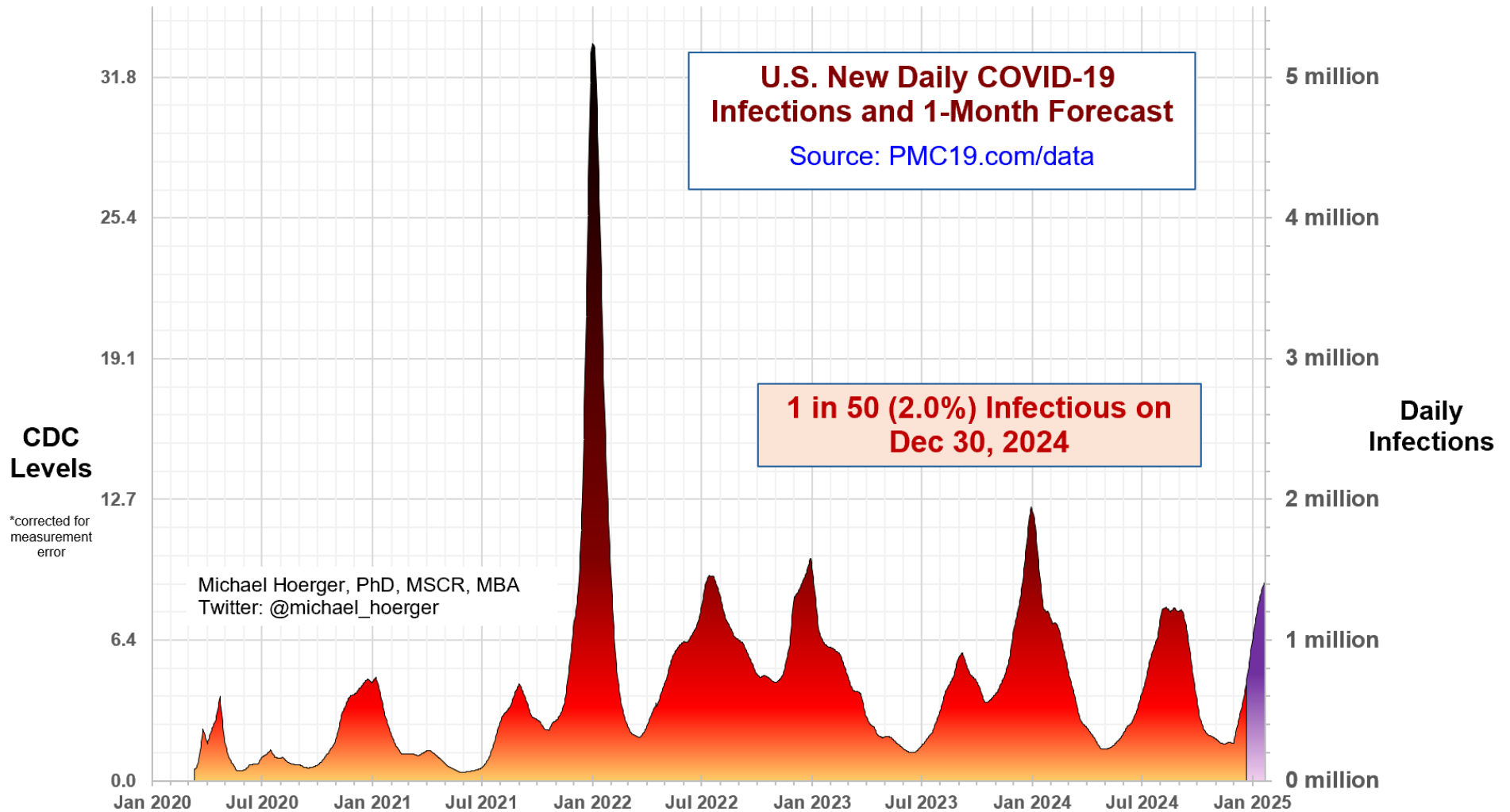


PMC U.S. COVID-19 Case Estimation and Forecasting Model: Report for December 30, 2024, pmc19.com/data

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



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Announcements

PMC Dashboard Survey: Please complete our quick survey about how you use this dashboard. The results will be used in a grant application documenting our public health impact and will hopefully help get additional funding for Covid mitigation supplies for patients with cancer. We would be pleased to share the results with other organizations interested in making the case that people continue to take Covid seriously and that more funds are needed for outreach and supportive activities. Findings will ultimately be published and document the high-level precautions many continue to use.

