

Vaccine Preventable Diseases Epidemiology in MA – Get Back on Track

Massachusetts Adult Immunization Conference
April 4, 2023

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150 YEARS
OF ADVANCING
**PUBLIC
HEALTH**

Disclosure

We, Marija Popstefanija & Trisha Barungi, have been asked to disclose any relevant financial relationships with ACCME-defined commercial entities that are either providing financial support for this program or whose products or services are mentioned during this presentation.

We have no relevant financial relationships to disclose.

We may discuss the use of vaccines in a manner not approved by the U.S. Food and Drug Administration, but in accordance with ACIP recommendations.

Agenda

Vaccine Preventable Diseases – Get Back on Track

Resources

- NEW Web-based Bureau Reporting Forms (BRFs)
- Dashboards: COVID, Influenza, Mpox, Wastewater

Quick review

- Polio
- Hepatitis B
- Mpox

Morbidity and Trends

- Measles
- Mumps
- Influenza
- Respiratory illnesses



<https://www.mass.gov/influenza> and <https://www.mass.gov/flu-facts>

Information Series for Adults

Vaccines

Know what you need

Vaccines prevent diseases that can be very serious. All adults need vaccines to help protect themselves and others. The vaccines recommended for you are based on your age, health condition, job, lifestyle, or travel habits.

Talk to your healthcare professional about which vaccines are right for you!

Vaccines you may need based on your age:



Bureau Reporting Forms (BRF's)

Cases – Infectious Disease Case Report Forms No More FAXING!

- COVID-19
- Varicella
- Hepatitis B Infected Pregnant Woman
- Hepatitis B Maternal/Infant Birth
- Tuberculosis**
- Gonorrhea

Clusters – Infectious Disease Clusters Report Forms No More FAXING!

- COVID-19
- GI Illness Clusters
- Influenza
- Gonorrhea
- Varicella

**Use this form to report any positive test for TB (IGRA or TST) or to report any individual suspected of having active pulmonary or extra-pulmonary TB.

<https://madss.casetivity.com/pages/CaseReportForms>

Varicella (Chickenpox)

Do not report shingles to the Massachusetts Department of Public Health. It is not a reportable disease.

PATIENT INFORMATION

Last Name * First Name *

State * Address * City * Zip *

None selected None selected


DEMOGRAPHIC INFORMATION

Influenza/Respiratory Illness Facility Cluster Reporting Form

A respiratory illness cluster is defined as one positive influenza test or 3 or more clients/students with influenza-like illness (ILI*). Submit one form per cluster at your facility. A new form should only be submitted if there is a new cluster and it has been greater than 14 days since your last case. (*ILI is defined as: Fever of $\geq 100^{\circ}\text{F}$ and cough and/or sore throat.).

Facility Information

Report Date * Facility Name *

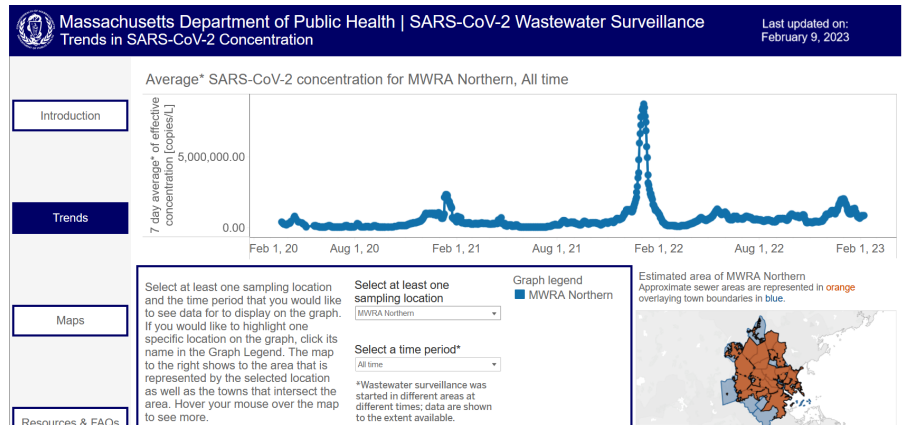
MM/DD/YYYY 

Dashboards/Data Reporting

4 Dashboards – COVID-19, Influenza Mpox and Wastewater

Dashboards/Data Reporting

- COVID - <https://www.mass.gov/info-details/covid-19-response-reporting>
- Influenza - <https://www.mass.gov/info-details/weekly-flu-report>
- Mpox - <https://www.mass.gov/info-details/mpox-data-reporting>
- Wastewater - <https://www.mass.gov/info-details/covid-19-wastewater-report>



Mpox Data Reporting

Cumulative reports on mpox (formerly called monkeypox) cases and people vaccinated in Massachusetts.

TABLE OF CONTENTS

- ✓ Massachusetts mpox cases and people vaccinated
- ✓ CDC U.S. map and case count
- ✓ Related

COVID-19 Interactive Data Dashboard

Updated every Thursday by 5 p.m.

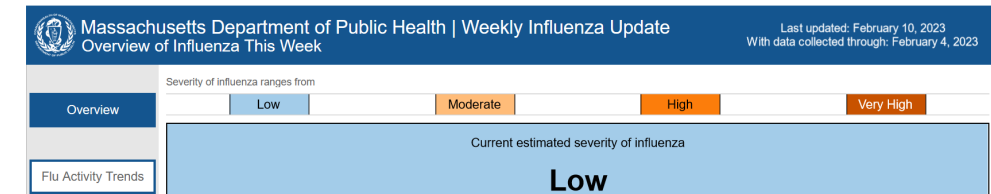
| Massachusetts Department of Public Health COVID-19 Dashboard Data at a Glance | | | | |
|---|--|---|--|---|
| Released on: February 9, 2023 Data as of: February 8, 2023 Caution: recent data may be incomplete | | | | |
| Navigation | Cases | Testing | Hospitalizations | Deaths |
| Data Overview | Confirmed Cases There were 4,591 new, confirmed cases reported during the past 7 days bringing the total to 2,010,024 total confirmed cases. | Tests Reported There were 64,082 new COVID-19 molecular tests reported during the past 7 days, bringing the cumulative total to 49,396,491 tests. | Hospitalizations On February 7, 2023, there were 189 patients primarily hospitalized for COVID-19 related illness and 691 total patients hospitalized with COVID-19. | Confirmed Deaths There were 92 new, confirmed deaths reported during the past 7 days. There have been 22,030 confirmed deaths in total. |
| Overview Trends | Probable Cases There were 975 new, probable cases reported in the past 7 days bringing the total to 196,288 total probable cases. | Percent Positivity The 7-day average of percent positivity is 7.65%. | ICU & Intubated Patients There were 77 patients in Intensive Care Units (ICU) and 25 patients were intubated. | Probable Deaths There were 38 new, probable deaths reported during the past 7 days. There have been 1,871 probable deaths in total. |
| COVID-19 Cases | | | | |
| COVID-19 Testing | | | | |
| Hospitalizations | | | | |
| COVID-19 Deaths | | | | |
| Long Term Care | | | | |

Weekly Flu Report

Massachusetts Department of Public Health weekly influenza update

Interactive data dashboard

Updated every Friday by 5 p.m.



Vaccine-Preventable Diseases in Massachusetts*, 2013-2023**

***Data are current as of 2/21/23 and are subject to change.*

| Disease | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|
| Measles | 1 | 8 | 0 | 1 | 0 | 2 | 3 | 1 | 0 | 0 | 0 |
| Mumps | 71 | 5 | 6 | 258 | 192 | 44 | 64 | 19 | 2 | 10 | 0 |
| Rubella | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Meningococcal Disease | 11 | 11 | 12 | 11 | 10 | 21 | 15 | 10 | 9 | 13 | 1 |
| Pertussis | 348 | 298 | 253 | 198 | 383 | 262 | 287 | 42 | 5 | 5 | 2 |
| Diphtheria | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pneumococcal Disease < 5 | 24 | 27 | 20 | 31 | 21 | 26 | 23 | 14 | 19 | 30 | 3 |
| Hib < 5 | 1 | 1 | 0 | 1 | 2 | 1 | 0 | 0 | 0 | 1 | 0 |
| Varicella | 474 | 469 | 356 | 289 | 380 | 293 | 299 | 93 | 99 | 102 | 17 |
| Tetanus | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 |
| Polio | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hepatitis A | 46 | 42 | 35 | 64 | 53 | 373 | 193 | 32 | 18 | 27 | *** |
| Hep B (acute) | 41 | 36 | 34 | 32 | 52 | 48 | 37 | 16 | 14 | 21 | *** |

*Both confirmed and probable cases are reported for measles, mumps, rubella, tetanus and varicella to better reflect the true burden of disease. All other diseases include confirmed cases only. ***Preliminary data are not available for 2023 YTD.

Control of VPDs is a Collaboration

Local Boards of Health – School Nurses – Childcare – Hospitals – Providers – Labs

Vaccinate! Get vaccinated!

Report suspected and confirmed cases of VPDs!

- Notify patient of diagnosis/suspected diagnosis
- Provide key information to the LBOH to complete the official “Case Report” per 105 CMR 300.000

Control measures:

- Isolate patient if still infectious
- Educate patient about protecting their family and close contacts
- Inform patient that the LBOH/MDPH may be calling
- Assist with notification and PEP
- Exclude susceptible individuals (staff, students, etc.)

COMMUNICABLE AND OTHER INFECTIOUS DISEASES REPORTABLE IN MASSACHUSETTS BY HEALTHCARE PROVIDERS*

*Reportable infectious diseases and conditions are not limited to those designated below. This list includes only those which are primarily reportable by clinicians. A full list of reportable diseases in Massachusetts is detailed in 105 CMR 300.100.

REPORT IMMEDIATELY BY PHONE!
This includes both suspected and confirmed cases.
All cases should be reported to your local board of health;
if unavailable, call the Massachusetts Department of Public Health:
Telephone: (617) 983-6800 Confidential Fax: (617) 983-6813

REPORT PROMPTLY (WITHIN 24 HOURS)
This includes suspected and confirmed cases.
Isolates should be submitted to the State Public Health Laboratory

Reportable Diseases:

- Anthrax
- Any case of an unusual illness thought to have public health implications
- Any cluster/outbreak of illness, including but not limited to foodborne illness
- Botulism
- Brucellosis
- Cholera
- Chikungunya virus
- Creutzfeldt-Jakob disease (CJD) and variant CJD
- Diphtheria
- Encephalitis, any cause
- Hemolytic uremic syndrome
- Foodborne illness due to toxins (including mushroom toxins, ciguatera toxins, scombrototoxin, tetrodotoxin, paralytic shellfish toxin and amnesic shellfish toxin, staphylococcus enterotoxin and others)
- Hansen's disease (leprosy)
- Hemolytic uremic syndrome
- Hepatitis A (IgM+ only)
- Hepatitis B in pregnant women
- Hepatitis syndrome, acute possibly infectious
- Influenza, pediatric deaths (<18 years old)
- Infection due to novel influenza A viruses
- Jamestown Canyon virus
- Lymphocytic choriomeningitis
- Malaria
- Measles
- Meningitis, bacterial, community acquired
- Meningitis, viral (aseptic), and other infectious (non-bacterial)
- Meningococcal disease, invasive (*Neisseria meningitidis*)
- Mumps
- Pertussis
- Plague
- Polio
- Powassan
- Pox virus infections in humans, including variola (smallpox), monkeypox, vaccinia, and other orthopox or parapox viruses
- Rabies in humans
- Respiratory infection thought to be due to any novel coronavirus including SARS and MERS
- Reye syndrome
- Rickettsialpox
- Rocky Mountain spotted fever
- Rubella
- Tetanus
- Toxic shock syndrome
- Trichinosis
- Tuberculosis
- Evidence of tuberculosis infection
- Tularemia
- Typhoid fever
- Typhus
- Varicella (chickenpox)
- Viral hemorrhagic fevers

Animal bites should be reported immediately to the designated local authority.

Important Note: MDPH, its authorized agents, and local boards of health have the authority to collect pertinent information on all reportable diseases, including those not listed on this page, as part of epidemiological investigations (M.G.L. c. 111, s. 7).

