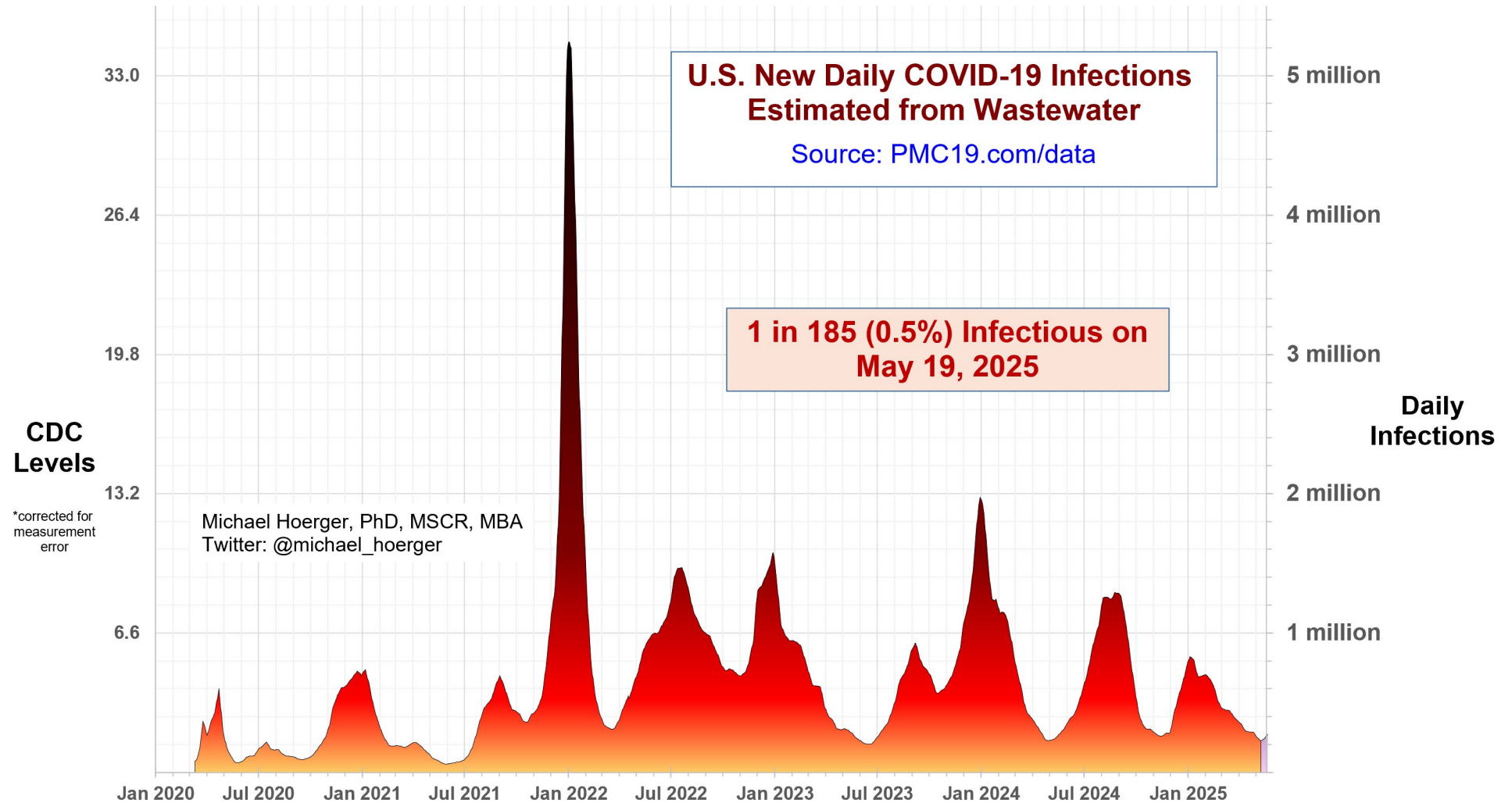


PMC U.S. COVID-19 Case Estimation and Forecasting Model: Report for May 19, 2025, pmc19.com/data