Survey Link: https://tulane.co1.qualtrics.com/jfe/form/SV_0okopCSxA26Mgxo

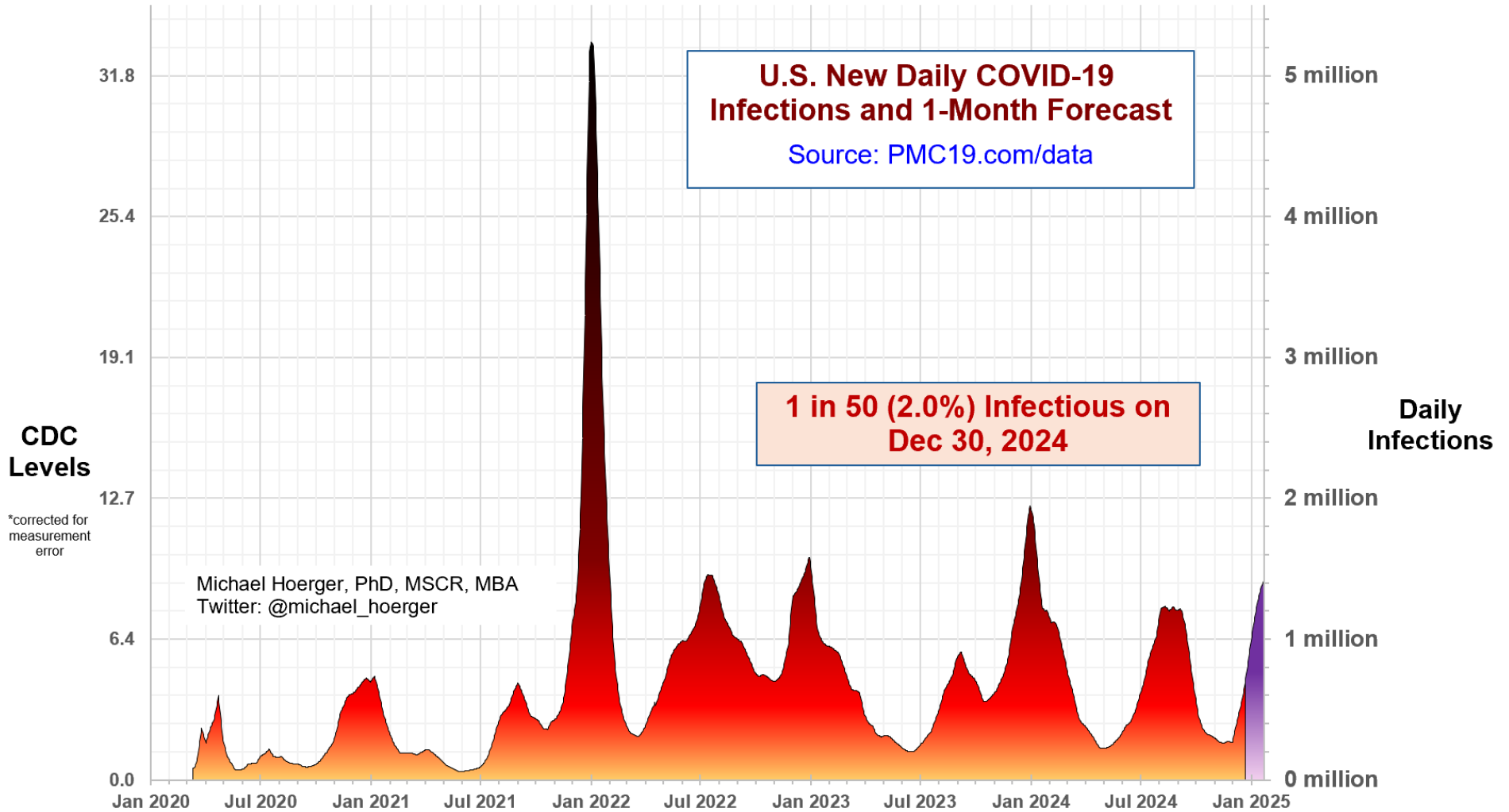
Letters of Support: We are aiming to expand our COVI-CAN program, which provides Covid Defense Kits (educational booklets, tests, masks, air purifiers) to patients with cancer and are seeking organizational letters in support of continued funding. Please reach out to Dr. Hoerger (mhoerger@tulane.edu) if potentially interested in helping, and we will make the process as easy as possible. Thank you.

