



**150 YEARS**  
OF ADVANCING  
**PUBLIC**  
**HEALTH**

# Massachusetts Department of Public Health

## COVID-19 Vaccines: Employer Mandates

Larry Madoff, MD, FACP, FIDSA

Medical Director

Bureau of Infectious Disease and Laboratory Sciences

Professor of Medicine, University of Massachusetts Medical School

NECOEM

Dec 4, 2021

# Disclosure

- I have been asked to disclose any significant relationships with commercial entities that are either providing financial support for this program or whose products or services are mentioned during my presentations.
  - I have no 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.

1. COVID
2. COVID vaccines
3. Uptake and utilization
4. School requirements
5. Occupational requirements
6. COVID vaccine mandates
7. Summary



Published Date: 2019-12-30 23:59:00

Subject: PRO/AH/EDR> Undiagnosed pneumonia - China (HU): RFI

Archive Number: 20191230.6864153

UNDIAGNOSED PNEUMONIA - CHINA (HUBEI): REQUEST FOR INFORMATION

\*\*\*\*\*

“...an official report from Hubei Province said: "Following the report of the Provincial Health and Health Commission, since December [2019], Wuhan has continued to monitor influenza and related diseases, and 27 cases of viral pneumonia have been found, all of which were diagnosed with viral pneumonia / pulmonary infection. Of the 27 cases, 7 were critically ill, and the remaining cases were controllable. ... The investigation found that most of the cases were operated by South China Seafood City in Jiangnan District, Wuhan. ... At present, related virus typing, isolation treatment, public opinion control, and terminal disinfection are underway.”



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Moderator comment: “Having been involved in moderating the SARS-CoV (Severe acute respiratory syndrome - coronavirus) and the MERS-CoV (Middle Eastern Respiratory Syndrome - coronavirus), the type of social media activity that is now surrounding this event, is very reminiscent of the original "rumors" that accompanied the SARS-CoV outbreak...-Mod.MPP”

# Novel 2019 coronavirus genome

SARS-CoV-2 coronavirus



edward\_holmes

6  Jan '20

Jan 2020

1 / 28

Jan 2020

10th January 2020

This posting is communicated by Edward C. Holmes, University of Sydney on behalf of the consortium led by Professor Yong-Zhen Zhang, Fudan University, Shanghai

The Shanghai Public Health Clinical Center & School of Public Health, in collaboration with the Central Hospital of Wuhan, Huazhong University of Science and Technology, the Wuhan Center for Disease Control and Prevention, the National Institute for Communicable Disease Control and Prevention, Chinese Center for Disease Control, and the University of Sydney, Sydney, Australia is releasing a coronavirus genome from a case of a respiratory disease from the Wuhan outbreak. The sequence has also been deposited on GenBank ([accession MN908947](#) 32.2k) and will be released as soon as possible.

Update: [This genome is now available on GenBank and an updated version has been posted](#) 32.2k.

Virologic.org

# Coronavirus 2019-nCoV Global Cases by Johns Hopkins CSSE

## Total Confirmed

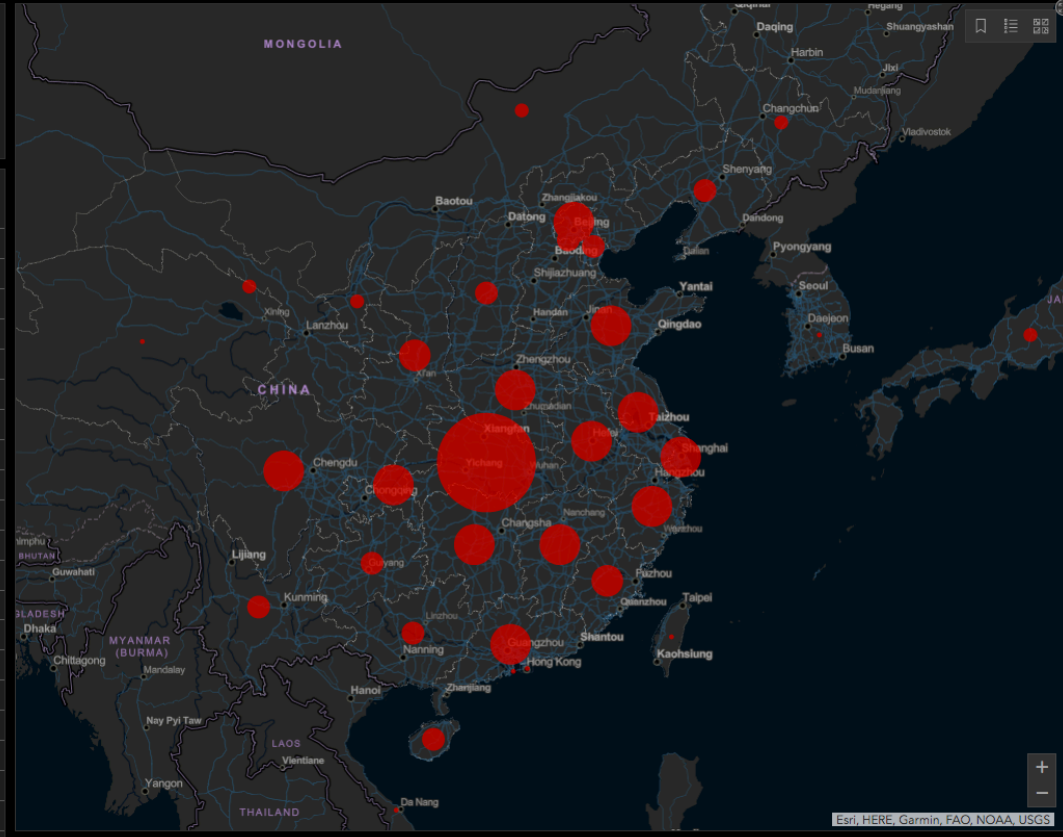
# 24,613

Confirmed Cases by Country/Region

24,392	Mainland China
25	Thailand
24	Singapore
22	Japan
21	Hong Kong
19	South Korea
13	Australia
12	Germany
12	Malaysia
11	US
11	Taiwan
10	Macau
8	Vietnam
6	France
5	United Arab Emirates
4	Canada
3	India
2	Italy
2	Russia
2	Philippines
2	UK

1 Hanoi  
Country/Region City, St/Prov

Last Updated at  
**2/5/2020, 11:03 AM**



Visualization: [JHU CSSE](#). Automation Support: [Esri Living Atlas team](#).  
Data sources: [WHO](#), [CDC](#), [ECDC](#), [NHC](#) and [DXI](#). Read more in this [blog](#). [Contact US](#).  
Downloadable [Google Sheet](#) (new link): [Here](#). Time series table: [Here](#). Feature layer: [Here](#).  
Point level: City level - US, Canada and Australia; Province level - China; Country level - other countries.

## Total Deaths

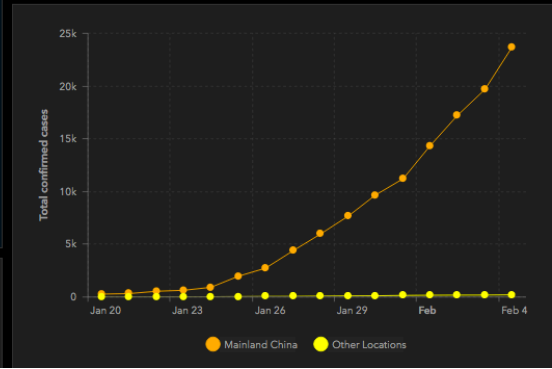
# 494

479	deaths	Hubei Mainland China
2	deaths	Henan Mainland China
2	deaths	Chongqing Mainland China
1	deaths	Sichuan Mainland China
1	deaths	Beijing Mainland China
1	deaths	Shanghai Mainland China
2	deaths	Heilongjiang Mainland China
1	deaths	Hebei Mainland China
1	deaths	Hainan Mainland China
1	deaths	Tianjin Mainland China
1	deaths	

## Total Recovered

# 1,028

537	recovered	Hubei Mainland China
78	recovered	Zhejiang Mainland China
54	recovered	Hunan Mainland China
49	recovered	Guangdong Mainland China
47	recovered	Henan Mainland China
27	recovered	Jiangxi Mainland China
24	recovered	Beijing Mainland China
24	recovered	Sichuan Mainland China
23	recovered	Anhui Mainland China
23	recovered	Jiangsu Mainland China
15	recovered	



