Influenza Surveillance for Local Boards of Health

2023-2024

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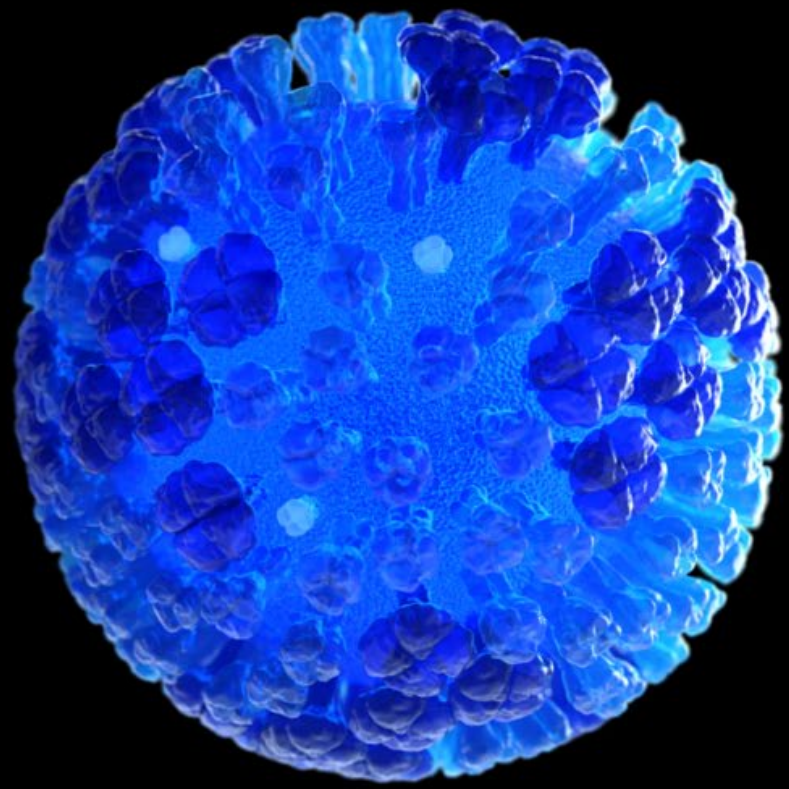
Influenza Agenda Today:

- Background, Clinical Presentation, and Epidemiology of Flu
- Influenza Reporting and Surveillance in MA
  1. Influenza-like illness (ILI)
  2. Hospitalizations
  3. Influenza Positive Lab Test Results reported to the MDPH
- Role of Local Health in Influenza-like illness (ILI) Clusters and Follow-up
  1. Positive Influenza Lab Results
  2. Influenza-Associated Pediatric Deaths (< 18 years old)
  3. Respiratory/Influenza Clusters
- General (State and CDC) Resources and Information on Influenza Prevention, including Vaccination

Influenza (Flu) Viruses

Influenza is an acute respiratory disease caused by infection with **influenza viruses**.

There are two main types of human flu viruses: types A and B. The flu A and B viruses that routinely spread in people are responsible for seasonal flu epidemics each year.



Influenza: The Basics

Symptoms:

- The clinical severity of infection can range from asymptomatic illness to pneumonia and death.
- Symptoms include:
  - Fever
  - Cough
  - Sore throat
  - Body aches
  - Headache
  - Chills
  - Runny nose
  - Feeling very tired

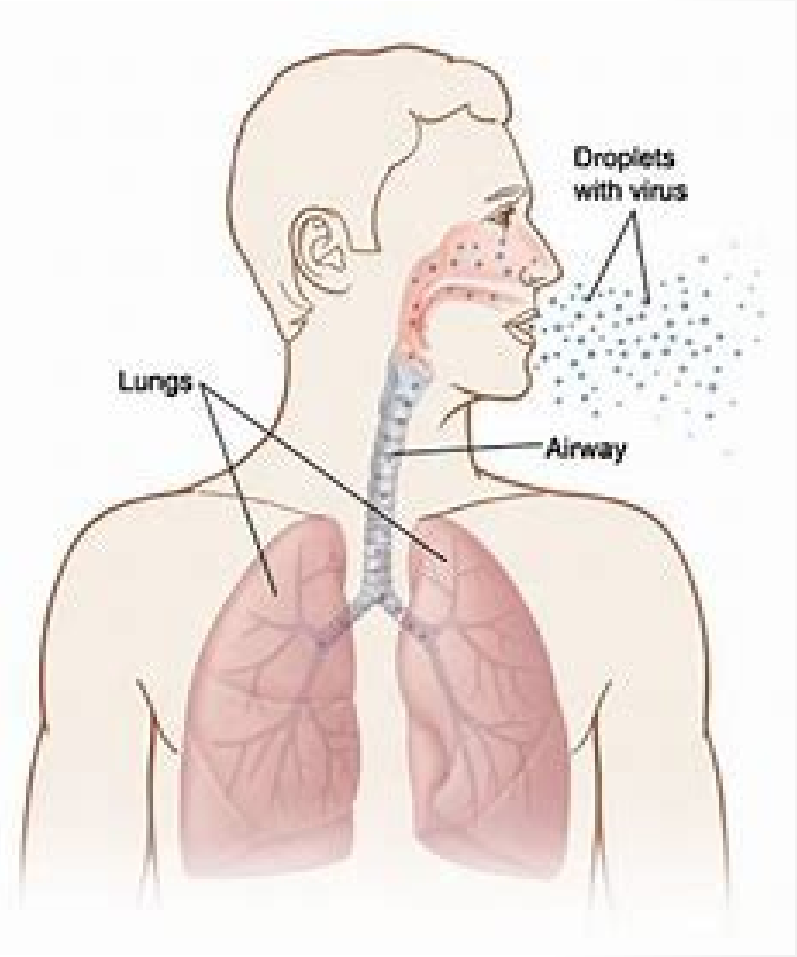
- Some people, especially young children, also have diarrhea and vomiting.
- Acute symptoms generally last 2–7 days, although malaise and cough may continue for 2 weeks or longer.

Influenza: The Basics

- **Diagnosis and Testing:**
  - It is very difficult to distinguish flu from other viral or bacterial respiratory illnesses based on symptoms alone.
  - There are tests available to diagnose flu (see Diagnosing Flu)
    - PCR (polymerase chain reaction) - Most common, detects genetic material
    - Rapid antigen tests - also available but less sensitive
    - Cultures – least commonly used
- **Seasonality:**
  - Flu viruses are detected year-round but typically circulate in the fall and winter months. Official flu season is October through May, typically peaking between December and February.

