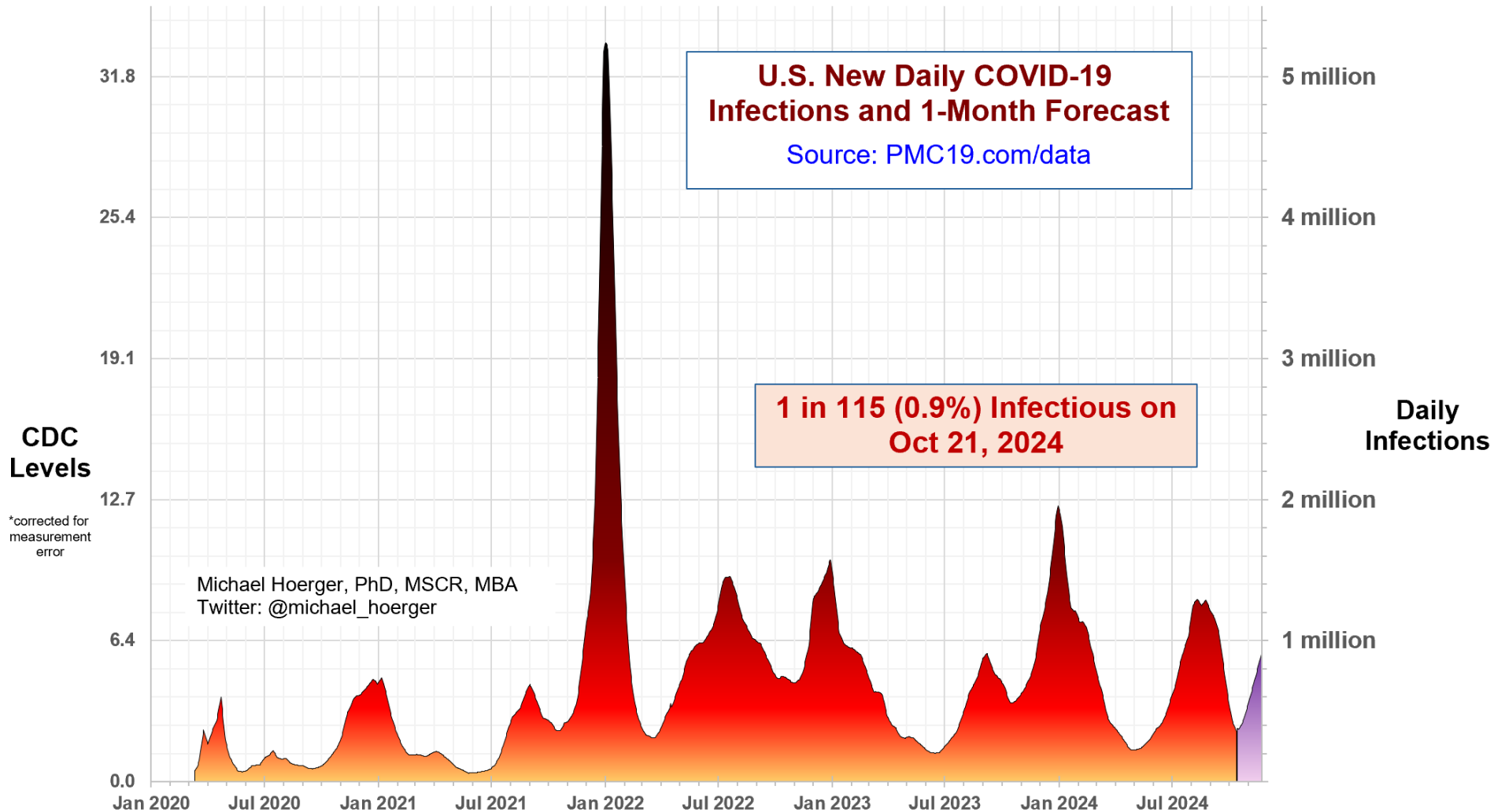


PMC U.S. COVID-19 Case Estimation and Forecasting Model: Report for October 21, 2024, pmc19.com/data

Michael Hoerger, PhD, MSCR, MBA, Pandemic Mitigation Collaborative (PMC)



Cite as: Hoerger, M. (2024, Oct 21). *PMC U.S. COVID-19 Case Estimation and Forecasting Model: Report for October 21, 2024*. Pandemic Mitigation Collaborative. <http://www.pmc19.com/data>

Join the Team!