# Massachusetts reports first confirmed case of coronavirus

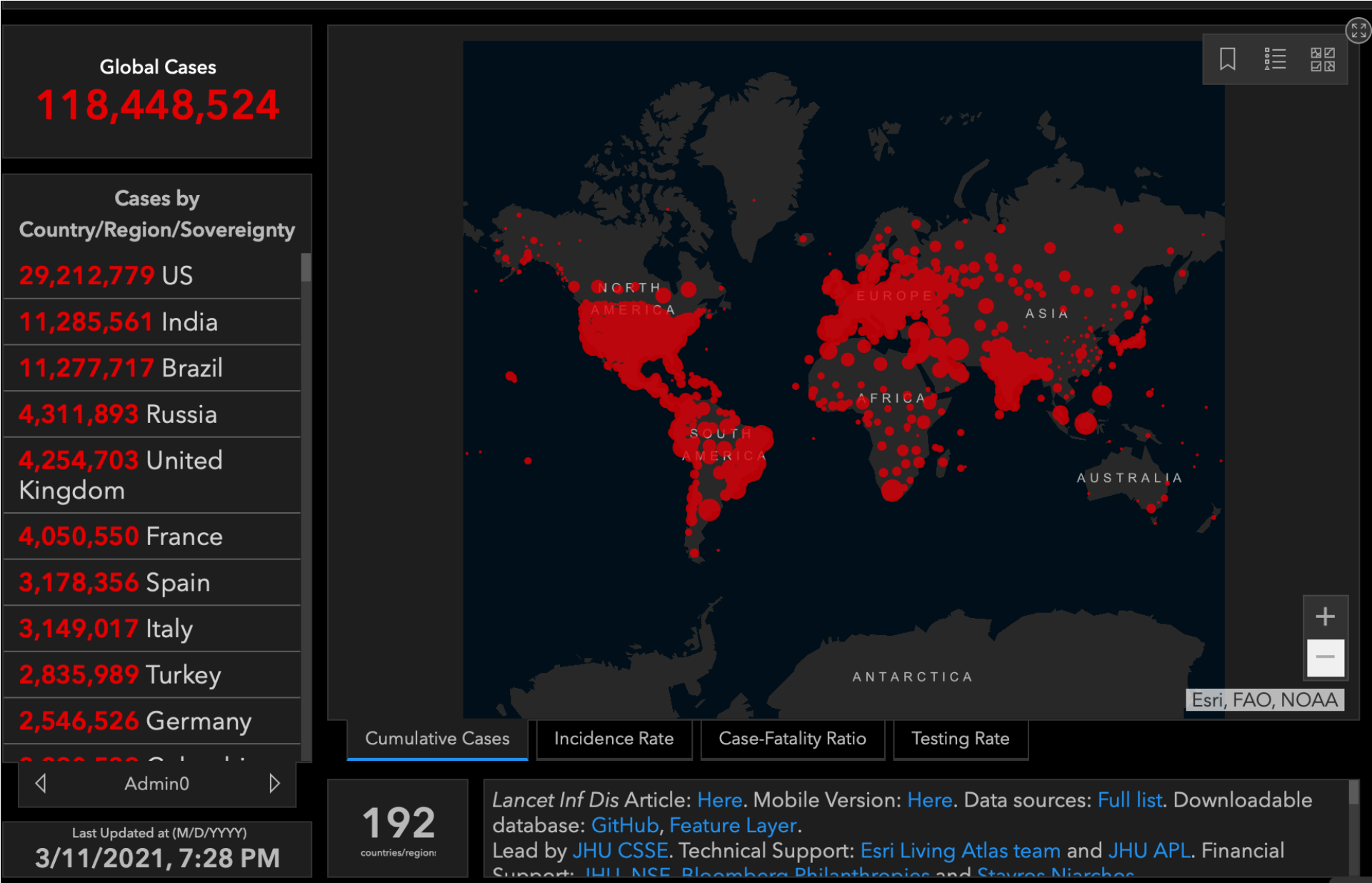
By [Felice J. Freyer](#) Globe Staff, Updated February 1, 2020, 6:48 p.m.



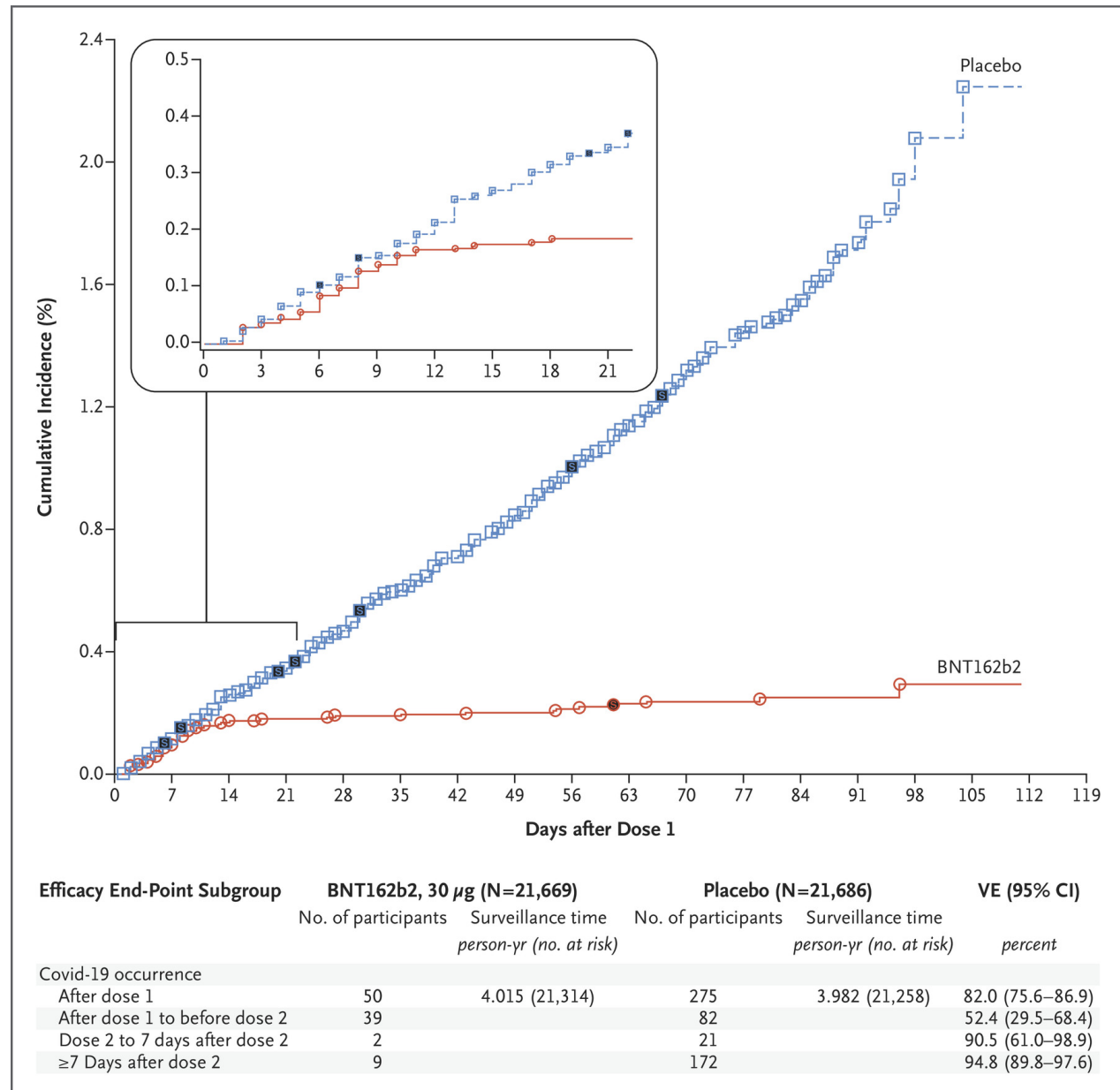
Travelers at John F. Kennedy International Airport, which is served by Delta, in New York. JOHNNY MILANO/THE NEW YORK TIMES