Project Link: <https://covican.com/>



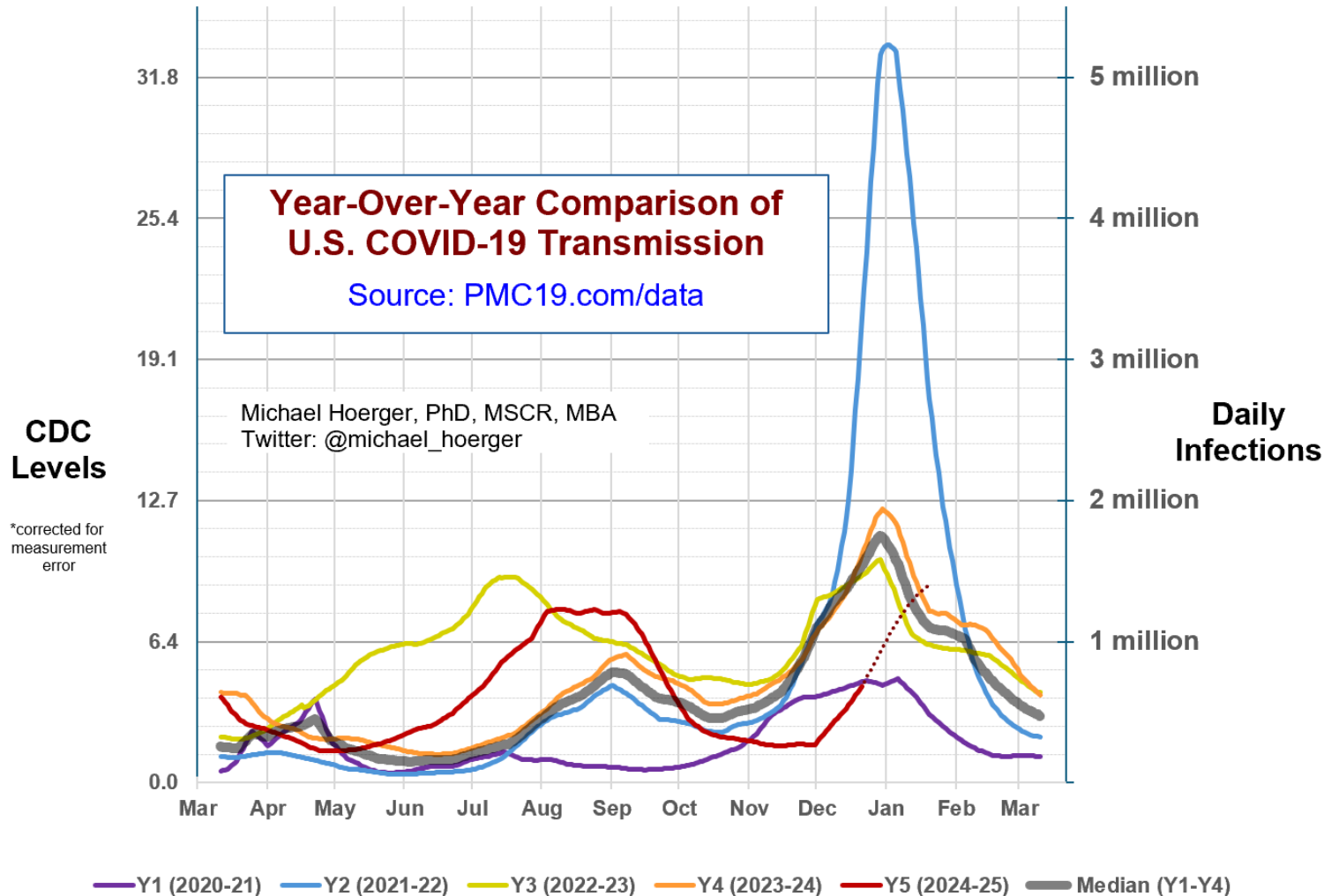
The Big-Picture View of the Pandemic

Many will be caught off guard by Covid infections this winter. Approximately 2.0% of the population is actively infectious with Covid. We have had large increases in transmission for each of the last 3 week's reports from the CDC and Biobot. The wave began much later than "typical" this year, leading many to a false sense of security.



Year-Over-Year Comparisons