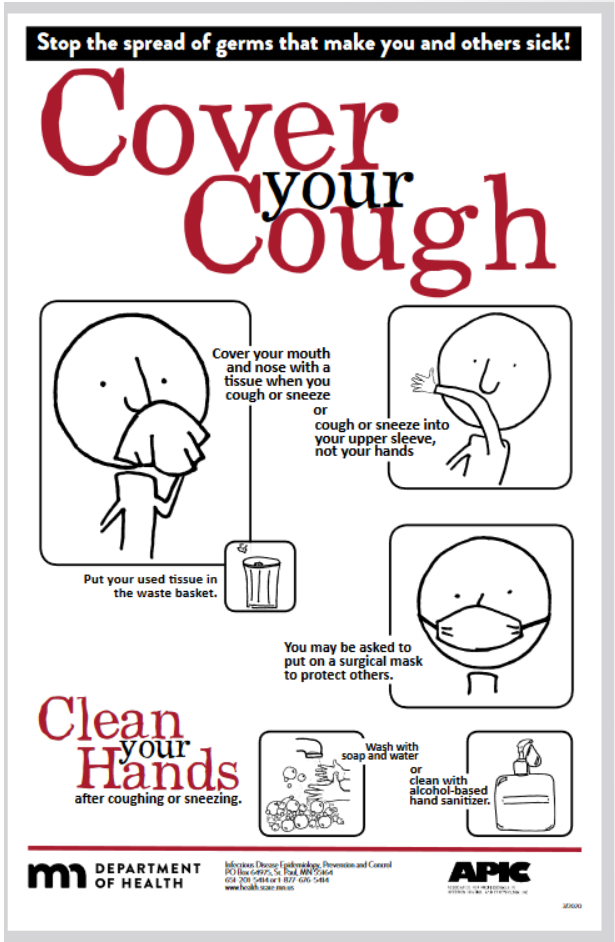
Influenza: The Basics

- **Transmission:** Most experts believe that flu viruses spread mainly by tiny droplets made when people with flu cough, sneeze, or talk and these droplets land in the mouths or noses of people who are nearby.
  - Less often, a person might get flu by touching a surface or object that has flu virus on it and then touching their own mouth, nose or possibly their eyes.
- **Incubation Period:** Ranges from 1 to 4 days.



Influenza: The Basics

- **Prevention:**
  - The first and most important step in preventing flu is to get a flu vaccine each year.
  - Flu vaccine has been shown to reduce flu related illnesses, hospitalization and death.
  - Annual influenza vaccination is recommended for persons 6 months and older who do not have contraindications.
  - CDC also recommends everyday preventive actions (like staying away from people who are sick, covering coughs and sneezes, and frequent handwashing) to help slow the spread of germs.
- **Treatment:**
  - There are flu antiviral drugs that can be used to treat flu illness.



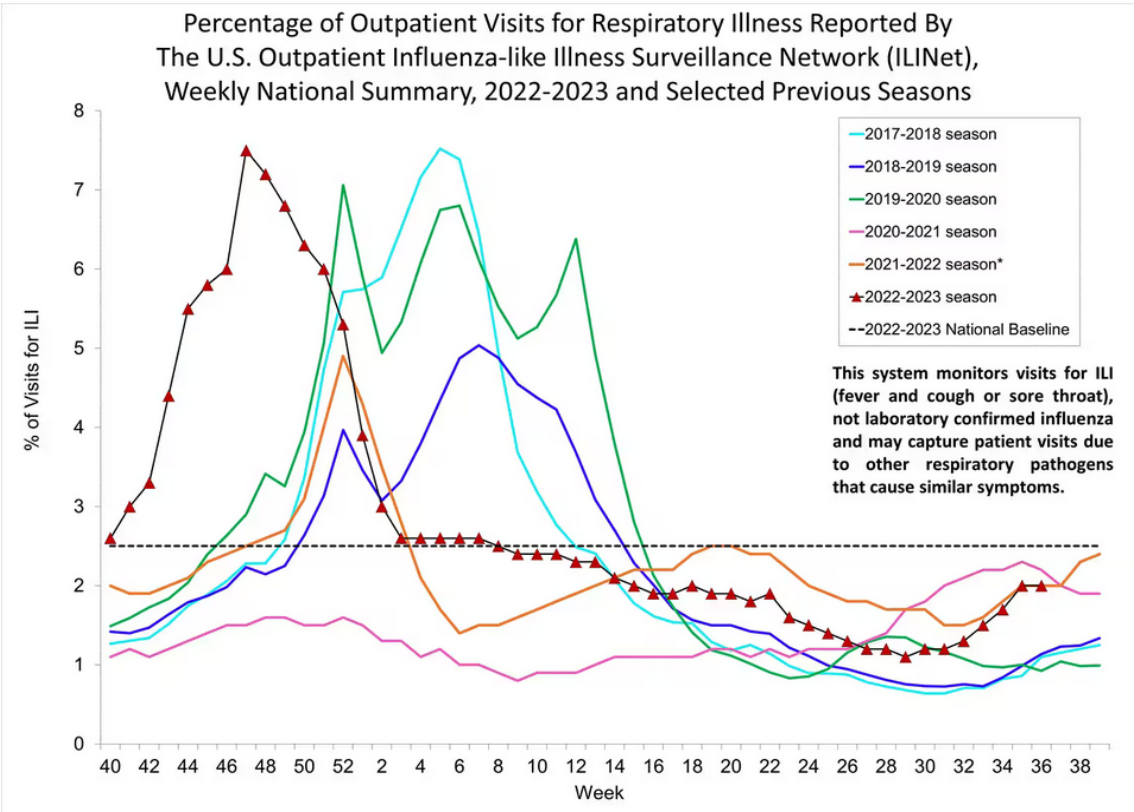
Influenza: The Basics

- **Period of Contagiousness Can Vary.** Peak virus shedding usually occurs from 1 day before onset of symptoms to 3-4 days after.
  - Some otherwise healthy adults may be able to infect others beginning one day **before** symptoms develop and up to five to seven days **after** becoming sick.
  - Some people, especially young children and people with weakened immune systems, might be able to infect others for an even longer time.
  - People should stay home when they are sick, until they are at least 24hrs fever free (Stay Home When You Are Sick | CDC)

