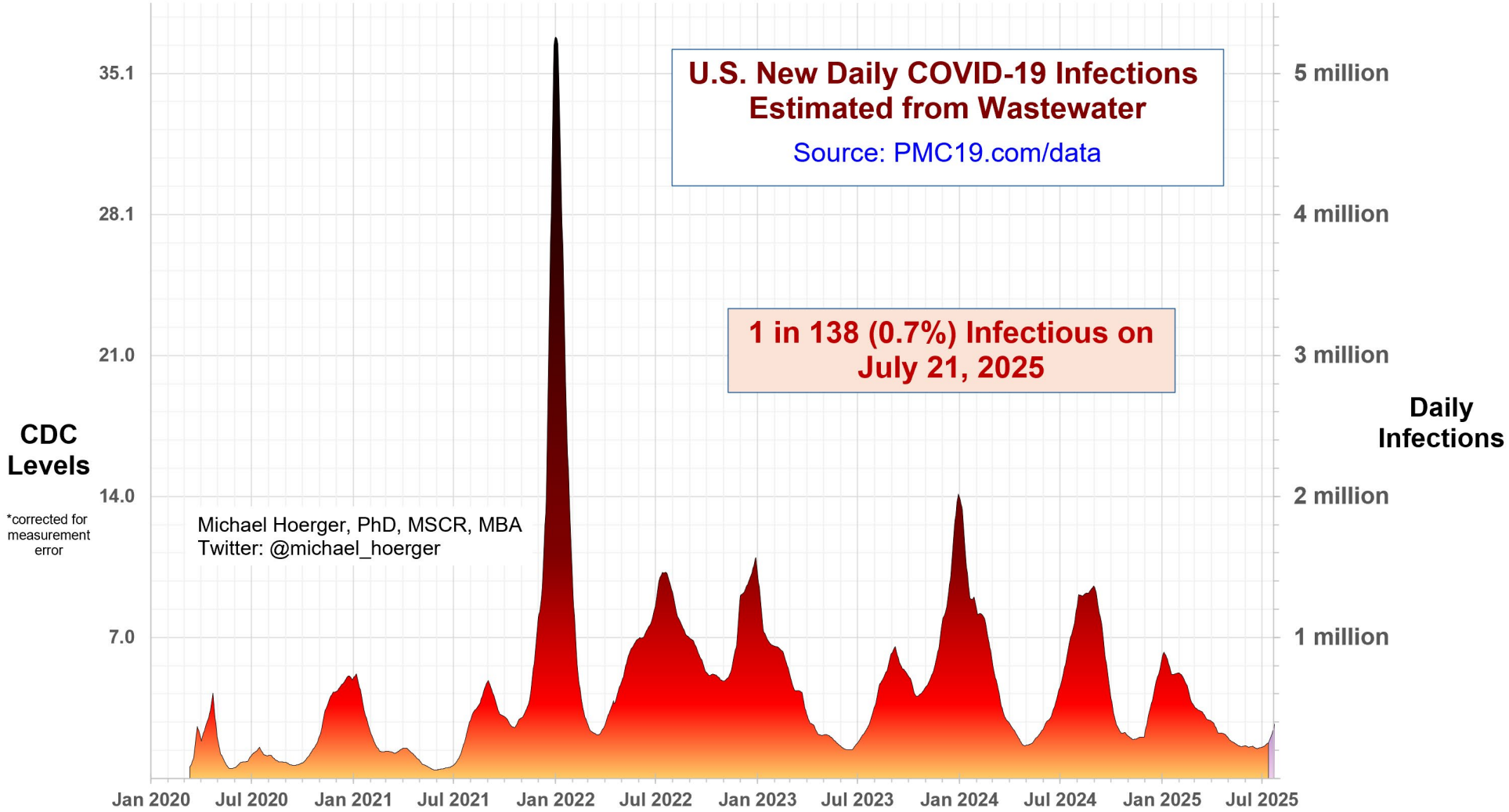
PMC U.S. COVID-19 Case Estimation and Forecasting Model: Report for July 21, 2025 pmc19.com/data

