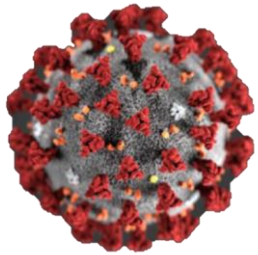

New Hampshire Coronavirus Disease 2019 Weekly Partner Call

August 5, 2021

Ben Chan
Elizabeth Talbot
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Thursday noon-time partner call will focus on science, medical, and vaccine updates with time for Q&A

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  - Presentation video and PPT slides are available: https://www.covid19.nh.gov/resources/schools
- August 11th: We will have another follow-up call with School and Childcare partners from 3:30-4:30
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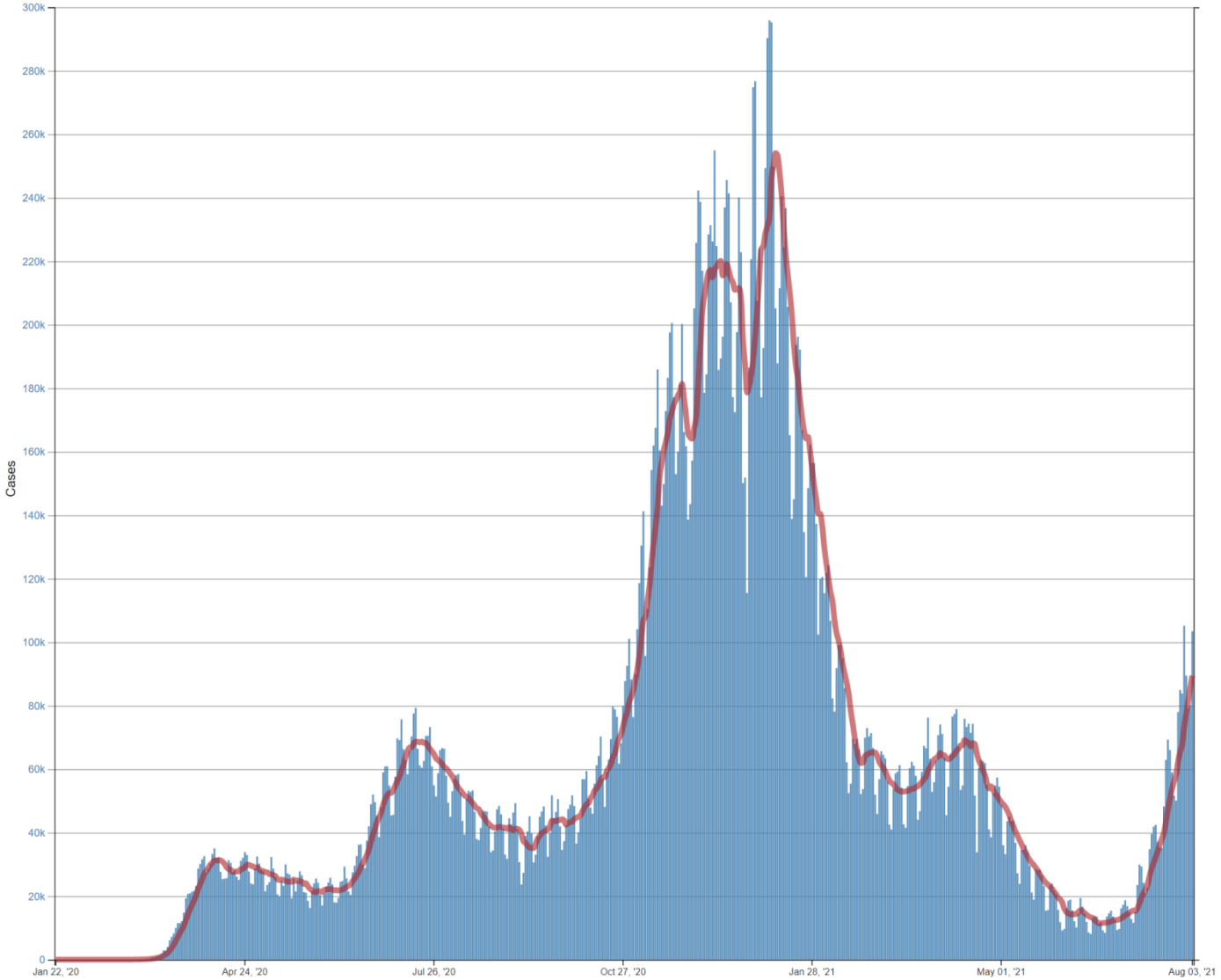
Agenda

- Epidemiology update
- MMWR publication: Large outbreak of SARS-CoV-2 in Provincetown, MA (Barnstable County)
- Review Delta variant vaccine effectiveness and talk about "Vaccine Breakthrough Infections"
- Questions & Answers (Q&A)

Epidemiology Update

U.S. National Daily Incidence of COVID-19



https://covid.cdc.gov/covid-data-tracker/#trends_dailytrendscases

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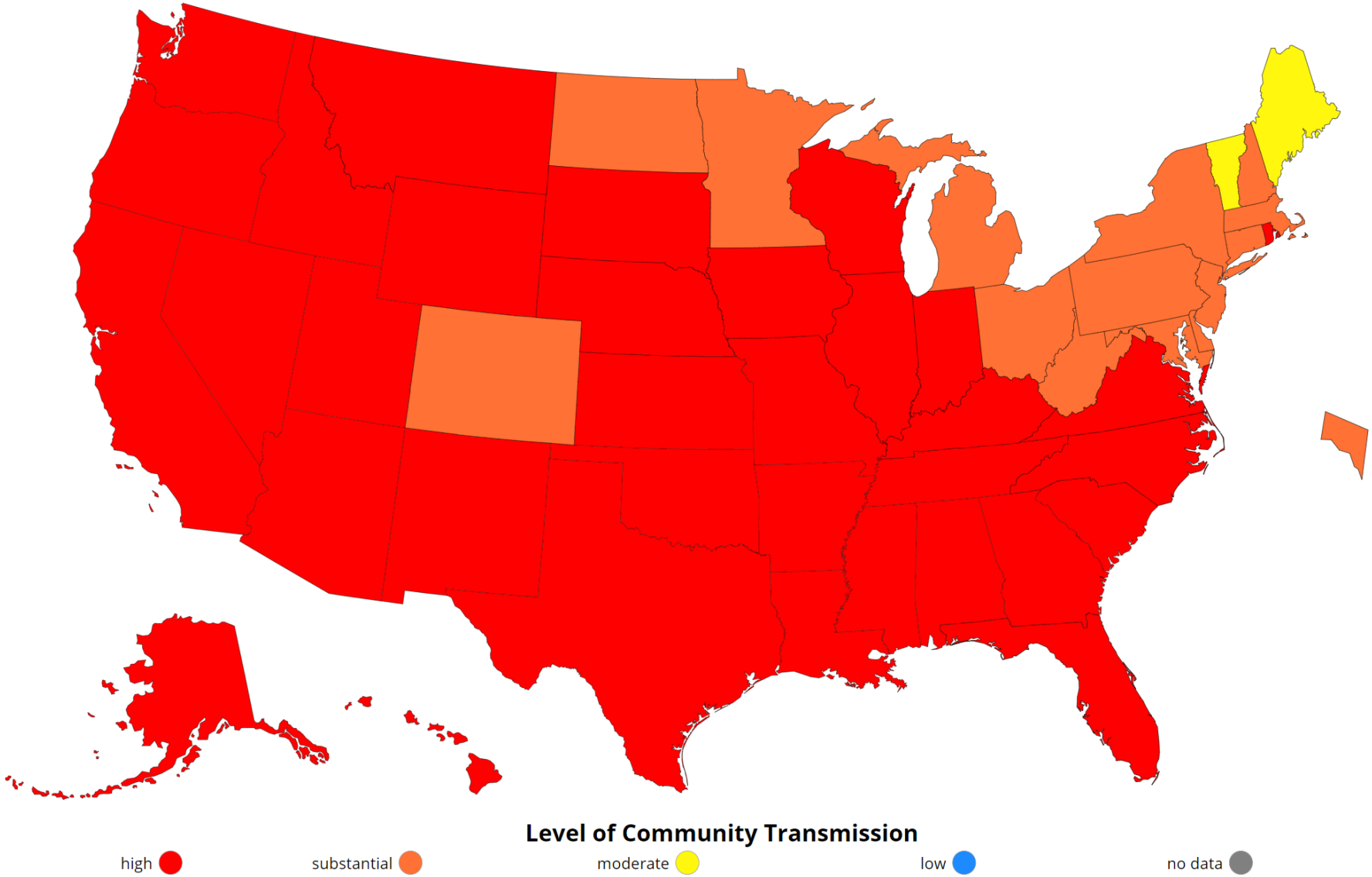
Level of Community Transmission by State



