

# **Looking in the Rearview Mirror Lessons Learned about Immunizations and Immunization Messaging Through the Pandemic**

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**May 10, 2022**

# Objectives

- Discuss the burden of vaccine-preventable childhood diseases including COVID
- Communicate vaccine science to parents and patients effectively
- Comfortably explain the clinical rationale behind childhood vaccines
- Collaborate with school nurses to increase vaccination rates

No financial relationships to disclose

# Preventing Disease with Life-Saving Immunizations

## Vaccines for Children Act

**Table 1** Recommended Child and Adolescent Immunization Schedule for ages 18 years or younger, United States, 2022

These recommendations must be read with the notes that follow. For those who fall behind or start late, provide catch-up vaccination at the earliest opportunity as indicated by the green bars. To determine minimum intervals between doses, see the catch-up schedule (Table 2).

Vaccine	Birth	1 mo	2 mos	4 mos	6 mos	9 mos	12 mos	15 mos	18 mos	19–23 mos	2–3 yrs	4–6 yrs	7–10 yrs	11–12 yrs	13–15 yrs	16 yrs	17–18 yrs
Hepatitis B (HepB)	1 <sup>st</sup> dose	← 2 <sup>nd</sup> dose →			← 3 <sup>rd</sup> dose →												
Rotavirus (RV): RV1 (2-dose series), RVS (3-dose series)			1 <sup>st</sup> dose	2 <sup>nd</sup> dose	See Notes												
Diphtheria, tetanus, acellular pertussis (DTaP <7 yrs)			1 <sup>st</sup> dose	2 <sup>nd</sup> dose	3 <sup>rd</sup> dose			← 4 <sup>th</sup> dose →				5 <sup>th</sup> dose					
Haemophilus influenzae type b (Hib)			1 <sup>st</sup> dose	2 <sup>nd</sup> dose	See Notes		← 3 <sup>rd</sup> or 4 <sup>th</sup> dose → See Notes										
Pneumococcal conjugate (PCV13)			1 <sup>st</sup> dose	2 <sup>nd</sup> dose	3 <sup>rd</sup> dose		← 4 <sup>th</sup> dose →										
Inactivated poliovirus (IPV <18 yrs)			1 <sup>st</sup> dose	2 <sup>nd</sup> dose			← 3 <sup>rd</sup> dose →					4 <sup>th</sup> dose					
Influenza (IIV4) OR Influenza (LAIV4)												Annual vaccination 1 or 2 doses					Annual vaccination 1 dose only
												Annual vaccination 1 or 2 doses					Annual vaccination 1 dose only
Measles, mumps, rubella (MMR)					See Notes		← 1 <sup>st</sup> dose →					2 <sup>nd</sup> dose					
Varicella (VAR)							← 1 <sup>st</sup> dose →					2 <sup>nd</sup> dose					
Hepatitis A (HepA)					See Notes							2-dose series, See Notes					
Tetanus, diphtheria, acellular pertussis (Tdap ≥7 yrs)															1 dose		
Human papillomavirus (HPV)															See Notes		
Meningococcal (MenACWY-D ≥9 mos, MenACWY-CRM ≥2 mos, MenACWY-TT ≥2 years)															1 <sup>st</sup> dose	2 <sup>nd</sup> dose	
Meningococcal B (MenB-4C, MenB-FHbp)																	See Notes
Pneumococcal polysaccharide (PPSV23)																	See Notes
Dengue (DEN4CYD; 9–16 yrs)																	Seropositive in endemic areas only (See Notes)

Comparison of 20th century annual morbidity and current estimates vaccine-preventable diseases

Disease	20th Century annual morbidity ( <a href="#">2</a> )	2016 Reported cases ( <a href="#">3</a> )	Percent decrease (%)
Smallpox	29,005	0	100
Diphtheria	21,053	0	100
Measles	530,217	69	>99
Mumps	162,344	5,311	97
Pertussis	200,752	15,737	92
Polio (paralytic)	16,316	0	100
Rubella	47,745	5	>99
Congenital rubella syndrome	152	1	99
Tetanus	580	33	94
<i>Haemophilus influenzae</i>	20,000	22 <sup>*</sup>	>99

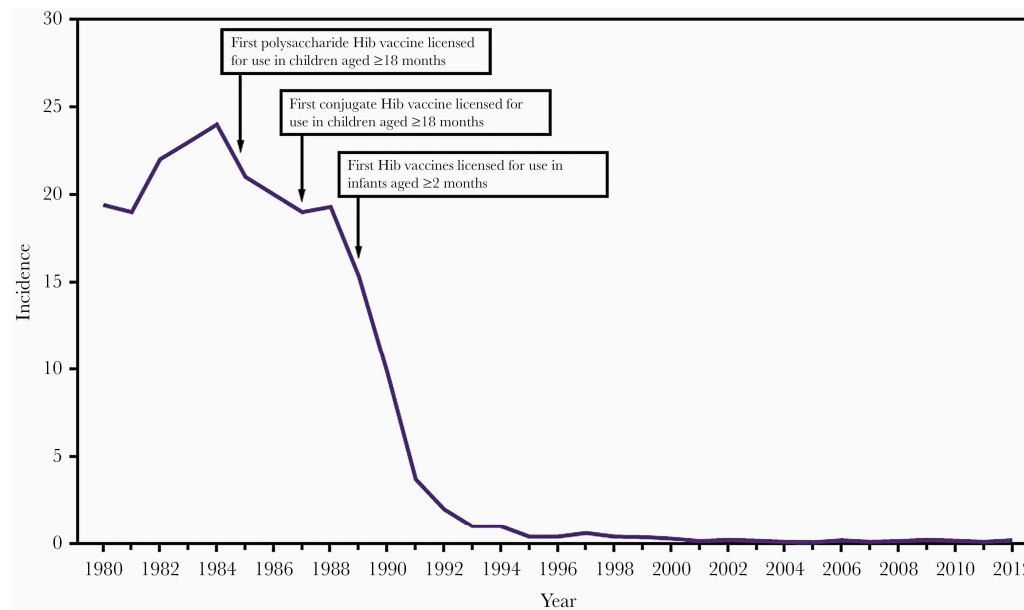
\**Haemophilus influenzae* type b (Hib) < 5 y of age.

