

**Advisory Panel 4:  
Public Health, Safety, & Logistics**

**Metrics Review**

**PSB Testing Update**

**SARS-CoV-2 Variants of Concern Update**

**Surface/Object Cleaning Update**

**April 9, 2021**

# Community Benchmarks - Status

<b>Benchmark</b> (each measured over prior 14 days)	Status 3/17/21	Status 3/24/21	Status 3/31/21	Status 4/7/21
<b>Avg. daily new case count in Brookline = &lt;10 per 100k people</b>	9.4	9.7	8.5	9.9
<b>Avg. daily new case count in Mass. = &lt;10 per 100k people</b>	19.5	21.5	25.6	28.1
<b>Avg. test positivity rate in Brookline = &lt;5.0%</b>	0.74%	0.79%	0.73%	0.80%
<b>Avg. test positivity rate in Massachusetts = &lt;5.0%</b>	1.83%	2.01%	2.36%	2.54%

*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.*

# 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

Group	Population		
	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

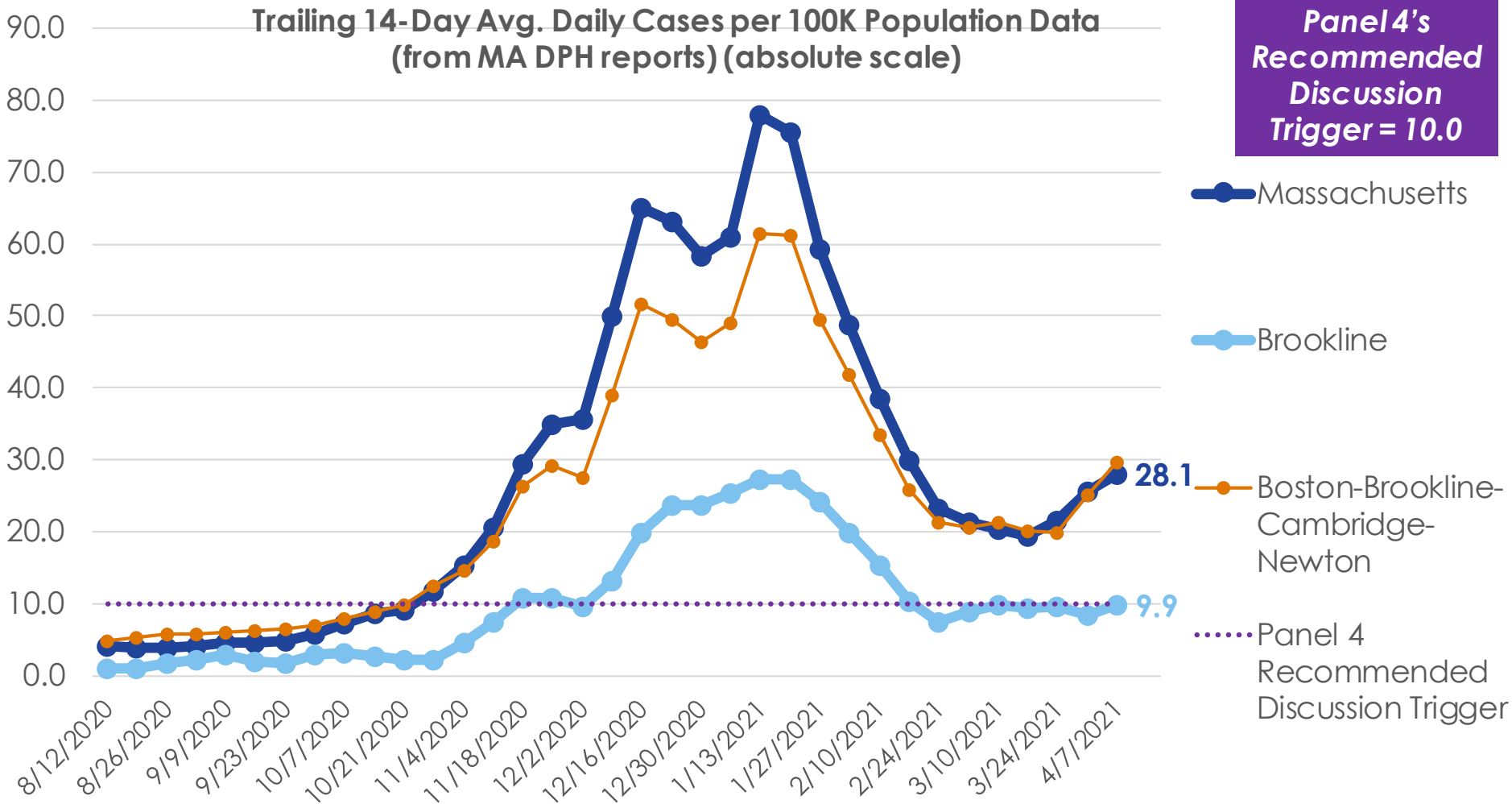
Brookline is here as of 4/7/2021 (barely green bordering on yellow)

Brookline's population is ~60,000

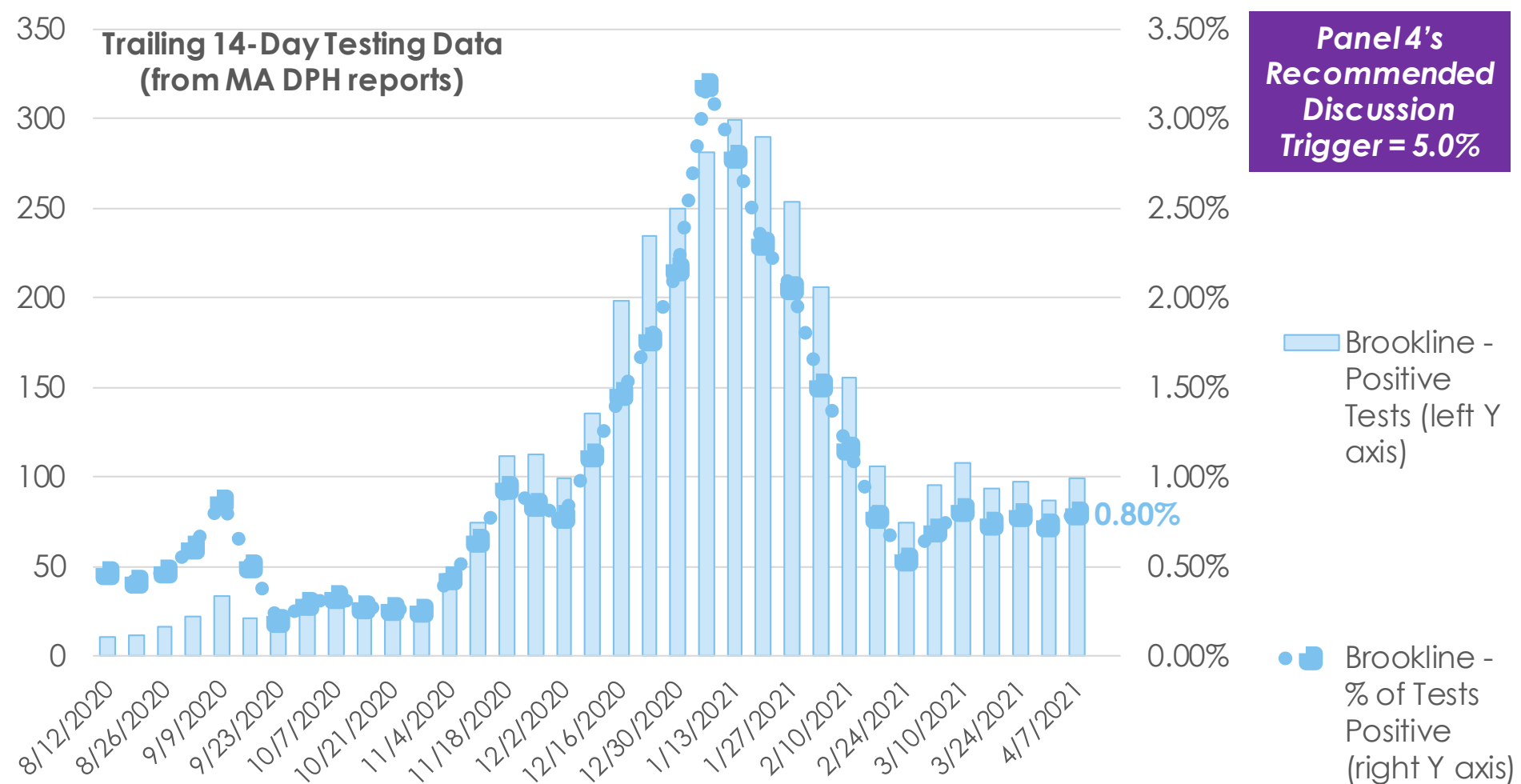
As of 11/5, DPH is using 2019 population estimates derived from a method developed by the University of Massachusetts Donahue Institute. The 2019 estimates are the most currently available data.