Massachusetts health officials Saturday announced the state's first confirmed case of the new coronavirus, in a Boston resident who had recently returned from Wuhan City, the epicenter of the respiratory illness raging

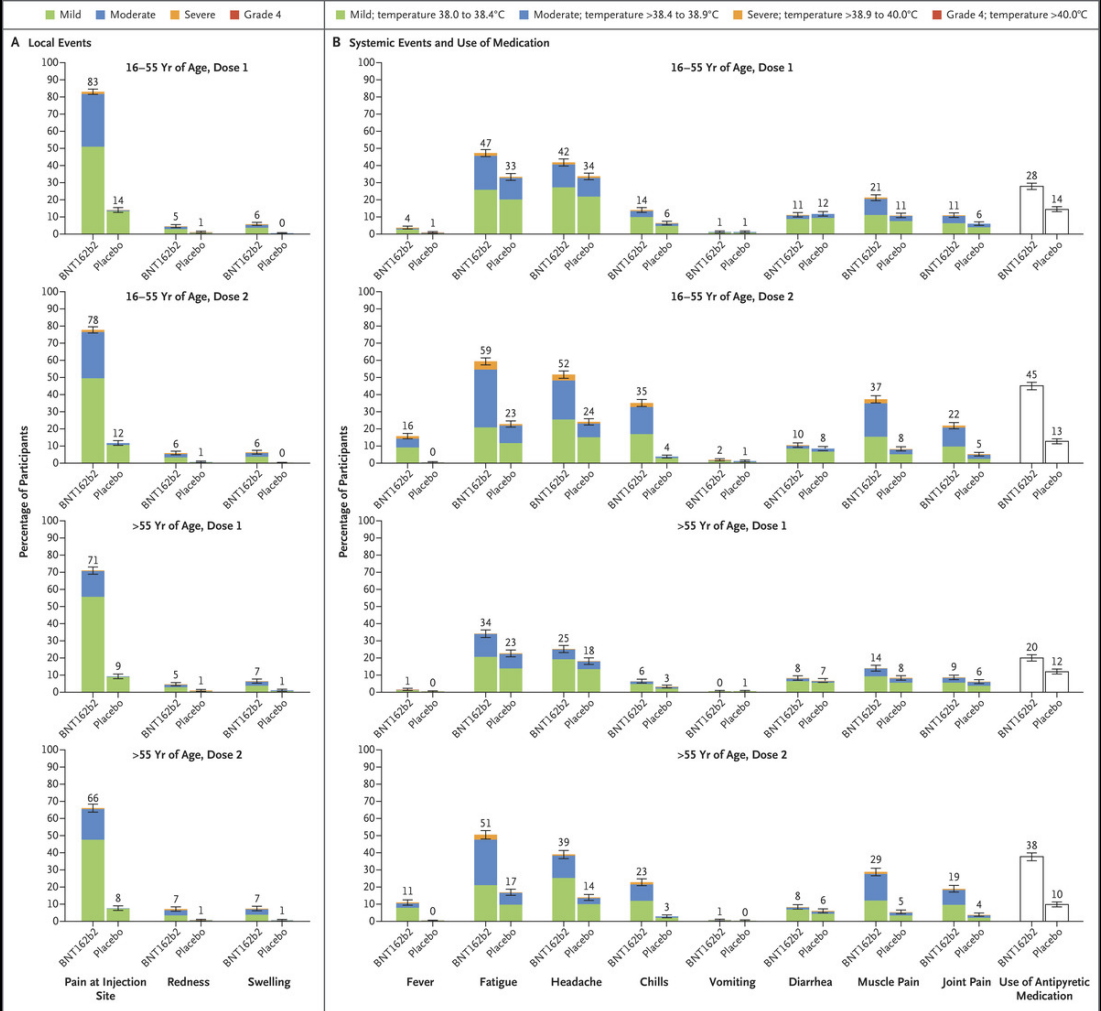




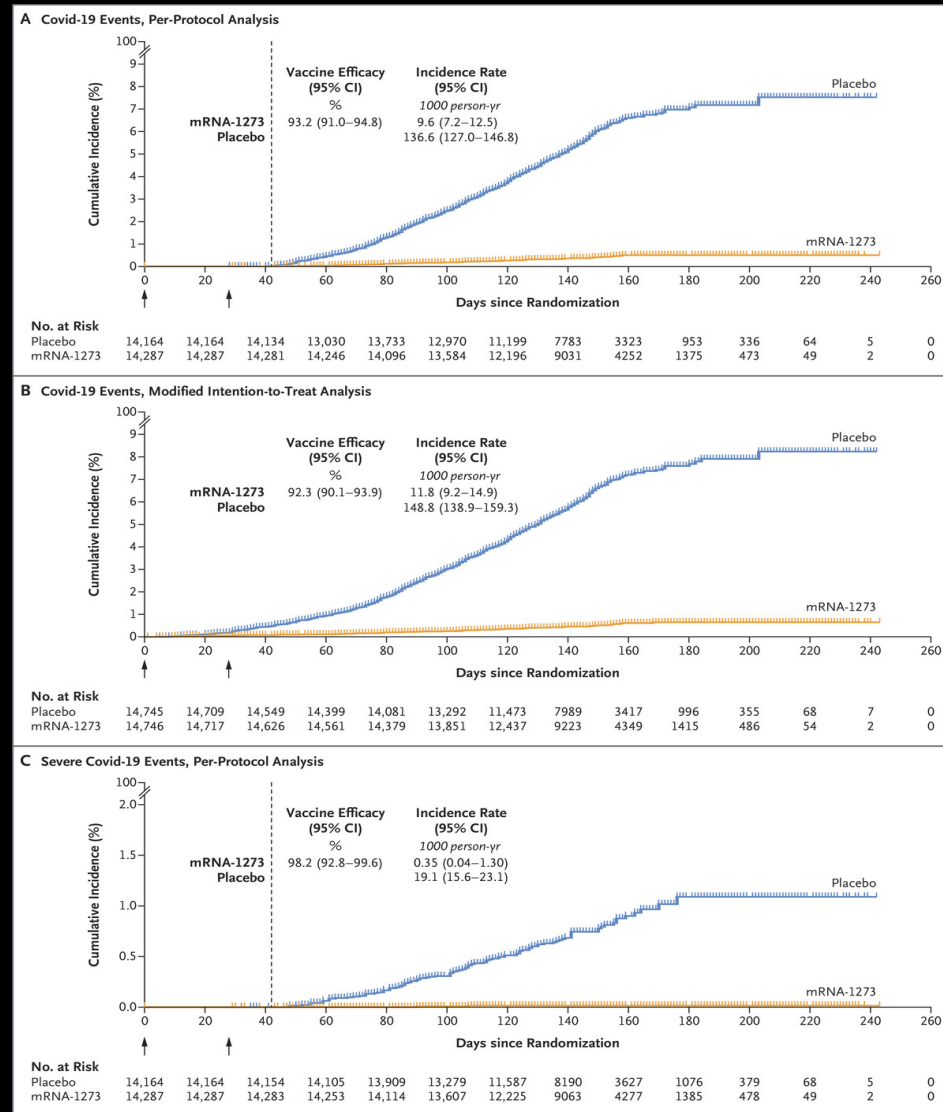
## Efficacy of BNT162b2 against Covid-19 after the First Dose.



# Local and Systemic Reactions Reported within 7 Days after Injection of BNT162b2 or Placebo, According to Age Group.



# Efficacy of the mRNA-1273 Vaccine in Preventing Covid-19.



# Rate Ratios for a Diagnosis of Myocarditis within 30 Days after the Second Dose of Vaccine, as Compared with Unvaccinated Persons (January 11 to May 31, 2021).

**Table 5.** Rate Ratios for a Diagnosis of Myocarditis within 30 Days after the Second Dose of Vaccine, as Compared with Unvaccinated Persons (January 11 to May 31, 2021).