- **There is NO quarantine for influenza exposure.**

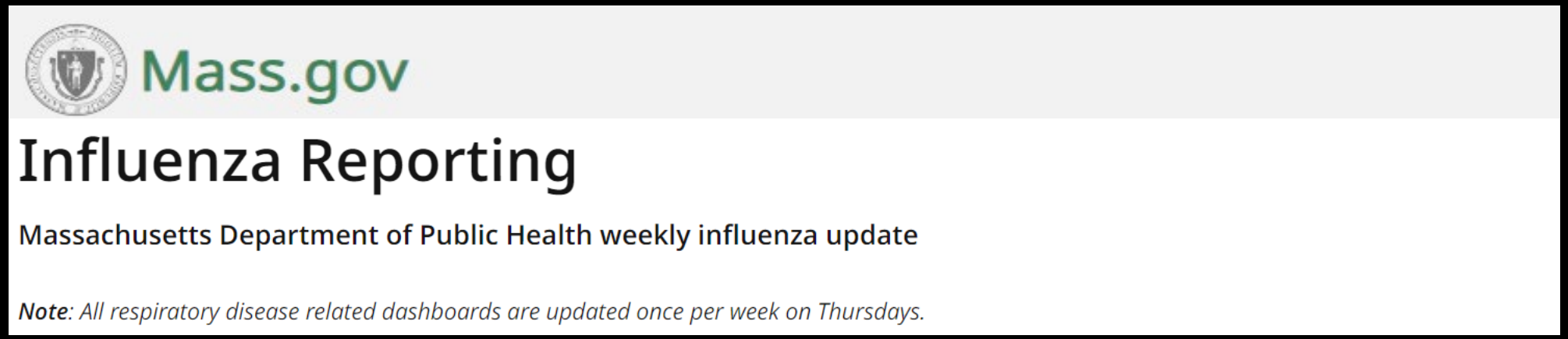
Influenza: The Basics

- So what makes flu seasons challenging?
  - Every season is different! Makes it hard to predict.
  - The influenza vaccine changes every year to match the expected flu strains that will be circulating in the country.
  - Several other respiratory viruses also spread during flu season and can cause symptoms similar to those seen with influenza.



CDC Outpatient Respiratory Illness Surveillance

Influenza Surveillance: Tracking the Flu Each Season…



Influenza Reporting | Mass.gov

https://www.cdc.gov/flu/weekly/index.htm

The Goal of Influenza Surveillance

- **Tracking the Influenza Virus** each season is multifaceted (it's not as simple as counting cases!) and we look at many different data sources combined to help CDC to:
  - Find out when and where influenza activity is occurring
  - Track influenza-related illness
  - Determine what influenza viruses are circulating
  - Detect changes in influenza viruses
  - Measure the impact influenza is having on hospitalizations and deaths in the United States

So, what happened the last few flu seasons nationally?

2020-2021

- Minimal flu!
- Likely influenced by COVID-19 mitigation efforts (masking, limited school, social distancing, etc.)

2021-2022

- Almost all A(H3N2) virus in all age groups and regions
- **Long and late season**
  - Two waves of circulation
  - Activity began to increase in November, remained elevated and increased in some areas in May/early June
- **Low levels of activity overall**
  - Lowest ever compared to pre-pandemic seasons by most metrics, but higher than the 2020-2021 season

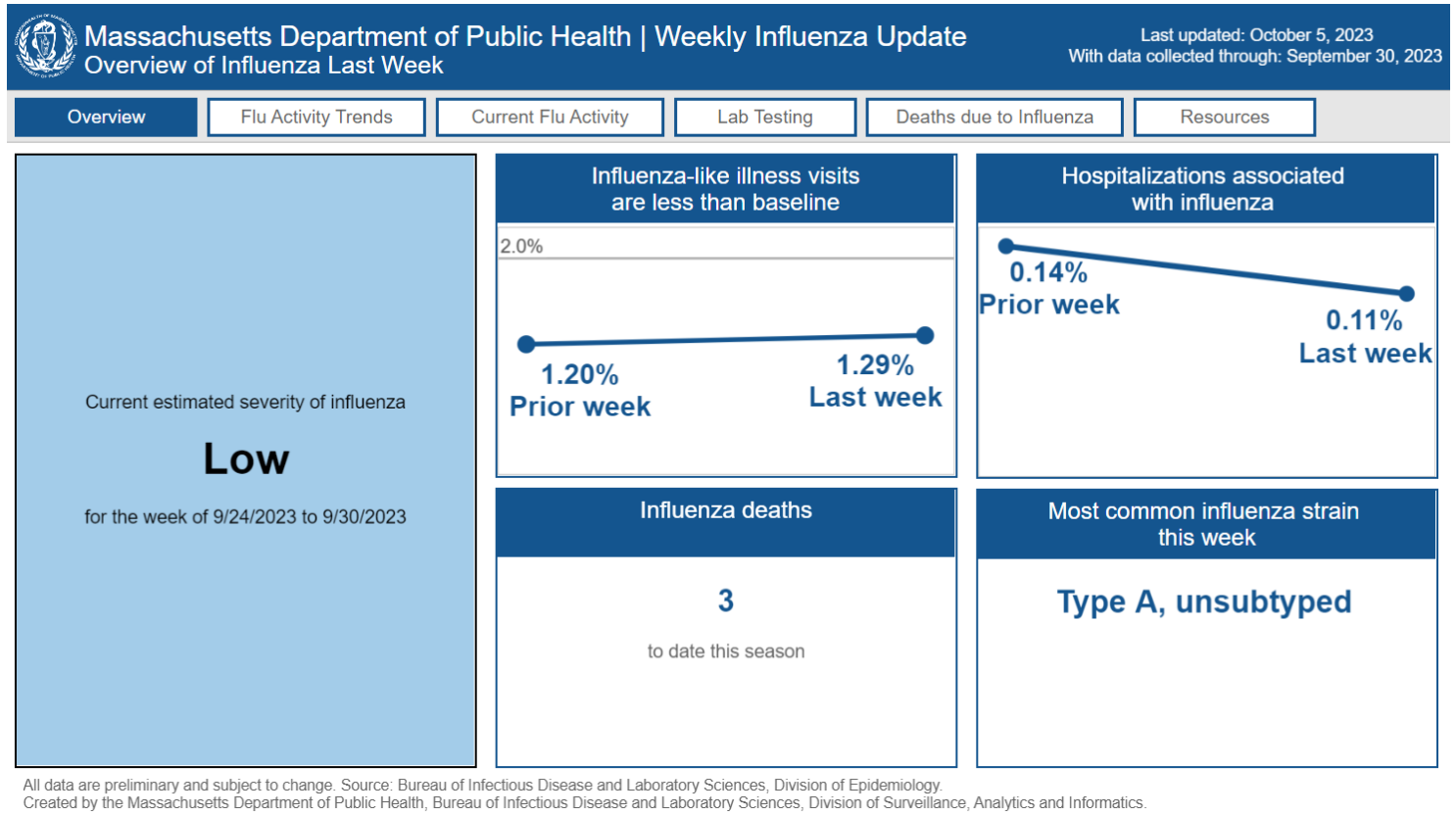
2022-2023

- Season predominated by Influenza A(H3N2) virus in all age groups and regions
  - Very little Influenza B and Influenza A (H1N1) circulated. Influenza B Yamagata not detected at all.
- **Early Peak**
  - Activity began in October, peaked in December, dropped in January and remained low with no second wave
- **Moderate Season**
  - "Tripledemic" - Influenza, RSV and COVID circulating all at the same time

So what does MDPH do when it comes to flu?

- **Tracking Influenza each season** requires data from many sources and is less about exact numbers than identifying trends in real time.
  - We know not every sick person receives a reported influenza test, so we look to other indicators to see where we are in the season and how the virus has changed from one season to the next (so we can allocate resources and plan for next season's vaccines).
- **We look at:**
  1. Influenza-like illness (ILI)
  2. Hospitalizations
  3. Influenza Positive Lab Test Results reported to the MDPH
- These weekly markers are analyzed and assist us to classify the severity using historical data collected during past influenza seasons.