https://covid.cdc.gov/covid-data-tracker/#cases_community

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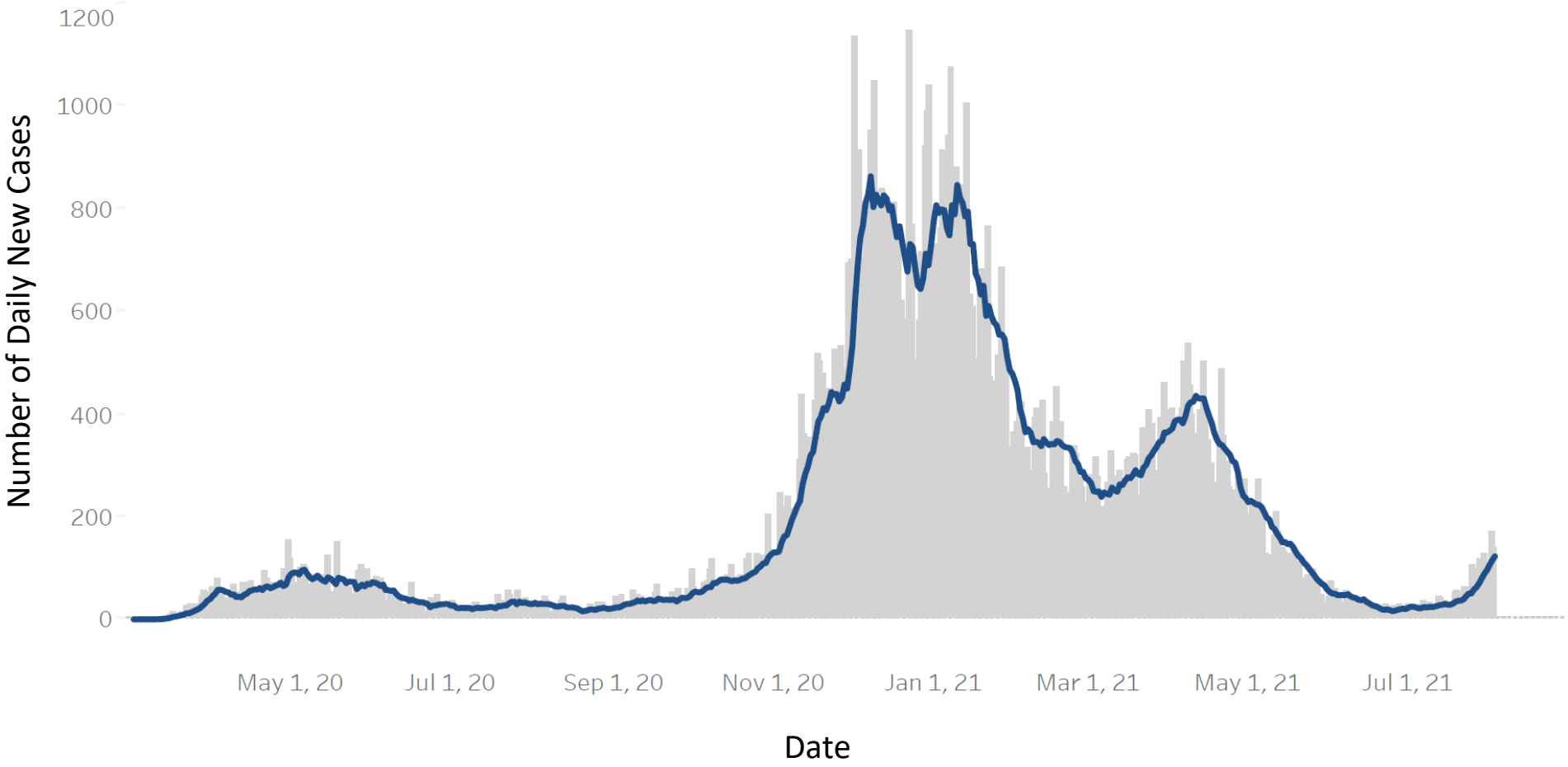
Number of New COVID-19 Cases per Day in NH



https://www.nh.gov/covid19/dashboard/overview.htm#dash

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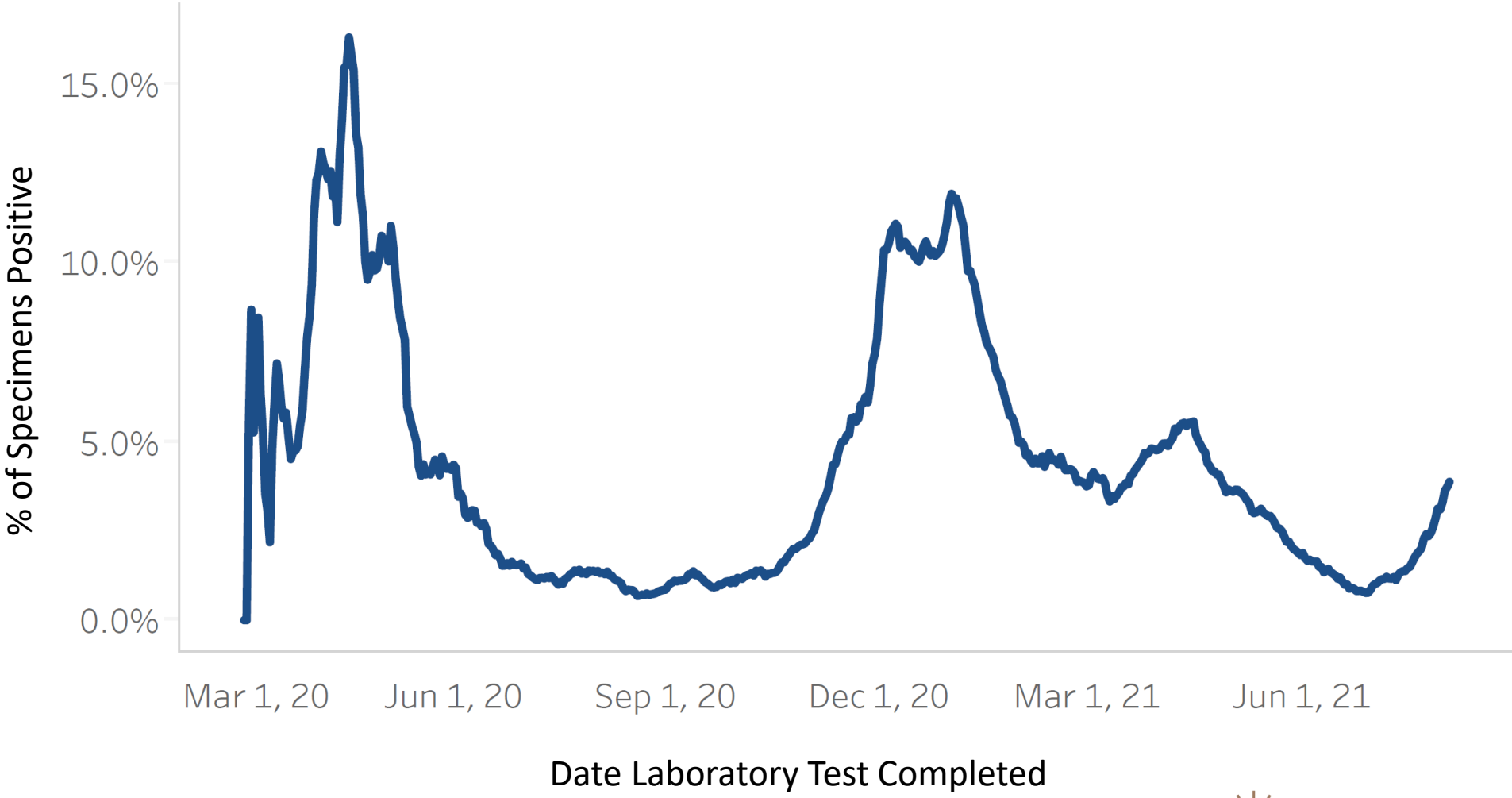
% of Tests (Antigen and PCR) Positive for COVID-19 (7-Day Average)