Age and Sex	Vaccinated Group		Unvaccinated Group		Rate Ratio (95% CI)
	Person-Days of Follow-up	Cases	Person-Days of Follow-up	Cases	
			<i>number</i>		
<b>All recipients*</b>	149,786,065	117	296,377,727	98	2.35 (1.10–5.02)
16–19 yr					
Male	6,018,541	31	19,135,706	11	8.96 (4.50–17.83)
Female	6,033,192	2	17,768,696	2	2.95 (0.42–20.91)
20–24 yr					
Male	7,088,335	27	20,926,320	13	6.13 (3.16–11.88)
Female	6,889,399	5	20,832,407	2	7.56 (1.47–38.96)
25–29 yr					
Male	6,590,263	18	20,944,595	16	3.58 (1.82–7.01)
Female	6,417,564	1	20,943,920	0	0
≥30 yr					
Male	53,577,403	26	82,419,957	40	1.00 (0.61–1.64)
Female	57,171,368	7	93,406,126	14	0.82 (0.33–2.02)

\* Data for all vaccine recipients have been weighted according to age and sex.

# Safety and Efficacy of Single-Dose Ad26.COV2.S Vaccine against Covid-19

Sadoff J et al. DOI: 10.1056/NEJMoa2101544

## BACKGROUND

Vaccines are needed to control the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) pandemic. Safe adenovirus vector-based vaccines have induced durable immune responses to other diseases.

## CLINICAL TRIAL

**Design:** A randomized, double-blind trial to evaluate the safety and efficacy of Ad26.COV2.S, a recombinant, replication-incompetent human adenovirus 26 vector encoding a full-length membrane-bound SARS-CoV-2 spike protein.

**Intervention:** 19,630 participants  $\geq 18$  years old were assigned to receive a single intramuscular dose of Ad26.COV2.S, and 19,691 were assigned to placebo. Participants were monitored for safety and for the occurrence of moderate to severe–critical Covid-19 with onset  $\geq 14$  days and  $\geq 28$  days after injection.

## RESULTS

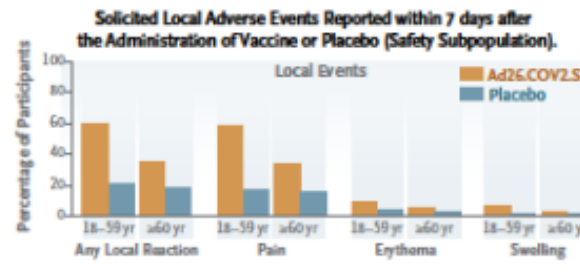
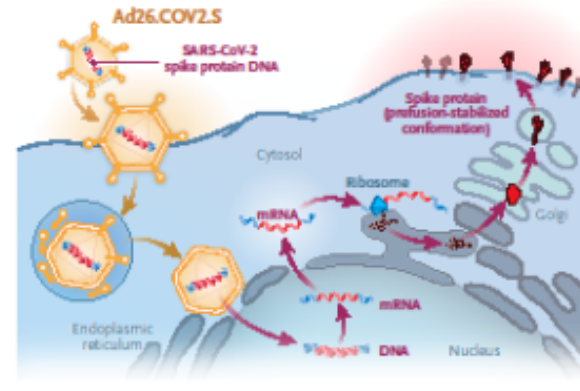
**Efficacy:** The incidence of moderate to severe–critical Covid-19 with onset  $\geq 14$  days and  $\geq 28$  days was lower among vaccine recipients. The incidences of severe–critical Covid-19 (including incidence in South Africa, despite high prevalence of the 20HJ501Y.V2, or E.1.351, variant), hospitalization, and death were lower with vaccine than with placebo.

**Safety:** Vaccine recipients were more likely to have reactogenicity, mostly injection-site pain, as well as systemic symptoms of headache, fatigue, myalgia, or nausea. Most symptoms were mild to moderate in severity and lasted 1 to 2 days.

## LIMITATIONS AND REMAINING QUESTIONS

Further study is required to understand the following:

- Safety and efficacy of Ad26.COV2.S in children.
- Long-term safety and efficacy and whether the vaccine protects against asymptomatic transmission.
- Efficacy against emerging SARS-CoV-2 variants.



Variable	$\geq 14$ Days after Administration			Vaccine Efficacy (95% CI) %	
	Ad26.COV2.S (N = 19,514)	Placebo (N = 19,544)			
	no. of cases	person-yr	no. of cases	person-yr	
Moderate to severe–critical Covid-19	116	3116.6	348	3096.1	66.9 (59.0–73.4)
18–59 yr	95	2106.8	260	2095.0	63.7 (53.9–71.6)
$\geq 60$ yr	21	1009.8	88	1001.2	76.3 (61.6–86.0)
Variable	$\geq 28$ Days after Administration			Vaccine Efficacy (95% CI) %	
	Ad26.COV2.S (N = 19,514)	Placebo (N = 19,544)			
Moderate to severe–critical Covid-19	66	3102.0	193	3070.7	66.1 (55.0–74.8)
18–59 yr	52	2097.6	152	2077.0	66.1 (53.3–75.8)
$\geq 60$ yr	14	1004.4	41	993.6	66.2 (36.7–83.0)

## CONCLUSIONS

A single dose of Ad26.COV2.S was safe and efficacious against symptomatic Covid-19.

## J&J vaccine

- Replication incompetent Adenovirus-vectored
- 66% efficacy after single dose

# COVID-19 Vaccine Boosters Are Available



Pfizer, Moderna, and Johnson & Johnson boosters are safe and effective, free, and available near you.

- You don't need an ID, health insurance, or vaccine card
- Check your eligibility: [mass.gov/BoosterCheck](https://mass.gov/BoosterCheck)
- Use [VaxFinder.mass.gov](https://VaxFinder.mass.gov) to find a location

Learn more at [mass.gov/COVID19booster](https://mass.gov/COVID19booster)



@massgov

# COVID Vaccine Regulatory Status

FDA approved:

Pfizer BioNTech age 16+

FDA EUA

Pfizer BioNTech age 11-15

Moderna 18+

Johnson & Johnson Janssen 18+

Additional dose for immunocompromised individuals

Booster dose >6 mo (mRNA) certain groups

Booster dose >2 mo J&J

WHO authorized (recognized by CDC in addition to above)

AstraZeneca (both Oxford and SSI)

Sinopharm

Sinovac

Covaxin



## **FDA Emergency Use Authorization**

- “Based on the totality of scientific evidence available...including data from adequate and well-controlled clinical trials...the known and potential benefits of the product outweigh the known and potential risks of the product...”
- ensure that people know they can refuse or accept the product

## **FDA Approval**

- More rigorous process, “safe and effective”
- Includes evaluation of production

# Serious adverse events, e.g., myocarditis

**Table 5.** Rate Ratios for a Diagnosis of Myocarditis within 30 Days after the Second Dose of Vaccine, as Compared with Unvaccinated Persons (January 11 to May 31, 2021).

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# Subsequent COVID and vaccine events

- Protection against asymptomatic infection, hospitalization, death
- Variants (essentially all Delta)
- Omicron
- Waning immunity
- Breakthrough infections
- VITTS with J&J
- Guillain Barre syndrome
  