105 CMR 300.000 Reportable Diseases, Surveillance, and Isolation and Quarantine Requirements. Effective January 2017. Page 1 of 2

List of Reportable Diseases

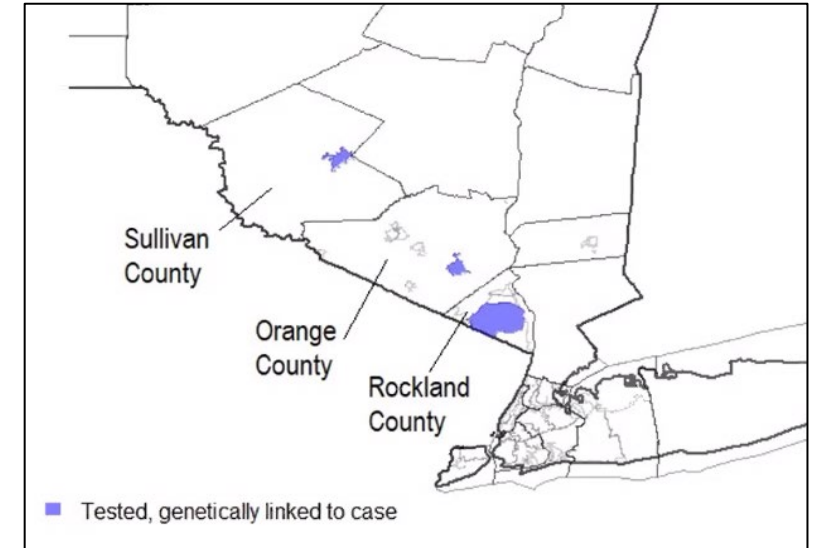


Massachusetts Department of Public Health

POLIO

Polio Update

- On July 18, 2022, CDC was notified about a case of polio, in New York state in an unvaccinated patient who presented to an emergency room with lower limb weakness with fever.
- Vaccine-derived poliovirus (VDPV) type 2 was isolated from the patient and identified from wastewater samples in two neighboring New York counties.
- The NY State Health Department and CDC are working to assess any potential risk, put in place prevention measures like vaccination clinics, and test for poliovirus in wastewater samples.
- This is the second identification of community transmission of poliovirus in the United States since 1979; the previous instance, in 2005, was a type 1 VDPV.



More details can be found at [Polio Vaccination: What Everyone Should Know | CDC](#) and [Polio Vaccination: For Healthcare Providers | CDC](#)

MMWR released August 16, 2022, [Public Health Response to a Case of Paralytic Poliomyelitis in an Unvaccinated Person and Detection of Poliovirus in Wastewater — New York, June–August 2022](#)

MMWR released November 4, 2022 **Wastewater Testing and Detection of Poliovirus Type 2 Genetically Linked to Virus Isolated from a Paralytic Polio Case — New York, March 9–October 11, 2022**
<https://www.cdc.gov/mmwr/volumes/71/wr/mm7144e2.htm>

Polio Update: What Providers Should Do

CDC recommends that **everyone be up to date with polio vaccination** and urges everyone who is not fully vaccinated to complete the polio vaccination series as soon as possible.

- MDPH recommends that providers **proactively review their patients' vaccination records** for patients who are under-vaccinated for polio.
- Most adults in the U.S. were vaccinated as children. However, adults who have never been vaccinated against polio should get 3 doses of IPV. Those partially vaccinated should receive the remaining doses. (See [CDC Catch-up Schedule](#))
- Adults travelling and at increased risk of exposure to polio virus - may administer one lifetime IPV booster.

Call the 24/7 Division of Epidemiology line at 617-983-6800 to report a suspect case.

*Submitting a stool sample is crucial

Polio Update: What Providers Should Do

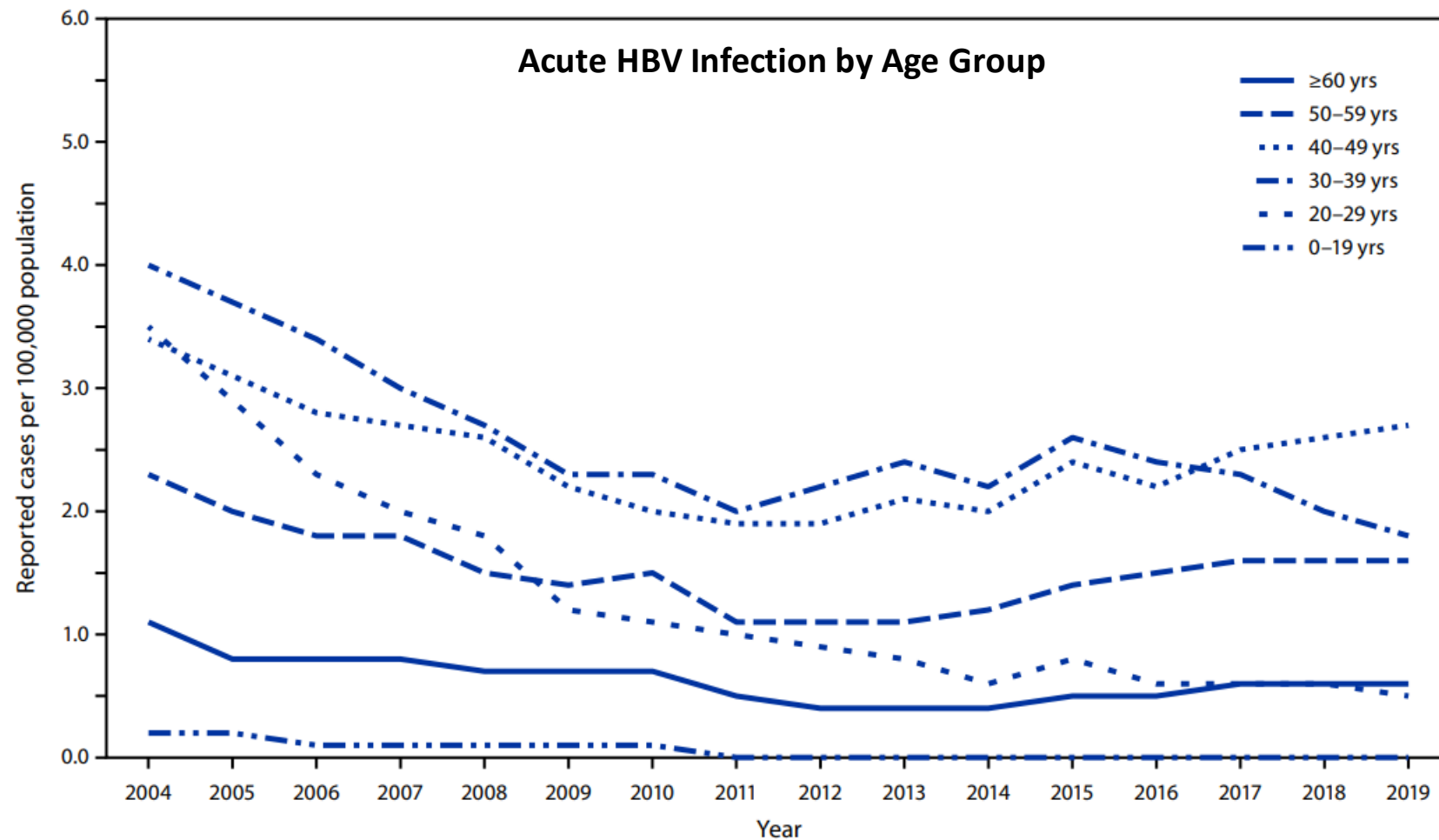
- Make polio vaccine availability for your patients
 - Clinical provider's office who are not routinely using the polio vaccine should reach out to other clinics in their area and collaborate to assure a supply of the vaccine is available.
 - Travel clinics
 - Pharmacies



Massachusetts Department of Public Health

Hepatitis B

Rates of reported acute hepatitis B virus infection, by age group — United States, 2004–2019



SOURCE: <https://www.cdc.gov/mmwr/volumes/71/wr/mm7113a1.htm>

Hepatitis B Vaccination for Adults

Universal Hepatitis B Vaccination in Adults Aged 19–59 Years: Updated Recommendations of the Advisory Committee on Immunization Practices — United States, 2022

Universal adult HepB vaccination through age 59 years removes the need for risk factor screening and disclosure and could increase vaccination coverage and decrease hepatitis B cases.

Rationale:

- HepB vaccination coverage among adults aged ≥ 19 years is low.
- HepB vaccination coverage among adults with risk factors has been suboptimal.
- A universal recommendation for HepB vaccination could increase the number of persons who receive vaccination before the onset of chronic liver disease and other comorbidities (e.g., obesity or diabetes) that might make vaccination less effective.

