Massachusetts State Immunization Update

28th Annual Massachusetts Adult Immunization Conference
April 4, 2023

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Massachusetts Department of Public Health

Disclosure

I, Pejman Talebian, 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.

I have no relevant financial relationships to disclose.

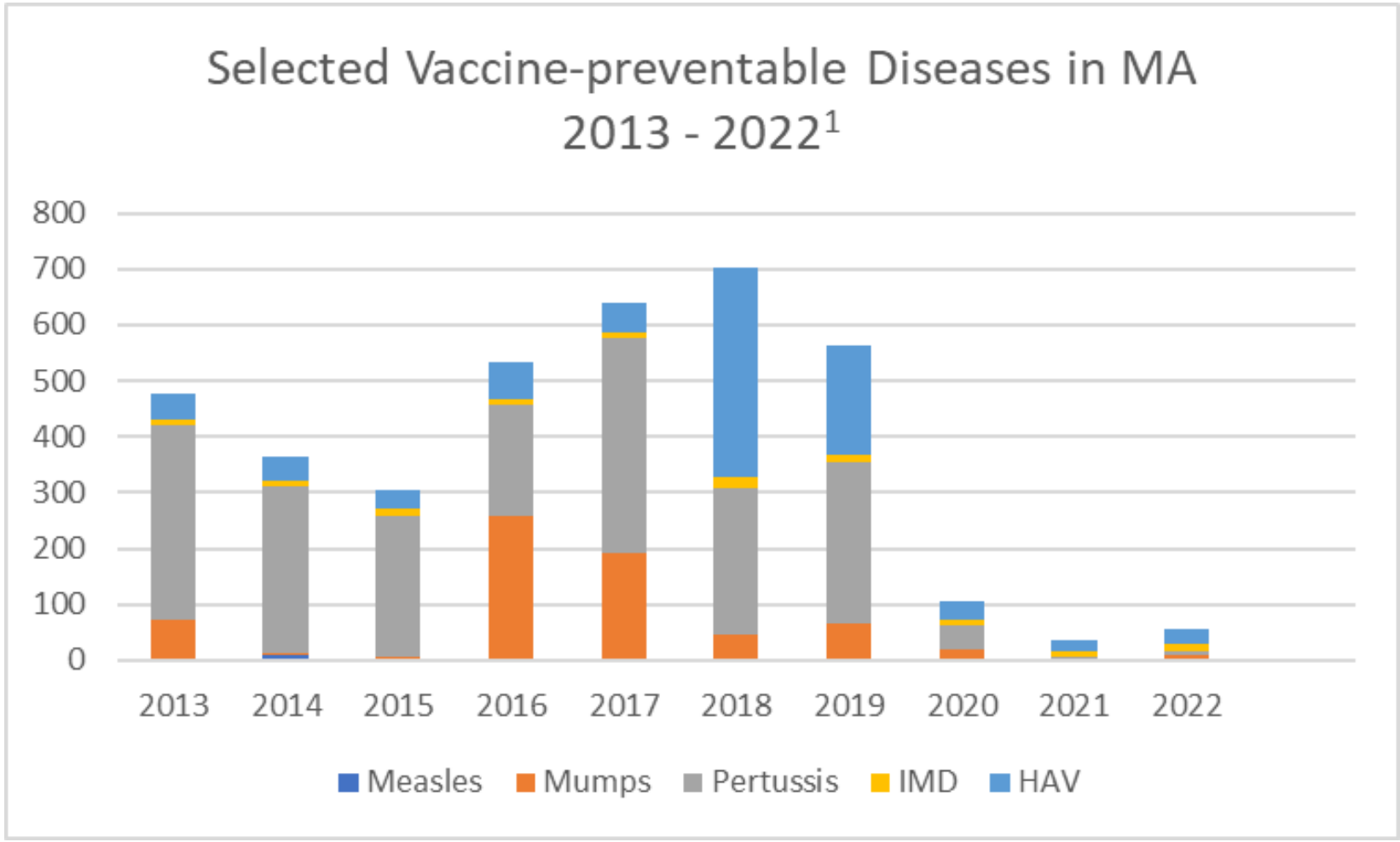
I may discuss the use of vaccines in a manner not approved by the U.S. Food and Drug Administration, but in accordance with ACIP recommendations.

Status of Vaccine Preventable Diseases

Vaccine-preventable Disease Morbidity in Massachusetts: Trends

In general, since the COVID pandemic VPD morbidity levels have remained low for most VPDs compared to before the pandemic.

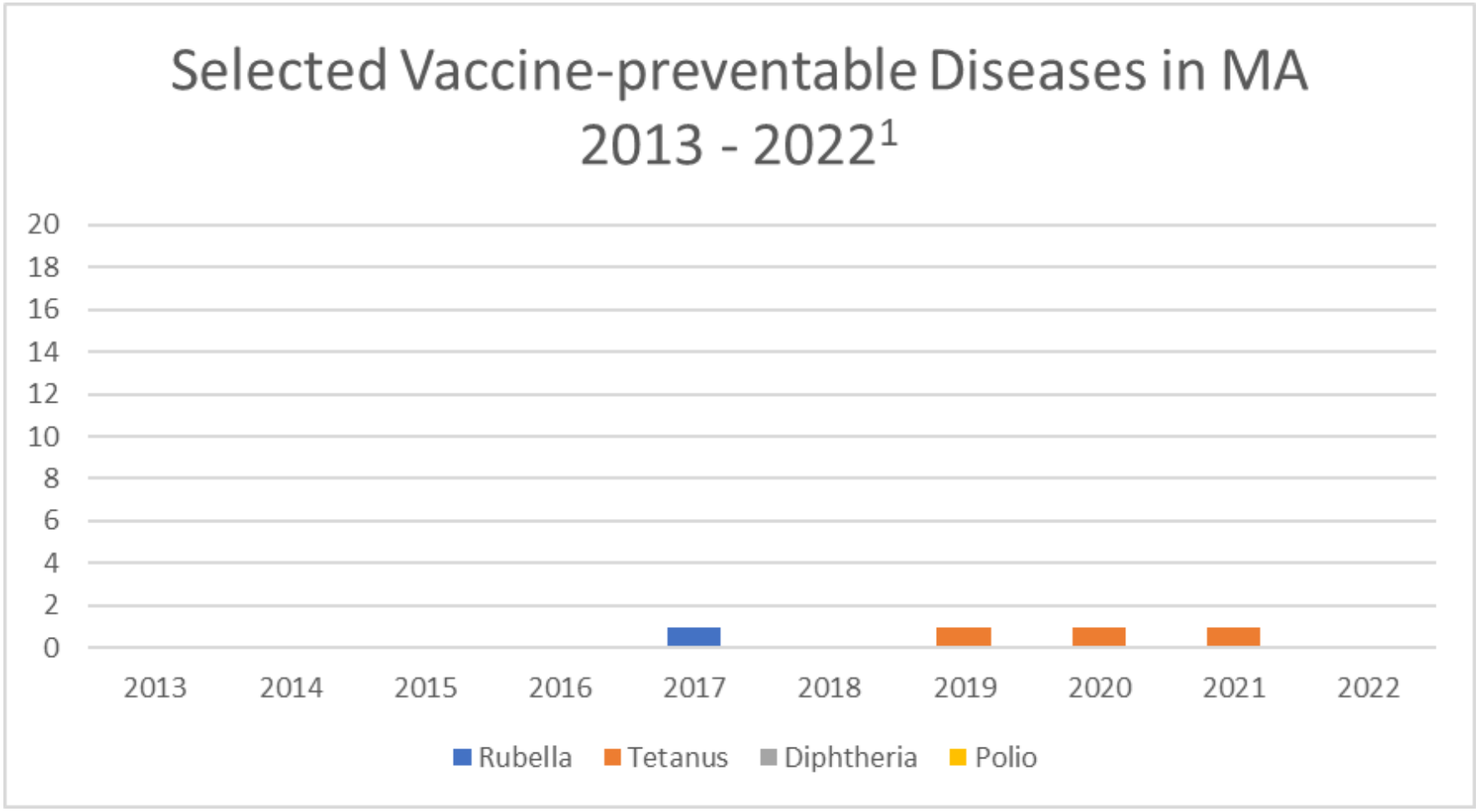
We are seeing slow increases in case numbers for some VPDs (e.g., mumps, HAV and pertussis).



MDPH March 2023

*2022 data are preliminary and subject to change

Vaccine-preventable Disease Morbidity in Massachusetts: Successes



MDPH March 2023

We continue to see once-devastating VPDs minimally impacting Massachusetts due to high vaccination rates and world-wide elimination efforts.