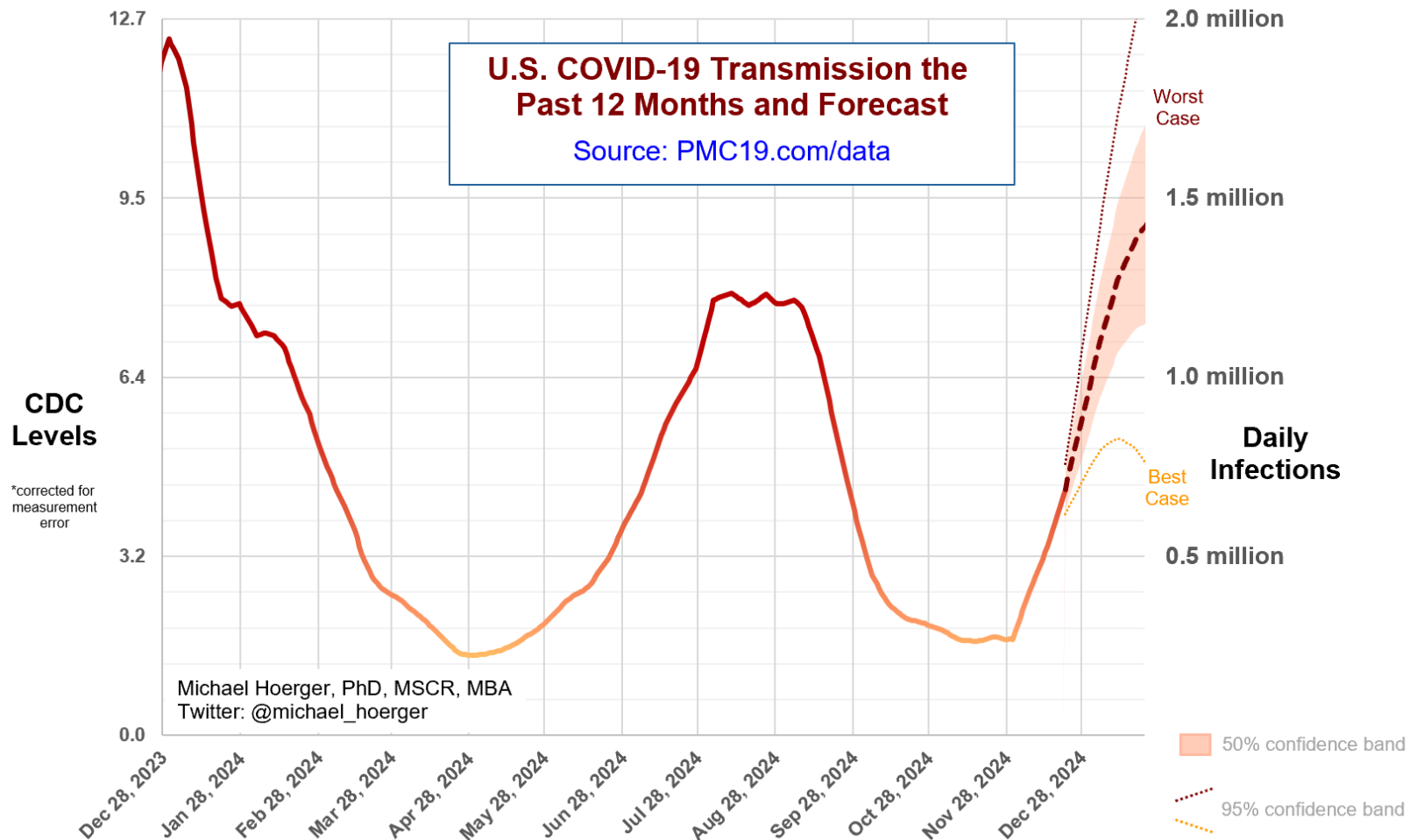
The year-over-year graph shows how the current winter wave departs from the pattern of prior years, with a high, flat, long summer wave, a steep post-summer-wave decline, an extended “lull,” and a later winter wave than usual. We are currently near the Year 1 peak and expect transmission to continue to rise. Note that the estimates for “today” (Dec 30) are a 9-10 day forecast from the most recent data, so there is considerable uncertainty.