SOURCE: <https://www.cdc.gov/mmwr/volumes/71/wr/mm7113a1.htm>



Massachusetts Department of Public Health

Mpox

Mpox cases as of 3/30/2023

U.S. Cases

Total Cases

30,286

U.S. Deaths

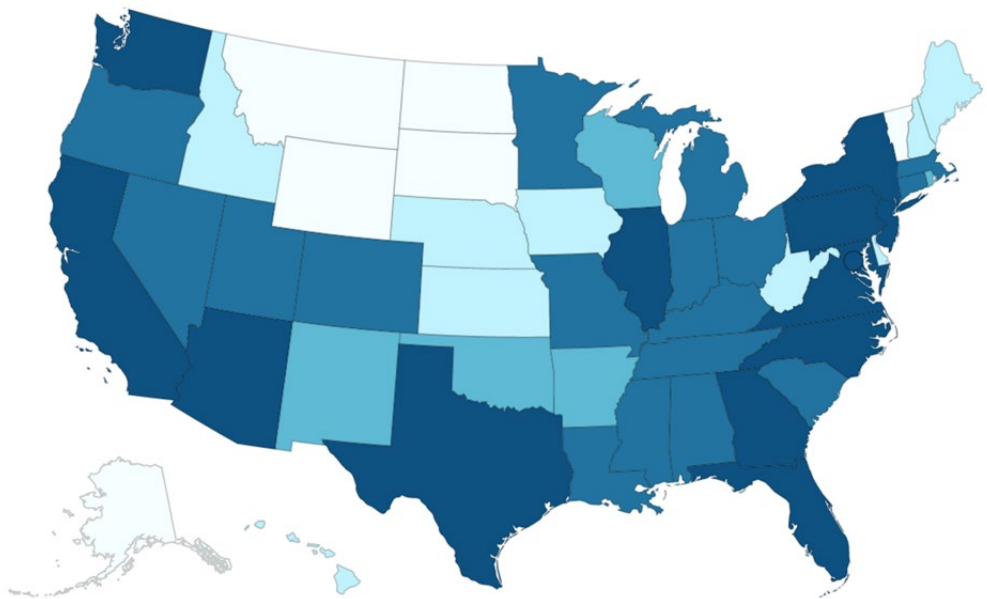
Total Deaths

38

Global Cases

Total Cases

86,500



Massachusetts

460

Legend

1 to 10

51 to 100

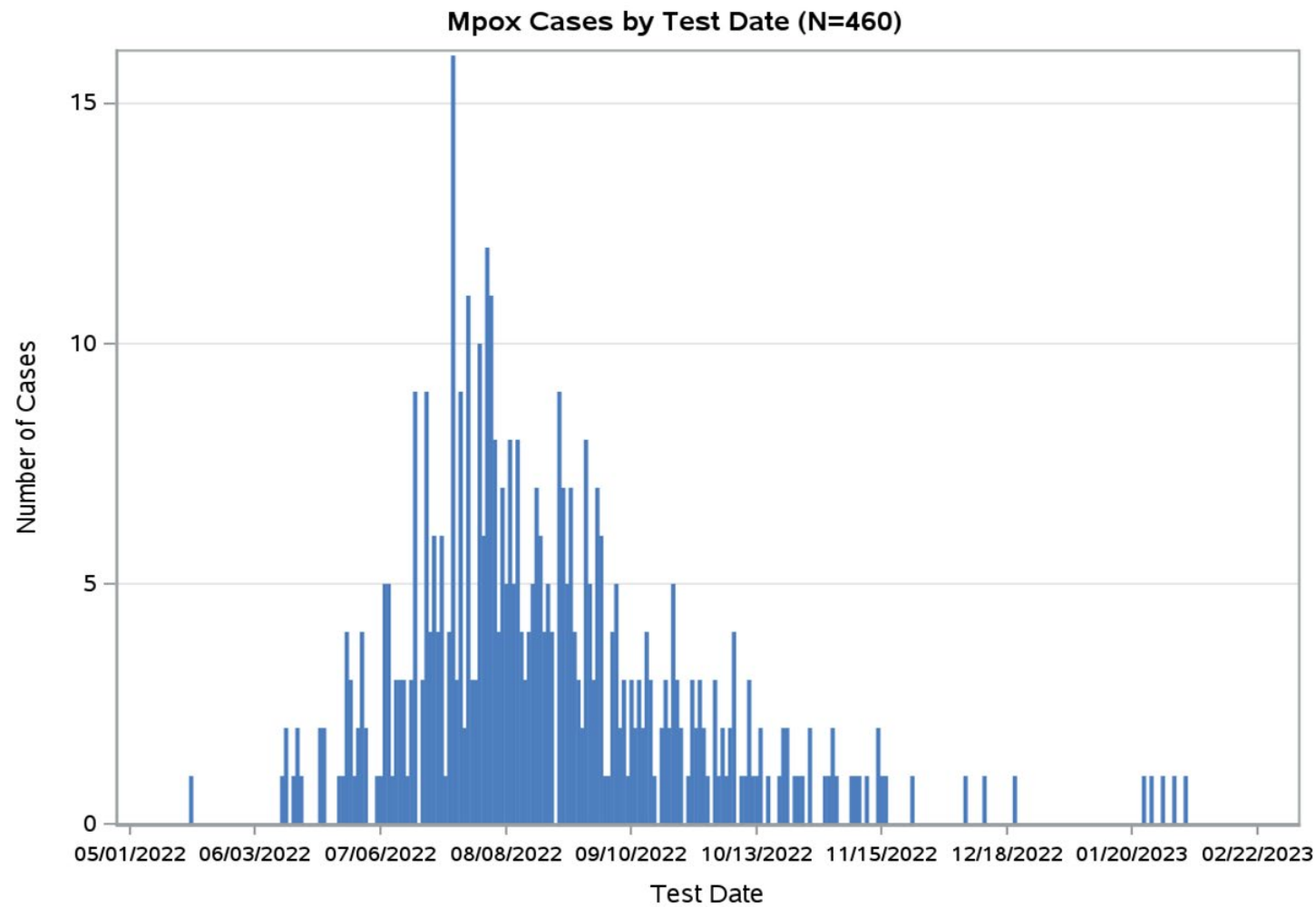
>500

11 to 50

101 to 500

SOURCE: <https://www.cdc.gov/poxvirus/monkeypox/response/2022/us-map.html>

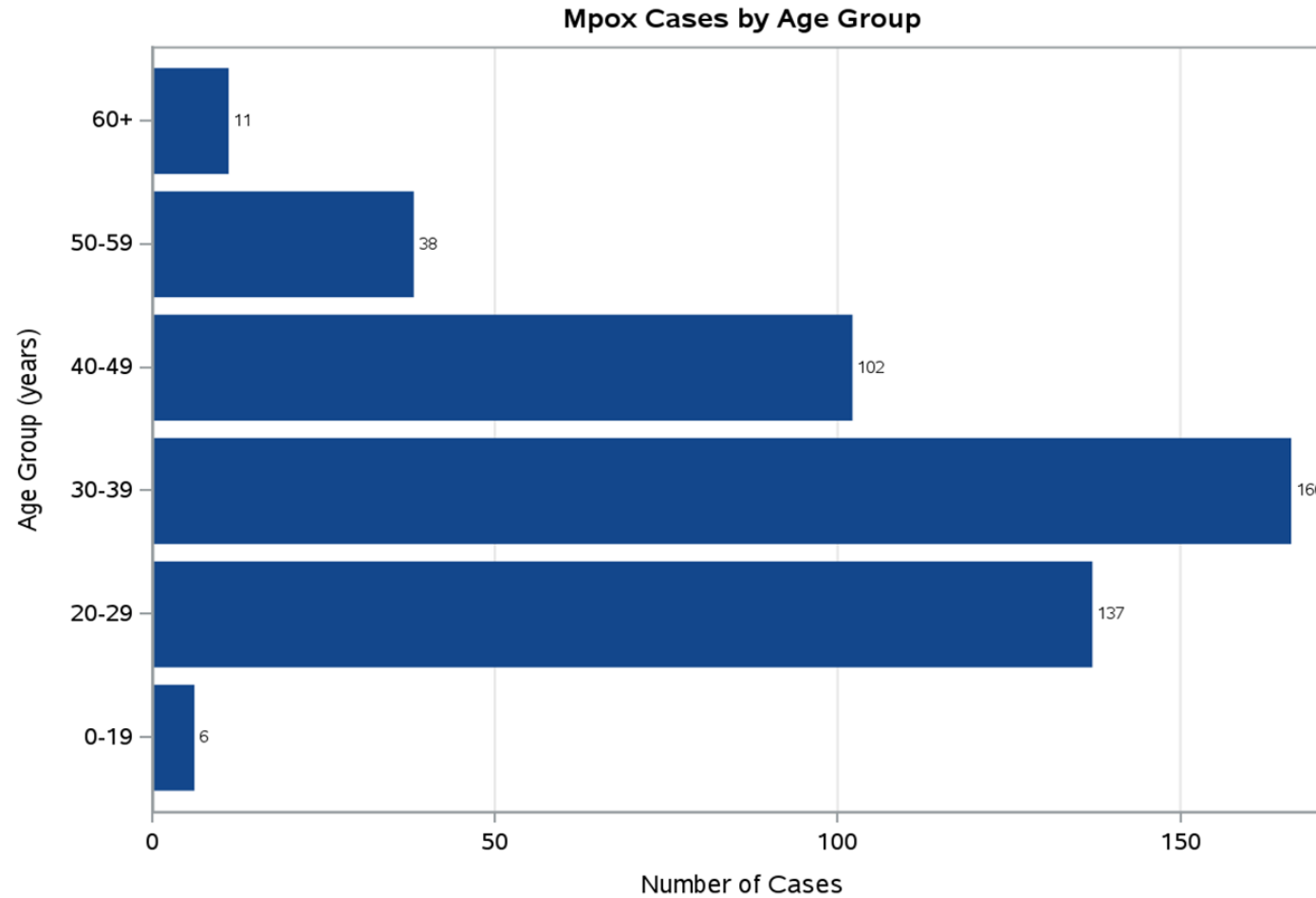
MA Mpox cases as of 3/1/2023



Data as of 03/01/2023 and subject to change.

Source: [CCC structure and update \(mass.gov\)](https://www.mass.gov/mpox)
<https://www.mass.gov/mpox>

MA Mpox cases as of 3/1/2023

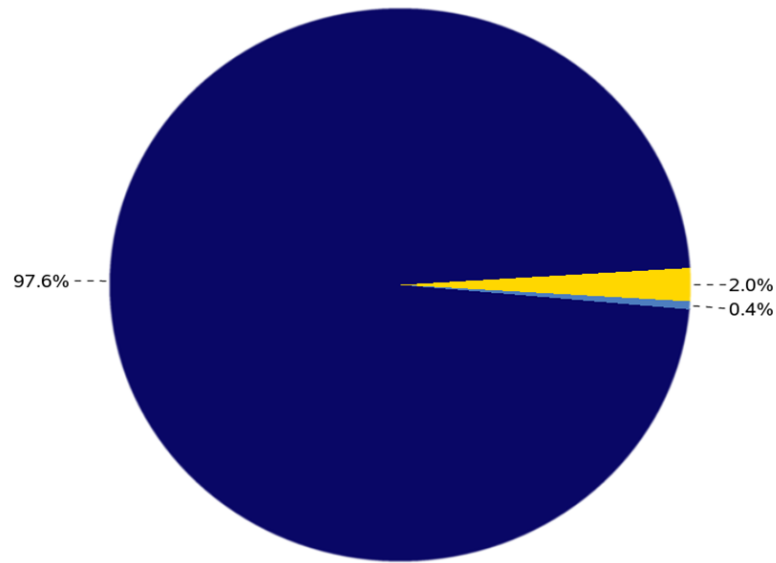


Data as of 03/01/2023 and subject to change.

Source: [CCC structure and update \(mass.gov\)](https://www.mass.gov/info-details/cdc-structure-and-update)

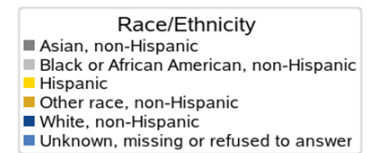
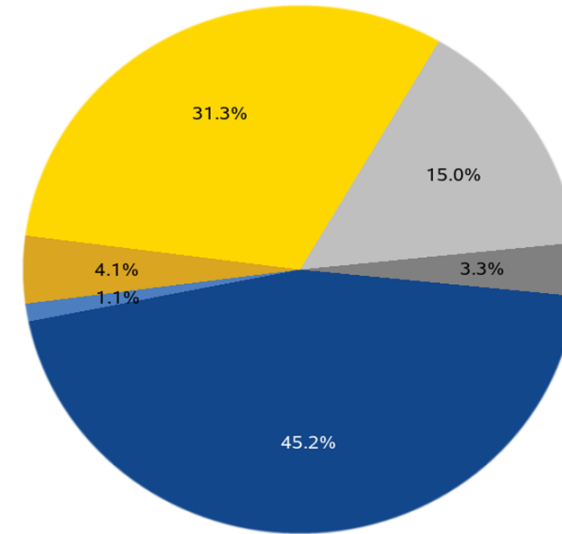
MA Mpox cases as of 3/1/2023

Mpox Cases by Sex



Data as of 03/01/2023 and subject to change.

Mpox Cases by Race/Ethnicity

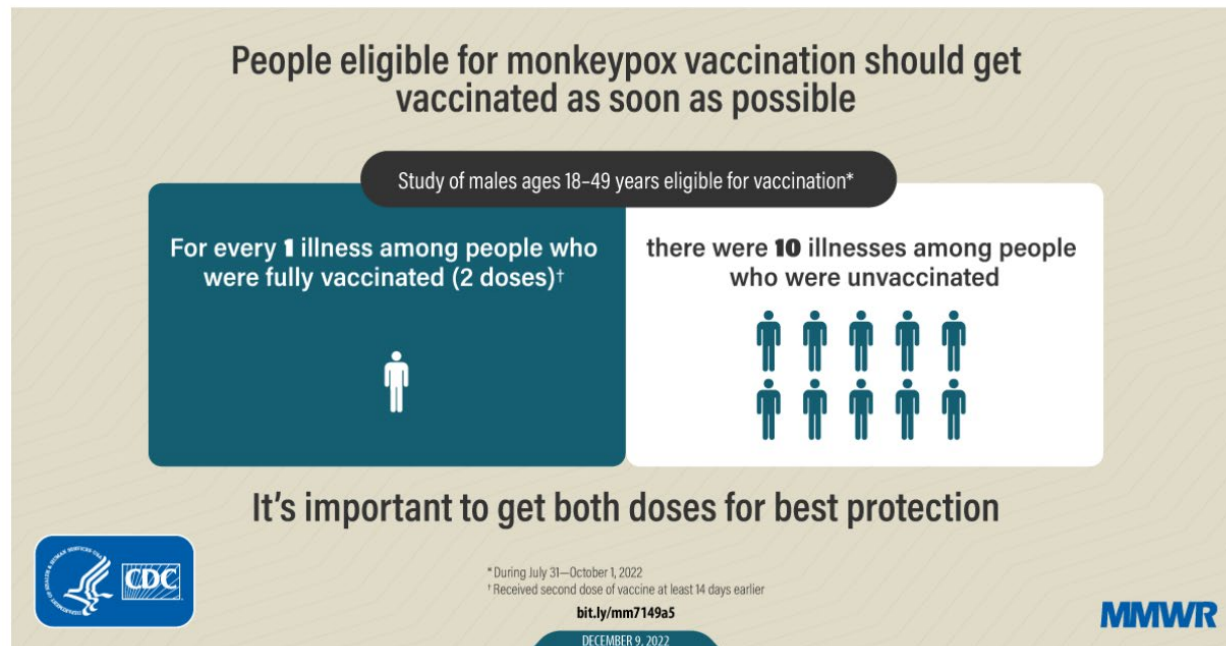


Data as of 03/01/2023 and subject to change

Source: [CCC structure and update \(mass.gov\)](https://www.mass.gov/info-details/covid-19-ccc-structure-and-update)

Mpox Vaccine Administration in the U.S. as of 3/28/2023

1,208,260 Doses administered in the U.S



Reminder:

- Ask your patients about their sexual health and potential risk factors for Mpox
- Vaccinate when appropriate.

Availability of vaccine

As of October 3, 2022, vaccination will be available to individuals who live or work in Massachusetts and meet the CDC's current eligibility criteria, which have recently expanded to include individuals at potential risk for mpox in addition to those with possible recent exposure to an individual with mpox:

Persons eligible for post-exposure vaccination (PEP) includes:

- Known contacts identified by public health via case investigation, contact tracing, and risk exposure assessments (this may include sexual partners, household contacts, and healthcare workers); as well as
- Presumed contacts who meet the following criteria:
 - Know that a sexual partner in the past 14 days was diagnosed with mpox
 - Had multiple sexual partners in the past 14 days in a jurisdiction with known mpox

[Mpox vaccination | Mass.gov](https://www.mass.gov/mpox-vaccination)



Massachusetts Department of Public Health

Measles

Measles in Massachusetts

Total Confirmed Measles Cases and Measles Investigations*

| | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|-----------|------------|------------|-----------|-----------|-----------|------------|-----------|-----------|-----------|
| CONFIRMED MEASLES | 1 | 8 | 0 | 1 | 0 | 2 | 3 | 1 | 0 | 0 |
| Total Suspect Investigations | 63 | 111 | 119 | 62 | 55 | 74 | 196 | 24 | 16 | 17 |

*Data as of 2/1/2023

Note: Imported cases (AKA travelers who may visit MA while infectious) do not reside in MA and therefore are not included in the table above.

- As you can see, most suspect cases for measles are eventually ruled out, however even one case can lead to several hundred exposures and extensive follow-up.

