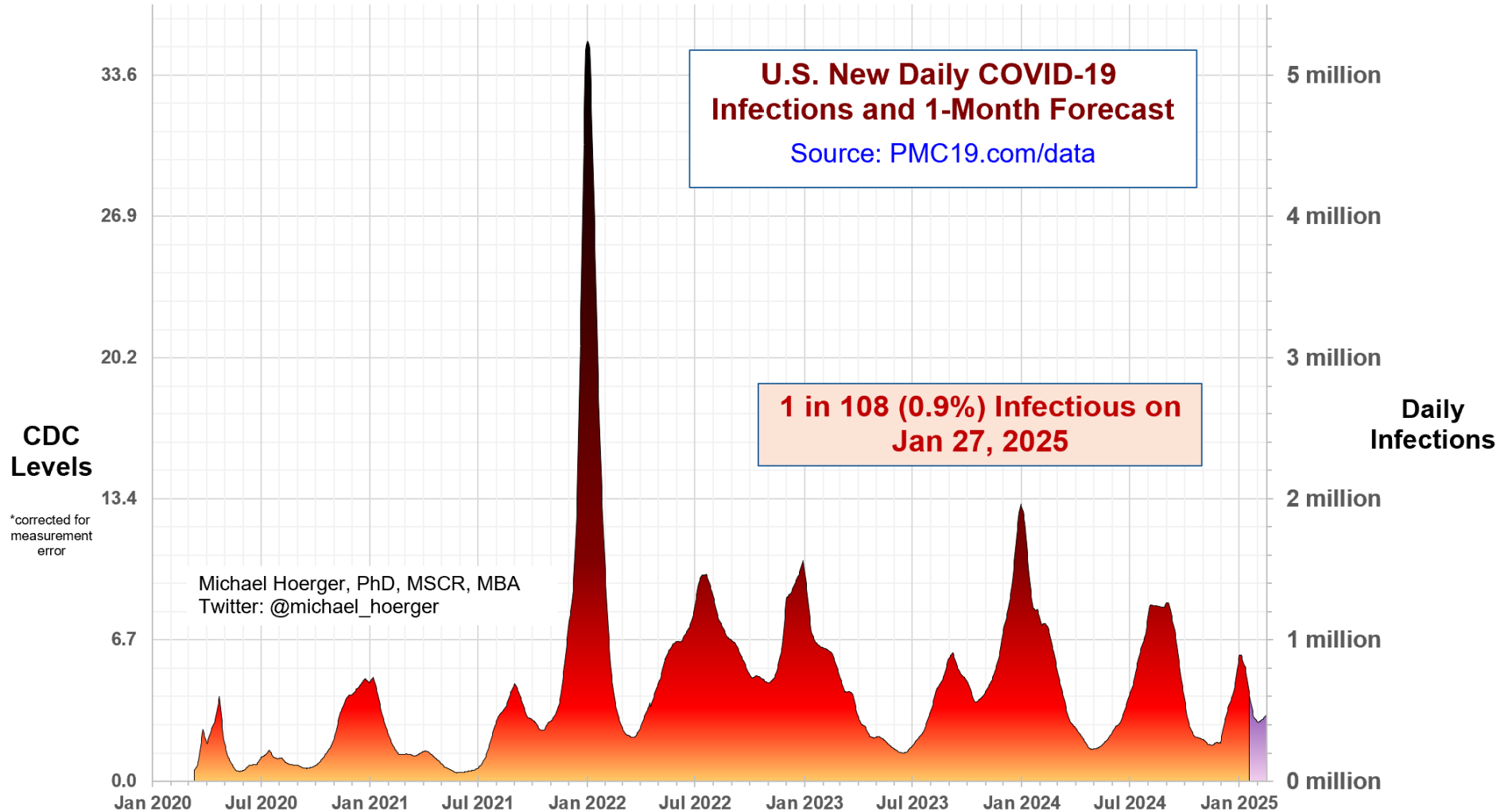


PMC U.S. COVID-19 Case Estimation and Forecasting Model: Report for January 27, 2025, pmc19.com/data

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



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Announcements

Data Quality Note: Data quality is rather low this week. Biobot has not reported data for 2025 yet (20% model weight). The CDC (80% model weight) reported data Friday, presumably through an automated process, and appears approximately two days more outdated than usual. That time frame is consistent with the ban on external communication. We have prorated their dip in transmission, but there is more uncertainty in the representativeness of reported values. We have an interim model ready to substitute the usual model next week if the CDC and Biobot do not report, which is a likely scenario. Thus, the PMC Dashboard will maintain continuity.