# Trends: Avg. Daily New Cases per 100k

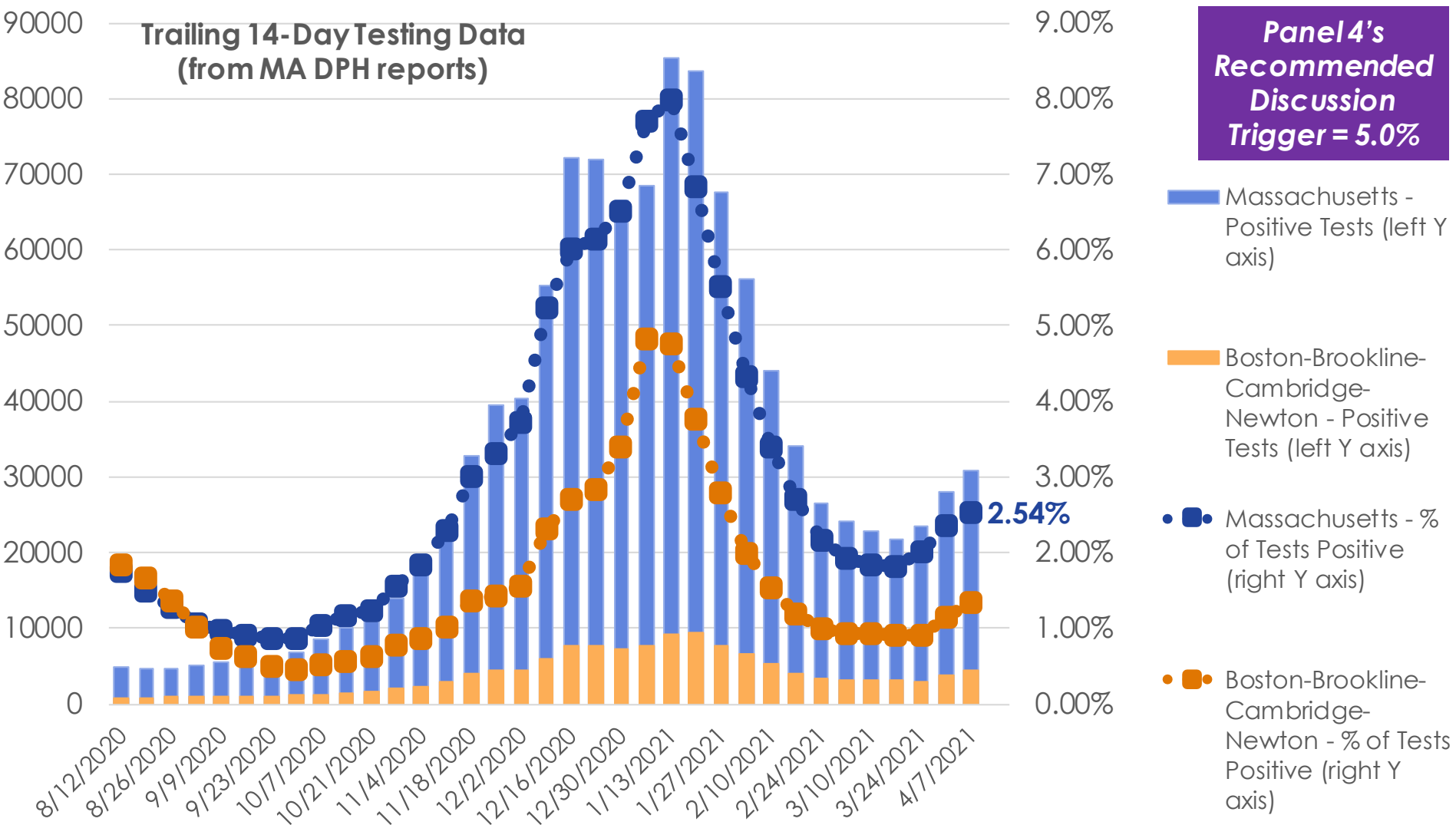
Trailing 14-Day Avg. Daily Cases per 100K Population Data  
(from MA DPH reports) (absolute scale)