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



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Announcements

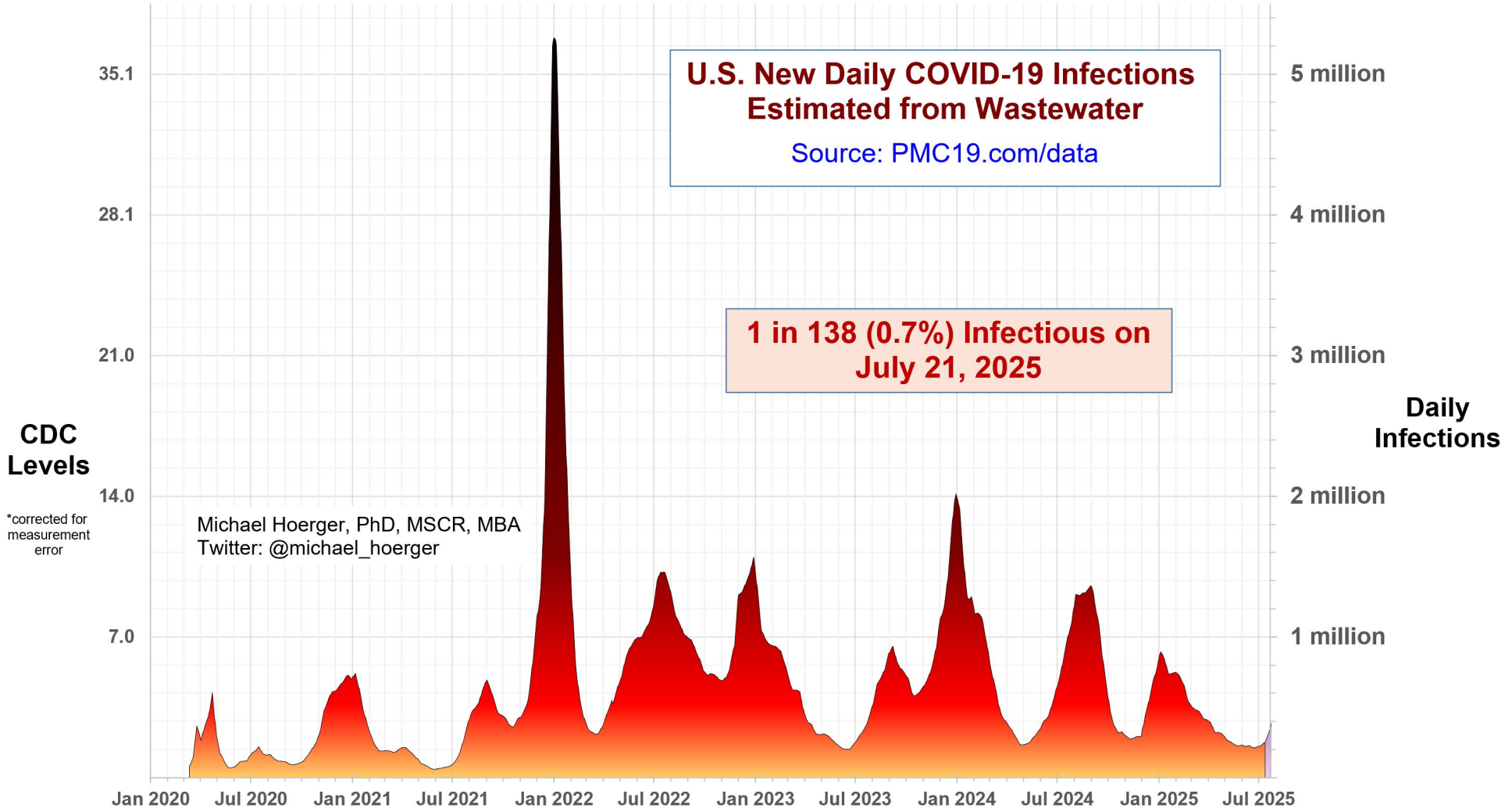
Data Quality Note: Long-term data quality is ‘high,’ but real-time data quality is ‘low’ and prone to retroactive correction. The CDC (80% model weight) has limited or no data for 5 states, and Biobot (20% model weight) has an extended reporting lag. These constraints add uncertainty to forecasts beyond historical norms. These constraints will also lead to inconsistencies in media reporting about specific variants, wave timing and peaks, and local transmission. Assume the worst, hope for the best, and monitor closely. On the website, we added links to more localized U.S. data and international dashboards to help with this uncertainty.