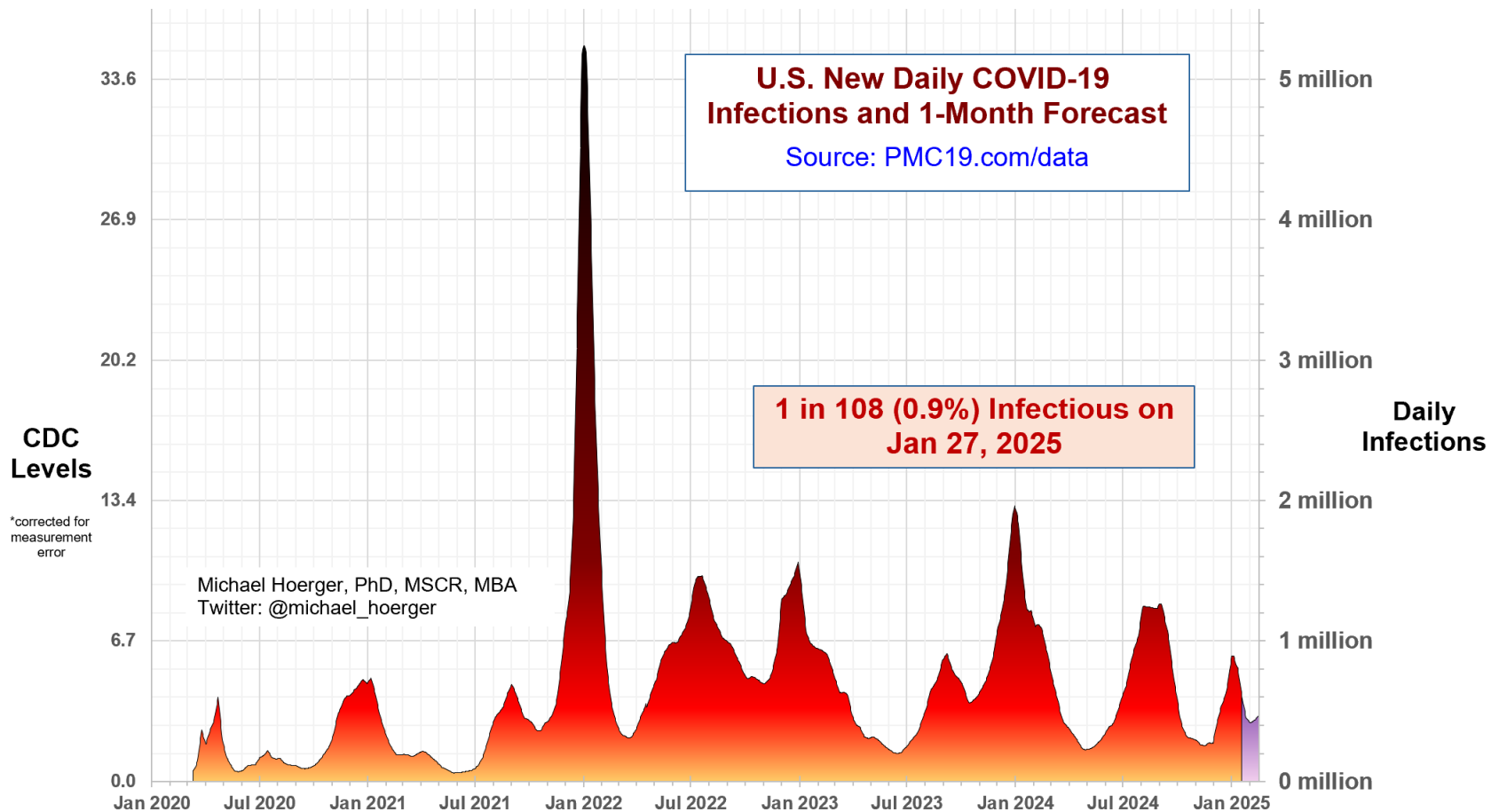
Recent News Coverage:

- CNN: <https://www.cnn.com/2024/12/31/health/covid-holiday-surge-us/index.html>
- The Atlantic: <https://www.theatlantic.com/health/archive/2024/12/covid-christmas-winter-wave/681133/>
- TODAY: <https://www.today.com/health/coronavirus/us-silent-covid-surge-holidays-2024-rcna184828>
- USA Today: <https://www.usatoday.com/story/news/health/2024/12/24/covid-winter-2024-cdc-data/77199841007/>

The Big-Picture View of the Pandemic

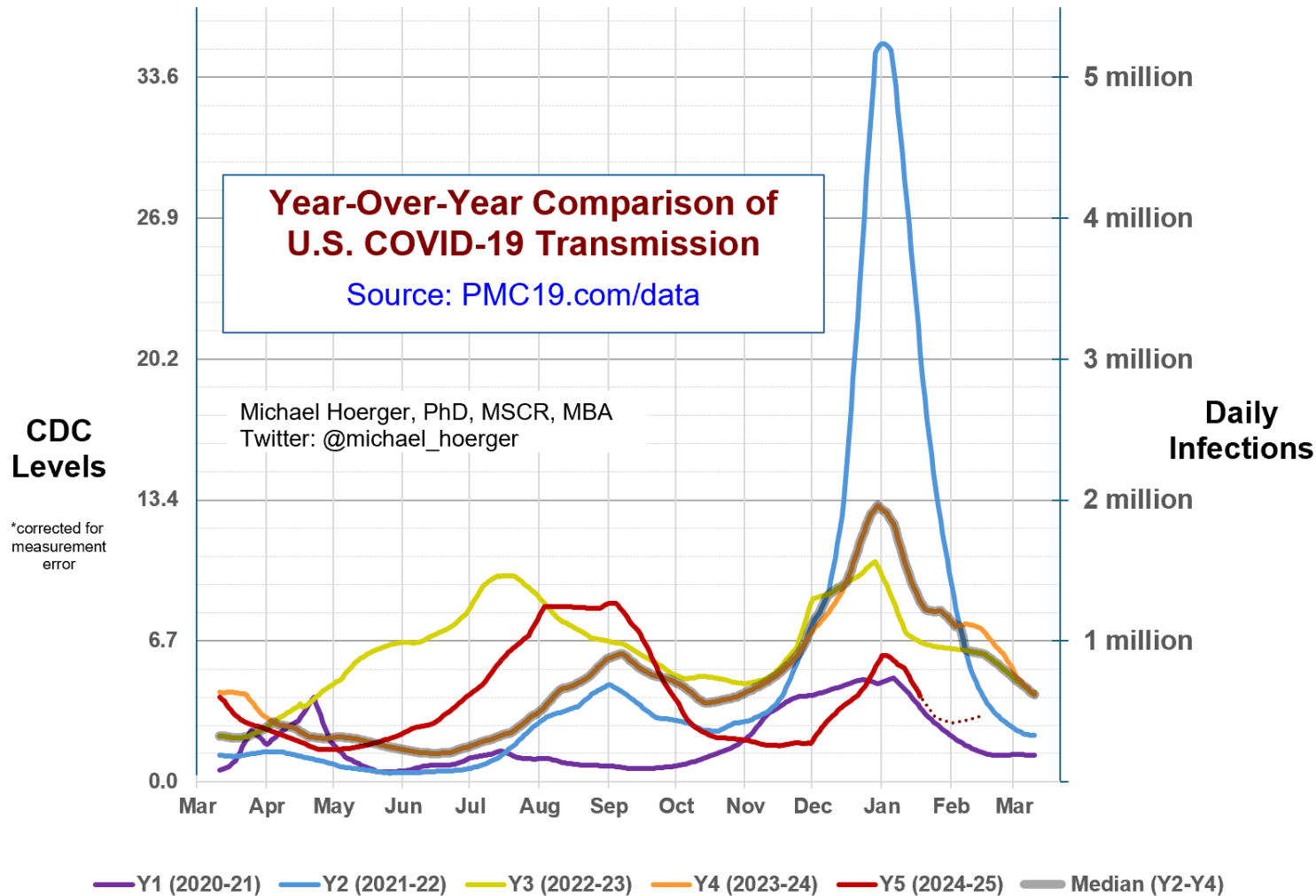
We have passed the peak of the 10th wave in much of the U.S. It is common for 50-60% of transmission to occur on the back end of the wave, so there remains a need for caution over the weeks ahead. Unfortunately, data quality is at an all-time low, so take these estimates with a grain of salt. The most recent CDC data through Jan 18 suggest 1 in 81 were actively infectious, and carrying forward, we estimate 1 in 108 today, with a wave peak of 0.9-1.0 million daily infections. The WHN model shows a similar pattern, albeit with a peak of 1.3 million.