Influenza Surveillance in Massachusetts



- The flu dashboard tells us:
  - How much Influenza-like illness we are seeing in Massachusetts
  - How much ILI activity is in your region of the state!
  - If we are seeing more Flu A or Flu B in Massachusetts
  - Percentage of people hospitalized for influenza
  - Percentage of people vaccinated for flu

Our Weekly Flu Dashboard is now part of the Massachusetts Respiratory Illness Dashboard on mass.gov!

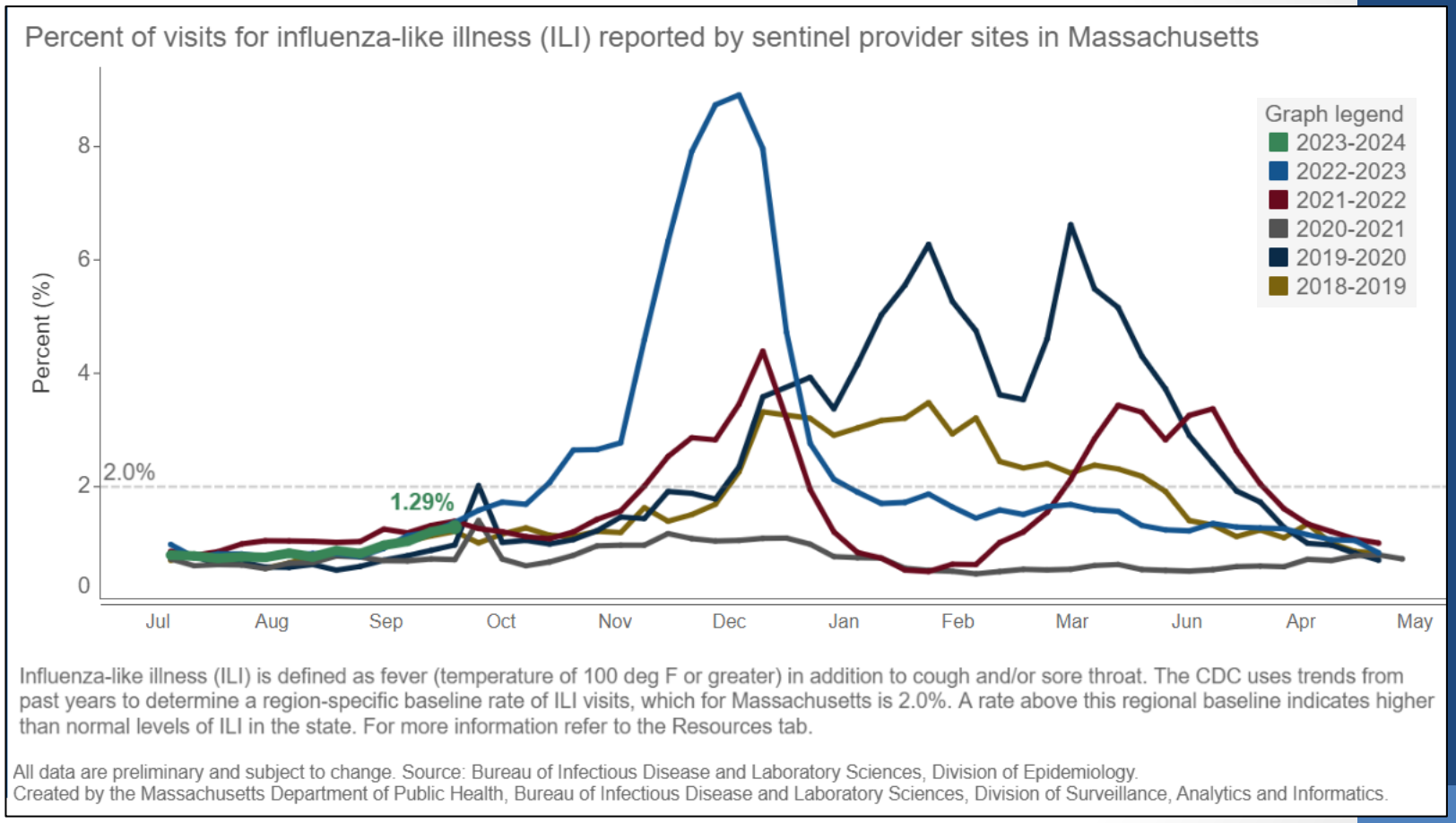
1. Influenza-Like Illness (ILI)

- Many people experiencing influenza symptoms do not go to the doctor, and of those that do, many do not receive influenza laboratory testing.
- As a result, tracking influenza requires looking at multiple markers, including "trends" in Influenza-Like Illness (ILI).
- **Definition of Influenza-like illness:**
  - Influenza-like illness (ILI) is defined as fever (temperature of 100 deg F or greater) in addition to cough and/or sore throat.
  - It's important to note that many more people are infected with influenza than are tested for influenza.