https://www.nh.gov/covid19/dashboard/overview.htm#dash

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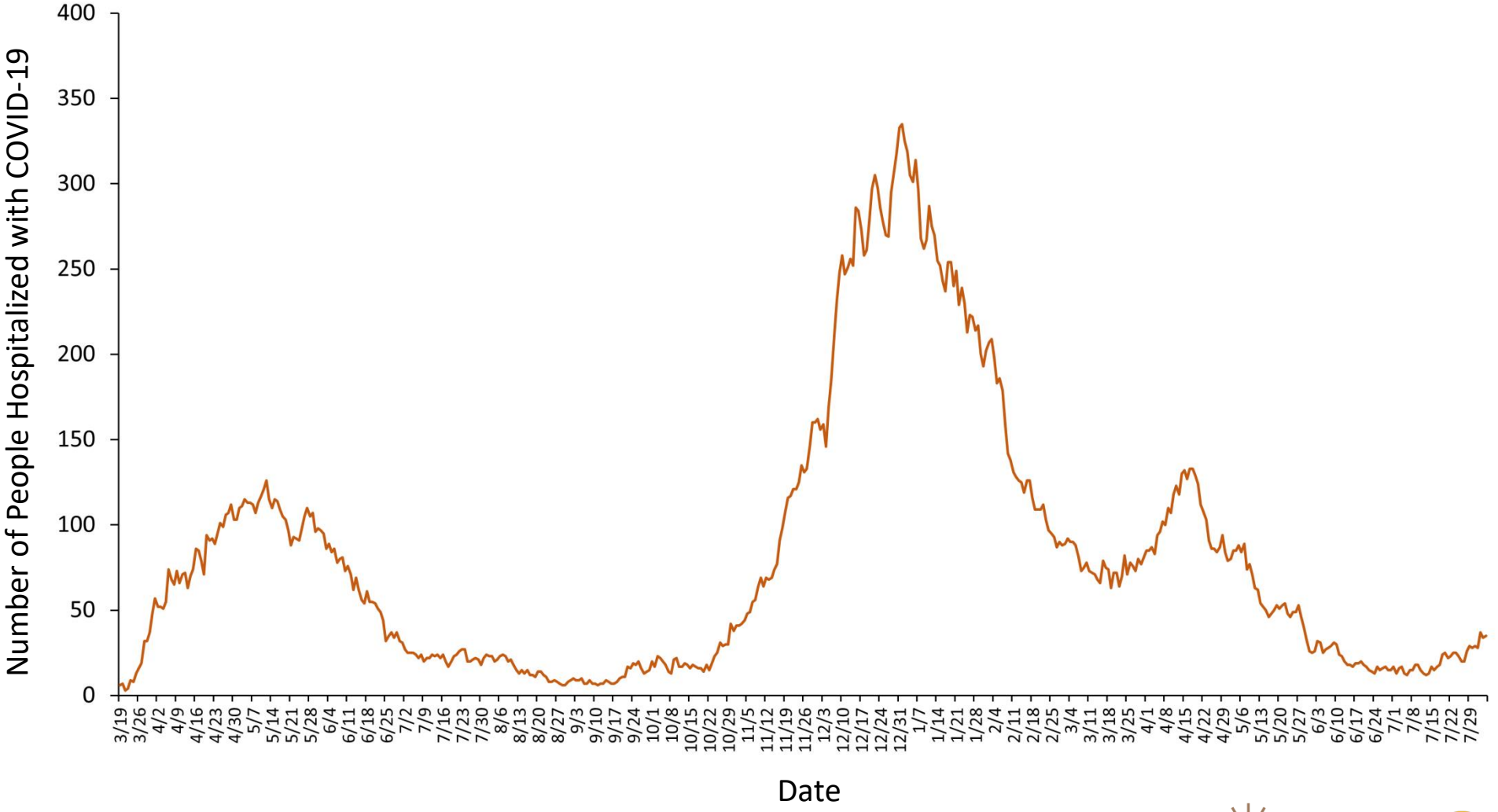
Number of People Hospitalized with COVID-19 Each Day in NH (Hospital Census)



https://www.nh.gov/covid19/dashboard/overview.htm#dash

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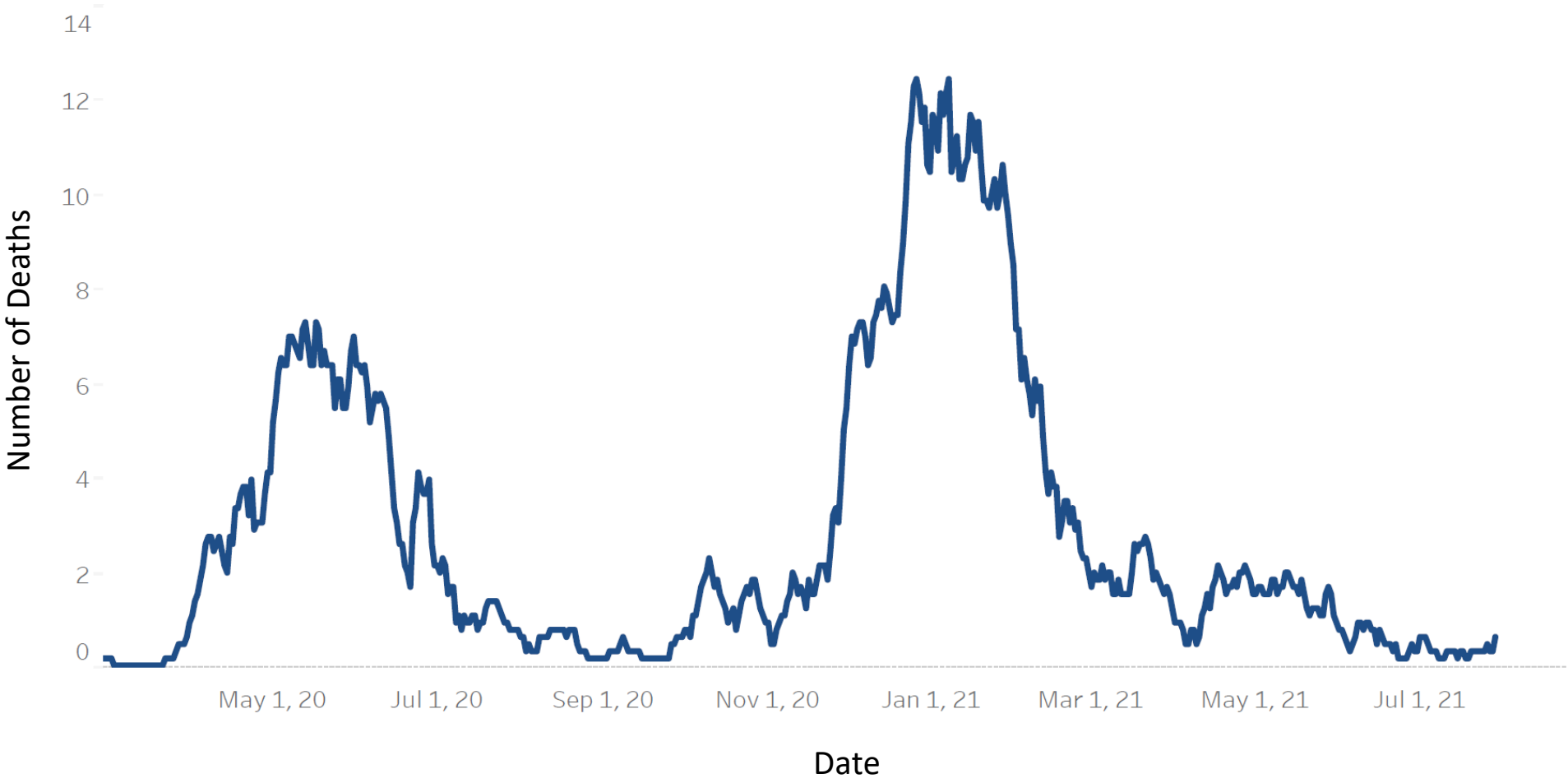
Average Number of COVID-19 Deaths per Day in NH (Based on Date of Death)