Dr. Hoerger is accepting students for the Health Psychology PhD program at Tulane University. Applications are due November 30. Please share the graphic below on listservs and social media.

Websites of relevance:

- Hoerger – psychmike.com
- Cancer Research – psych-onc.com
- Pandemic Program – pmc19.com
- Doctoral Program – HealthPsychPhD.com

Tulane University - Health Psychology PhD

Seeking applicants to our PhD program who

- 1) Understand and are cautious about COVID,
- 2) Have a background in psychology or a closely-related undergraduate or Master's degree program,
- 3) Plan to pursue a research-intensive career spanning multiple scientific disciplines, and
- 4) Have a desire to help people with serious health conditions like cancer.

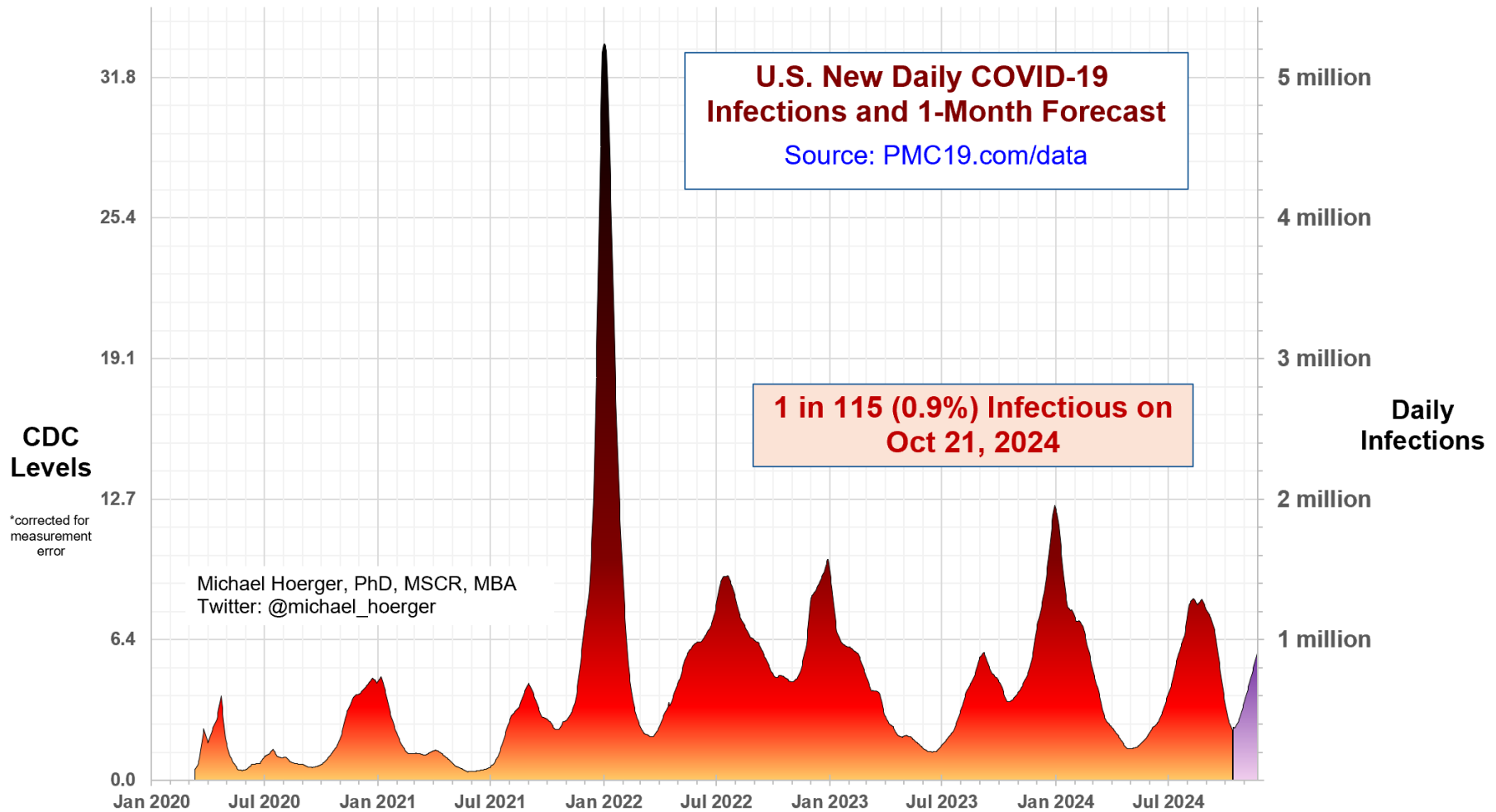


Learn more: HealthPsychPhD.com or mhoerger@tulane.edu



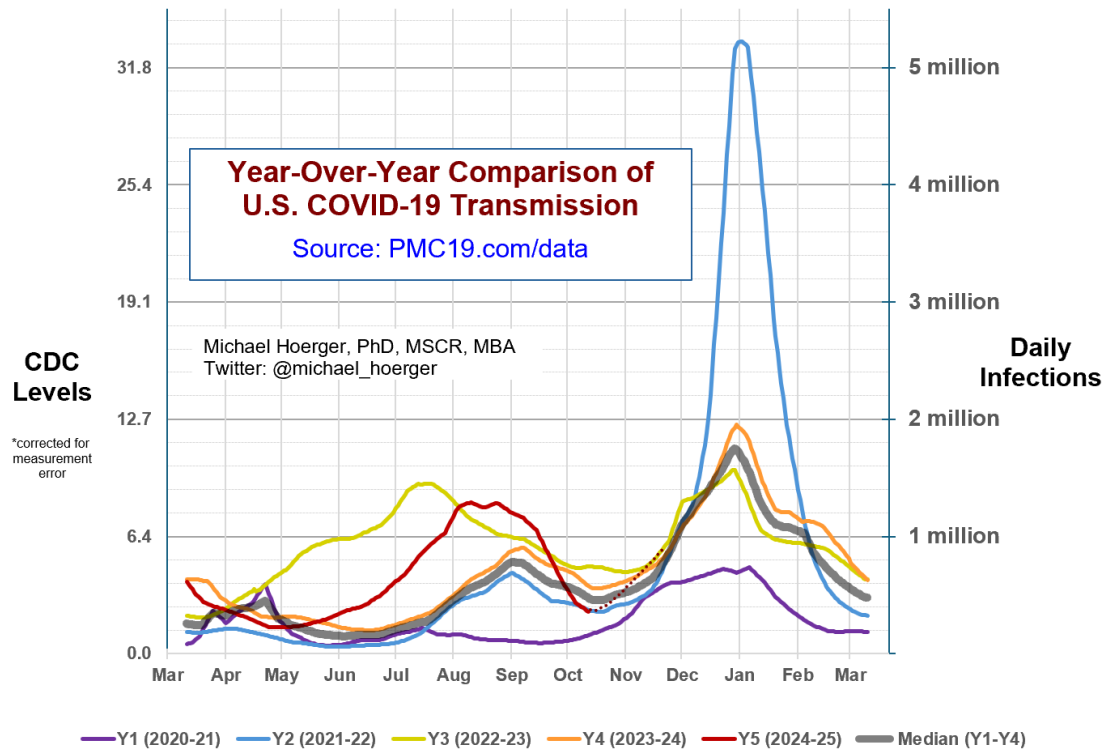
The Big-Picture View of the Pandemic

We are coming down from the 9th wave of the pandemic, which peaked at 1.3 million infections per day, and are heading into a 10th wave of COVID. We are presently in a very high between-wave “lull” with 1 in 115 (0.9%) actively infectious, nearly identical to last week. If the data hold, the lull point has passed, but it is possible the levels will be similar the next two weeks. We expect high transmission the remainder of 2024.



