PUBLIC SCHOOLS of BROOKLINE

Advisory Panel 4: Public Health, Safety, & Logistics

Metrics Review

PSB Testing Update

PPE Updates

Contract Tracing/Quarantine Updates

March 26, 2021

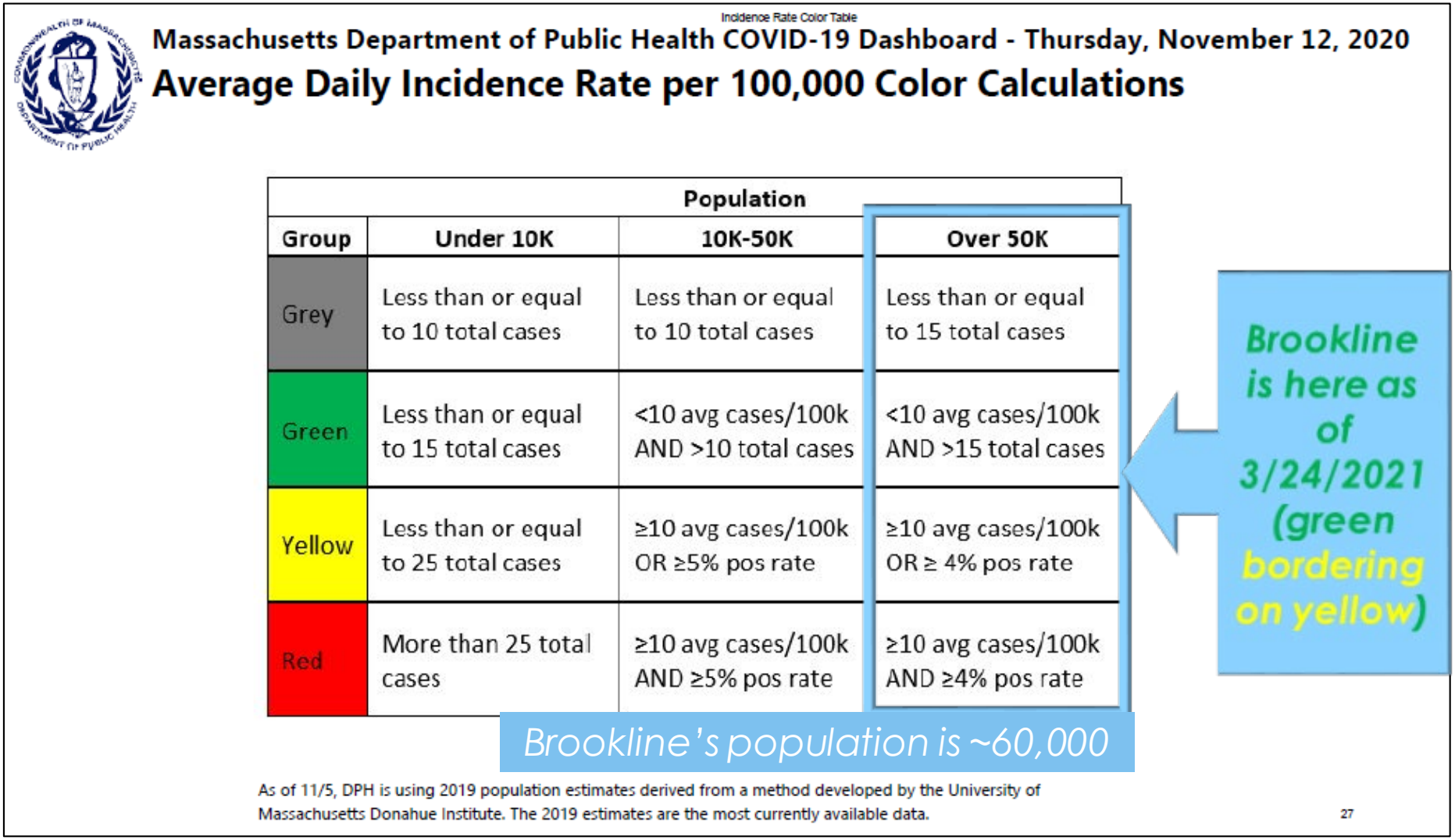
Community Benchmarks - Status

Benchmark (each measured over prior 14 days)	Status 3/3/21	Status 3/10/21	Status 3/17/21	**Status 3/24/21**
Avg. daily new case count in Brookline = <10 per 100k people	8.8	9.8	9.4	**9.7**
Avg. daily new case count in Mass. = <10 per 100k people	21.3	20.3	19.5	**21.5**
Avg. test positivity rate in Brookline = <5.0%	0.70%	0.81%	0.74%	**0.79%**
Avg. test positivity rate in Massachusetts = <5.0%	1.93%	1.83%	1.83%	**2.01%**

Panel 4 selected these four community transmission benchmarks in August 2020 as triggers for focused evaluation and discussion of whether changes in operations are warranted, not as definitive indicators of in-school risk or thresholds for automatic action. Research and PSB-specific data since that time have convincingly shown that in-school transmission risk can be kept very low even at high levels of community case incidence.

Data source: https://www.mass.gov/info-details/covid-19-response-reporting#covid-19-weekly-public-health-report-

MA DPH Color Scale



Incidence Rate Color Table

Massachusetts Department of Public Health COVID-19 Dashboard - Thursday, November 12, 2020

Average Daily Incidence Rate per 100,000 Color Calculations

	Population		
Group	**Under 10K**	**10K-50K**	**Over 50K**
Grey	Less than or equal to 10 total cases	Less than or equal to 10 total cases	Less than or equal to 15 total cases
Green	Less than or equal to 15 total cases	<10 avg cases/100k AND >10 total cases	<10 avg cases/100k AND >15 total cases
Yellow	Less than or equal to 25 total cases	≥10 avg cases/100k OR ≥5% pos rate	≥10 avg cases/100k OR ≥ 4% pos rate
Red	More than 25 total cases	≥10 avg cases/100k AND ≥5% pos rate	≥10 avg cases/100k AND ≥4% pos rate

Brookline's population is ~60,000

Brookline is here as of 3/24/2021 (green bordering on yellow)

As of 11/5, DPH is using 2019 population estimates derived from a method developed by the University of Massachusetts Donahue Institute. The 2019 estimates are the most currently available data.

27

Chart source: https://www.mass.gov/info-details/covid-19-response-reporting

Public Schools of Brookline Case Counts: Trends Over Time

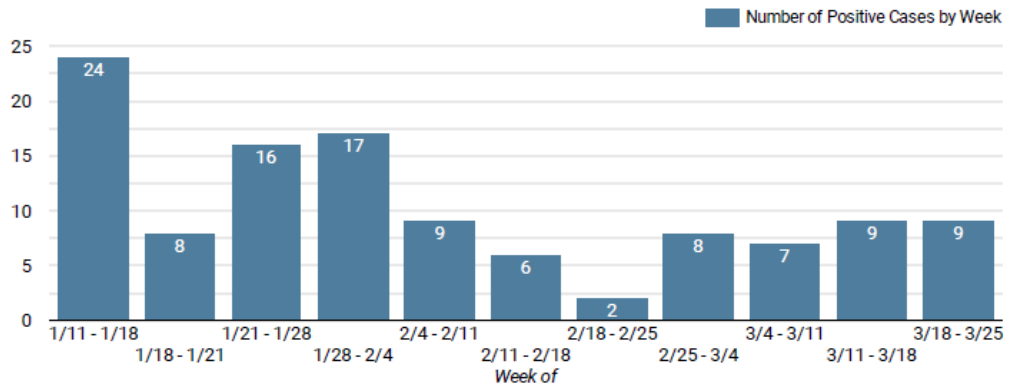
Data Last Updated: 3/26/21

PUBLIC SCHOOLS of BROOKLINE

COVID-19 CASES: DISTRICT DASHBOARD

Dashboard outlines number of positive COVID-19 cases in the PSB school community by week and learning model. For the purpose of this dataset, weeks run **Friday to Thursday.**
Source: Public Schools of Brookline School Health Services Department

Number of Positive Cases, by Week

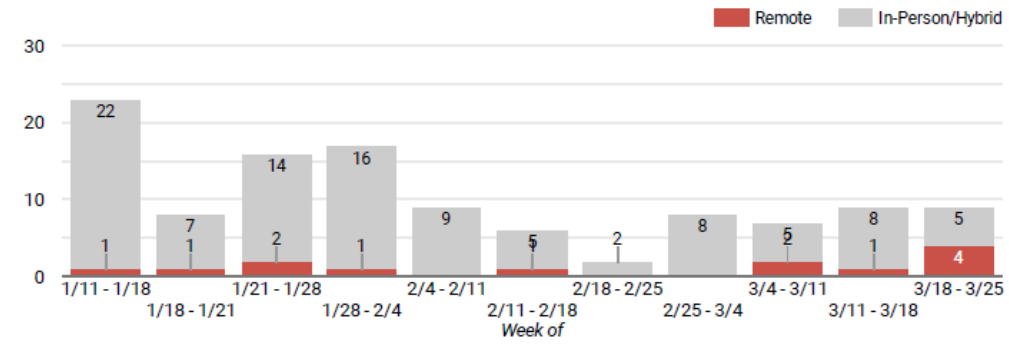


TOTAL PSB CASES TO DATE: 264

Remote: 33
Hybrid/In-Person: 231

Total among school-based students and staff: 260

Number of Positive Cases, by Week and Learning Model



TOTAL CLOSE CONTACTS*: 263 connected to 56 cases

Total positive cases with no close contacts* at school: 186

***Close contacts are defined as anyone who has been within 6 feet of an positive case for at least 15 minutes during the infectious period.**

Chart source: https://sites.google.com/psbma.org/psb-reopening-hub/dashboard

Public Schools of Brookline Case Counts: By School

Data Last Updated: 3/26/21

PUBLIC SCHOOLS of BROOKLINE

COVID-19 CASES: SCHOOL BY SCHOOL DASHBOARD

The table outlines the number of positive COVID-19 cases by week and the number of cumulative cases for the year at each school. For the purpose of this dataset, weeks run **Friday to Thursday.**
Source: Public Schools of Brookline School Health Services Department

Number of Positive Cases, by School & District Offices (Week of 3/18 - 3/25)

School/Building	Weekly Positive Cases	Cumulative Positive Cases	Close Contacts	Cases with Close Contacts
BEEP @ Beacon	0	3	-	-
BEEP @ Clark	0	2	-	-
BEEP @ Lynch	0	1	-	-
BEEP @ Putterham	0	1	-	-
Baker	0	37	-	-
Driscoll	0	17	-	-
Florida Ruffin Ridley	1	24	-	-
Heath	0	12	-	-
Lawrence	2	24	9	1
Lincoln	0	23	-	-
Pierce	1	25	-	-
Runkle	0	16	-	-
Remote Learning Academy K-8	1	11	-	-
Brookline High School	4	65	-	-
Total*	9	261	9	1

**1 staff case shared between schools during week of 1.28-2.4*

School/Building	Weekly Positive Cases	Cumulative Positive Cases	Close Contacts	Cases with Close Contacts
District Office	0	4	-	-

Chart source: https://sites.google.com/psbma.org/psb-reopening-hub/dashboard

Public Schools of Brookline Case Counts: Students (By Grade) and Staff

Data Last Updated: 3/26/21

PUBLIC SCHOOLS of BROOKLINE

COVID-19 CASES: GRADE LEVEL AND STAFF DASHBOARD

The table outlines the number of positive COVID-19 cases by week and the number of cumulative cases for the year at each school. For the purpose of this dataset, weeks run **Friday to Thursday.**
Source: Public Schools of Brookline School Health Services Department

Total Number of Positive Cases, by Grade Level and Staffing (Week of 3/18 - 3/25)

Grade Level	Weekly Positive Cases	Cumulative Positive Cases
BEEP/Pre-K	0	3
Kindergarten	1	20
1st Grade	0	20
2nd Grade	0	11
3rd Grade	0	12
4th Grade	0	10
5th Grade	0	11
6th Grade	1	10
7th Grade	0	12
8th Grade	1	19
9th Grade	1	8
10th - 12th Grade	3	41
Staff (School-Based)*	2	81
Staff (District Office)	0	4
Total	9	262

**1 staff case shared between schools during week of 1.28-2.4*

Chart source: https://sites.google.com/psbma.org/psb-reopening-hub/dashboard

Public Schools of Brookline Case Counts: Staff Asymptomatic Testing Program Results

Data Last Updated: 3/26/21

PUBLIC SCHOOLS of BROOKLINE

COVID-19 CASES: STAFF ASYMPTOMATIC TESTING

The table outlines the number of positive COVID-19 cases by week and the number of cumulative cases for the year at each school. For the purpose of this dataset, weeks run **Friday to Thursday.**
Source: Public Schools of Brookline School Health Services Department

Staff Asymptomatic Testing Program Results

On Friday, January 15, 2021, the Public Schools of Brookline launched the voluntary staff COVID-19 PCR testing program for all "student-facing staff". This program is strictly for asymptomatic staff. This program is piloted by the Broad Institute, with tests collected and brought to each school. The turn-around time for these test results is within 24 hours.

The asymptomatic testing was paused from Febraury 5 through February 26 as the district expanded the program to include pooled testing with students with support from the Massachusettes Department of Elementary and Secondary Education (DESE). Pooled testing involves mixing several test samples together in a "pool" and then testing the pooled sample with a PCR test for detection of SARS-CoV-2. Staff were put into pools of 5. The first week of this program launched on Monday, March 1, 2021.