1. Influenza-Like Illness (ILI) Surveillance

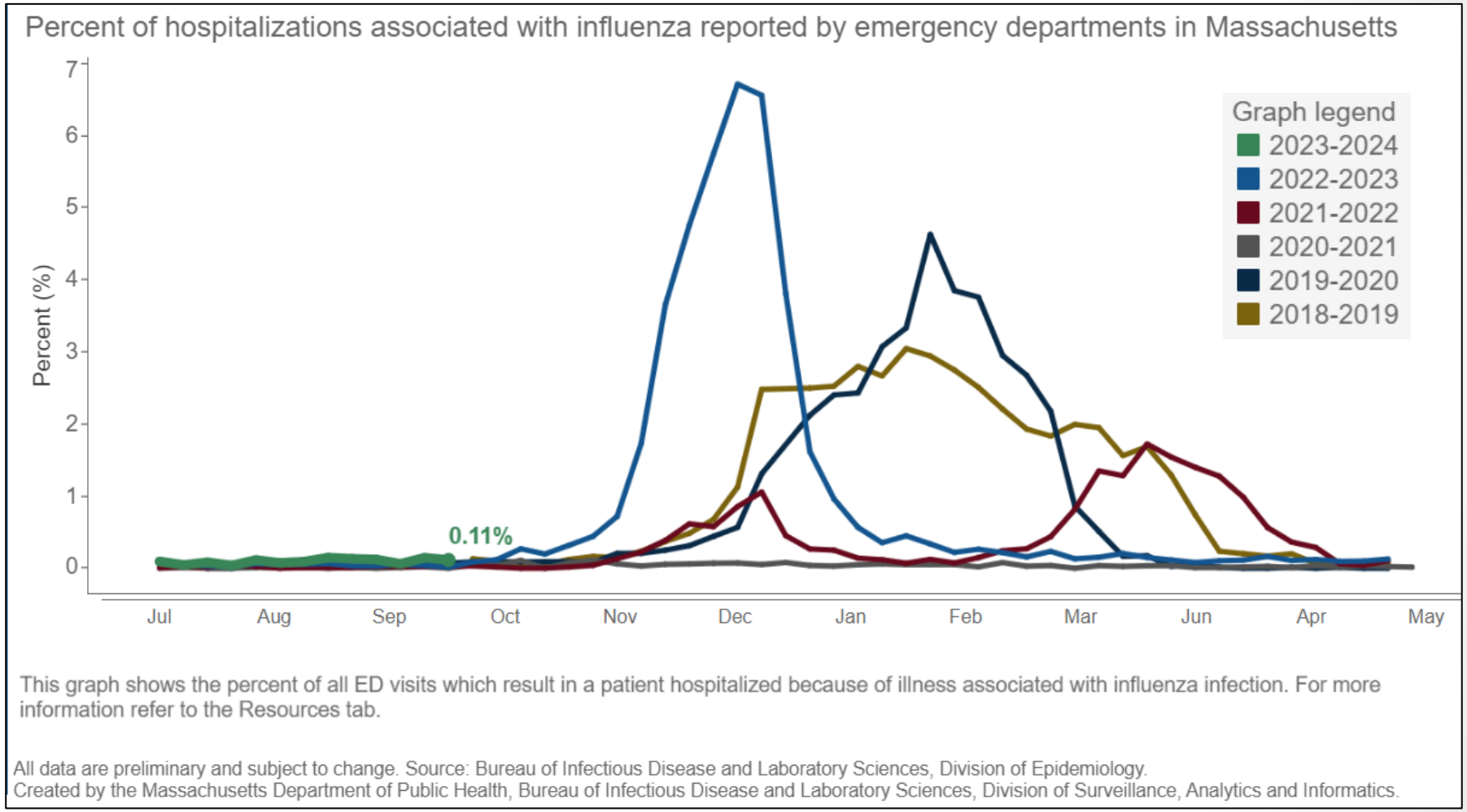
- Over 100 healthcare facilities called 'sentinel sites' report the **number of patients they see with ILI each week** during regular flu season to us.

- **Sentinel Sites** include provider offices, school health services, community health centers, urgent care centers, and emergency departments across Massachusetts.



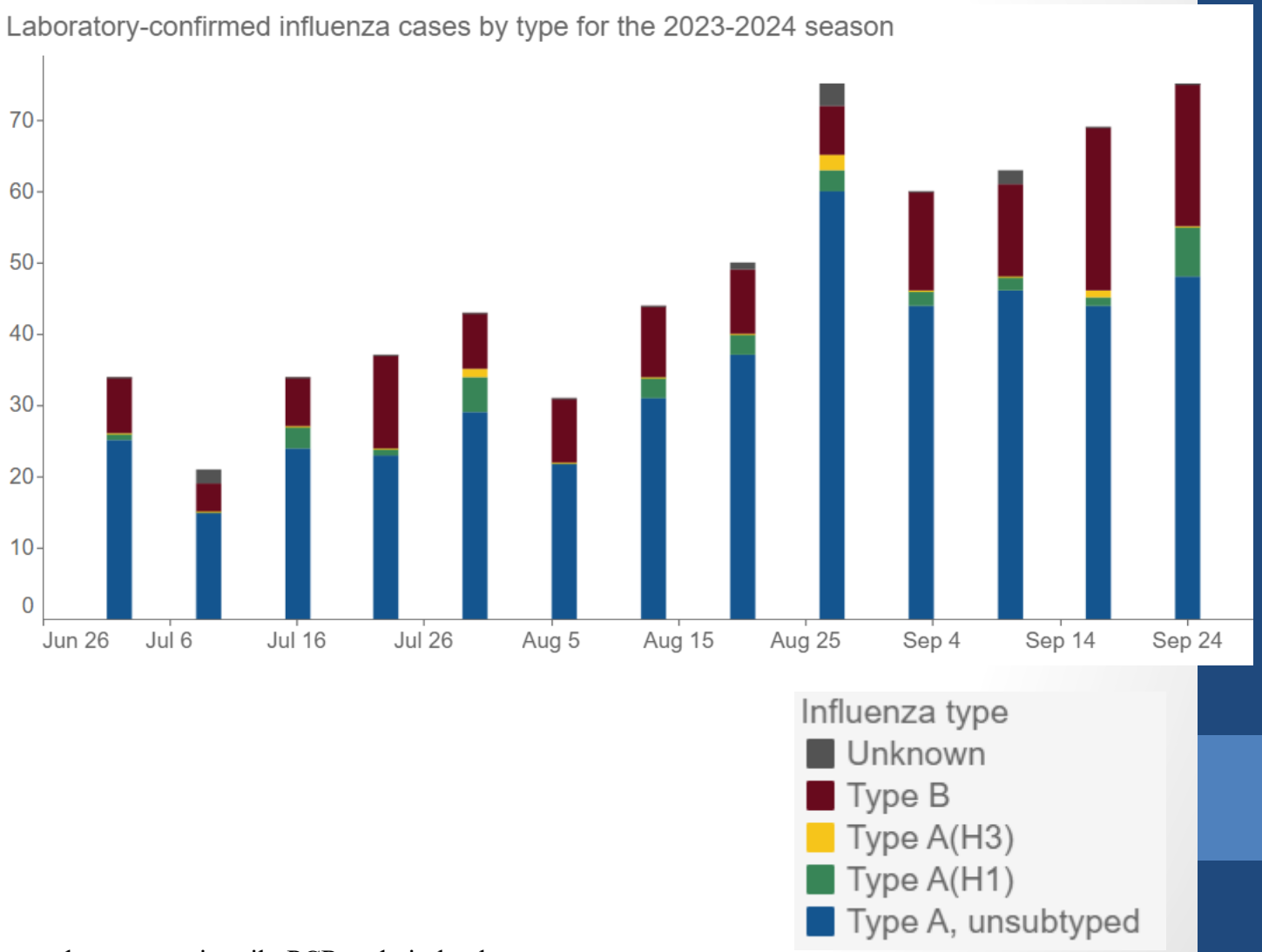
2. Influenza Hospitalization Surveillance

This graph shows the percent of people who came in through hospital emergency departments who tested positive for influenza and were admitted.



3. Influenza Surveillance in Massachusetts – Lab Data

- Laboratories in Massachusetts report all positive molecular influenza test results to MDPH.
- The majority of individuals with ILI are not tested; therefore, the number of positive test results does **not** reflect the total number of influenza cases in MA.
- However, laboratory data do provide information about the types of influenza virus circulating in Massachusetts and help indicate the presence and define the distribution of influenza in the state.



Note: MDPH stopped accepting rapid flu antigen labs back in 2018. Labs reported now are primarily PCR and viral culture.