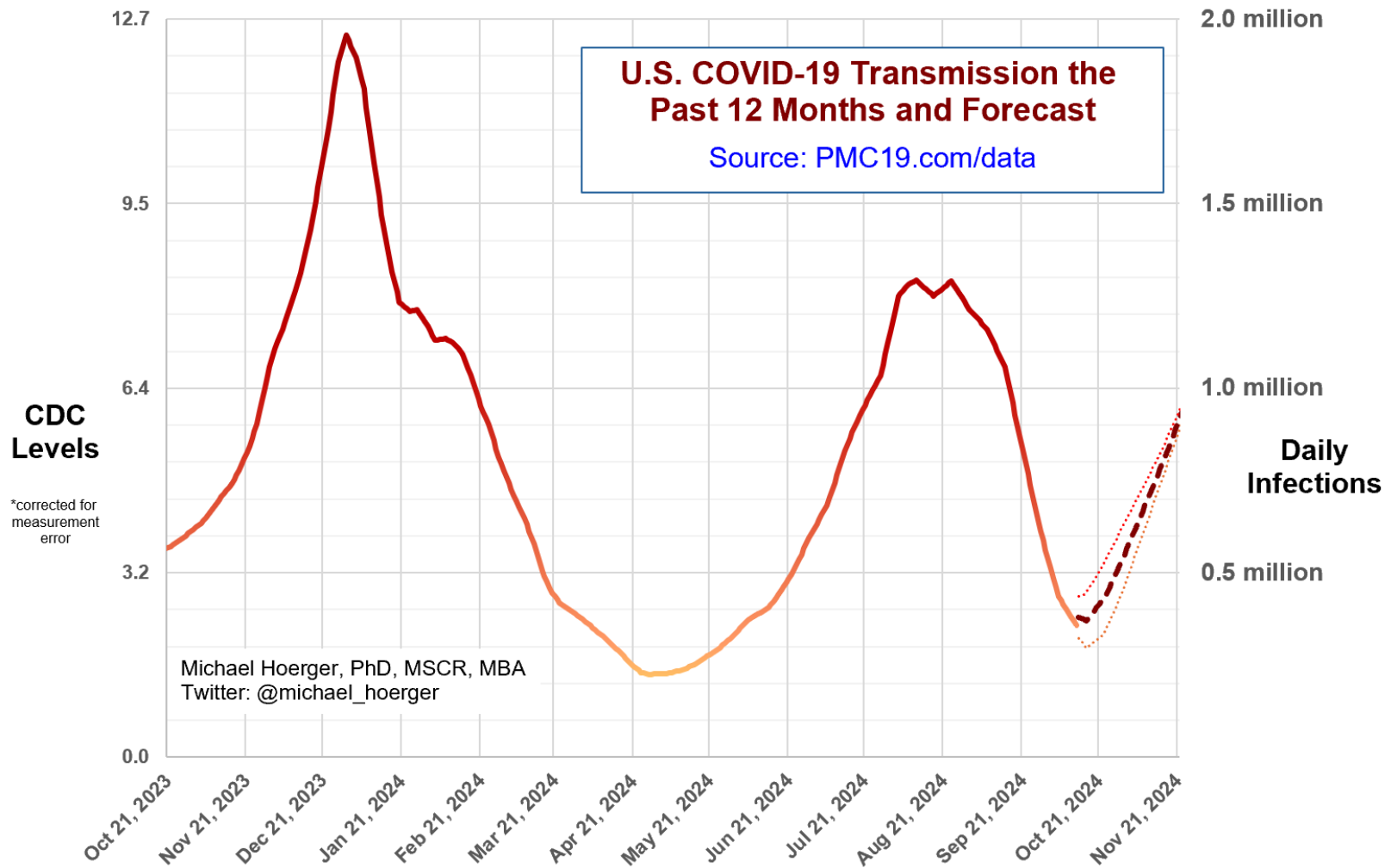
Year-Over-Year Comparisons

The year-over-year comparisons show that we have experienced an unprecedented decline in transmission for the back end of summer/fall wave. October now looks similar to the historical median. Transmission is anticipated to be similar from late September through early November, before picking up quickly. If we are lucky, the lull will go a bit lower and later (early November). For example, our estimates of transmission for the 2024 summer wave are likely minor underestimates, given potentially higher than average school transmission and that wastewater underestimates pediatric infections. To the extent that wave was larger than depicted, that would explain why transmission fell more rapidly than anticipated and could lead to a slightly later/lower lull. Regardless, the next several weeks are a good time to catch up on activities like dental/medical visits that one may have put off during the summer wave. Top medical centers have begun re-requiring masks, and more will on November 1.