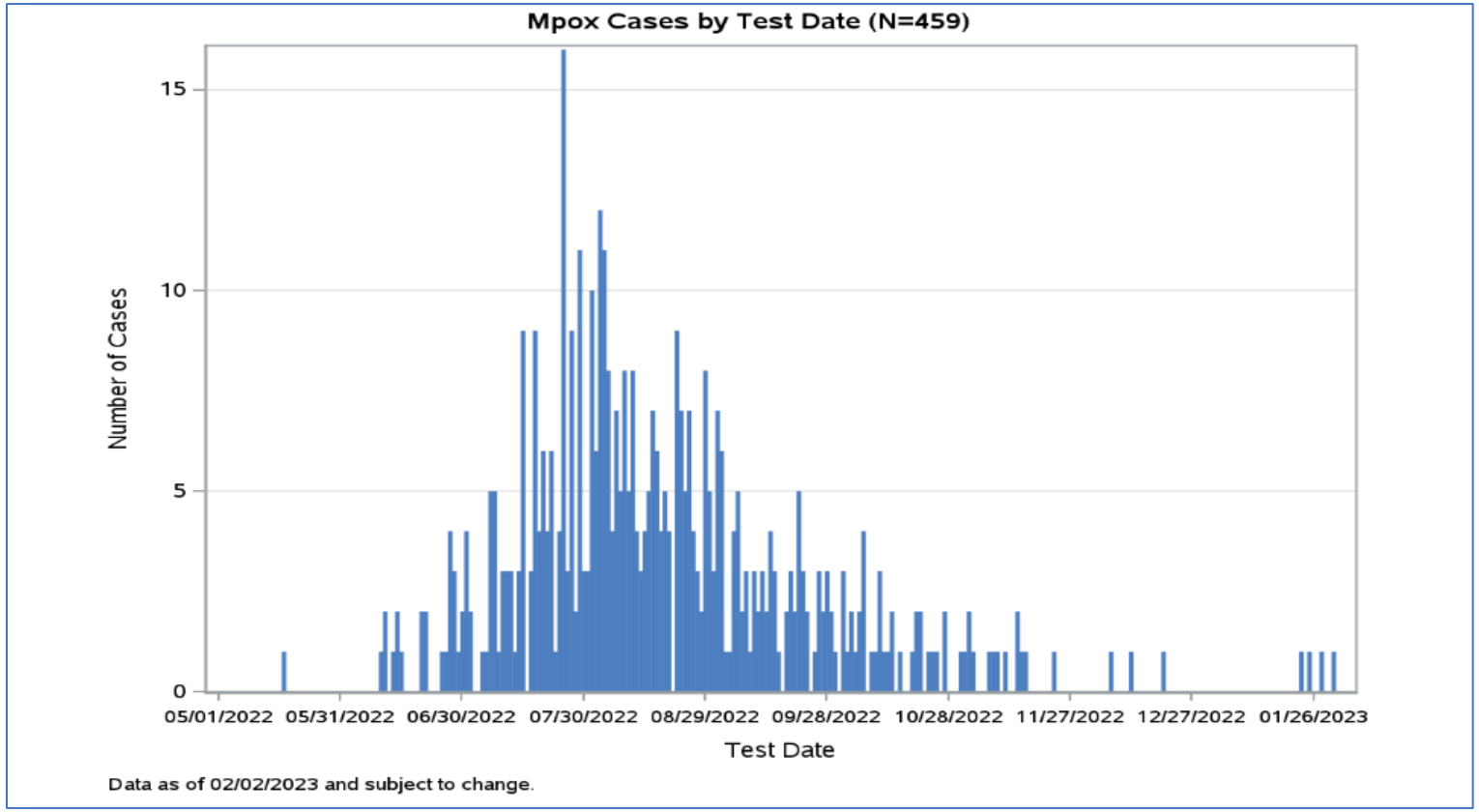
*2022 data are preliminary and subject to change

May 2022: Mpox Identified in Massachusetts – First U.S. Case

Massachusetts identifies first 2022 U.S. case of monkeypox infection

By Deena Beasley

May 18 (Reuters) - The Massachusetts Department of Public Health on Wednesday



[Massachusetts identifies first 2022 U.S. case of monkeypox infection | Reuters]

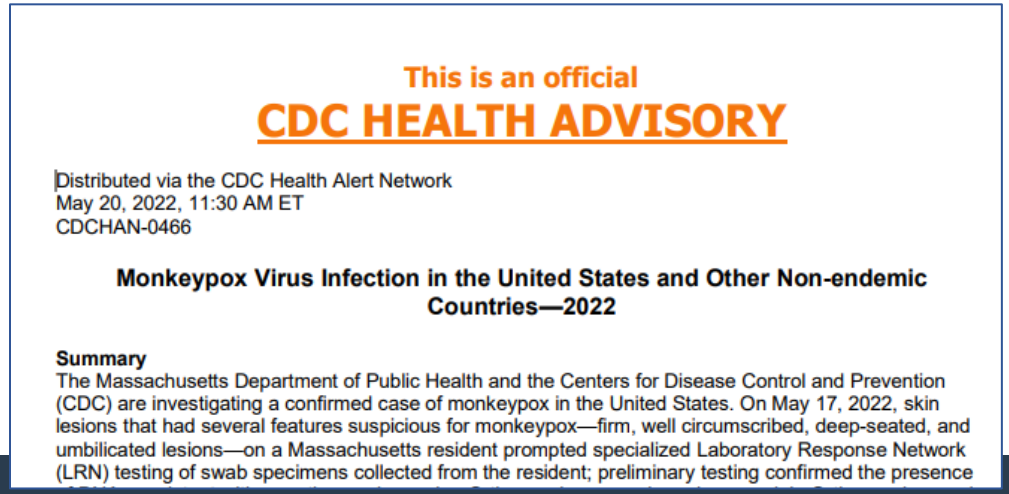
Mpox Vaccine in Massachusetts

Who should be vaccinated?

As of October 3, 2022, vaccination is 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 infection** in addition to those with possible **recent exposure to an individual with mpox** (that is, vaccination pre-exposure and post-exposure).

The JYNNEOS 2-dose vaccine is effective at protecting people against mpox. Experts also believe vaccination after exposure may help prevent the disease or make it less severe.

1,189,028 doses were administered in the U.S. as of 2/14/23.



This is an official

CDC HEALTH ADVISORY

Distributed via the CDC Health Alert Network
May 20, 2022, 11:30 AM ET
CDCHAN-0466

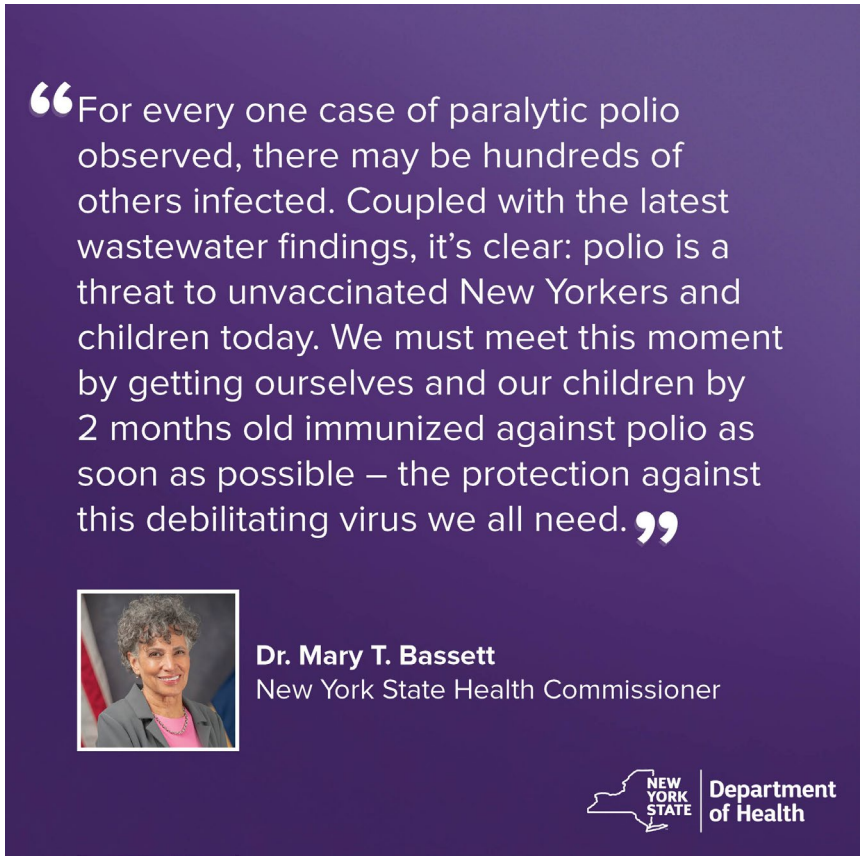
Monkeypox Virus Infection in the United States and Other Non-endemic Countries—2022