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



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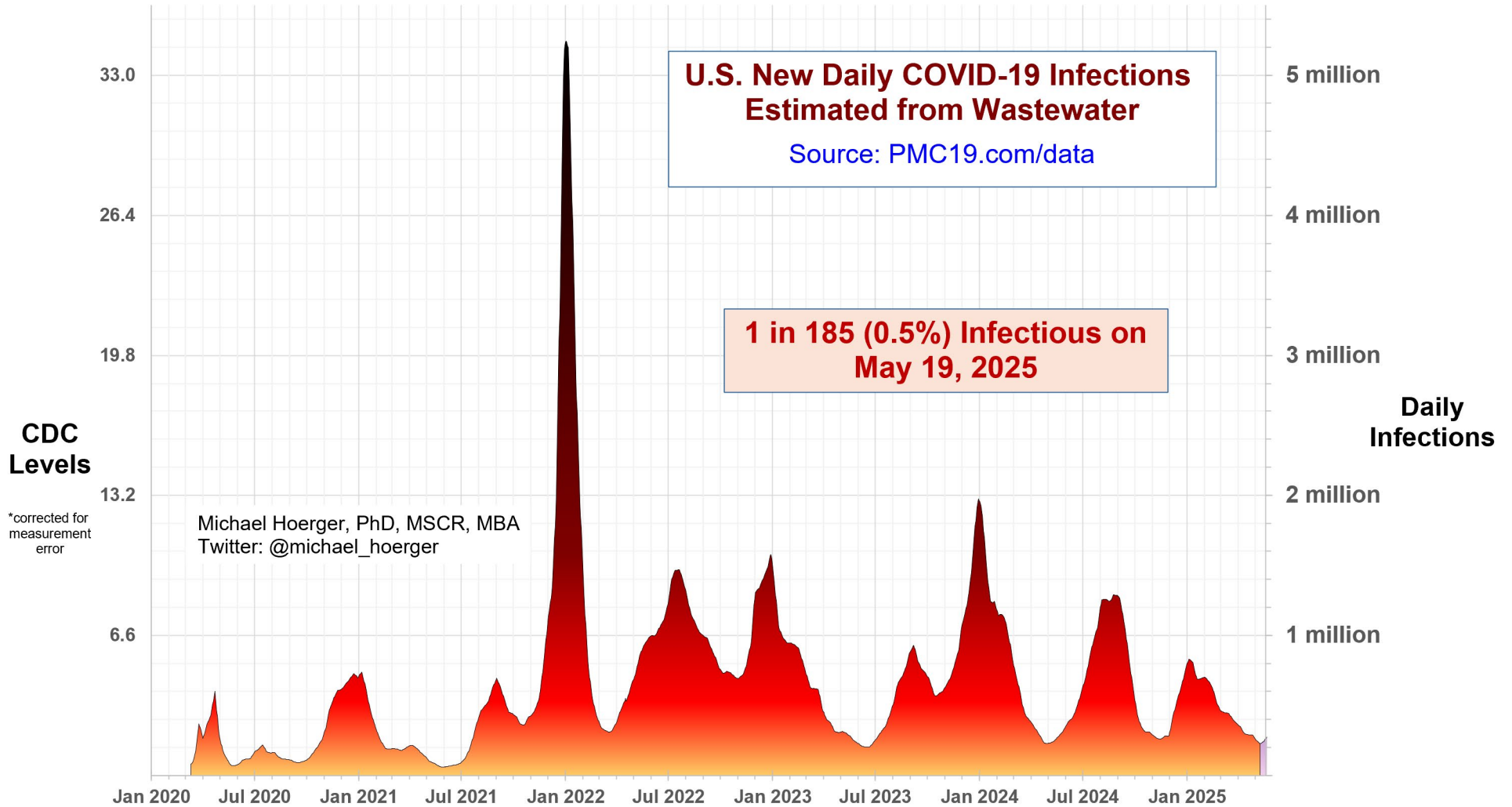
Announcements

Data Quality Note: The CDC (80% model weight) and Biobot (20% model weight) both reported this week. Data quality is moderate. The CDC data are running a bit “hotter” than Biobot at the moment; specifically, CDC sites are showing about 60% higher estimated transmission than the Biobot sites.