Close-up on the Current Forecast

This graph shows the best- and worst- case anticipated scenarios. At this point, a key question is whether the winter wave will have a higher or lower peak than the summer wave. The point estimate for the peak is about 1.4 million daily infections, just higher than the summer. However, values of 1.1-1.6 million are highly plausible. In the best-case scenario, the most recent wastewater data would get retroactively corrected downward, transmission would flatten, and the peak would be about 850,000, slightly lower than the current estimate of today. A worst-case scenario with retroactive upward adjustments, LP.8.1. taking off, and the west coast increasing more rapidly than expected would

place the potential peak closer to 2 million daily infections, like last winter. Likely, this is a medium-sized wave, currently looking like the 5th highest of 10, but there is still much uncertainty.



Supplemental Statistics

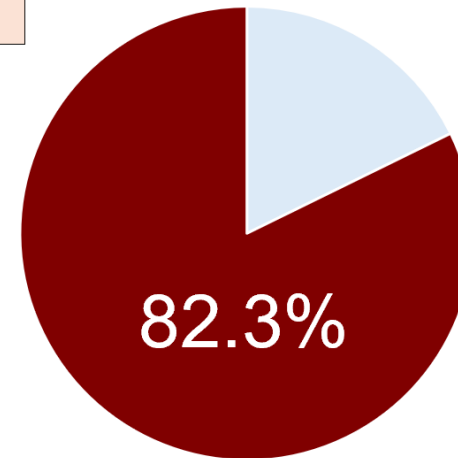
These supplemental statistics may prove useful in conversations about transmission and mitigation. The numbers have gotten substantially worse relative to last week. We see that 1 in 50 are actively infectious, or 2% of the population. In a classroom of 35 people, it should be assumed that someone (about a 50% chance) has infectious COVID. On a flight of 100-300 people, that's a 86-99% chance someone is infectious. Transmission is higher than 82% of the pandemic and lower than 18% of the pandemic. We may see 38 million infections over the next month, if the middle estimate of the model holds.

Current Levels for Dec 30, 2024	
% of the Population Infectious	2.0% (1 in 50)
New Daily Infections	954,000
New Weekly Infections	6,678,000
Resulting Weekly Long COVID Cases	334,000 to 1,336,000

Monthly Forecast	
Average % of the Population Infectious	2.7% (1 in 37)
Average New Daily Infections	1,275,767
New Infections During the Next Month	38,273,000
Resulting Monthly Long COVID Cases	1,914,000 to 7,655,000

Running Totals	
Infections Nationwide in 2024	252,028,000
Average Number of Infections Per Person All-Time, U.S.	3.53

How Does Risk Increase with More Social Contacts?			
Number of People	Chances Anyone Is Infectious	Number of People	Chances Anyone Is Infectious
1	2.0%	15	26.1%
2	4.0%	20	33.2%
3	5.9%	25	39.6%
4	7.7%	30	45.4%
5	9.6%	35	50.6%
6	11.4%	40	55.4%
7	13.2%	50	63.5%
8	14.9%	75	78.0%
9	16.6%	100	86.7%
10	18.3%	300	99.8%



There is more COVID-19 transmission today than during 82.3% of the pandemic.