SOURCE: MAVEN Data as of 2/1/2023

Measles in Massachusetts

- As of the recording of this webinar, our last case of measles in MA was in early 2020 (just before our first case of COVID-19 in the start of a global pandemic)...
- And while vaccination rates are high in our state compared to many, we are still vulnerable as domestic and international travel picks up again and vaccine hesitancy grows.

MENU

WEATHER | METRO | SPORTS | BUSINESS | POLITICS | OPINION | HEALTH | RHODE ISLAND

Tourist with measles may have exposed people across Eastern Mass.

By [Kay Lazar](#) Globe Staff, May 12, 2016, 12:12 p.m.

Residents from a wide swath of Massachusetts — from Rockport on the North Shore to Wrentham south of Boston — may have been exposed to measles, state and city health officials announced Thursday.

A tourist from Europe who was ill with the highly infectious disease shopped, rode the subway, and dined out in Boston and Cambridge on May 1, then headed south to Wrentham the next day to hit the outlet shops and eat at Unos Chicago Grill.

FOX25 News

Like This Page · April 28, 2015 ·

MEASLES IN MASS.: The first case of measles has been reported in Mass. Here is a list of possible places where you may have been exposed:
<http://bit.ly/1JyUY5L>

Have you had your vaccine?

Like

Comment

Share

360

Top Comments

W F X T

WEATHER NEWS TRAFFIC SPORTS VIDEO AROUND TOWN FOX25 CARES ABOUT US WATCH LIVE

SIGN IN REGISTER

Measles patient visited several Massachusetts cities

Updated: May 13, 2016 - 5:05 PM

POTENTIAL MEASLES EXPOSURES

- ROCKPORT-MAY 3RD
- CAMBRIDGESIDE GALLERIA-MAY 1ST
- HARVARD SQUARE-MAY 1ST
- BACK BAY-MAY 4TH
- MASS GENERAL HOSPITAL-MAY 5TH
- WRENTHAM VILLAGE OUTLET-MAY 2ND

Romania: health chiefs, Hewlett Packard probed

David Mamet, David Yazbek premieres set for Atlantic Co.

Manchester United fires manager Louis van Gaal

Search Mass.gov

SEARCH

OFFERED BY Department of Public Health

PRESS RELEASE

State health officials alert residents about potential exposure to measles in multiple locations

Those exposed or developing symptoms are urged to contact their healthcare provider

FOR IMMEDIATE RELEASE: 4/01/2019

Department of Public Health

MEDIA CONTACT

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Phone (617) 624-5006

Online Ann.Scales@State.MA.US

BOSTON — The Massachusetts Department of Public Health (DPH) has confirmed that a person was diagnosed with measles in greater Boston on Sunday, March 31, 2019. During the infectious period, the individual went to locations where other people may have been exposed.

"The measles virus is currently causing large national and international outbreaks of measles and a lack of vaccination, combined with domestic and international travel, has resulted in the spread of illness," said Dr. Catherine Brown, Massachusetts State Epidemiologist. "Getting vaccinated is the best way to protect yourself from this disease."


Measles is very contagious. People who are not immune who visited any of the locations on the below specified dates and times may be at risk for developing measles and is advised to contact their health care provider to confirm their immunization status.

Those who have not been immunized or do not know their measles immunization status should get vaccinated with at least one dose of Measles, Mumps, and Rubella (MMR) vaccine. Measles vaccine given within 72 hours of exposure may prevent measles disease, and vaccination beyond this window will provide protection from subsequent exposures. DPH, local health departments and healthcare providers are working to contact individuals at high risk for exposure.

Exposures to this individual may have occurred at the following locations and times:

Measles in the News Recently...

- In 2000, Measles was declared eliminated in the U.S.
- However, almost 1,300 cases of measles were reported in 31 states in the U.S. in 2019—the greatest number since 1992.
 - The 2019 [U.S. measles outbreaks](#) were all linked to travel-related cases that reached at-risk populations (un or under vaccinated against measles) in the United States.
- Recently, Ohio reported the 4th largest measles outbreak since 2000.

 CBS News

[At least 82 children in Ohio infected with measles, more than half of whom are unvaccinated babies and toddlers](#)

Measles is spreading among children in Ohio two months after cases were first detected. As of Thursday morning, there are at least 82 cases...

1 month ago

 BBC

[Ohio reports more measles cases than previous two years combined](#)

An outbreak of measles in the US state of Ohio has infected 82 children so far - the biggest eruption of the disease in the county since...

1 month ago

 The Hill

[More than 80 Ohio children infected in measles outbreak, most unvaccinated](#)

More than 80 children have been infected with measles in central Ohio as an outbreak in the state continues to spread rapidly among the...

1 month ago



CHOP and Penn Researchers Find 1 in 5 Pregnant Women Lack Measles Antibodies

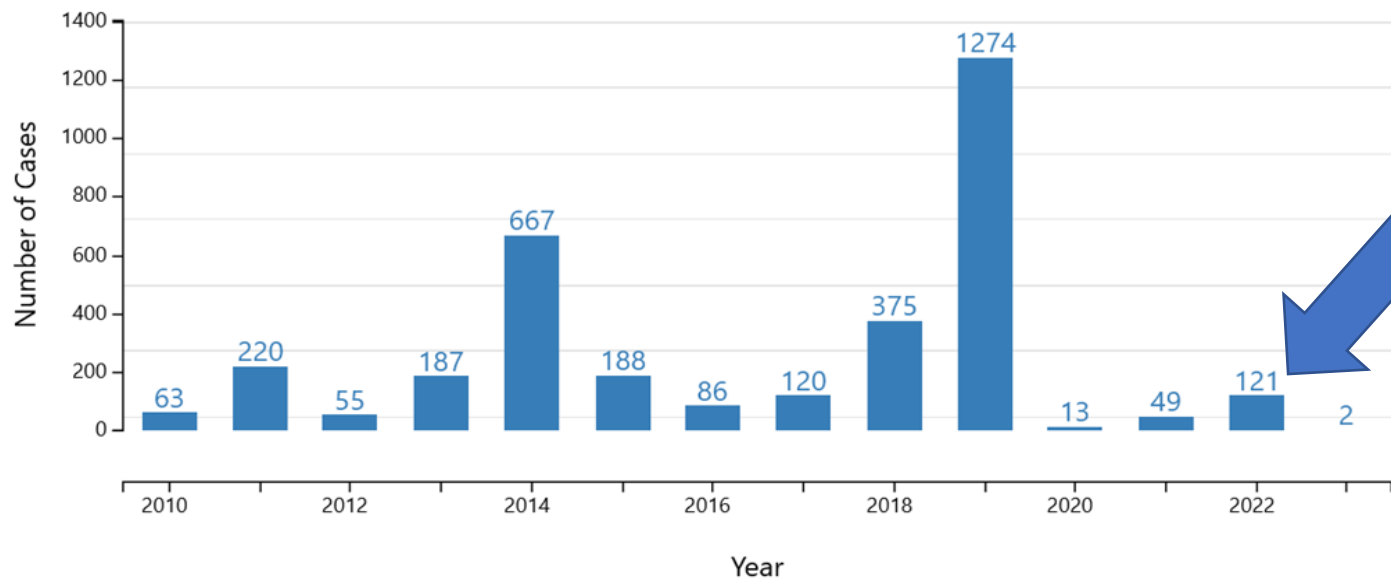
The study analyzed biobank serum samples collected from 550 patients who were admitted to hospitals for childbirth between April and October of 2021.

<https://www.chop.edu/news/chop-and-penn-researchers-find-1-5-pregnant-women-lack-measles-antibodies>

Measles Outbreaks in the U.S.

- In any given year, more measles cases can occur for any of the following reasons:
 - an **increase in the number of travelers who get measles abroad** and bring it into the U.S., and/or
 - further spread of measles in U.S. communities with **pockets of unvaccinated people**.

Number of US Measles Cases Reported by Year
2010-2023* (as of January 27, 2023)

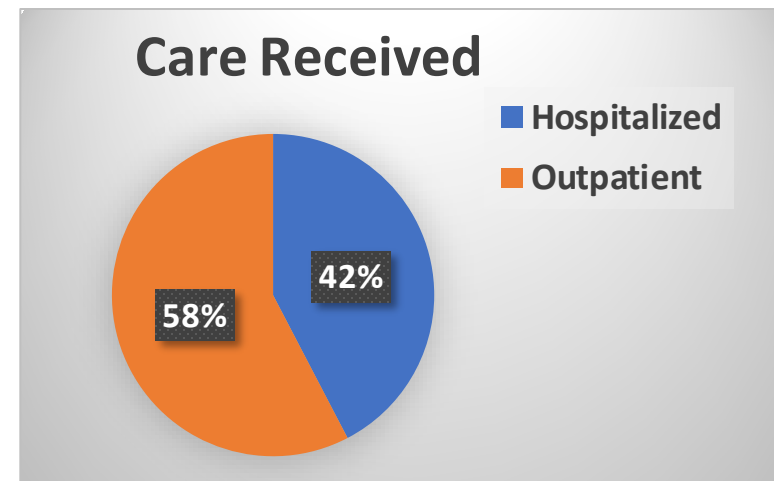
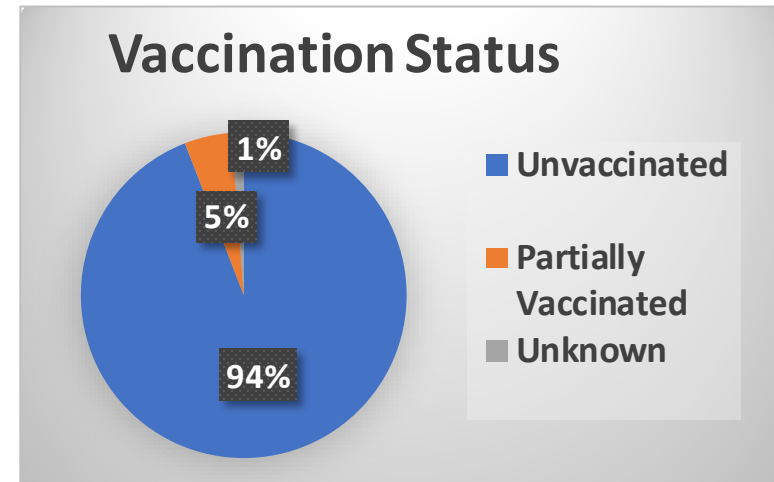


**Majority from
Ohio Outbreak
(2022)**

SOURCE: <https://www.cdc.gov/measles/cases-outbreaks.html>

Measles In Ohio...

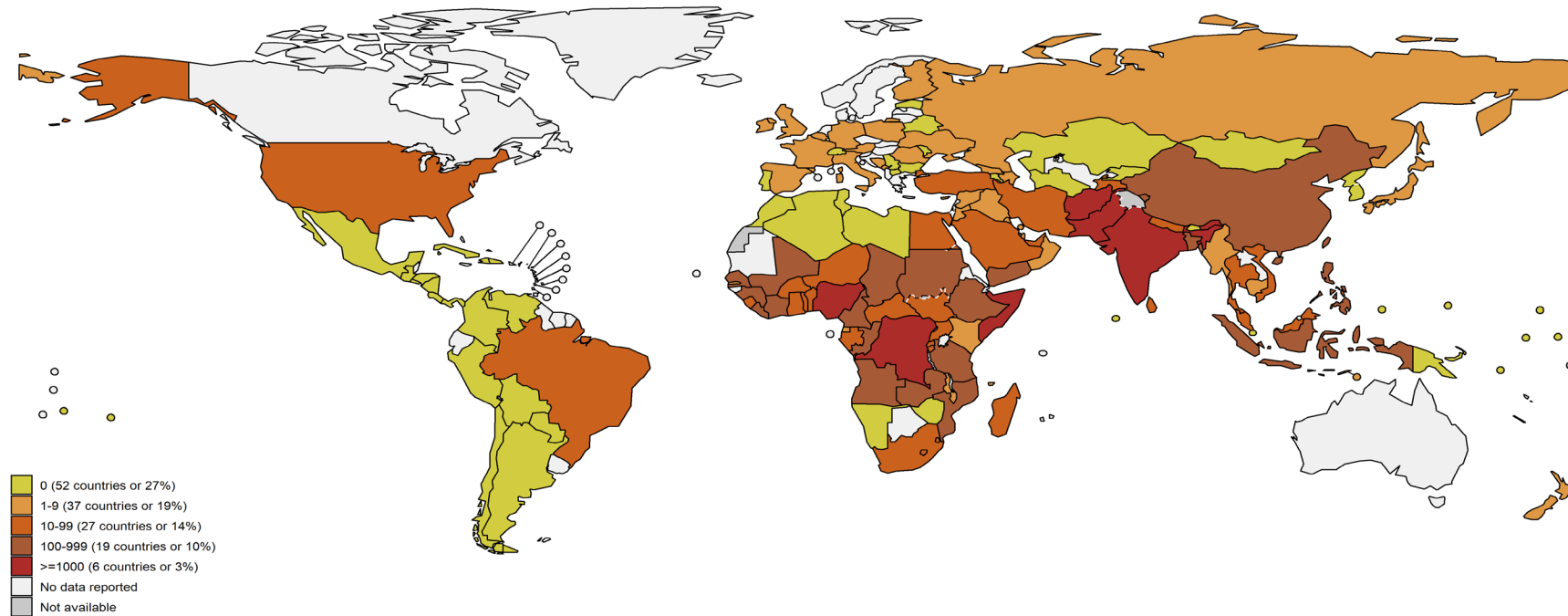
- Takeaways from the Ohio Measles Outbreak (2022-2023) N=85 Cases (as of Jan. 17, 2023)
 - Began with international travel, spread among local community.
 - 94% of cases were unvaccinated
 - Majority (71%) were age eligible
 - Parents reported vaccine hesitancy
 - Notably higher hospitalization rate (42%)
 - U.S. hospitalization Rate typically ~25%
 - Young age of cases and case detection in the hospital setting
- Outbreak [declared over](#) following two incubation periods (42 days) with no new cases (2/5/23).