Summary

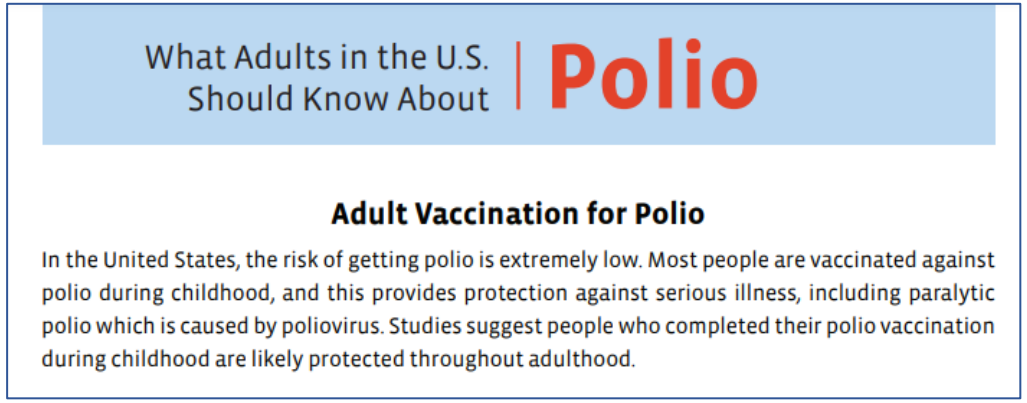
The Massachusetts Department of Public Health and the Centers for Disease Control and Prevention (CDC) are investigating a confirmed case of monkeypox in the United States. On May 17, 2022, skin lesions that had several features suspicious for monkeypox—firm, well circumscribed, deep-seated, and umbilicated lesions—on a Massachusetts resident prompted specialized Laboratory Response Network (LRN) testing of swab specimens collected from the resident; preliminary testing confirmed the presence

Mpox information for health care providers | Mass.gov

July 2022: Polio Case Confirmed in Rockland County New York in Unvaccinated Adult



- Polio considered eliminated in the U.S.
- Since 1979 there have been no cases of wild polio that have originated in the U.S.
- In very rare instances, the **vaccine-derived virus** can genetically change into a form that can paralyze – this is what is known as a vaccine-derived poliovirus (VDPV).
- This is the second identification of community transmission of vaccine-derived poliovirus in the United States since 1979.


What Adults in the U.S. Should Know About | Polio

Adult Vaccination for Polio

In the United States, the risk of getting polio is extremely low. Most people are vaccinated against polio during childhood, and this provides protection against serious illness, including paralytic polio which is caused by poliovirus. Studies suggest people who completed their polio vaccination during childhood are likely protected throughout adulthood.

https://www.cdc.gov/vaccines/vpd/polio/hcp/recommendations.html

Polio and U.S. Adults: Vaccination Assumptions and Recommendations

- Most adults in the United States were vaccinated as children and are therefore likely to be protected from getting polio. In general, unless there are specific reasons to believe they were not vaccinated, most adults who were born and raised in the United States can assume they were vaccinated for polio as children.
- Unvaccinated or incompletely vaccinated adults who are at **increased risk of exposure to poliovirus** should receive and complete their polio vaccination series with IPV.
- Other adults who are unvaccinated or incompletely vaccinated should talk with their doctor to understand their risk for polio and need for polio vaccination.
- Adults who completed their polio vaccination but who are at increased risk of exposure to poliovirus may receive one lifetime IPV booster.

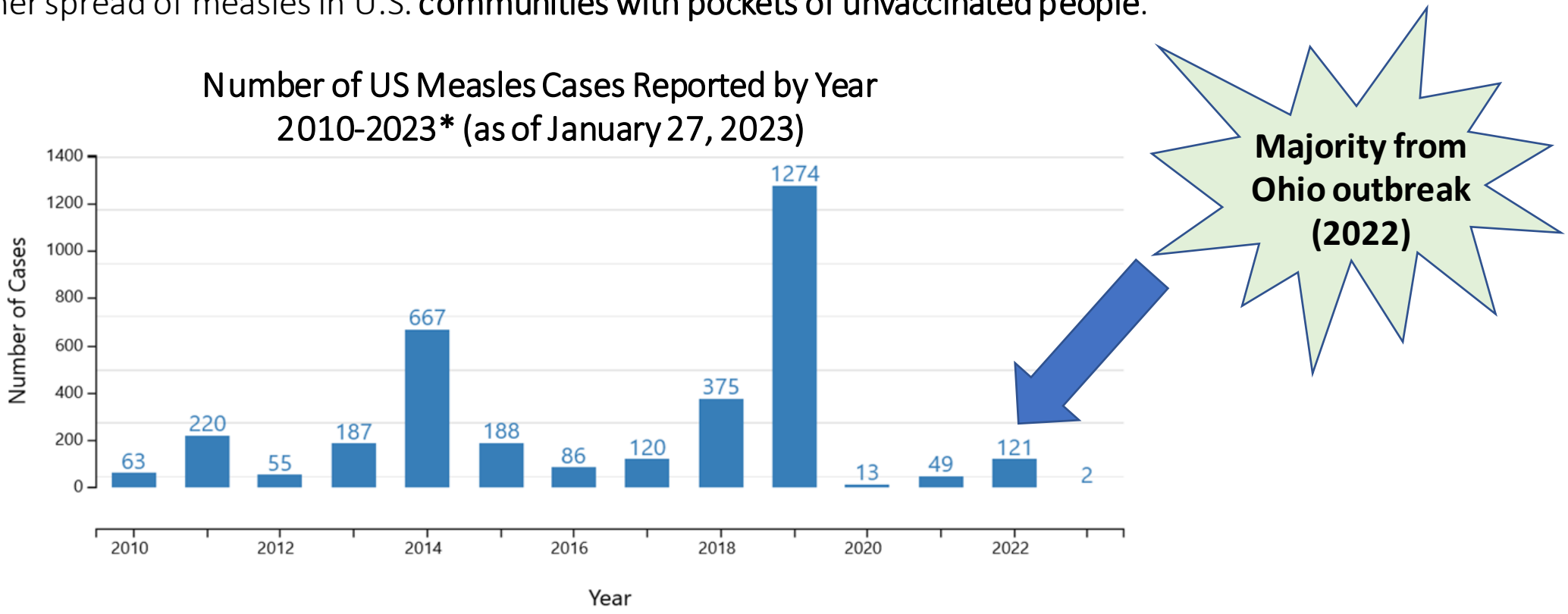
https://www.cdc.gov/vaccines/vpd/polio/hcp/recommendations.html

https://www.npr.org/2021/10/25/1047691984/decades-after-polio-martha-is-among-the-last-to-still-rely-on-an-iron-lung-to-br

All Things Considered, NPR, 10/25/2021
Decades after polio, Martha is among the last to still rely on an iron lung to breathe.

Measles Outbreaks in the U.S.

- Measles was declared eradicated from the U.S. in 2000 thanks to a highly successful vaccination campaign.
- Measles cases can still occur and eradication status can be threatened due to:
  - 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**.



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

Measles Vaccination Recommendations

Adults who do not have presumptive evidence of immunity should get at least one dose of MMR vaccine.

Certain adults may need 2 doses. Adults who are going to be in a setting that poses a high risk for measles or mumps transmission should make sure they have had two doses separated by at least 28 days. These adults include:

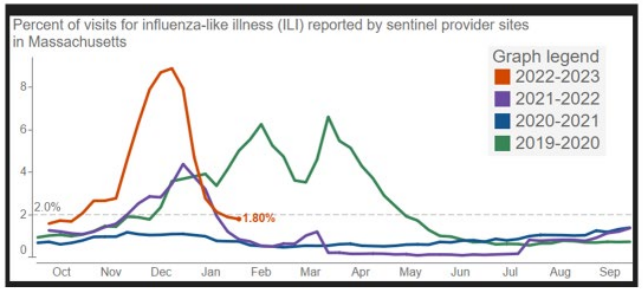
- students at post-high school education institutions
- healthcare personnel
- international travelers

https://www.cdc.gov/vaccines/vpd/mmr/public/index.html
https://www.washingtonpost.com/health/2022/12/26/vaccine-hesitancy-measles-chickenpox-polio-flu/

Influenza in MA 2022-2023

Early peaks in influenza-like illness, flu-related hospitalizations and lab-confirmed flu cases compared to recent seasons.