Week of	Tests Processed	Positive Results	TNP (Tests Not Processed)	Test Positvity %	Pools Submitted	Positive Pools	Pool Positvity %
1/11 - 1/15	175	1	5	0.57%	-	-	-
1/18 - 1/22	571	1	15	0.18%	-	-	-
1/25 - 1/29	612	0	11	0%	-	-	-
2/2 - 2/4	447	1	10	0.22%	-	-	-
--	-	-	-	-	-	-	-
3/1 - 3/5	395	2	0	0.51%	81	2	2.47%
3/8 - 3/12	433	0	0	0%	88	0	0%
3/15 - 3/19	450	0	0	0%	91	0	0%
3/22 - 3/26	485	1	0	0.21%	91	1	1.09%
Total	3,568	6	41	0.17%	351	3	0.85%

Chart source: https://sites.google.com/psbma.org/psb-reopening-hub/dashboard

Enhanced PPE Update

Nanette Wofford recommends **Frontliners Med**.
November 19 at 12:00 PM ·

I adore my Frontliners Med respirators! They filter so well that I can't smell the dirty diaper I am changing! 👍😁Yet they are perfectly comfortable all day long. Plus, I don't get short of breath, I don't get zits, and I don't get a red nose, like I did with other masks. Thank you so much! ❤️

Nanette Wofford ▶ Frontliners Med
Just now • Dallas, Texas •

Our elementary school is a brighter, safer, happier place now that staff members are protected with Frontliner Med respirators! Thank you!

Enhanced PPE Update

SUPPORT-95™

SOFT SHELL PARTICULATE RESPIRATOR

Key Features

- FDA EUA, Appendix A list approved for medical use and pending NIOSH approval
- FFP2, CE (modules B, C2, & D), GB2626, EN149, and OEKO-TEX Standard 100
- Available in 4 sizes XS, S, M, L to precisely fit a broad range of faces
- Contoured cup design increases surface contact area to form a more reliable seal and ending painful pressure sores
- Ultra-sonic welded, adjustable aluminum nose bar for a customizable fit
- Anti-microbial polyester comfort liner wicks away moisture from skin
- Velvety ear loops for a smooth and simple donning process
- Available for special order in any color

Day in and day out Frontliners work tirelessly to care for our community. The limiting factor in your line of work isn't heart or soul, it's your equipment.

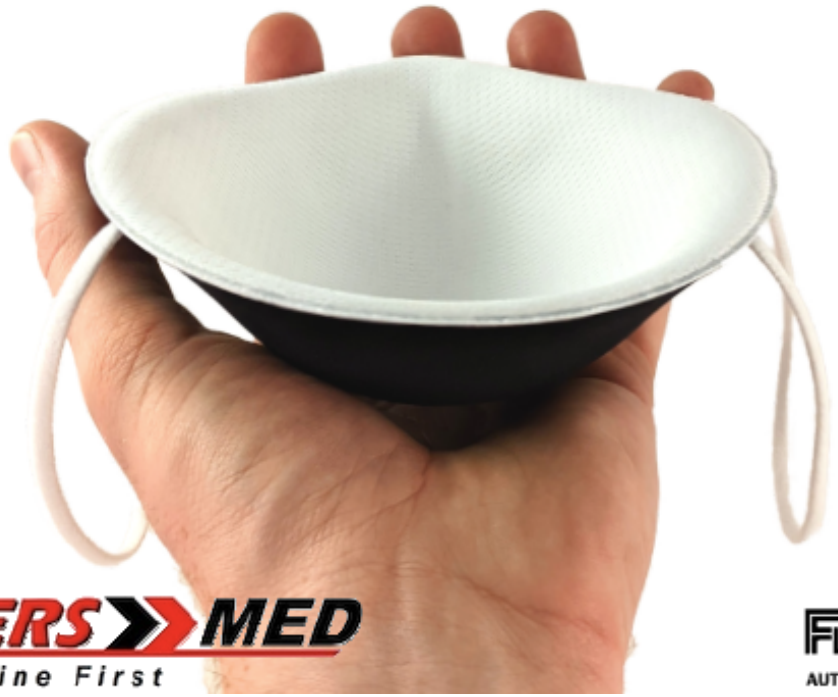
The Support-95 uses patented fabric technologies to provide fluid resistance, increased breathability, and ultra soft material so you can safely continue saving the world in comfort.

Enhanced PPE Update

8 Layers of Protection

- Micro polyester fluid-resistant outer layer
- Nano polyester non-woven filtration layers x2
- High filtration efficiency melt blown layers x2
- Nano polyester non-woven filtration layers x2
- Anti-microbial, ultra soft moisture-wicking polyester comfort liner

Our mission is to innovate and supply the products frontliners around the world want and need, while donating a portion of every sale to mental health services and giving PPE to keep our frontline fully equipped--body and mind.



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Our Frontline First

FDA EUA AUTHORIZED

Update on Contact Tracing from Brookline Public Health Commissioner, Dr. Swannie Jett

1. The Department of Brookline Public Health nor any entity such a schools will conduct contact tracings. If there's any outbreaks the BPH will conduct epidemiology investigations at that time.

2. All cases and contacts (including all daycares, all k-12 schools and the general public) will go to directly to the Contact Tracing Collaborative of MDPH for contact tracings.

3. Department of Brookline Public Health will allow CTC to manage all cases and contact tracings, so they will align with the MA Department of Public Health COVID-19 related guidelines. These may vary depending on the case situation. I will not modify or use Board of Health authority for local rule in relation to any scenario for MDPH guidelines unless there's a serious outbreak an eradication of local transmission is paramount.

4. Everyone is still required by law to contact the local board of health to report positive cases of exposure. The exposure should be reported directly to the Health Commissioner. We will investigate if any epidemiological outbreaks or clusters occur and decide next appropriate steps at that time.

MA Community Tracing Collaborative

Community Tracing Collaborative overview

The Commonwealth of Massachusetts created the COVID-19 Community Tracing program to help support local health departments from every community in their contact tracing work. The program focuses on reaching out to people who have tested positive for COVID-19 and the contacts they have been close to, making sure they have the support they need to isolate or quarantine. When the MA COVID Team calls, you can do your part by answering the phone and providing helpful information that will help flatten and reduce the curve in Massachusetts.

Why your help matters

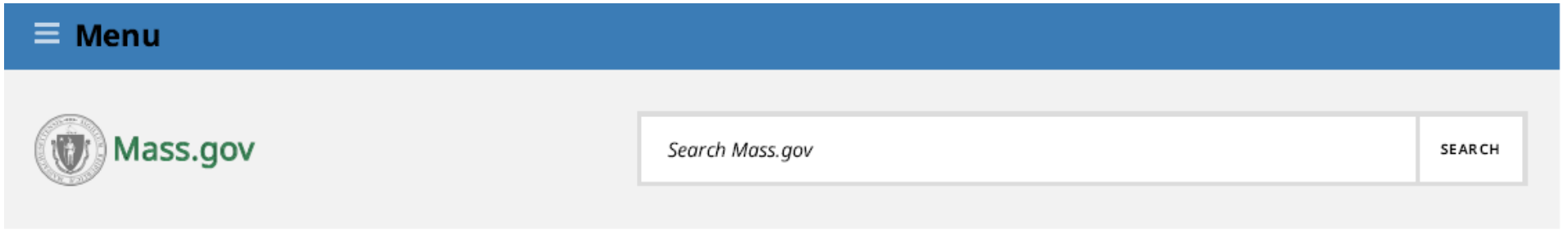
Through what's called contact tracing, local health departments and the Collaborative are reaching out to everyone who tested positive and people who have been exposed. We are proud to be the first state in the nation to initiate contact tracing and your participation is critical to our shared success. Contact tracing is your way to impact the lives of many in our state and beyond and help stop the spread of COVID-19

Source: https://www.mass.gov/info-details/learn-about-the-community-tracing-collaborative

MA Community Tracing Collaborative

Source: https://www.mass.gov/info-details/learn-about-the-community-tracing-collaborative

MA DPH Guidance on Quarantine Length



COVID-19 isolation and quarantine information

Isolating and quarantining are related but distinct approaches to limiting COVID-19's spread. In short: Isolate if you're sick, quarantine if you have been exposed.

You must isolate if you are symptomatic or have tested positive for COVID-19. This means you must be alone, without direct contact with anyone else, until you can no longer spread the virus. This typically lasts about 10 days.

You must quarantine if you were exposed to someone with COVID-19 but haven't shown symptoms or had a positive COVID-19 test. It's best if you can quarantine for 14 days. However, if 10 days after your exposure you have no symptoms, you can end quarantine. You can end your quarantine after 7 days if you get tested and are negative for the virus.

Source: https://www.mass.gov/info-details/covid-19-isolation-and-quarantine-information

MA DPH Guidance on Quarantine Length

Learn about quarantining

You must quarantine if you are not sick but are a close contact to someone diagnosed with COVID-19 or if you've been traveling outside Massachusetts. You may be contacted by a local health official or the **Commonwealth's Community Tracing Collaborative** (/info-details/learn-about-the-community-tracing-collaborative) regarding any contact with those who have COVID-19.

- Please note that individuals who had COVID-19 in the last 90 days (from day of symptom onset or day of first positive test if asymptomatic), AND individuals who have received either two doses of the Moderna or Pfizer COVID-19 vaccines or a single dose of the Janssen COVID-19 vaccine, at least 14 days ago are not required to quarantine following an exposure.

Source: https://www.mass.gov/info-details/covid-19-isolation-and-quarantine-information

CDC Guidance on Isolation Length (for Positive Cases)

Discontinuing Home Isolation for Persons with COVID-19:

Centers for Disease Control and Prevention

Accumulating evidence supports ending isolation and precautions for persons with COVID-19 using a symptom-based strategy. Specifically, researchers have reported that people with mild to moderate COVID-19 remain infectious no longer than 10 days after their symptoms began, and those with more severe illness or those who are severely immunocompromised remain infectious no longer than 20 days after their symptoms began. Therefore, CDC has updated the recommendations for discontinuing home isolation as follows:

Persons with COVID-19 who have symptoms and were directed to care for themselves at home may discontinue isolation under the following conditions:

- At least 10 days* have passed since symptom onset **and**
- At least 24 hours have passed since resolution of fever without the use of fever-reducing medications **and**
- Other symptoms have improved.

*A limited number of persons with severe illness may produce replication-competent virus beyond 10 days, that may warrant extending duration of isolation for up to 20 days after symptom onset. Consider consultation with infection control experts. See Discontinuation of Transmission-Based Precautions and Disposition of Patients with COVID-19 in Healthcare Settings (Interim Guidance).

Persons infected with SARS-CoV-2 who never develop COVID-19 symptoms may discontinue isolation and other precautions 10 days after the date of their first positive RT-PCR test for SARS-CoV-2 RNA.

Source: https://www.cdc.gov/coronavirus/2019-ncov/hcp/disposition-in-home-patients.html; https://www.cdc.gov/coronavirus/2019-ncov/hcp/duration-isolation.html#:~:text=For%20most%20persons%20with%20COVID,with%20improvement%20of%20other%20symptoms.

CDC Guidance on Quarantine Length (Close Contacts)

Options to Reduce Quarantine for Contacts of Persons with SARS-CoV-2 Infection Using Symptom Monitoring and Diagnostic Testing

Updated Dec. 2, 2020 Print

Centers for Disease Control and Prevention

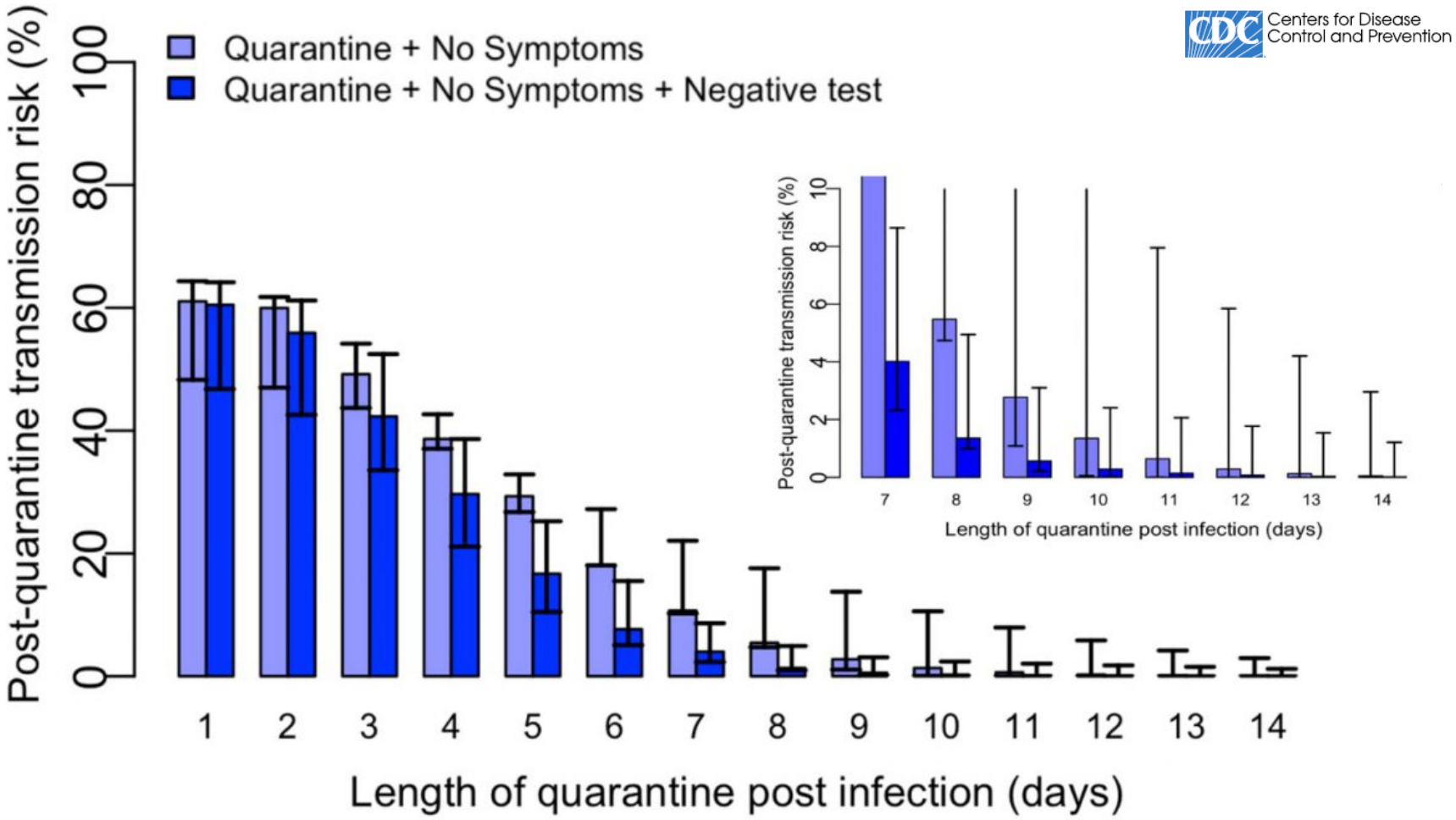
Local public health authorities determine and establish the quarantine options for their jurisdictions. CDC currently recommends a quarantine period of 14 days. However, based on local circumstances and resources, the following options to shorten quarantine are acceptable alternatives.