N=85 Cases as of 2/6/23

[Measles Case Summary: Central Ohio Outbreak](#)

Number of Reported Measles Cases (Last 6 months)



Map production: World Health Organization, 2022. All rights reserved
Data source: IVB Database

Disclaimer: The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

0 875 1750 3500 Kilometers

| Country | Cases* |
|---------------|--------|
| Nigeria | 4,640 |
| India** | 4,246 |
| Somalia | 2,297 |
| Pakistan | 1,935 |
| DR Congo*** | 1,765 |
| Afghanistan | 1,344 |
| Ethiopia | 983 |
| Côte d'Ivoire | 849 |
| Yemen | 638 |
| Mali | 596 |

- Notes: Based on data received 2022-03 - Surveillance data from 2021-08 to 2022-01 - * Countries with highest number of cases for the period - **WHO classifies all suspected measles cases reported from India as measles clinically compatible if a specimen was not collected as per the algorithm for classification of suspected measles in the WHO VPD Surveillance Standards. Thus numbers might be different between what WHO reports and what India reports. - *** DRC typically reports more cases through IDSR

Evidence of Immunity for Measles

1. **VACCINE RECORD:** Documentation of 2 appropriately timed doses of measles containing vaccine; or
2. **LAB TEST:** Serologic evidence of immunity or laboratory evidence of disease; or
3. **AGE:** Birth in the US before 1957 (unless a healthcare worker)
 - Past history of disease is NOT acceptable evidence of immunity without a lab test.
 - Foreign-born individuals (including those born before 1957) should have documentation of immunization or serologic evidence of immunity. Those who are born before 1957 can be assigned a lower priority for follow up.

**Quarantine for Susceptible
Contacts:** Day 5 through Day 21
Following Exposure. (Exposure =
Day 0)

- Not sure if someone was previously vaccinated? There is no harm in giving MMR vaccine to a person who may already be immune to one or more of the vaccine viruses.
- There are currently 2 MMR vaccine products on the market from Merck and GlaxoSmithKline and they are interchangeable.

True Story: Healthcare Exposures!

Health care workers:

- regardless of year of birth, who are not appropriately immunized or do not have laboratory evidence of immunity:
- will be excluded from work from the 5th day after their first exposure through the 21st day after their last exposure.

These restrictions for health care workers and inpatients remain even if the contact received IG or was vaccinated post-exposure.

Case study

- **MA Medical Practice** saw a patient with a rash, suspected measles and sent a lab specimen to a commercial lab (no notification to MDPH) and the results returned positive for measles.
- Multiple providers were exposed, and the office had **NO IDEA if their staff had evidence of immunity**, requiring titers on all staff and closing the office for a day while awaiting results.

Fortunately, all came back immune but remember to have **vaccination documentation or laboratory evidence readily available!**

Questions to Think About for Your Staff

- Do YOU have evidence of your immunity to measles?
 - Your Staff?
 - Could you quickly stand up an MMR vaccine clinic for exposed patients?
- Is it clear who would provide emergency weekend response if you did have a large exposure requiring immediate follow-up?



Measles Testing

- Due to high vaccination rates in MA and the U.S. at large, measles is still relatively rare.
- **SUSPECT** measles cases reported to MDPH will be assessed as based upon:
 - clinical presentation (fever, rash, 3C's-cough, coryza, conjunctivitis)
 - vaccination status of the patient, and additional known risk factors as below:

| Risk factors |
|---|
| <ul style="list-style-type: none">• International traveler• Recent travel to an area with known confirmed cases• Sick contacts• Unvaccinated or vaccinated abroad• Classic symptom presentation |

- Collect NP swab (preferred) and serology samples that can be sent to the state lab

Next Steps for Suspect Measles

- **Call us at 617-983-6800 to discuss and assess risk!**
- Important questions to ask:
 - Vaccination history?
 - Any recent contact with people experiencing similar symptoms?
 - Any recent travel, especially international?
 - Any recent contact with visitors from outside the U.S.?
 - Where did the rash start, what does it look like, and how did it spread?
 - Take some pictures of the rash to share confidentially with medical directors at MDPH.
 - Did patient have a fever, cough, conjunctivitis or coryza?
 - Did your staff have close contact with the patient? What PPE were they using?
 - What type of room was the patient evaluated in?



Next Steps

- Isolation (Cases)
 - Through 4 days after rash onset with onset of rash being day 0
- Quarantine (Contacts)
 - Contacts born in or after 1957¹, who are not appropriately immunized or do not have evidence of immunity, will be excluded from work, classes, or other public activities from the 5th through the 21st day after their exposure

1- This year cutoff is not applicable to HCWs.

1-Foreign born individuals even those born before 1957 must have documentation of immunization, serologic evidence of immunity or lab evidence of disease

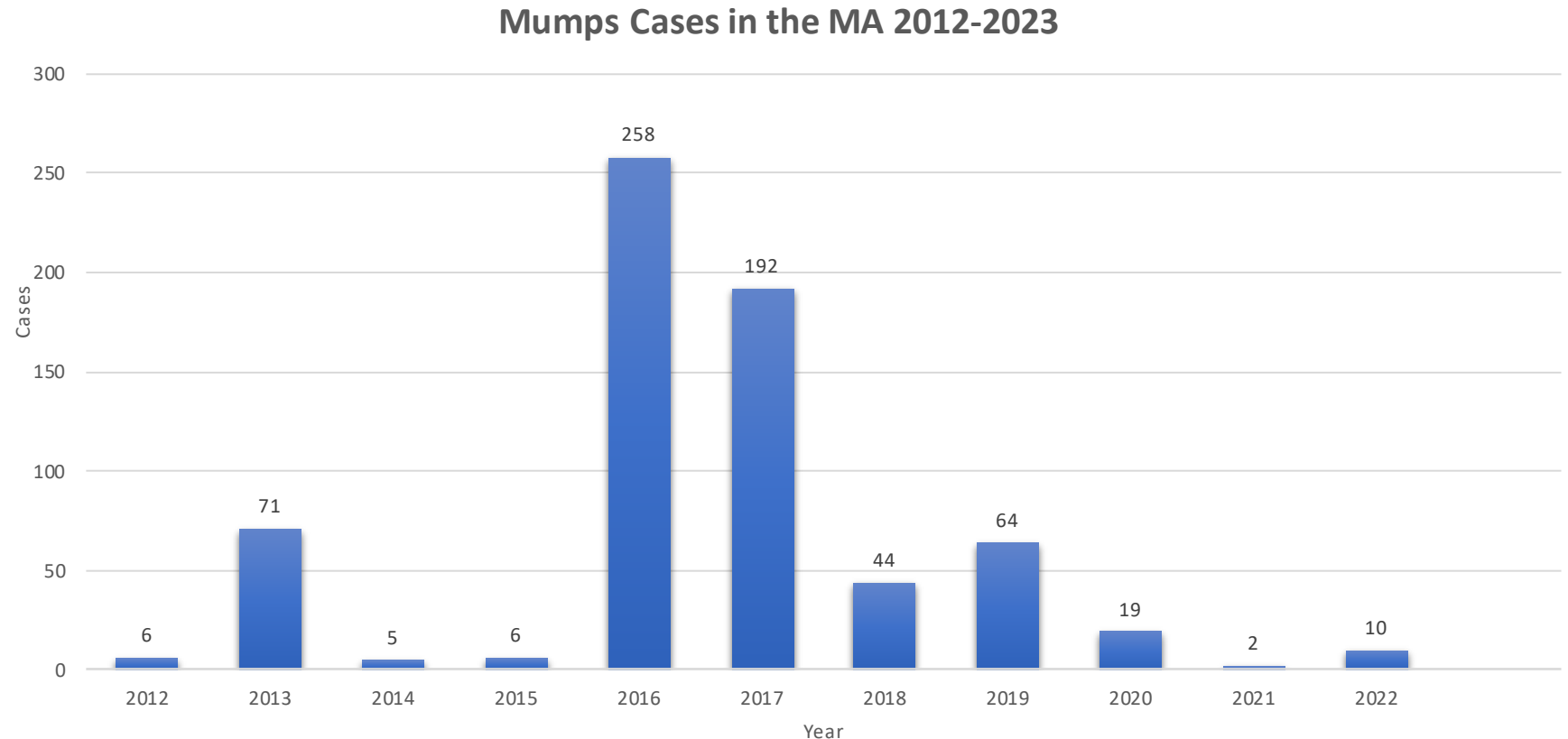


Massachusetts Department of Public Health

Mumps

Mumps in MA

- **51%** of probable / confirmed cases of mumps in MA from 2016-2021 were among college aged adults (18-24 years old)
- **32%** of probable / confirmed cases of mumps in MA from 2016-2021 were vaccinated with their first dose of MMR between 1998-2002.
- No cases in 2023 as of 3/3/23.

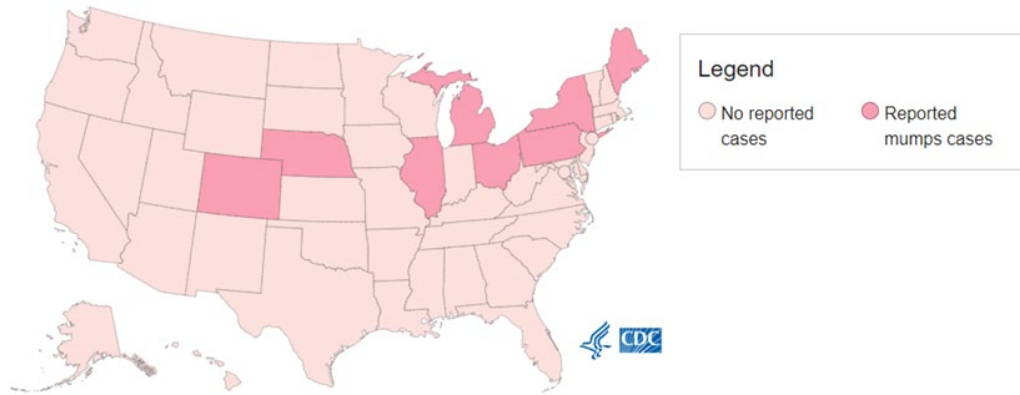


SOURCE: MAVEN Data as of 3/3/23 and are subject to change

Mumps in United States

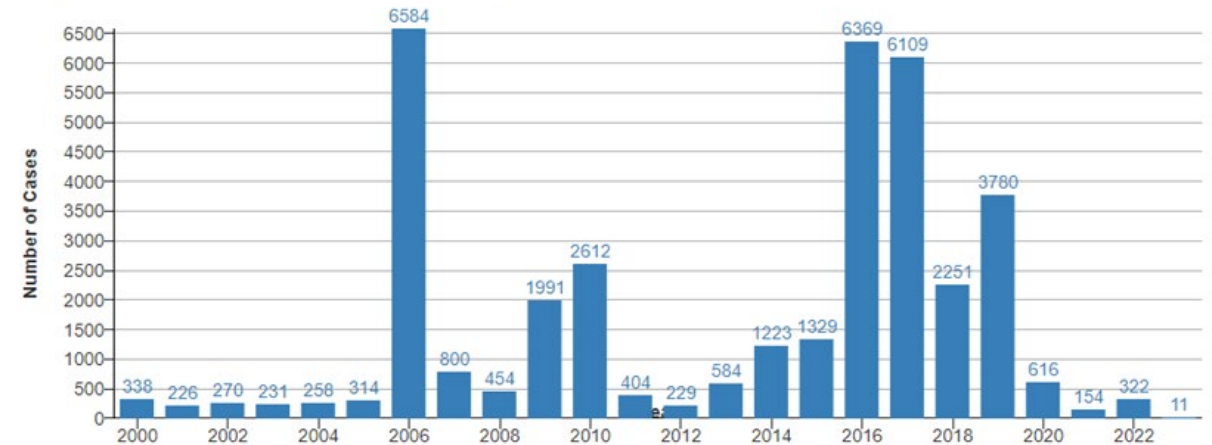
Reported US Mumps Cases by Jurisdiction and Year*

Reported Mumps Cases-2023



*Jurisdictions refer to any of the 50 states, New York City, and the District of Columbia.
**2023 map represents cases reported to CDC as of February 2, 2023; 2022 and 2023 case counts are preliminary and subject to change.