Comparison of 20th century annual morbidity and current estimates vaccine-preventable diseases

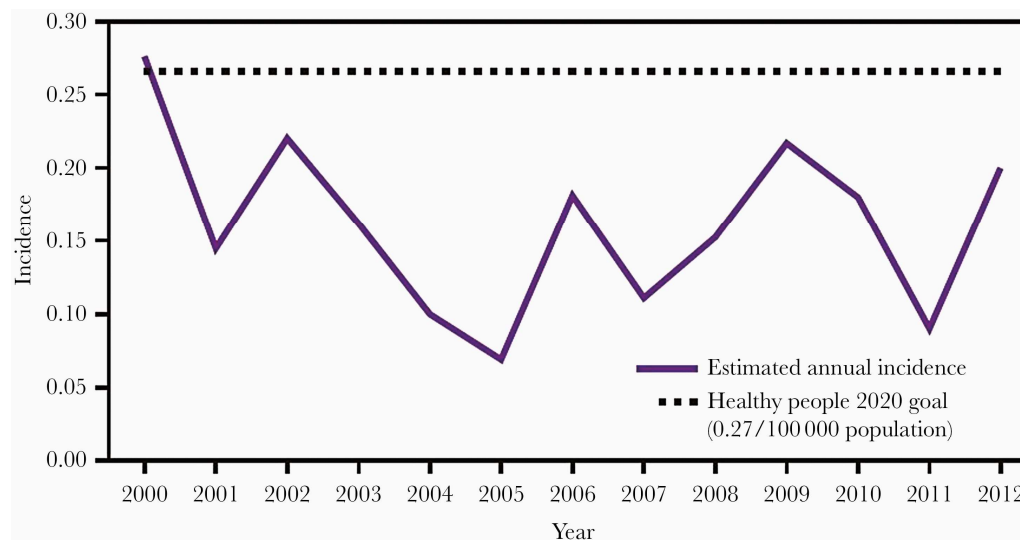
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\* *Haemophilus influenzae* type b (Hib) < 5 y of age.

**Figure 1.** Impact of *Haemophilus influenzae* type b (Hib) vaccines on incidence per 100 000 children <5 years old in the US, 1980-2012