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

Michael Hoerger, PhD, MSCR, MBA
 Twitter: @michael_hoerger

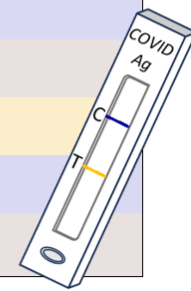
Holiday Estimates

This chart merely carries forward the values from the previous page by an extra day so that it can be readily shared for New Year's Eve gatherings.

PMC New Year's Eve Forecast - Dec 31, 2024

How Does Risk Increase with More Social Contacts?

Number of People	Chances Anyone Is Infectious	Number of People	Chances Anyone Is Infectious
1	2.1%	15	26.8%
2	4.1%	20	34.0%
3	6.1%	25	40.6%
4	8.0%	30	46.4%
5	9.9%	35	51.7%
6	11.7%	40	56.5%
7	13.6%	50	64.7%
8	15.3%	75	79.0%
9	17.1%	100	87.5%
10	18.8%	300	99.8%



Assumes no testing/isolation protocols, forecasted 12/20/24 (U.S.)
pmc19.com/data

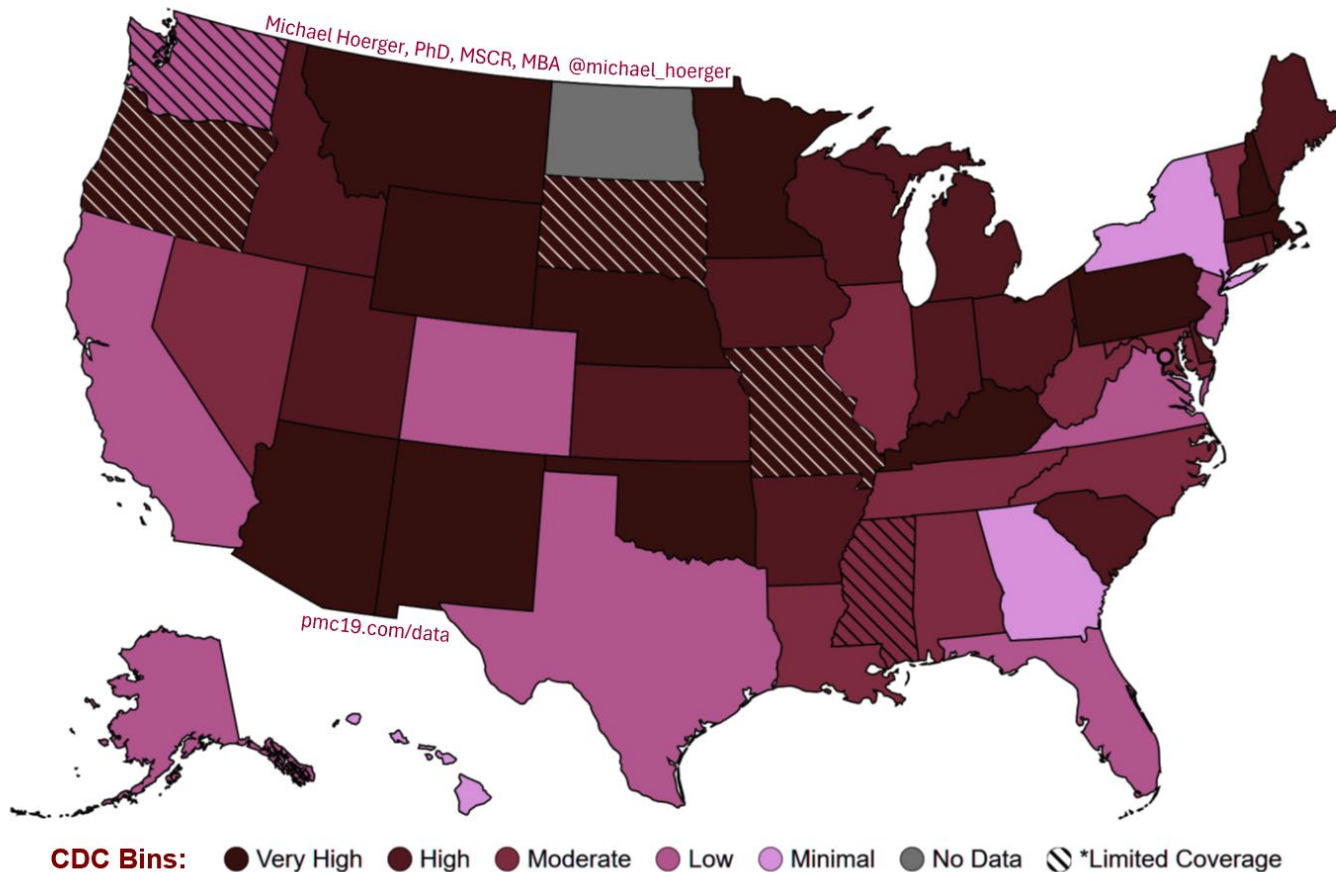
Michael Hoerger, PhD, MSCR, MBA
 Twitter: @michael_hoerger