https://www.nh.gov/covid19/dashboard/overview.htm#dash

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Level of Community Transmission in NH

Statewide Level of Transmission

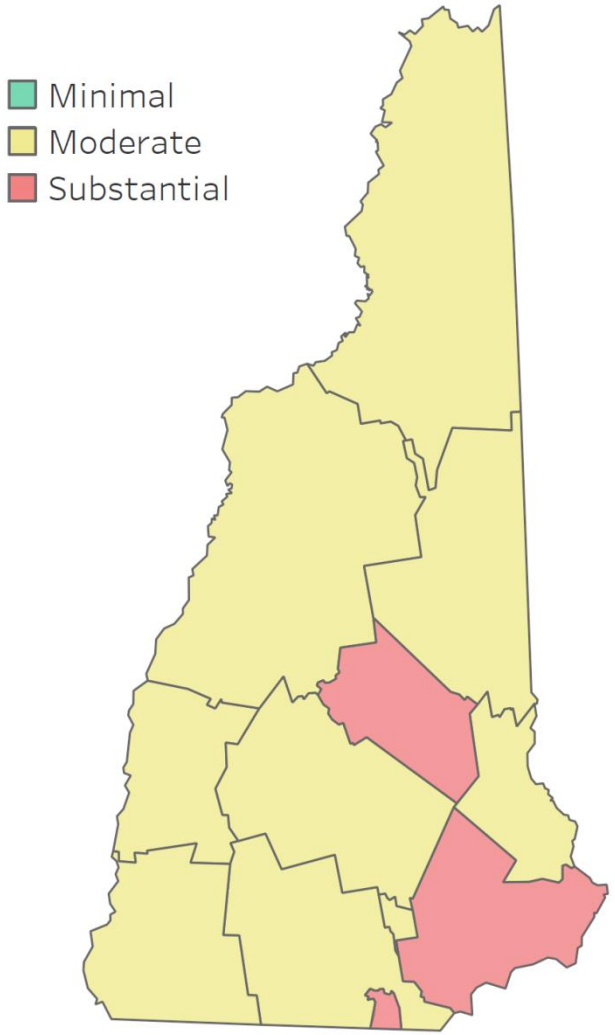
Moderate

New Cases per 100k over 14 days

95.5

7-Day Total Test Positivity Rate

3.9%



Data as of: 8/4/2021

https://www.covid19.nh.gov/dashboard/schools

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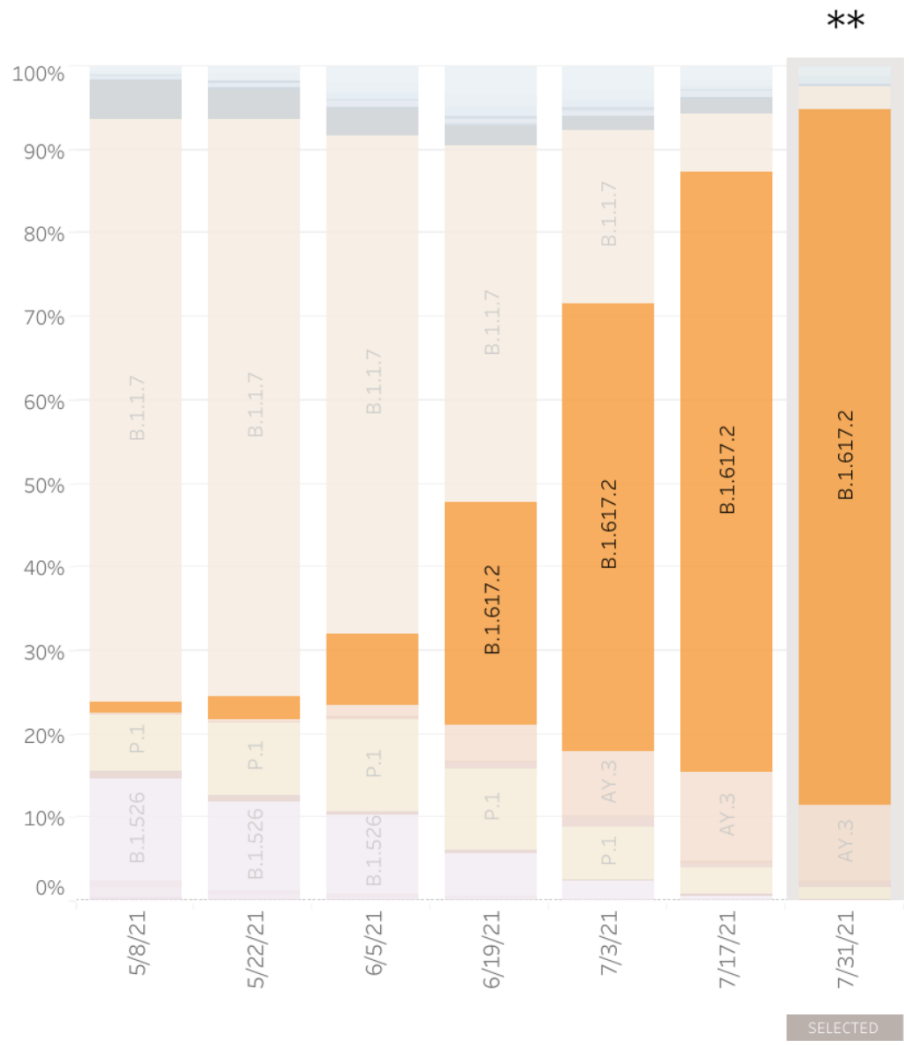
Variant Proportions in the U.S.

United States: 4/25/2021 – 7/31/2021



Collection date, two weeks ending

United States: 7/18/2021 – 7/31/2021 NOWCAST

USA

WHO label	Lineage #	Type	%Total	95%PI
Alpha	B.1.1.7	VOC	2.9%	1.2-4.7%
Beta	B.1.351	VOC	0.0%	0.0-0.2%
Gamma	P.1	VOC	1.3%	0.2-2.5%
Delta	B.1.617.2	VOC	83.4%	79.6-87.0%
	AY.3	VOC	9.1%	6.2-12.0%
	AY.2	VOC	0.8%	0.0-1.7%
	AY.1	VOC	0.1%	0.0-0.5%
Epsilon	B.1.427	VOI	0.0%	0.0-0.2%
	B.1.429	VOI	0.0%	0.0-0.2%
Eta	B.1.525	VOI	0.0%	0.0-0.2%
Iota	B.1.526	VOI	0.2%	0.0-0.7%
	B.1.621		1.1%	0.2-2.2%
	B.1.621.1		0.6%	0.0-1.5%
	B.1.628		0.3%	0.0-1.0%
	B.1		0.1%	0.0-0.5%
	A.2.5		0.0%	0.0-0.2%
	Other*		0.0%	0.0-0.2%
	B.1.617.3	VOI	0.0%	0.0-0.2%
	B.1.626		0.0%	0.0-0.2%

* Enumerated lineages are VOI/VOC or are circulating >1% in at least one HHS region during at least one two week period; remaining lineages are aggregated as "Other".

