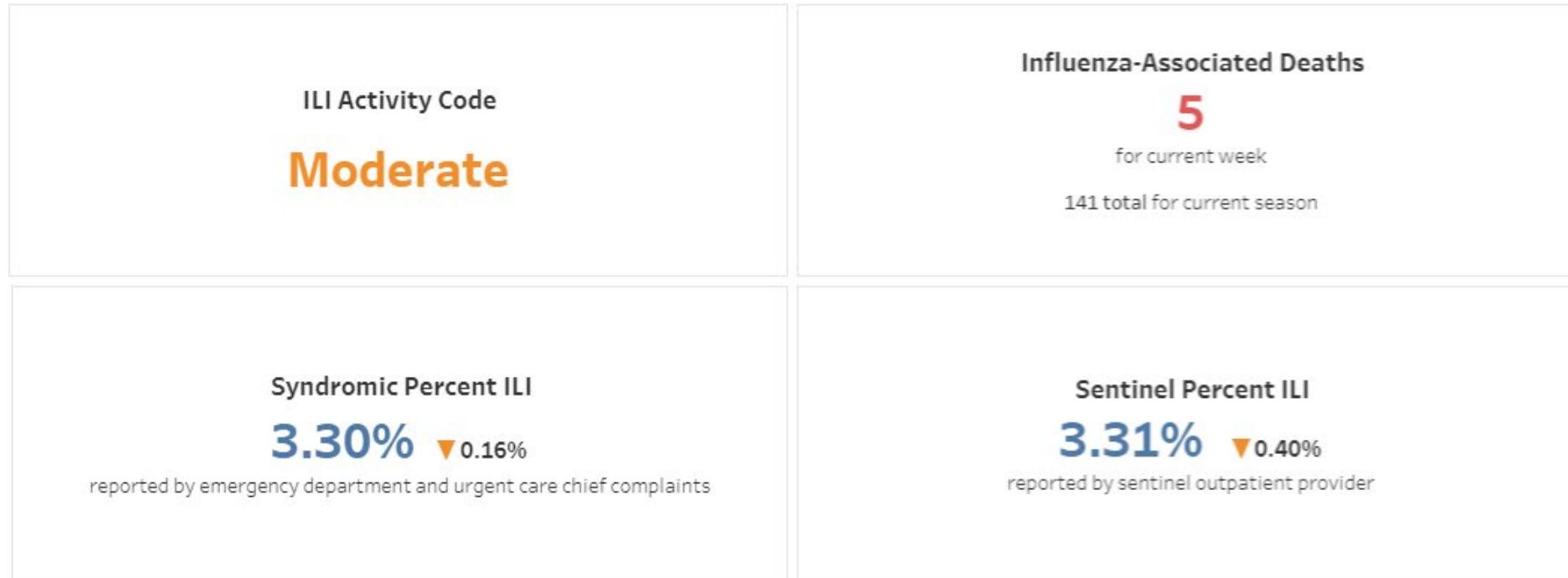
All data will be updated weekly beginning Friday, October 13, 2023. Data as of March 15, 2024.
Observed Current Week - March 3, 2024 - March 9, 2024

- WEEKLY OVERVIEW
- SYNDROMIC SURVEILLANCE
- SENTINEL SURVEILLANCE
- VIROLOGIC SURVEILLANCE
- INFLUENZA-ASSOCIATED MORTALITY

Indiana Influenza-Like Illness (ILI) Surveillance – Week ending March 9, 2024

This influenza “flu” dashboard is to describe the spread and prevalence of influenza-like illness (ILI) in Indiana. It is meant to provide local health departments, hospitals, healthcare professionals, and the community with the general burden of ILI activity. Flu season for the U.S. typically occurs from October – May, however, flu can and does circulate year-round.

ILI Definition = fever of 100° F or higher (measured) AND cough and/or sore throat.



Influenza-like illness (ILI) in Indiana



Indiana Influenza Dashboard

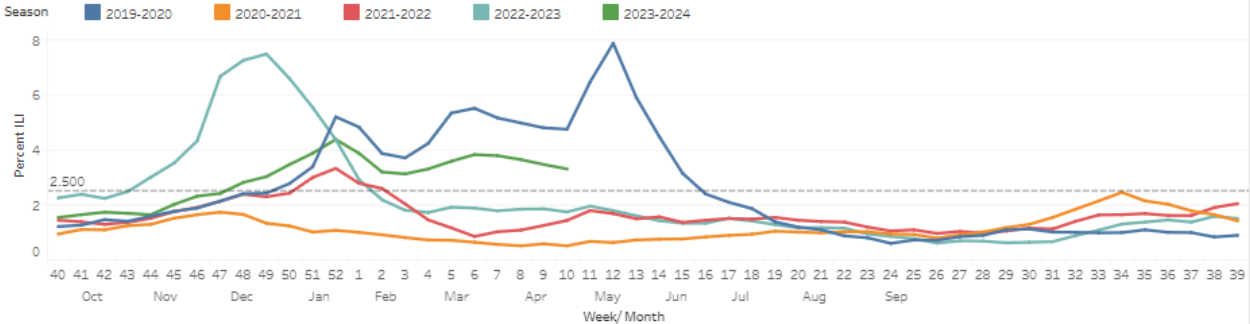
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- WEEKLY OVERVIEW
- SYNDROMIC SURVEILLANCE**
- SENTINEL SURVEILLANCE
- VIROLOGIC SURVEILLANCE
- INFLUENZA-ASSOCIATED MORTALITY

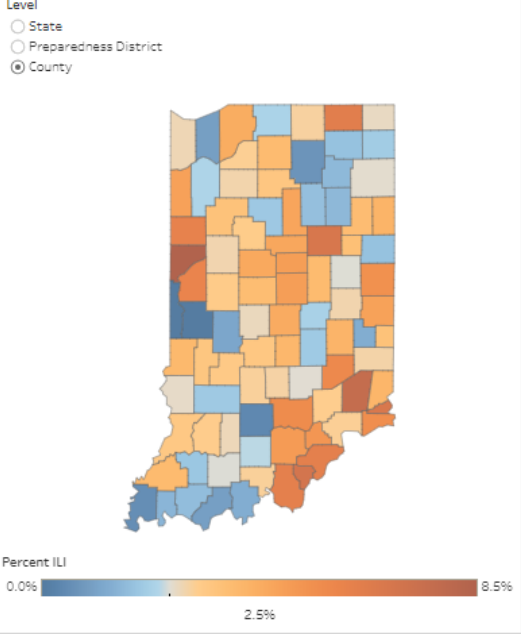
Emergency Department and Urgent Care Visits for ILI

The Indiana Department of Health (IDOH) uses a system called ESSENCE (Electronic Surveillance System for the Early Notification of Community-based Epidemics) to track and monitor syndromic surveillance for ILI. In ESSENCE, a visit is classified as ILI when a patient presents with a chief complaint of fever (greater than or equal to 100 °F) accompanied by a cough and/or sore throat, or complaining of "influenza". Epidemiologists at IDOH analyze data from 119 emergency departments and 23 urgent care facilities across the state.

Percent ILI by Season



Percent ILI by Geography for Current Week



ILI Count by Age Group for Current Season

	Current Week	Previous Week
Age 0-4	455	426
Age 5-24	1,091	1,003
Age 25-49	778	739
Age 50-64	226	209
Age 65+	191	199
Total	2,741	2,576

Percent ILI by Age Group for Current Season

	Current Week	Previous Week
Age 0-4	7.6%	7.6%
Age 5-24	5.7%	5.4%
Age 25-49	3.1%	3.0%
Age 50-64	1.8%	1.7%
Age 65+	1.2%	1.3%





Indiana COVID-19 Home Dashboard

Below results are as of 3/19/2024, 11:59 PM. Dashboard updates by 5 p.m. on Wednesdays.

[Return to Landing Page](#)

7-Day Average COVID-19 Counts

(Total Counts in Italics)

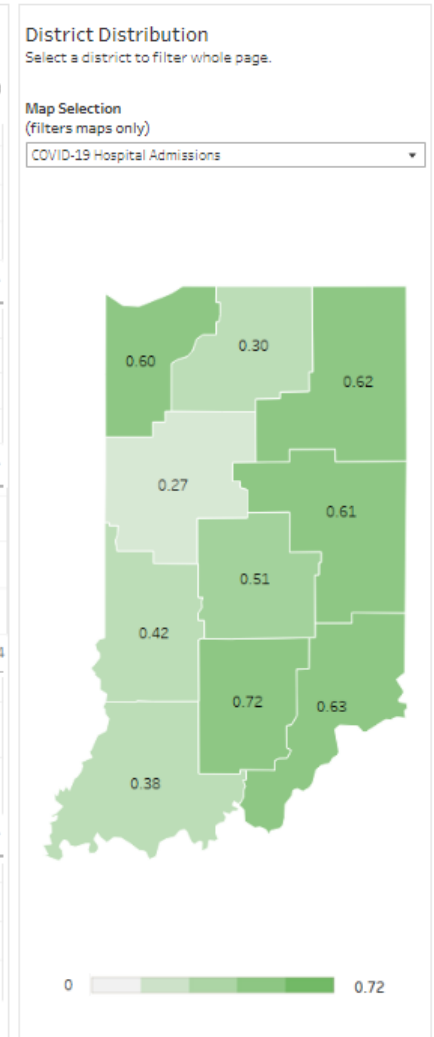
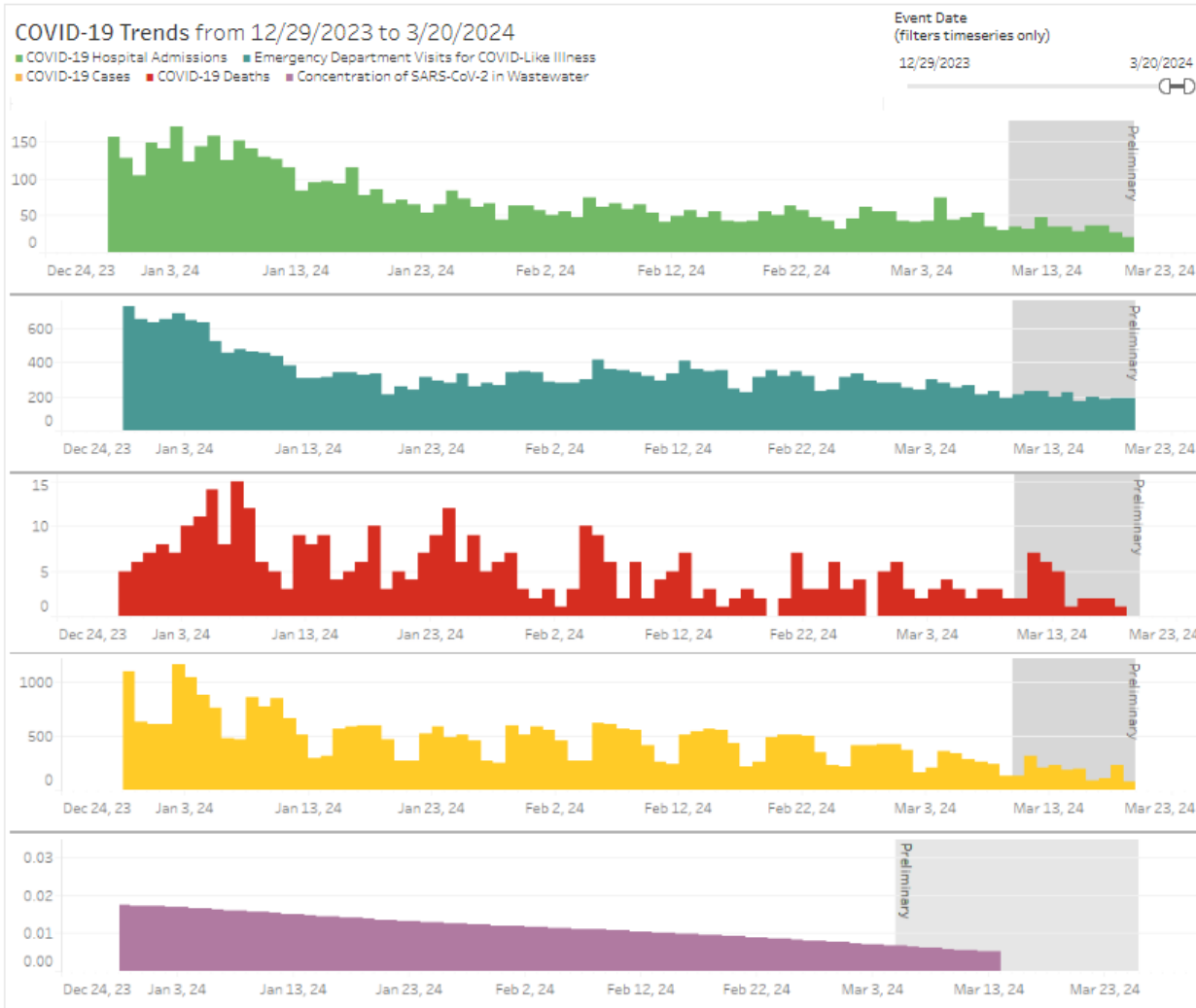
COVID-19 Hospital Admissions
35 (↓12)
165,025 Total Count