Announcements:

- Dr. Malek made this helpful video for clinicians: https://www.youtube.com/watch?v=GPUTTjjdT4A
- The TODAY Show is tracking vaccinations and transmission, including using the PMC dashboard: https://www.today.com/health/coronavirus/covid-2025-summer-surge-rcna218754

The Big-Picture View of the Pandemic

Transmission picked up markedly in the most recent CDC data. An estimated 1 in 138 people are actively infectious. The lull point presently appears to have occurred around June 21.



Statistical Summary

Presently, we are seeing an estimated nearly 2.4 million weekly infections, likely to result in 121-486K Long COVID cases, and 900-1,400 excess deaths in the U.S. In a room of 40 people of average risk, there would be a 1 in 4 chance of exposure. Although transmission is rising in most states, there is significant geographic variation. Check your local levels using the new information provided at the bottom of the dashboard website.

Current Levels for Jul 21, 2025
% of the Population Infectious
0.7% (1 in 138)
New Daily Infections
347,000
New Weekly Infections
2,429,000
Resulting Weekly Long COVID Cases
121,000 to 486,000
Resulting Weekly Excess Deaths
900 to 1,400

Monthly Forecast
Average % of the Population Infectious
1.3% (1 in 76)
Average New Daily Infections
626,500
New Infections During the Next Month
18,795,000
Resulting Monthly Long COVID Cases
940,000 to 3,759,000
Resulting Monthly Excess Deaths
6,700 to 11,200

Running Totals
Infections Nationwide in 2025
86,695,000
Average Number of Infections Per Person All-Time, U.S.
3.85

How Does Risk Increase with More Social Contacts?

Number of People	Chances Anyone Is Infectious	Number of People	Chances Anyone Is Infectious
1	0.7%	15	10.4%
2	1.4%	20	13.6%
3	2.2%	25	16.7%
4	2.9%	30	19.6%
5	3.6%	35	22.5%
6	4.3%	40	25.3%
7	5.0%	50	30.5%
8	5.7%	75	42.1%
9	6.3%	100	51.7%
10	7.0%	300	88.8%