** These data include Nowcast estimates, which are modeled projections that may differ from weighted estimates generated at later dates

Sublineages of P.1 and B.1.351 (P.1.1, P.1.2, B.1.351.2, B.1.351.3) are aggregated with the parent lineage and included in parent lineage's proportion. AY.1, AY.2, and AY.3 are no longer aggregated with B.1.617.2.

https://covid.cdc.gov/covid-data-tracker/#variant-proportions

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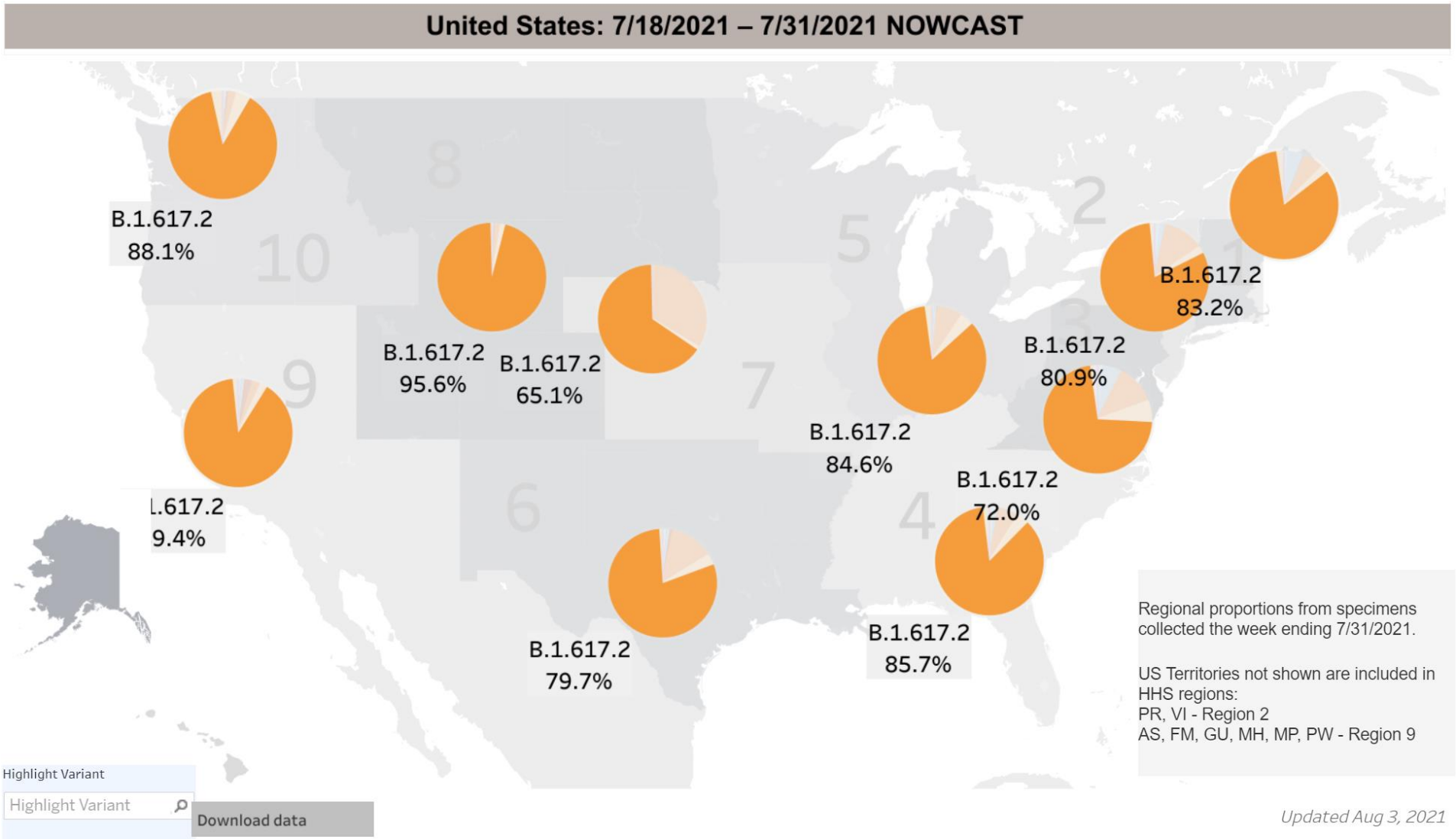

https://covid.cdc.gov/covid-data-tracker/#variant-proportions

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Variant Proportions in NH, 7/22 – 8/4 (Last 2 Weeks)

- 130 positive specimens were sequenced:
  - Alpha (B.1.1.7): 12 (9%)
  - Beta (B.1.351): 0 (0%)
  - Gamma (P.1): 1 (<1%)
  - Delta (B.1.617.2): 59 (45%)

MMWR Publication

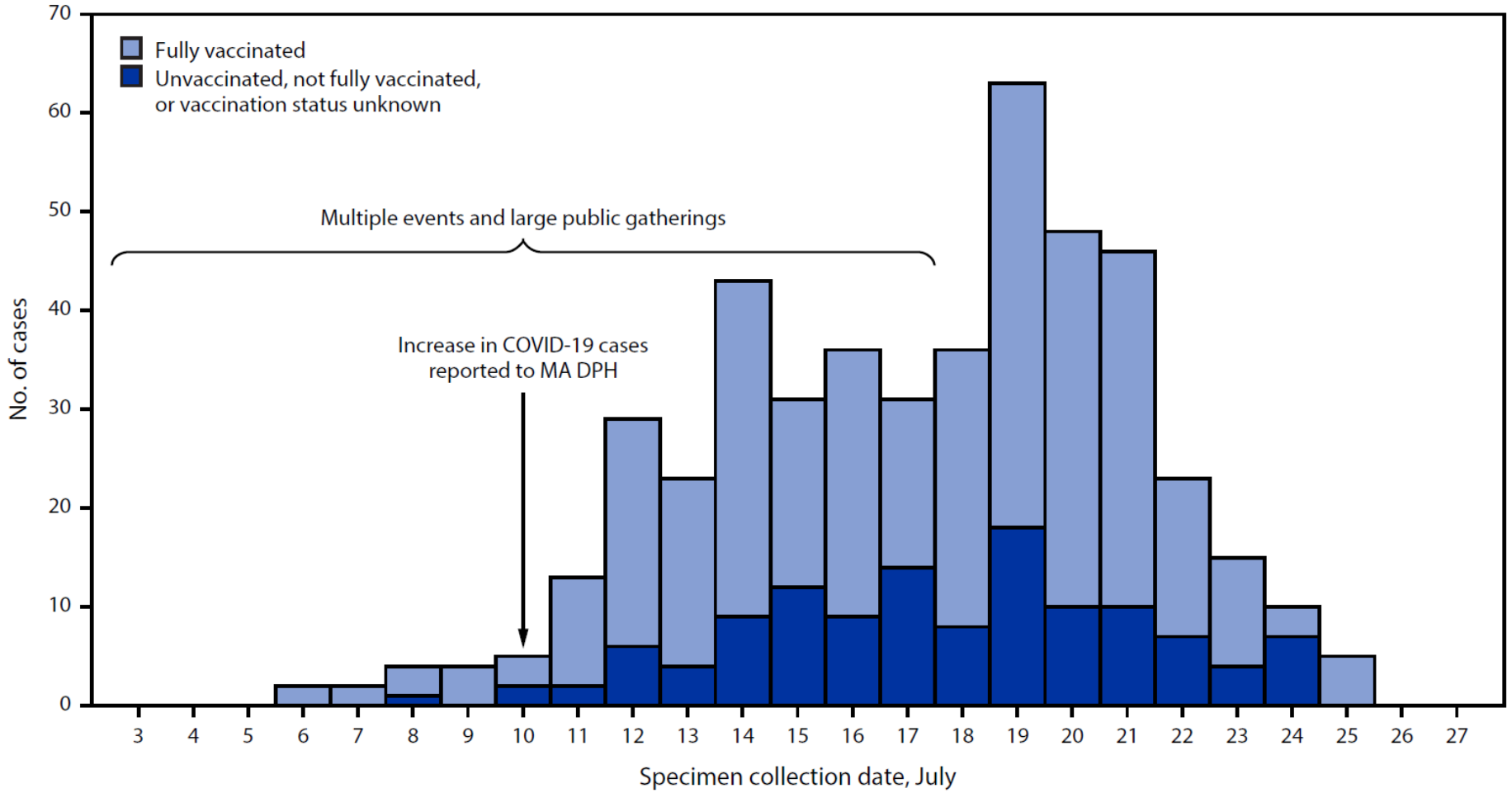
Centers for Disease Control and Prevention
MMWR
Morbidity and Mortality Weekly Report
Early Release / Vol. 70
July 30, 2021