Close-up on the Current Forecast

The forecasted trajectory of transmission is largely the same as that of last week. The low point for the remainder of 2024 may have just occurred or could occur between today and early November. It is common for the most recent CDC data to get corrected upward or downward marginally in hindsight, and the dashed lines show how the point estimate of the forecast would change given errors of +/-8% in real-time reports. The differences in transmission over the next couple weeks are likely negligible from a big-picture perspective.



Supplemental Statistics

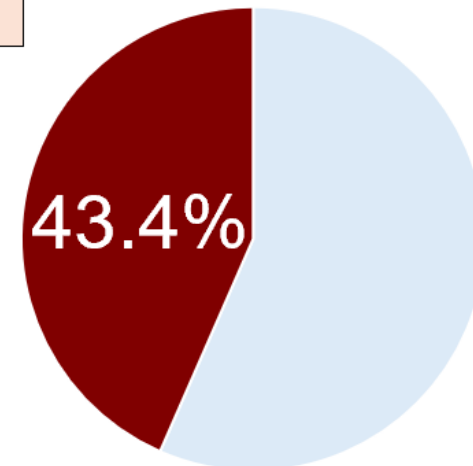
These supplemental statistics may prove useful in conversations about transmission and mitigation. The numbers are comparable to last week. We see that 1 in 115 are actively infectious. Over the next month, expect 550-700,000 infections/day on average, if the numbers hold. In a university classroom of 75-100 people, it should be assumed that someone (about a 50% chance) has infectious COVID. Transmission is higher than 43% of the pandemic and lower than 57% of the pandemic. The impact on potential Long COVID cases the next month will be staggering, and expect high transmission throughout the remainder of 2024.

Current Levels for Oct 21, 2024	
% of the Population Infectious	0.9% (1 in 115)
New Daily Infections	414,000
New Weekly Infections	2,898,000
Resulting Weekly Long COVID Cases	145,000 to 580,000

Monthly Forecast	
Average % of the Population Infectious	1.3% (1 in 76)
Average New Daily Infections	627,600
New Infections During the Next Month	18,828,000
Resulting Monthly Long COVID Cases	941,000 to 3,766,000

Running Totals	
Infections Nationwide in 2024	225,097,000
Average Number of Infections Per Person All-Time, U.S.	3.46

How Does Risk Increase with More Social Contacts?			
Number of People	Chances Anyone Is Infectious	Number of People	Chances Anyone Is Infectious
1	0.9%	15	12.2%
2	1.7%	20	16.0%
3	2.6%	25	19.5%
4	3.4%	30	23.0%
5	4.3%	35	26.3%
6	5.1%	40	29.4%
7	5.9%	50	35.3%
8	6.7%	75	47.9%
9	7.5%	100	58.1%
10	8.3%	300	92.6%