- Quarantine can end after Day 10 without testing and if no symptoms have been reported during daily monitoring.
  - With this strategy, residual post-quarantine transmission risk is estimated to be about 1% with an upper limit of about 10%.
- *When diagnostic testing resources are sufficient and available (see bullet 3, below),* then quarantine can end after Day 7 if a diagnostic specimen tests negative and if no symptoms were reported during daily monitoring. The specimen may be collected and tested within 48 hours before the time of planned quarantine discontinuation (e.g., in anticipation of testing delays), but quarantine cannot be discontinued earlier than after Day 7.
  - With this strategy, the residual post-quarantine transmission risk is estimated to be about 5% with an upper limit of about 12%.

In both cases, additional criteria (e.g., continued symptom monitoring and masking through Day 14) must be met and are outlined in the full text.

Source: https://www.cdc.gov/coronavirus/2019-ncov/more/scientific-brief-options-to-reduce-quarantine.html; https://www.cdc.gov/coronavirus/2019-ncov/if-you-are-sick/quarantine.html

CDC Guidance on Quarantine Length (Close Contacts)



Source: https://www.cdc.gov/coronavirus/2019-ncov/more/scientific-brief-options-to-reduce-quarantine.html

CDC Guidance on Quarantine Length (Close Contacts)

CDC Centers for Disease Control and Prevention

Planned day after which quarantine is completed and can be discontinued	Residual post-quarantine transmission risk (%) with and without diagnostic testing of a specimen within 48 hours before time of planned discontinuation of quarantine					
	No testing		RT-PCR testing		Antigen testing	
	Median	Range	Median	Range	Median	Range
7	10.7	10.3-22.1	4.0	2.3-8.6	5.5	3.1-11.9
10	1.4	0.1-10.6	0.3	0.0-2.4	1.1	0.1-9.5
14	0.1	0.0-3.0	0.0	0.0-1.2	0.1	0.0-2.9

Source: https://www.cdc.gov/coronavirus/2019-ncov/more/scientific-brief-options-to-reduce-quarantine.html

MA DESE Guidance on Quarantine Length

Policy of when a close contact may return to school: All close contacts should be tested but must self-quarantine, consistent with the guidance outlined below. The local board of health, in consultation with the school's COVID-19 response person, are best suited to advise on which quarantine option applies to a specific case. In accordance with the federal Center for Disease Control, close contacts must quarantine for the time period listed below:

At least 7 days, provided that all of the following are satisfied:

- They are tested (either polymerase chain reaction (PCR) or antigen test) on day 5 or later from their last exposure to the positive individual and receive a negative test result
- They have not experienced any symptoms up to this point
- They conduct active monitoring for symptoms through day 14, and self-isolate if new symptoms develop

While most exposed close contacts do not contract COVID-19, this quarantine option may not identify 5% of those who still have the potential to transmit infection after quarantine ends. In other words, 95% of individuals who could still transmit infection after quarantine ends would be identified with this strategy.

Source: https://www.doe.mass.edu/covid19/on-desktop/protocols/

MA DESE Guidance on Quarantine Length, ctd.

At least 10 days, provided that all of the following are satisfied:

- They have not experienced any symptoms up to this point
- They conduct active monitoring for symptoms through day 14 and self-isolate if new symptoms develop
- No test is necessary under this option for the purposes of exiting quarantine

While most exposed close contacts do not contract COVID-19, this quarantine option may not identify 1% of those who still have the potential to transmit infection after quarantine ends. In other words, 99% of individuals who could still transmit infection after quarantine ends would be identified with this strategy.

Source: https://www.doe.mass.edu/covid19/on-desktop/protocols/

MA DESE Guidance on Quarantine Length, ctd.

At least 14 days after the last exposure to the person who tested positive, if:

- They have experienced any symptoms during the quarantine period, even if they have a negative COVID-19 test; or
- They are unable to conduct active monitoring of symptoms

This option provides the maximal risk reduction.

Source: https://www.doe.mass.edu/covid19/on-desktop/protocols/

MA DESE Guidance on Quarantine Length, ctd.

When individuals exit quarantine, masking and other safety measures remain critical. It may be best for individuals who are not be able to adhere to masking and distancing to exit quarantine after 10 or 14 days. Active monitoring requires individuals to actively monitor their symptoms and take temperature once daily. If even mild symptoms develop or the individual has a temperature of 100.0 F, they must immediately self-isolate, and contact the public health authority overseeing their quarantine, and be tested.

https://www.mass.gov/guidance/information-and-guidance-for-persons-in-quarantine-due-to-covid-19
https://www.cdc.gov/coronavirus/2019-ncov/more/scientific-brief-options-to-reduce-quarantine.html

Source: https://www.doe.mass.edu/covid19/on-desktop/protocols/

PSB 2020-2021 Calendar and Quarantine Impacts

Grade(s)	Model and Start Date	Approx. In-Person Days Through 3/19/21	Approx. In-Person Days 3/19/21 to Year-End
BEEP and K	Full-time starting 9/16/20	110	60
Grades 1-5	Hybrid since late Oct. '20; full-time starting Mar. '21	35 – 45	55 – 60
Grades 6-8	Hybrid starting Oct. '20; full-time starting Apr. '21	35	50
Grades 9-12	Hybrid starting 10/26 - 11/9/20	30 – 35	25 – 45

Quarantine Length	Impact on 2-Day/ Week Hybrid	Impact on 5-Day/ Week Full In-Person
14-day	4 school days	10 school days
10-day	2-4 school days	6-8 school days
7-day	2 school days	5 school days

Source: https://www.brookline.k12.ma.us/cms/lib/MA01907509/Centricity/Domain/4/2020-2021%20District%20Calendar_updated_1.4.21.pdf

Appendix – For Reference As Needed

Simple Example Using Made-Up Numbers

Whole Population = 200

(100 As and 100 Bs)

Total Population A Members Infected = 10

Total Population A Members Hospitalized = 2

Total Population A Member Deaths = 1

Higher case rate = more cases in same sized population (20% infected vs. 10%)

Same per-case hospitalization rate for both (20%) but more total hospitalizations below

Same per-case fatality rate for both (10%) but more total deaths below

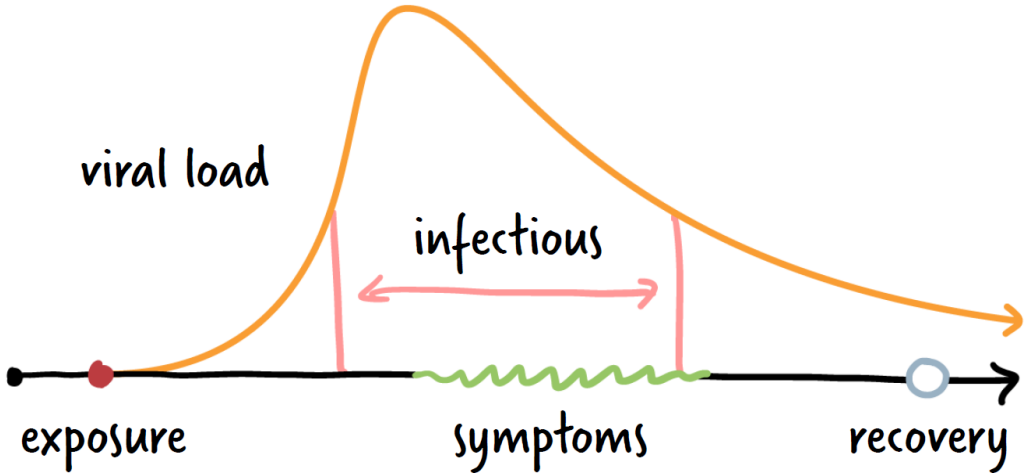
Total Population B Members Infected = 20

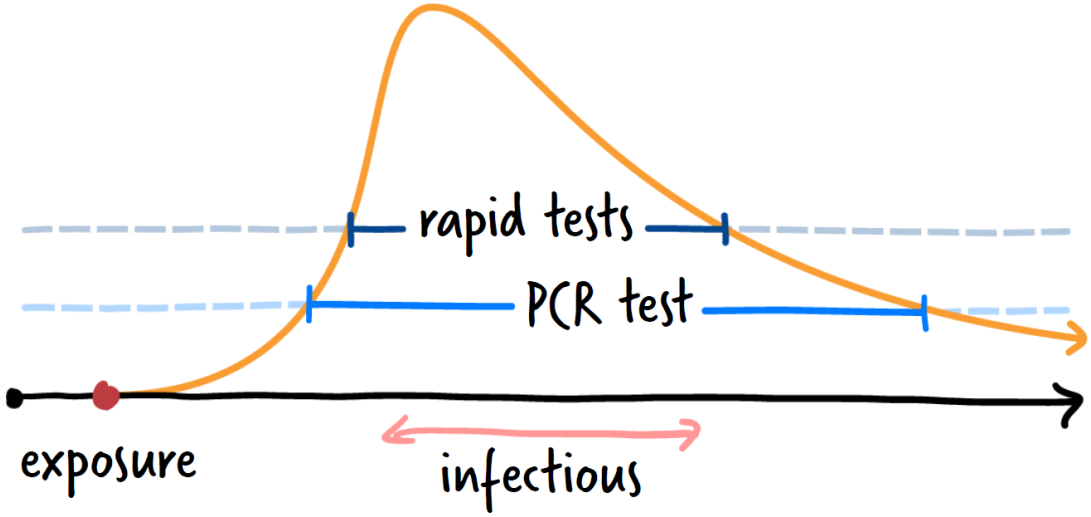
Total Population B Members Hospitalized = 4

Total Population B Member Deaths = 2

SARS-CoV-2 Infection Timeline

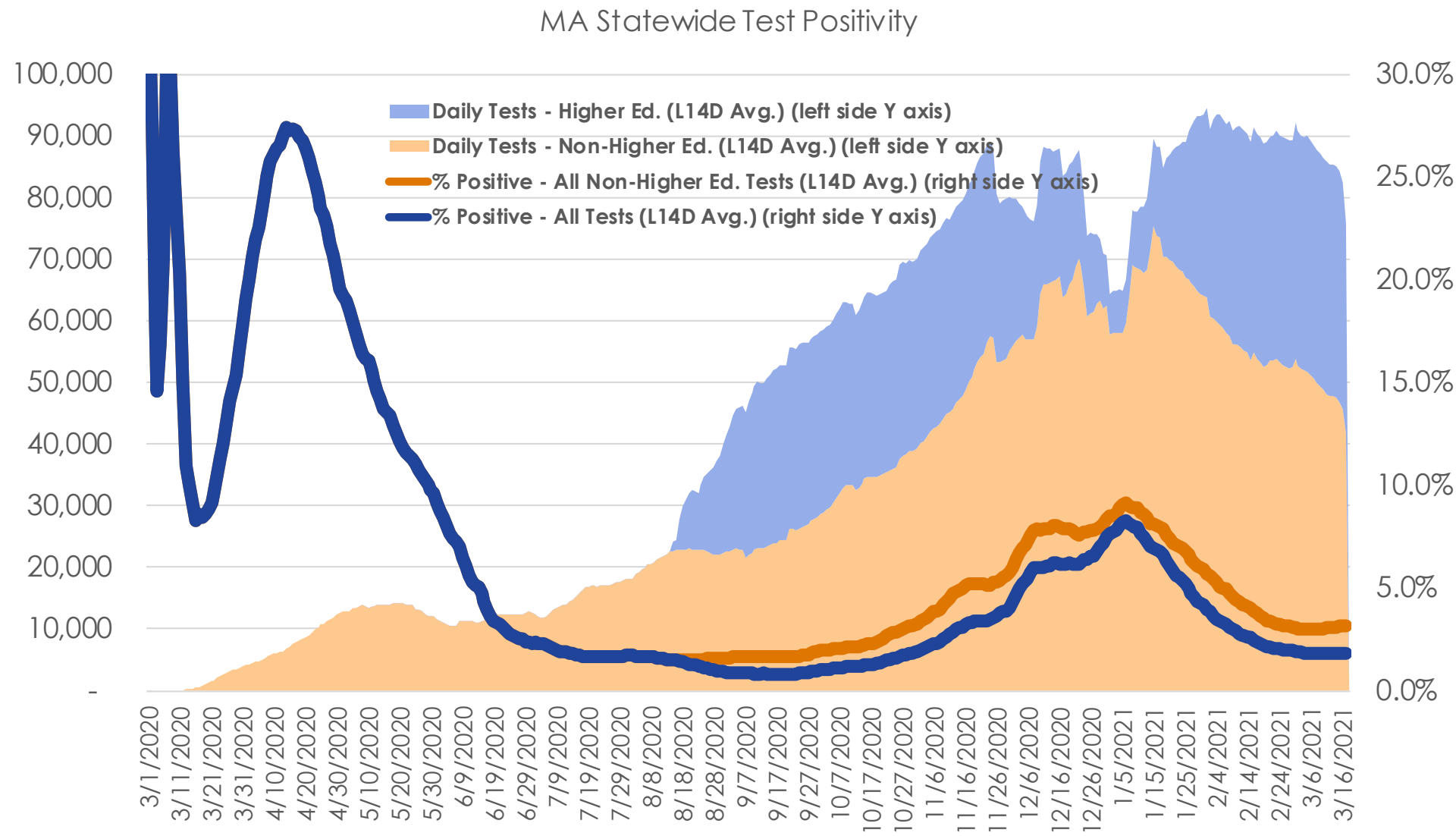
- Two main types of cases:
  - (Pre-)Symptomatic
  - Asymptomatic
- Timeline of a case:





Sources: https://www.nytimes.com/interactive/2020/10/02/science/charting-a-coronavirus-infection.html

Trends: Test Positivity and Testing Volume (Statewide)