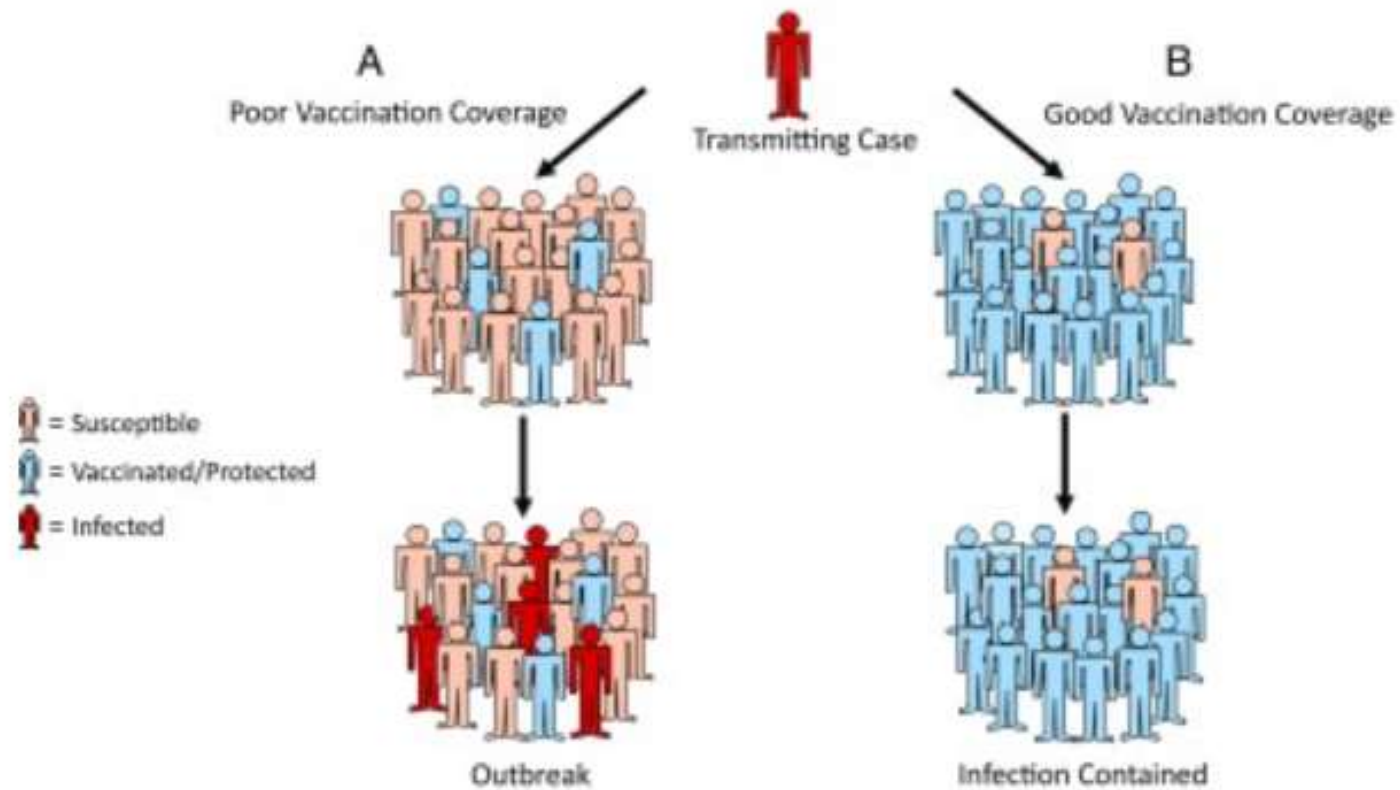


**Figure 2.** Estimated annual incidence per 100 000 children aged <5 years of *Haemophilus influenzae* type b infection in the United States, 2000–2012

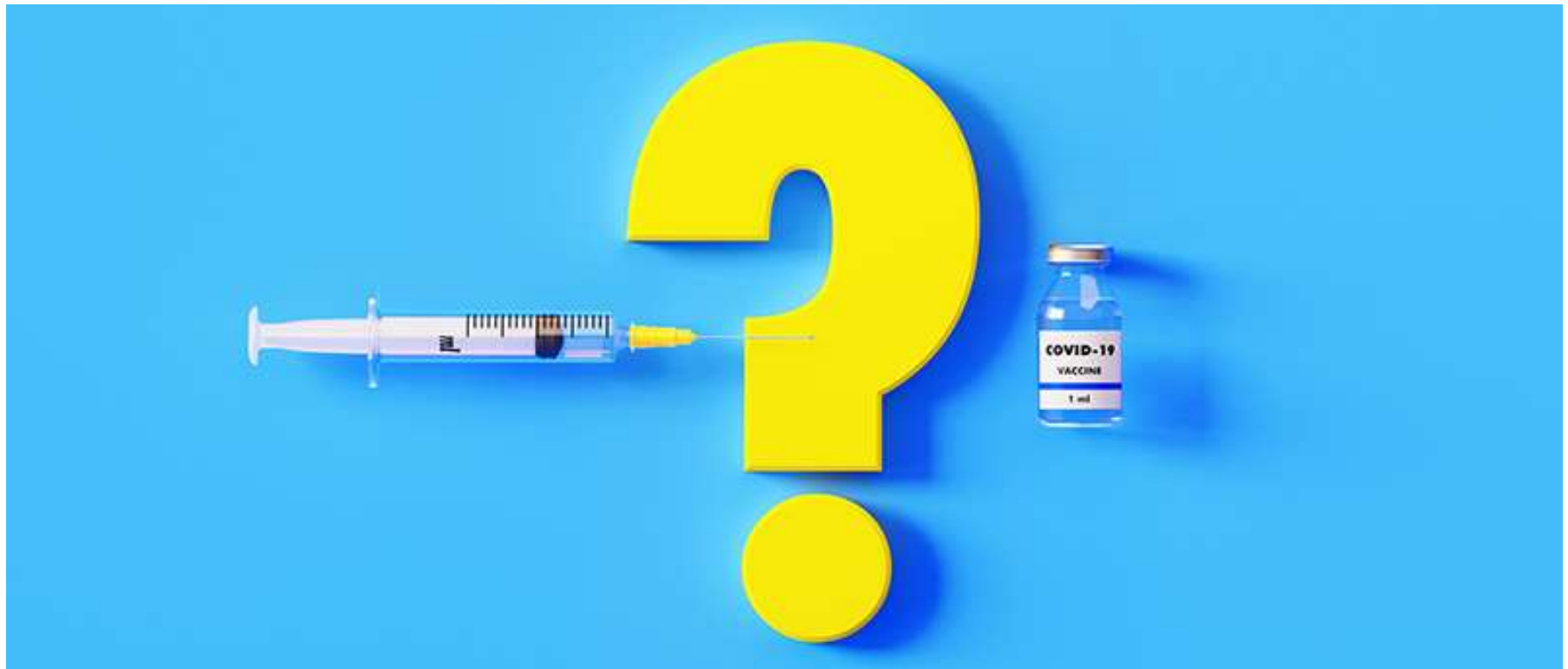




## Community Protection



# Communicating vaccine science to parents



# COVID-19 and kids: How mRNA vaccines work

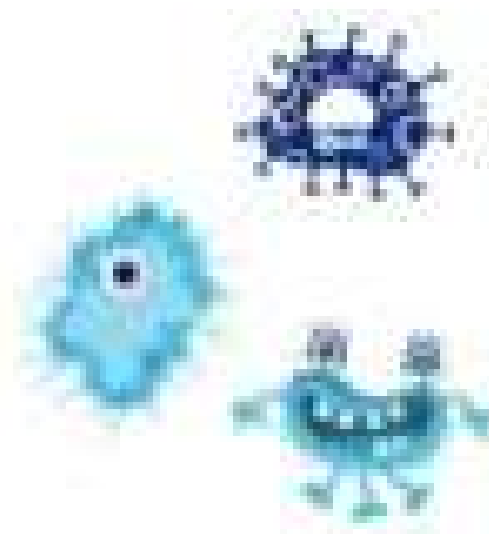


American Academy of Pediatrics (Copyright © 2021)