Outbreak of SARS-CoV-2 Infections, Including COVID-19 Vaccine Breakthrough Infections, Associated with Large Public Gatherings — Barnstable County, Massachusetts, July 2021

- Context: "Independence Week" in Provincetown, MA (P-town), is a large tourist/party attraction; estimated 60,000+ attendees
  - Bad weather may have driven many "densely packed" parties indoors
- MMWR publication reports only on Massachusetts residents with COVID-19, but there are multiple other states affected
- 469 cases among MA residents (many more out-of-state cases)
  - 74% occurred in fully vaccinated persons
  - 90% of genetic sequencing showed Delta variant
  - Most were symptomatic (79% with vaccine breakthrough infection)
  - 5 hospitalizations, 0 deaths

https://www.cdc.gov/mmwr/volumes/70/wr/mm7031e2.htm

FIGURE 1. SARS-CoV-2 infections (N = 469) associated with large public gatherings, by date of specimen collection and vaccination status* — Barnstable County, Massachusetts, July 2021



https://www.cdc.gov/mmwr/volumes/70/wr/mm7031e2.htm

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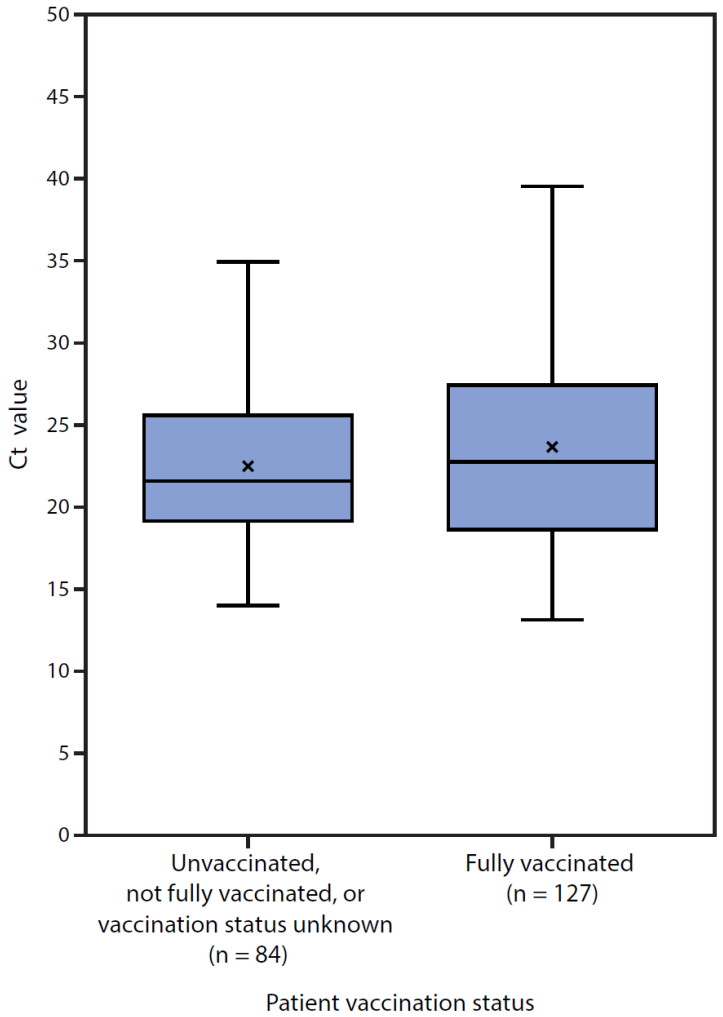
CT Values in Based on Vaccination Status

- Individual CT values are unable to be reported at the individual level (under federal lab regulations)
- At a population level, lower CT values are believed to represent higher viral loads/shedding
- This is an indirect measure of a person's potential ability to transmit infection; it remains unclear how CT values relate to transmission risk
- We have always said that anybody who is infected (even fully vaccinated people) have the potential to transmit to others; the risk may be greater with the Delta variant

FIGURE 2. SARS-CoV-2 real-time reverse transcription–polymerase chain reaction cycle threshold values* for specimens from patients with infections associated with large public gatherings, by vaccination status† — Barnstable County, Massachusetts, July 2021§



https://www.cdc.gov/mmwr/volumes/70/wr/mm7031e2.htm

Vaccine Breakthrough (VBT) Infections

- We talk a lot about the % of infections that are due to VBT infections – that's probably not the right measure to be tracking (because it's misleading)
- The rate of infection in vaccinated vs. unvaccinated populations is a more appropriate measure
- % of VBT infections is affected by both vaccine efficacy AND the proportion of the population that is vaccinated
- As more people get vaccinated (i.e., as a higher % of the population is vaccinated), we expect that a greater % of infections will be in people who are fully vaccinated – that's NOT an indication of vaccine failure

https://www.cdc.gov/mmwr/volumes/70/wr/mm7031e2.htm

Bulletin of the World Health Organization, 63 (6): 1055-1068 (1985)

Field evaluation of vaccine efficacy*

WALTER A. ORENSTEIN,[1] ROGER H. BERNIER
JAMES S. MARKS,[3] KENNETH J. BART,[1] & B

*This paper describes the epid
efficacy and recommends a practi
measles vaccine, the efficacy of w
methods are applicable to other va
the techniques are indicated.*