Data source: https://www.mass.gov/info-details/covid-19-response-reporting

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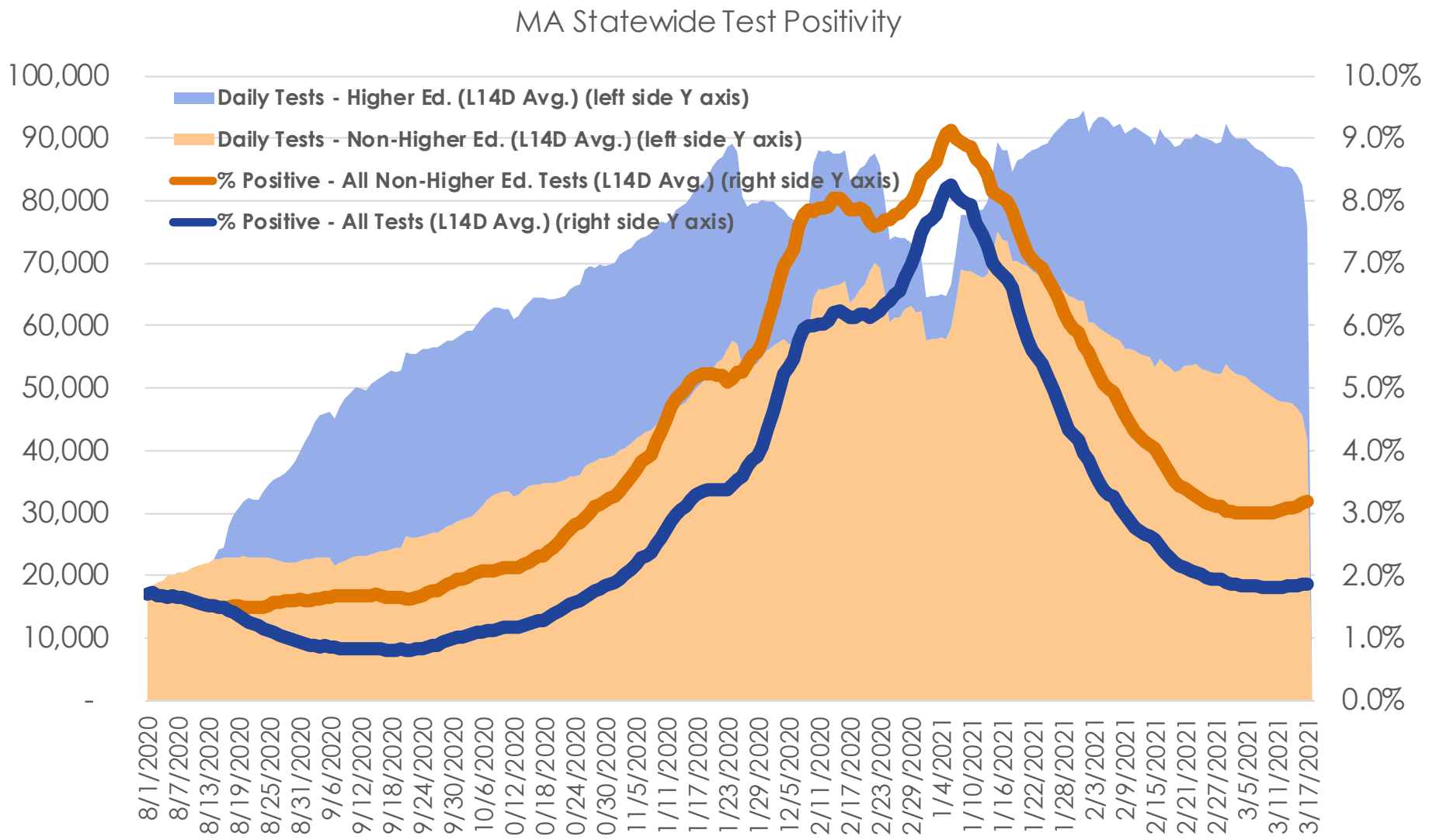
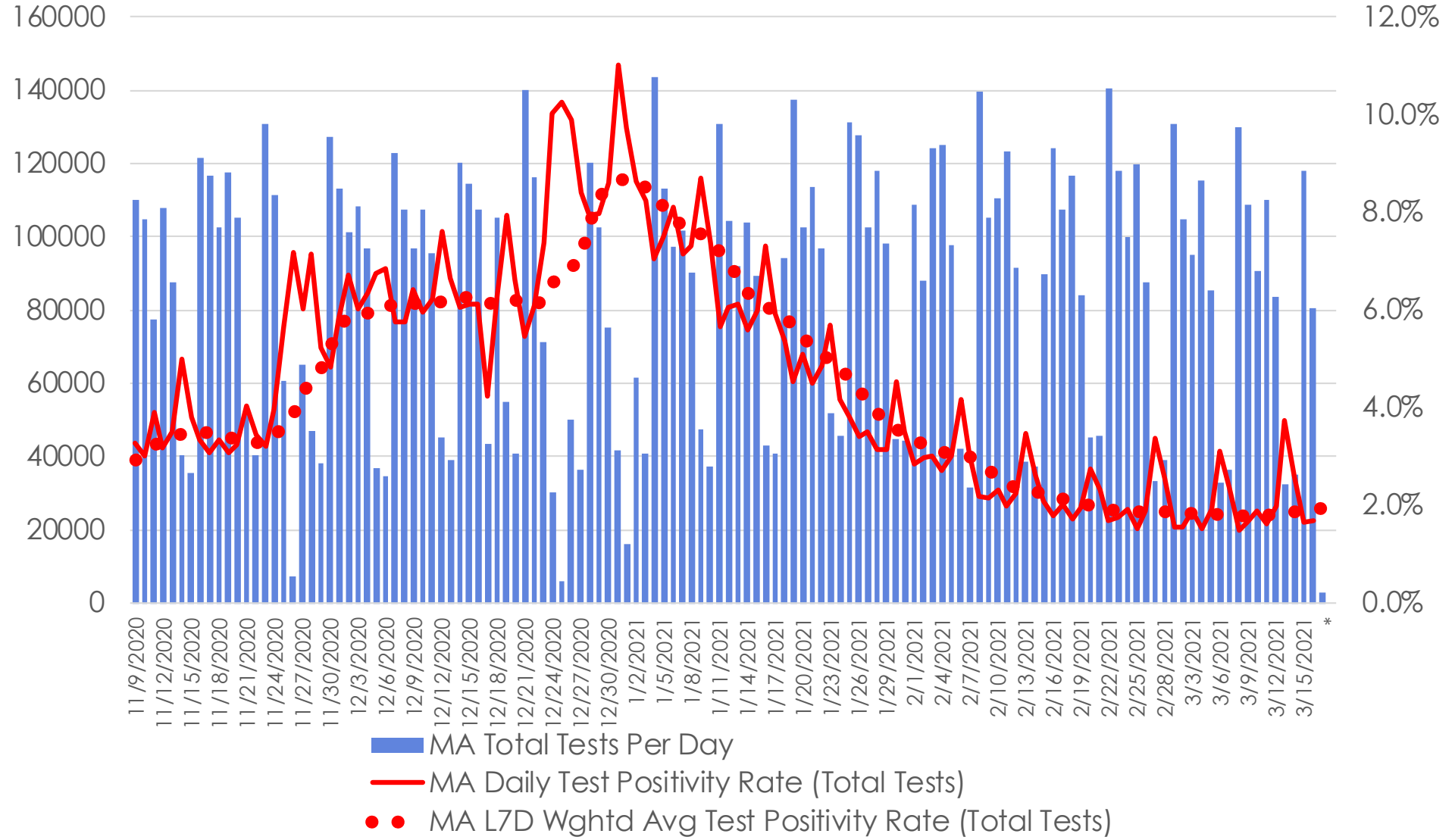


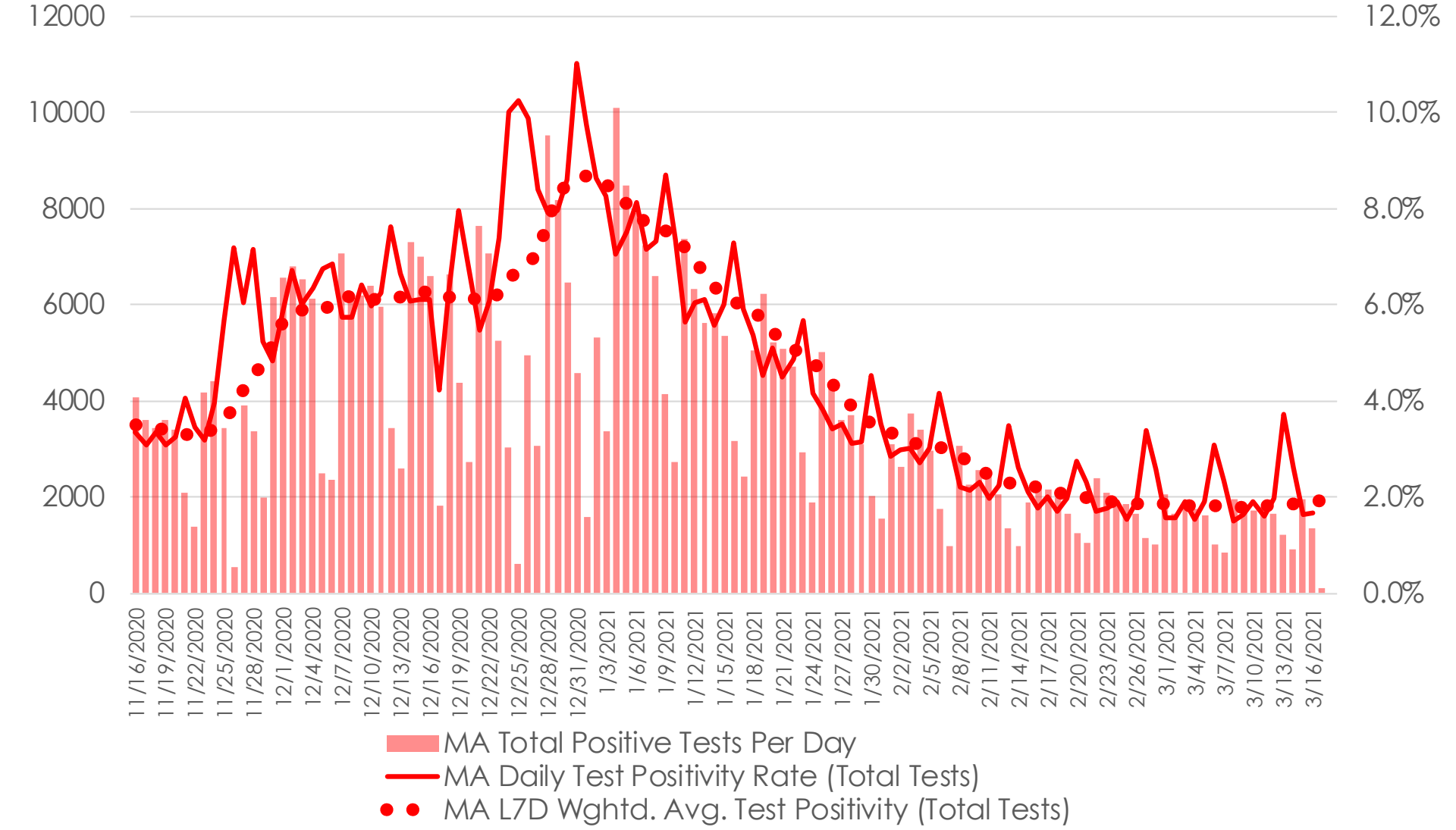
Data source: https://www.mass.gov/info-details/covid-19-response-reporting

Trends: Daily Test Volumes and Positivity (Statewide)



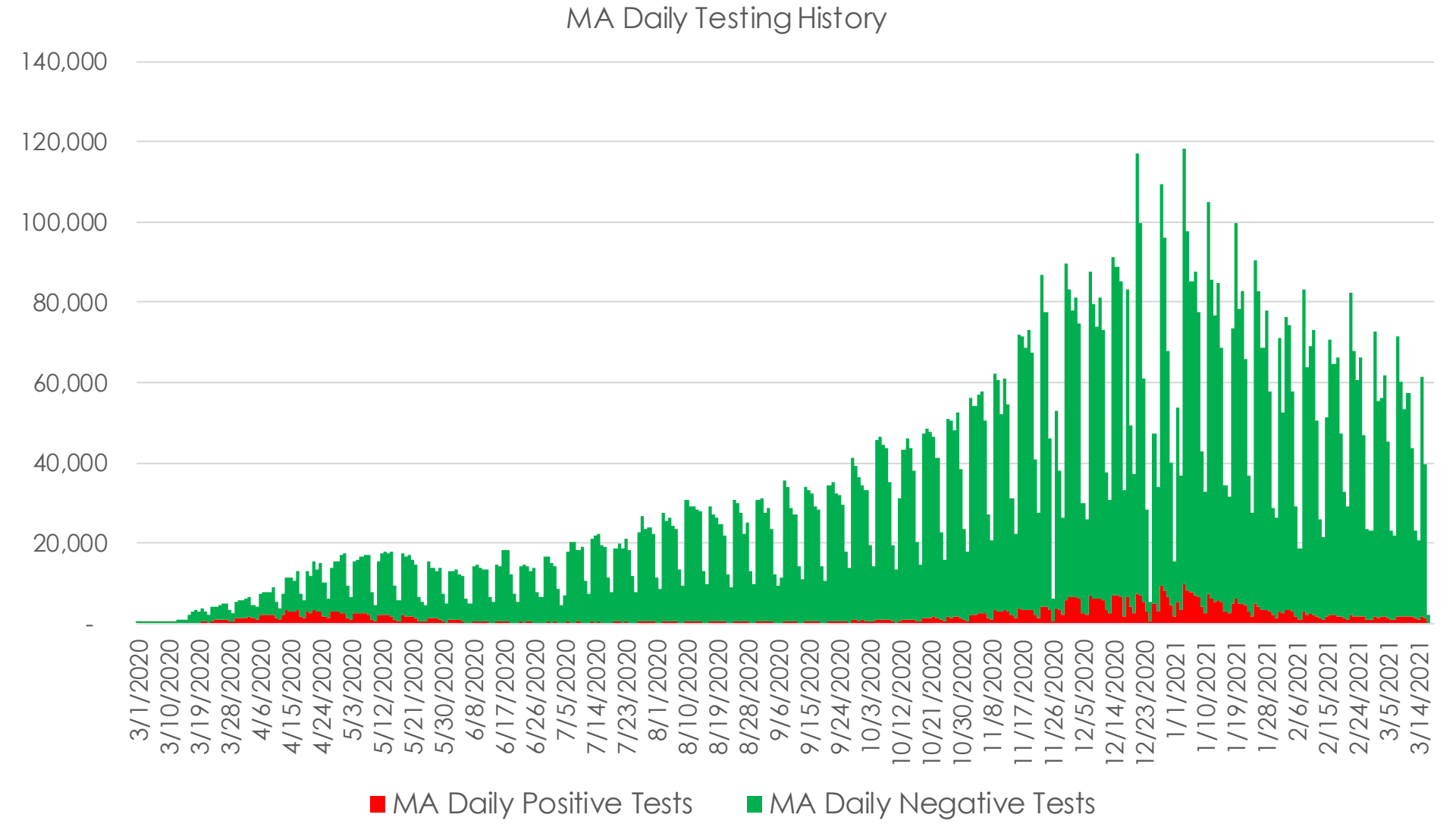
Data source: https://www.mass.gov/info-details/covid-19-response-reporting