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A kid's guide to COVID-19

How vaccines work



University of Michigan Health System  
Ann Arbor, MI 48106-0000

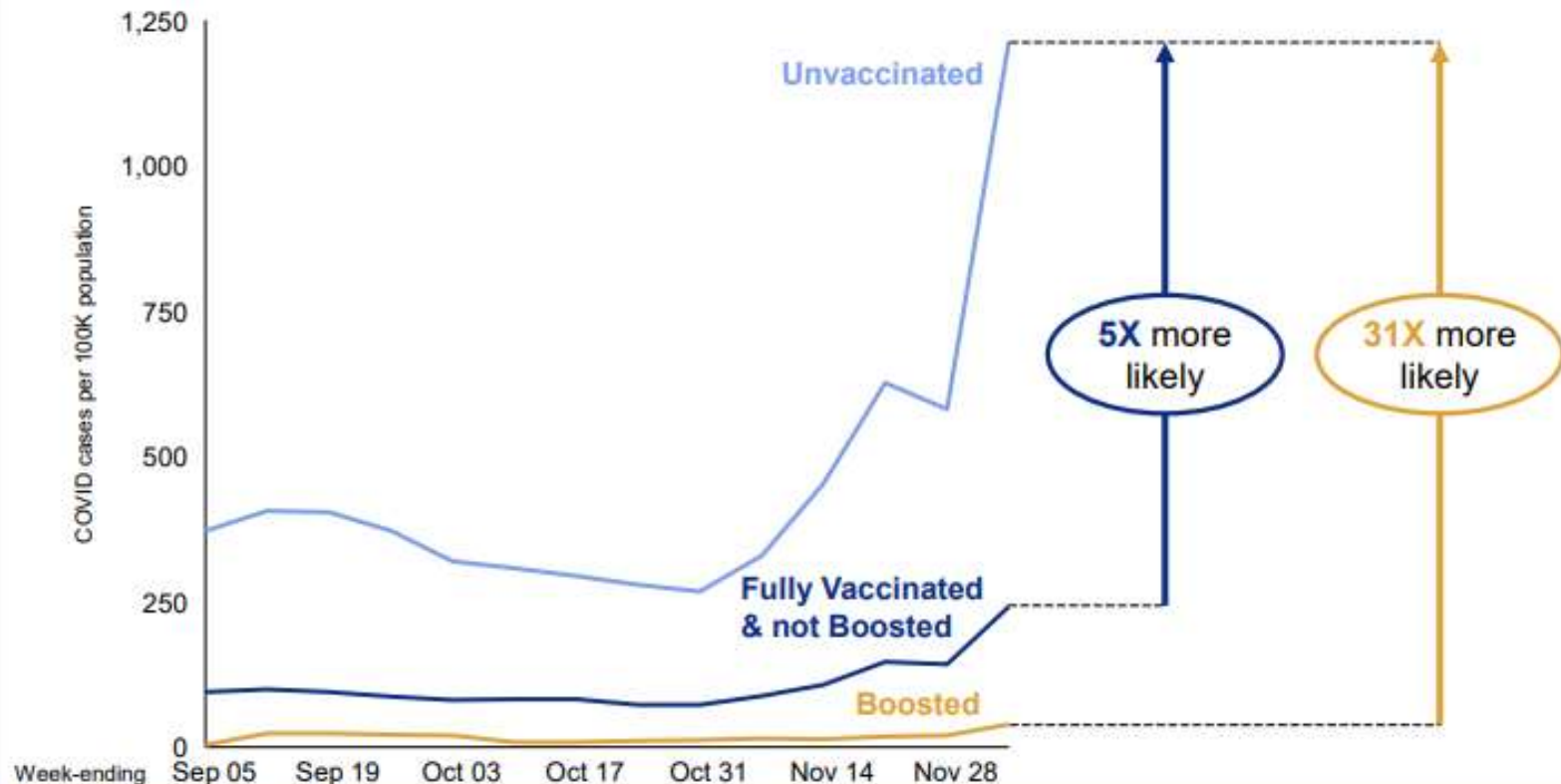
# Talking about the COVID Vaccine

- Inquire about specific questions
- Share my decision-making process
  - My story
- Meaningful data
  - Safety
  - Efficacy
  - Variants
- Reputable sources



## Per capita COVID-19 case rates in boosted, fully vaccinated, and unvaccinated populations in Massachusetts

Per capita COVID cases for individuals 12+ years of age  
(August 29, 2021 – December 4, 2021)



Last week, unvaccinated individuals were 31x more likely to be infected with COVID than boosted individuals