Emergency Department Visits for COVID-Like Illness
225 (↓43)
585,625 Total Count

COVID-19 Deaths
4 (↑1)
26,425 Total Count
1,540 Probable Deaths

COVID-19 Cases
191 (↓67)
2,205,805 Total Count

SARS-CoV-2 Wastewater Concentration
0.0072 (↓0.0013)
1,929,167 Total Population Served

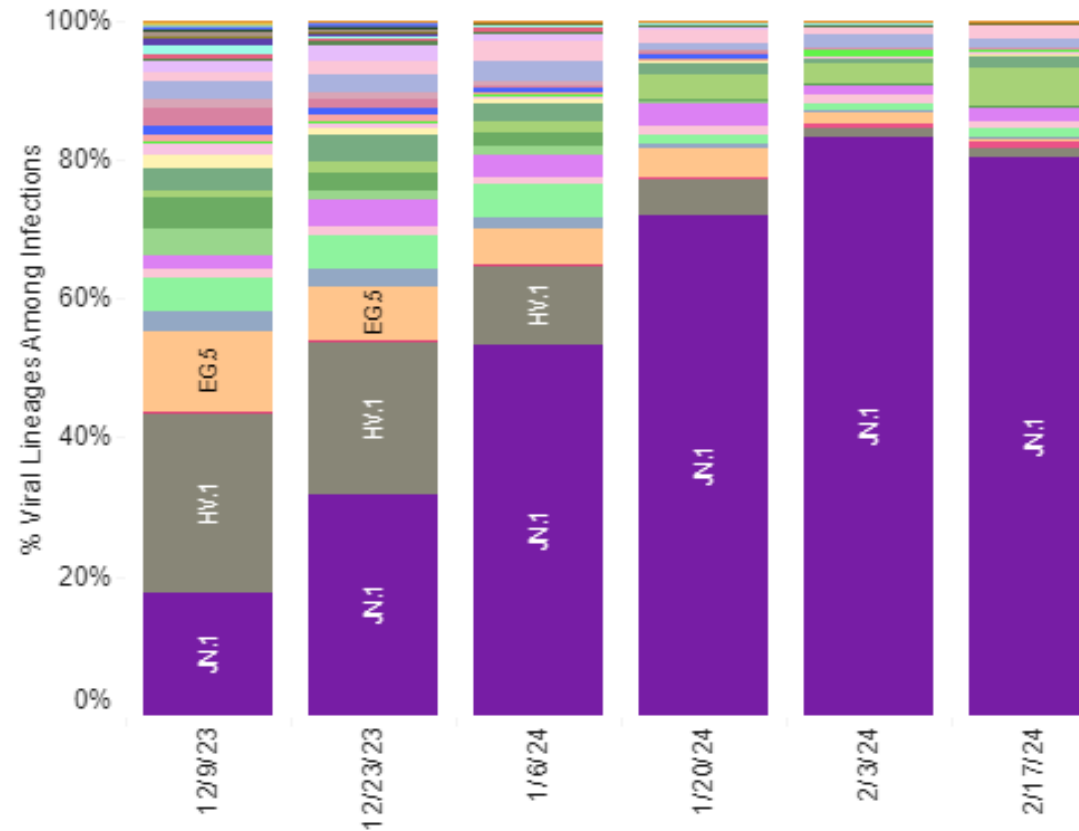


All numbers are provisional and reflect only those reported to IDOH. Numbers should not be characterized as a comprehensive total and may change as more data is reported.



Weighted Estimates in HHS Region 5 for 2-Week Periods in 11/26/2023 – 3/16/2024

Weighted Estimates: Variant proportions based on reported genomic sequencing results



ED Visits for Viral Respiratory Illness (Indiana)

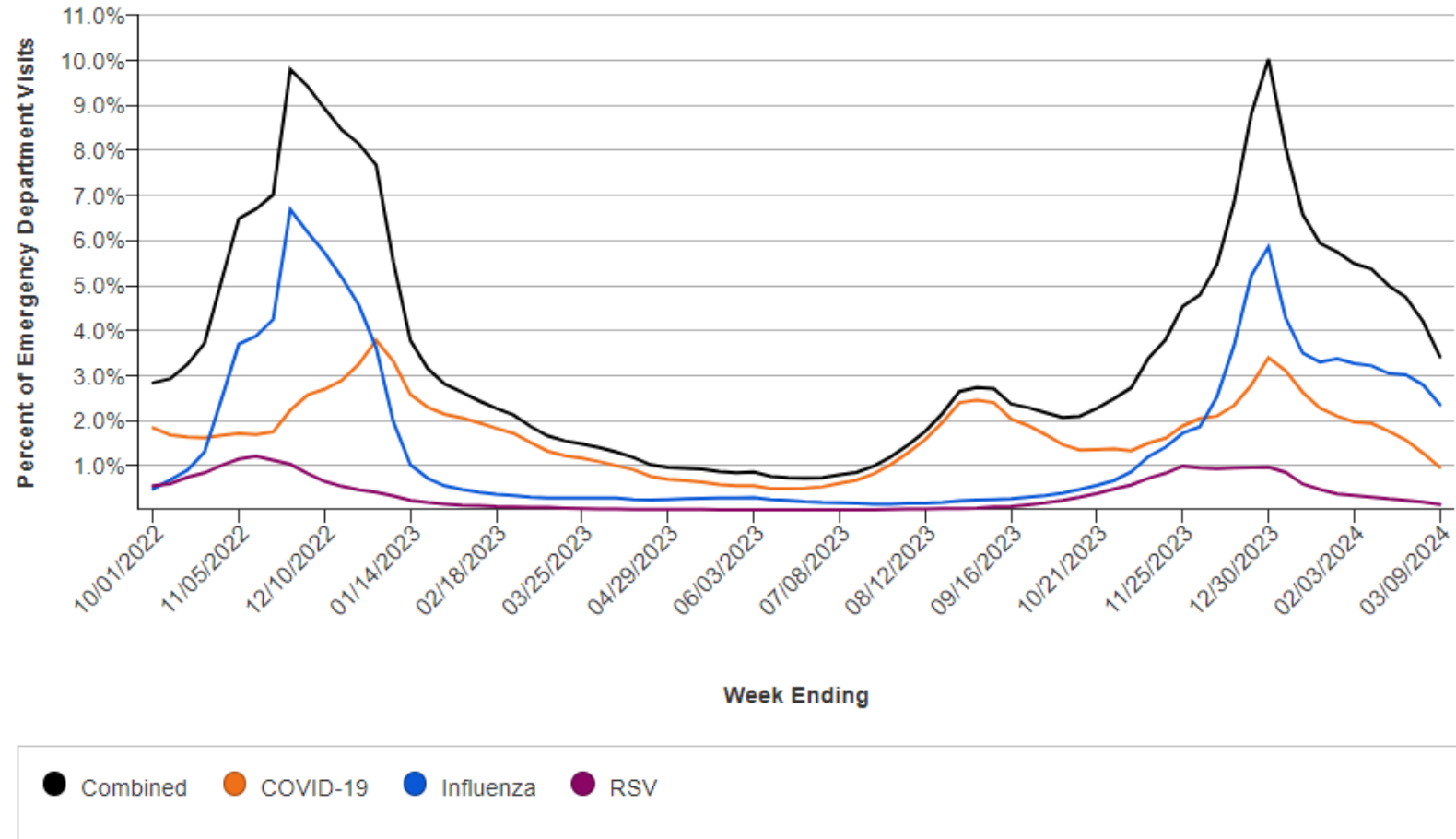
[Respiratory Virus Activity Levels \(cdc.gov\)](https://www.cdc.gov/respiratory)

Health Service Area

Counties Represented

All

All



Data presented through: 03/09/2024; Data as of: 03/13/2024

Updated Respiratory Viral Guidance

CDC updated guidance, see link for full details: <https://www.cdc.gov/respiratory-viruses/guidance/respiratory-virus-guidance.html>

Important notes

- **The revised guidance is for community settings.**
- **Healthcare guidance is unchanged at this time.**
- **Expect updated school guidance to come out prior to next school year.**

Goals of the Respiratory Virus Guidance

To provide streamlined guidance built on effective strategies so that more people take action to prevent respiratory disease.