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>

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



Regional Case Estimation

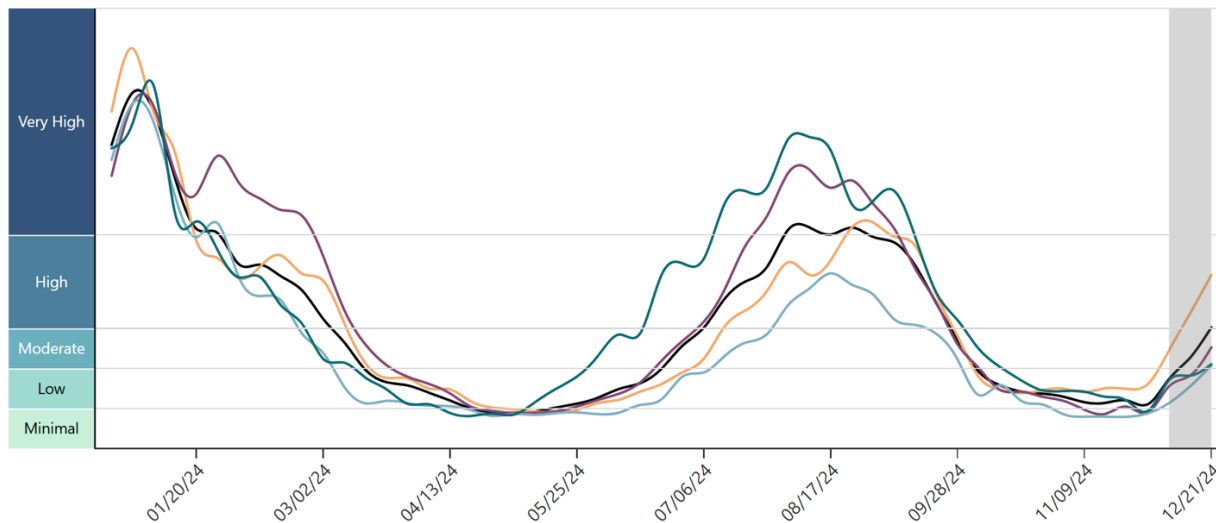
This graph from the CDC shows regional variation in transmission. You can use the “PMC Regional Multiplier” to get a ballpark estimate the proportion of a given region actively infectious with COVID-19 (see Technical Appendix document on the dashboard page).