Reported Mumps Cases by Year — United States, 2000-2023**



SOURCE: <http://www.cdc.gov/mumps/outbreaks.html>

Case Study: Suspect Mumps

- On Feb 13, provider at College Health Center calls MDPH to report a suspect case of Mumps:
 - Case is a 21-year-old male college student from Town Z.
 - The patient presented on 2/13 with bilateral parotid swelling (more pronounced on the left side) that began on 2/11.
 - Swelling is tender on both sides.
 - Fever of 101° , fatigue, headache and jaw pain.
 - Returned from a one week trip to a college in another state approximately 2 weeks ago for a soccer tournament where there have been mumps cases.
 - Has 2 MMR doses
- MDPH advises the facility to collect a buccal swab and serum for IgM testing to be sent to MA State Public Health Laboratory (MA SPHL).



Classic Suspect situation based upon recent travel, potential exposure to mumps, classic symptoms.

Mumps Testing

- Due to high vaccination rates in MA and the U.S. at large, mumps cases/outbreaks have occurred but are still relatively rare.
- **SUSPECT** mumps cases reported to MDPH will be assessed as Low or High Suspect based upon:
 - clinical presentation, vaccination status of the patient, and additional known risk factors.

| Risk factors |
|---|
| <ul style="list-style-type: none">• Known contact with a confirmed mumps case• Recent travel to an area with known confirmed cases• Sick contacts• Unvaccinated or vaccinated abroad• Classic symptom presentation• Dense communal living (dorm environment) |



- Reminder to collect and send in a **buccal swab to MA SPHL** for testing! You can also send serum too.
- Providers should add other respiratory viruses to their differential list in addition to mumps

Next Steps for Suspect Mumps

- **Call us at 617-983-6800 (24/7/365) to discuss!**
- Important questions to ask:
 - Vaccination history?
 - Any recent contact with people experiencing similar symptoms?
 - Any recent travel, especially international?
 - Any recent contact with visitors from outside the US?
 - Did patient have a fever or parotitis?

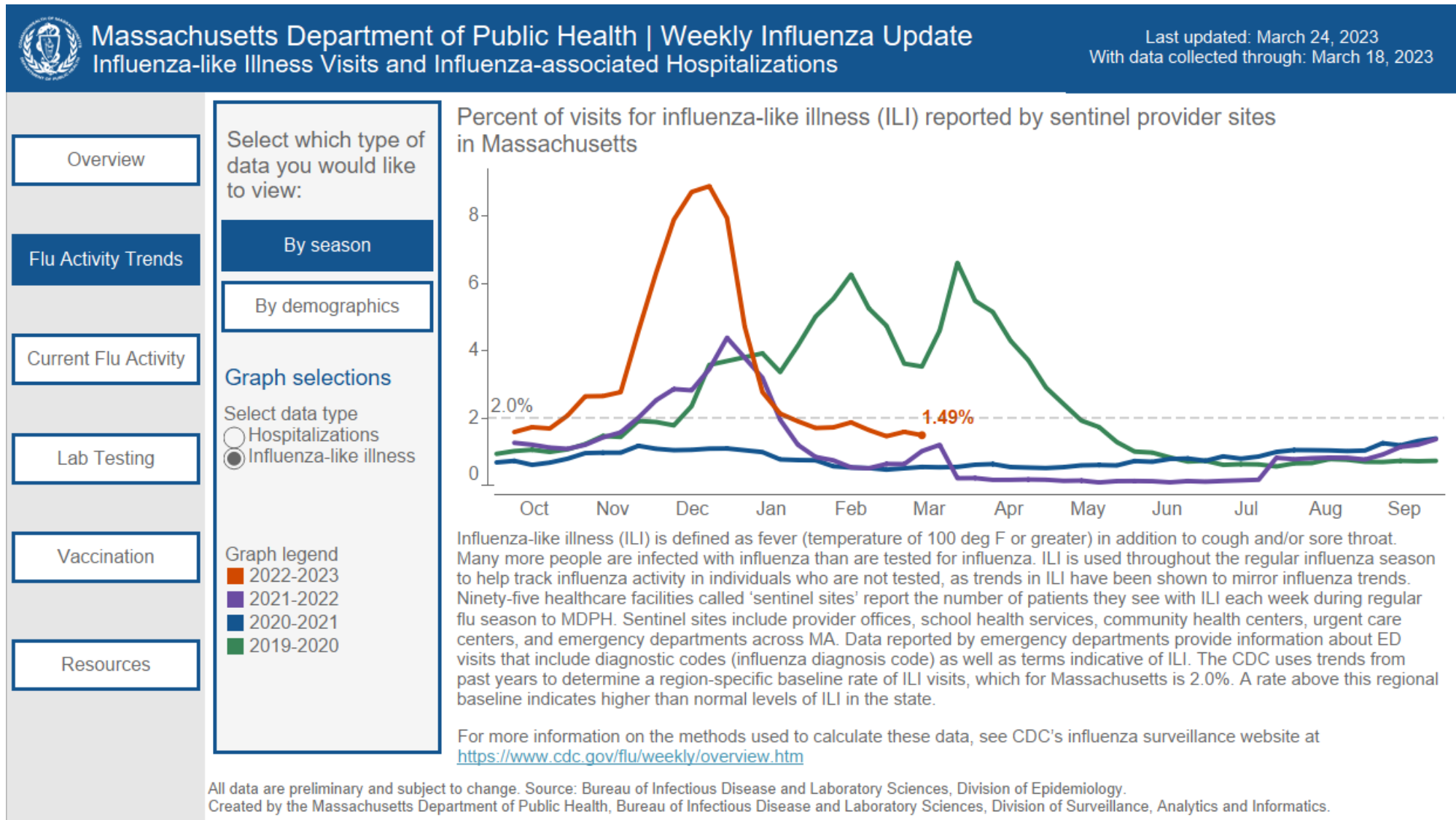
LBOH will also be investigating these cases so providers can remind patients that LBOH will be in contact.



Massachusetts Department of Public Health

Influenza

Influenza-like illness (ILI) in MA 2022-2023



Hospitalizations Associated with Influenza in MA 2022-2023



Massachusetts Department of Public Health | Weekly Influenza Update
Influenza-like Illness Visits and Influenza-associated Hospitalizations

Last updated: March 24, 2023
With data collected through: March 18, 2023

Overview

Flu Activity Trends

Current Flu Activity

Lab Testing

Vaccination

Resources

Select which type of data you would like to view:

By season

By demographics

Graph selections

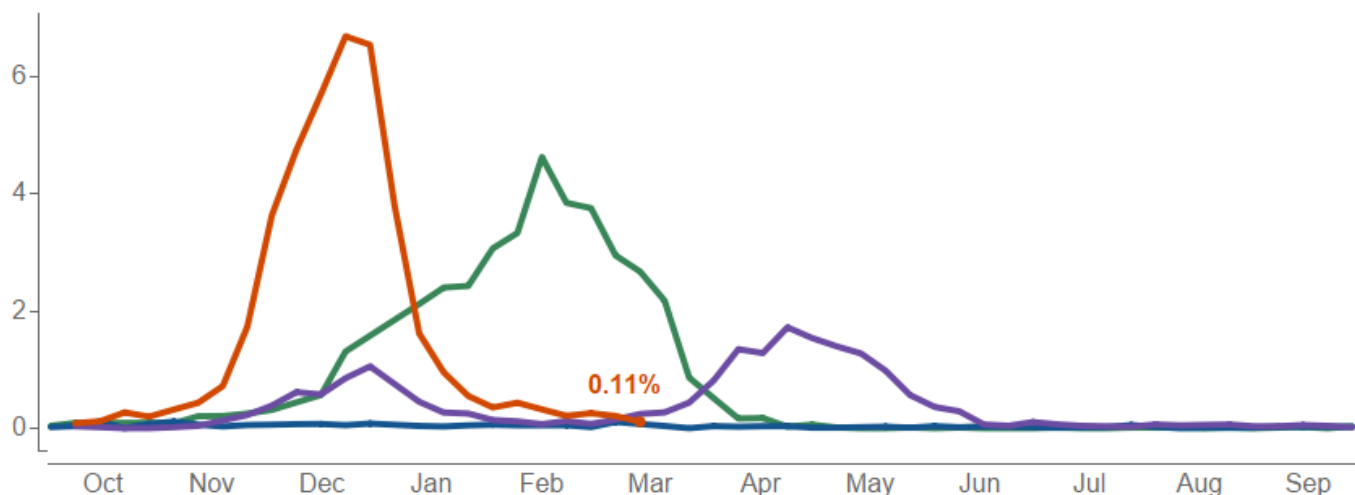
Select data type

- ☒ Hospitalizations
☐ Influenza-like illness

Graph legend

- 2022-2023
■ 2021-2022
■ 2020-2021
■ 2019-2020

Percent of hospitalizations associated with influenza reported by emergency departments in Massachusetts

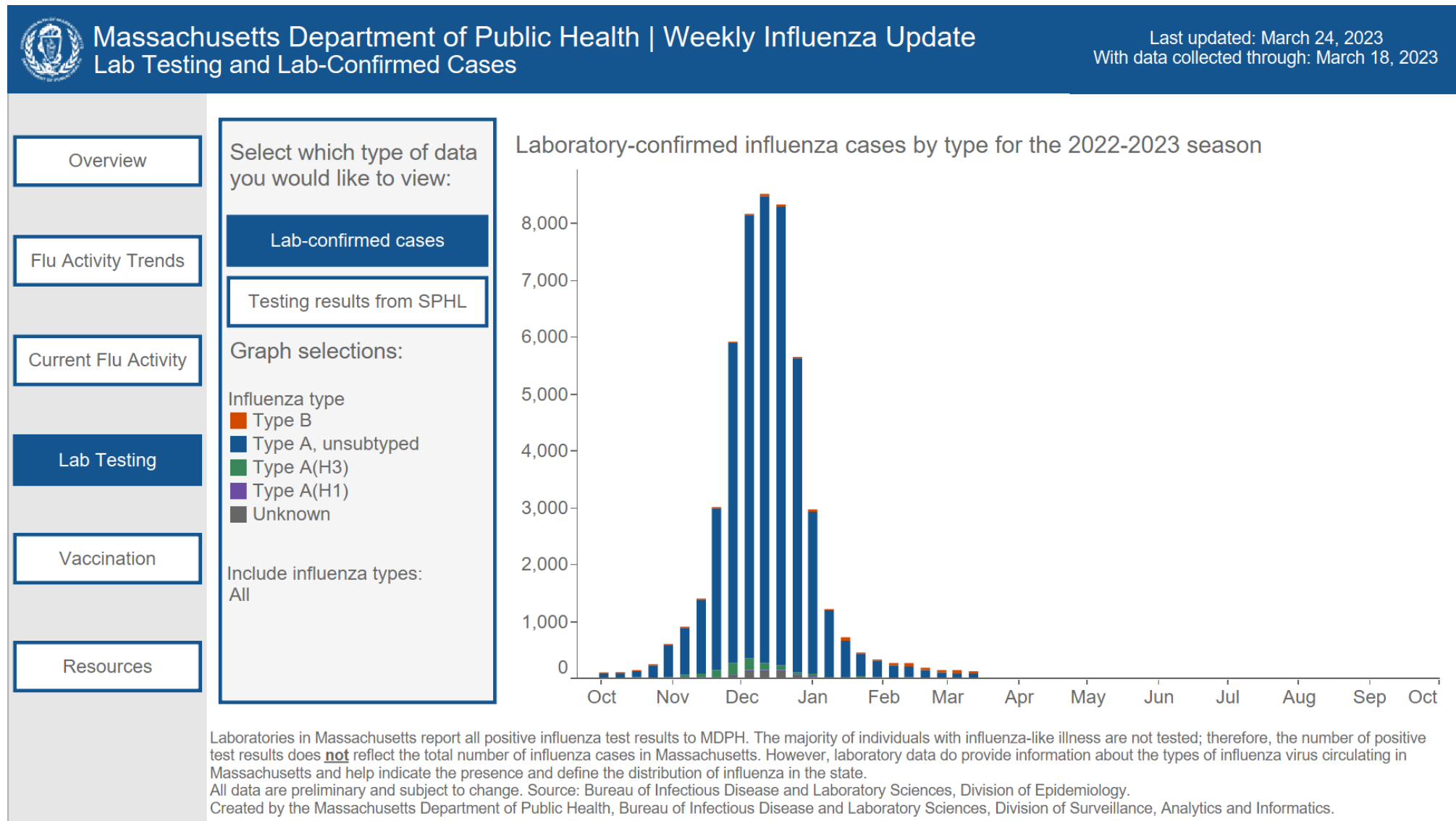


As part of the National Syndromic Surveillance Program, MDPH receives data from Emergency Departments (EDs) covering 100% of ED visits statewide. These data are used to track patient visits related to influenza by monitoring the diagnoses the patients receive (ICD-10 code). These data are available to MDPH in near real-time. This graph shows the percent of all ED visits which result in a patient hospitalized because of illness associated with influenza infection.