<https://whn.global/estimation-of-infections-based-on-wastewater-data-us/>



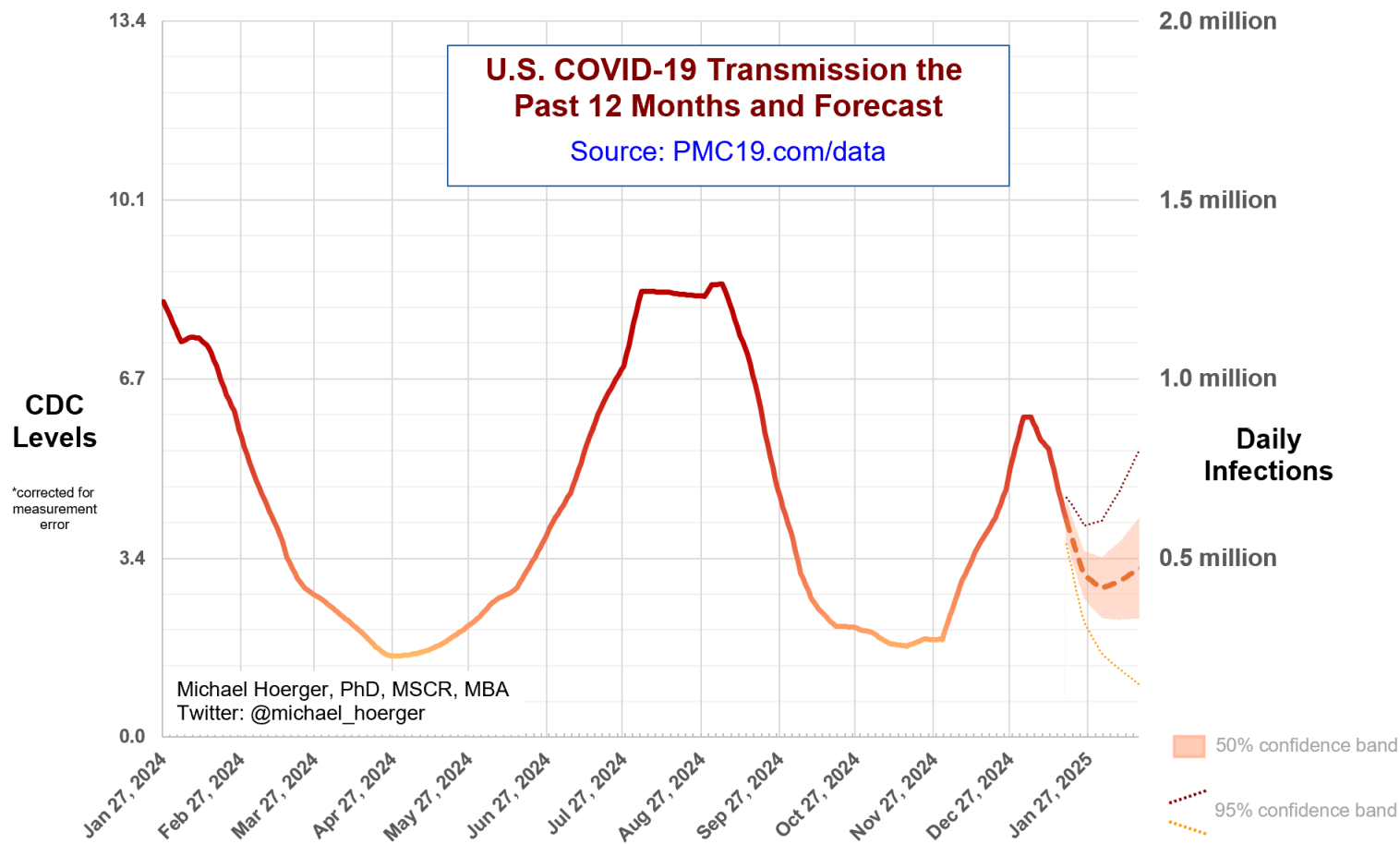
Year-Over-Year Comparisons

The year-over-year graph shows how the current winter wave departs from the pattern of prior years. See the late onset, yet the presumed peak occurring very near the “usual” time point.