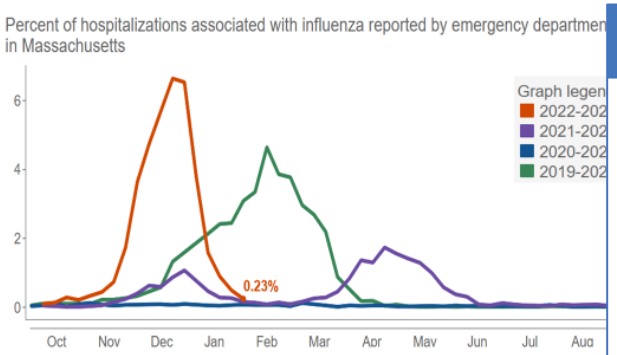
Influenza-like illness (ILI) in MA 2022-2023



Influenza-like illness (ILI) is defined as fever (temperature of 100 deg F or greater) in addition to cough and/or sore throat. Many more people are infected with influenza than are tested for influenza. ILI is used throughout the regular influenza season to help track influenza activity in individuals who are not tested, as trends in ILI have been shown to mirror influenza trends. Ninety-five healthcare facilities called 'sentinel sites' report the number of patients they see with ILI each week during regular flu season to MDPH. Sentinel sites include provider offices, school health services, community health centers, urgent care centers, and emergency departments across MA. Data reported by emergency departments provide information about ED visits that include diagnostic codes (influenza diagnosis code) as well as terms indicative of ILI. The CDC uses trends from past years to determine a region-specific baseline rate of ILI visits, which for Massachusetts is 2.0%. A rate above this regional baseline indicates higher than normal levels of ILI in the state.

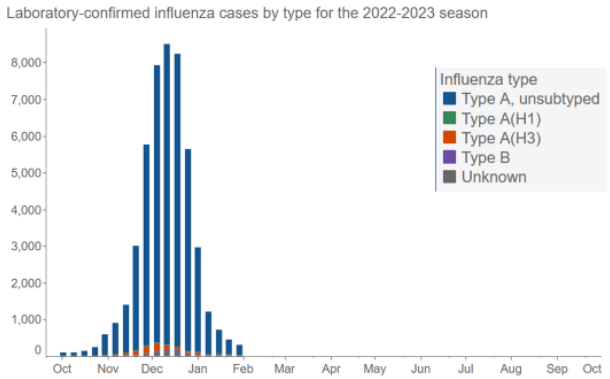
2023 MAIC Conference Massachusetts Department of Public Health

Hospitalizations Associated with Influenza in MA 2022-2023



2023 MAIC Conference Massachusetts Department of Public Health

Influenza: Lab Confirmed Cases in MA 2022-2023



2023 MAIC Conference Massachusetts Department of Public Health

Early Wave of Flu Brings Early Flu Hospitalizations

CDC urges vaccination now to protect against flu this season.

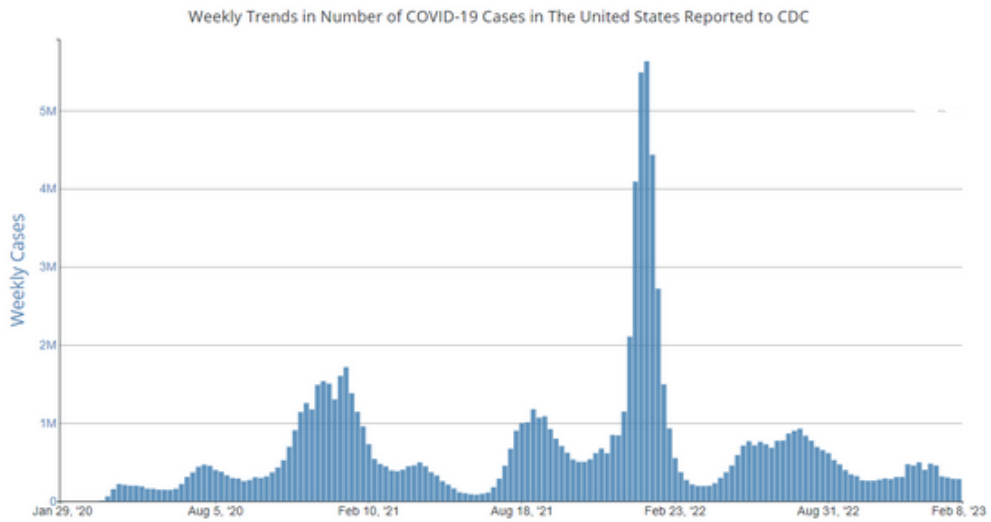
Español | Other Languages | Print

October 28, 2022—CDC's FluView report today shows that early flu activity has brought early flu-related hospitalizations, with the highest hospitalization rates in children and older adults. Levels of laboratory-confirmed flu activity continue to increase and are highest in the southeast and south-central parts of the country.

COVID-19 Public Health Emergency

January 31, 2020: U.S. declared coronavirus a public health emergency
March 10, 2020: Governor Charlie Baker declared a state of emergency
May 11, 2023: Biden administration to end COVID-19 emergency declarations
May 11, 2023: Healey-Driscoll administration announces end of COVID-19 Public Health Emergency in Massachusetts

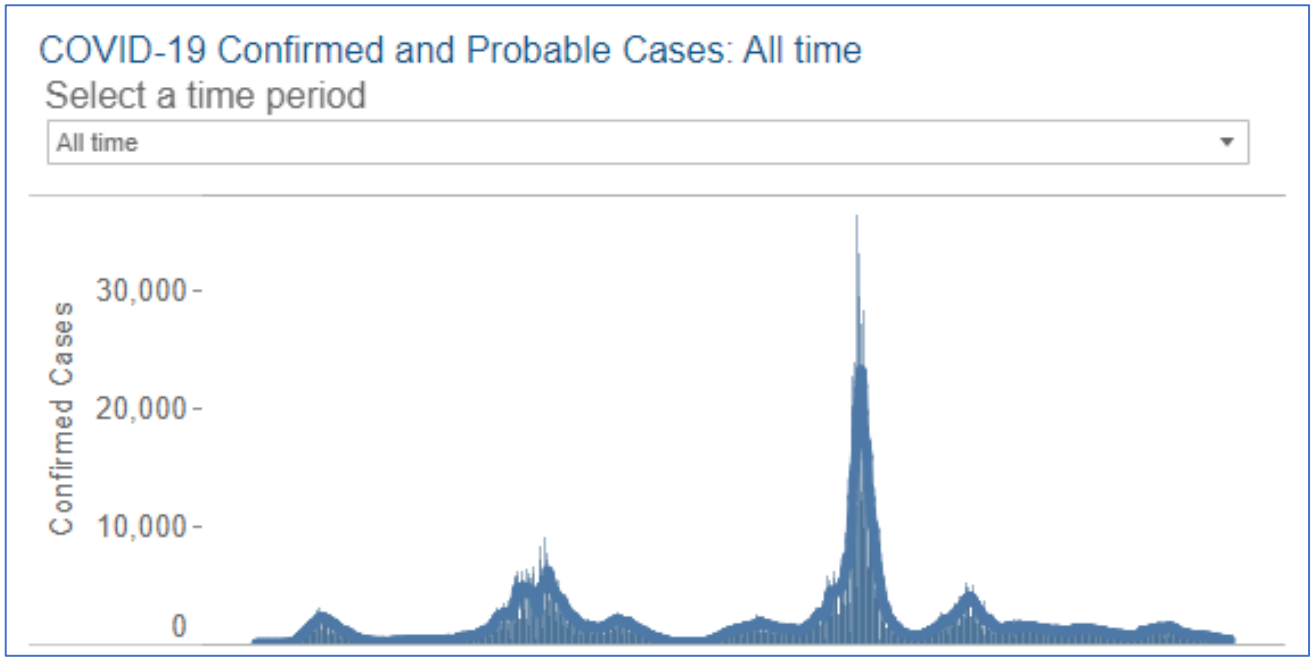
Weekly Trends in COVID-19 Cases in the United States Reported to CDC



A total of 102,736,819 COVID-19 cases have been reported in the United States as of February 8, 2023.

https://www.cdc.gov/coronavirus/2019-ncov/covid-data/covidview/index.html

Massachusetts COVID-19 Cases as of 3/16/2023



A total of 2,027,015 COVID-19 cases have been reported in Massachusetts as of March 15, 2023.