- Nearly 1 in 400 Americans have died of COVID



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

Cases Over Time

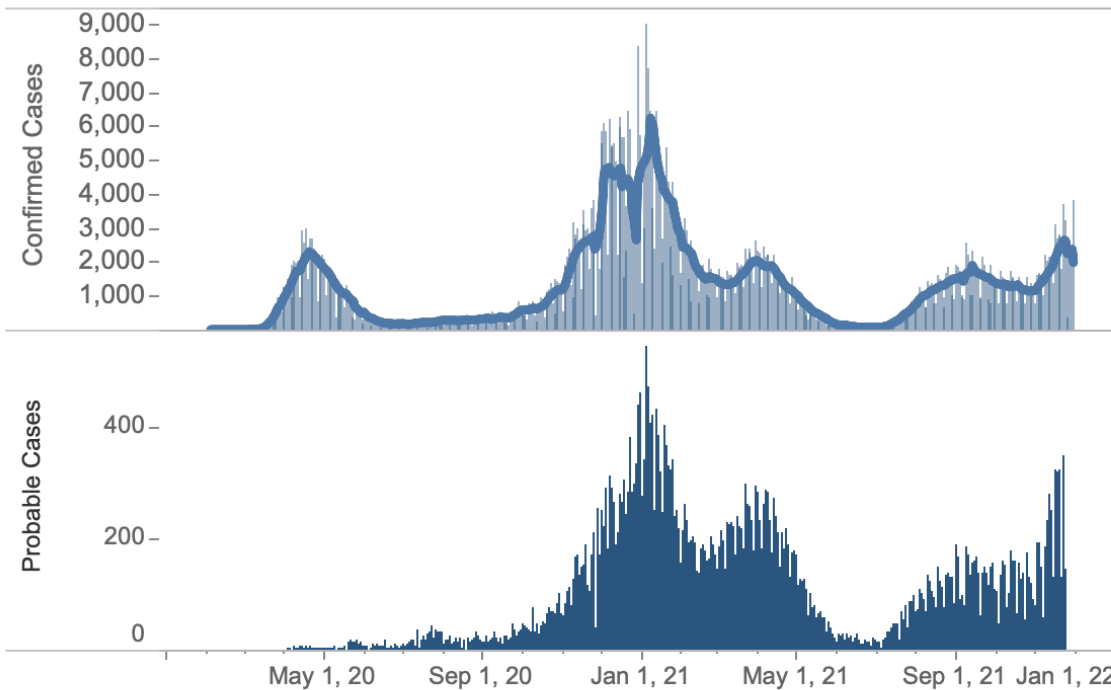
Contact Tracing

Clusters

COVID-19 Confirmed and Probable Cases

Select dates:

1/29/2020   11/30/2021



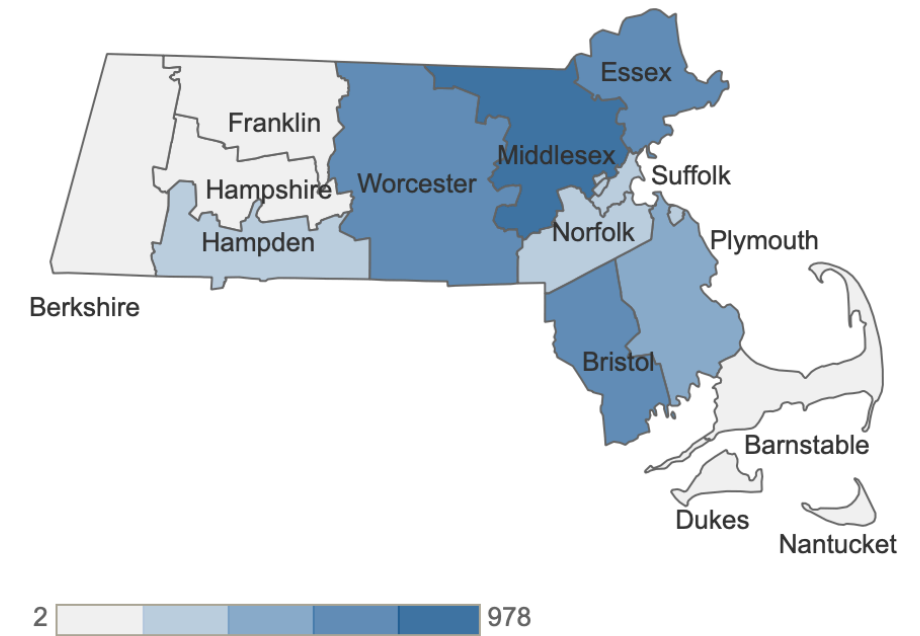
New confirmed cases reported by county and date

Select new or total cases

New confirmed cases

Select a date\*

12/1/2021





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

Hospitalizations

ICU & Intubation

Patient Demographics

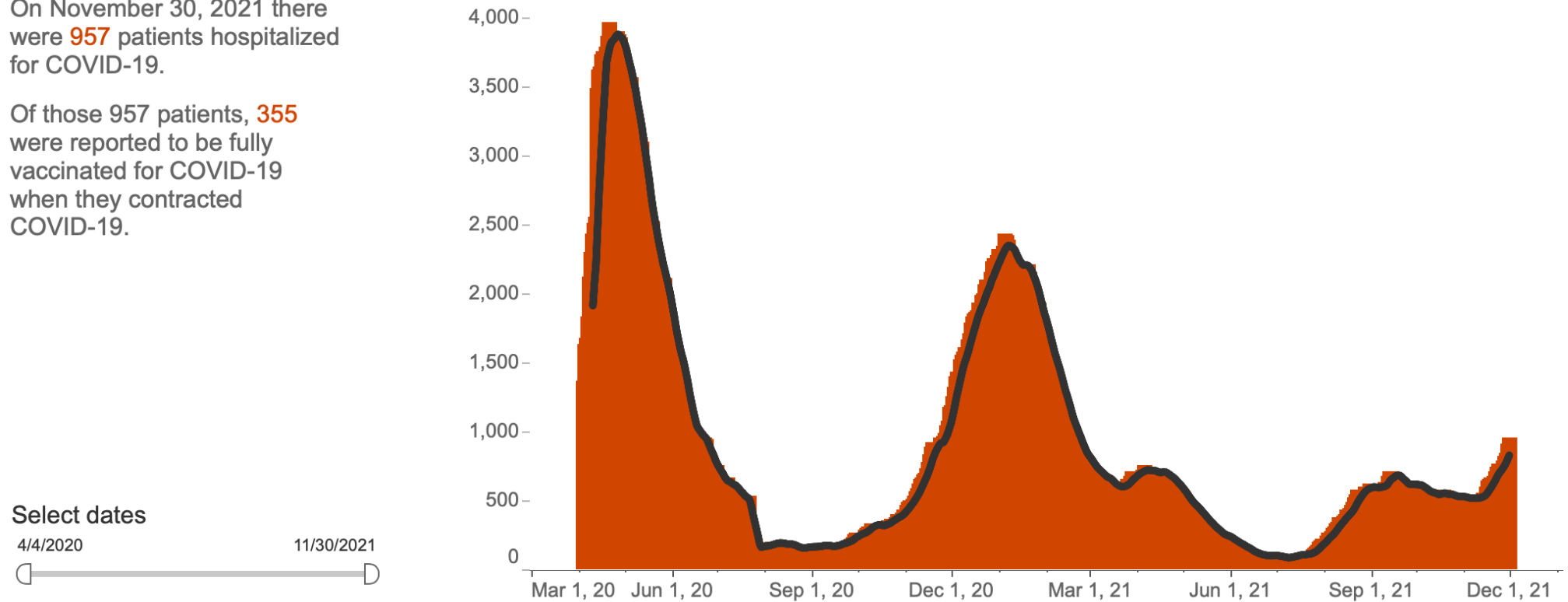
Bed Occupancy

**Hospitalizations**

On November 30, 2021 there were **957** patients hospitalized for COVID-19.

Of those 957 patients, **355** were reported to be fully vaccinated for COVID-19 when they contracted COVID-19.