Technical Appendix: As a minor update, the formula for the forecasting model has been updated marginally. We will roll out several minor updates over the coming months, as the existence of 10 waves and the past 2 irregular waves provide rich data for model improvements.

The Big-Picture View of the Pandemic

We are in a “lull” between Covid waves. Presently, an estimated 0.5% (1 in 185 people) are actively infectious. The national average for transmission may not get much lower for some time. Unless we head toward an atypically low lull, transmission will percolate and tick up before long.



Statistical Summary

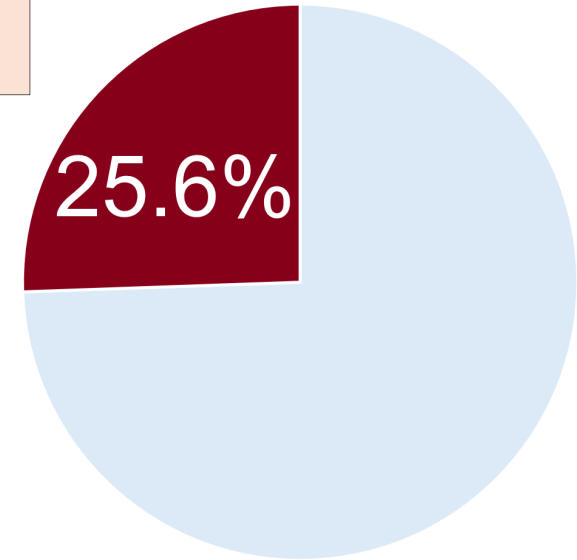
Presently, we are seeing an estimated nearly 1.6 million weekly infections, likely to result in 80-325k Long COVID cases, and 600-1,000 excess deaths in the U.S. In a room of 50 people of average risk, there would be a 1 in 5 chance of exposure. Transmission rarely gets this low (<22% of all days of the pandemic), mostly in the first 1.5 years the onset of COVID-19 when universal precautions were the norm.

| Current Levels for May 19, 2025 | |
|--|-------------------|
| % of the Population Infectious | 0.5% (1 in 185) |
| New Daily Infections | 259,000 |
| New Weekly Infections | 1,813,000 |
| Resulting Weekly Long COVID Cases | 91,000 to 363,000 |
| Resulting Weekly Excess Deaths | 600 to 1,100 |

| Monthly Forecast | |
|---|----------------------|
| Average % of the Population Infectious | 0.8% (1 in 129) |
| Average New Daily Infections | 371,567 |
| New Infections During the Next Month | 11,147,000 |
| Resulting Monthly Long COVID Cases | 557,000 to 2,229,000 |
| Resulting Monthly Excess Deaths | 4,000 to 6,600 |

| Running Totals | |
|---|------------|
| Infections Nationwide in 2025 | 66,986,000 |
| Average Number of Infections Per Person All-Time, U.S. | 3.75 |

| How Does Risk Increase with More Social Contacts? | | | |
|---|------------------------------|------------------|------------------------------|
| Number of People | Chances Anyone Is Infectious | Number of People | Chances Anyone Is Infectious |
| 1 | 0.5% | 15 | 7.8% |
| 2 | 1.1% | 20 | 10.3% |
| 3 | 1.6% | 25 | 12.7% |
| 4 | 2.2% | 30 | 15.0% |
| 5 | 2.7% | 35 | 17.3% |
| 6 | 3.2% | 40 | 19.5% |
| 7 | 3.7% | 50 | 23.8% |
| 8 | 4.3% | 75 | 33.5% |
| 9 | 4.8% | 100 | 41.9% |
| 10 | 5.3% | 300 | 80.4% |