https://www.mass.gov/info-details/covid-19-response-reporting#covid-19-interactive-data-dashboard-

Immunization Coverage

Phasing out this version of COVID-19 Vaccine Dashboard (3/28/23)

	March 21, 2023	March 22, 2023	March 23, 2023	March 24, 2023	March 25, 2023	March 26, 2023	March 27, 2023
At least one dose – number of people who received at least one dose of Moderna, Pfizer, Novavax, or Johnson & Johnson vaccine**	6,542,207	6,542,614	6,543,025	6,543,443	6,543,747	6,543,865	6,544,132
Fully vaccinated – number of people who received a primary series of Moderna, Pfizer, Novavax or Johnson & Johnson vaccine***	5,637,783	5,638,029	5,638,283	5,638,522	5,638,611	5,638,661	5,638,829
First booster doses – number of people who received a booster dose of Moderna, Pfizer, or Johnson & Johnson vaccine****	3,526,132	3,526,679	3,527,205	3,527,641	3,527,875	3,528,014	3,528,404
Second booster doses – number of people who have received at least 2 booster doses*****	1,661,241	1,661,830	1,662,470	1,663,098	1,663,516	1,663,763	1,664,198
Total Doses Administered (MIIS)	17,629,851	17,631,905	17,634,054	17,636,099	17,637,316	17,638,158	17,639,621

*Data from the Massachusetts Immunization Information System (MIIS) are as of midnight the night before.
**Now that the majority of Massachusetts residents have received at least one dose of COVID-19 vaccine, changes to this cumulative count may represent data corrections and deduplications.
***An individual is counted as fully vaccinated if they have received the number of doses required to complete the primary series for their age and all of these doses have been reported to MIIS. Pfizer recipients under 5 years of age require three doses of vaccine; all other Pfizer recipients require two doses. Moderna and Novavax recipients require two doses of vaccine. Janssen/Johnson & Johnson recipients require one dose of vaccine.
****See the defintions page at the end of this document for the full definition. Booster doses are currently recommended for everyone aged 5 years and older. See https://www.mass.gov/info-details/covid-19-booster-frequently-asked-questions for details on which formulation of vaccine is recommended at which intervals.
*****Second booster doses: Number of individuals who have received an additional dose after their first booster dose.

Goes Live April 6

Updated COVID-19 Vaccine Dashboard (3/28/23)

	Three weeks ago: cumulative through March 6, 2023	Two weeks ago: cumulative through March 13, 2023	Last week: cumulative through March 20, 2023	This week: cumulative through March 27, 2023
At least one dose -- number of people who received at least one dose of any COVID-19 vaccine**	6,786,282 97%	6,786,184 97%	6,786,887 97%	6,788,612 97%
Primary series complete -- number of people who received a primary series of vaccine	5,932,524 84%	5,934,754 84%	5,936,728 84%	5,938,851 84%
Boosted -- number of people who received a dose of Moderna or Pfizer booster vaccine since 9/1/2022***	1,969,629 28%	1,983,099 28%	1,993,535 28%	2,006,848 29%
Total doses administered	18,946,912	18,961,289	18,973,144	18,985,716

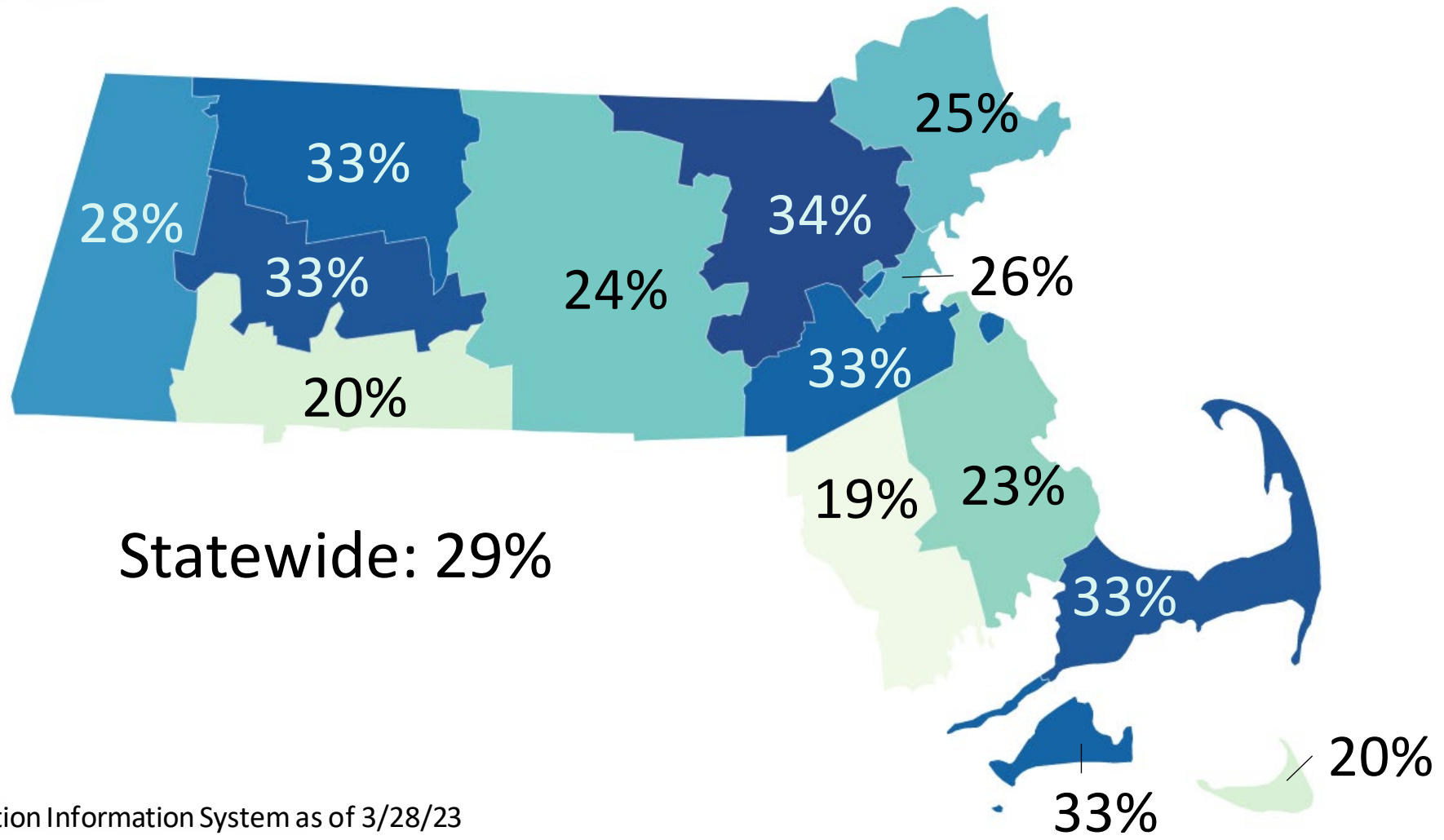
*Percentages are based on the number of people recorded in MIIS divided by the estimated state population from the UMass Donahue Institute. See source information below.
**Now that the majority of Massachusetts residents have received at least one dose of COVID-19 vaccine, changes to this cumulative count may represent data corrections and deduplications.
***After 9/1/2022 nearly all booster doses were the bivalent formulation of Moderna or Pfizer COVID-19 vaccine.
See the defintions page at the end of this document for the full definitions of the terms used on this page.
Source: Data from the Massachusetts Immunization Information System (MIIS) are as of midnight the night before. Population estimates source: MDPH calculates rates per 100,000 population using denominators estimated by the University of Massachusetts Donahue Institute using a modified Hamilton-Perry model (Strate S, et al. Small Area Population Estimates for 2011 through 2020, report, Oct 2016.)
See https://www.mass.gov/info-details/covid-19-booster-frequently-asked-questions for details on which formulation of vaccine is recommended at which intervals.