Close-up on the Current Forecast

This graph shows the current forecast. Note that values for “today” are a forecast from data 9-12 days old. The average (dashed line) reflects all possible scenarios. The more likely scenario is closer to the bottom of the 50% confidence interval, but the model is accounting for the possibility of significant post-peak transmission, much like the plateaus in prior years. Keep a close eye on the data the next two months, as there are significant departures across credible forecasting models (extended lull vs. April wave).



Supplemental Statistics

These supplemental statistics may prove useful in conversations about transmission and mitigation. These are not “safe” circumstances but much better than 2-3 weeks ago nationally. That is much less risk for people to deal with in medical appointments. However, the back of the wave remains risky. Even with aggressive predictions on decline, this would amount to 14 million infections the next month. In a class of 30 people, there is still a 1-in-4 chance of exposure if average risk and no firm testing/isolation policies.

Current Levels for Jan 27, 2025	
% of the Population Infectious	0.9% (1 in 108)
New Daily Infections	443,000
New Weekly Infections	3,101,000
Resulting Weekly Long COVID Cases	155,000 to 620,000

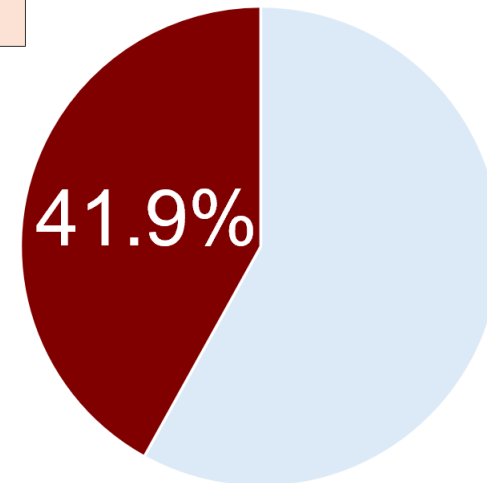
Monthly Forecast	
Average % of the Population Infectious	0.9% (1 in 106)
Average New Daily Infections	452,933
New Infections During the Next Month	13,588,000
Resulting Monthly Long COVID Cases	679,000 to 2,718,000

Running Totals	
Infections Nationwide in 2025	18,779,000
Average Number of Infections Per Person All-Time, U.S.	3.60

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	13.0%
2	1.8%	20	17.0%
3	2.8%	25	20.8%
4	3.7%	30	24.4%
5	4.5%	35	27.8%
6	5.4%	40	31.1%
7	6.3%	50	37.2%
8	7.2%	75	50.3%
9	8.0%	100	60.6%
10	8.9%	300	93.9%