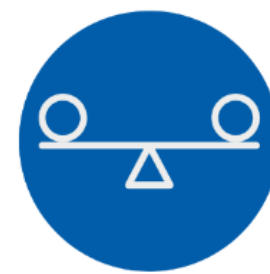
Provide **practical** recommendations that are clear and actionable



Streamline guidance across common respiratory virus illnesses



Highlight strategies that **effectively reduce risk**



Balance current, post-emergency risks with other health and societal needs

The COVID-19 Threat has Changed

DRIVERS

Effective vaccines and treatments

Each cut the risk of severe disease in half

Broad immunity

>98% of US population now has some protective immunity from vaccination, prior infection, or both, BUT this subscription needs to be renewed with updated vaccines

Other effective tools

Masks, hygiene, steps for cleaner air, tests



RESULTS

Fewer hospitalizations

Weekly hospital admissions down >75% from Jan 2022 peak; now in range of flu; 95% of people hospitalized with COVID-19 not up to date on vaccine

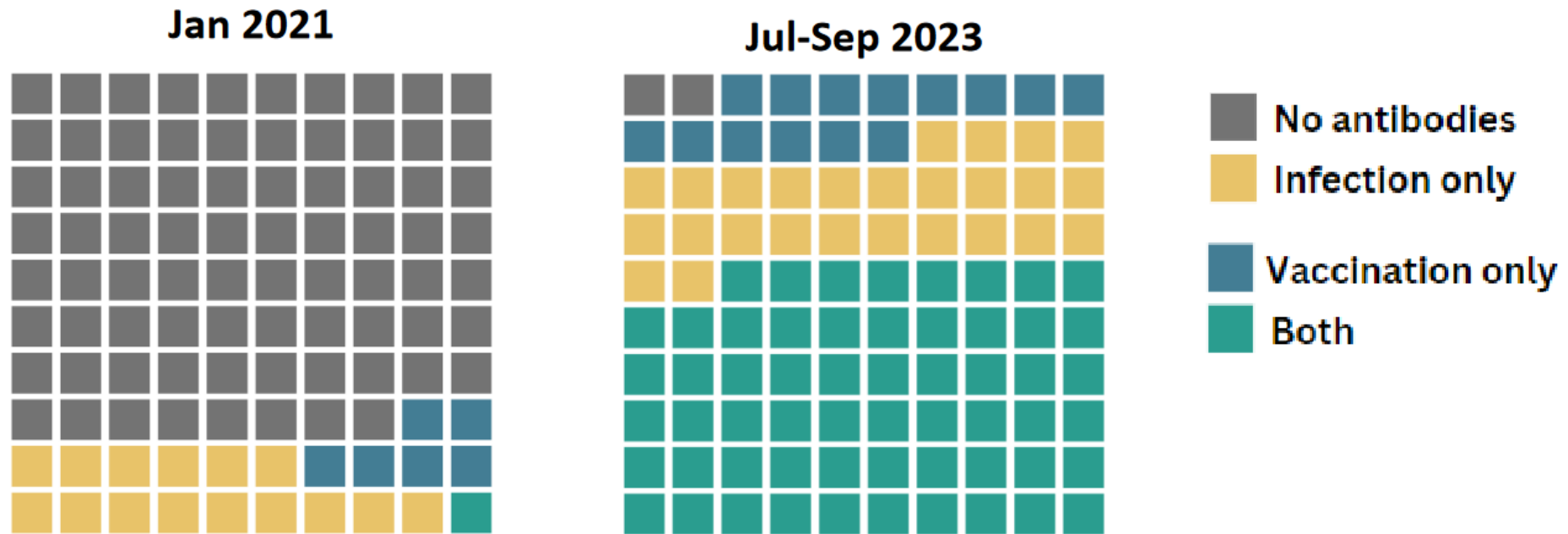
Fewer deaths

COVID-19 went from the 3rd leading cause of death in 2021 to 10th in 2023

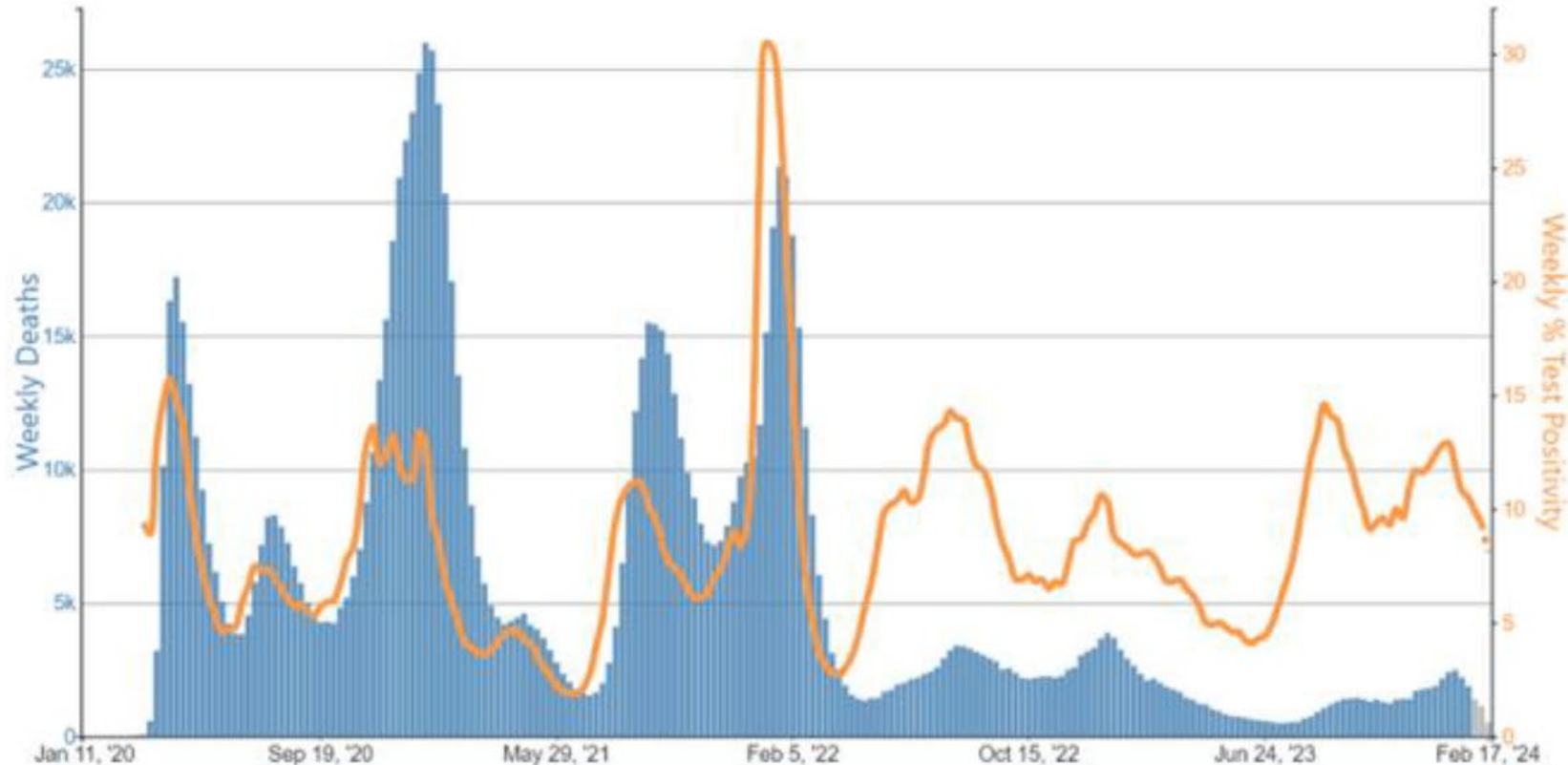
Fewer cases of other complications

Multisystem inflammatory syndrome in children (MIS-C) and Long COVID are now also less common

>98% of the US population now has some protective immunity



COVID-19 test positivity has remained elevated, but deaths have declined substantially



Provisional COVID-19 Deaths and COVID-19 Nucleic Acid Amplification Test (NAAT) Percent Positivity, by Week, in The United States, Reported to CDC.

Sources: Provisional Deaths from the CDC's National Center for Health Statistics (NCHS) National Vital Statistics System (NVSS) National Respiratory and Enteric Virus Surveillance System (NREVSS) Figure from CDC's [COVID Data Tracker](#).

Respiratory Virus Guidance Snapshot



Core prevention strategies

Immunizations



Hygiene



Steps for Cleaner Air



Treatment



Stay Home and Prevent Spread*



Additional prevention strategies

Masks



Distancing



Tests



Layering prevention strategies can be especially helpful when:

- ✓ Respiratory viruses are causing a lot of illness in your community
- ✓ You or those around you have risk factors for severe illness
- ✓ You or those around you were recently exposed, are sick, or are recovering

***Stay home and away from others until, for 24 hours BOTH:**



Your symptoms are getting better



You are fever-free (without meds)



Then take added precaution for the next 5 days

Additional COVID-19 Booster for Ages 65 and older

- CDC Director Mandy Cohen endorsed the CDC Advisory Committee on Immunization Practices' (ACIP) recommendation for adults ages 65 years and older to receive an additional updated 2023-24 COVID-19 vaccine dose.
- People who are immunocompromised and aged 65 years and older who received 1 dose of any updated 2023-2024 COVID-19 vaccine (Pfizer-BioNTech, Moderna or Novavax) should receive 1 additional dose of an updated 2023-2024 COVID-19 vaccine at least 2 months after the previous updated dose.

[Older Adults Now Able to Receive Additional Dose of Updated COVID-19 Vaccine | CDC Online Newsroom | CDC](#)

Real-World Evidence Studies of COVID-19 Therapeutics

Real-World Evidence Studies Page

OpenData Portal | SARS-CoV-2 Variants & Therapeutics
Real-World Evidence Studies of COVID-19 Therapeutics Updated 29 days ago
Browse high-level summaries of real-world outcomes for EUA/FDA approved and revoked COVID-19 therapeutics.
[Which Real-World Evidence studies are being collected here?](#)
[Download real-world evidence dataset here](#)

FILTER BY

Treatment:

- Bamlanivimab
- Bamlanivimab/Etesevimab
- Bebtelovimab
- Evusheld
- Molnupiravir
- Paxlovid
- Remdesivir
- Sotrovimab

Endpoint:

- Hospitalization
- Mortality
- Other

Lineage (Variant):

- Alpha, Gamma, Delta, Beta, Eta
- Delta
- Delta, Omicron
- N/R
- Omicron
- Wild type and alpha

49 entries found

Title	Publication Date	Treatment (n)	Study Start	Study End	Summa	Viral Lineag
Real-World Effectiveness of Remdesivir...	12/15/2021	Remdesivir (36656); Control (36656)	2/23/2020	2/11/2021	These r...	N/R
Remdesivir Use Compared With Suppor...	10/29/2020	Remdesivir (99); Control (125)	2/27/2020	5/11/2020	Patient...	N/R
Association of Remdesivir Treatment W...	07/15/2021	Remdesivir (1172); Control (1172)	5/1/2020	10/8/2020	The fin...	N/R
Association of Remdesivir Treatment W...	12/01/2022	Remdesivir (24856); Control (24856)	5/1/2020	5/3/2021	Results ...	N/R
Evaluation of the effectiveness of remd...	03/09/2022	Remdesivir (1549); Control (4964)	5/26/2020	11/30/2020	initiatio...	N/R
Real-world evaluation of the impact of t...	02/24/2022	Bamlanivimab (137); Ronapreve(137); Con...	6/1/2020	12/31/2020	Treatm...	N/R
Remdesivir Treatment in Hospitalized P...	10/01/2021	Remdesivir (28885); Control (16687)	8/1/2020	11/30/2020	RDV init...	N/R
Long-term survival benefit of male and ...	08/30/2022	Remdesivir (370); Control (370)	9/1/2020	4/30/2021	Hospita...	Wild type ar
Real-World Experience of Bamlanivima...	04/13/2021	Bamlanivimab (218); Control (185)	11/20/2020	1/19/2021	Ambula...	N/R
Impact of Bamlanivimab Monoclonal An...	07/12/2021	Bamlanivimab (232); Control (1160)	12/9/2020	3/3/2021	Bamliani...	N/R
Emulation of a Target Trial From Observ...	05/06/2022	Bamlanivimab+Etesevimab (237); Ronapr...	3/23/2021	12/3/2021	In a pre...	Alpha, Gar
Real World Evidence of the Neutralizing...	05/16/2022	Sotrovimab (522); Control (1563)	10/1/2021	12/11/2021	Effectiv...	Delta
Effectiveness of the neutralizing antibo...	10/11/2022	Sotrovimab (345); Control (583)	10/20/2021	02/28/2022	No evid...	Omicron
Oral Nirmatrelvir and Ritonavir in Nonho...	08/20/2022	Paxlovid (1130); Control (1130)	12/1/2021	4/18/2022	Treatm...	N/R
Molnupiravir's real-world effectiveness ...	03/05/2023	Molnupiravir (165); Control (155)	12/15/2021	2/15/2022	Our stu...	Omicron