Trends: Daily Positive Test Counts and Positivity (Statewide)



Data source: https://www.mass.gov/info-details/covid-19-response-reporting

Statewide Test Results by Day



Data source: https://www.mass.gov/info-details/covid-19-response-reporting

Brookline in Regional Context
(as of 3/3/2021)

Municipality	Avg. Daily Cases/100k L14D	% of Tests Positive L14D	Total Tests L14D / Muni. Population
Dedham			
Milton			
Boston			
Needham			
Somerville			
Watertown			
Wellesley			
Newton			
Cambridge			
Arlington			
Belmont			
Brookline			

Data source: https://www.mass.gov/info-details/covid-19-response-reporting#covid-19-weekly-public-health-report-

Public Schools of Brookline Case Counts: Asymptomatic Testing Program Results

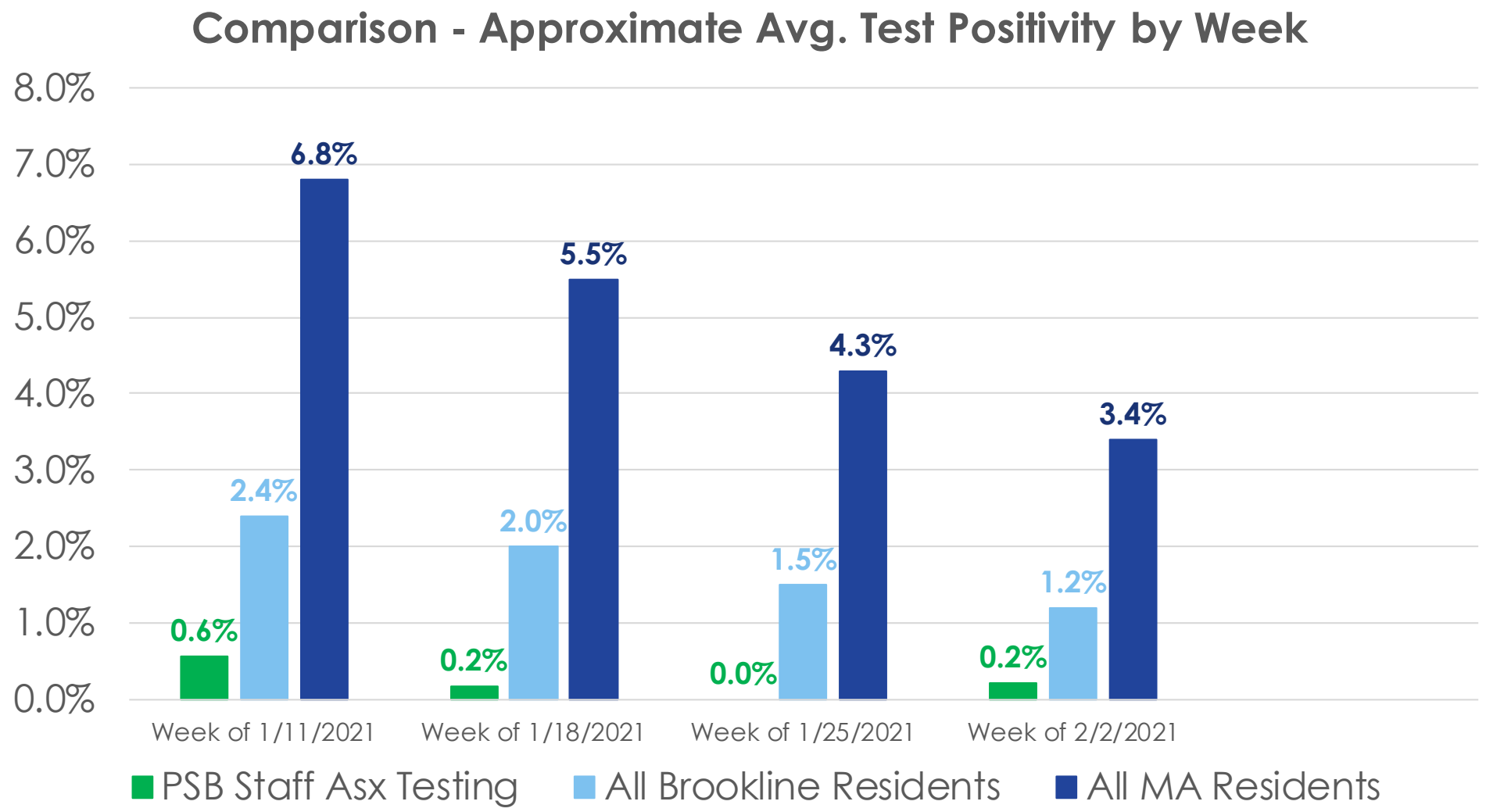


Chart source: https://sites.google.com/psbma.org/psb-reopening-hub/dashboard?authuser=0

Summary of PSB's COVID-19 Experience to Date (through 2/18/2021)

- Since the fall:
  - **90,000+ staff member-days** in buildings
  - **175,000+ student-days** in buildings

- **229 known COVID-19 cases among students and staff**
  - Nearly all believed to be community-acquired (e.g., some individuals were 100% remote)
  - 49 were present in buildings during likely contagious periods

- **Very few instances of possible in-school transmission:**
  - Only 1 likely and 2 more possible/"can't rule out" cases
  - Just 1 of 227 (0.4%) of in-school close contacts have tested positive or developed symptoms

- **Just 3 positives (0.17% positivity) out of 1,805** asymptomatic in-person staff members PCR tested between 1/15/21 (height of the winter surge) and 2/4/21

PSB's Multi-Layered Mitigation Strategy

1. **Daily symptom screening:** Repeated requests and instructions to staff and families with stay-home advice if any symptoms present

2. **PPE:** Universal mask requirement except at designated mask breaks; face shields and eye protection made available to teachers and staff

3. **Enhanced ventilation:** all multiple-occupant spaces getting at least 4 air changes per hour of outside or MERV-13+ filtered air; most even higher

4. **Hand hygiene and respiratory etiquette**, including handwashing/sanitizer

5. **Surface cleaning and disinfection**

6. **Contact tracing, isolation, and quarantine** through Brookline Health Dept. and PSB school nursing joint efforts

7. **Asymptomatic PCR testing:** recently added for staff; expanding soon to students

8. **Physical distancing** between individuals in school buildings

MA DESE Guidance – In-Person/Remote

https://www.doe.mass.edu/covid19/on-desktop/interpreting-dph-metrics.html

- ***Districts are expected to prioritize in-person learning across all color-coded categories, unless there is suspected in-school transmission, in accordance with DESE's Guidance on Responding to COVID-19 Scenarios.*** *Transmission in schools is defined as spread of the virus between people during interactions in the school setting. While there have been positive COVID-19 cases of staff and students in schools, most of these infections have occurred outside of the school setting. If there is suspected in-school transmission, then the affected classrooms or schools should temporarily shift to remote learning, in accordance with DESE's Guidance on Responding to COVID-19 Scenarios. Classrooms and schools should reopen after appropriate mitigation strategies have been implemented, as determined in consultation with the local board of health, DPH, and DESE.*

MA DESE Guidance – In-Person/Remote

https://www.doe.mass.edu/covid19/on-desktop/interpreting-dph-metrics.html

- ***Districts and schools in communities designated gray, green, or yellow are expected to have students learning fully in-person, if feasible.*** *A hybrid model should be used only if there is no other way to meet health and safety requirements. Parents and caregivers will continue to have the option to choose a district's remote learning program for their children.*

- ***Schools in red communities should implement hybrid models, while maximizing in-person learning time for high-needs students.***

…

- ***Fully remote instructional models should be implemented only as a last resort*** *in classrooms, schools, or districts when there is suspected in-school transmission or a significant municipal outbreak, in accordance with DESE's Guidance on Responding to COVID-19 Scenarios. Classrooms and schools should reopen after appropriate mitigation strategies have been implemented, as determined in consultation with the local board of health, DPH, and DESE.*

CDC's New K-12 School Guidance: Key Themes

1. From CDC's Executive Summary: "It is critical for schools to open as safely and as soon as possible, and remain open, to achieve the benefits of in-person learning and key support services."

2. Multi-layered mitigation strategies keep in-school transmission risk low.

3. Community transmission levels are important. At low to moderate levels, schools generally should operate fully in-person (even if that requires <6' physical distancing).

4. Health equity should not be overlooked.

5. Educators and staff should be vaccinated as soon as supply allows, as an additional layer of mitigation.

Source: https://www.cdc.gov/coronavirus/2019-ncov/downloads/community/schools-childcare/K-12-Operational-Strategy-2021-2-12.pdf

CDC's New K-12 School Guidance: Community Transmission Levels

Table 1. CDC Indicators and Thresholds for Community Transmission of COVID-19[1]

Indicator	Low Transmission Blue	Moderate Transmission Yellow	Substantial Transmission Orange	High Transmission Red
Total new cases per 100,000 persons in the past 7 days[2]	0-9	10-49	50-99	≥100
Percentage of NAATs that are positive during the past 7 days[3]	<5.0%	5.0%-7.9%	8.0%-9.9%	≥10.0%

[1]If the two indicators suggest different levels, the actions corresponding to the higher threshold should be chosen. County-level data on total new cases in the past 7 days and test percent positivity are available on the County View tab in CDC's COVID Data Tracker.

[2]Total number of new cases per 100,000 persons within the last 7 days is calculated by adding the number of new cases in the county (or other community type) in the last 7 days divided by the population in the county (or other community type) and multiplying by 100,000.

[3]Percentage of positive diagnostic and screening NAATs during the last 7 days is calculated by dividing the number of positive tests in the county (or other administrative level) during the last 7 days by the total number of tests resulted over the last 7 days. Additional information can be found on the Calculating Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) Laboratory Test Percent Positivity: CDC Methods and Considerations for Comparisons and Interpretation webpage.

Source: https://www.cdc.gov/coronavirus/2019-ncov/downloads/community/schools-childcare/K-12-Operational-Strategy-2021-2-12.pdf

CDC's New K-12 School Guidance: Key Mitigation Strategies

- **Five key mitigation strategies:**
  - ***Universal and correct use of masks***
  - ***Physical distancing****
  - Handwashing and respiratory etiquette
  - Cleaning and maintaining healthy facilities
  - Contact tracing in combination with isolation and quarantine, in collaboration with the health department

- **Also helpful:**
  - Ventilation
  - Surveillance testing
  - Educator/staff vaccination when available

Source: https://www.cdc.gov/coronavirus/2019-ncov/downloads/community/schools-childcare/K-12-Operational-Strategy-2021-2-12.pdf

Table 2. Recommended Implementation of Mitigation Strategies and K-12 School Learning Modes by Level of Community Transmission for Schools That Do Not Implement Expanded Screening Testing

<table>
<tr><th>Low Transmission[1]
Blue</th><th>Moderate Transmission
Yellow</th><th>Substantial Transmission
Orange</th><th>High Transmission
Red</th></tr>
<tr><td colspan="4">All schools implement 5 key mitigation strategies: Universal and correct use of masks required; physical distancing; handwashing and respiratory etiquette; cleaning and maintaining healthy facilities; contact tracing in combination with isolation and quarantine.
Diagnostic testing[2]: Symptomatic students, teachers, and staff and close contacts referred for diagnostic testing</td></tr>
<tr><td colspan="2" rowspan="2">K-12 schools open for full in-person instruction
Physical distancing of 6 feet or more to the greatest extent possible[3]</td><td colspan="2">Elementary schools in hybrid learning mode or reduced attendance[4]
Physical distancing of 6 feet or more is required</td></tr>
<tr><td>Middle and high schools in hybrid learning mode or reduced attendance
Physical distancing of 6 feet or more is required</td><td>Middle and high schools in virtual only instruction unless they can strictly implement all mitigation strategies, and have few cases; schools that are already open for in-person instruction can remain open, but only if they strictly implement mitigation strategies and have few cases[5]</td></tr>
<tr><td>Sports and extracurricular activities occur; physical distancing of 6 feet or more to the greatest extent possible[6]</td><td>Sports and extracurricular activities occur with physical distancing of 6 feet or more required</td><td>Sports and extracurricular activities occur only if they can be held outdoors, with physical distancing of 6 feet or more</td><td>Sports and extracurricular activities are virtual only</td></tr>
</table>

Source: https://www.cdc.gov/coronavirus/2019-ncov/downloads/community/schools-childcare/K-12-Operational-Strategy-2021-2-12.pdf

Table 3. Recommended Implementation of Mitigation Strategies, Testing, and Safe K-12 School Learning Modes by Level of Community Transmission for Schools that Implement Expanded Screening Testing