COVID-19 (Bivalent) Booster Doses Administered after 9/1/22

Age	Primary Series Complete N	Primary Series Complete % of pop. est.*	Booster Doses Administered after 9/1/2022 n	Booster Doses Administered after 9/1/2022 % of pop. est.*
0-4 Years	56,169	16%	45,229	13%
5-11 Years	249,517	48%	85,556	16%
12-15 Years	217,404	69%	61,510	19%
16-19 Years	289,160	78%	67,205	18%
20-64 Years	3,972,812	93%	1,082,775	25%
65+	1,424,998	119%	733,827	61%
Race and Ethnicity				
American Indian or Alaskan Native, non-Hispanic	6,072	61%	1,301	13%
Asian, non-Hispanic	443,735	87%	149,049	29%
Black or African American, non-Hispanic	388,726	82%	91,288	19%
Hispanic	645,832	73%	136,922	16%
Native Hawaiian or Pacific Islander, non-Hispanic	2,965	161%	633	34%
White, non-Hispanic	4,153,909	86%	1,552,353	32%
Multi Race, non-Hispanic	228,167	70%	96,387	30%
Other/Unknown, non-Hispanic	340,654	5%	48,169	1%
Sex				
Female	3,301,779	91%	1,157,642	32%
Male	2,886,549	85%	916,851	27%
Unknown sex	21,732	-	1,609	-

Source: Massachusetts Immunization Information System as of 3/28/23 *UMass Donahue Institute 2020 Population Estimates, IPUMS USA

COVID-19 (Bivalent) Booster Doses Administered after 9/1/22 by County of Residence



Statewide: 29%

Source: Massachusetts Immunization Information System as of 3/28/23

MA Adult Vaccination Rates, BRFSS 2018-2021

Vaccine/Group	2018	2019	2020	2021
Tdap ≥18 y/o	45%	45%	43%	42%
Zoster ≥60 y/o	45%	42%	45%	53%
HPV females 18-26 y/o (1+ doses)	71%	74%	70%	62%
HPV males 18-26 y/o (1+ doses)	43%	45%	51%	54%
Influenza vaccine ≥65 y/o	55%	68%	76%	75%
Pneumococcal vaccine ≥65 y/o	73%	75%	76%	71%
Hep B ≥18 y/o	41%	43%	44%	41%
Hep B High Risk ≥18 y/o	61%	60%	67%	61%

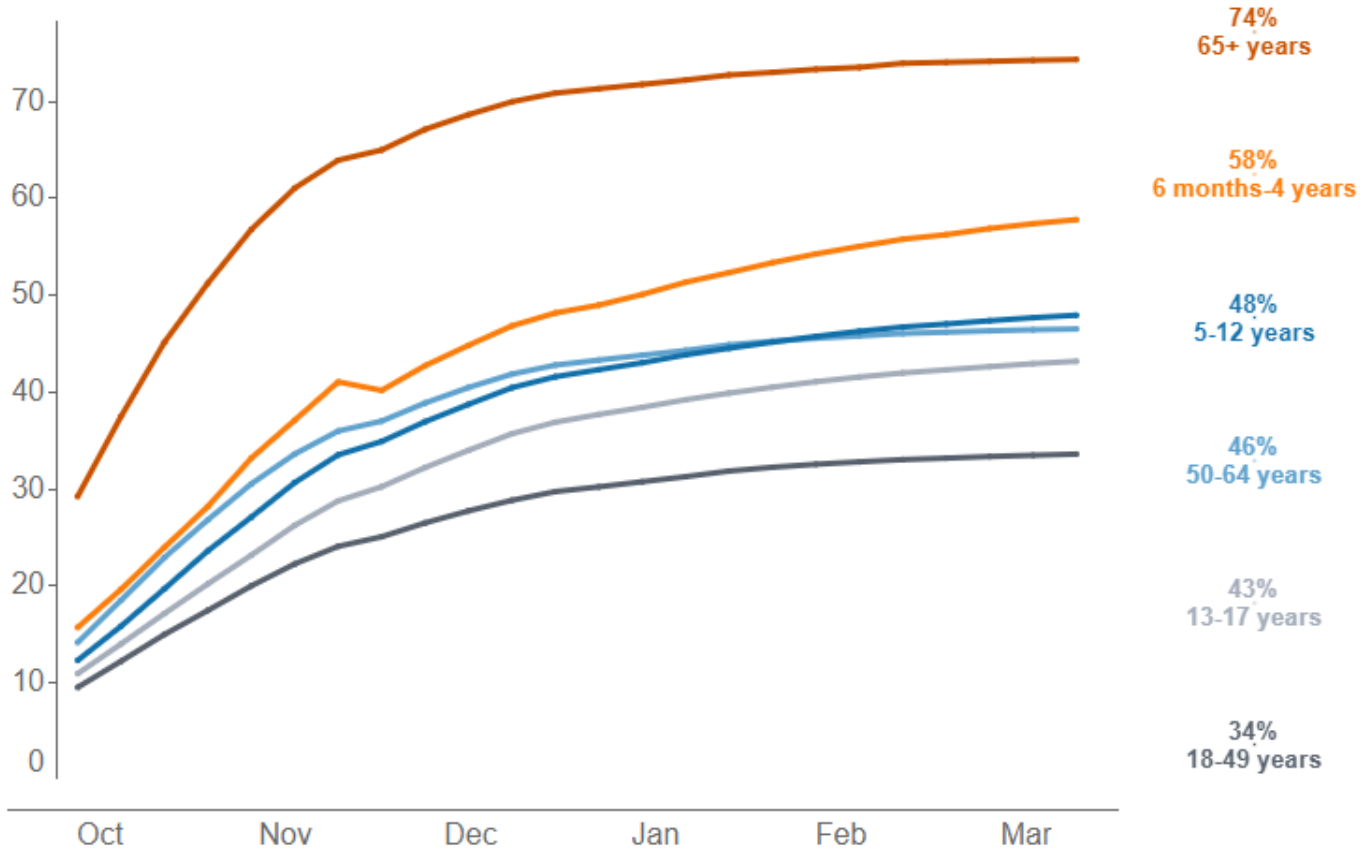
MA Flu Vaccination Rates, NIS 2020-2022

	MA 2020-21	MA 2021-22	US 2021-22
Everyone 6 mos+	67%	63%* (4)	51%
Children 6 mos – 17 yrs	84%	78%* (1)	58%
○ Children 6 mos – 4 yrs	87%	81%* (2)	67%
○ Children 5 – 12 yrs	84%	80% (1)	58%
○ Adolescents 13 – 17 yrs	80%	71%* (1)	50%
Adults 18 +	62%	59%* (6)	49%
○ Adults 18 – 64 y/o	57%	54% (4)	42%
○ Adults HR 18 – 64 y/o	61%	59% (7)	50%
○ Adults 50 – 64 y/o	67%	67% (2)	52%
○ Adults 65+	80%	77% (15)	74%

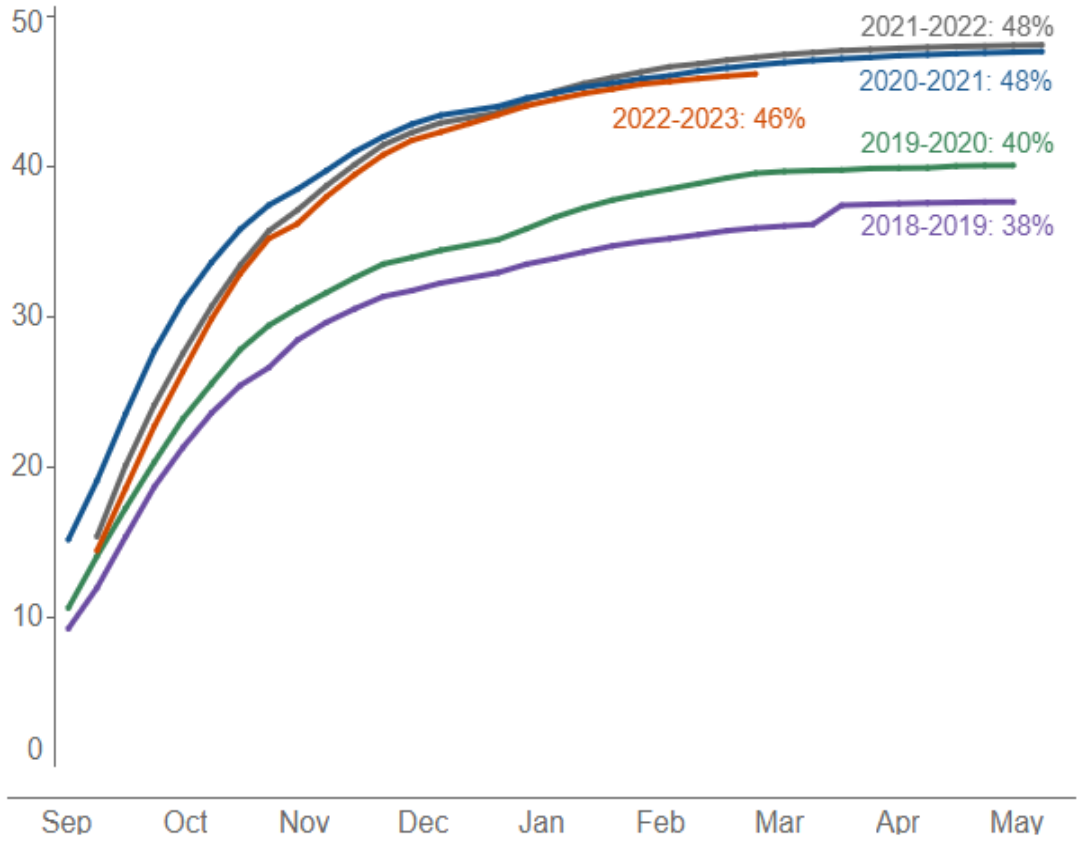
Source: 2020-21 and 2021-22 National Immunization Survey (NIS) – Flu, and BRFSS
*Statistically significant change compared to prior year