**Table 1. Immunization schedule for persons 5 years of age and older**

Recipient Age	Product <sup>††</sup>	Persons Who ARE NOT Moderately or Severely Immunocompromised		Persons Who ARE Moderately or Severely Immunocompromised	
		Primary Series <sup>‡§</sup>	Booster Dose <sup>‡¶</sup>	Primary Series <sup>‡§</sup>	Booster Dose <sup>‡¶</sup>
Type: mRNA vaccine					
5–11 years	Pfizer-BioNTech Ages: 5–11 years Orange cap	2 doses. Separate: Dose 1 and 2 by at least 3 weeks	Not recommended	3 doses. Separate: Dose 1 and 2 by at least 3 weeks. Dose 2 and 3 by at least 4 weeks.	Not recommended
12–17 years	Pfizer-BioNTech Ages: 12 years and older Gray cap or Purple cap	2 doses. Separate: Dose 1 and 2 by at least 3 - 8 weeks.**	At least 5 months after Dose 2	3 doses. Separate: Dose 1 and 2 by at least 3 weeks. Dose 2 and 3 by at least 4 weeks.	At least 12 weeks after Dose 3 <sup>††</sup>
18 years and older	Pfizer-BioNTech Ages: 12 years and older Gray cap or Purple cap	2 doses. Separate: Dose 1 and 2 by at least 3 - 8 weeks.**	At least 5 months after Dose 2 <sup>††</sup>	3 doses. Separate: Dose 1 and 2 by at least 3 weeks. Dose 2 and 3 by at least 4 weeks.	At least 12 weeks after Dose 3 <sup>††</sup>
	Moderna	2 doses. Separate: Dose 1 and 2 by at least 4 - 8 weeks.**	At least 5 months after Dose 2 <sup>††</sup>	3 doses. Separate: Dose 1 and 2 by at least 4 weeks. Dose 2 and 3 by at least 4 weeks.	At least 12 weeks after Dose 3 <sup>††</sup>
Recipient Age	Product <sup>††</sup>	Persons Who ARE NOT Moderately or Severely Immunocompromised		Persons Who ARE Moderately or Severely Immunocompromised	
		Primary Series <sup>‡§</sup>	Booster Dose <sup>‡¶</sup>	Primary Series <sup>‡§</sup>	Booster Dose <sup>‡¶</sup>
Type: Viral vector vaccine					
18 years and older	Janssen <sup>§§</sup>	1 dose	At least 8 weeks after Dose 1 <sup>¶¶</sup>	2 doses. Separate: Dose 1 and 2 <sup>***</sup> by at least 28 days Dose 2 MUST be a mRNA vaccine	At least 8 weeks after Dose 2 <sup>†††</sup>

Centers for Disease Control and Prevention. COVID-19 Vaccine Interim COVID-19 Immunization Schedule for Ages 5 Years and Older. April 2022.