Number and 7-day average of COVID-19 patients in the hospital



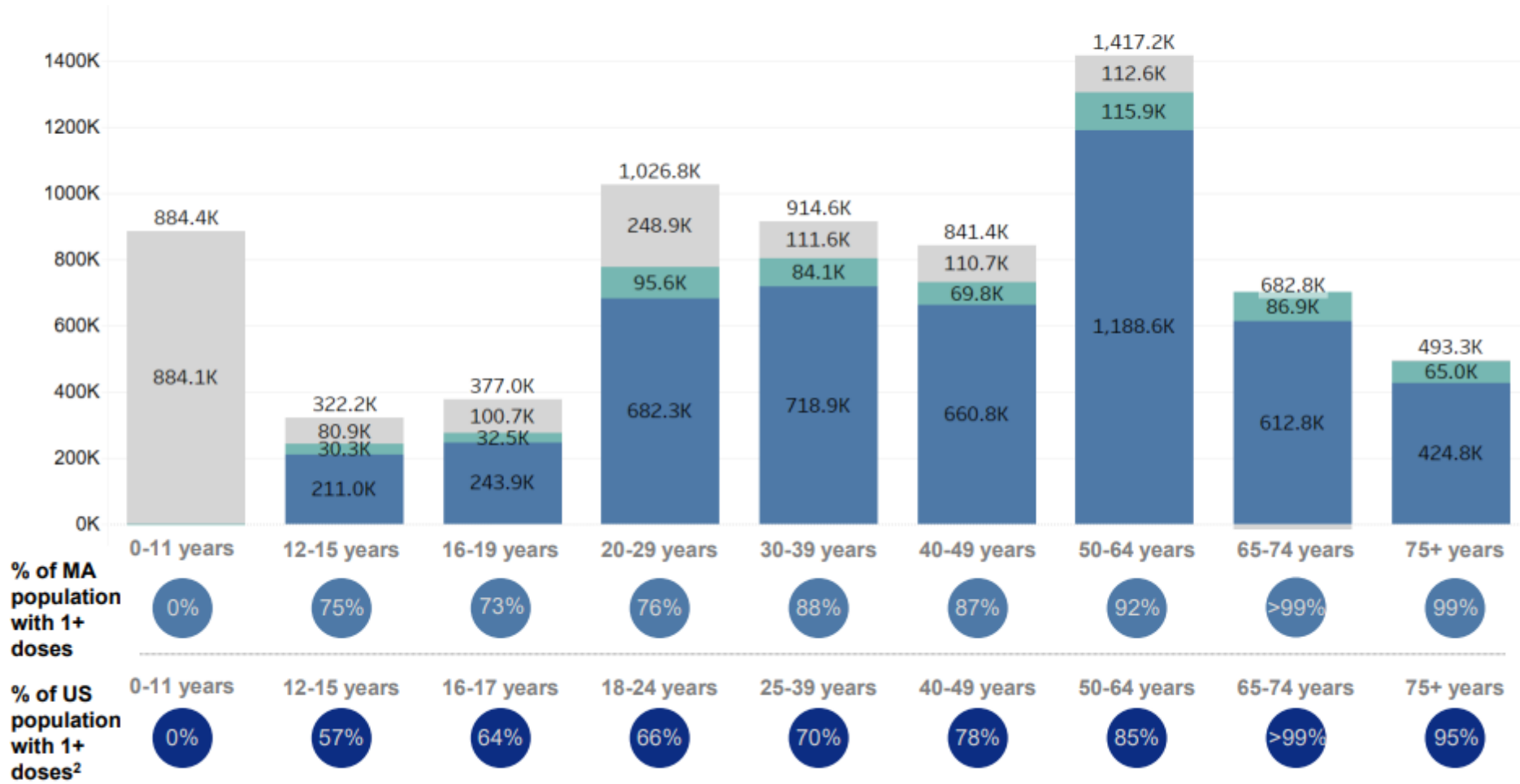
Hospitalization data provided by the MDPH hospital survey (survey data are self-reported by hospitals). All data included in this dashboard are preliminary and subject to change. Created by the Massachusetts Department of Public Health, Bureau of Infectious Disease and Laboratory Sciences, Division of Surveillance, Analytics and Informatics.

# In MA, 76% of the MA population has received at least one dose, compared to 67% of national population

MA data as of Nov 2<sup>nd</sup> and National data as of Nov 3<sup>rd</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. As of 5/23, CDC age grouping updated to reflect 12-15 eligibility expansion. National population estimates from CDC do not include Texas population.

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

Confidential, Draft and Pre-Decisional

# Vaccine Mandates

## 1777: George Washington mandates smallpox vaccines for all his soldiers



During the Revolutionary War, American soldiers were susceptible to smallpox, but the majority of British troops were immune due to childhood exposure or vaccination. The Continental Army's major military campaigns failed, as smallpox outbreaks swept through its camps. So the Continental Congress authorized Gen. Washington to require his troops to get vaccinated. Subsequent victories of American forces were attributed to the smallpox vaccine mandate.

W.H. Powell // U.S. National Archives



Jacobson v Massachusetts

Cambridge issued a \$5 fine for failure to receive smallpox vaccine



***Jacobson v Massachusetts: It's Not Your Great-Great-Grandfather's Public Health Law***

[Wendy K. Mariner](#), JD, LLM, MPH, [George J. Annas](#), JD, MPH, and [Leonard H. Glantz](#), JD

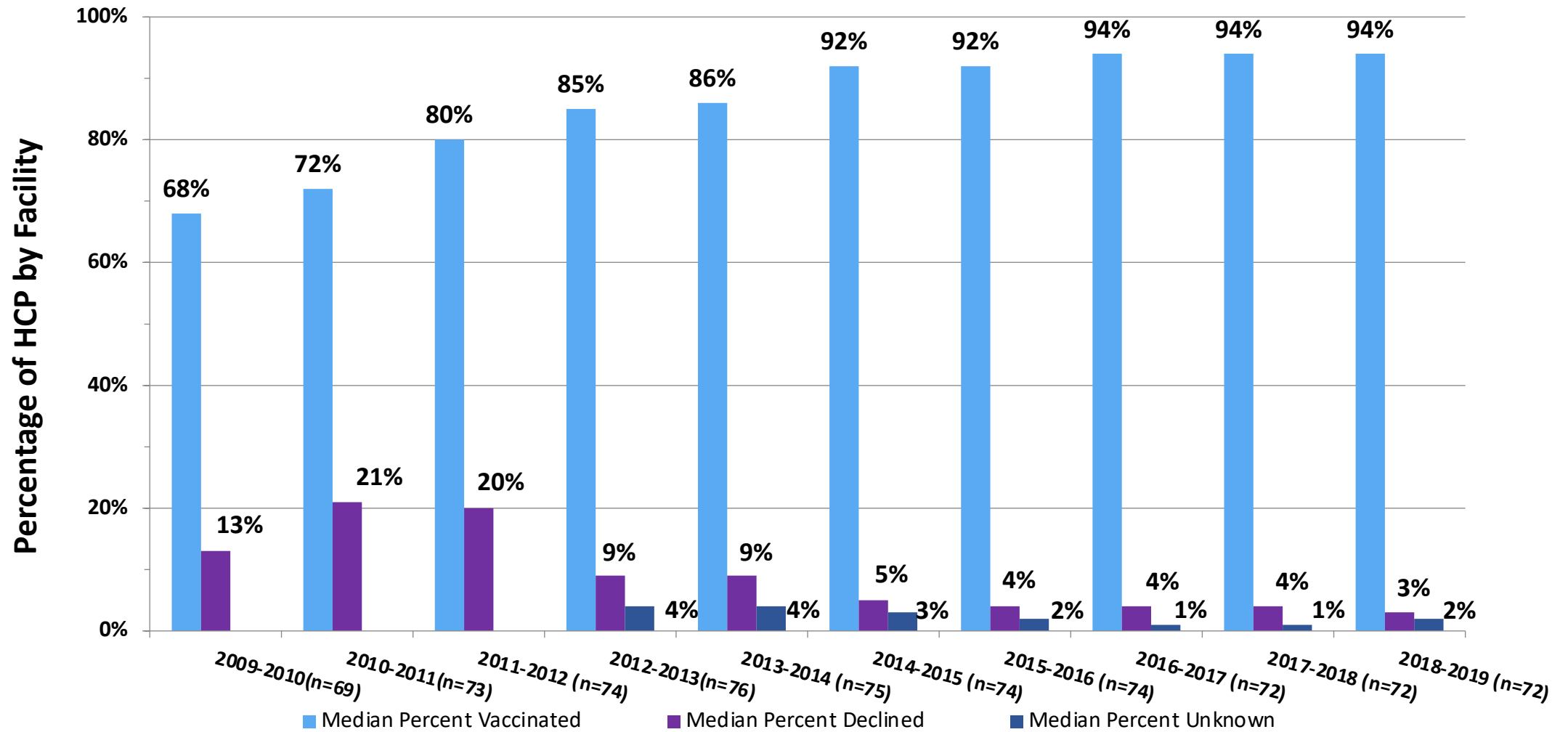
[Am J Public Health](#). 2005 April; 95(4): 581–590.