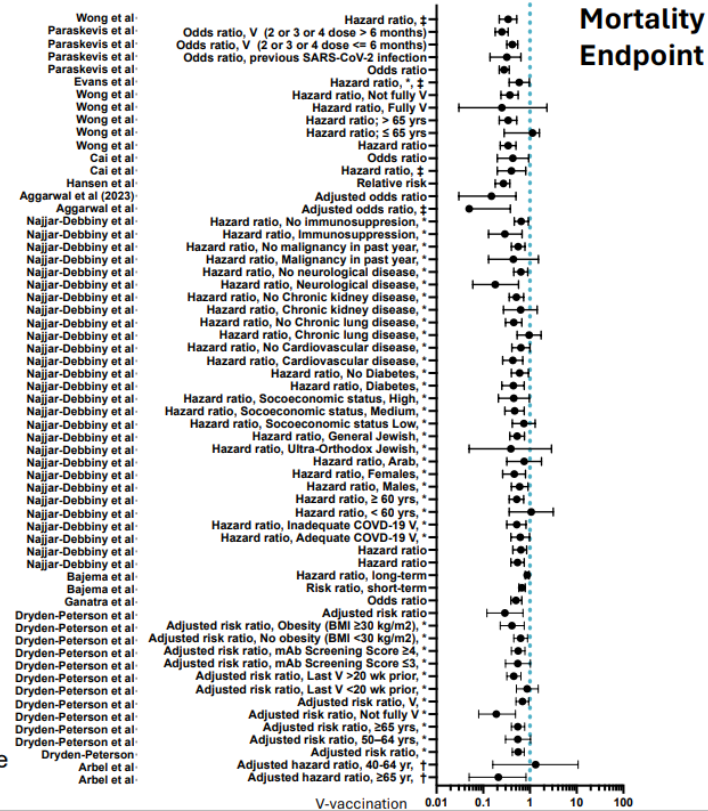


Real-World Evidence Studies of COVID-19 Therapeutics- Example

Example of available data | Paxlovid

Study	Hospitalization	Mortality
Wong et al	N/A	↓
Paraskevis et al	↓	↓
Evans et al	↓	↓
Wong et al	N/A	↓
Cai et al	↓	↓
Hansen et al	↓	↓
Lewnard et al	↓	↓
Aggarwal et al	↓	↓
Najjar-Debbiny et al	N/A	↓
Bajema et al	↓	↓
Ganatra et al	↓	↓
Dryden-Peterson et al	↓	↓
Arbel et al	↓	↓

The data may be from preliminary reports that **have not been peer reviewed and thus should not be regarded as conclusive, guide clinical practice or health decisions, or be reported in news media as established information.



MIS-C

Surveillance for Multisystem Inflammatory Syndrome in Children — United States, 2023

- Multisystem inflammatory syndrome in children (MIS-C) is a rare but serious condition typically occurring 2–6 weeks after SARS-CoV-2 infection and characterized by fever and multiorgan involvement.
- MIS-C incidence has decreased from early in the COVID-19 pandemic (highest in late 2020–early 2021), but cases continue to occur with a recent relative increase in the fall of 2023 after a period of increased COVID-19 activity in the general population.
 - Among 117 patients with MIS-C in 2023, approximately one half required intensive care unit-level care.
 - More than 80% (92 of 112) of MIS-C cases were in vaccine-eligible but unvaccinated children, and among the 20 vaccinated children, 60% likely had waned immunity at the time of MIS-C illness. [Notes from the Field: Surveillance for Multisystem Inflammatory Syndrome in Children — United States, 2023 | MMWR \(cdc.gov\)](#)

Early Estimates of Effectiveness of Nirsevimab

- Respiratory syncytial virus (RSV) is the leading cause of hospitalization among U.S. infants.
- In August 2023, CDC recommended nirsevimab, a long-acting monoclonal antibody, to protect infants aged <8 months against RSV-associated lower respiratory tract infection in their first RSV season.
- **Nirsevimab effectiveness was 90% against RSV-associated hospitalization in infants in their first RSV season. Median time from receipt of nirsevimab to symptom onset was 45 days (IQR = 19–76).**
- To reduce the risk for RSV-associated hospitalization, infants should be protected by maternal RSV vaccination or infant receipt of nirsevimab.

Use of Trivalent Influenza Vaccines for the 2024-2025 U.S. Influenza Season

- FDA's Vaccines and Related Biological Products Advisory Committee (VRBPAC) met on March 5, 2024, to discuss and make recommendations on the selection of influenza viruses for the composition of influenza vaccines for the 2024-2025 U.S. influenza season. This follows the October 5, 2023, VRBPAC meeting during which FDA and the committee engaged in scientific discussion pertaining to the continued need for a quadrivalent formulation of seasonal influenza vaccine for the U.S. **as there have been no confirmed detections of circulating B/Yamagata lineage viruses worldwide after March 2020.**
- Influenza B viruses are classified into two lineages: B/Yamagata and B/Victoria. However, the evidence indicates that the B/Yamagata lineage virus no longer poses a public health threat. During the October 2023 meeting, **the committee unanimously voted to recommend excluding the B/Yamagata lineage component from quadrivalent seasonal influenza vaccines as soon as possible.**



Other Infections



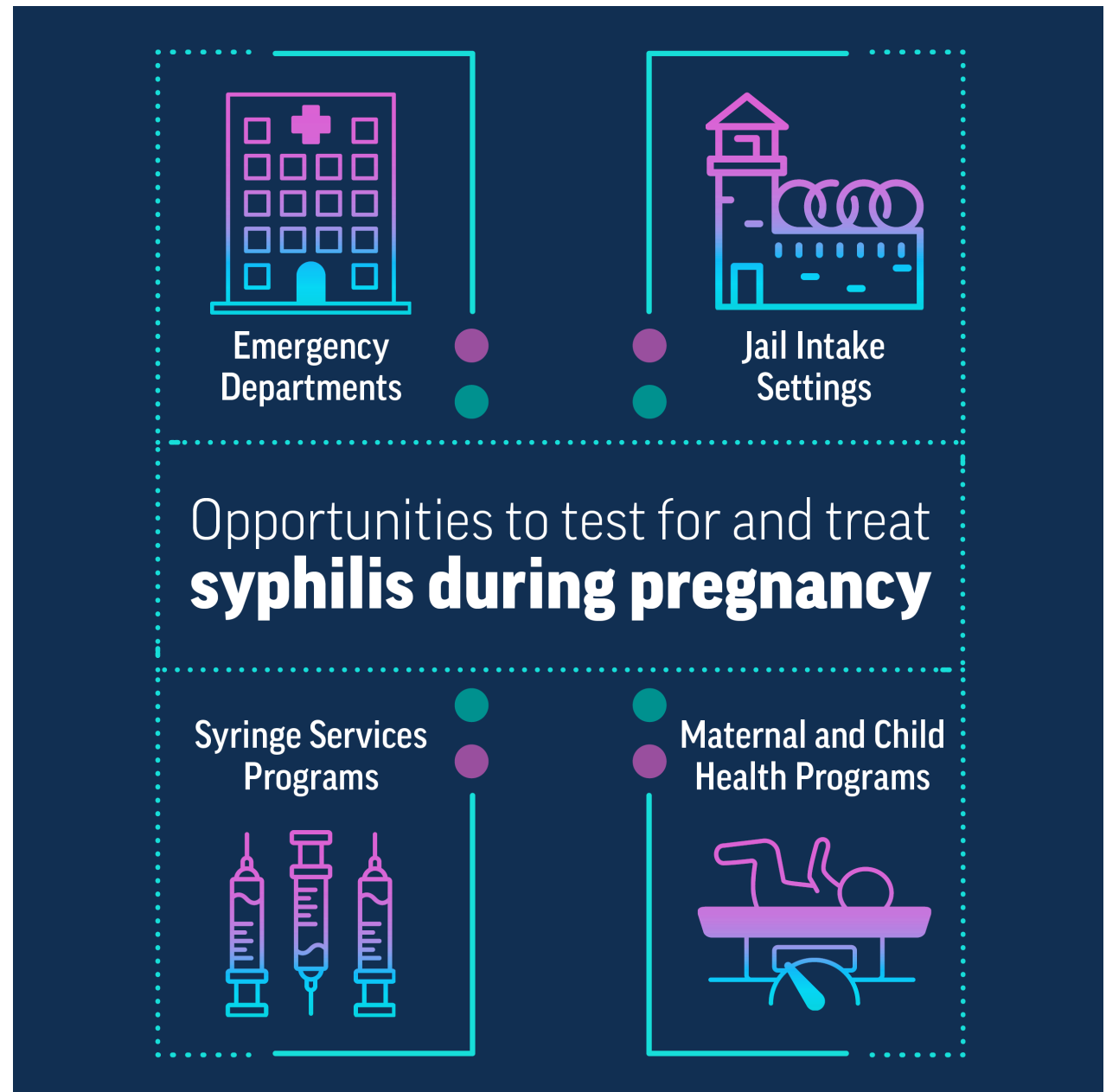
Indiana
Department
of
Health

Syphilis in Babies Reflects Health System Failures | VitalSigns | CDC

All you need to do is test!

These are potential opportunities to improve testing and, ultimately, treatment.

If a test is collected from any of these places and is positive, local health departments can assist with investigating and managing the cases.



Syphilis During Pregnancy and Congenital Syphilis Prevention Initiatives

[Syphilis During Pregnancy and Congenital Syphilis Prevention Initiatives: April 3, 2024, noon - 1:15 pm EDT - Health Care Education & Training \(hcet.org\)](#)

Presentation by Dr. Guy Crowder and Dawson Groves

Syphilis poses a significant public health challenge. To address this concerning trend, it becomes crucial to explore prevention initiatives that can effectively decrease the spread of these infections.

This webinar will dive deeper into the prevalence of syphilis and congenital syphilis and why both are on the rise. Participants not only get help understanding the contributing factors behind the surge in prevalence but also acquire the knowledge needed to engage in preventative measures to create healthier, safer communities.