Assumes no testing/isolation protocols (U.S. only)
 pmc19.com/data

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 Twitter: @michael_hoerger

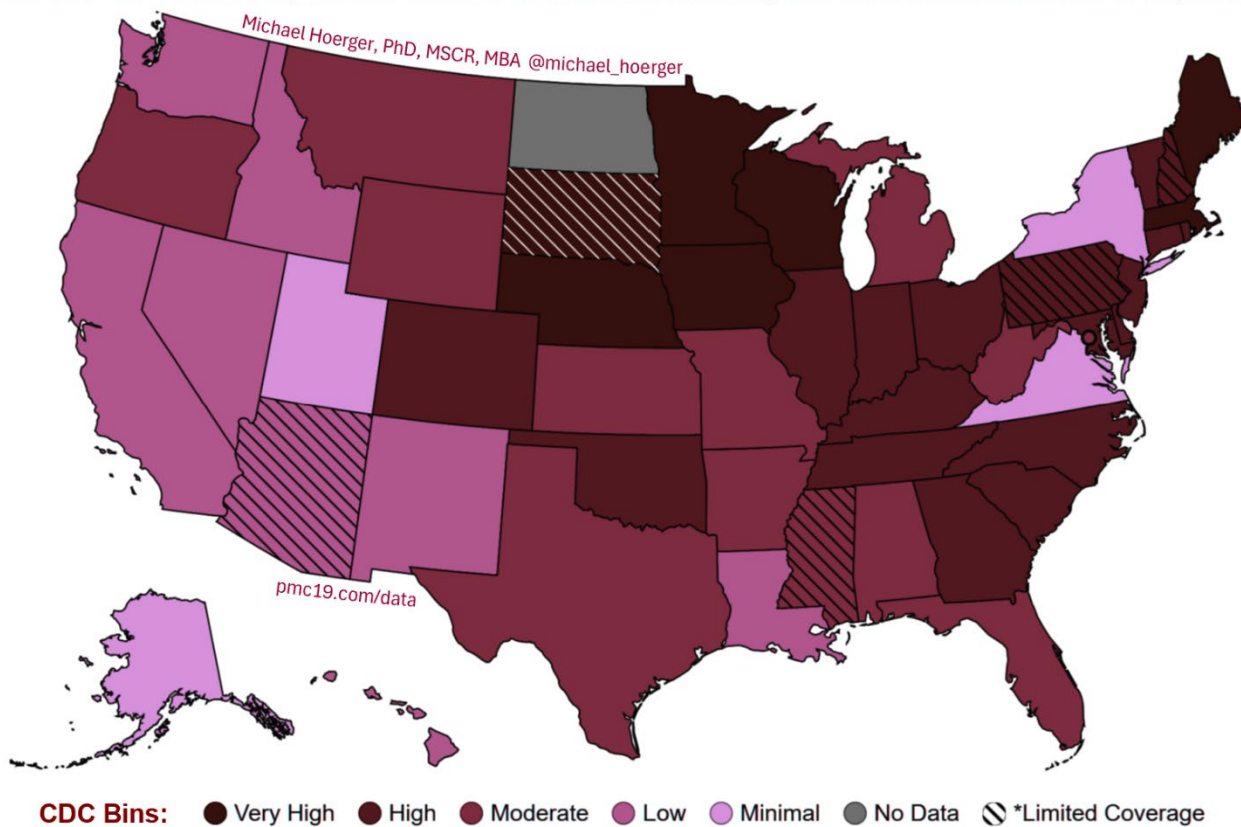


There is more COVID-19 transmission today than during 41.9% of the pandemic.

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 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>

COVID-19 Heat Map, CDC Data & Risk Levels, Higher Transmission in Deeper Red



Regional Case Estimation

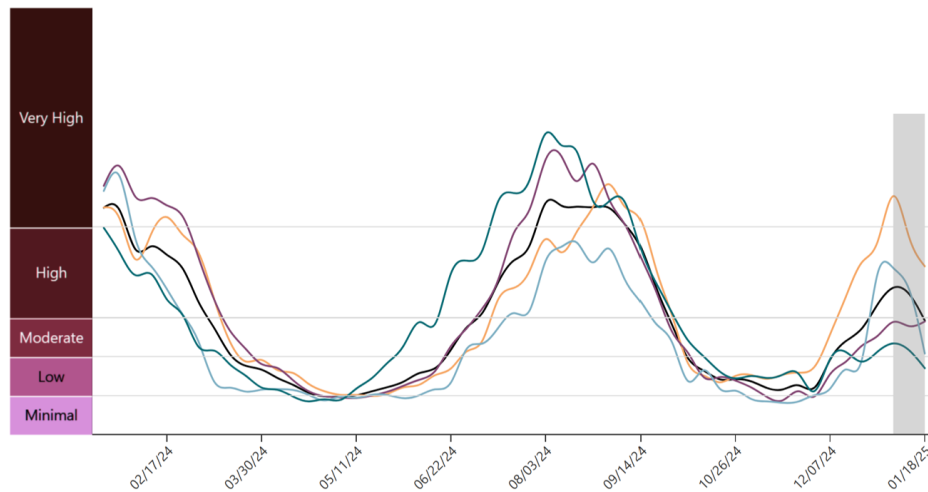
This graph from the CDC shows regional variation in transmission. You can use the “PMC Regional Multiplier” to get a ballpark estimate the proportion of a given region actively infectious with COVID-19 (see Technical Appendix document on the dashboard page). Note the persistent transmission in the South.