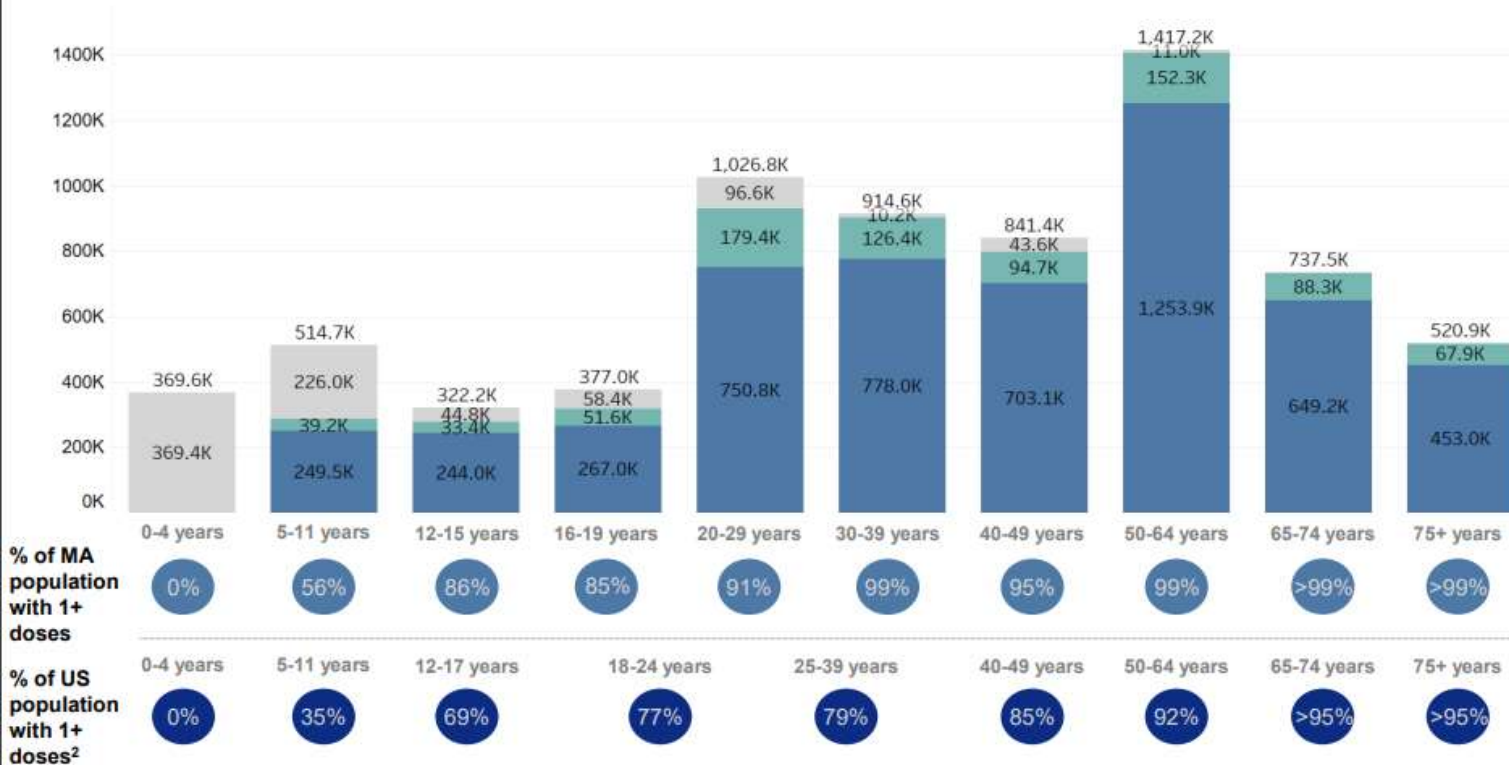


# In MA, 89% of the MA population has received at least one dose, compared to 77% of national population

Data as of Apr 19<sup>th</sup>

Individuals who are fully vaccinated<sup>1</sup>    Unvaccinated population  
Individuals who are partially vaccinated<sup>1</sup>

Vaccination status of individuals by age group (cumulative)



1. Individuals who are partially vaccinated are those that received the first dose but not the second dose of a two-dose vaccine. Individuals who are fully vaccinated are those that have received both doses of a two-dose vaccine or one dose of a single-dose vaccine.

2. On 11/2/21, Pfizer vaccine was recommended for individuals aged 5-11. National population estimates from CDC do not include Texas.

Source: MIIS; CDC; UMass Donahue Institute 2019 Population Estimates, IPUMS USA

Confidential, Draft and Pre-Decisional



# In MA, 56% of those fully vaccinated have received a booster dose, compared to 46% of national population

Data as of Apr 19<sup>th</sup>

- Individuals who are fully vaccinated but have not received booster<sup>1</sup>
- Individuals who have received a booster but no additional dose
- Individuals who have received an additional dose after the booster

Booster status of individuals by age group (cumulative)



1. Individuals who are fully vaccinated are those that have received both doses of a two-dose vaccine or one dose of a single-dose vaccine. This includes some individuals who may not be eligible for a booster (i.e. less than 2 or 5 months after primary series)

2. Orange and red bubbles are not mutually exclusive; orange bubble includes all those boosted, including those with an additional dose

Source: MIIS; CDC; UMass Donahue Institute 2019 Population Estimates, IPUMS USA

Confidential, Draft and Pre-Decisional



# Massachusetts Department of Public Health | COVID-19 Dashboard

## Data by Patient Age, Sex, Race, and Hispanic Ethnicity

The report on May 5, 2022 reflects data from the two week period April 17, 2022 to May 2, 2022.

\*These data are updated once per week.

### Navigation

Today's Overview

Overview Trends

COVID-19 Cases

COVID-19 Testing

Hospitalizations

COVID-19 Deaths

Higher Ed & LTCF

**Patient Breakdown**

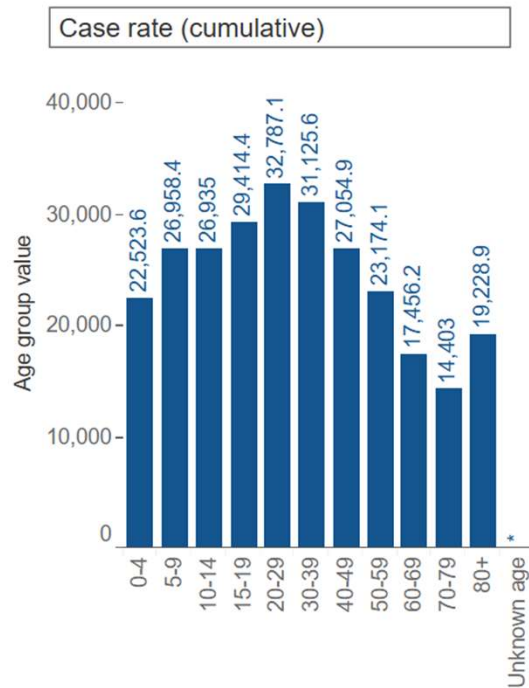
City & Town Data

Resources

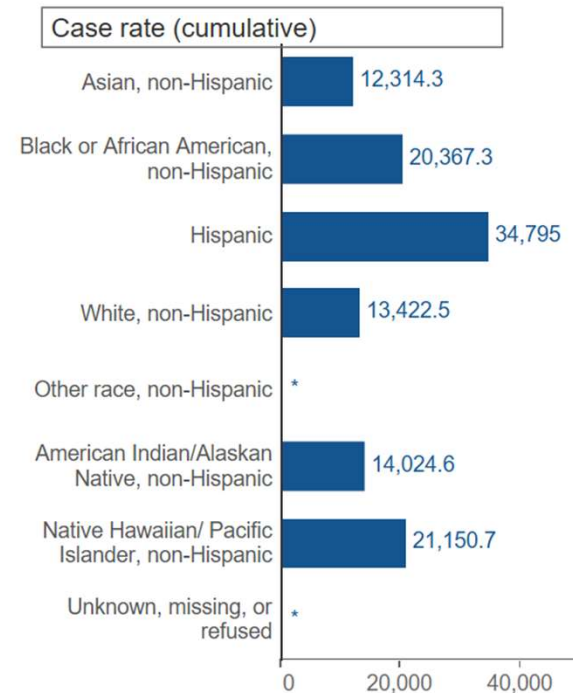
Data Archive

Confirmed and probable **cases** and **deaths** (select below) by...