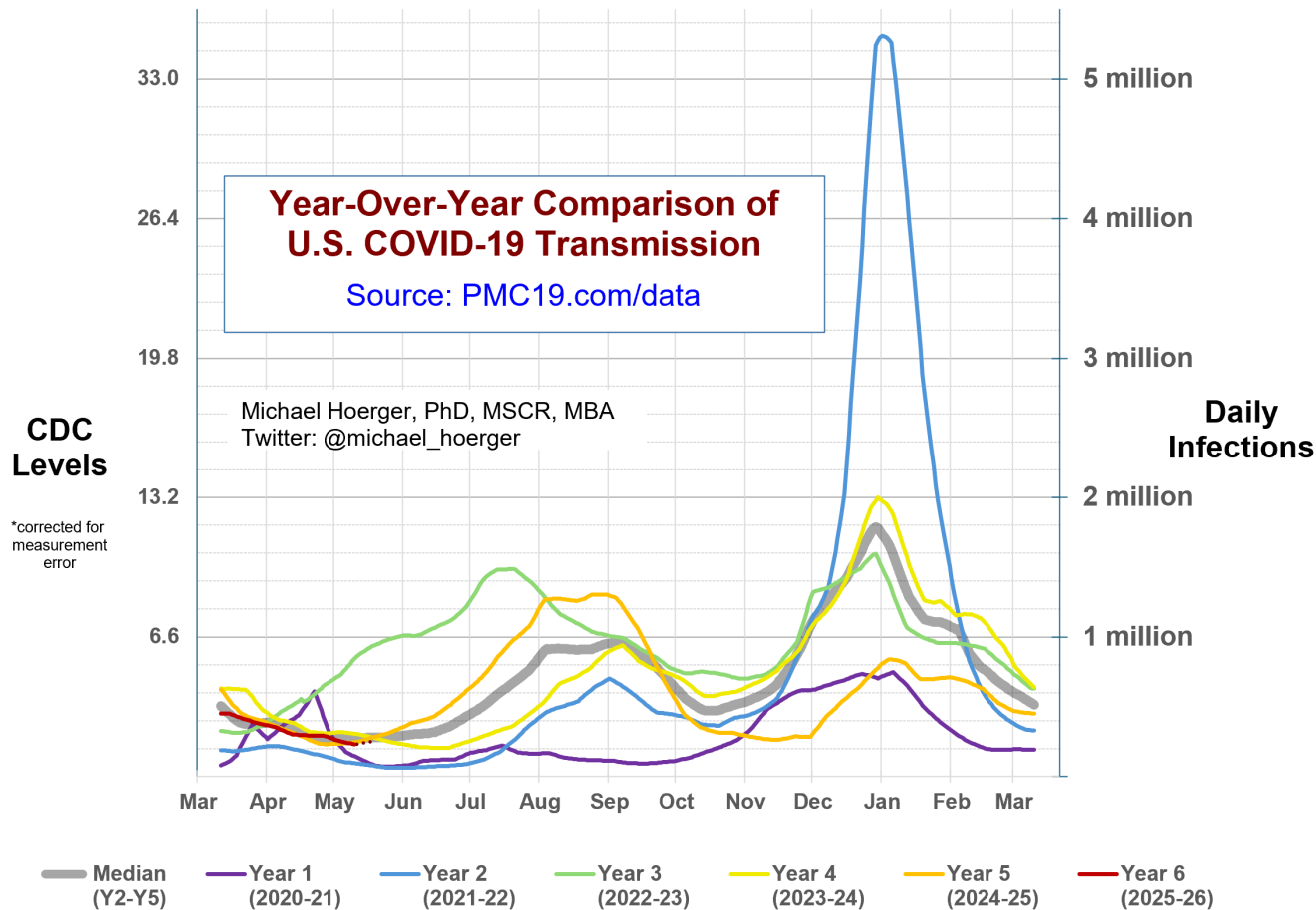
There is more COVID-19 transmission today than during 25.6% of the pandemic.