*"[r]eal liberty for all could not exist under the operation of a principle which recognizes the right of each individual person to use his own [liberty], whether in respect of his person or his property, regardless of the injury that may be done to others."*

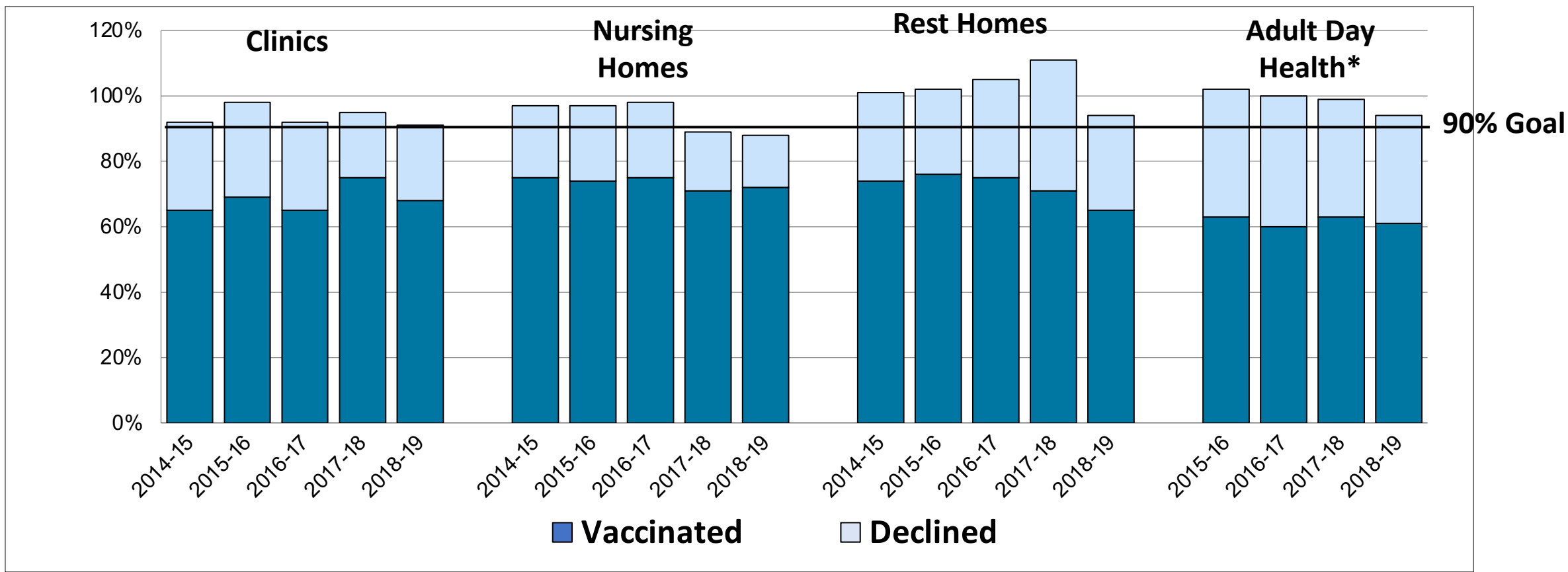
- Supreme Court Associate Justice John Marshall Harlan  
writing for the 7-2 majority in 1905

# Flu Vaccination Trends Over Time: Acute Care Hospitals Massachusetts



Median HCP vaccine coverage remained constant in 2018-19 and exceeded the Healthy People 2020 benchmark of 90%.

## Mean Percent of HCP Influenza Vaccinations and Declinations as Reported by Massachusetts Clinics, Nursing Homes, Rest Homes and Adult Day Health Programs: 2014-2019 Seasons



\* 2015-2016 Season was the first year Adult Day Health Programs were required to report