2022-23 Flu Vaccine Administration, MIIS, 2/24/23

Vaccine Coverage* by Age Group

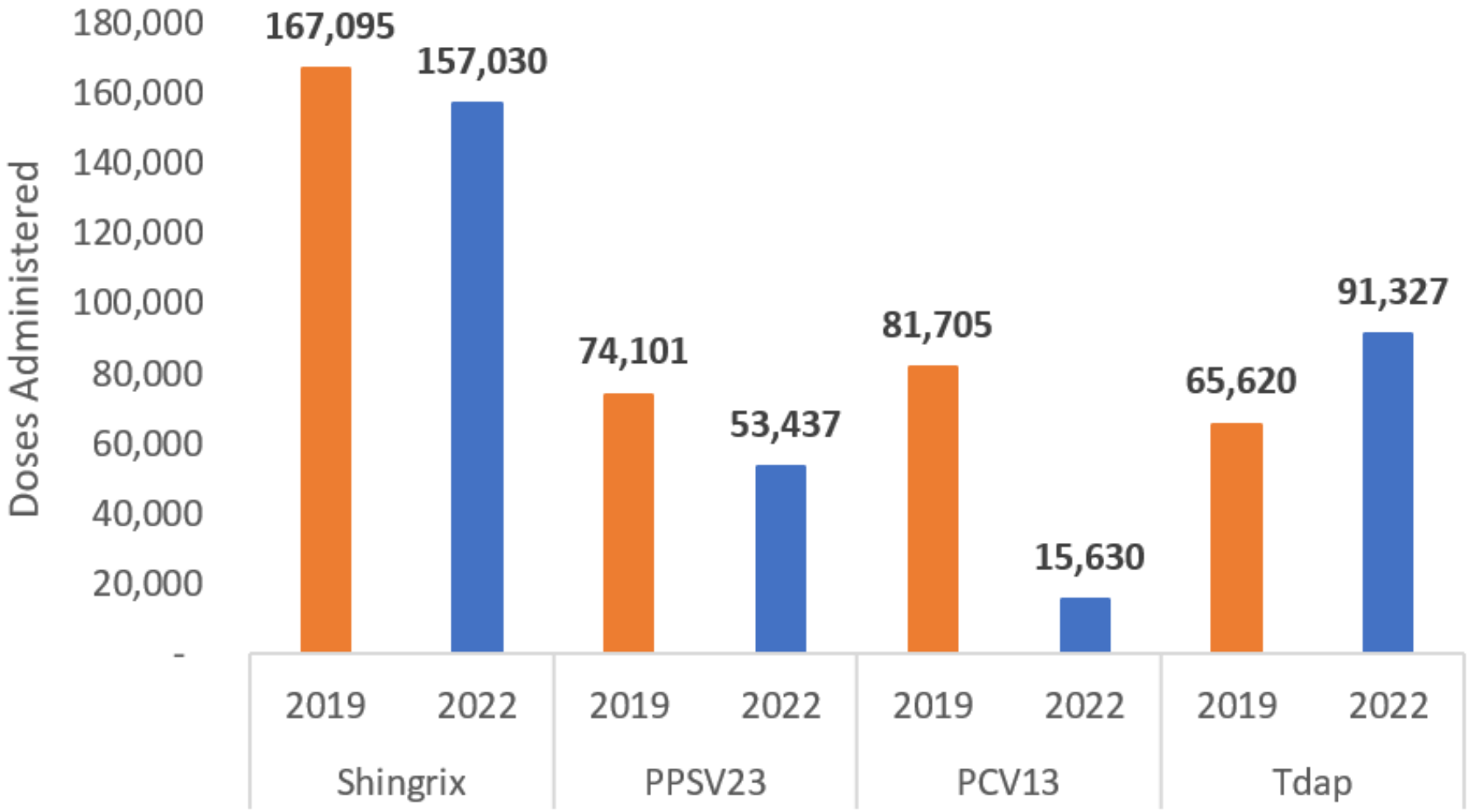


Vaccine Coverage* by Year



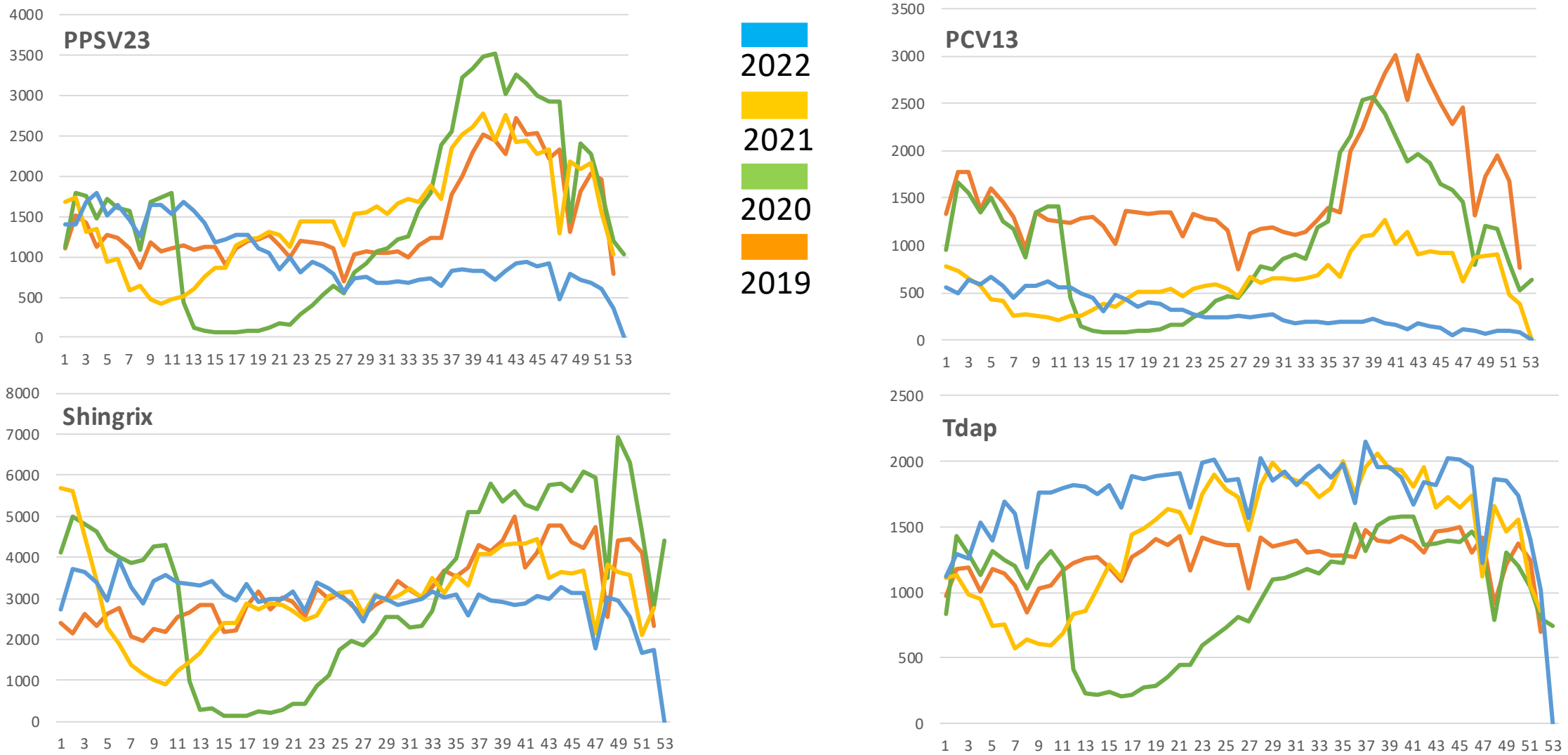
*UMass Donahue Institute 2020 Population Estimates, IPUMS USA