# Trends: Test Positivity (Brookline)

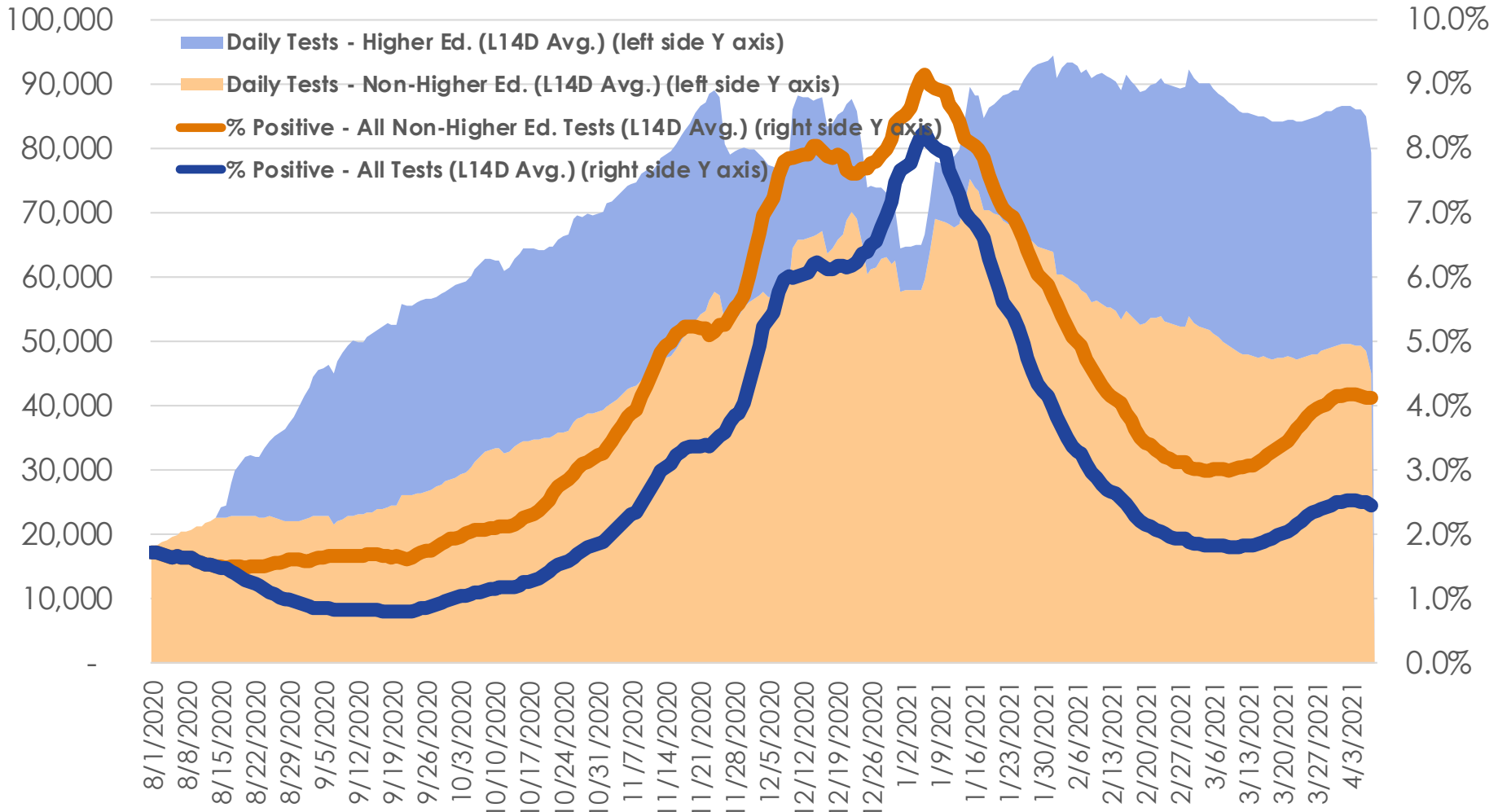


# Trends: Test Positivity (Statewide)

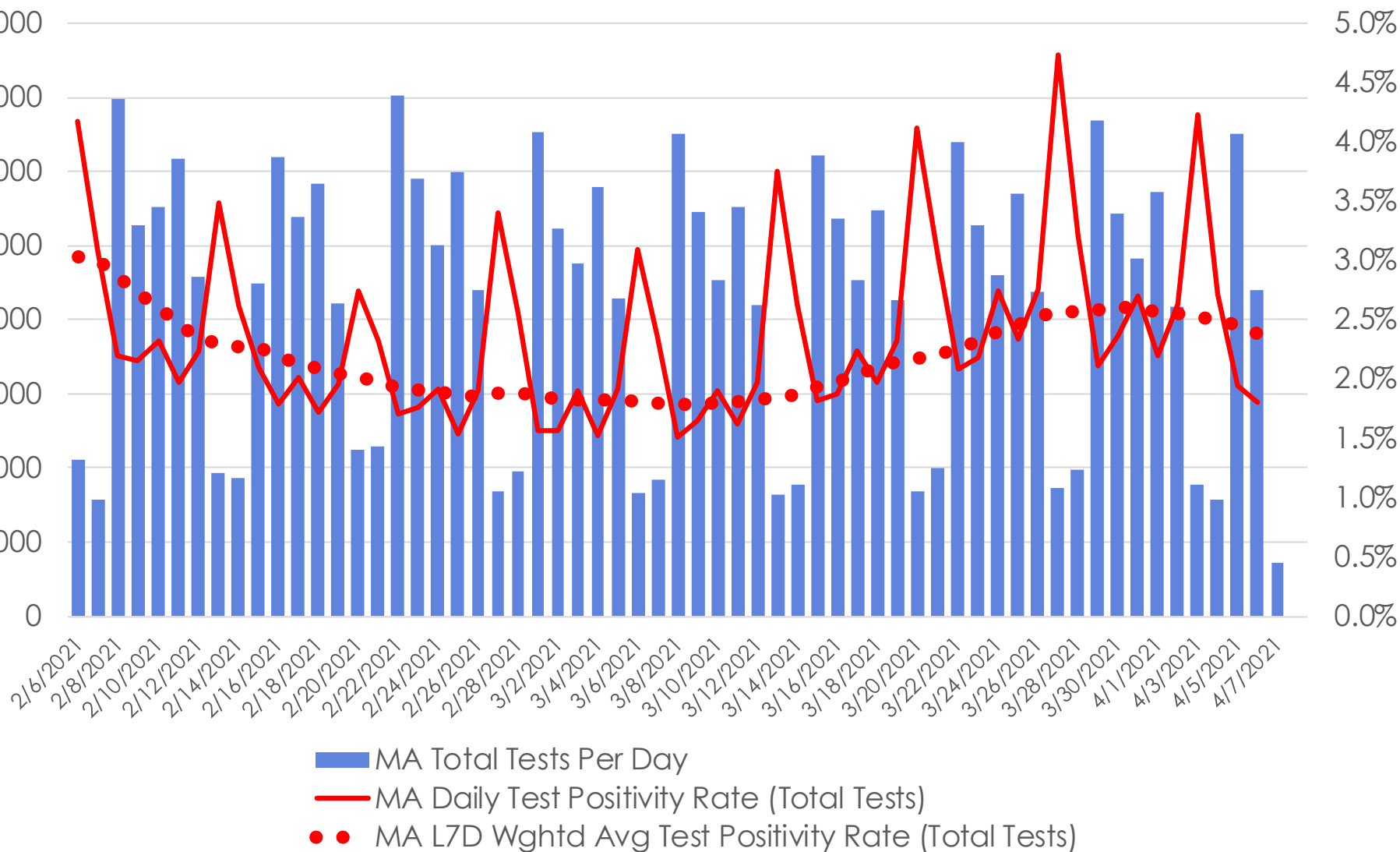


# Trends: Test Positivity and Testing Volume (Statewide)

MA Statewide Test Positivity and Volume



# Trends: Daily Test Volumes and Positivity (Statewide)





# Public Schools of Brookline Case Counts: Trends Over Time

Data Last Updated: 4/9/21

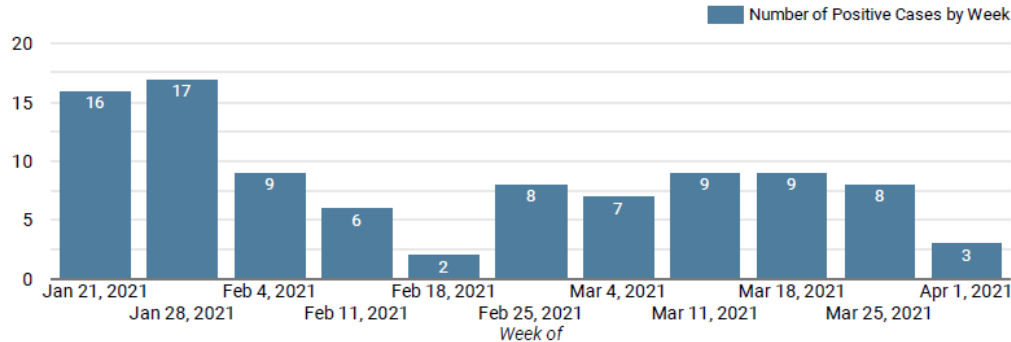


## COVID-19 CASES: DISTRICT DASHBOARD

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

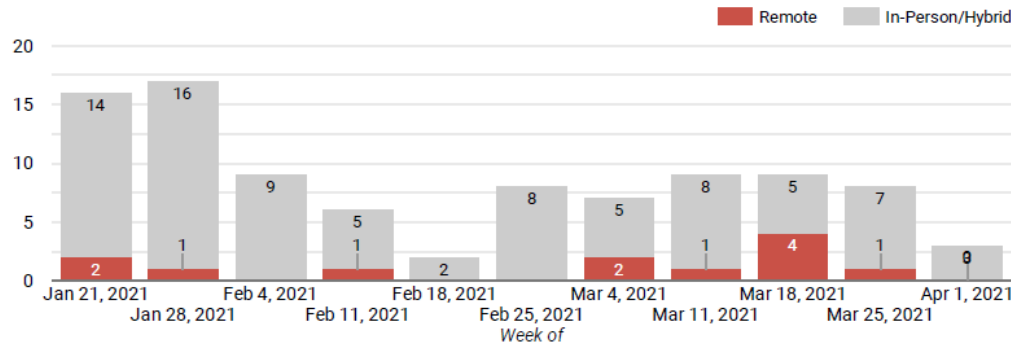


**TOTAL PSB CASES TO DATE: 275**

Remote: 34  
Hybrid/In-Person: 241

Total among school-based students and staff: 271

Number of Positive Cases, by Week and Learning Model



**TOTAL CLOSE CONTACTS\*: 275 connected to 58 cases**

Total positive cases with no close contacts\* at school: 192

\*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.

# Public Schools of Brookline Case Counts: By School

Data Last Updated: 4/9/21



## 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 4/1 - 4/8)

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	1	3	-	-
Baker	0	38	-	-
Driscoll	0	17	-	-
Florida Ruffin Ridley	1	26	-	-
Heath	0	12	-	-
Lawrence	1	25	-	-
Lincoln	0	23	-	-
Pierce	0	27	-	-
Runkle	0	16	-	-
Remote Learning Academy K-8	0	11	-	-
Brookline High School	0	68	-	-
<b>Total*</b>	<b>3</b>	<b>272</b>	<b>0</b>	<b>0</b>

\*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	-	-

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

Data Last Updated: 4/9/21



## 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 4/1 - 4/8)

Grade Level	Weekly Positive Cases	Cumulative Positive Cases
BEEP/Pre-K	1	5
Kindergarten	0	20
1st Grade	0	20
2nd Grade	0	11
3rd Grade	0	12
4th Grade	0	10
5th Grade	0	11
6th Grade	1	13
7th Grade	0	12
8th Grade	1	21
9th Grade	0	8
10th - 12th Grade	0	44
Staff (School-Based)*	0	82
Staff (District Office)	0	4
<b>Total</b>	<b>3</b>	<b>273</b>

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

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

Data Last Updated: 4/9/21



## 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 February 5 through February 26 as the district expanded the program to include pooled testing with students with support from the Massachusetts 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 Positivity %	Pools Submitted	Positive Pools	Pool Positivity %
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	501	1	2	0.2%	92	1	1.09%
3/29 - 4/2	520	0	0	0%	94	0	0%
4/5 - 4/9	481	0	0	0%	87	0	0%
<b>Total</b>	<b>4,585</b>	<b>6</b>	<b>43</b>	<b>0.13%</b>	<b>533</b>	<b>3</b>	<b>0.56%</b>

# CDC Science Brief: Transmission of SARS-CoV-2 in K-12 Schools (Updated March 19, 2021)

- Collects and summarizes 72 U.S. and international study results:
- Key observations include:
  - Children and adolescents can be infected with and spread SARS-CoV-2 but may do so less commonly than adults (evidence mixed and biological mechanism unclear)
  - Children <10 years old seem to be less likely to be infected than adolescents or adults (evidence more consistent)
  - “Susceptibility to SARS-CoV-2 infection and the proportion among those infected experiencing symptoms both generally increase with age.”

# CDC Science Brief: Transmission of SARS-CoV-2 in K-12 Schools (Updated March 19, 2021)

- Key observations specific to school settings include:
  - “Based on the data available, in-person learning in schools has not been associated with substantial community transmission.”
  - Outbreaks can occur in school settings when prevention strategies are not implemented or followed (e.g., inconsistent mask wearing).
  - “Evidence suggests that staff-to-staff transmission is more common than transmission from students to staff, staff to student, or student to student.”
  - “Though outbreaks do occur in school settings, multiple studies have shown that transmission within school settings is typically lower than – or at least similar to – levels of community transmission, when prevention strategies are in place in schools.”