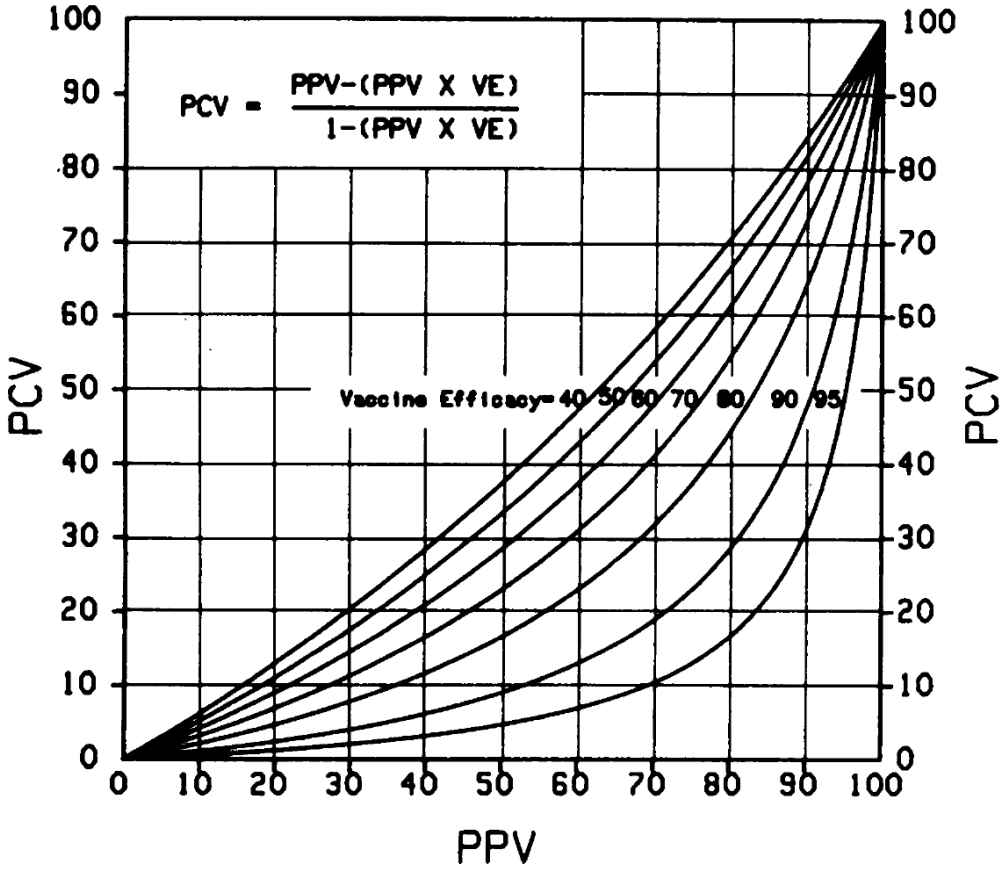
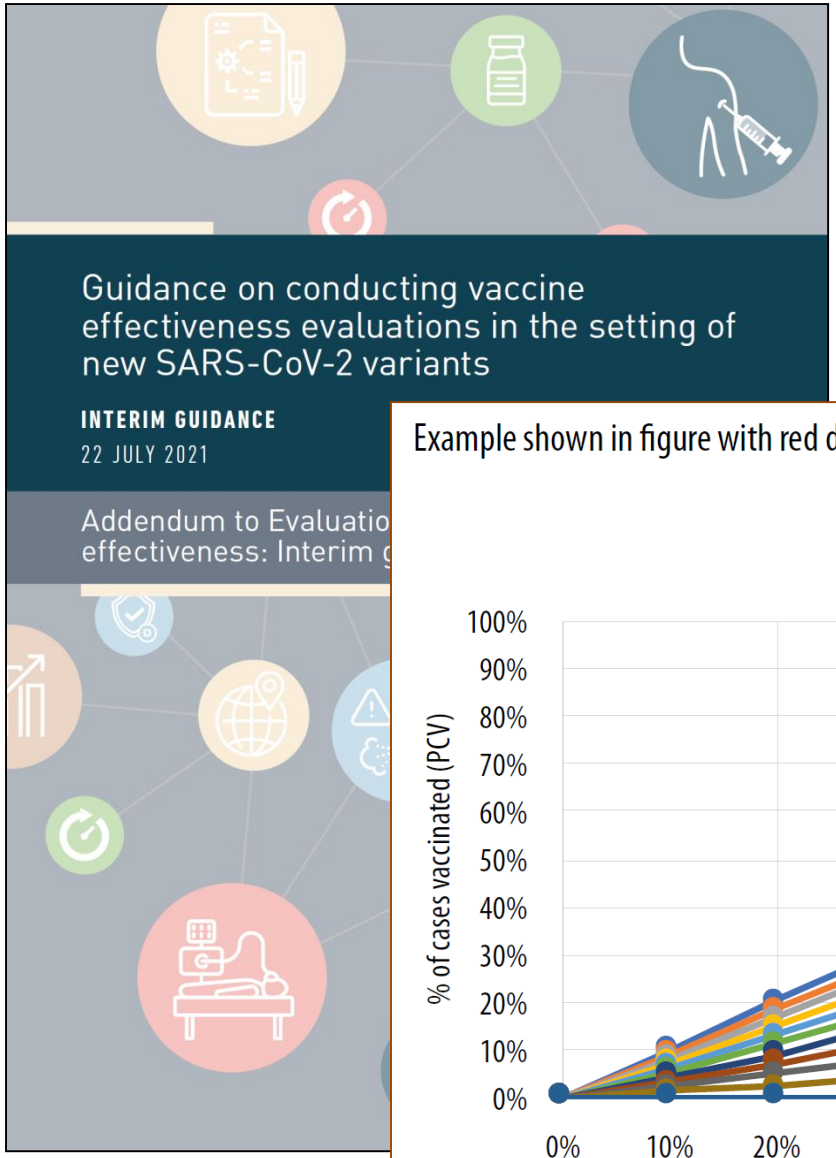
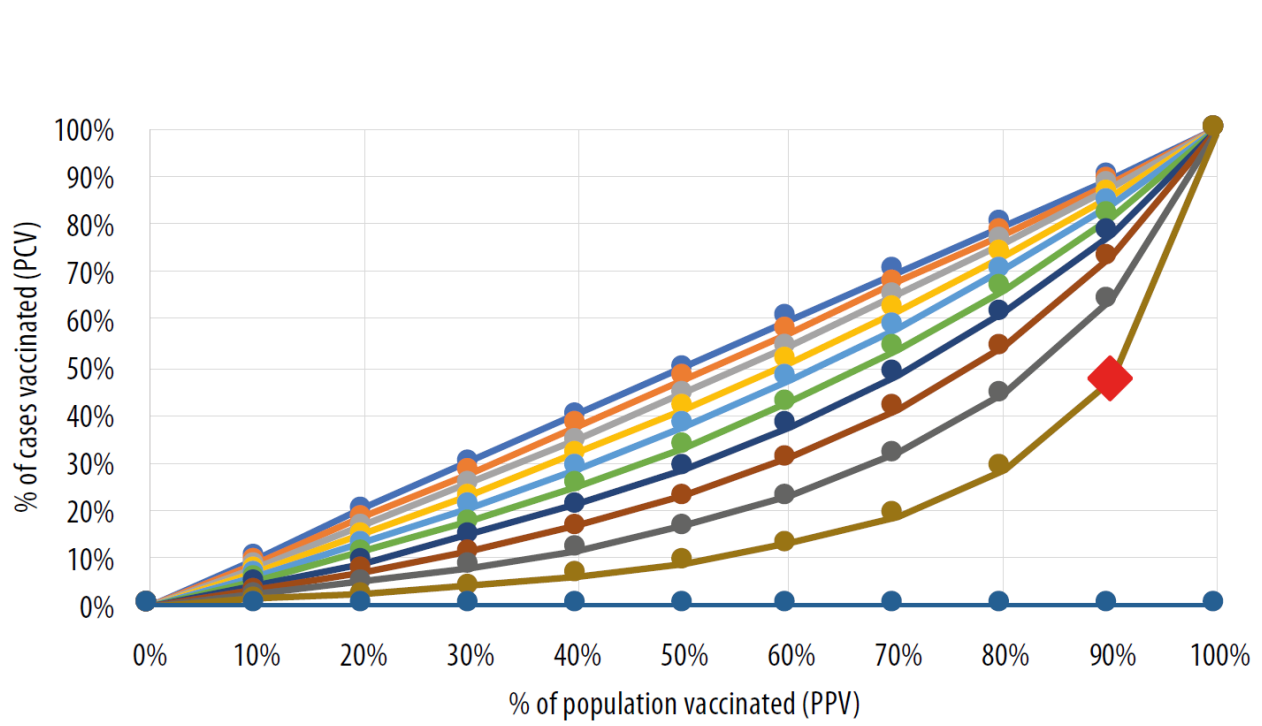


Fig. 1. The relationship between the percentage of cases vaccinated (PCV) and the percentage of the population vaccinated (PPV) for seven different percentage values of vaccine efficacy (VE).