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 2.0% (1 in 50)	1.5% (1 in 67)
	Northeast 1.4% (1 in 73)	1.0% (1 in 98)
	Midwest 2.9% (1 in 35)	2.1% (1 in 47)
	South 1.7% (1 in 60)	1.2% (1 in 80)
	West 1.4% (1 in 72)	1.0% (1 in 96)

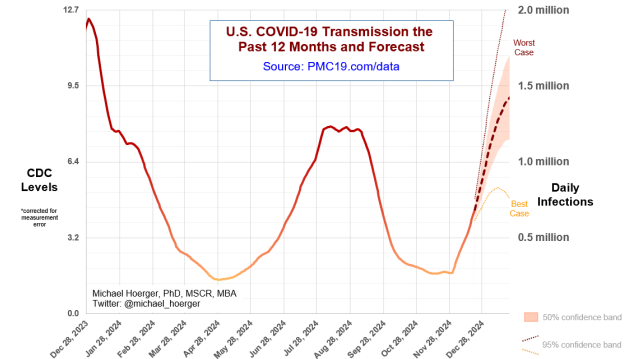
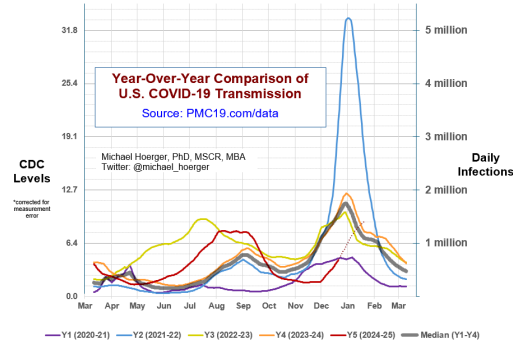
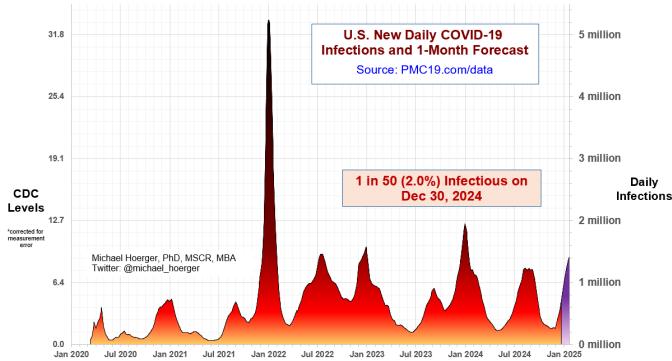
PMC Regional Multiplier*
0.329

* 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 Dec 30, 2024

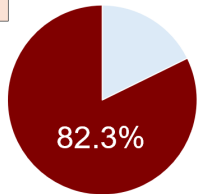
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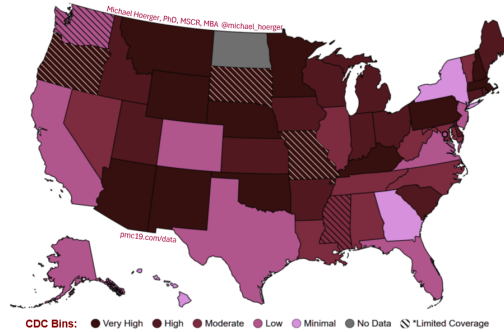
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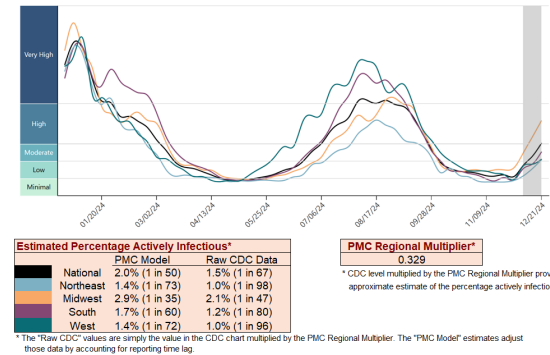
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COVID-19 Heat Map, CDC Data & Risk Levels, Higher Transmission in Deeper Red



CDC Regional Levels with PMC Estimates of the Percentage Actively Infectious



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.

Coming Soon

Dr. Hoerger joins as a guest on the new podcast, Public Health Is Dead. No financial COIs. Catch the trailer online:

<https://podcasts.apple.com/az/podcast/public-health-is-dead/id1775839058>

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