Low Transmission[1] Blue	Moderate Transmission Yellow	Substantial Transmission Orange	High Transmission Red
All schools implement 5 key mitigation strategies: Universal and correct use of masks required; physical distancing; handwashing and respiratory etiquette; cleaning and maintaining healthy facilities; contact tracing in combination with isolation and quarantine. **Diagnostic testing[2]:** Symptomatic students, teachers, and staff and close contacts referred for diagnostic testing			
Screening Testing[3]			
Routine screening testing of teachers and staff offered once per week			
No screening testing for students	Routine screening testing of students offered once per week[4]		
School Status			
K-12 schools open for full in-person instruction Physical distancing of 6 feet or more to the greatest extent possible[5]		K-12 schools in hybrid learning mode or reduced attendance[6] Physical distancing of 6 feet or more is required	
Sports and extracurricular activities occur; physical distancing of 6 feet or more to the greatest extent possible[7]	Sports and extracurricular activities occur with physical distancing of 6 feet or more required	Sports and extracurricular activities occur only if they can be held outdoors, with physical distancing of 6 feet or more	Sports and extracurricular activities are virtual only

Source: https://www.cdc.gov/coronavirus/2019-ncov/downloads/community/schools-childcare/K-12-Operational-Strategy-2021-2-12.pdf

CDC's New K-12 School Guidance: CDC Director Dr. Rochelle Walensky on Distancing

From 2/12/2021 press conference announcing CDC's new guidance:

- *"With regard to transmission and six feet, you know, in these lower areas of transmission…low to moderate transmission, we are worried that people will not be able to get back to full in-person learning if we mandate six feet of physical distancing."*

- *"We believe that, at such low levels of transmission, that schools could be kept safe simply with universal masking and all the other three mitigation strategies while doing their best to limit interaction. So, we believe that, at those very low levels of transmission, that schools could be open for full, in-person learning while trying to do six feet distancing, recognizing that, in some situations, that might not be possible."*

Source: https://www.cdc.gov/media/releases/2021/t0212-cdc-update-covid-19.html

CDC's New K-12 School Guidance: A Sampling of Expert Reactions

- Dr. Joe Allen at (Healthy Buildings Program Director at Harvard/ Chan School of Public Health) and Dr. Helen Jenkins (Associate Professor of Biostatistics at BU School of Public Health): "*[C]ommunity-spread metrics pose major problems. We're part of a group of faculty and researchers at Harvard, Boston University and Brown University that released a report in July using such metrics as indicators for when to open schools. We changed our position on this in light of overwhelming scientific evidence that transmission within schools can be kept low regardless of community spread, so long as good mitigation measures are in place. It's also clear that community spread is not an indicator of within-school transmission.*"

- Dr. Jennifer Nuzzo, epidemiologist at the Johns Hopkins Bloomberg School of Public Health: "*A lot of communities have pursued hybrid approaches or, in some cases, just not opened, because they haven't been able to figure out that spacing issue. The whole attempt to bring kids back to school doesn't have to break down over that.*"

Source: https://www.nytimes.com/2021/02/12/health/school-reopenings-cdc.html; https://www.washingtonpost.com/opinions/2021/02/12/cdc-report-schools-problems/

MA DPH/DESE Guidance on Distancing for Schools

https://www.doe.mass.edu/covid19/on-desktop.html (8/19/2020 Joint Memo)

- *Physical distancing is a critical tool in preventing the spread of COVID-19. The CDC and DPH recommend 6 feet of distance between individuals. The World Health Organization and the American Academy of Pediatrics recommend a minimum of 3 feet of distance.* ***DESE recommends that districts aim for 6 feet of distance where feasible. When 6 feet is not feasible, 3 feet is an acceptable minimum as long as staff and students wear masks covering the nose and mouth at all times.*** *If the 3 feet minimum is applied on the bus, all staff and students regardless of age must wear masks at all times. Please note that decisions to apply a 3-feet minimum will likely increase the number of close contacts associated with the occurrence of a case.*

- *CDC, Social Distancing, Quarantine, and Isolation. (2020, May 6). Retrieved from https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/social-distancing.html*
- *DPH, COVID-19 Prevention and Treatment (2020). Retrieved from https://www.mass.gov/info-details/covid-19-prevention-and-treatment#social-distancing-*
- *WHO, Considerations for school-related public health measures in the context of COVID-19. (2020, May 10). Available at https://www.who.int/publications/i/item/considerations-for-school-related-public-health-measures-in-the-context-of-covid-19*
- *American Academy of Pediatrics (2020). COVID-19 Planning Considerations: Guidance for School Re-entry Retrieved from https://services.aap.org/en/pages/2019-novel-coronavirus-covid-19-infections/clinical-guidance/covid-19-planning-considerations-return-to-in-person-education-in-schools/*

MA DESE Guidance on Distancing for Schools

https://www.doe.mass.edu/covid19/on-desktop.html (9/21/2020 FAQs)

- ***How should mask breaks be conducted?***
  It is recommended that students have at least two mask breaks per day (e.g. mealtime and recess). As it is recommended that students younger than second grade wear masks, it is important to note that they may need additional mask breaks during the day. Mask breaks should be held outdoors, if feasible. ***Students must be at least 6 feet apart during mask breaks.*** *Hand washing facilities or hand sanitizer must be available when entering and leaving this space. Students should remove masks as outlined above.*

WHO Guidance on Distancing for Schools

https://www.who.int/news-room/q-a-detail/coronavirus-disease-covid-19-schools

- "***Hygiene and daily practices at the school and classroom level***: ***Physical distancing of at least 1 metre [3.3-foot] between individuals including spacing of desks***, *frequent hand and respiratory hygiene, age-appropriate mask use, ventilation and environmental cleaning measures should be in place to limit exposure.*"

- Also:
  - *"Teacher and support staff should wear masks* ***when they cannot guarantee at least a 1-metre distance from others*** *or if there is widespread transmission in the area."*
    - https://www.who.int/docs/default-source/coronaviruse/risk-comms-updates/update39-covid-and-schools.pdf?sfvrsn=320db233_2

American Acad. of Pediatrics Guidance for Schools

https://services.aap.org/en/pages/2019-novel-coronavirus-covid-19-infections/clinical-guidance/covid-19-planning-considerations-return-to-in-person-education-in-schools/

- "In many school settings, 6 feet between students is not feasible without drastically limiting the number of students. Some countries have been able to successfully reopen schools after first controlling community-wide spread of SARS-CoV-2 while using 3 feet of distance between students without increases in community spread.[20] Physical distance between desks should follow current public health guidance, and desks should be placed at least 3 feet apart and ideally 6 feet apart. … **Schools should weigh the benefits of strict adherence to a 6-feet spacing rule between students with the potential downside if remote learning is the only alternative.**"

- **Elementary Schools:** "Desks should be placed at least 3 feet apart, and ideally 6 feet apart. If this reduces the amount of time children are present in school, harm may outweigh potential benefits."

- **Secondary Schools:** "Desks should be placed 6 feet apart when feasible."

- "Given what is known about SARS-CoV-2 transmission dynamics, adults within schools should maintain a distance of 6 feet from other people as much as possible, particularly around other adult staff."

Mitigation Impact of Distancing

The following graph from Chu, et al. in *The Lancet*, June 1, 2020 may be particularly helpful in understanding the nature of the relationship between distancing and infection risk mitigation:

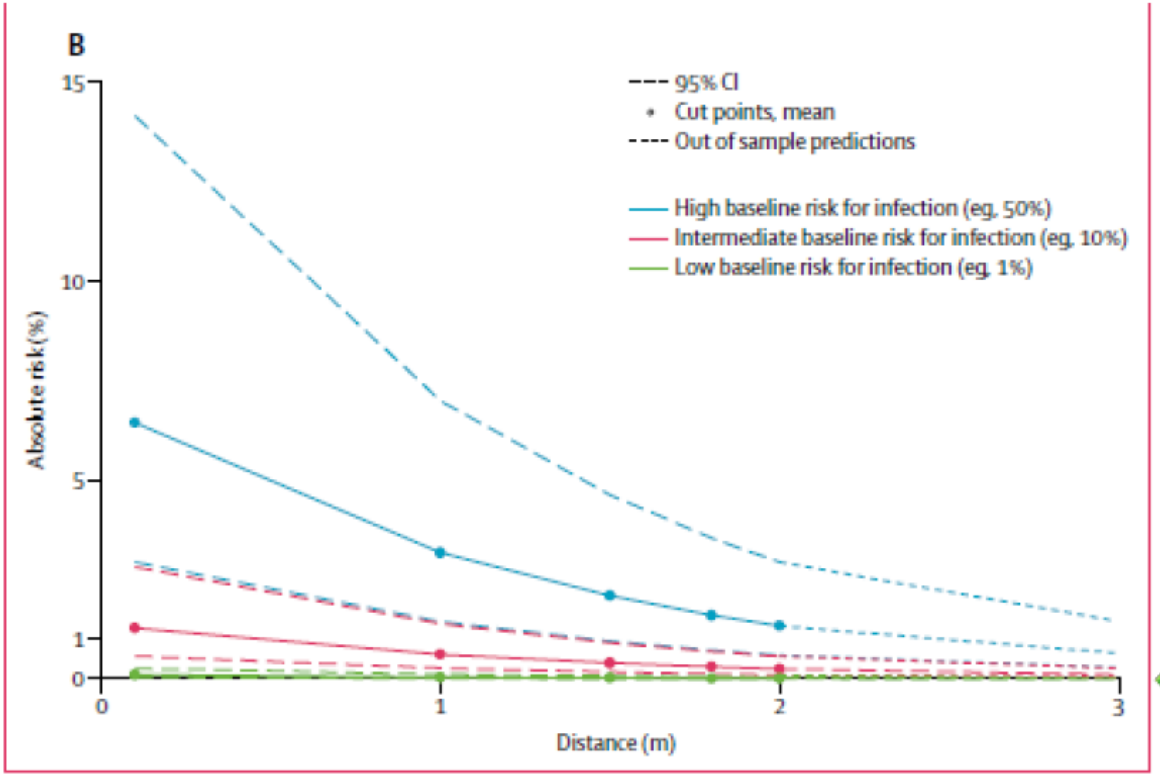


Figure 3: **Change in relative risk with increasing distance and absolute risk with increasing distance**
Meta-regression of change in relative risk with increasing distance from an infected individual (A). Absolute risk of transmission from an individual infected with SARS-CoV-2, SARS-CoV, or MERS-CoV with varying baseline risk and increasing distance (B). SARS-CoV-2=severe acute respiratory syndrome coronavirus 2. SARS-CoV=severe acute respiratory syndrome coronavirus. MERS-CoV=Middle East respiratory syndrome coronavirus.

PSB's environment is best represented by the green line in our view (low baseline risk of infection)—meaning the absolute risk difference between 3ft and 6ft distancing is insignificant.

Source: https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)31142-9/fulltext

Mitigation Impact of Distancing vs. Masks (unpublished Mayo Clinic data)

Mask use basically removed risk differential of distance.

Source: https://newsnetwork.mayoclinic.org/discussion/mayo-clinic-research-confirms-critical-role-of-masks-in-preventing-covid-19-infection/

Studies Focused on School-Based Transmission Risk Generally Say "Low Risk" at Less Distancing

- Multiple studies and commentary are collected in the Massachusetts General Hospital Global Health COVID-19 School and Community Resource Library -- summary note on page 145:
  - *11. Physical Distancing - Maintaining physical distancing of approximately 1m (~3 feet) between all persons is likely associated with a reduction in risk of transmission of COVID-19, although most data to support efficacy of physical distancing were generated in the absence of the use of face masks.* ***There are no direct comparisons of 3' vs. 6' distancing in schools where mask-wearing is universal. Over the course of the fall 2020 semester, several reports have described low rates of in-school transmission at distances less than 6'.*** *Please see Section 4D for available data on distance in each published report of school-associated transmission risk.*

Source: https://globalhealth.massgeneral.org/covidlibrary.pdf

Studies Focused on School-Based Transmission Risk Generally Say "Low Risk" at Less Distancing

- Brandal LT, Ofitserova TS, Meijerink HM. Minimal transmission of SARS-CoV-2 from paediatric COVID-19 cases in primary schools, Norway, August to November 2020. Euro Surveill. 2021;26:2002-11. ("minimal child-to-child and child-to-adult transmission in primary schools" with 1-meter physical distancing, but no masks worn in school).

- Gandini S, Rainisio M, Iannuzzo ML, Bellerba F, Cecconi F, Scorrano L. No evidence of association between schools and SARS-CoV-2 second wave in Italy. medRxiv 2021. ePub January 8, 2021. (incidence among students "lower than that in the general population of all but two Italian regions"; incidence among teachers statistically the same as the general population when matched for age; "COVID-19 infections rarely occur at school and that that transmission from students to teachers is very rare" with precautions including "compulsory 1m seat to seat distance").

Studies Focused on School-Based Transmission Risk Generally Say "Low Risk" at Less Distancing

- Kriemler S, Ulyte A, Ammann P, et al. Surveillance of acute SARS-CoV-2 infections in school children and point-prevalence during a time of high community transmission in Switzerland. Preprint. MedRxiv. 2020; Posted 2020 December 26. doi:10.1101/2020.12.24.20248558 ("In a setting of high incidence of SARS-CoV-2 infections, unrecognized virus spread within schools was very low. Schools appear to be safe with the protective measures in place (e.g., clearly symptomatic children have to stay at home, prompt contact tracing with individual and class-level quarantine, and structured infection prevention measures in school)." [physical distancing appears to have been 1.5-meter.]

- Fricchione et al., Public Health Management and Practice, 12/30/20, Data-Driven Reopening of Urban Public Education Through Chicago's Tracking of COVID-19 School Transmission ("Data collected in the nation's largest Catholic school system suggest that implementation of layered mitigation strategies creates a low- but not zero-risk environment for in-person learning in public schools. Chicago data revealed a lower attack rate for students and school staff than for the city overall during a period of moderate to high COVID-19 incidence.") [6-foot distancing apparently used only when students were unmasked; less distance used when masked. See https://globalhealth.massgeneral.org/covidlibrary.pdf (page 52)]

Panel 4's Updated Recommendations to PSB

1. The available evidence on infection prevention, plus the increasing clarity and concern around negative impacts of remote schooling on children, indicates to us that it is **now time to increase in-person time offered to all students—returning to full in-person in a staged manner across grades** to allow for planning, logistics, and ongoing monitoring, **but not unreasonably delayed**.