Mpox update

- There is an outbreak of concern of Clade I mpox in the Democratic Republic of the Congo (DRC).
 - Clade I mpox is endemic to Central Africa and has previously been observed to be more transmissible and cause more severe infection than Clade II.
 - Clade I has a 10% case fatality rate in DRC, compared with <1% CFR for Clade IIb, which was responsible for the worldwide outbreak a couple of years ago.
 - Transmission can occur through casual (skin-to-skin) and sexual contact.
 - Work with the government of DRC is ongoing to determine which populations are most at risk from the current Clade I outbreak.
- The ongoing global mpox outbreak that began in 2022 is a Clade IIb strain and has disproportionately affected gay, bisexual, and other men who have sex with men (MSM)
 - **The response actions for Clade I are similar to those for Clade II.**
 - There have been no reported cases of Clade I mpox in the United States and no evidence of transmission of Clade I outside of endemic countries of central Africa, including DRC.



Miscellaneous



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Outbreak Linked to Morel Mushroom Exposure — Montana, 2023

- Although morel mushrooms are generally considered edible, rare cases of illness have been reported after consumption; little is known about the human health effects of morels.
- During March–April 2023, a total of 51 persons reported gastrointestinal illness after dining at a Montana restaurant; two patients died.
- A case-control study identified morel mushrooms as the likely outbreak source. Consumption of raw morels was more strongly associated with illness than was consumption of cooked or partially cooked morels.
- **The signs and symptoms reported by ill persons and documented in medical records, including gastrointestinal illness and dizziness, are consistent with those reported in association with consumption of improperly handled, prepared, or cooked morels.** Previous reports have described gastrointestinal illness after consumption of morels, which were consumed raw or cooked to varying degrees, as well as neurologic symptoms, including cerebellar effects, and, in some cases, death
- **Morels should be refrigerated at a temperature of $\leq 40^{\circ}\text{F}$ ($\leq 4.4^{\circ}\text{C}$), in breathable type packaging, such as a paper bag. Morels should be cooked thoroughly before consumption because cooking is likely to reduce toxin levels present in the mushrooms**

Alcohol-related Cancer Deaths

A recent [CDC study](#) found that more than 20,000 alcohol-related cancer deaths occurred each year during 2020-2021. **About 80% of these cancer deaths could have been prevented** if all adults who drank at levels above the Dietary Guidelines for Americans had instead consumed alcohol within the recommended daily limits of two drinks or less for men or one drink or less for women.

Guidelines for Alcohol Use according to the Dietary Guidelines for Americans:

- To reduce the risk of alcohol-related harms, adults of legal drinking age can choose not to drink, or to drink in moderation by limiting intake to **two drinks or less in a day for men or one drink or less in a day for women**, on days when alcohol is consumed.
- Don't drink at all if you are younger than age 21, pregnant or may be pregnant, have health problems that could be made worse by drinking, or are engaging in activities for which alcohol is dangerous (like driving).
- The Guidelines also do not recommend that you start drinking for any reason. Even moderate intake is associated with increased risks, including some cancers.

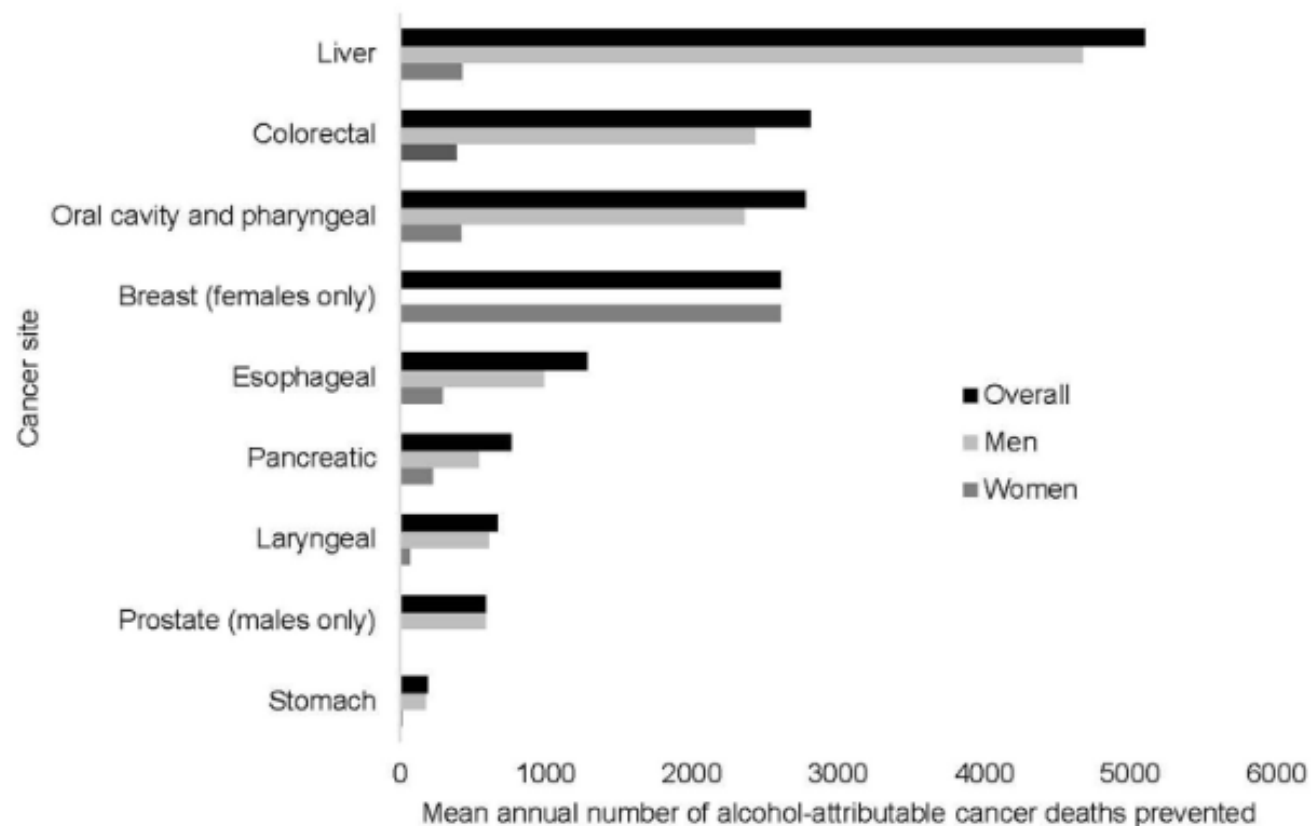


Figure 1. Alcohol-attributable cancer deaths that could have been prevented if adults reduced their drinking^a.

^aCalculated as the difference between actual estimates of alcohol-attributable cancer deaths and the estimated number of alcohol-attributable cancer deaths that would have occurred if adults reduced their mean daily alcohol use to correspond with the Dietary Guidelines for Americans on alcohol, 2 drinks or less per day for men or 1 drink or less per day for women.



Indiana Tick-borne Disease Surveillance

Tick surveillance data last updated 11/15/2023.
Case surveillance data last updated 3/5/2024.

Start with filter selections below, which apply to everything on this page

For best results, clear all filter selections before selecting a new disease (refresh the webpage or hover over a multi-select filter and find the "Click to Show All Values" option: a funnel icon with a red x)

Select Disease: | Select Pathogen(s): | Select Tick Type(s):

TICK SURVEILLANCE AND TESTING

Lyme Disease is Selected

Lyme disease is a tick-borne disease caused by the bacteria *Borrelia burgdorferi* and *Borrelia mayonii* and transmitted by the blacklegged tick (*Ixodes scapularis*). Most reported cases are due to *B. burgdorferi*.

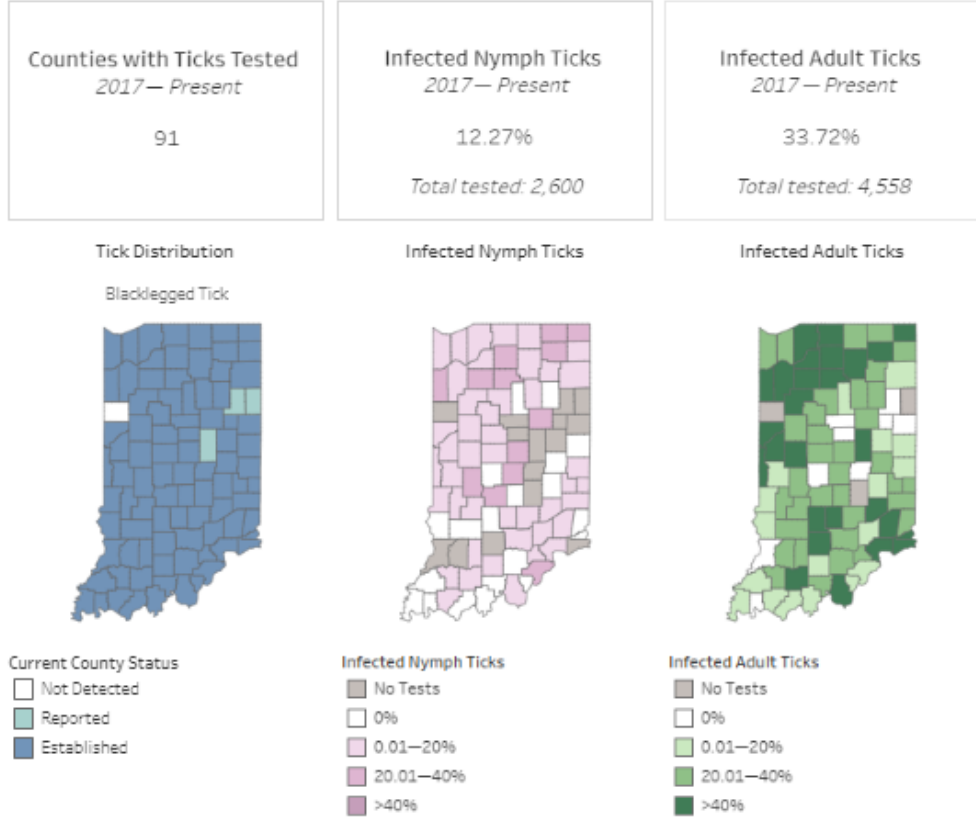
TICK SURVEILLANCE

The blacklegged tick life cycle has four stages (egg, larva, nymph, and adult); both nymph and adult ticks can transmit human pathogens.

The "Tick Distribution" map shows where blacklegged ticks are found. "Established" means that ≥5 ticks of the same life stage or >1 tick life stage have been collected in the county within a calendar year. "Reported" means that no more than 5 ticks of the same life stage have been collected in the county within a calendar year.

The "Infected Nymph Ticks" and "Infected Adult Ticks" statistics and maps show the percentage of blacklegged ticks collected since 2017 that were carrying the bacterium that cause Lyme disease.

The "Tick Activity by Month" chart shows the times of year when blacklegged nymph and adult ticks are expected to be most active.



Rho Immune Globulin Shortages

Currently there are four U.S. Licensed sources.