## Hershow, et. al., CDC MMWR 3/26/2021, “**Low SARS-CoV-2 Transmission in Elementary Schools – Salt Lake County, Utah, 12/3/2020 – 1/31/2021**”

- Investigated COVID-19 cases in **20 elementary schools**
  - Student population = 56% free/reduced lunch eligible; 47% non-white (mostly Hispanic/Latino)
- Contemporaneous community incidence in the county = **41- 96 avg. daily new cases per 100k people**
- 51 COVID+ index patients (40 students + 11 staff members)
- 1,041 susceptible in-school contacts identified and followed
  - 735 (71%) were tested;
  - 12 were COVID+ (1.6%) (11 students + 1 staff member)
  - 5 of the 12 COVID+ were classified as school-associated (0.7% of tested)
    - 2 featured “poor mask use”; 2 featured “poor distancing behavior”

## Hershow, et. al., CDC MMWR 3/26/2021, “Low SARS-CoV-2 Transmission in Elementary Schools – Salt Lake County, Utah, 12/3/2020 – 1/31/2021”

- Reported in-school mask use was high (86%) and 90% of schools reportedly used HEPA filtration in “high-risk areas”
- Other widespread mitigation measures included classroom cohorting, staggered mealtimes, cancelation of (in-person) after-school activities, hand washing/sanitizing, cleaning
- Median desk distance was 3 feet
- Close contact quarantine rules in effect using CDC definition (<6 feet for  $\geq 15$  min in 24 hr period)
  - In December, applied regardless of mask wearing
  - In January, changed to no quarantine required if both index case and contact were masked
    - Of 158 masked close contacts allowed to keep attending school in January; 70% were tested and “no school associated-cases were detected”



## Hershow, et. al., CDC MMWR 3/26/2021, “**Low SARS-CoV-2 Transmission in Elementary Schools – Salt Lake County, Utah, 12/3/2020 – 1/31/2021**”

- Authors' conclusion: *“In an urban county with high SARS-CoV-2 community incidence, comprehensive testing of contacts detected low school-associated transmission in elementary schools, with a secondary attack rate of 0.7%. These results suggest that when  $\geq 6$  ft distancing is not feasible, schools in high-incidence communities can still limit in-school transmission by consistently using masks and implementing other important mitigation strategies.”*
- NB: of the 5 school-associated cases, all households were tested and further transmission was detected in 3 of the 5 households (6 out of 8 members of those households were COVID+)
- I.e., infected students' household members appeared to be at greater risk of transmission than their classmates or teachers were

Dawson, et. al., CDC MMWR 3/26/2021, “Pilot Investigation of SARS-CoV-2 Secondary Transmission in K-12 Schools Implementing Mitigation Strategies — St. Louis County and City of Springfield, Missouri, Dec. 2020”

- Two-week pilot study Dec. 7-18, 2020 in 22 schools
  - Avg. daily case incidence in communities was 51 – 71 per 100,000 people
- 37 COVID+ students/staff, with 156 in-school close contacts identified and followed
  - 102 close contacts tested; 2 (2%) were COVID+ (both believed to be single cases, not clusters, of school-based transmission)
  - 42 student close contacts were allowed to keep attending school through a modified quarantine approach
    - 21 were tested; zero were COVID+
- Masks required; 3+-foot distancing in place in most of the studied schools (6-foot in roughly 25%); simple ventilation interventions

Gold, et. al., CDC MMWR 2/26/2021, “**Clusters of SARS-CoV-2 Infection Among Elementary School Educators and Students in One School District — Georgia, Dec. 2020–Jan. 2021**”

- Investigation of SARS-CoV-2 transmission in a Georgia school district’s elementary schools between 12/1/2020 and 1/22/2021
  - ~2,600 students and ~700 staff members present in-person for 6-7 weeks
  - Community background case rates more than tripled from 28 to 101 avg. daily new cases per 100,000 people

## Gold, et. al., CDC MMWR 2/26/2021, “Clusters of SARS-CoV-2 Infection Among Elementary School Educators and Students in One School District — Georgia, Dec. 2020–Jan. 2021”

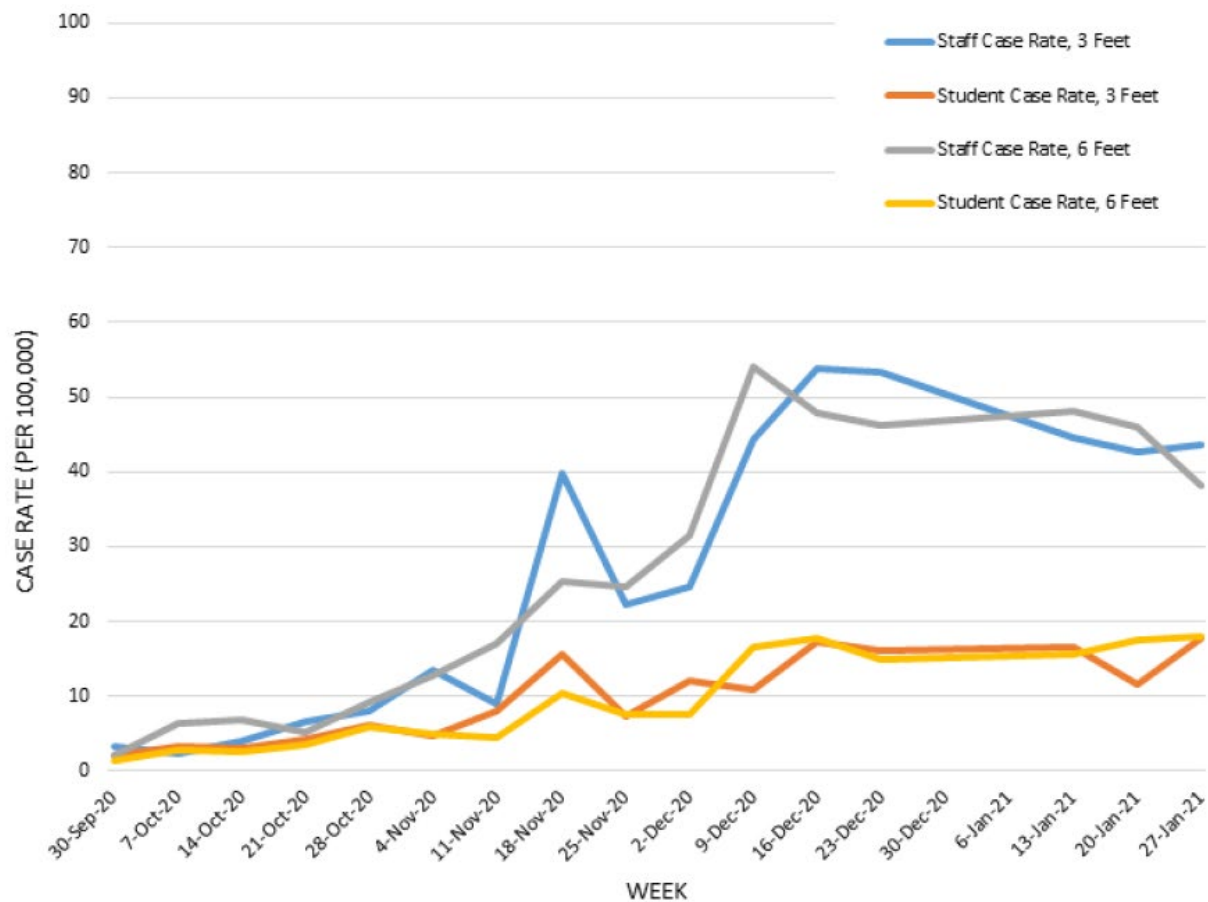
- 9 case clusters identified, involving 13 educators and 32 students at six elementary schools
  - Clusters (including household members) ranged from 3 – 16 people
  - 8 clusters involved at least one educator and probable educator to student transmission
  - 69 household members of COVID+ students/staff tested; 18 (26%) were COVID+
  - Students sat <3 ft apart and ate lunch at their desks
  - In 7 clusters, transmission “might have occurred” during small group instruction sessions in close proximity
  - Generally good mask use, but specific instances of inadequacy “likely contributed to spread” in 5 of the 9 clusters

## Gold, et. al., CDC MMWR 2/26/2021, “Clusters of SARS-CoV-2 Infection Among Elementary School Educators and Students in One School District — Georgia, Dec. 2020–Jan. 2021”

- Key observations from the investigators:
  1. “[E]ducators can play an important role in in-school transmission”
  2. “[I]n-school transmission can occur when physical distancing and mask compliance are not optimal”
  3. “To ensure safer in-person learning during the COVID-19 pandemic, schools should implement multicomponent mitigation strategies, including efforts to prevent infection among educators, and promoting consistent, correct mask use and physical distancing wherever possible, especially during mealtime when masks are not being worn.”

# van den Berg, et al., Clinical Infectious Diseases, March 10, 2021

“Effectiveness of three versus six feet of physical distancing for controlling spread of COVID-19 among primary and secondary students and staff: A retrospective, state-wide cohort study.”