2. **During MASKED times indoors, 6-foot distancing indoors remains a goal where feasible, but is <u>not</u> a bright line and should <u>not</u> be a basis to limit in-person time for students.** Desk distance between students should be reduced to the extent needed to allow full in-person operations, **but not below 3 feet**. PSB should try to continue to give adults consistent 6-foot distancing from others as much as possible (especially from other adults, but also from students if feasible).

3. **During UNMASKED times, it is important to maintain 6-foot distancing or to fully compensate with a combination of existing enhanced ventilation measures and physical droplet barriers.** We strongly recommend that adults remain masked and use face shields while indoors in the presence of anyone who is unmasked.

4. **We will continue to monitor** for changes (including any impact of virus variants) and commit to alerting PSB immediately if we see any reason to pause/rollback.

The Balance of Public Health Risks and Benefits is Changing

Mitigating Risk of In-School SARS-CoV-2 Transmission	Mitigating Other Risks and Harms to Kids of Less In-Person School
• We know a lot more now than we did in March or August • Strong national and global evidence that school-based risk can be kept low • PSB's experience to date matches that • 6' distancing is not the lynchpin	• Increasing concern from pediatricians, mental health/ social work clinicians, and others about isolation, obesity, myopia, etc. • School Committee's Feb. 11th and Panel 4's Feb. 12th meetings focused on these concerns; data increasingly available

Panel 4's Updated Lunch/Snack Recommendations (in order of preference)

1. **Outside (@ 6-foot distancing or as close as feasible)**
   - Consider foam cushions/floor puzzle pieces for seating on ground

2. **Inside @ strict 6-foot distancing from any other person**
   - Consider sending ½ classroom to recess while other half eats and then trading places, if staffing allows (OK to combine masked cohorts for recess if needed)
   - Consider standing/sitting on floor around room periphery as needed

3. **Inside @ 6-foot distancing from any other <u>unmasked</u> person, with droplet barriers used if any other (masked) students are sitting within 3-6 feet**
   - Consider showing video to keep students' attention forward into barriers and trying to limit student conversation until all masks back on

For inside options (2 and 3): provide as much ventilation as possible (minimum 4.0 ACH), limit unmasked duration as much as reasonably possible, and supervising adults should wear masks and face shields.

Source:

Cafeteria Tables

~4 ft distancing (with barriers) would allow for ~50% seat usage on most café tables, but DESE guidance doesn't yet address this option

Source:

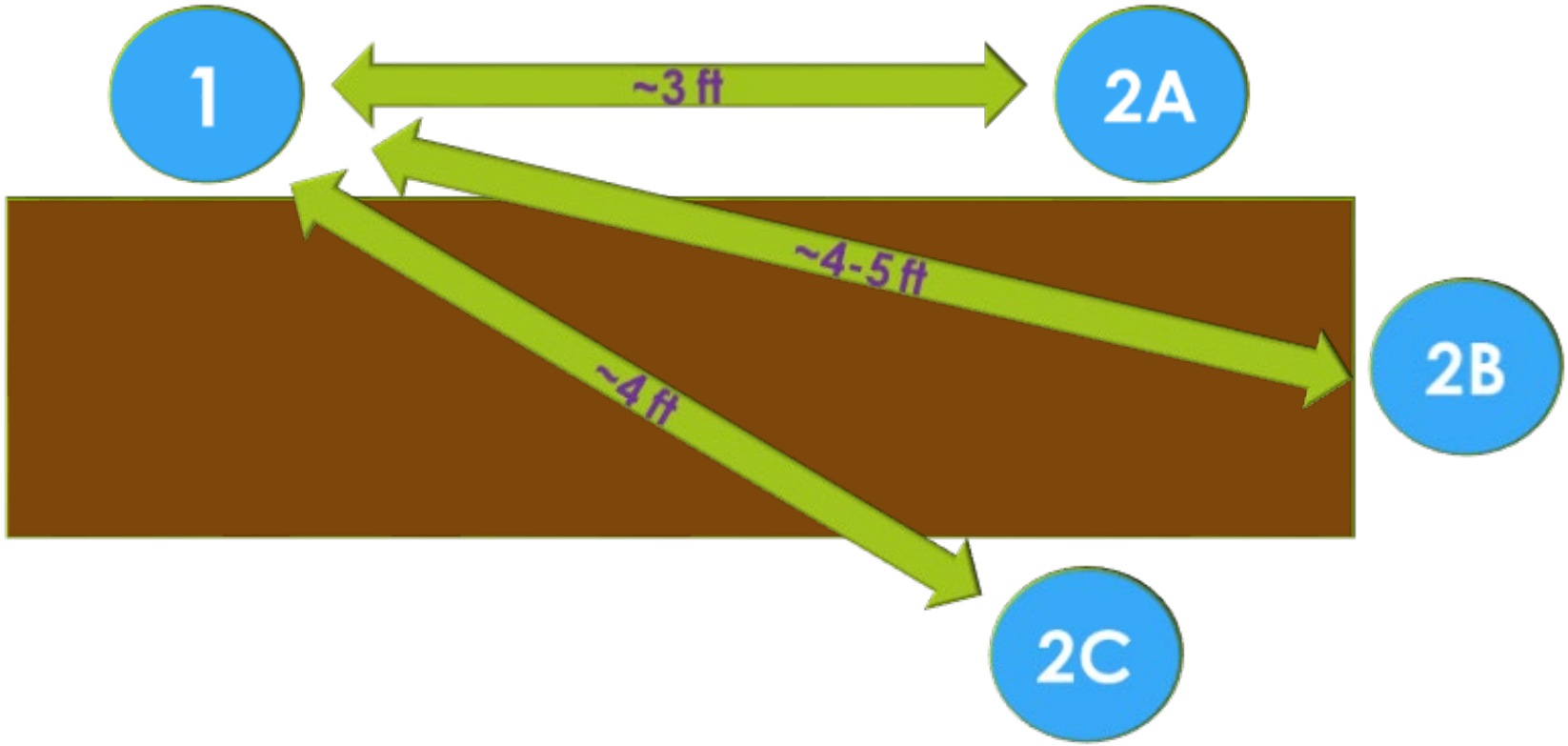
Cafeteria Table Dividers

Source:

Classroom Dividers

Source:

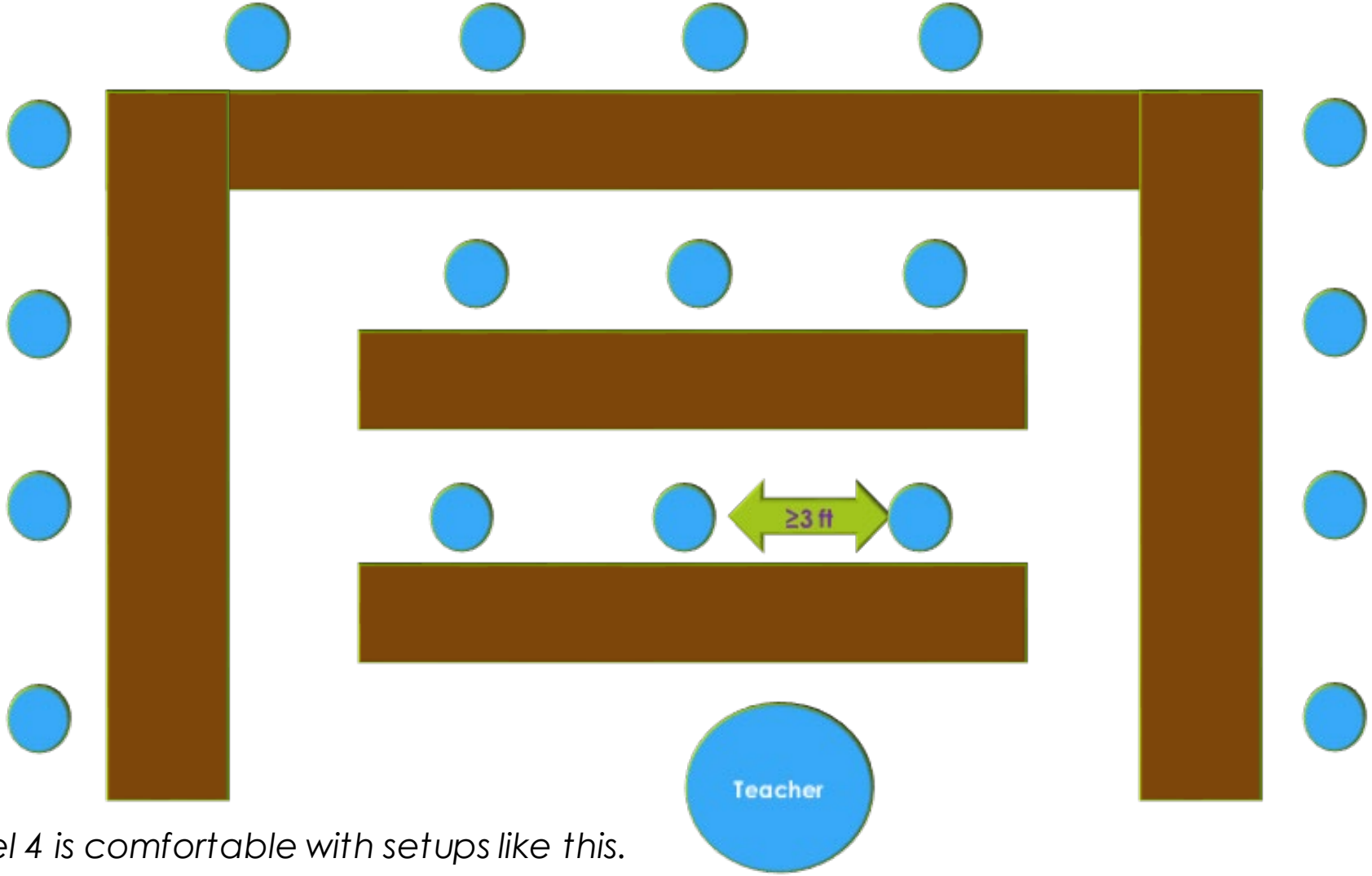
Classroom Seating Arrangements



Panel 4 is comfortable seating two students at a ~5-6 foot long table using any of these configurations: 1+2A, 1+2B, or 1+2C

Source:

Classroom Seating Arrangements



Panel 4 is comfortable with setups like this.

Source:

COVID-19: Equity and Disparate Impacts

- The evidence available to date shows that:
  - Overall, the pandemic clearly has **hit Black and Latinx (and likely also Indigenous North American and many multi-racial) individuals and families harder** than White and Asian/Pacific-American individuals and families in terms of:
    - Case rates
    - Population level rates of hospitalization/serious illness/death

    Key point: these are <u>not</u> effects of genetic differences, but rather of structural racism and other societal factors

  - Black and Latinx parents and caregivers, as a group, have **expressed more concerns** about risk of school-related transmission than have White and Asian-American parents/caregivers:
    - Concern about increased risk to themselves and their children
    - Concern about increased risk to older family members who might be more likely to live in the same (multi-generational) household

From March 2021 Meta-Analysis in Annals of Internal Medicine (Mackey, et al.)

[all indexed to NH-White]	**Infection Rate**	**Hospitalization Rate**	**Death Rate**
Non-Hispanic White American	1.0	1.0	1.0
Black/African American	1.5 – 3.5	1.5 – 4.0	1.2 – 3.2
Hispanic American	1.3 – 7.7+	~1.5 – 4.0	1.2 – 3.2
Asian American	~1.0	~1.0	~1.0

"6 main findings. ***First,*** *African American/Black populations experience disproportionately higher SARS-CoV-2 infection rates and excess mortality due to COVID-19 (high strength of evidence) but not higher case-fatality rates (moderate strength of evidence).* ***Second,*** *Hispanic populations experience disproportionately higher infection rates and excess mortality due to COVID-19, but not higher case-fatality rates (moderate strength of evidence).* ***Third,*** *African American/Black and Hispanic populations have an increased risk for hospitalization due to COVID-19 (moderate strength of evidence).* ***Fourth,*** *Asian populations appear to have similar rates of infections, hospitalizations, and deaths as White populations (low strength of evidence).* ***Fifth,*** *American Indian, Alaska Native, and Pacific Islander populations experience excess mortality due to COVID-19 (low strength of evidence).* ***Finally,*** *observed disparities are more likely to be due to exposure-related factors than susceptibility (that is, comorbid conditions) (low strength of evidence)."*

Source: https://www.acpjournals.org/doi/10.7326/M20-6306

From March 2021 Meta-Analysis in Annals of Internal Medicine (Mackey, et al.)

[all indexed to NH-White]	Infection Rate	Hospitalization Rate	Death Rate
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Black/African American	1.5 – 3.5	1.5 – 4.0	1.2 – 3.2
Hispanic American	1.3 – 7.7+	~1.5 – 4.0	1.2 – 3.2
Asian American	~1.0	~1.0	~1.0

"6 main findings. ***First,*** *African American/Black populations experience disproportionately higher SARS-CoV-2 infection rates and excess mortality due to COVID-19 (high strength of evidence) but not higher case-fatality rates (moderate strength of evidence).* ***Second,*** *Hispanic populations experience disproportionately higher infection rates and excess mortality due to COVID-19, but not higher case-fatality rates (moderate strength of evidence).* ***Third,*** *African American/Black and Hispanic populations have an increased risk for hospitalization due to COVID-19 (moderate strength of evidence).* ***Fourth,*** *Asian populations appear to have similar rates of infections, hospitalizations, and deaths as White populations (low strength of evidence).* ***Fifth,*** *American Indian, Alaska Native, and Pacific Islander populations experience excess mortality due to COVID-19 (low strength of evidence).* ***Finally,*** *observed disparities are more likely to be due to exposure-related factors than susceptibility (that is, comorbid conditions) (low strength of evidence)."*

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[all indexed to NH-White]	Infection Rate	Hospitalization Rate	Death Rate
Non-Hispanic White American	1.0	1.0	1.0
Black/African American	**1.5 – 3.5**	1.5 – 4.0	1.2 – 3.2
Hispanic American	**1.3 – 7.7+**	~1.5 – 4.0	1.2 – 3.2
Asian American	~1.0	~1.0	~1.0

"6 main findings. ***First,*** *African American/Black populations experience disproportionately higher SARS-CoV-2 infection rates and excess mortality due to COVID-19 (high strength of evidence)* ***but not higher case-fatality rates (moderate strength of evidence).*** ***Second,*** *Hispanic populations experience disproportionately higher infection rates and excess mortality due to COVID-19,* ***but not higher case-fatality rates (moderate strength of evidence).*** ***Third,*** *African American/Black and Hispanic populations have an increased risk for hospitalization due to COVID-19 (moderate strength of evidence).* ***Fourth,*** *Asian populations appear to have similar rates of infections, hospitalizations, and deaths as White populations (low strength of evidence).* ***Fifth,*** *American Indian, Alaska Native, and Pacific Islander populations experience excess mortality due to COVID-19 (low strength of evidence).* ***Finally, observed disparities are more likely to be due to exposure-related factors than susceptibility (that is, comorbid conditions) (low strength of evidence).***"

Source: https://www.acpjournals.org/doi/10.7326/M20-6306

From March 2021 Meta-Analysis in Annals of Internal Medicine (Mackey, et al.)