Influenza Surveillance FAQs

- **Q. Is *Haemophilus influenzae* (or *Haemophilus influenzae* Type B) the same as Influenza?**

  - **A. No.** *Haemophilus influenzae (HI)*, a **type of bacteria**, can cause many different kinds of infections. These infections range from mild (like ear infections), to serious (like bloodstream infections). HI infections are not the same as Influenza, which is caused by the **Influenza Virus**, and control measures and follow-up differ for HI. HI cases create their own events in MAVEN and are typically completed by calling the Infection Practitioner in the hospital for all the clinical data needed.

Influenza Surveillance FAQs

- **Q. Can I track our flu data in MAVEN?**
  - **A.** Yes, you could run a report for flu events in your jurisdiction by doing an Event Information Extract by Disease (Select Influenza) (see MAVEN Reports Tip Sheet) but remember there are many other data points that go into monitoring and tracking the flu season and just looking at positive labs may not show the whole picture.
    - There are also the Massachusetts Flu Dashboard and CDC's Flu View page which show national weekly trends.

- **Q. Are ILI and Flu Hospitalization Data Tracked in MAVEN?**
  - **A.** No, these data are not in MAVEN and are compiled from other reporting sources. Check out the Respiratory Illness Reporting Dashboard for more information.

LBOH & Influenza

LBOH Overview: Influenza In MAVEN

1. **<u>Positive Influenza Lab Results</u> are reported electronically to MAVEN by Clinical Laboratories.**
   - These generate Influenza Virus events in MAVEN but require no follow-up and appear in your **LBOH Notification but no follow up needed workflow.** You can use the bulk action feature to update Step 1 (LBOH Notification) to YES. See Tipsheet Here

2. **<u>Influenza-Associated Pediatric Deaths</u> (< 18 years old) should be reported directly to the Epidemiology Program by Healthcare Providers.**
   - Pediatric Deaths are high profile and require additional investigation and data collection. Sometimes there may be community control measures (such as a flu vaccination campaign at the child's school or other support for the community). MDPH Epis will work with you and the family to assist in these situations.

3. **<u>Respiratory/Influenza Clusters</u> are reportable via the <u>Influenza/Respiratory Illness Facility Cluster Reporting Form</u> in facilities such as:**
   - Long Term Care Facilities (LTCFs), Assisted Living Facilities (ALFs), Group Homes, Correctional Facilities, Daycares/Schools/Colleges, Hospitals, and Other Congregate Settings.
   - LBOH can provide guidance on control measures and assist with follow-up as needed.

1. Individual Influenza Cases

- **Individual cases of influenza typically are not investigated.**
  - The rare exception to this might be severe or unusual complications (such as a pediatric death) or when the infecting virus is suspected or confirmed to be of animal origin (most frequently highly pathogenic avian influenza (HPAI)), or a variant strain.
  - **Isolation & Quarantine:** There is no official isolation or quarantine period for cases or exposed individuals. Ill individuals should stay home while sick and comply with typical school or work sick policies.
  - We expect to see positive flu labs in MAVEN each year, but LBOH are not expected to do more than bulk acknowledge these cases.
  - **NOTE:** Rapid antigen flu tests in a typical provider office are not reported to MDPH. (PCRs and culture results are reported systematically through Electronic Lab Reporting (ELR)). LBOH should not create an individual flu event. If you have questions, contact MDPH and we can help troubleshoot.

2. Influenza-Associated Pediatric Deaths

- **Influenza-Associated Pediatric Mortality Reporting**
  - Influenza-associated deaths in children (persons less than 18 years of age) were added as a nationally notifiable condition in 2004. Any laboratory-confirmed influenza-associated death in a child is reported through this system.
  - Demographic and clinical information are collected on each case and transmitted to CDC.
  - **MDPH Epis will take the lead on these events but work closely with local jurisdictions.**

Pediatric Influenza-Associated Deaths in MA

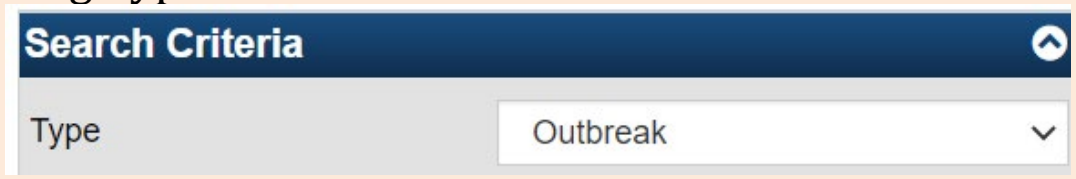
Year	Count
2009	5
2010	0
2011	1
2012	0
2013	6
2014	1
2015	1
2016	2
2017	2
2018	1
2019	4
2020	1
2022	1
2023	7

3. Influenza Clusters in LTCF/ALF

- If you get a call from a facility in your community reporting a cluster of respiratory illness or influenza illness:
  - Facility should complete the reporting form online here: Infectious Disease Case Report Forms (mass.gov)
  - This will create a cluster event in MAVEN.
  - An MDPH epidemiologist will be assigned to the facility and will reach out to them to discuss control measures
  - As the LBOH, you can task yourself to the cluster as well.

A note about MAVEN:

- Flu/ILI clusters do not appear in a workflow
- You can search for them using the MAVEN ID *or* search using Type = "Outbreak":



Control Measures for LTCF/ALF

Facilities experiencing respiratory illness should:

Test	Isolate	Treat	Prevent	Report
• Symptomatic people for COVID and flu • Consider full respiratory panel • NO 'outbreak' testing like with COVID-19	• Flu cases on droplet precautions • Cohort flu and COVID cases separately	• Discuss use of antivirals for ill residents • Consider PEP for non-ill residents	• Surveillance for new cases • Hand hygiene and cough etiquette among staff • Vaccinate! (residents and staff)	• DPH Epi (Infectious Disease Case Report Forms (mass.gov)) • LBOH • Licensing agency (HCSQ or EOEA)

Influenza Clusters in Schools/Daycares

- **Q: What if a school calls you and says that 20% of their 4th and 5th grade students are out due to respiratory illness?**

A: Depending on the time of year and the ILI activity we are seeing, this may not be surprising. They can always report this via the cluster reporting form Infectious Disease Case Report Forms (mass.gov) and we can make recommendations, including:

- Emphasize vaccination – both flu and COVID
- Stay home when sick and consider testing
- Good hand hygiene and covering coughs/sneezes
- Take antivirals if your clinician prescribes them for you
- Consider sending a fact sheet about influenza/notification to families about flu season

Flu Follow-Up FAQs

- **Q: What happens if a school in your community calls you and they want to shut down due to cases of flu in the school?**
  - A: Typically, we try to discourage closing of schools. Unless there are not enough staff to keep a school running safely, we want schools to remain open. Feel free to call 617-983-6800 to speak to an epidemiologist if this occurs.
- **Q: Should we reinstate mask wearing if there is an outbreak of respiratory illness in a school setting or some other setting?**
  - A: We defer to local jurisdictions for decision making around control measures. We can certainly be consulted and provide guidance, but the decision is up to the local health department.