For more information on the methods used to calculate these data, see CDC's influenza surveillance website at <https://www.cdc.gov/flu/weekly/overview.htm>

All data are preliminary and subject to change. Source: Bureau of Infectious Disease and Laboratory Sciences, Division of Epidemiology.
Created by the Massachusetts Department of Public Health, Bureau of Infectious Disease and Laboratory Sciences, Division of Surveillance, Analytics and Informatics.

Influenza: Lab Confirmed Cases in MA 2022-2023



Influenza: Vaccination by age group in MA 2022-2023



Massachusetts Department of Public Health | Weekly Influenza Update
Vaccination Data

Last updated: March 24, 2023
With data collected through: March 18, 2023

Overview

Select which type of data
you would like to view:

People currently vaccinated

Progress during this season

Compared with past seasons

Flu Activity Trends

Current Flu Activity

Lab Testing

Vaccination

Resources

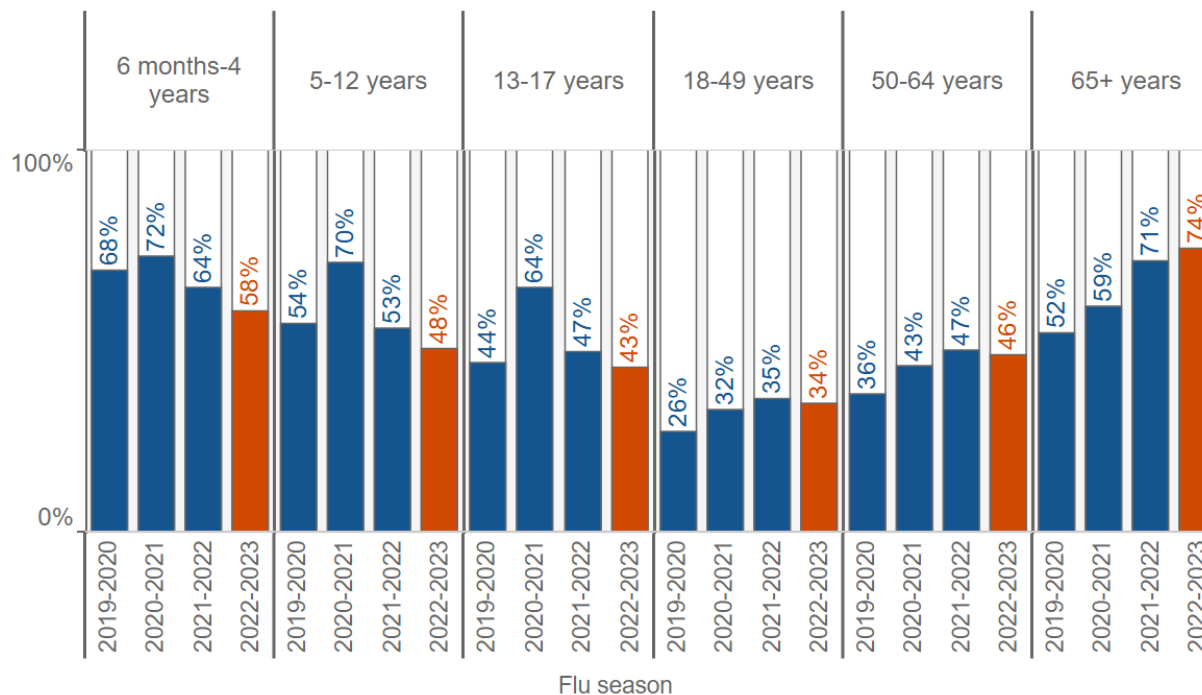
Graph selections:

Show data

- ☒ By age group
- ☐ By race/ethnicity
- ☐ Total statewide

2019-2020
Previous seasons 2020-2021
2021-2022
Current season 2022-2023

Estimated percent of MA residents who have received an influenza vaccine **so far**
during the **this season** compared with **previous seasons**



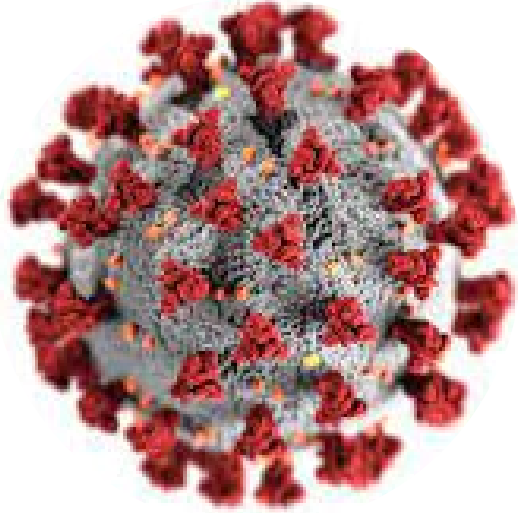
^aNot Hispanic. ^{*}Patients with unknown race or ethnicity are not shown as a group on this graph but are included in the "total" proportion and in the accompanying data file. ^{**}Other race includes multi-race, non-Hispanic. Vaccination coverage is an estimate based on the number of vaccine doses administered and reported and the estimated population of Massachusetts. All data are preliminary and subject to change. Source: Massachusetts Immunization Information System (MIIS), also called an immunization registry, is a confidential, web-based system that collects and stores vaccination records for any vaccine administered in Massachusetts. The data in MIIS is updated frequently, but may not include all vaccination records for Massachusetts residents, such as those who were vaccinated out of state. For more information see the MIIS website at <https://www.mass.gov/service-details/massachusetts-immunization-information-system-miis-overview>. Population data source: UMass Donahue Institute, 2019-2020 estimates. Created by the Massachusetts Department of Public Health, Bureau of Infectious Disease and Laboratory Sciences, Division of Surveillance, Analytics and Informatics.

SOURCE: <https://www.mass.gov/info-details/weekly-flu-report>

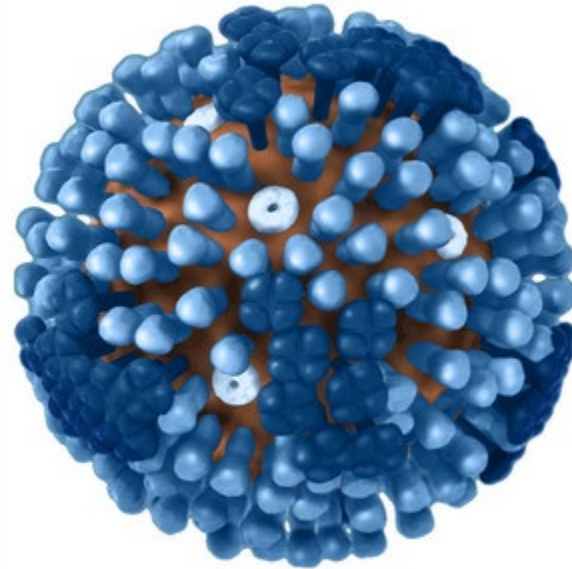
Flu Vaccination Data Takeaways

- Influenza vaccine coverage remains lowest among adults 18-49 years of age
 - Similar trend at the national level
- Prepare for next Fall – How to talk to your patients about receiving influenza and COVID-19 vaccination annually prior to respiratory season
 - As well as other vaccinations they may be due for. (Zoster, Tdap, Pneumococcal, Hepatitis B, Hepatitis A)

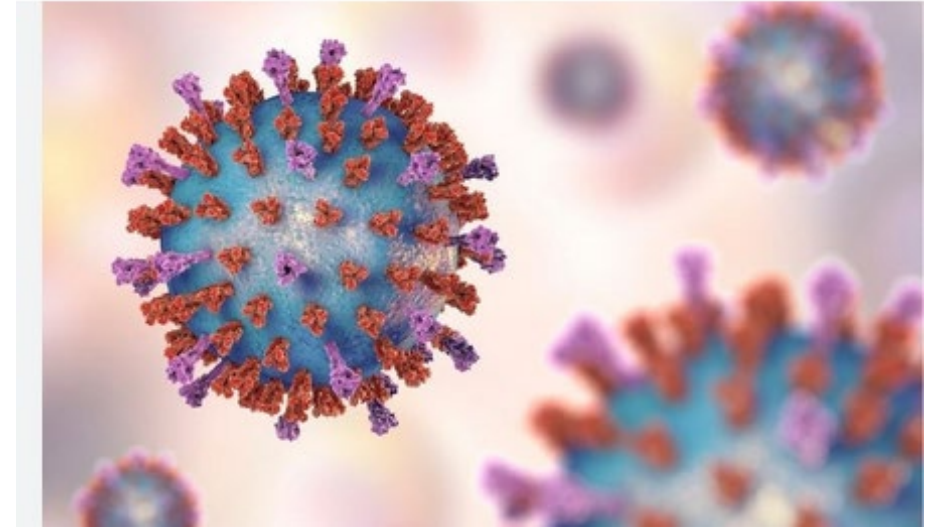
Other respiratory diseases



COVID-19



INFLUENZA



RSV

Parainfluenza, Adenovirus,
Rhinovirus/Enterovirus, Seasonal Human
Coronavirus, Human Metapneumovirus,

Providers should consider ordering an entire respiratory panel to test for all.

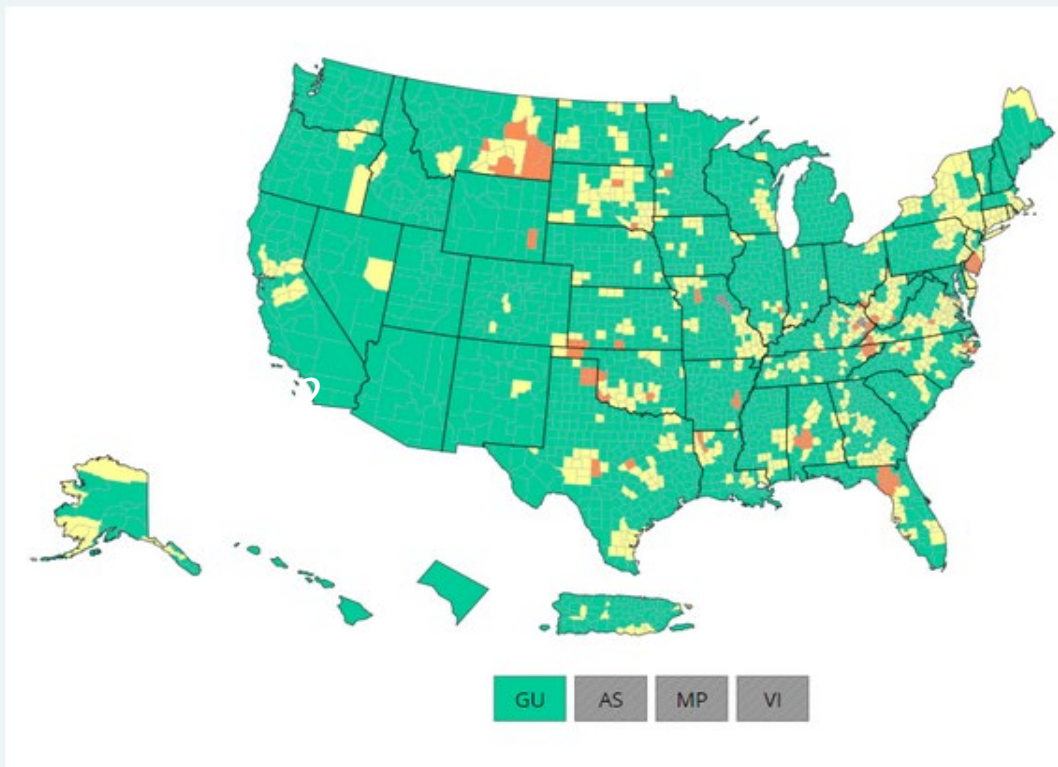


Massachusetts Department of Public Health

Covid-19

Where are we with COVID-19 today?