[all indexed to NH-White]	Infection Rate	Hospitalization Rate	Death Rate
Non-Hispanic White American	1.0	1.0	1.0
Black/African American	1.5 – 3.5	1.5 – 4.0	1.2 – 3.2
Hispanic American	1.3 – 7.7+	~1.5 – 4.0	1.2 – 3.2
Asian American	~1.0	~1.0	~1.0

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From March 2021 Meta-Analysis in Annals of Internal Medicine (Mackey, et al.)

[all indexed to NH-White]	**Infection Rate**	**Hospitalization Rate**	**Death Rate**
Non-Hispanic White American	1.0	1.0	1.0
Black/African American	1.5 – 3.5	1.5 – 4.0	1.2 – 3.2
Hispanic American	1.3 – 7.7+	~1.5 – 4.0	1.2 – 3.2
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Source: https://www.acpjournals.org/doi/10.7326/M20-6306

Harvard/Chan SPH Study Aug. 2020 (Figueroa, et al.)

- *"Across Massachusetts cities and towns, significant COVID-19 disparities are evident along multiple* ***dimensions—particularly race/ethnicity, foreign-born noncitizen status, household size, and job type****. Higher proportions of Black or Latino residents within a community were significantly associated with higher rates of COVID-19 cases. The factors examined in our study* [e.g., proportion of foreign-born noncitizens in a community, household size, food service occupation, etc.] *explained this relationship for Latino populations but did not appear to explain the higher rates among Black populations. Further research into the social and economic factors underlying COVID-19-related disparities and new policies to address risk factors and institutional racism will be critical to controlling the epidemic and improving health equity."*

Source: https://www.healthaffairs.org/doi/10.1377/hlthaff.2020.01040

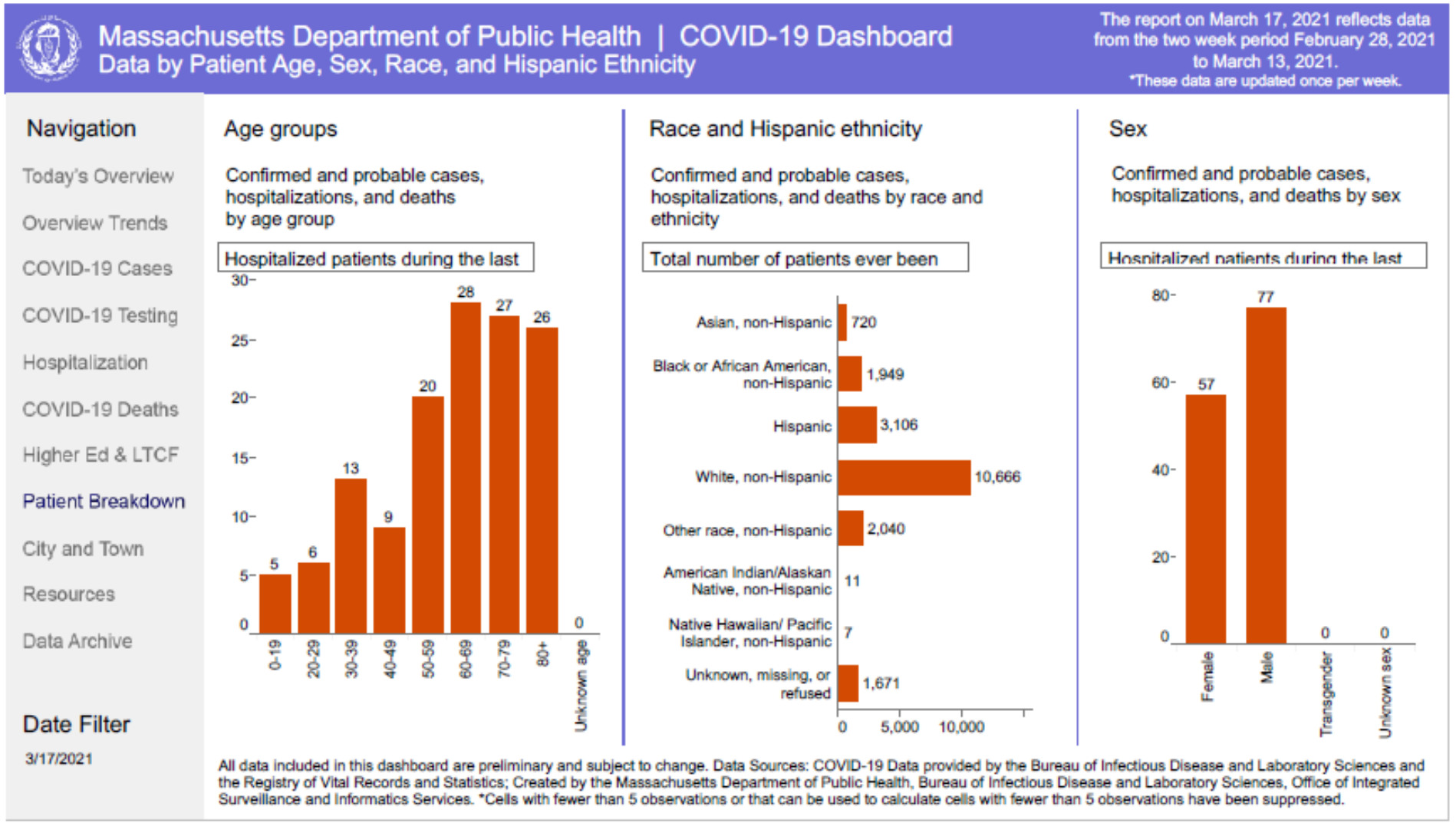
Per 12/18/2020 Analysis by Melnik, et. al at UMass Donahue Inst./UMass Amherst

Key demographic variables in infection risk here in MA:

- *"For each additional percentage point of households in a community that are "overcrowded," the number of COVID-19 cases increases by 35.0 per 10,000 members of the population.*
- *For each additional thousand dollars of per capita income, the number of COVID-19 cases decreases by 3.6 per 10,000 members of the population.*
- *For each additional 1,000 persons per square mile, the number of COVID-19 cases increases by 11.8 per 10,000 members of the population.*
- *As the household size increases by 0.1, the number of COVID-19 cases increases by 24 per 10,000 members of the population."*

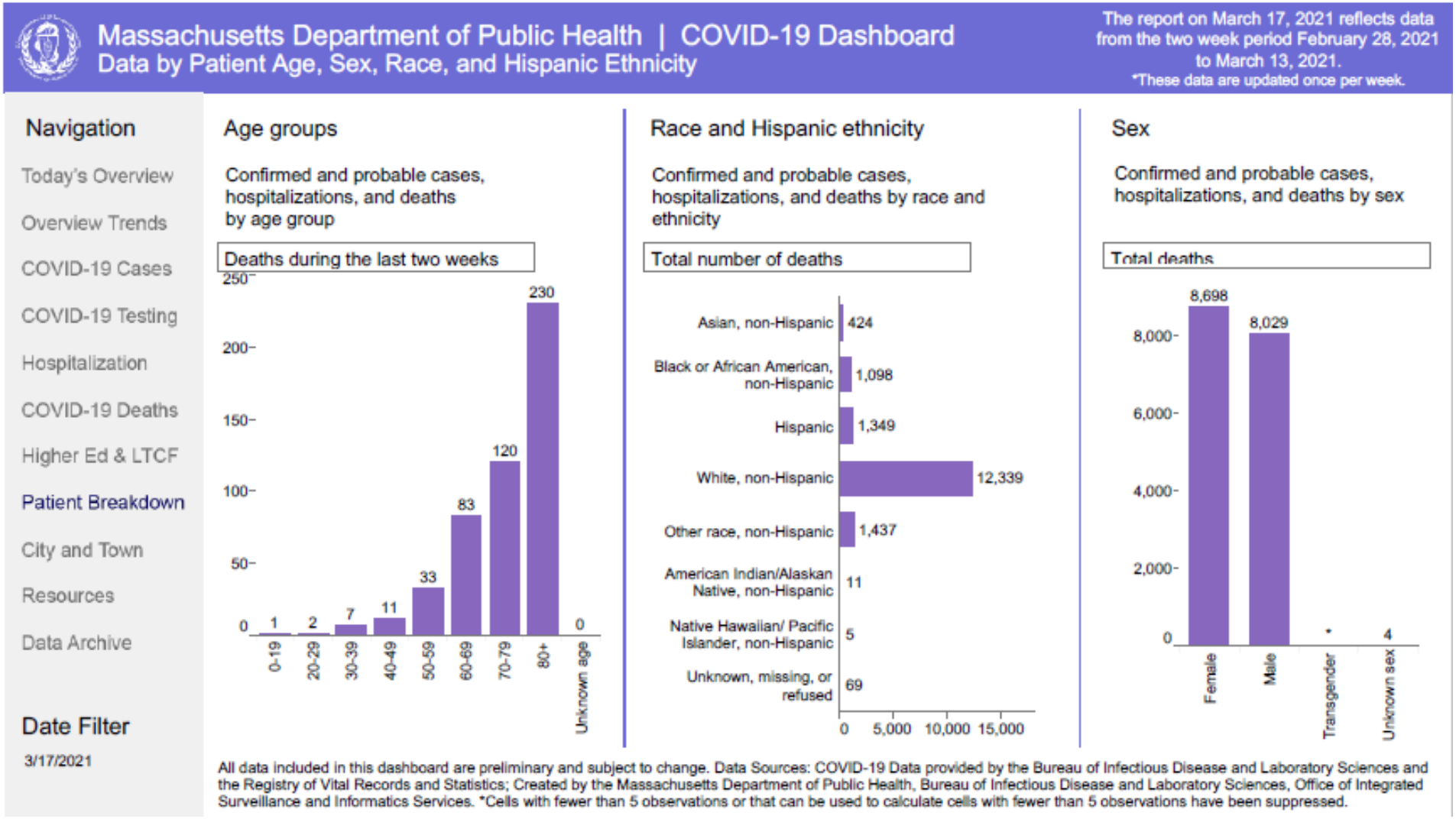
Source: https://www.bostonindicators.org/reports/report-website-pages/covid_indicators-x2/2020/december/persisting-covid-disparities

Hospitalization and Esp. Death Risk Skews Heavily to Older Age Groups (Most Already Vaccine Eligible)



Source: https://www.mass.gov/info-details/covid-19-response-reporting

Hospitalization and Esp. Death Risk Skews Heavily to Older Age Groups (Most Already Vaccine Eligible)



Source: https://www.mass.gov/info-details/covid-19-response-reporting

Overall, Black and Latinx Communities in MA Have Shouldered Disproportionately Higher Shares of Total Infections

- What we know:

For Black, Latinx, and Multi-Racial people, these are larger shares of total population

(MA statewide data - cumulative through 3/17/21)	Total Cases
Black/African American (non-Hispanic)	36,581
Hispanic	130,171
Asian (non-Hispanic)	16,905
Native Hawaiian/Pacific Islander (non-Hispanic)	165
Indigenous North American (non-Hispanic)	534
White (non-Hispanic)	229,456
Other Race (non-Hispanic)	50,301
Unknown/Missing/Refused	142,264

Source: https://www.mass.gov/info-details/archive-of-covid-19-cases-in-massachusetts#march-2021-

But a Black or Latinx Person in MA Does Not Appear to Face More Risk of Hospitalization/Death Once Infected

- What we know:

For Black and Latinx people, these are larger shares of total population

(MA statewide data - cumulative through 3/17/21)	Total Cases	Total No. of People Ever Hospitalized (% of cases)	Total Deaths (% of cases)
Black/African American (non-Hispanic)	36,581	1,949 (**5.3%**)	1,098 (3.0%)
Hispanic	130,171	3,106 (**2.4%**)	1,349 (**1.0%**)
Asian (non-Hispanic)	16,905	720 (4.3%)	424 (2.5%)
Native Hawaiian/Pacific Islander (non-Hispanic)	165	7 (4.2%)	5 (3.0%)
Indigenous North American (non-Hispanic)	534	11 (**2.1%**)	11 (2.1%)
White (non-Hispanic)	229,456	10,666 (**4.6%**)	12,339 (**5.4%**)
Other Race (non-Hispanic)	50,301	2,040 (4.1%)	1,437 (2.9%)
Unknown/Missing/Refused	142,264	1,671 (1.2%)	69 (0.0%)

Source: https://www.mass.gov/info-details/archive-of-covid-19-cases-in-massachusetts#march-2021-

Is a Black/Latinx PSB Student at Greater Risk of Infection than a White/Asian Student?

- Assuming they have similar pre-existing medical histories and similar safety behaviors (e.g., mask wearing, hand washing, etc.) **NO—at least not in-school infection**.
  - Due to systemic racism and other socioeconomic conditions, the average Black/Latinx student may have higher overall risk of infection from exposures **outside of school** (e.g., parent/caregiver occupational exposures, etc.)
  - But being present in school – even fully in-person – does not put Black/Latinx students at greater risk of infection than White or Asian students, based on available data