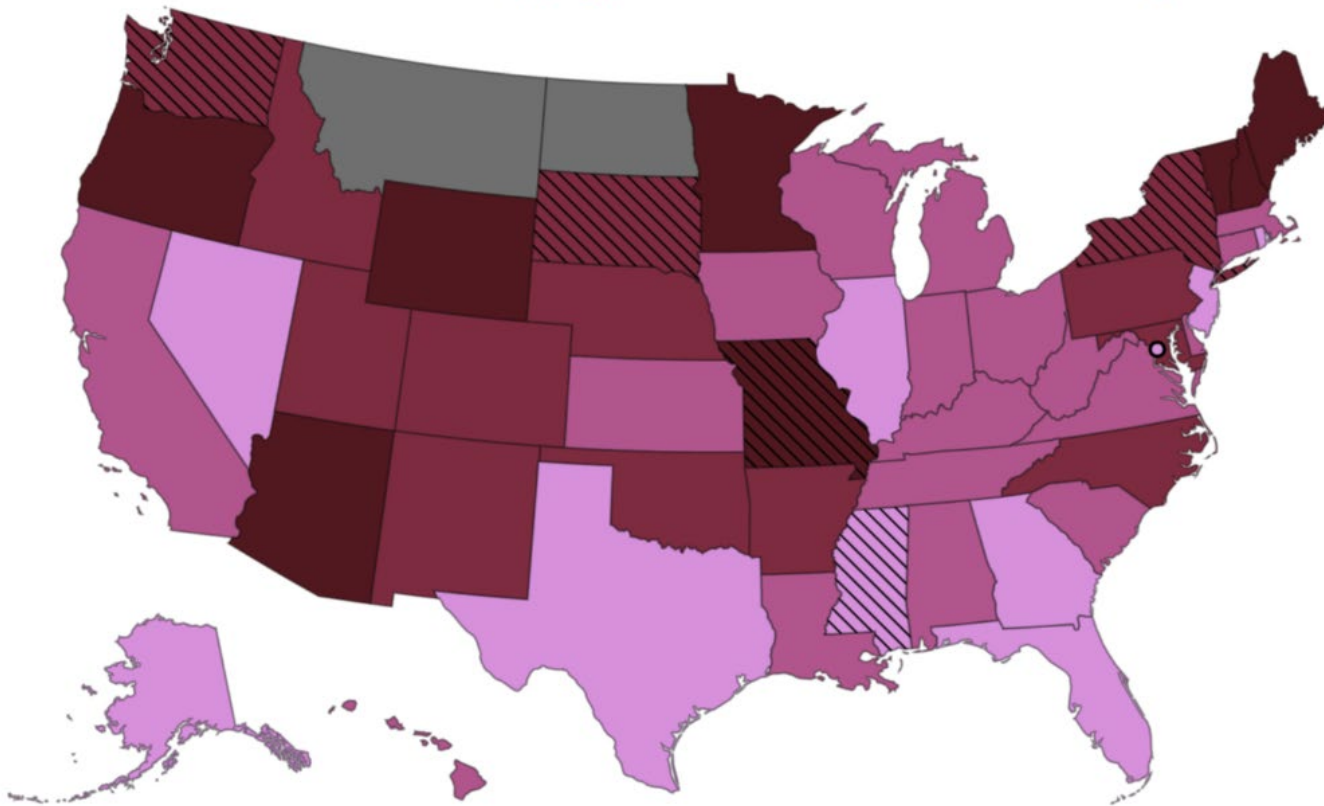
There is more COVID-19 transmission today than during 43.4% of the pandemic.

CDC COVID-19 Heat Map

This map uses the CDC state-by-state data to show areas with higher transmission in deeper red. Notice the considerable geographic variation. The CDC version of the map, colored in cool blue is available online. Blue tends to confuse people into thinking transmission is “cool” or low, so we and various popular media outlets (e.g., Newsweek) tend to recolor. The dashed lines indicate atypically low representation from the wastewater sites within a state.

<https://www.cdc.gov/nwss/rv/COVID19-currentlevels.html>

CDC COVID-19 Heat Map, Higher Transmission Shown with Deeper Red



Regional Case Estimation

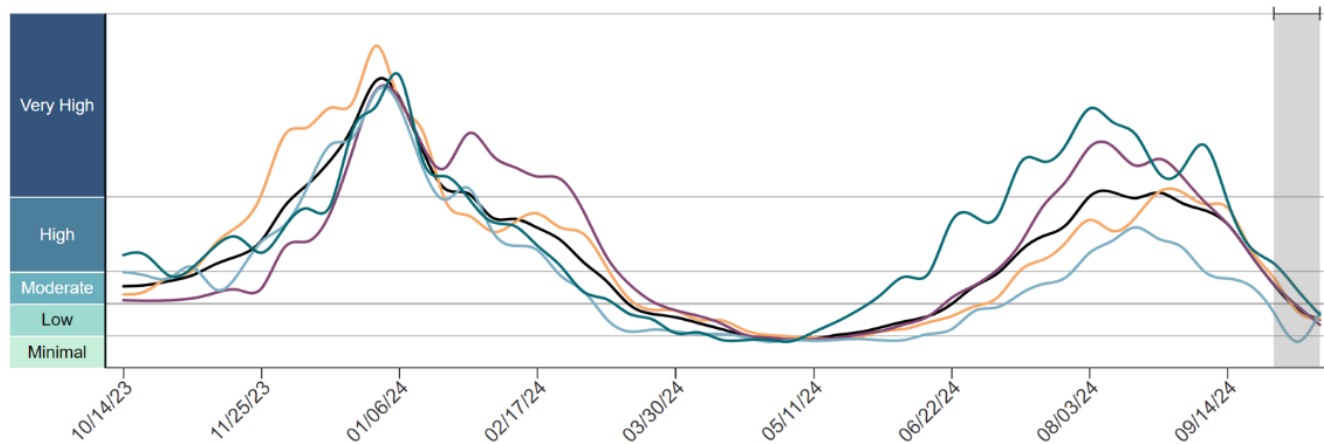
This graph from the CDC shows regional variation in transmission. You can use the “PMC Regional Multiplier” to get a ballpark estimate the proportion of a given region actively infectious with COVID-19 (see Technical Appendix document on the dashboard page). Notice how the Northeast (on average) and many particular regions are presently experiencing a considerable lull in relative terms.