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

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

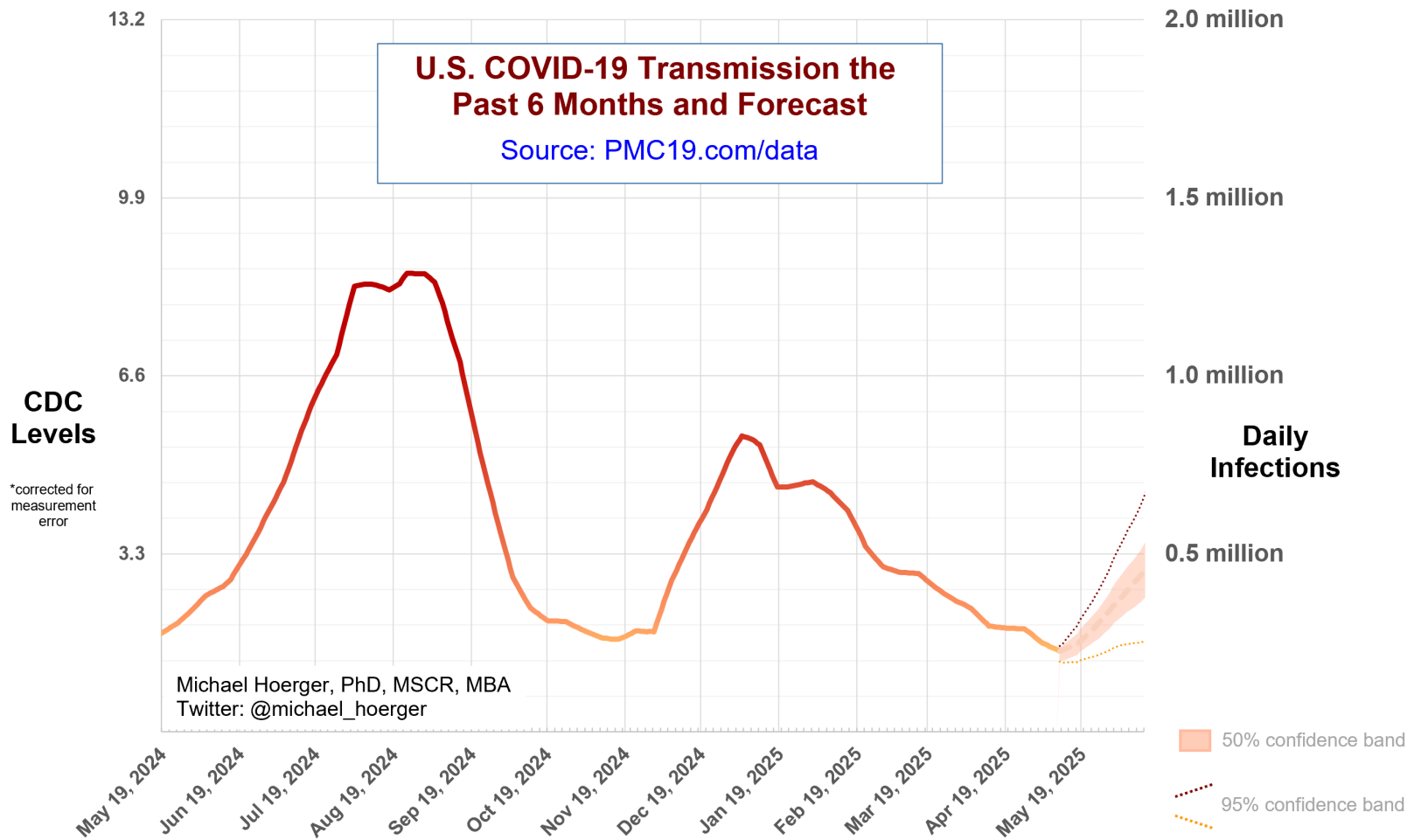
Year-Over-Year Comparisons

The year-over-year graph shows current transmission along the red line in the lower left corner. The model is tracking closely with the median, and as more data come in, we will see whether we are headed more toward a pattern like Year 4 (yellow line, later peak) or Year 5 (orange line, earlier peak). Note that the dotted portion of the red line projects forward the CDC and Biobot data that are 9-12 days outdated, suggesting that by the time they provide real-time data for today, it will be just past the lull point. This may shift through retroactive corrections in their underlying data but suggests we are near the lull 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 current forecast is for steady transmission of 200-450k daily infections the next