# Key Ongoing Issue: Potential Impacts of SARS-CoV-2 Variants of Concern (VOCs)

Based on what is known so far...	More Transmissible than Wild Type?	More Virulent than Wild Type?	Vaccine Efficacy Impacts?	Differential Impacts on Kids vs Wild Type?	% of Sequenced Cases in Mass. (per CDC, but likely outdated)
<b>B.1.1.7</b> ("U.K.")	Yes (~50-100%)	Likely yes	Minimal	None known	18.6%
<b>B.1.427/ B.1.429</b> ("California")	Yes (~20%)	Unclear	Minimal to Moderate	None known	3.6%
<b>P.1</b> ("Brazil")	Likely yes	Likely yes	Moderate	None known	1.4%
<b>B.1.351</b> ("South Africa")	Yes (~50%)	Unclear	Moderate	None known	0.2%

Sources: <https://www.cdc.gov/coronavirus/2019-ncov/cases-updates/variant-proportions.html>;  
<https://www.cdc.gov/coronavirus/2019-ncov/cases-updates/variant-surveillance/variant-info.html>;  
<https://www.mayoclinic.org/diseases-conditions/coronavirus/expert-answers/covid-variant/faq-20505779>;  
<https://directorsblog.nih.gov/2021/03/30/infections-with-u-k-variant-b-1-1-7-have-greater-risk-of-mortality/>;  
<https://www.bmj.com/content/373/bmj.n879>; <https://www.nature.com/articles/d41586-020-00502-w>;  
<https://science.sciencemag.org/content/372/6538/eabg3055>

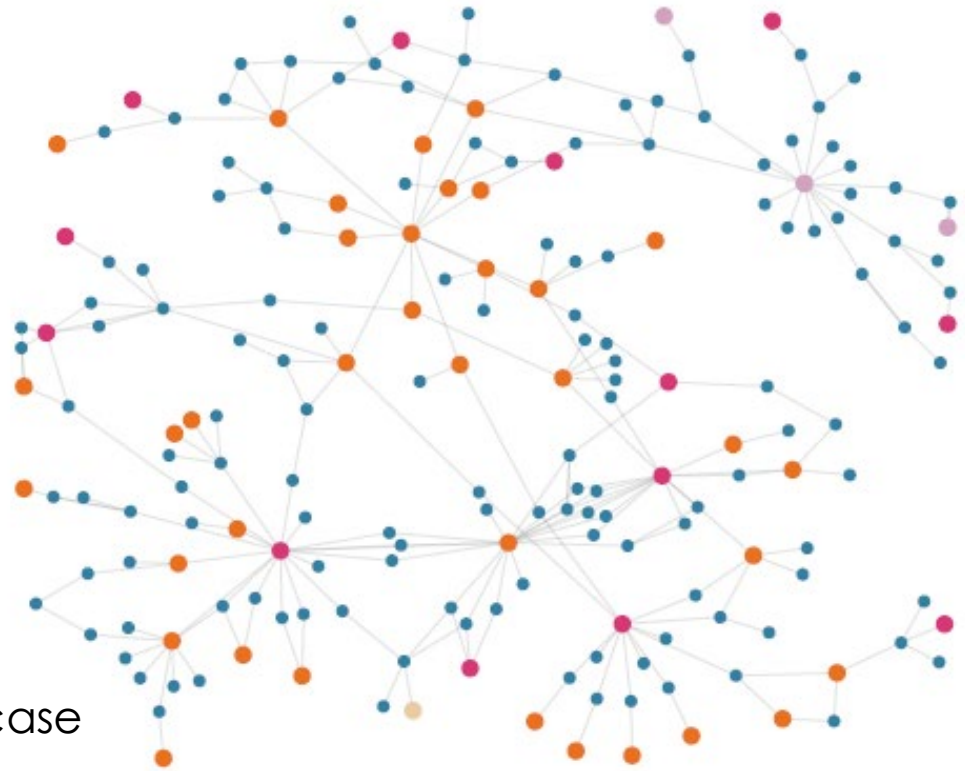
# SARS-CoV-2 Variant Impacts on K-12 Schools

- Minnesota has seen, and extensively traced, partially B.1.1.7-driven outbreaks centered around youth sports and other activities—including some school-based spread.
  - In-school spread does not seem to be the primary driver
  - Consistency of mask wearing and other mitigation measures unclear, so efficacy hard to assess
  - Dr. Michael Osterholm of Univ. of Minn. CIDRAP is raising alarms very publicly
- In Europe, countries are moving in varying directions in terms of in-person versus remote school operations in the face of B.1.1.7 surges.
  - Notably, the UK (where B.1.1.7 originated) has been moving back into full in-person school since early March—with no widespread in-school transmission issues publicly apparent so far.



# What's Going on in Minnesota?

- COVID-19 (partially B.1.1.7) clusters extensively traced and mapped primarily to youth sports, with some school transmission in January – February.



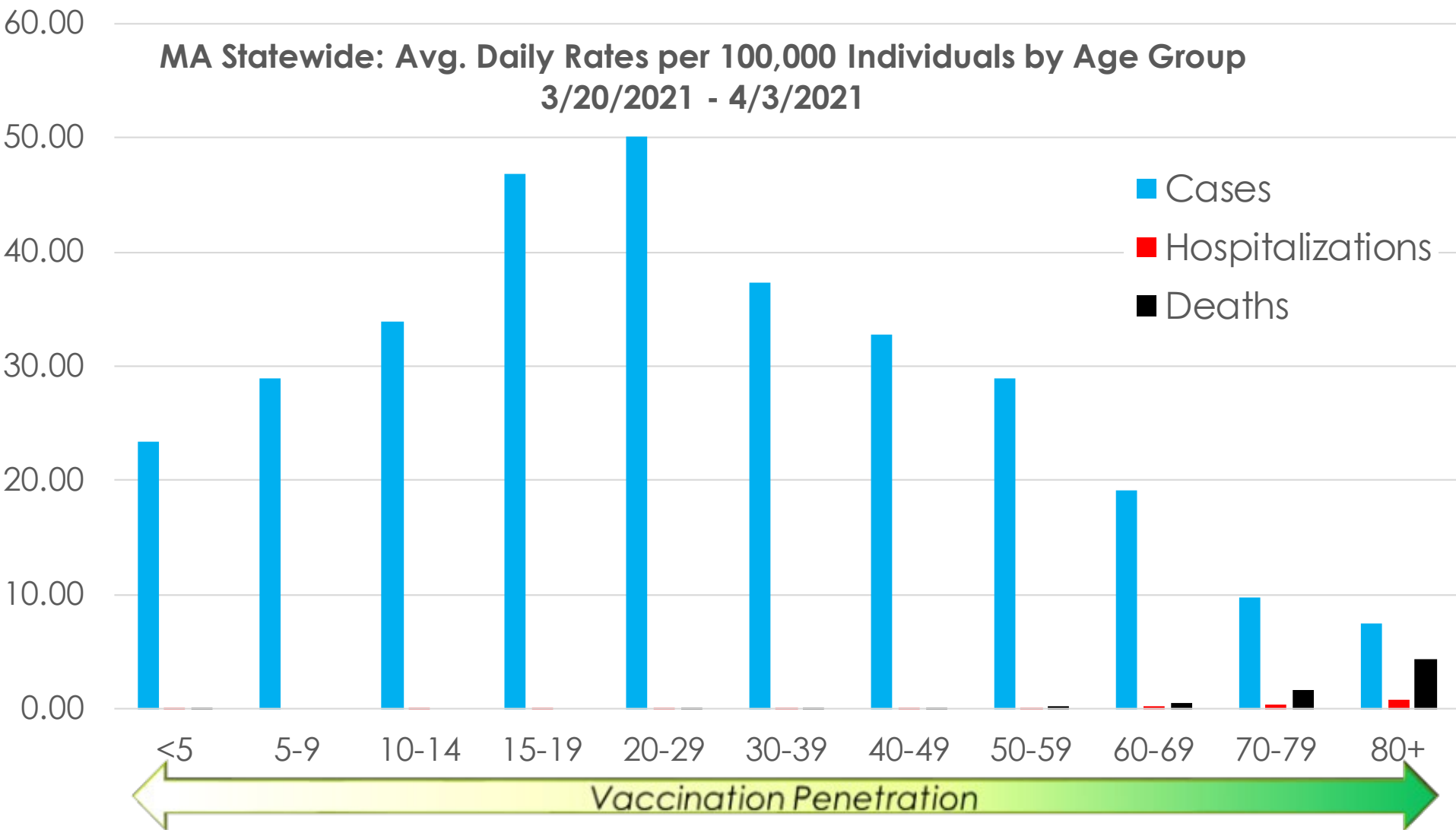
- Key to tracing diagram:

- **Blue** = confirmed COVID-19 case
- **Orange** = “sports” (including 10 high school teams, 10 club teams, 12 teams in a sports association, 3 fitness/rec centers)
- **Red** = school
- **Pink** = child care