The CDC regional data are available online:

<https://www.cdc.gov/nwss/rv/COVID19-nationaltrend.html>

State-level data are also available: <https://www.cdc.gov/nwss/rv/COVID19-statetrend.html>

CDC Regional Levels with PMC Estimates of the Percentage Actively Infectious



Estimated Percentage Actively Infectious*			
		PMC Model	Raw CDC Data
	National	0.9% (1 in 115)	0.7% (1 in 134)
	Northeast	1.0% (1 in 101)	0.9% (1 in 117)
	Midwest	0.9% (1 in 114)	0.8% (1 in 132)
	South	0.8% (1 in 130)	0.7% (1 in 151)
	West	0.9% (1 in 106)	0.8% (1 in 122)

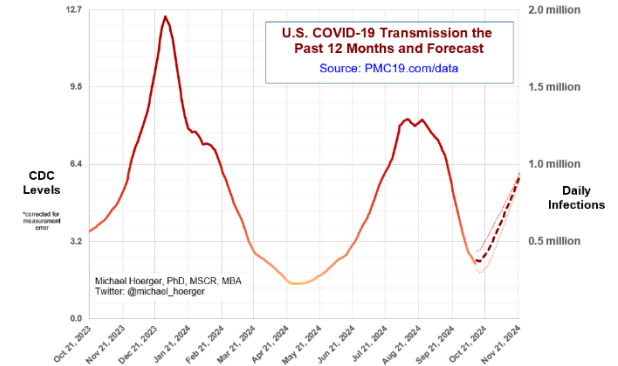
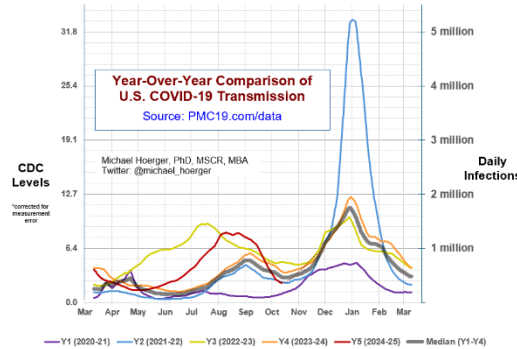
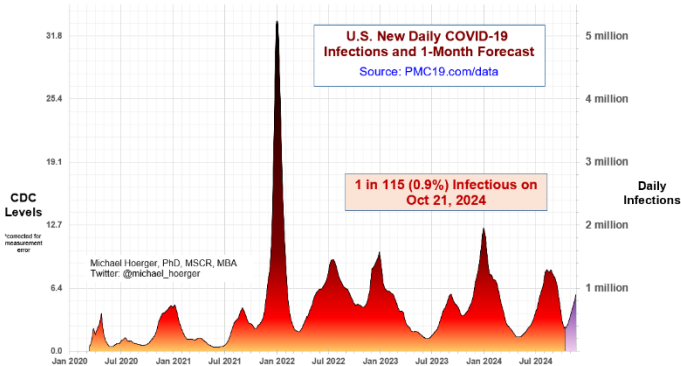
PMC Regional Multiplier*
0.330

* CDC level multiplied by the PMC Regional Multiplier provides an approximate estimate of the percentage actively infectious.

* The "Raw CDC" values are simply the value in the CDC chart multiplied by the PMC Regional Multiplier. The "PMC Model" estimates adjust those data by accounting for reporting time lag.