several weeks. We have updated our model, which has had the benefit of reducing the size of the 4-week 95% confidence interval by about 40% for more precision under typical circumstances. More updates will be released in the coming months. In a more optimistic scenario, we will bounce around near the lull for another 4 weeks. More likely, we will start to see transmission picking up shortly. If our model is on point, expect to see the increase reflected in the next week’s (or following week’s) report from the CDC and Biobot, given their standard data lags.



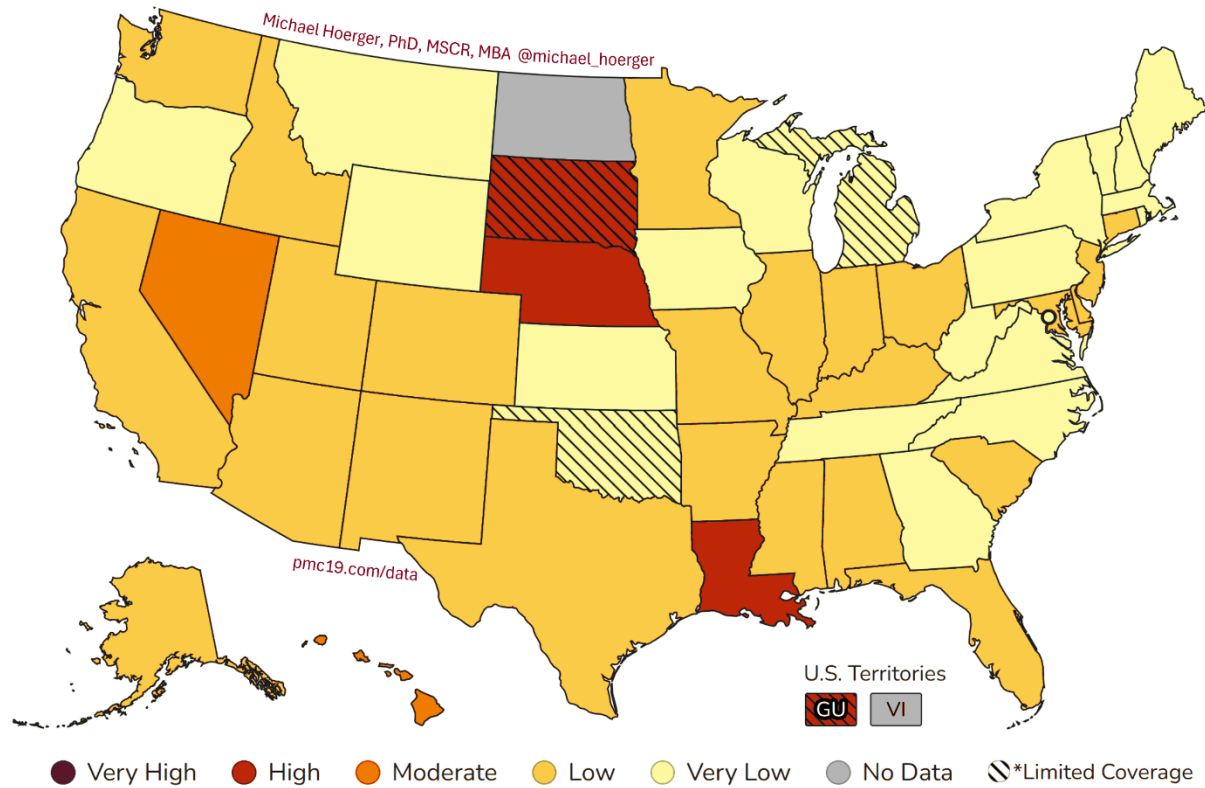
CDC COVID-19 Heat Map

This map uses the CDC state-by-state data to show areas with higher transmission in deeper red. The CDC version of the map, colored in cool blue is available online. Blue tends to confuse people to thinking transmission is “cool” or low, so we and various popular media outlets (e.g., Newsweek) tend to recolor.