## Since Early March

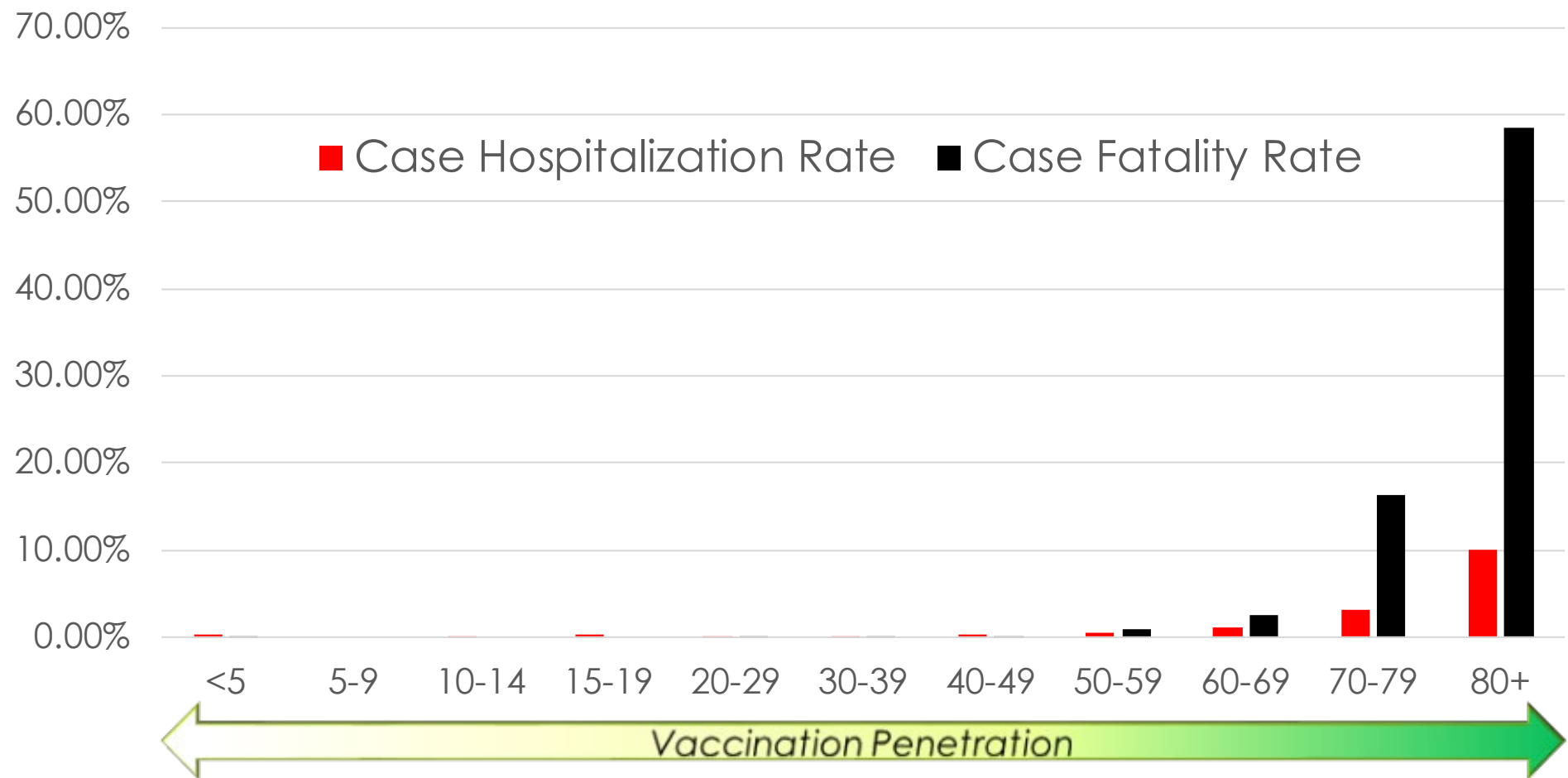
- MN Dept. of Health issued public warning in early March focused on youth sports and gyms
- Dr. Walensky at White House Task Force briefing this past week:
  - B.1.1.7 VOC is now the most common lineage in the U.S.
  - CDC is seeing increasing case numbers and hospitalization among younger people
  - Clusters being reported around the country centered on daycare centers, youth sports, extra-curriculars
  - Still no indication of significant in-school transmission when CDC-recommended precautions are taken
- Dr. Fauci on "Good Morning America" on April 6<sup>th</sup>:
  - "We're finding out that it's the team sports where kids are getting together, obviously many without masks, that are driving it, rather than in the classroom spread ...When you go back and take a look and try and track where these clusters of cases are coming from in the school, it's just that."

# Most Recent MA DPH Case Data By Age



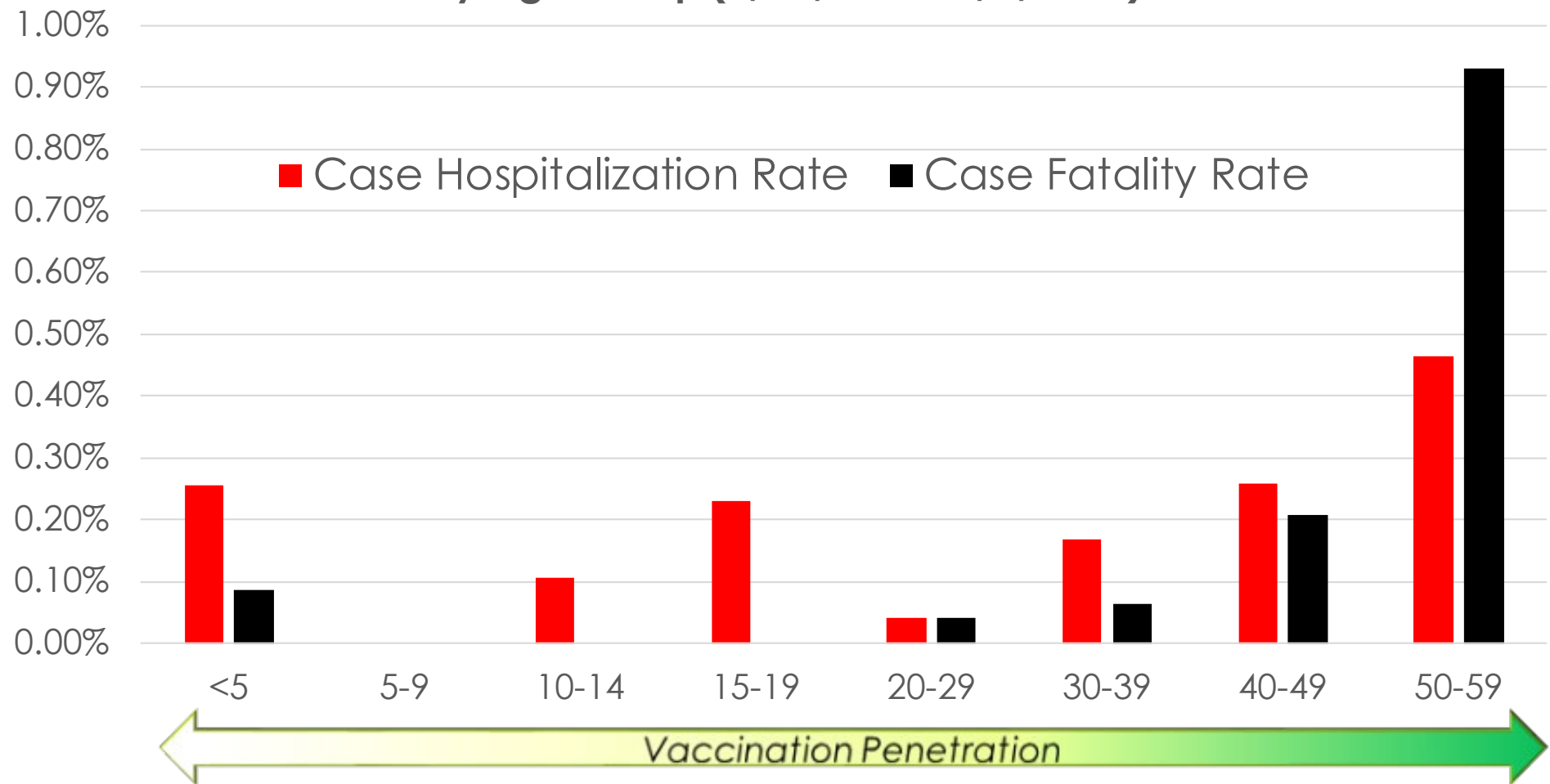
# Most Recent MA DPH Case Severity Data By Age