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2536484/



Example shown in figure with red diamond is the result for vaccine with 90% estimated VE and 90% PPV.



https://www.who.int/publications/i/item/WHO-2019-nCoV-vaccine_effectiveness-variants-2021.1

Proportion of all COVID-19 cases expected to occur among people who were vaccinated

Scenario	Vaccination coverage	Vaccine effectiveness	% of COVID-19 cases expected among vaccinated persons
1	30%	70%	11%
2	50%	70%	23%
3	70%	70%	41%
4	90%	70%	73%
5	30%	90%	4%
6	50%	90%	9%
7	70%	90%	19%
8	90%	90%	47%

Vaccine Effectiveness Against the Delta Variant

Vaccine Effectiveness (VE) Against Delta Variant

Country	Study Link	COVID-19 Vaccine	VE at Preventing Infection*	VE at Preventing Severe Illness**
United Kingdom	Bernal et al. NEJM; Stowe et al. khub	Pfizer-BioNTech	88%	
Canada	Nasreen et al. medRxiv	Pfizer-BioNTech	85%	
Scotland	Sheikh et al. Lancet	Pfizer-BioNTech	79%	
Israel	Press Release	Pfizer-BioNTech	64%	

* Includes preventing "confirmed infection" and "symptomatic infection"

** Includes preventing hospitalizations and deaths (depending on study)

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Preliminary estimates show that the Pfizer-BioNTech COVID-19 vaccine is:

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Summary

- COVID-19 is dramatically increasing in NH and across the U.S.
- Increases are largely being driven by Delta variant infections
  - Estimated to be ~2x more infectious compared to earlier circulating strains of SARS-CoV-2
  - Whether the Delta variant causes more severe disease is still being studied
- We need higher levels of vaccination to control this more infectious variant
- Vaccine breakthrough infections are expected/normal, especially as a greater proportion of the population gets vaccinated
- Current mRNA COVID-19 vaccines are still estimated to be ~80% effective at preventing infection from the Delta variant, but 90-95% effective at preventing severe disease

Problem with Increasing Community Transmission

- Everybody has an increasing risk of exposure and infection
- People who are unvaccinated or only partially vaccinated are more likely to be infected and potentially have a severe outcome
- Fully vaccinated people are much less likely to develop infection and very unlikely to have a serve outcome if infected…
- But there will be more episodes of exposure to COVID-19… and the more exposure events, the greater the risk a fully vaccinated person might develop a vaccine breakthrough infection (no vaccine is 100% effective)
- Anybody who becomes infected has the potential to spread it to others in the community
- And the pandemic goes on…

When Levels of Community Transmission are High, It's important for Everybody to Take Precautions

- The COVID-19 mitigation measures remain important:
  - Physical distancing
  - Avoiding high-risk settings for COVID-19 spread
  - Wearing facemasks in indoor public locations: this is especially important for people who are not fully vaccinated, have a weakened immune system, are at increased risk for severe disease, or who have a household member who is unvaccinated or at increased risk of severe COVID-19
  - Getting tested for any new symptoms of COVID-19; a list of currently available testing locations is available online: https://www.dhhs.nh.gov/dphs/cdcs/covid19/documents/covid-testing-options.pdf
- Vaccination is the most important thing people can do to protect themselves, their families, and their communities

Vaccination Is the Most Important Intervention

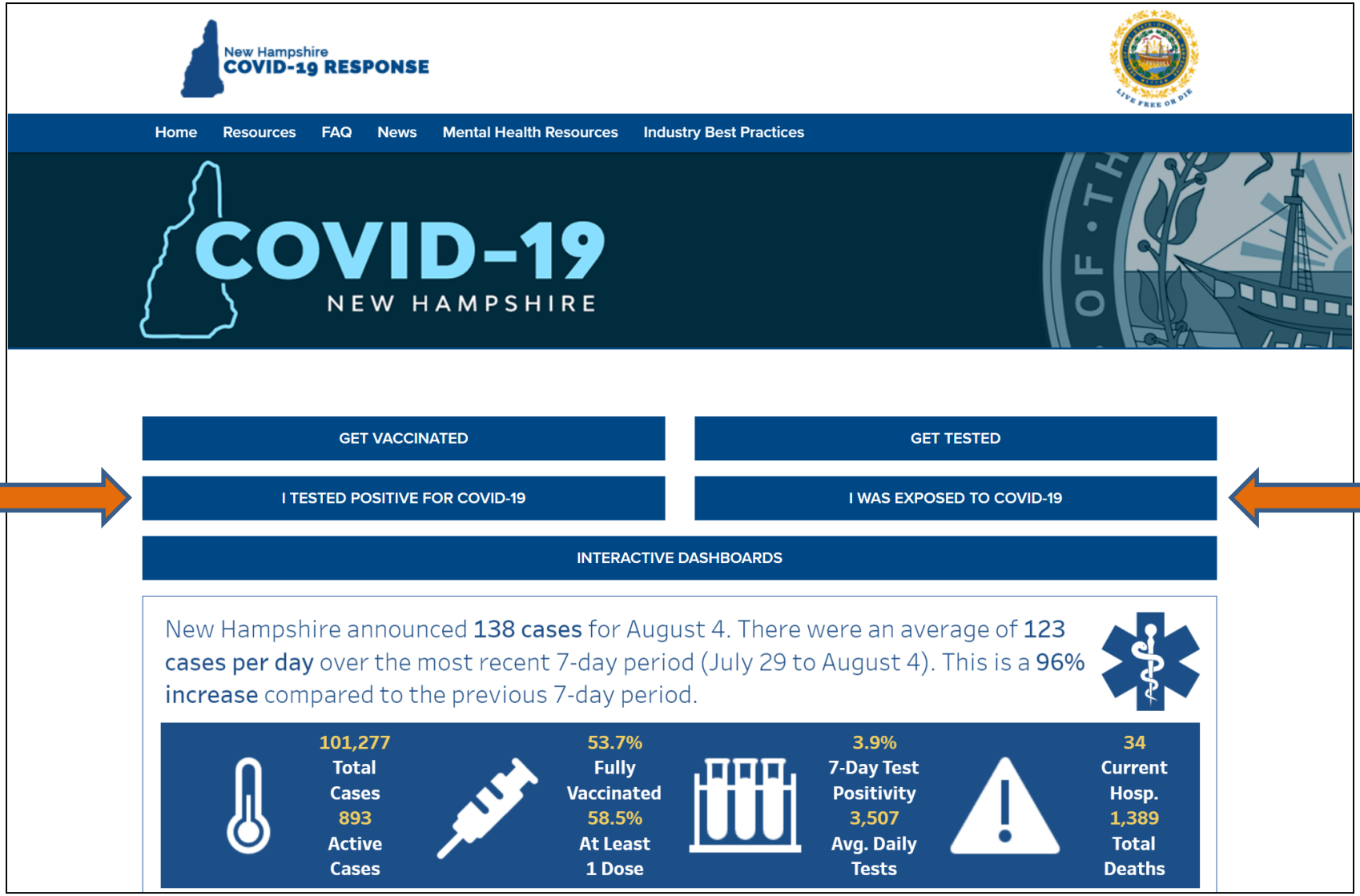
- Anybody who is not yet vaccinated against COVID-19 should get vaccinated
  - Vaccination is very safe and protective against infection, helps prevent the spread of COVID-19, and dramatically reduces a person's risk for severe disease if they develop COVID-19

- Anybody who has only gotten one vaccine dose of a 2-dose series (Pfizer or Moderna vaccines) needs to complete the vaccination series to have the highest level of protection, especially against the Delta variant
  - People can go to www.vaccines.gov to find a nearby location to be vaccinated

Continue to Use These Resources

- Isolation Guide: For people diagnosed with COVID-19 (*unchanged*)
- Quarantine Guide: For household close contacts who are NOT fully vaccinated (*minor updates*)
- Observation Guide: For non-household close contacts (e.g., close contact with someone with COVID-19 in the community), and for fully vaccinated household contacts (*substantial updates*)

Continue to Use These Resources



https://www.covid19.nh.gov/

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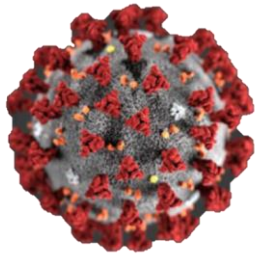

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