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 108)	1.2% (1 in 81)
	Northeast	0.7% (1 in 137)	1.0% (1 in 103)
	Midwest	1.5% (1 in 66)	2.0% (1 in 50)
	South	1.0% (1 in 99)	1.4% (1 in 74)
	West	0.6% (1 in 168)	0.8% (1 in 126)

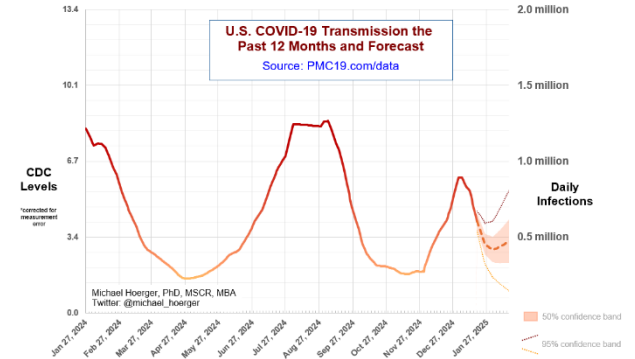
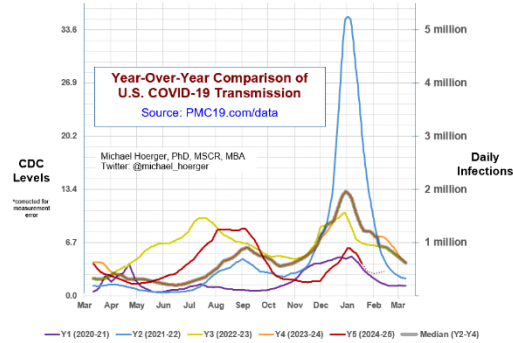
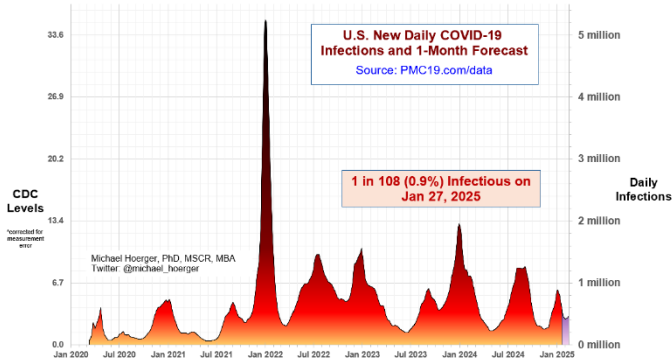
PMC Regional Multiplier*
0.311

* 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 Jan 27, 2025

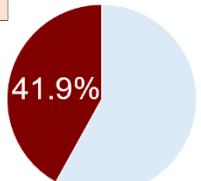
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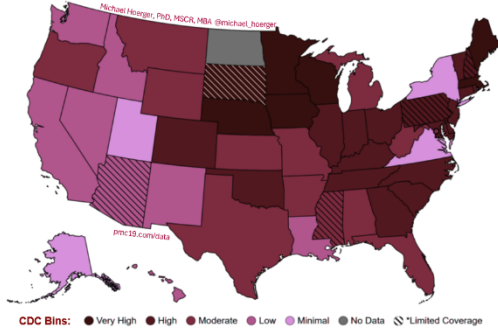
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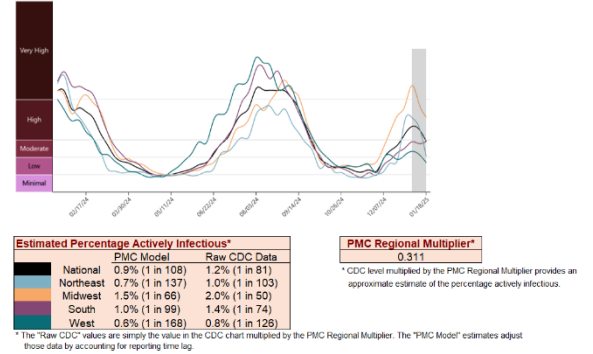
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A separate document called a Technical Appendix appears on the dashboard page and has more methodologic info.