Flu Test Kit Distribution Program

Want to help the congregate care facilities in your town have easier access to flu and respiratory testing?

- New initiative by DPH to provide LBOHs with flu test kits that they can keep on site so that facilities (LTCF, ALF) have easy, local access to testing supplies.
- The program is FREE (all testing supplies, shipping costs, and testing fees are covered!)
- LBOH expectation: 1) store flu kits properly 2) assist facilities with obtaining kits 3) return specimens to MA SPHL via UPS.
- Email Joyce Cohen at joyce.cohen@mass.gov to learn more and schedule kit delivery.

Summary of LBOH Role in Flu Casework

- **Individual cases –** no follow-up required!
  - Will be in "LBOH Notification but no follow up needed" workflow for bulk review

- **Clusters -** Infectious Disease Case Report Forms (mass.gov)
  - Long Term Care Facilities (LTCF)/Assisted Living Facilities (ALF)
    - Have sites send in cluster report form if they haven't already
  - Schools/Daycares
    - Provide general guidance
    - LBOH can complete cluster report form if helpful or have them complete the cluster report form which will automate an epi response to provide guidance

Influenza Resources

- Encourage vaccination every day – you already do this!

Flu Vaccine FAQs

- **Q: Can I get a flu vaccine and a COVID-19 vaccine during the same visit?**
  - **A:** Yes! You can get a COVID-19 vaccine and a flu vaccine at the same time if you are eligible and the timing coincides.

- **Q: When is the best time to get a flu vaccine?**
  - **A:** It's best to be vaccinated before flu begins spreading in your community. (Now is an EXCELLENT time to be vaccinated).) However, even in November or even later (December, January), vaccination is still recommended because remember that earlier graph, flu most commonly peaks in February and significant activity can continue into May.

- **Q: When can someone who recovered from COVID-19 receive a flu vacc**
  - **A:** Flu vaccination should be deferred until a patient is no longer acutely ill.

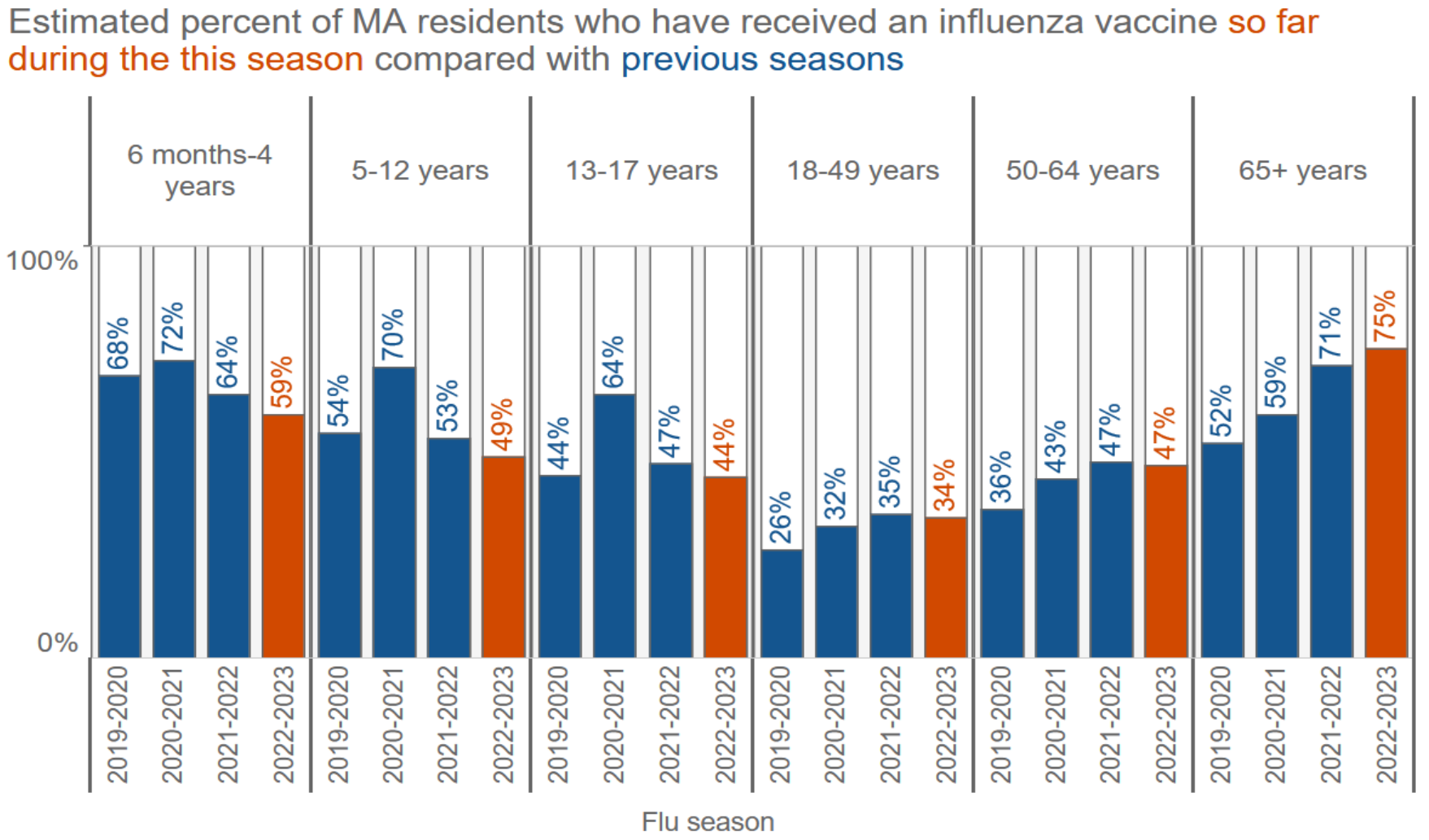
Prevention and Control of Seasonal Influenza with Vaccines: Recommendations of the Advisory Committee on Immunization Practices — United States, 2023–24 Influenza Season

People with egg allergies may get any influenza vaccine

"ACIP reports that people with an egg allergy may get any vaccine (egg-based or non-egg-based) that is otherwise appropriate for their age and health status.

- Previously, it was recommended that people with severe allergy to egg (those who have had any symptom other than hives with egg exposure) be vaccinated in an inpatient or outpatient medical setting.
- Beginning with the 2023-2024 season, additional safety measures are no longer recommended for flu vaccination of people with an egg allergy beyond those recommended for receipt of any vaccine, regardless of the severity of previous reaction to egg.
- All vaccines should be given in settings where allergic reactions can be recognized and treated quickly.

How is Massachusetts doing when it comes to vaccinating for influenza?