Rho(D) Immune Globulin (Human)

- HyperRHO – manufactured by Grifols Therapeutics LLC (No shortage and it is available for purchase)
- **RhoGAM** – manufactured by Kedrion Biopharma Inc. (Kedrion Biopharma Inc. has informed the FDA, that Rho(D) Immune Globulin (Human) RhoGAM is experiencing a reduction of supply and this reduction of supply is expected to last throughout 2024.)

Rho(D) Immune Globulin Intravenous (Human)

- Rhophylac – manufactured by CSL Behring AG (No shortage and product is available for purchase)
- **WinRho** – manufactured by Kamada Ltd. (Kamada Ltd. has informed the FDA, Rho(D) Immune Globulin (Human) WinRho SDF is experiencing a reduction of supply due to increase in demand.)

The FDA has no legal authority to require a manufacturer to begin producing, continue producing or increase their production of drugs. However, FDA does work with manufacturers whenever possible to help mitigate shortages whenever we learn of them.



The Impact of Bleeding and Clotting Disorder During and Post Pregnancy

The Indiana Department of Health will host a webinar on Thursday, April 18, from noon to 1 p.m. The webinar will raise awareness of bleeding and clotting disorders related to pregnancy and the postpartum period.

Dr. Gupta and Dr. Lewandowska from the Indiana Hemophilia and Thrombosis Center will present the session.

[Click here to join the meeting](#)

Updates from the FDA

- On 2/29/24, the FDA issued an EUA for SEKISUI Diagnostics, LLC's OSOM Flu SARS-CoV-2 Combo Home Test, a single use test to detect and differentiate influenza A and B and SARS-CoV-2, in individuals with signs and symptoms of respiratory infection consistent with COVID-19 within the first four days of symptom onset when tested at least twice over three days with at least 48 hours between tests.
 - The test is authorized for people aged 14 years or older with self-collected anterior (nares) nasal swab specimens and those aged two years or older when an adult collects the nasal swab specimens.
 - It is the first over the counter at-home antigen test that detects both flu and COVID-19 viruses to receive an EUA following collaboration with the [National Institutes of Health Independent Test Assessment Program](#).
- On 2/28/24, the FDA announced that grease-proofing substances containing Per and Polyfluoroalkyl Substances (PFAS) are no longer being sold by manufacturers for food contact use in the U.S. market.
 - The completion of the voluntary market phase-out of these substances used on food packaging paper and paperboard, eliminates the primary source of dietary exposure to PFAS from authorized food contact uses.

FDA Safety Communication

FDA released an update on 3-12-24 with additional saline and sterile water products were recalled. As you know, Nurse Assist, LLC recalled some products originally on November 6, 2023. [Recall of Certain Saline and Sterile Water Medical Products Associated with Nurse Assist: FDA Safety Communication | FDA](#)

Total Solar Eclipse - April 8

- Planning is occurring across the state in preparation for the April 8, 2024, total eclipse
- 145,000 to 581,000 visitors are expected to come to Indiana
- The eclipse will begin at approximately 1:45 p.m. Eastern on April 8, and end at about 4:30 p.m. Eastern
- American Astronomical Society - provides information regarding eclipse glasses and handheld solar viewers along with information regarding eye safety and other resources: <https://eclipse.aas.org/resources/solar-filters>



TOTAL SOLAR ECLIPSE 2024

On April 8, 2024, a total solar eclipse will plunge much of Indiana into momentary darkness. Excitement and interest is growing for the big event, and Hoosier communities and public safety partners are planning for the influx of hundreds of thousands of visitors to the state.



Solar retinopathy-Recommendations for Clinicians

- **The best management is prevention.**
- Clinical features: Painless loss of central vision with a central or paracentral scotoma in one or both eyes, rapid onset (minutes to one-two days) following exposure. Fundoscopic examination may be normal or show subtle yellowish spots in the fovea.
- Standard radiographic and echographic modalities will be normal. HD OCT and/or fluorescein angiography can assist with the diagnosis.
- There is no specific treatment for solar retinopathy. Most cases spontaneously heal within 3-6 months after the inciting event, although permanent vision loss can occur.
- Consider referral to a retinal specialist.
- There is not strong evidence to suggest routine use of systemic corticosteroids. If they are utilized, a Prednisone taper starting at 60mg and decreasing by 10mg weekly for a total of 4-6 weeks may be considered.

Prepare for Total Solar Eclipse - April 8

Medical Considerations

When planning for a medical surge, consider the following:

- Eye injuries/damage from viewing of the sun without proper eyewear; affects may occur 12-24 hrs after the event
- Overdoses, assess Narcan availability
- Excessive 911 calls
- Reschedule dialysis and other related non-emergency medical procedures to a different day, if appropriate
- Order medical supplies, blood, tissue, hospital cafeteria food, etc. early and delivered early to avoid issues
- Food safety inspections - increased temporary food vendors
- Emergency department and EMS staffing
- Increased number of health related issues due to the potential of large crowds
- Staffing/shift adjustments for a few days
- Staffing respite space especially for longer shifts
- Increased need for Medivac may be required due to ground transportation delays
- Identify a helipad location in each county in your planning efforts
- Heat related injuries such as heatstroke and dehydration

Ways to connect with us

- [IDOH Clinician Update Feedback Survey](#) – Please let us know what topics you'd like us to cover: Email svuppalanchi@health.in.gov or Gcrowder@health.in.gov
- Sign up for IHAN– Indiana Health Alert Network <https://ihan-in.org>
- [Health: Long Term Care/Nursing Homes: Newsletters](#)
- MARK YOUR CALENDARS - Clinician webinars for 2024: April 26, May 24, June 28, July 26, Aug. 23, Sept. 27, Oct. 25, Nov. 22, Dec. 27

For more information

The supplemental information section covers other topics to refer to on your own:

- Slides and recording from CDC's COCA call covering Xylazine
- Additional information on mpox, COVID-19 antiviral myths from CDC/IDSA call on 3-14-24
- Information on registration for AMA and CDC Fireside Chat on Measles on 3/28
- Flu and COVID vaccine effectiveness

Questions?

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Chief Medical Officer
GCrowder@health.in.gov

Shireesha Vuppalanchi, M.D.
Medical Director
svuppalanchi@health.in.gov

Next call: Noon, April 26





Supplemental information



Indiana
Department
of
Health

CDC Clinician Outreach and Communication Activity (COCA) call on Xylazine

Slides

[Overdoses Involving Xylazine Mixed with Fentanyl: Clinical and Public Health Implications \(cdc.gov\)](#)

Webinar

[Webinar Thursday, February 29, 2024 - Overdoses Involving Xylazine Mixed with Fentanyl: Clinical and Public Health Implications \(cdc.gov\)](#)

FINAL TAKEAWAYS/ SUMMARY

- Xylazine is an alpha-2 agonist found in increasing frequency mixed in heroin/fentanyl especially in the Northeast
- Causes significant sedation, not reversible by naloxone
- Does not appear to directly increase the fatality rate from fentanyl
- Repeated use *may* cause a withdrawal syndrome (unique?) typically described as anxiety and dysphoria
- Repetitive xylazine use is associated with necrotic wound development

AMA and CDC Fireside Chat on Measles

As we enter the spring and summer travel season, clinicians should be on alert for cases of measles.

Join CDC and the American Medical Association (AMA) Thursday, March 28, 1 p.m. EDT, for a special fireside chat to discuss the current trends in measles epidemiology, recognition of measles, travel-associated risks, core healthcare infection prevention measures, and the importance of vaccination.

AMA's Dr. Kaufman West will moderate a discussion with HHS Speaker Admiral Levine and CDC Speakers, Demetre Daskalakis, MD, MPH, David Sugerman, MD MPH FACEP, Thomas (Dan) Filardo, MD, and Michael Bell, MD, as they provide core measles infection prevention strategies in all healthcare settings.

Register at [Be on Alert for Travel-Related Measles: | Infectious Diseases | CDC's Project Firstline | AMA Ed Hub \(ama-assn.org\)](#)

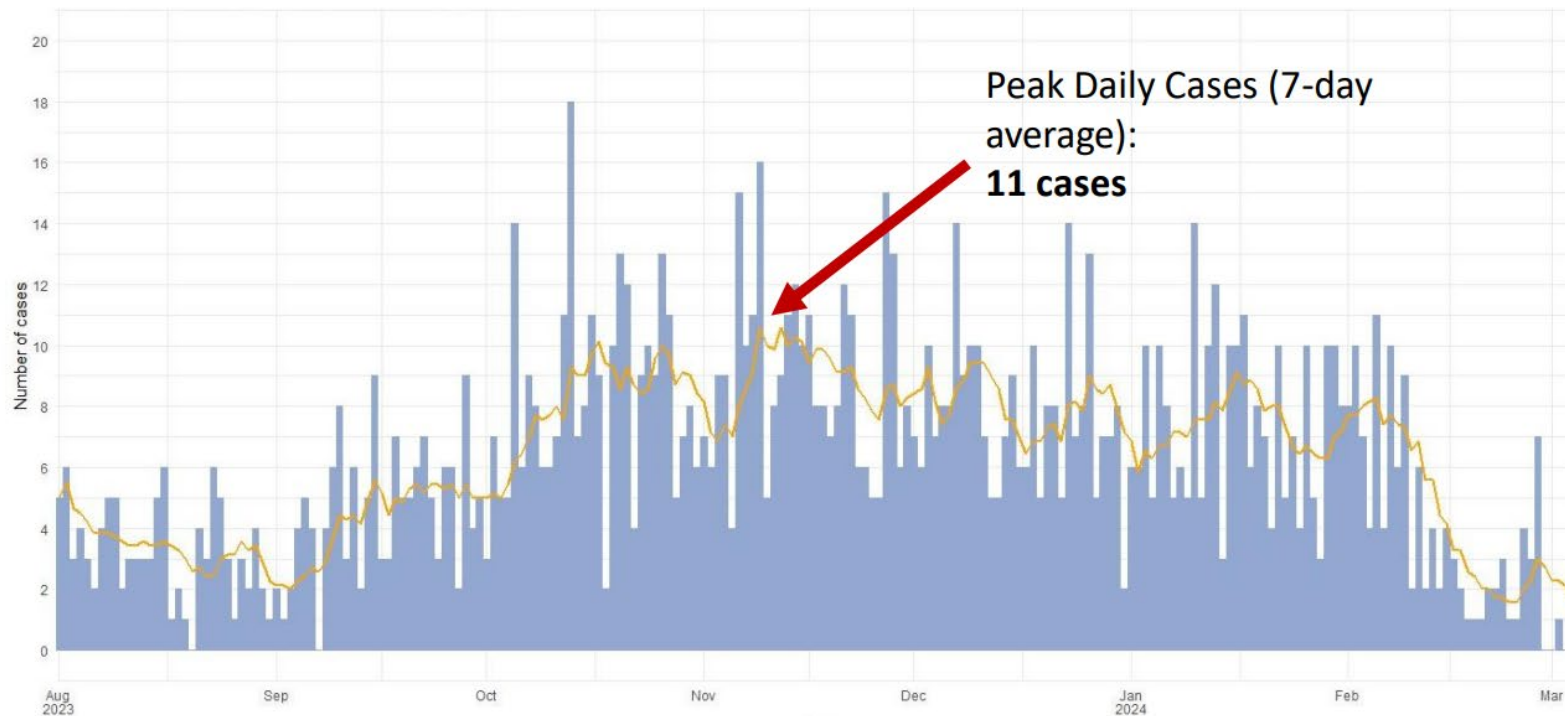
CDC/IDSA Call 3-14-24 -mpox

Global Monkeypox virus (MPXV) Clade II outbreak, 2022-present

- Associated with Clade II which is endemic in certain African countries
- First U.S. cases associated with travel
- Primarily affecting gay, bisexual, and other men who have sex with men (MSM); transgender and nonbinary persons
- Associated with person-to-person spread via close skin-to-skin contact (including sex)
- Deaths have occurred, primarily among persons with severe immunocompromise from advanced HIV
- U.S. case counts and deaths comprising more than a third of global cases
 - >32,000 U.S. cases
 - 58 U.S. deaths