**MA Statewide: Case Hospitalization and Fatality Rates by Age Group (3/20/2021 - 4/3/2021)**



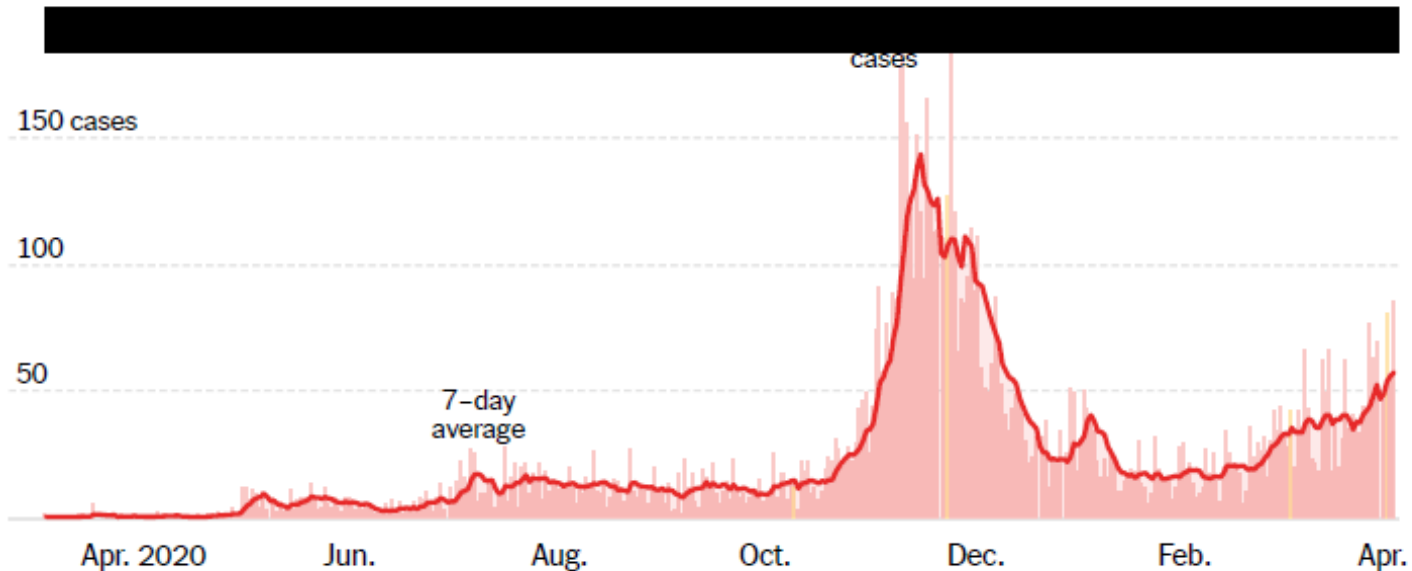
# Most Recent MA DPH Case Severity Data By Age (Excluding Ages >59 to Zoom In)

## MA Statewide: Case Hospitalization and Fatality Rates by Age Group (3/20/2021 - 4/3/2021)



# Since Early March, Carver County as a Whole Has Seen Increased Case Rates

New reported cases by day

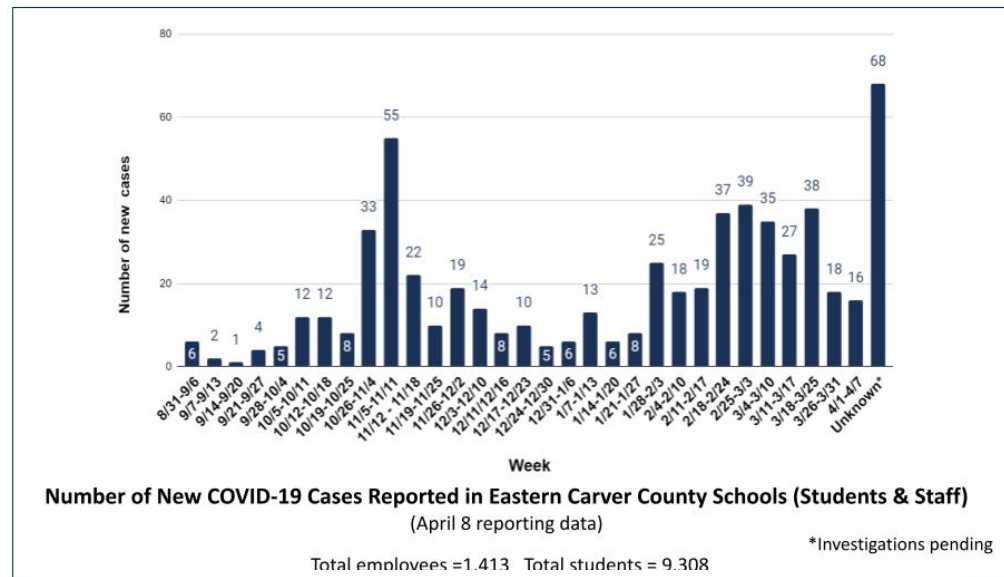


[About this data](#)

An average of **57 cases per day** were reported in Carver County, a **41 percent increase** from the average two weeks ago. Since the beginning of the pandemic, at least **1 in 11** residents have been infected, a total of **9,296 reported cases**.

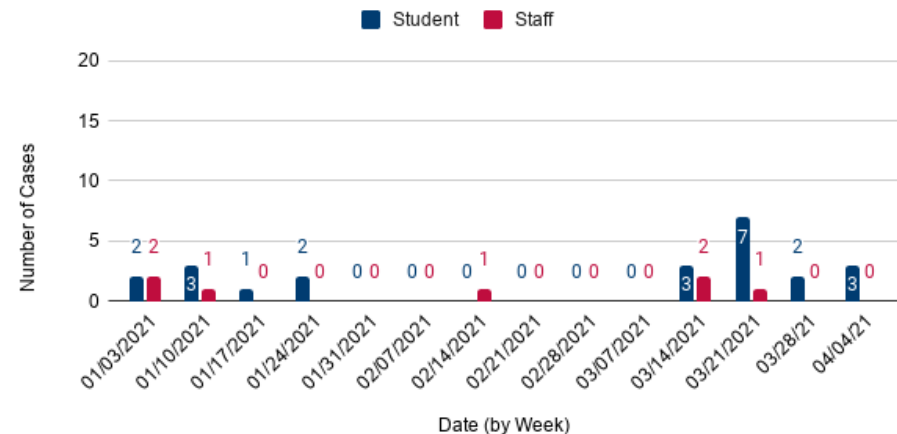
# But Has Not Fueled Significantly Different Student/Staff Case Patterns

- Eastern Carver County, MN school district case dashboard (far right bar is “unknown,” not most recent week):



- Watertown-Mayer, MN school district case dashboard:

Number of New Student Cases & Number of New Staff Cases (2021)



# UK Schools Status

	Already Back to In-Person	Still Remote
<b>England</b>	All age groups, since March 8, 2021	Students who are shielding “clinically extremely vulnerable” individuals
<b>Northern Ireland</b>	Primary school students, since March 22, 2021	Post-primary students (returning mid-April)
<b>Scotland</b>	Primary school students and some secondary students	Remaining students returning to full in-person by mid-April
<b>Wales</b>	Primary school students and some secondary students	Remaining students returning to full in-person by mid-April

***Since March, masks have been required of adults and secondary school students when moving around school and in common areas, and also recommended in classrooms “unless social distancing can be maintained.” Not expected to be worn in PE class or outdoors.***

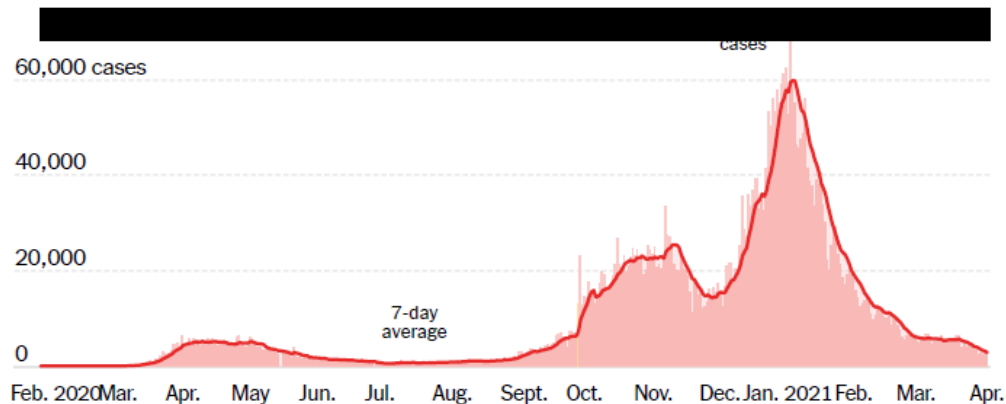
Sources: <https://www.bbc.com/news/education-51643556>; <https://www.bbc.com/news/education-56651135>; <https://www.gov.uk/government/publications/guidance-on-shielding-and-protecting-extremely-vulnerable-persons-from-covid-19/guidance-on-shielding-and-protecting-extremely-vulnerable-persons-from-covid-19>; [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/976213/Face\\_coverings\\_in\\_education\\_April\\_2021.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/976213/Face_coverings_in_education_April_2021.pdf)



# UK Pandemic Status

## United Kingdom Coronavirus Map and Case Count

Updated April 9, 2021, 7:41 A.M. E.T.



	TOTAL REPORTED	ON APRIL 8	14-DAY CHANGE
<b>Cases</b>	4.3 million+	3,030	-48% ↘
<b>Deaths</b>	126,980	53	-58% ↘

Day with reporting anomaly. 14-day change trends use 7-day averages.