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

Louisiana, South Dakota, Nebraska, and Guam are seeing ‘high’ transmission per the CDC’s most recent data, a reminder that during a national “lull,” transmission can still be high in several places.

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



Regional Case Estimation

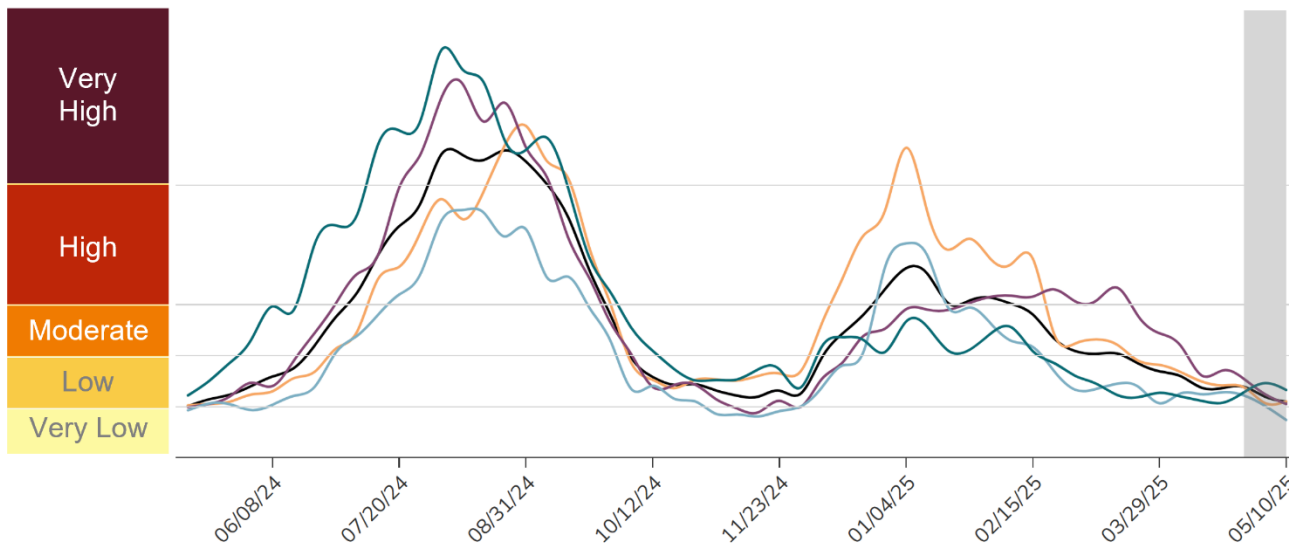
This graph from the CDC shows regional variation in transmission. You can use the “PMC Regional Multiplier” to get a ballpark estimate the proportion of a given region actively infectious with COVID-19 (see Technical Appendix document on the dashboard page).

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 0.5% (1 in 185) | 0.5% (1 in 195) |
| | Northeast 0.4% (1 in 274) | 0.3% (1 in 289) |
| | Midwest 0.5% (1 in 183) | 0.5% (1 in 193) |
| | South 0.5% (1 in 192) | 0.5% (1 in 203) |
| | West 0.7% (1 in 152) | 0.6% (1 in 161) |