Assumes no testing/isolation protocols (U.S. only)
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Michael Hoerger, PhD, MSCR, MBA
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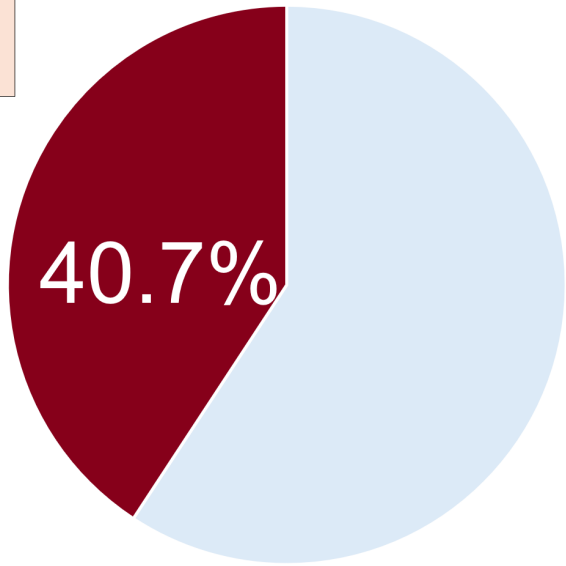
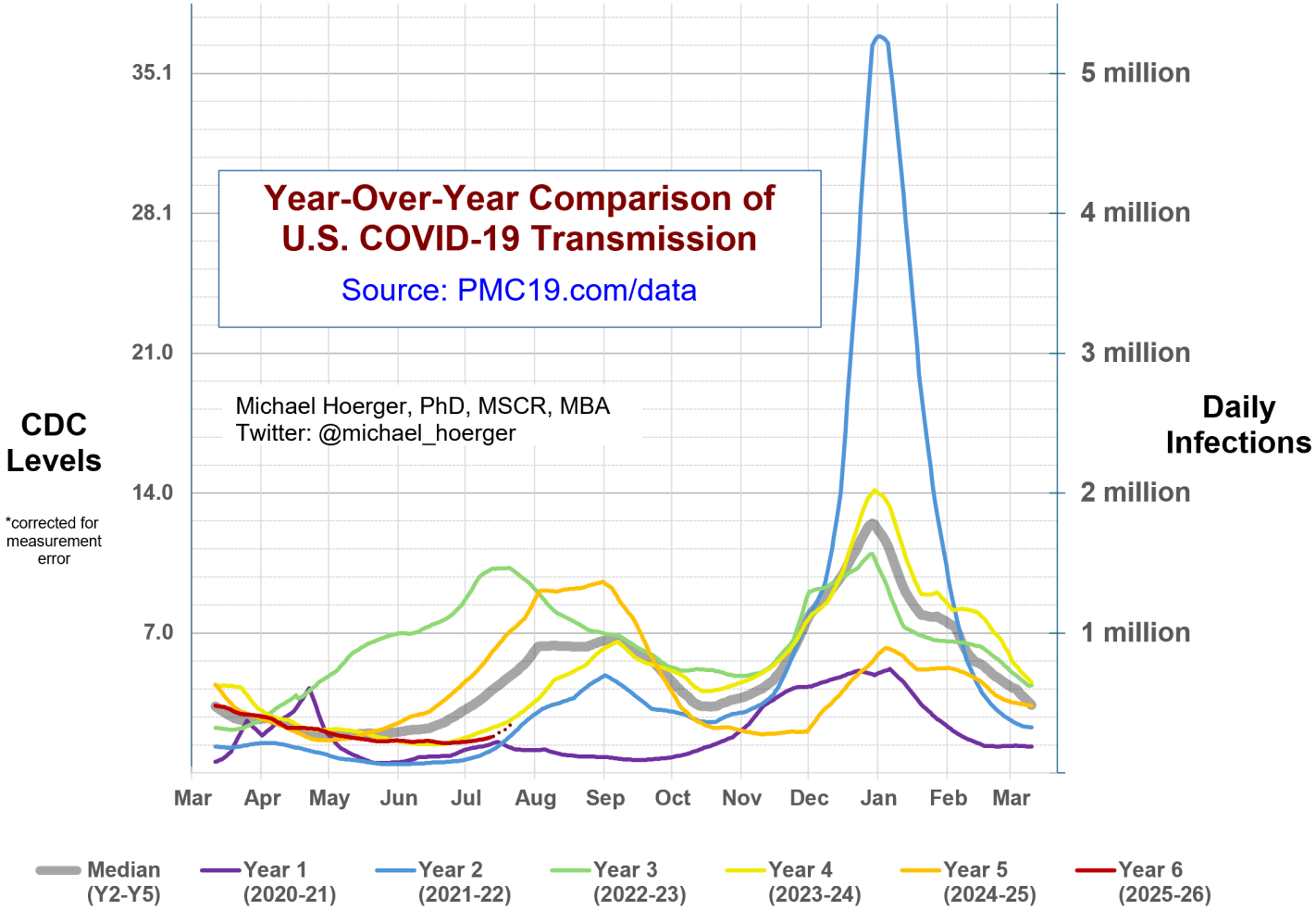


There is more COVID-19 transmission today than during 40.7% of the pandemic.