PMC COVID-19 Dashboard

Here is the complete PMC COVID-19 Dashboard. Please share the images across social media and other websites. Michael Hoerger, PhD, MSCR, MBA | Pandemic Mitigation Collaborative | pmc19.com/data



Current Levels for Oct 21, 2024

% of the Population Infectious	0.9% (1 in 115)
New Daily Infections	414,000
New Weekly Infections	2,898,000
Resulting Weekly Long COVID Cases	145,000 to 580,000

Monthly Forecast

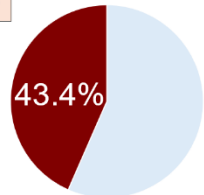
Average % of the Population Infectious	1.3% (1 in 76)
Average New Daily Infections	627,600
New Infections During the Next Month	18,828,000
Resulting Monthly Long COVID Cases	941,000 to 3,766,000

Running Totals

Infections Nationwide in 2024	225,097,000
Average Number of Infections Per Person All-Time, U.S.	3.48

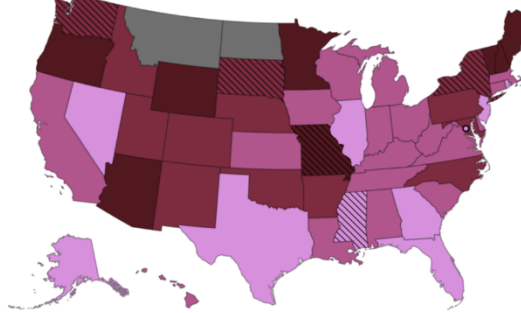
How Does Risk Increase with More Social Contacts?

Number of People	Chances Anyone Is Infectious	Number of People	Chances Anyone Is Infectious
1	0.9%	15	12.2%
2	1.7%	20	16.0%
3	2.6%	25	19.5%
4	3.4%	30	23.0%
5	4.3%	35	26.3%
6	5.1%	40	29.4%
7	5.9%	50	35.3%
8	6.7%	75	47.9%
9	7.5%	100	58.1%
10	8.3%	300	92.5%

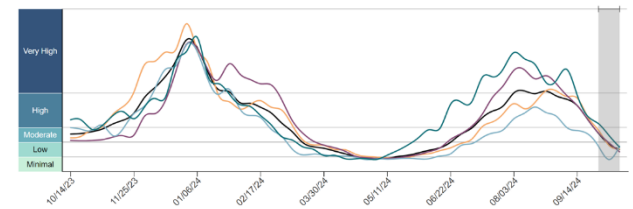


There is more COVID-19 transmission today than during 43.4% of the pandemic.

CDC COVID-19 Heat Map, Higher Transmission Shown with Deeper Red



CDC Regional Levels with PMC Estimates of the Percentage Actively Infectious



Estimated Percentage Actively Infectious*

	PMC Model	Raw CDC Data
National	0.9% (1 in 115)	0.7% (1 in 134)
Northeast	1.0% (1 in 101)	0.9% (1 in 117)
Midwest	0.9% (1 in 114)	0.8% (1 in 132)
South	0.8% (1 in 130)	0.7% (1 in 151)
West	0.9% (1 in 106)	0.8% (1 in 122)

PMC Regional Multiplier*

0.330

* CDC level multiplied by the PMC Regional Multiplier provides an approximate estimate of the percentage actively infectious.

* The "Raw CDC" values are simply the value in the CDC chart multiplied by the PMC Regional Multiplier. The "PMC Model" estimates adjust those data by accounting for reporting time lag.

Announcements

Aug 1

Check out our new empirical article in JAMA-NO framing masking in healthcare as a healthcare quality indicator.

Article: <https://jamanetwork.com/journals/jamanetworkopen/article-abstract/2821699>

Summary: <https://www.msn.com/en-gb/health/other/masking-policies-prevalent-in-top-cancer-centers-amid-winter-covid-wave/ar-BB1qZWnr>

Twitter Spaces Conversation: <https://x.com/i/spaces/1OdKrXllryAJX>

*If new to Twitter, it is not terribly challenging to create an account. Do so, and check in once a month or so.

You may find it more useful than realized. I did.

PPT for the Space: <https://pmc19.com/jama.pdf>

Aug 15

The dashboard and a related pilot project were featured on CBS, NBC, and FOX:

<https://www.wvltv.com/article/news/health/new-orleans-free-home-air-filters-for-cancer-patients-covid-cases-special-kit-safe/289-5d873151-7069-478a-ab03-2260cd08c22a>

Sep 17

Dr. Hoerger joined Dr. Moriarty and COVID-19 Resources Canada. We will post a link when the archived video is available. We received an update that the archived version is in progress.

A separate document called a Technical Appendix appears on the dashboard page and has more methodologic info.