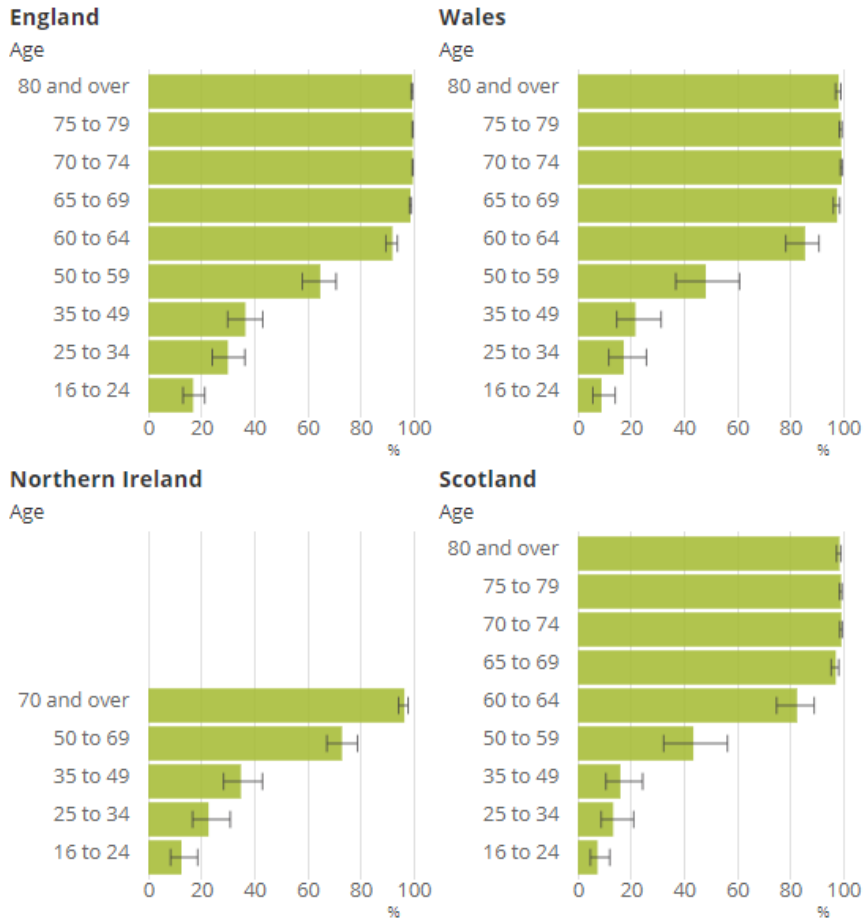
### Reported cases and deaths by country and local area

This table is sorted by places with the most cases per 100,000 residents in the last seven days. Select deaths or a different column header to sort by different data.

Cases
Deaths

	TOTAL CASES	PER 100,000	DAILY AVG. IN LAST 7 DAYS	▼ PER 100,000
+ Scotland	221,146	4,067	331	6
+ England	3,821,151	6,826	2,378	4
+ Northern Ireland	117,919	6,512	75	4
+ Wales	210,219	6,697	82	3

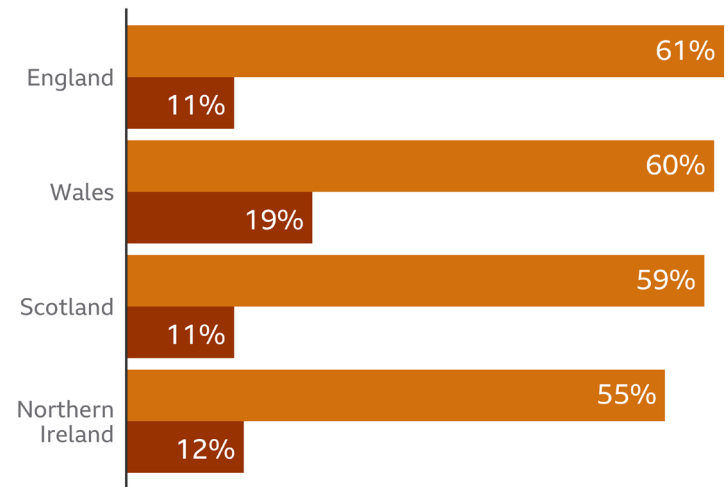
# UK Vaccination Status



Source: Office for National Statistics – Coronavirus (COVID-19) Infection Survey

## Vaccines across the UK

Percentage of people aged 18 and over who have received the **first** and **second** dose of the vaccine



Population figures used to calculate the percentages are based on estimates from the national statistical agencies

Source: UK government dashboard, data to 7 Apr

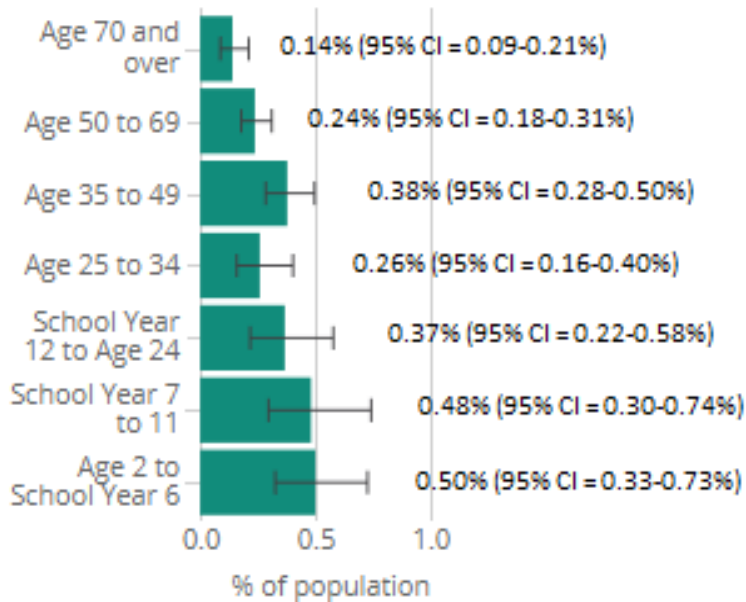


**MA residents: 23% fully vaccinated + 17% partially vaccinated (as of 4/8/21)**

# England – Data from Week Ending ~March 27, 2021 (Vast Majority of Cases are Likely B.1.1.7 VOC)

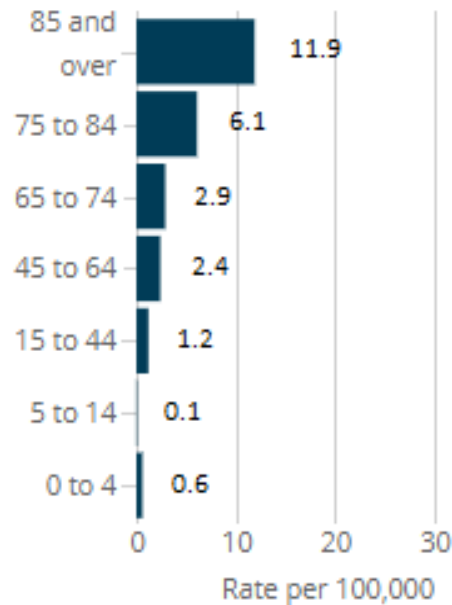
## Infections

Estimated percentage of the population testing positive for the coronavirus (COVID-19) on nose and throat swabs, week ending 3 April 2021



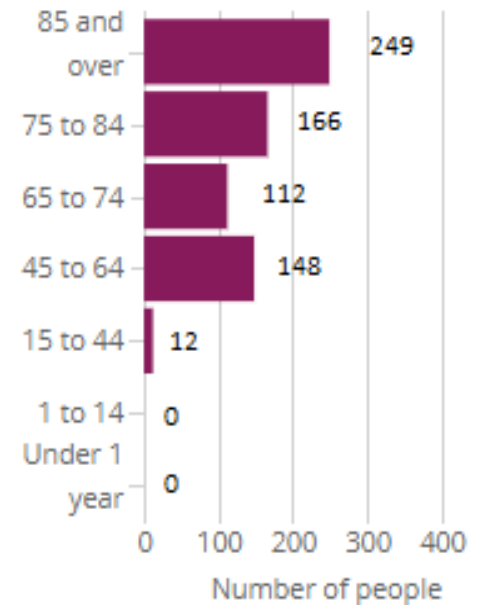
## Hospital admissions

Overall COVID-19 positive hospital admission rates per 100,000, week ending 4 April 2021



## Deaths

Number of deaths involving the coronavirus (COVID-19) by age group, England, registered week ending 26 March 2021



Source: Office for National Statistics and Public Health England

# CDC Updates on Surface (Fomite)-Based Transmission Risk (April 5, 2021)



- Quantitative microbial risk assessment (QMRA) study findings suggest that risk of SARS-CoV-2 infection via fomite transmission route is  $<1$  in 10,000 per touch of a contaminated surface.
- “When accounting for both surface survival data and real-world transmission factors, the risk of fomite transmission after a person with COVID-19 has been in an indoor space is minor after 3 days (72 hours), regardless of when it was last cleaned.”
- One QMRA study looked at prevention measures:
  - Good hand hygiene can “substantially reduce” risk of fomite transmission.
  - 1-2x/day surface disinfection “had little impact on reducing estimated risks.”

# CDC Updates on Surface (Fomite)-Based Transmission Risk (April 5, 2021)



- CDC's risk assessment: "The principal mode by which people are infected with SARS-CoV-2 (the virus that causes COVID-19) is through exposure to respiratory droplets carrying infectious virus. It is possible for people to be infected through contact with contaminated surfaces or objects (fomites), but the risk is generally considered to be low."
- CDC's updated recommendations:
  - Routine cleaning (at least 1x/day) with soap/detergent should be enough to further reduce the already low risk of fomite transmission in most cases.
  - When a COVID+ person has been indoors within the last 24 hours, high-touch surfaces within that space should additionally be disinfected.
  - Wear well-fitting masks and improve ventilation wear possible (or else avoid entering contaminated space for 24 hours).
- More specific guidance here: <https://www.cdc.gov/coronavirus/2019-ncov/community/disinfecting-building-facility.html>