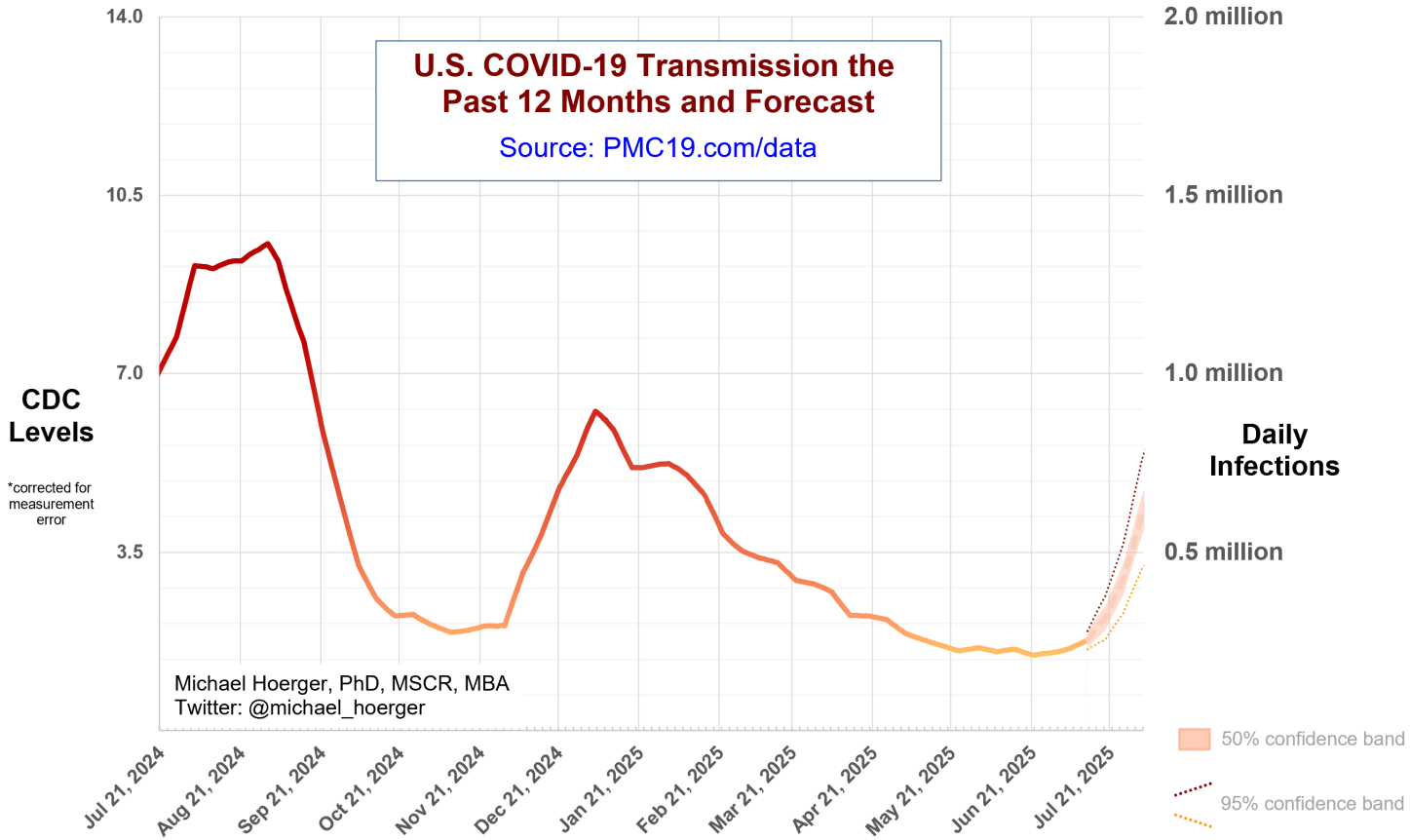
Year-Over-Year Comparisons

The year-over-year graph shows current transmission along the red line in the lower left corner. Current transmission continues to track quite closely with yellow line (two years ago). The yellow line is now looking more and more plausible. A more optimistic scenario would be a shift toward the blue line (Delta wave).