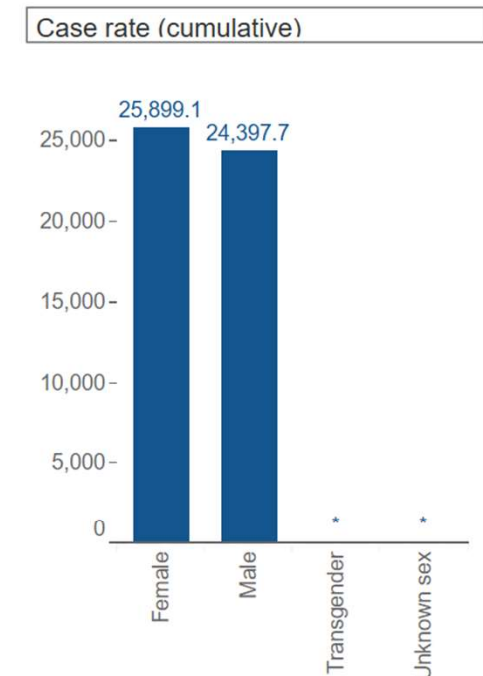
### Age groups



### Race and Hispanic ethnicity



### Sex



\*Cells with fewer than 5 observations have been suppressed. Groups without population estimates, such as other/ unknown, will not have rates listed. All data included in this dashboard are preliminary and subject to change. Data Sources: COVID-19 Data provided by the Bureau of Infectious Disease and Laboratory Sciences and the Registry of Vital Records and Statistics; Created by the Massachusetts Department of Public Health, Bureau of Infectious Disease and Laboratory Sciences, Division of Surveillance, Analytics and Informatics. 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.) \*The most recent 4 weeks of data are viewable on this page. To view data outside of this range, please visit our data archive and download the raw data.

Select a date  
5/5/2022



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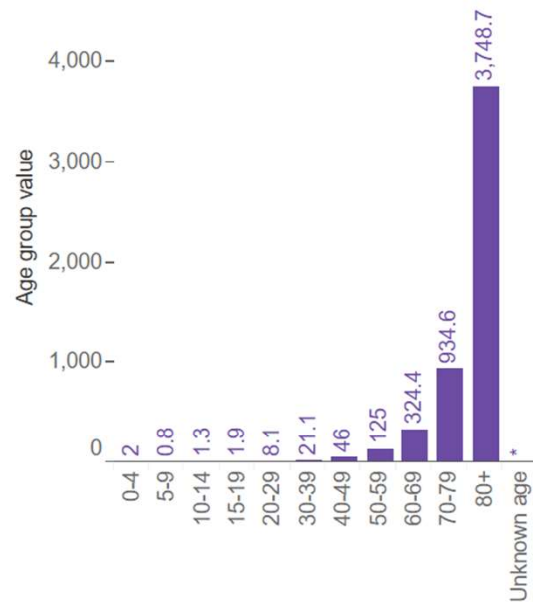
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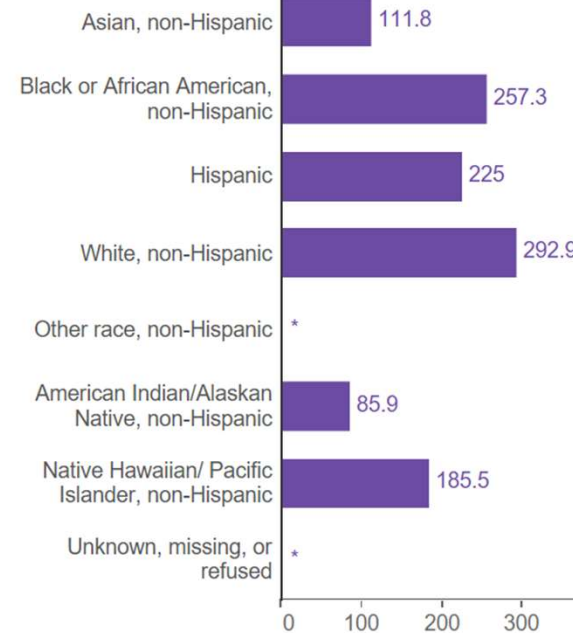
#### Age groups

Death rate (cumulative)



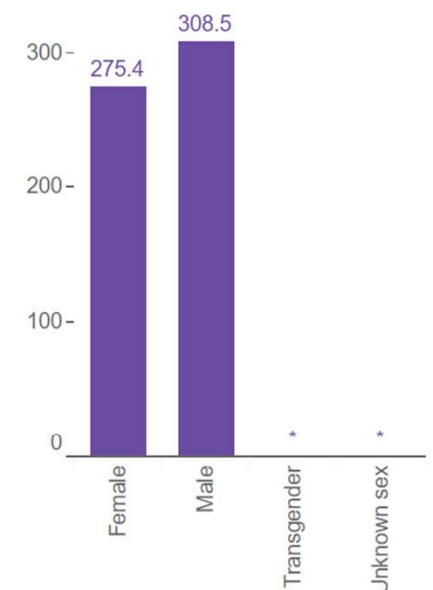
#### Race and Hispanic ethnicity

Death rate (cumulative)