Routine Vaccinations Administered to Adults 65+ Years 2019 vs. 2022



Source: Massachusetts Immunization Information System as of 3/30/23

Routine Vaccinations Administered to Adults 65+ Years by MMWR Week, 2019-2022

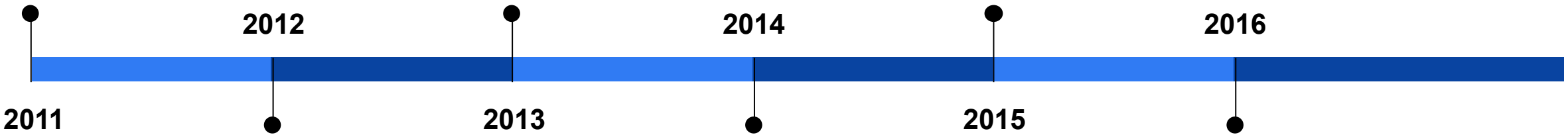


Source: Massachusetts Immunization Information System as of 3/30/23

Immunization IT System Rollout

- **MIIS**
- **Color**

MIIS Onboarding



2011
Sites: 9
Patients: 3,902
Shots: 69,505

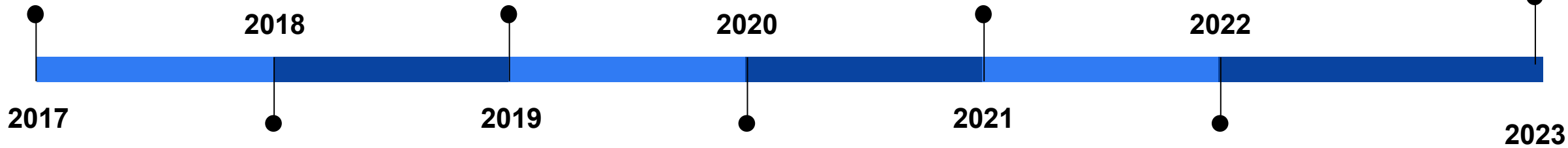
2012
Sites: 55
Patients: 815,928
Shots: 3,372,434

2013
Sites: 341
Patients: 1,539,629
Shots: 13,597,285

2014
Sites: 532
Patients: 2,370,194
Shots: 13,597,285

2015
Sites 1,121
Patients: 4,427,623
Shots: 33,334,571

2016
Sites: 1,970
Patients: 5,770,424
Shots: 40,464,697



2017
Sites: 2,104
Patients: 6,000,063
Shots: 42,093,576

2018
Sites: 2,280
Patients: 6,413,949
Shots: 48,668,309

2019
Sites: 2,471
Patients: 7,144,693
Shots: 56,389,594

2020
Sites: 2,691
Patients: 7,862,263
Shots: 65,236,892
Bi-Directional Data Exchange:
Sites: 647
Queries: 13,682,180

2021
Sites: 4,025
Patients: 8,807,872
Shots: 75,406,843
Bi-Directional Data Exchange:
Sites: 1830
Queries: 41,738,042

2022
Sites: 4,488
Patients: 10,584,224
Shots: 108,164,605
Bi-Directional Data Exchange:
Sites: 3,082
Queries: 313,721,491

2023
As of Feb 23, 2023
Sites: 4,492
Patients: 10,603,679
Shots: 109,426,595
Bi-Directional Data Exchange:
Sites: 3,108
Queries: 338,439,488

- Patients can access their MIIS records through the new online portal
- Print or download their full immunization history or COVID-19 only certificate

Address Cleansing Now Available in the MIIS

Benefits:

All addresses in the IIS database are verified and formatted in accordance with the USPS database and standards.

Will improve patient-level deduplication.

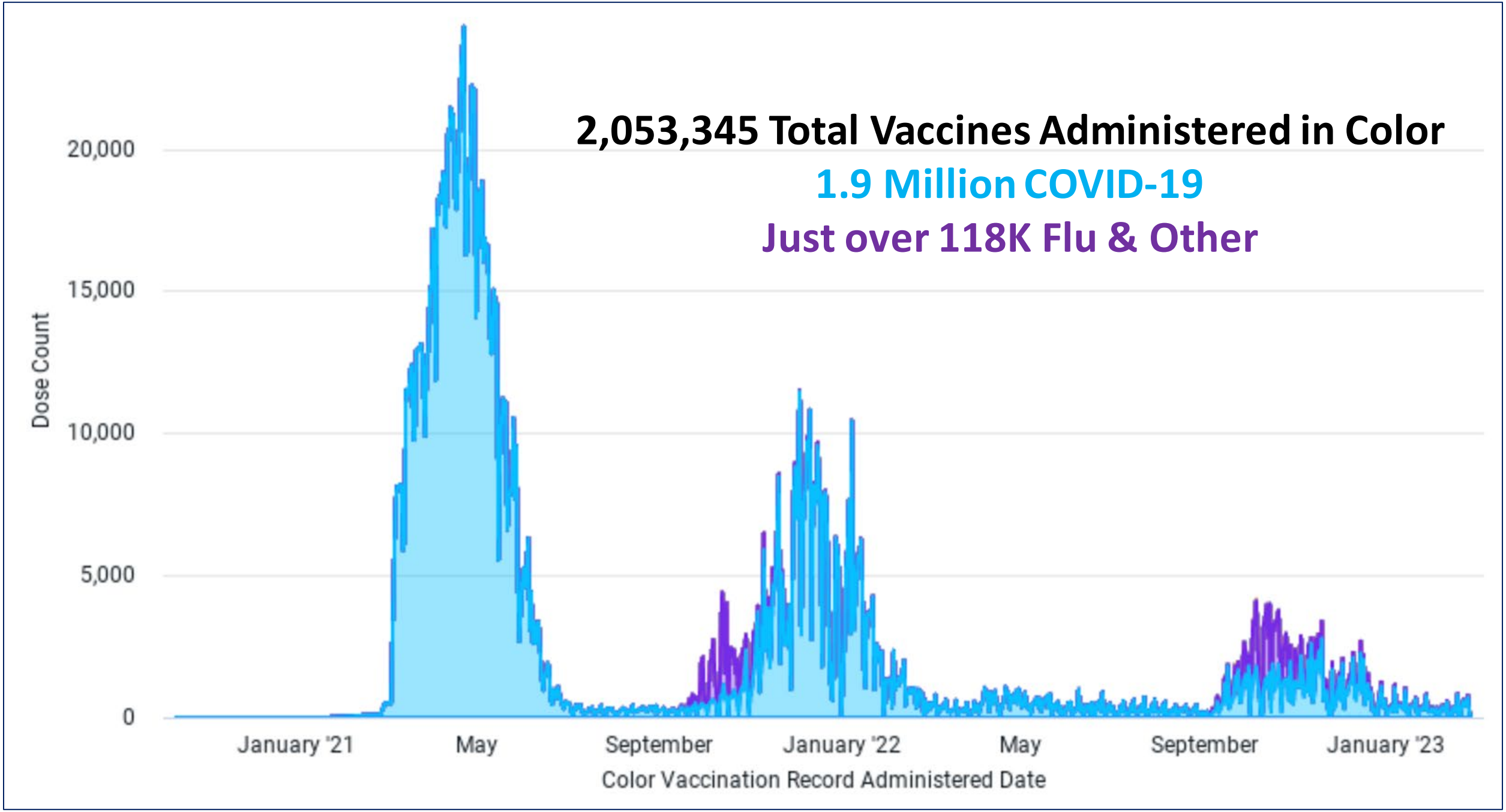
Improves the quality and accuracy of reports run by various address and geographic parameters (e.g., IQIP and other coverage assessments).

May help to better reconcile the denominator of patients in the IIS versus the actual census population.

Geocoding improves mapping capabilities and allows programs to look at data in different ways and better target intervention strategies (e.g., does distance from primary care provider impact coverage rates).

For reminder/recall, address cleansing can improve mailing success.

Improve household grouping functions by identifying all family members associated with a particular address.


2,053,345 Total Vaccines Administered in Color
1.9 Million COVID-19
Just over 118K Flu & Other
20,000
15,000
10,000
5,000
0
Dose Count
January '21
May
September
January '22
May
September
January '23
Color Vaccination Record Administered Date

Thank you

Contact us:

Immunization Division
617-983-6800
Fax: 617-983-6813

MIIS Help Desk
617-983-4335
MIISHelpDesk@mass.gov

Vaccine Management Unit
617-983-6828
DPH-Vaccine-Management@mass.gov

Fax: 617-983-6924