Close-up on the Current Forecast

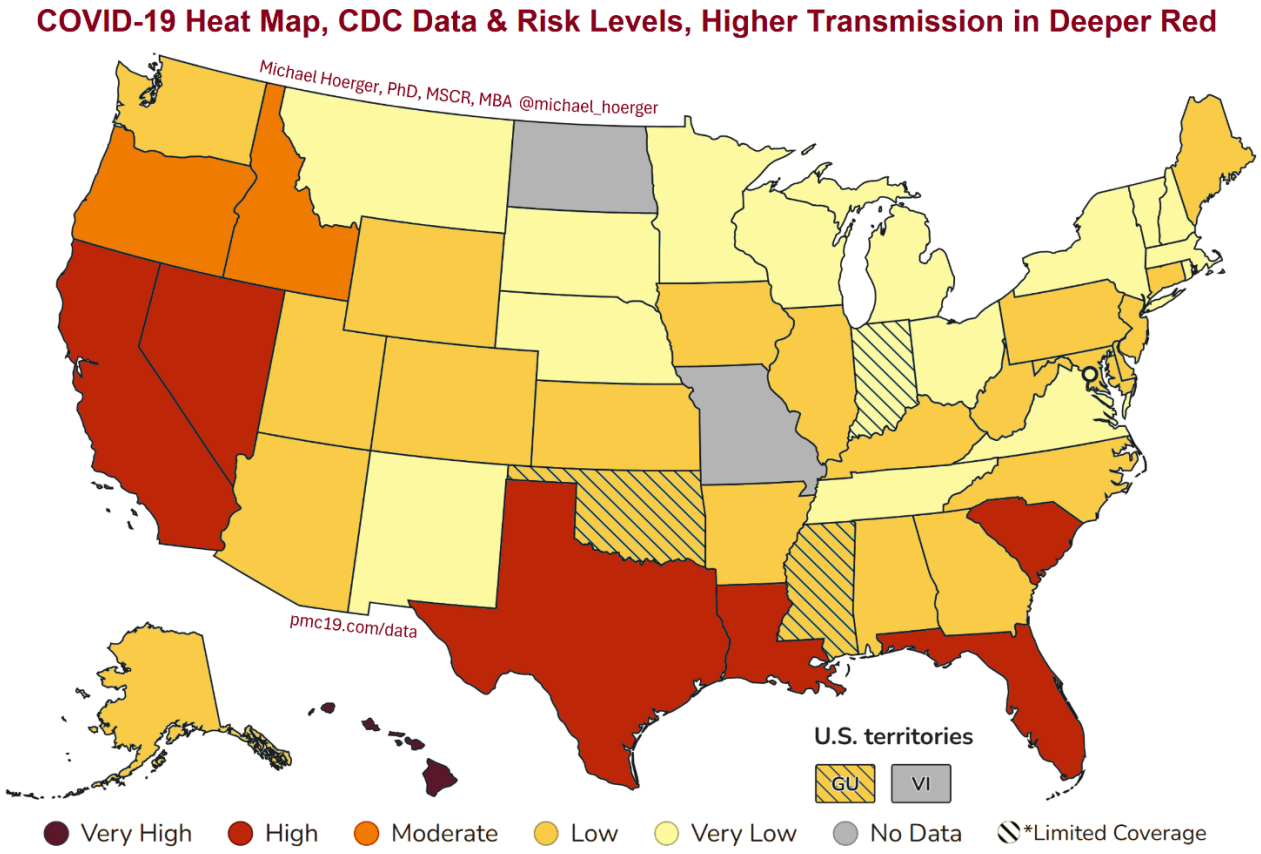
This graph shows the current forecast. Note that values for “today” are a forecast from data 9-12 days old. The current forecast is for increasing transmission over the next several weeks. With low-quality real-time data coming in, the forecast only shows 3 weeks forward from the most recent data point provided. Currently, the U.S. is expected to reach 500K daily infections in a week if following historical patterns, though this would not show in the data for 2 weeks, given reporting lags. A more optimistic scenario would have transmission increasing slightly slower and with a lower peak, like the Delta wave (blue line in the prior figure).



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

Transmission is high in Hawai’i (very high), California, Nevada, Texas, Louisiana, Florida, and South Carolina.