#### Sex

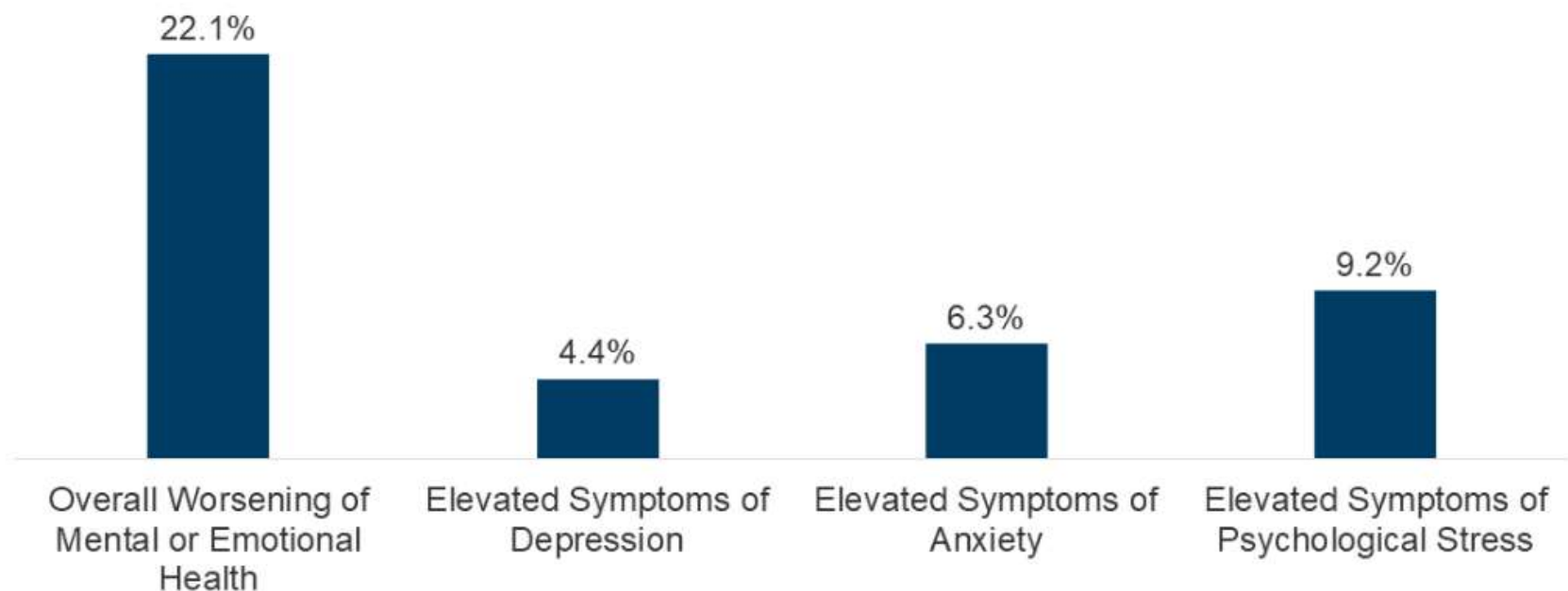
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Select a date  
5/5/2022

## Share of Parents Reporting Worsening Mental Health For Their Children Ages 5-12, October-November 2020



SOURCE: Verlenden JV, Pampati S, Rasberry CN, et al. Association of Children's Mode of School Instruction with Child and Parent Experiences and Well-Being During the COVID-19 Pandemic — COVID Experiences Survey, United States, October 8–November 13, 2020. MMWR Morb Mortal Wkly Rep 2021;70:369–376. DOI: <http://dx.doi.org/10.15585/mmwr.mm7011a1>

**KFF**

**Figure 3: Share of Parents Reporting Worsening Mental Health For Their Children Ages 5-12, October-November 2020**



THE GREAT DIVIDE

# One in five Boston public school children — may be virtual dropouts

Technical, language challenges keep students from continuing school online

By **Bianca Vázquez Toness** Globe Staff, Updated May 23, 2020, 2:47 p.m.

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<https://www.bostonglobe.com/2020/05/23/metro/more-than-one-five-boston-public-school-children-may-be-virtual-dropouts/>

# Collaboration with school nurses

Improvement school health services

Addressing social determinants of health

Management of chronic conditions

Feedback on treatment plans

Education for about need for medical visits

Introducing the  
Massachusetts Immunization Information System

# MIIS

## Fact Sheet for Parents and Patients



**T**he MIIS is a new statewide system to keep track of immunization records for you and your family. These records list the vaccinations (shots) you and your children get to protect against measles, chickenpox, tetanus, and other diseases. The goal is to make sure that everyone in Massachusetts is up-to-date with their shots and that your records are available when you need them – such as when your child enters school, when you need emergency medical help, or when you change healthcare providers.



**THANK YOU!**

**[Frinny.PolancoWalters@childrens.harvard.edu](mailto:Frinny.PolancoWalters@childrens.harvard.edu)**