Source: Massachusetts Flu Dashboard

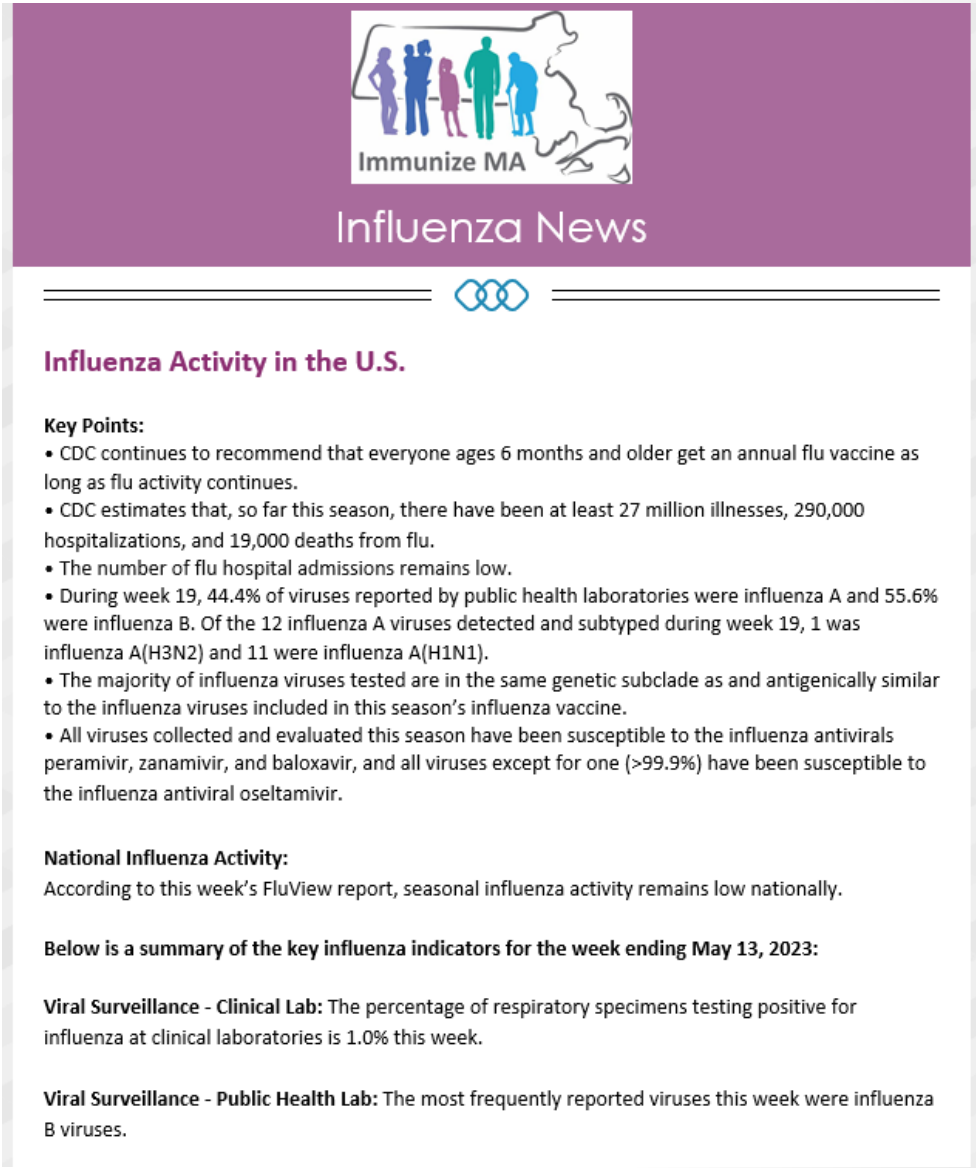
Key Takeaways

- We will see influenza this season – whether a severe season or a mild season is unknown at this time!
- Getting people vaccinated will provide the best protection we have to reduce the severity of illness, hospitalizations and death
- If you come across people who do not see themselves at risk for flu, let them know:
  - That if they don't want to get vaccinated for themselves, then do it for the people around them –
    - their grandparents,
    - their immunocompromised parent,
    - their partner,
    - their own infant or the infant of a friend/family member

Epidemiologists are always available to answer questions and assist! (617) 983-6800

Weekly Influenza Updates Email & Flu Report

- MDPH sends out a weekly email that highlights recent local and national flu activity and associated guidance. If you are interested in receiving these flu updates, please email Joyce Cohen (joyce.cohen@mass.gov).



Immunize MA

Influenza News

Influenza Activity in the U.S.

Key Points:

- CDC continues to recommend that everyone ages 6 months and older get an annual flu vaccine as long as flu activity continues.
- CDC estimates that, so far this season, there have been at least 27 million illnesses, 290,000 hospitalizations, and 19,000 deaths from flu.
- The number of flu hospital admissions remains low.
- During week 19, 44.4% of viruses reported by public health laboratories were influenza A and 55.6% were influenza B. Of the 12 influenza A viruses detected and subtyped during week 19, 1 was influenza A(H3N2) and 11 were influenza A(H1N1).
- The majority of influenza viruses tested are in the same genetic subclade as and antigenically similar to the influenza viruses included in this season's influenza vaccine.
- All viruses collected and evaluated this season have been susceptible to the influenza antivirals peramivir, zanamivir, and baloxavir, and all viruses except for one (>99.9%) have been susceptible to the influenza antiviral oseltamivir.

National Influenza Activity:

According to this week's FluView report, seasonal influenza activity remains low nationally.

Below is a summary of the key influenza indicators for the week ending May 13, 2023:

Viral Surveillance - Clinical Lab: The percentage of respiratory specimens testing positive for influenza at clinical laboratories is 1.0% this week.

Viral Surveillance - Public Health Lab: The most frequently reported viruses this week were influenza B viruses.

Flu Resources

- CDC Influenza homepage: https://www.cdc.gov/flu/
- Influenza Surveillance: https://www.cdc.gov/flu//weekly/fluactivitysurv.htm
- Influenza Vaccination Coverage: https://www.cdc.gov/flu//fluvaxview/index.htm
- For Professionals: https://www.cdc.gov/flu/professionals/index.htm
- - vaccination homepage: https://www.cdc.gov/flu/professionals/vaccination/index.htm
- National Foundation for Infectious Diseases: www.nfid.org
- CDC Protect Yourself : https://www.cdc.gov/respiratory-viruses/
- MDPH Influenza Homepage: www.mass.gov/flu
- For Healthcare Settings: https://www.cdc.gov/flu/professionals/infectioncontrol/healthcaresettings.htm
- For HPAI situations
- https://www.cdc.gov/flu/avianflu/avian-flu-summary.htm
- https://www.aphis.usda.gov/aphis/ourfocus/animalhealth/animal-disease-information/avian/avian-influenza/2022-hpai
- CDC Viral Respiratory Dashboards:
- https://www.cdc.gov/surveillance/nrevss/index.html
- https://www.cdc.gov/surveillance/resp-lens/dashboard.html
- https://www.cdc.gov/surveillance/resp-net/dashboard.html
- https://www.cdc.gov/ncird/surveillance/respiratory-illnesses/index.html