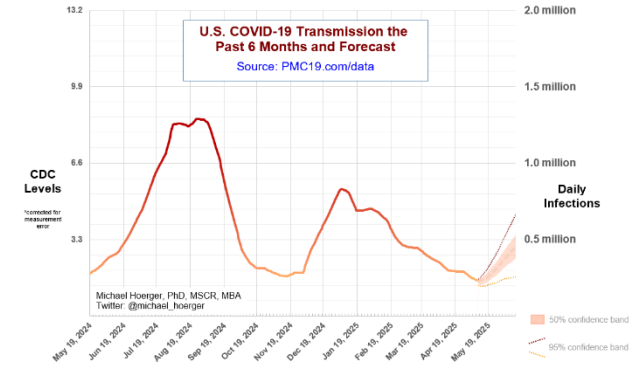
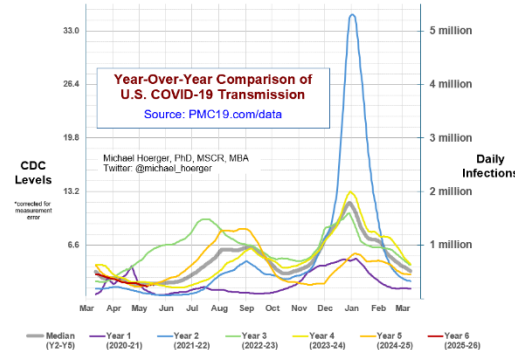
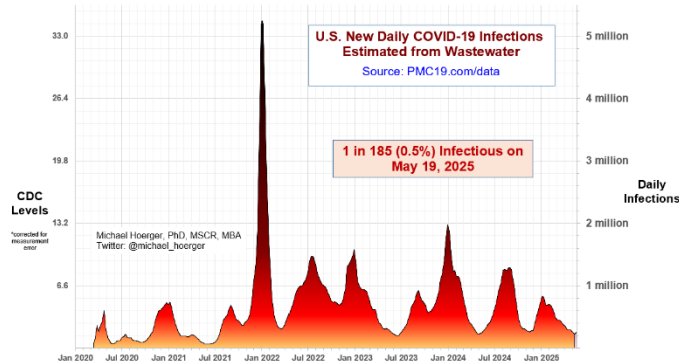
PMC Regional Multiplier*
0.313

* 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

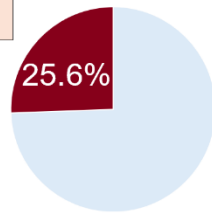
Here is the complete PMC COVID-19 Dashboard. Please share the images across social media and other websites. Michael Hoerger, PhD, MSCR, MBA | Pandemic Mitigation Collaborative | pmc19.com/data



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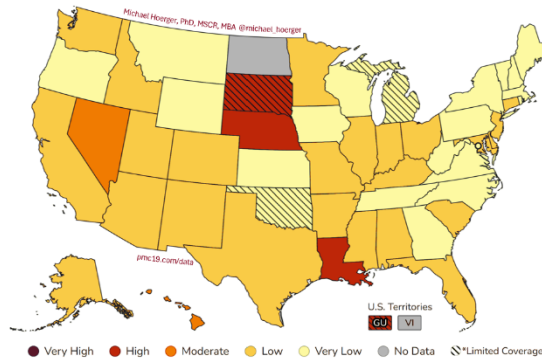
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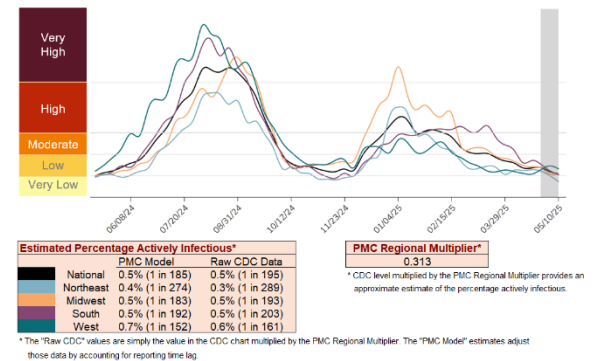
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CDC Regional Levels with PMC Estimates of the Percentage Actively Infectious



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