U.S. COVID-19 Community Levels by County

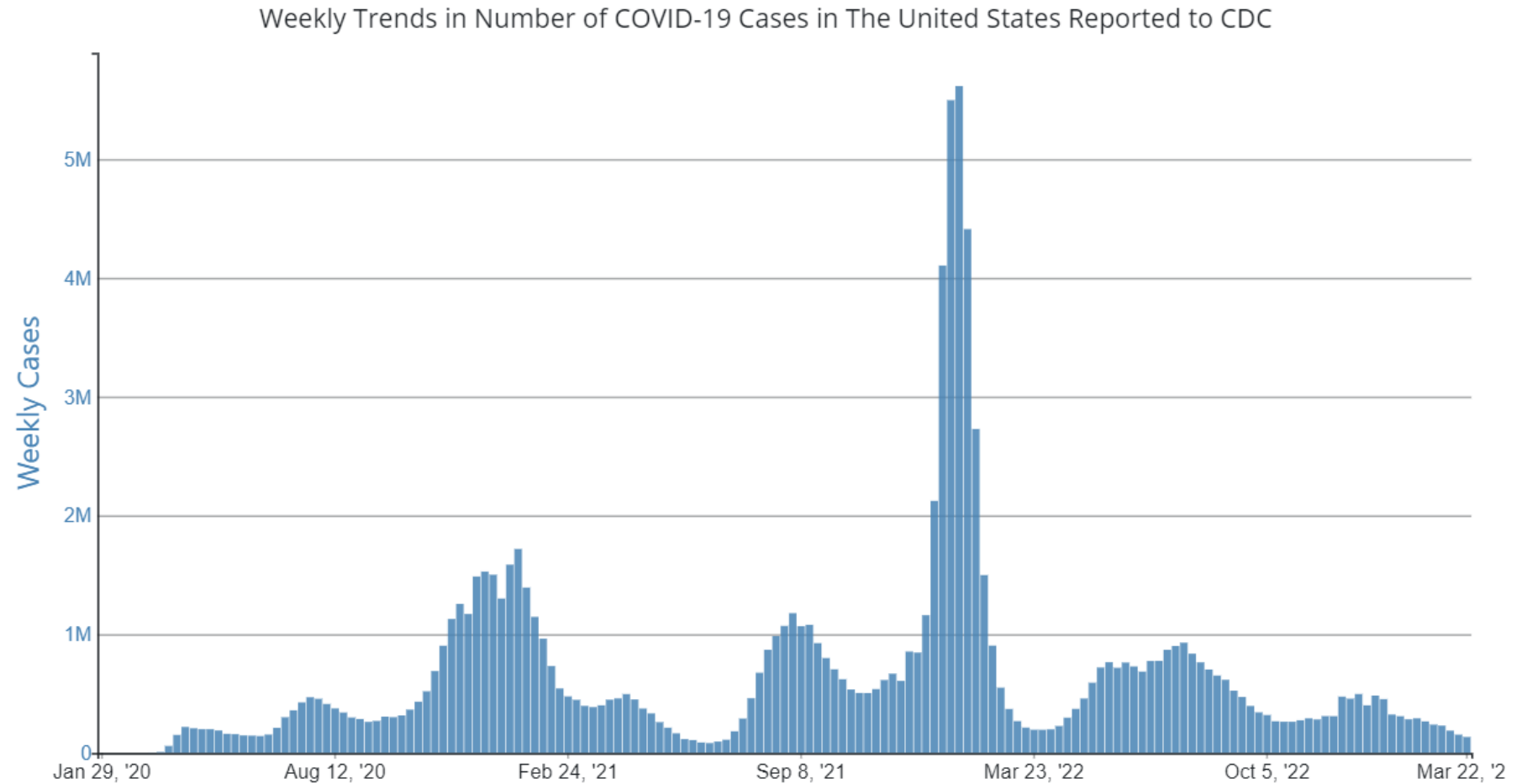


Low Medium High No Data

- COVID-19 is becoming a routine respiratory illness
- According to CDC as of February 28th 2023, 16.1% of the country population have received the new bivalent booster
- COVID-19 Emergency Public Health Emergency ends on May 11 which will affect the cost of vaccines, treatment, therapeutics for patients.

Where are we with COVID-19 today?

A total of
103,957,053
COVID-19 cases
have been
reported in the
United States as of
March 29, 2023.



Where are we with COVID-19 today?

As of March 29, 2023, 673.4 million vaccine doses have been administered in the United States. Overall, about 230.2 million people, or 69.4% of the total U.S. population, have completed a primary series.* About 54.5 million people, or 16.4% of the U.S. population, have received the updated bivalent booster dose.

AN UPDATED COVID-19 VACCINE HELPS SAVE LIVES

Vaccinated people* who received an **updated COVID-19 vaccine** were

- 14X less likely to die** compared with those who received no vaccine
- 3X less likely to die** compared with those who received only the original COVID-19 vaccine(s)

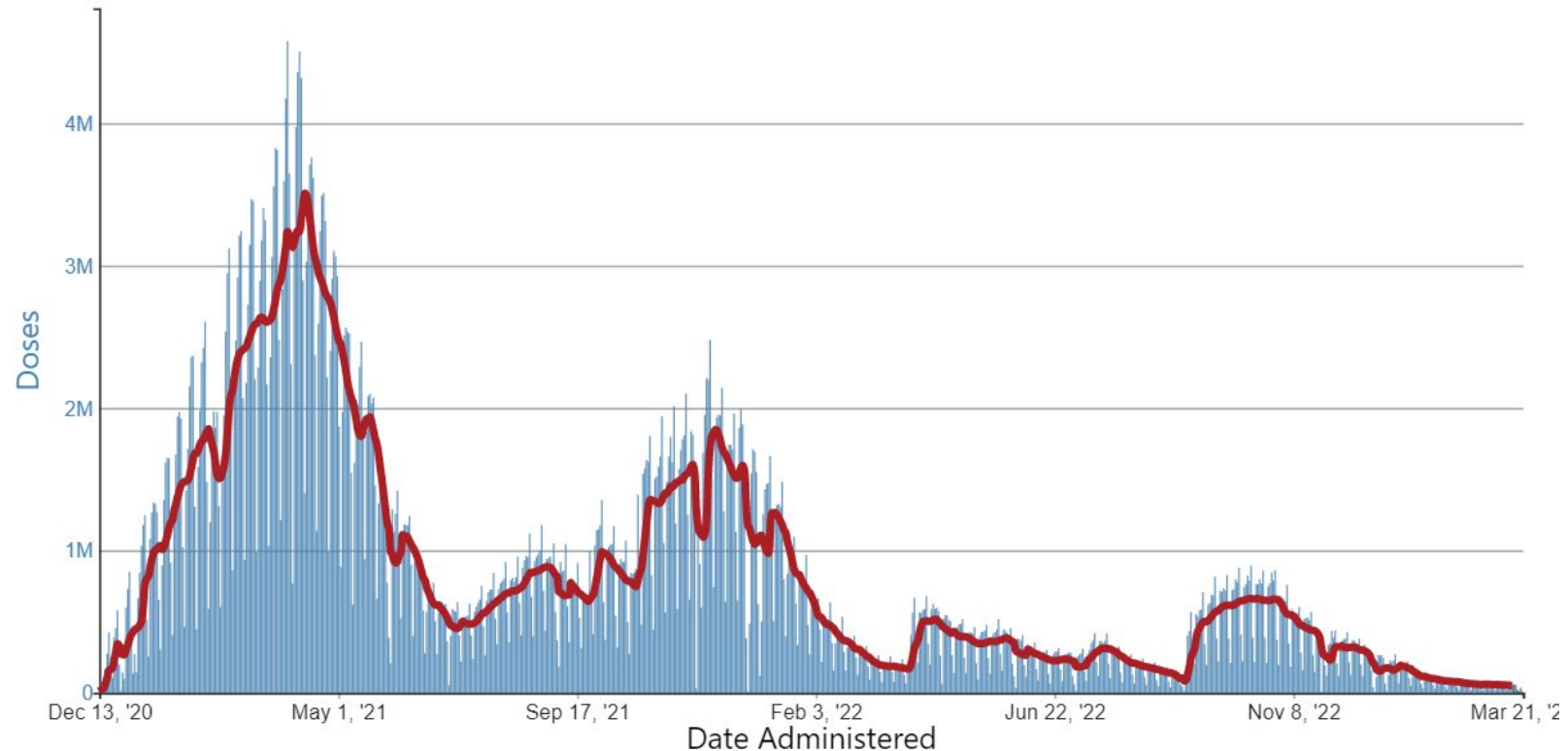
People ages 12+ who got their last COVID-19 vaccine dose before September 2022 should get an updated vaccine

* Completed the original COVID-19 vaccine primary series and/or original booster(s)

bit.ly/mm7206a3
FEBRUARY 10, 2023

CDC MMWR

Daily Count of Doses by Date of Vaccine Administration, United States



COVID-19 Isolation Guidance¹

Able to Mask

- Stay home for the first 5 days
- If you were asymptomatic OR symptoms are improving² you can resume most activities³ on day 6
- Wear a mask around others from days 6-10 including in the home

Unable to Mask

- Stay home for 10 days
- If you were asymptomatic OR symptoms are improving² you can resume usual activities on day 11
- Wear a mask around others for the full 10 days including in your home

¹Guidance for the general public.

²Fever free for 24hrs without using fever reducing medication

³Except for activities that do not allow mask wearing

Exposed to someone with COVID-19 (exposure precautions)

If you have been exposed to someone with COVID, you do not need to quarantine as long as you remain asymptomatic, regardless of your vaccination status. You must wear a mask any time you are around others inside your home or indoors in public for the 10 days following your exposure, unless you are unable to mask*.

- If you were exposed and develop symptoms at any time, isolate and take a test and stay home until you know the result. If the result is positive, follow isolation protocols. If your test is negative or if you have remained asymptomatic, take a test on day 6.
- * You are unable to consistently wear a mask due to young age or medical or behavioral condition.

SOURCE: <https://www.mass.gov/info-details/covid-19-isolation-and-exposure-guidance-for-the-general-public>

COVID-19 Testing



I tested positive for COVID-19 in the last 90 days.

My first positive test result was within:

30 days or less

I have symptoms

Use antigen tests. If negative, multiple tests may be necessary.

I do not have symptoms

Testing is not recommended to detect a new infection.

My first positive test result was within:

31-90 days

I have symptoms

Use antigen tests. If negative, multiple tests may be necessary.

I do not have symptoms

Use antigen tests. If negative, multiple tests may be necessary

After a positive test result, you may continue to test positive for some time after. You may continue to test positive on antigen tests for a few weeks after your initial positive. You may continue to test positive on NAATs for up to 90 days. Reinfections can occur within 90 days, which can make it hard to know if a positive test indicates a new infection. Consider consulting a healthcare provider if you have any questions or concerns about your individual circumstances.



SOURCE: <https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/testing.html>



Massachusetts Department of Public Health

Thank you and questions



Massachusetts Department of Public Health

Avian Influenza

March 2023: CDC Technical Report about Highly Pathogenic Avian Influenza A (H5N1) Viruses

- Since 2022, despite the wide geographic spread of highly pathogenic avian influenza (HPAI) A(H5N1) viruses in wild birds and to poultry worldwide, with sporadic spillover to mammals, only a small number of sporadic human cases of A(H5N1) have been identified.
- All reported human cases since 2022 were associated with recent poultry exposures, and no cases of human-to-human transmission have been identified.
- To date, HPAI A(H5N1) viruses currently circulating in birds and poultry, with spillover to mammals, and those that have caused human infections do not have the ability to easily bind to receptors that predominate in the human upper respiratory tract. **Therefore, the current risk to the public from HPAI A(H5N1) viruses remains low.**

<https://patch.com/massachusetts/across-ma/bird-flu-ma-what-know-deadly-outbreak>
<https://www.cdc.gov/flu/avianflu/spotlights/2022-2023/h5n1-technical-report.htm>



March 2023: CDC Technical Report about Highly Pathogenic Avian Influenza A (H5N1) Viruses



A highly infectious avian influenza has been detected in nearly 30 states over the past three months, including a flock in Lanesborough in March.

State, USDA Worked to Contain Avian Flu in Berkshire County

By Brian Rhodes

iBerkshires Staff

05:07AM / Saturday, April 30, 2022

<https://www.iberkshires.com/story/68071/State-USDA-Worked-to-Contain-Avian-Flu-in-Berkshire-County.html>

<https://www.cdc.gov/flu/avianflu/spotlights/2022-2023/h5n1-technical-report.htm>

- Because of the potential for influenza viruses to rapidly evolve and the wide global prevalence of HPAI A(H5N1) viruses in wild birds and poultry outbreaks, continued sporadic human infections are anticipated.
- Continued comprehensive surveillance of these viruses in wild birds, poultry, mammals, and people worldwide, and frequent reassessments are critical to determine the public health risk, along with ongoing preparedness efforts.
- CDC, along with our state and local public health partners, continues to actively monitor people in the United States who have been exposed to infected birds and poultry for 10 days after exposure. To date, more than 6,300 people in 52 jurisdictions have been monitored since 2022, and only one human case has been identified.