CDC/IDSA Call 3-14-24 -mpox

U.S. Clade II cases continue to occur



CDC/IDSA Call 3-14-24 -mpox

Recommendations of the Advisory Committee on Immunization Practices—October 25, 2023

ACIP recommends vaccination with the 2-dose JYNNEOS vaccine series for persons aged 18 years and older at risk for mpox[¶]

[¶]Persons at risk

- 1. Gay, bisexual, and other men who have sex with men, 2. transgender people or 3. nonbinary people who, in the past 6 months, have had one of the following
 - New diagnosis of ≥ 1 sexually transmitted disease
 - More than one sex partner
 - Sex at a commercial venue
 - Sex in association with a large public event in a geographic area where mpox transmission is occurring
- Sexual partners of persons with the risks described above
- Persons who anticipate experiencing any of the above

CDC/IDSA Call 3-14-24 –mpox vaccination

Table 1 Recommended Adult Immunization Schedule by Age Group, United States, 2024

Vaccine	19–26 years	27–49 years	50–64 years	≥65 years
COVID-19	1 or more doses of updated (2023–2024 Formula) vaccine (See Notes)			
Influenza inactivated (IIV4) or Influenza recombinant (RIV4)	1 dose annually			
Influenza live, attenuated (LAIV4)	1 dose annually			
Respiratory Syncytial Virus (RSV)	Seasonal administration during pregnancy. See Notes.			≥60 years
Tetanus, diphtheria, pertussis (Tdap or Td)	1 dose Tdap each pregnancy; 1 dose Td/Tdap for wound management (see notes)			
Measles, mumps, rubella (MMR)	1 dose Tdap, then Td or Tdap booster every 10 years			
Varicella (VAR)	2 doses (if born in 1980 or later)		2 doses	
Zoster recombinant (RZV)	2 doses for immunocompromising conditions (see notes)		2 doses	
Human papillomavirus (HPV)	2 or 3 doses depending on age at initial vaccination or condition	27 through 45 years	See Notes	
Pneumococcal (PCV15, PCV20, PPSV23)	See Notes			See Notes
Hepatitis A (HepA)	2, 3, or 4 doses depending on vaccine			
Hepatitis B (HepB)	2, 3, or 4 doses depending on vaccine or condition			
Meningococcal A, C, W, Y (MenACWY)	1 or 2 doses depending on indication, see notes for booster recommendations			
Meningococcal B (MenB)	19 through 23 years	2 or 3 doses depending on vaccine and indication, see notes for booster recommendations		
Haemophilus influenzae type b (Hib)	1 or 3 doses depending on indication			
Mpox				

■ Recommended vaccination for adults who meet age requirement, lack documentation of vaccination, or lack evidence of immunity
■ Recommended vaccination for adults with an additional risk factor or another indication
■ Recommended vaccination based on shared clinical decision-making
■ No recommendation/Not applicable

Mpox vaccine on routine immunization schedule

Mpox vaccination

Special situations

• Any person at risk for Mpox infection: 2-dose series, 28 days apart.

Risk factors for Mpox infection include:

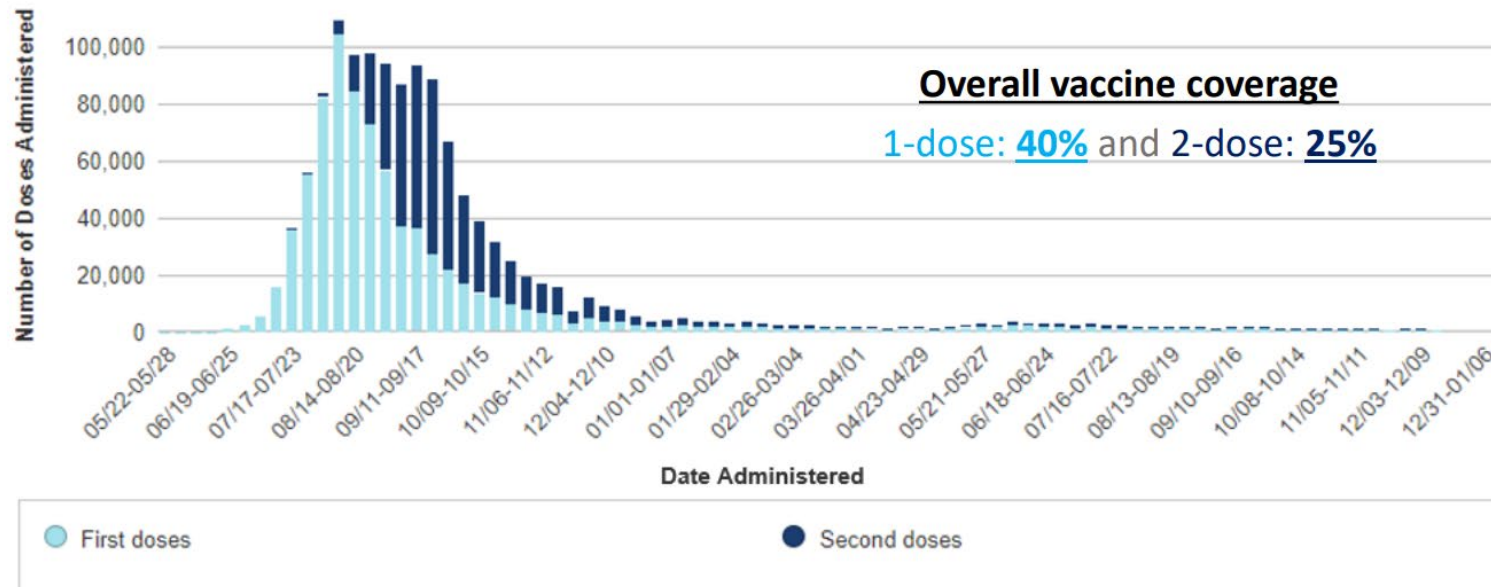
- Persons who are gay, bisexual, and other MSM, transgender or nonbinary people who in the past 6 months have had:
 - A new diagnosis of at least 1 sexually transmitted disease
 - More than 1 sex partner
 - Sex at a commercial sex venue
 - Sex in association with a large public event in a geographic area where Mpox transmission is occurring
- Persons who are sexual partners of the persons described above
- Persons who anticipate experiencing any of the situations described above

www.cdc.gov/vaccines/schedules/downloads/adult/adult-combined-schedule.pdf



CDC/IDSA Call 3-14-24 –mpox Vaccine

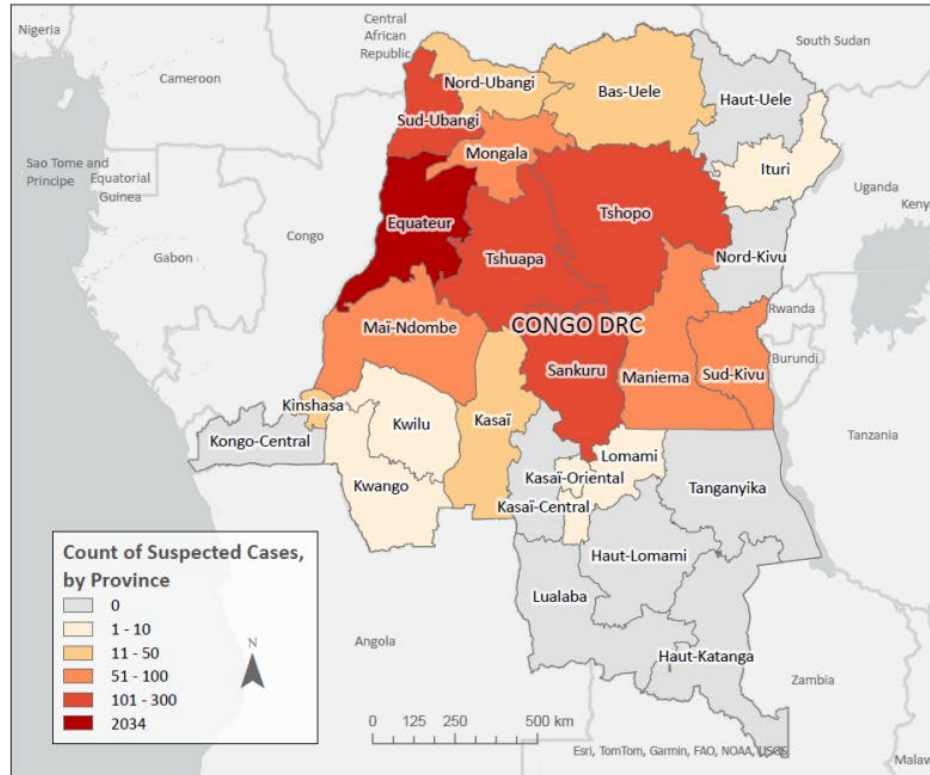
U.S. JYNNEOS Administration Data, 2022-2024*



*Data reported to CDC between May 22, 2022 and January 9, 2024

CDC/IDSA Call 3-14-24 –mpox Clade I

Ongoing Clade I outbreak: Democratic Republic of Congo



- Identified in parts of the country without previous cases
- Some cases associated with sex; however, both genders involved
- Children most affected

CDC/IDSA Call 3-14-24 –mpox Clade I and II

	Ways in which both clades are similar
Clinical presentation	Firm, deep-seated, sometimes umbilicated lesions; presents along a clinical continuum (mild to severe)
Transmission of virus	Contact with skin lesions, fomites, respiratory secretions (e.g., via kissing)
Diagnostic testing	FDA cleared non-variola orthopoxvirus (NVO) test used by many laboratories
Hospital waste management	Category B*
IPC for healthcare providers	Gown, gloves, eye protection, N-95; in addition to standard precautions, suspected mpox infections have additional IPC precautions
Patient management	Dependent on severity of illness or potential for severe illness
Use of JYNNEOS vaccine and therapeutics	Expected to be effective regardless of clade

*<https://www.phmsa.dot.gov/sites/phmsa.dot.gov/files/2024-03/PHMSA%20Safety%20Advisory%20Notice%20-%20Classification%20of%20MPXV%20Diagnostic%20Samples%20and%20Waste.pdf>

§ <https://www.cdc.gov/poxvirus/mpox/clinicians/infection-control-healthcare.html>