# **School vaccination requirements: a success story**

- Kindergarten

5 DTaP	4 Polio	2 MMR	3 Hep B	2 Varicella
95.7%	95.6%	95.9%	97.2%	95.5%

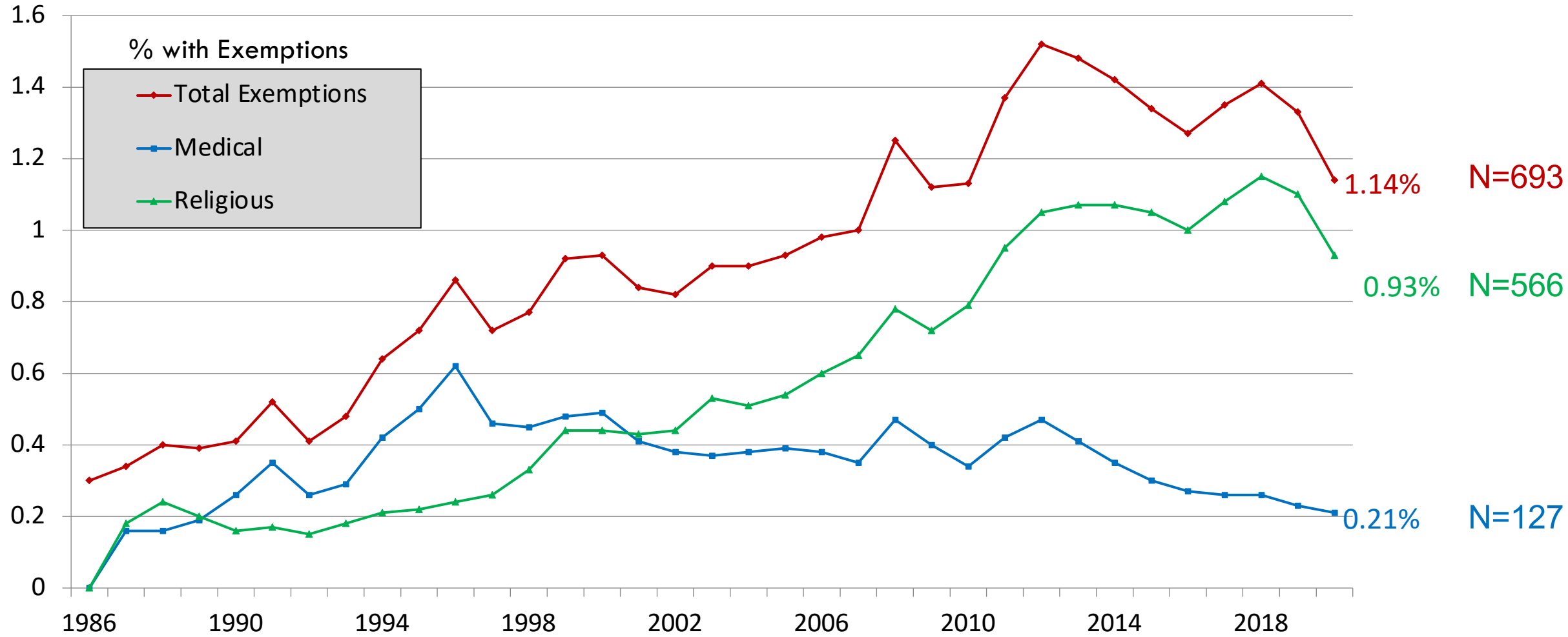
- Grade 7

2 MMR	3 Hep B	2 Varicella	1 Tdap	1 MenACWY
98.4%	98.3%	98.1%	91.3%	90.3%

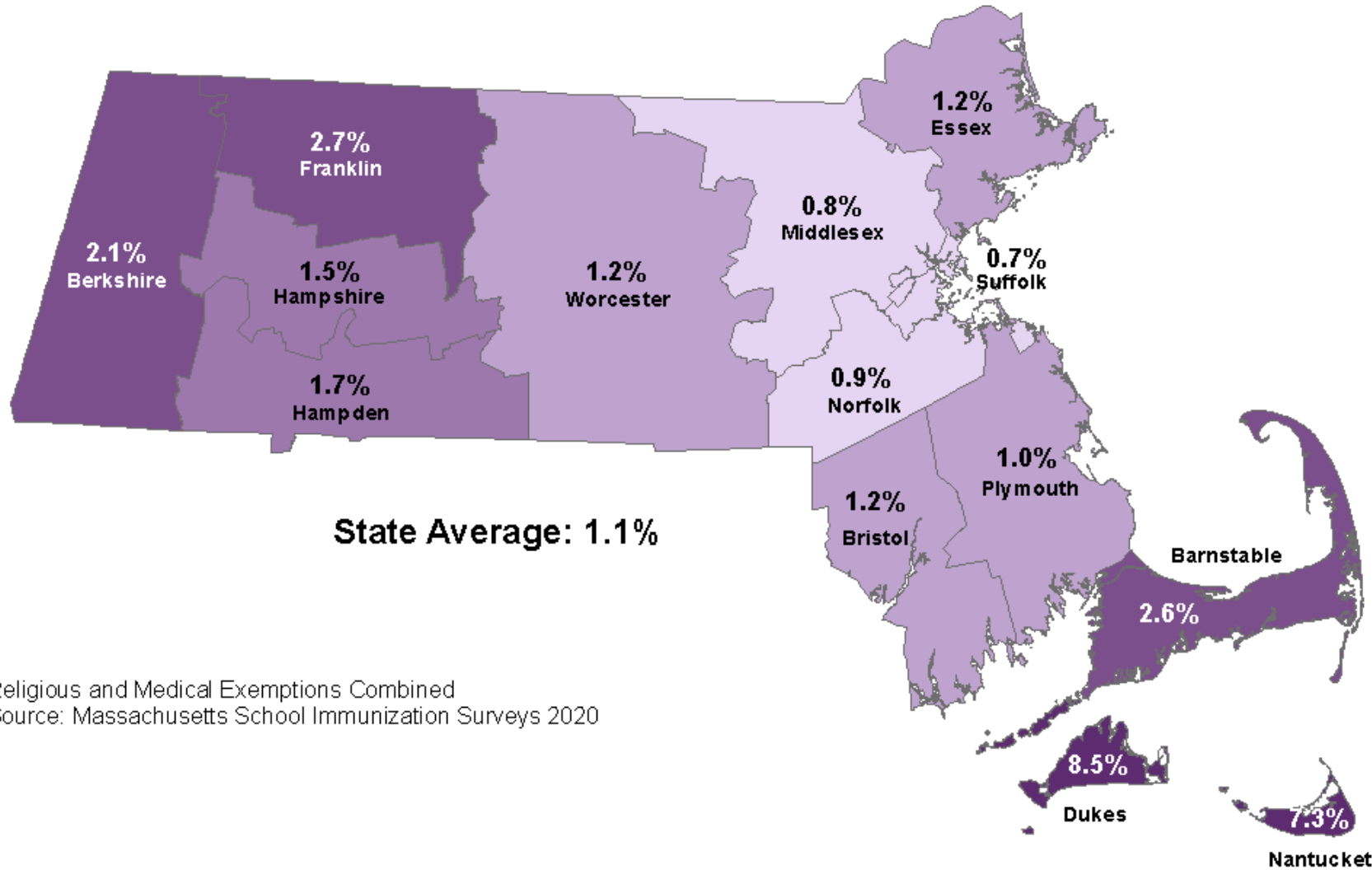
- Grade 11

2 MMR	3 Hep B	2 Varicella	1 Tdap	1 MenACWY
98.3%	97.4%	98.1%	97.9%	73.1%

# Religious and Medical Exemptions Among Massachusetts Kindergarten Students 1986-2020



# Kindergarten Students with an Exemption by Massachusetts County, 2020



Religious and Medical Exemptions Combined  
Source: Massachusetts School Immunization Surveys 2020



# Vaccine mandates

- Numerous employer and higher education mandates already in place
- Governor issued mandates for all executive branch employees
- Range from soft to hard
  - Some other measure if not vaccinated: testing, masking
  - Declination possible
  - Assignment to other role
- Medical (ADA) and religious exemptions
  - Process for review
- Should not detract from educational efforts
- Need to be operationalized with compassion and kindness

# Judge denies Mass. correction officers' injunction against vaccine mandate

October 15, 2021

By [Deborah Becker](#) 



A federal judge has denied state correction officers union request for a preliminary injunction against Gov. Charlie Baker's coronavirus vaccine mandate, which goes into effect Sunday.

# The New York Times

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Nov. 6, 2021 Updated 4 hours ago

## Coronavirus

# • **A court temporarily blocks Biden's vaccine mandate.**

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A stay granted by a federal appeals court in Louisiana could signal an uphill battle for the administration in getting the entire American work force vaccinated.



## Joint statement in support of COVID-19 vaccine mandates for all workers in health and long-term care

**Date:** Jul 26 2021

**FOR IMMEDIATE RELEASE**

**Contact:** [APHA Media Relations](#), 202-777-3913

Due to the recent COVID-19 surge and the availability of safe and effective vaccines, our health care organizations and societies advocate that all health care and long-term care employers require their workers to receive the COVID-19 vaccine. This is the logical fulfillment of the ethical commitment of all health care workers to put patients as well as residents of long-term care facilities first and take all steps necessary to ensure their health and well-being.

# APHA statement endorsed by:

American Public Health Association  
American Society for Clinical Pathology  
American Society for Radiation Oncology  
American Society of Health-System Pharmacists  
American Society of Hematology  
American Society of Nephrology  
American Thoracic Society  
Association for Clinical Oncology  
Association for Professionals in Infection Control and Epidemiology  
Association of Academic Health Centers  
Association of American Medical Colleges  
Association of Rehabilitation Nurses  
Council of Medical Specialty Societies  
HIV Medicine Association  
Infectious Disease Society of America  
LeadingAge  
National Association of Indian Nurses of America  
National Association of Pediatric Nurse Practitioners

National Council of State Boards of Nursing  
National Hispanic Medical Association  
National League for Nursing  
National Medical Association  
National Pharmaceutical Association  
Nurses Who Vaccinate  
Organization for Associate Degree Nursing  
Pediatric Infectious Diseases Society  
Philippine Nurses Association of America, Inc  
Society of Gynecological Oncology  
Society for Healthcare Epidemiology of America  
Society of Hospital Medicine  
Society of Infectious Diseases Pharmacists  
Society of Interventional Radiology  
Texas Nurses Association  
The John A. Hartford Foundation  
Transcultural Nursing Society  
Virgin Islands State Nurses Association  
Wound, Ostomy, and Continence Nurses Society



AMERICAN COLLEGE OF  
OCCUPATIONAL AND  
ENVIRONMENTAL MEDICINE

# ACOEM Supports COVID-19 Vaccine Mandates for Health Care Workers

 07/31/2021



The American College of Occupational and Environmental Medicine (ACOEM) recommends that COVID-19 vaccination be mandated for all health care workers (HCWs). Comprised of occupational and environmental medicine professionals responsible for ensuring the health, safety, and well-being of all workers, the College stands with the growing number of organizations urging that all workers in health care settings be vaccinated against COVID-19.

# Summary: COVID-19 Vaccine Mandates

## **Pros**

- Achieves highest vaccination rates
- Ethical duty to protect patients and HCPs
- Public health impact of increased vaccination rate
- EEOC authorization (onsite personnel)
  - Proper safeguards for disabilities and religion
- Health equity

## **Cons**

- General public health principle to use the least proscriptive method
- Adverse impacts on hiring/staffing
- Politicization
- Detract from educational experts
- Labor relations concerns
- Employee autonomy

# MDPH Immunization Division Contact Information

## General Information

- **Phone:** 617-983-6800
- **Fax:** 617-983-6840
- **Website:** [www.mass.gov/dph/imm](http://www.mass.gov/dph/imm)

## MIIS Help Desk

- **Phone:** 617-983-4335
- **Fax:** 617-983-4301
- **Email:** [miishelpdesk@state.ma.us](mailto:miishelpdesk@state.ma.us)
- **Websites:** [www.contactmiis.info](http://www.contactmiis.info) | [www.mass.gov/dph/miis](http://www.mass.gov/dph/miis)

## MDPH Vaccine Unit

- **Phone:** 617-983-6828
- **Fax:** 617-983-6924
- **Email:** [dph-vaccine-management@state.ma.us](mailto:dph-vaccine-management@state.ma.us)
- **Website:** [www.mass.gov/dph/imm](http://www.mass.gov/dph/imm) (click on Vaccine Management)





**150 YEARS**  
OF ADVANCING  
**PUBLIC**  
**HEALTH**

# Massachusetts Department of Public Health

Thank you

[larry.madoff@mass.gov](mailto:larry.madoff@mass.gov)

# Connect with DPH



@MassDPH



Massachusetts Department of Public Health



DPH blog

<https://blog.mass.gov/publichealth>



[www.mass.gov/dph](http://www.mass.gov/dph)