CDC/IDSA Call 3-14-24 –mpox Clade I Vs. II

	Ways in which Clade I cases differ from Clade II
Populations impacted	Might not affect predominantly MSM; uncertain if other populations could be impacted
Clinical presentation	More of the severe cases <i>could</i> occur: disseminated lesions, prodromal symptoms, hospitalization
Diagnostic testing	Clade II specific testing available in some labs but not others
IPC for healthcare providers	Patients may shed more virus; adherence to IPC practices* particularly important



*<https://www.cdc.gov/poxvirus/mpox/clinicians/infection-control-healthcare.html>

CDC/IDSA Call 3-14-24 –mpox Clinical Guidance

Interim clinical guidance for severe MPXV infections (regardless of Clade)

- Tecovirimat (intravenous or oral)
- Brincidofovir or cidofovir
- Vaccinia immune globulin intravenous
- Trifluridine ophthalmic solution

- CDC, through health departments, available for consultations for severe mpox (i.e., involving patients with severe immunocompromise)

The screenshot shows the CDC logo and tagline "CDC 24/7. Saving Lives. Protecting People™" at the top left. A search bar is located at the top right. Below the header, the title "Morbidity and Mortality Weekly Report (MMWR)" is displayed. The main content area features the title "Interim Clinical Treatment Considerations for Severe Manifestations of Mpox — United States, February 2023" and the issue information "Weekly / March 3, 2023 / 72(9);232–243". A red "Please note" banner states "This report has been corrected." Below this, the authors are listed: "Agam K. Rao, MD¹; Caroline A. Schrodt, MD¹; Faisal S. Minhaj, PharmD^{1,2}; Michelle A. Waltenburg, DVM³; Shama Cash-Goldwasser, MD²; Yon Yu, PharmD⁴; Brett W. Petersen, MD¹; Christina Hutson, PhD¹; Inger K. Damon, MD, PhD³ (VIEW AUTHOR AFFILIATIONS)".

https://www.cdc.gov/mmwr/volumes/72/wr/mm7209a4.htm?s_cid=mm7209a4_w

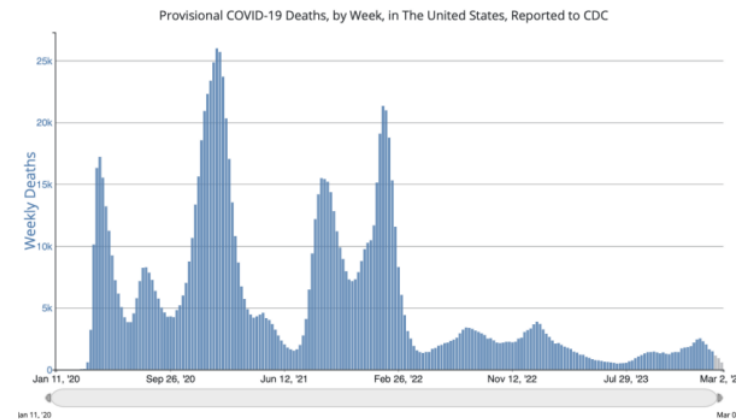
COVID-19 Antiviral Myths

COVID antiviral myths

- Population immunity is high so my patient doesn't need Paxlovid
- My patients have a high chance of rebound if they take Paxlovid
- My patient has mild symptoms so Paxlovid or other early therapies won't help
- Drug-drug interactions make it impossible for my patient for my patient to get early therapy
- Paxlovid is easy to get after I prescribe it

Good news: Deaths down.

Not so good news: Still 576 deaths/week in US (95% no recent COVID vaccine)



https://covid.cdc.gov/covid-data-tracker/#trends_weeklydeaths_select_00

COVID-19 Antiviral Myths

COVID antiviral myths

- Population immunity is high so my patient doesn't need Paxlovid
- My patients have a high chance of rebound if they take Paxlovid
- My patient has mild symptoms so Paxlovid or other early therapies won't help
- Drug-drug interactions make it impossible for my patient for my patient to get early therapy
- Paxlovid is easy to get after I prescribe it

Smith-Jeffcoat S et al, CID, 11/14/23

Edelstein G et al, Annals Intern Med, 11/14/23

Small studies with mixed findings, short follow up, diff pop (Paxlovid 20-32%, no treatment 2-20%)

Difference between virologic and symptomatic rebound

When it occurs, rebound is brief and mild

Centers for Disease Control and Prevention

MMWR

Morbidity and Mortality Weekly Report

Weekly / Vol. 72 / No. 51

December 22, 2023

SARS-CoV-2 Rebound With and Without Use of COVID-19 Oral Antivirals

Dallas J. Smith, PharmD^{1,2}; Anastasia Lambrou, PhD^{1,2}; Pragna Patel, MD³

Abstract

Early treatment with a first-line therapy (nirmatrelvir/ritonavir [Paxlovid] or remdesivir) or second-line therapy (molnupiravir) prevents hospitalization and death among patients with mild-to-moderate COVID-19 who are at risk for severe disease and is recommended by the National Institutes of Health COVID-19 Treatment Guidelines. On May 25, 2023, the Food and Drug Administration approved nirmatrelvir/ritonavir for treatment of adults at high risk for severe disease. Although antiviral therapies are widely available, they are underutilized, possibly because of reports of SARS-CoV-2 rebound after treatment. To enhance current understanding of rebound, CDC reviewed SARS-CoV-2 rebound studies published during February 1, 2020–November 29, 2023. Overall, seven of 23 studies that met inclusion criteria, one randomized trial and six observational studies, compared rebound for persons who received antiviral treatment with that for persons who did not receive antiviral treatment. In four studies, including the randomized trial, no statistically significant difference in rebound

Although hospitalizations and deaths are currently much lower than they were during the peak of the pandemic, COVID-19 continues to cause substantial morbidity and mortality. As of December 9, 2023, approximately 23,000 hospitalizations per week were reported among patients with COVID-19, with highest rates among persons aged ≥65 years. Currently, health care providers are positioned to mitigate COVID-19 morbidity and mortality with safe and effective vaccines¹ and early diagnosis and treatment (1).

Antiviral Therapeutics

Early treatment with first-line therapy (nirmatrelvir/ritonavir [Paxlovid] or remdesivir) or second-line therapy (molnupiravir) reduces the prevalence of hospitalization and death among patients with mild-to-moderate COVID-19 who are at risk for severe disease (2–4), and is recommended by the National

¹ <https://www.cdc.gov/vaccines/covid-19/clinical-considerations/covid-19-vaccines-us.html>

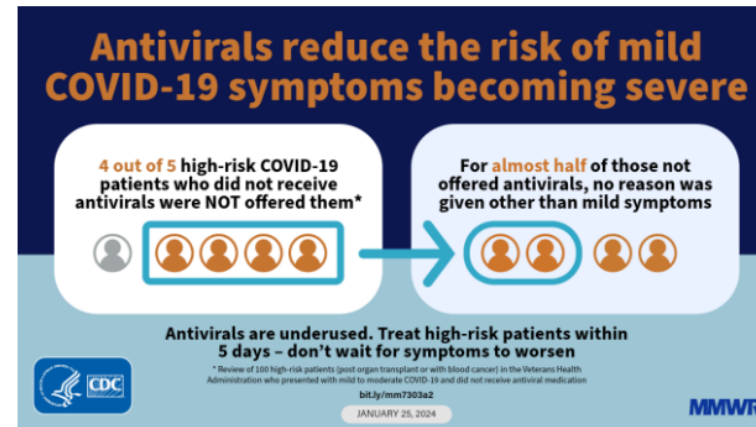
Smith D et al, MMWR 72(51)

Harrington P et al, MMWR 72(51)

COVID-19 Antiviral Myths

COVID antiviral myths

- Population immunity is high so my patient doesn't need Paxlovid
- My patients have a high chance of rebound if they take Paxlovid
- My patient has mild symptoms so Paxlovid or other early therapies won't help
- Drug-drug interactions make it impossible for my patient for my patient to get early therapy
- Paxlovid is easy to get after I prescribe it



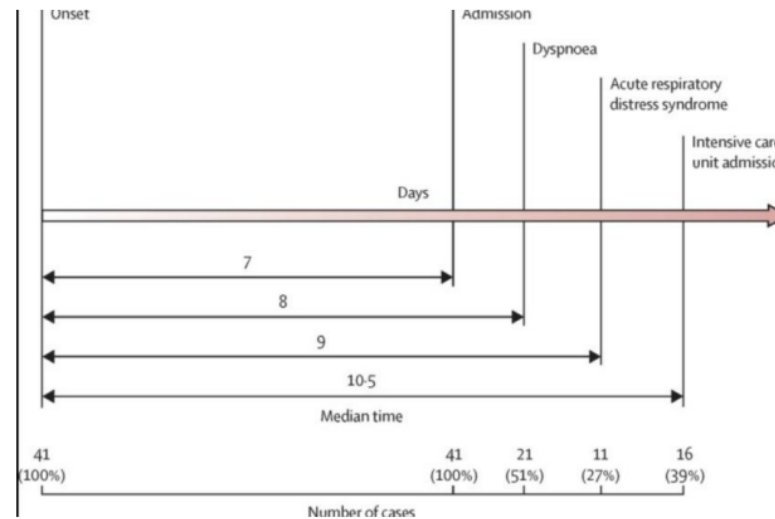
Monarch PA et al, MMWR, 2024, 73(3)

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Hospitalizations 7-8 days after onset symptoms



Huang C et al, 2020, Lancet 395 (10223)

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Influenza Vaccine Effectiveness

- Analysis of data from four vaccine effectiveness (VE) networks estimated:
 - Interim pediatric influenza VE was 59%–67% in outpatient settings and 52%–61% against influenza-associated hospitalization.
 - Interim adult influenza VE was 33%–49% in outpatient settings and 41%–44% against influenza-associated hospitalization. [Interim Estimates of 2023–24 Seasonal Influenza Vaccine Effectiveness — United States | MMWR \(cdc.gov\)](#)
- Using timely surveillance data from mandatory influenza laboratory surveillance and the immunization registry in California, investigators estimated that VE for laboratory-confirmed influenza during October 2023–January 2024 was 45%.
 - VE was highest among persons aged <18 years (56%) and declined with age to 30% among adults aged ≥65 years. [Interim Influenza Vaccine Effectiveness Against Laboratory-Confirmed Influenza — California, October 2023–January 2024 | MMWR \(cdc.gov\)](#)

Updated COVID-19 Vaccine Effectiveness

- Vaccination provides protection against JN.1 and other circulating lineages.
- Receipt of updated COVID-19 vaccine provided approximately 54% increased protection against symptomatic SARS-CoV-2 infection compared with no receipt of updated vaccine. [Early Estimates of Updated 2023–2024 \(Monovalent XBB.1.5\) COVID-19 Vaccine Effectiveness | MMWR \(cdc.gov\)](#)
- VE against COVID-19–associated emergency department and urgent care encounters was 51% during the first 7–59 days after an updated dose and 39% during the 60–119 days after an updated dose. VE estimates against COVID-19–associated hospitalization from two CDC VE networks were 52% and 43% with a median interval from updated dose of 42 and 47 days, respectively. [VISION and IVY MMWR](#)