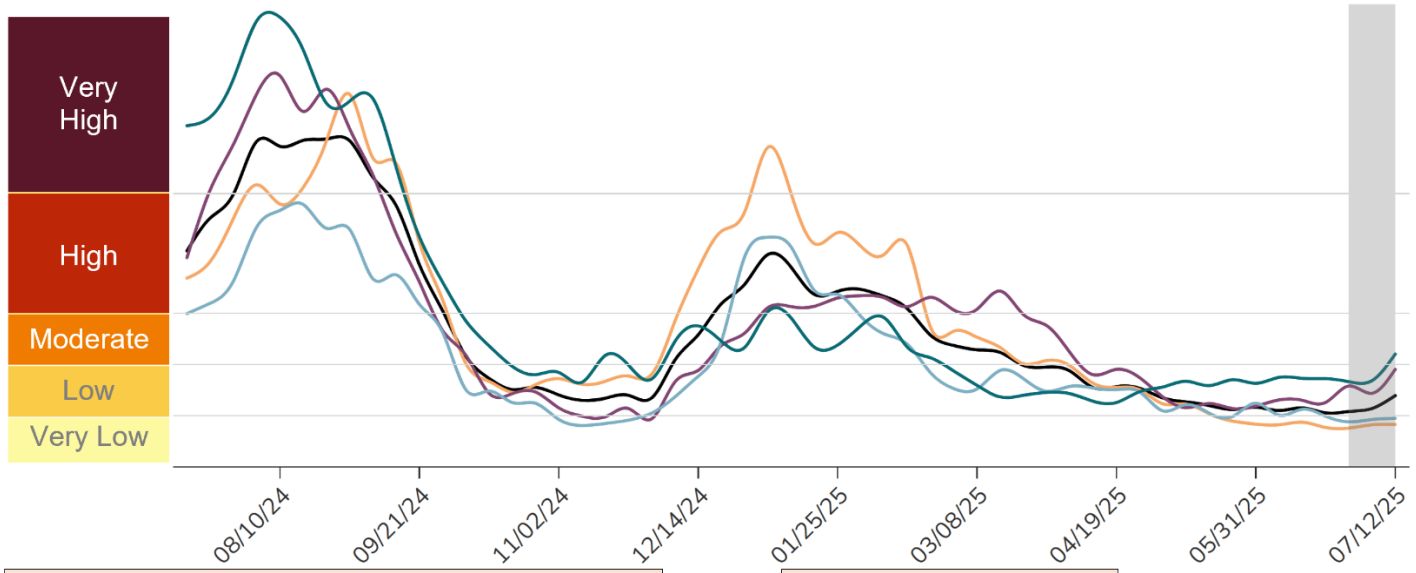


Regional Case Estimation

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	0.7% (1 in 138)	0.6% (1 in 156)
Northeast	0.5% (1 in 201)	0.4% (1 in 228)
Midwest	0.4% (1 in 232)	0.4% (1 in 263)
South	1.0% (1 in 101)	0.9% (1 in 114)
West	1.1% (1 in 87)	1.0% (1 in 99)

PMC Regional Multiplier*
0.298

* 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.
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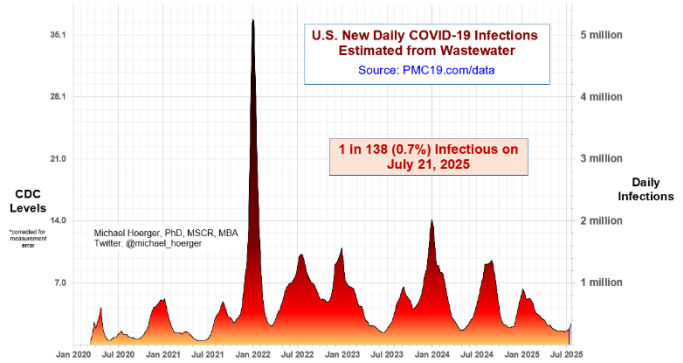

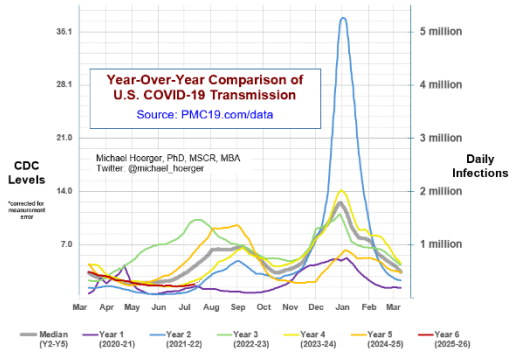

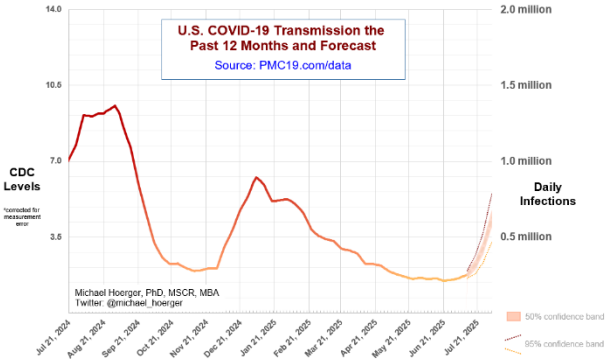

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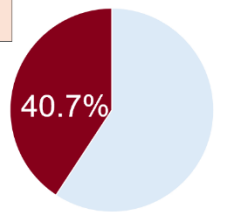

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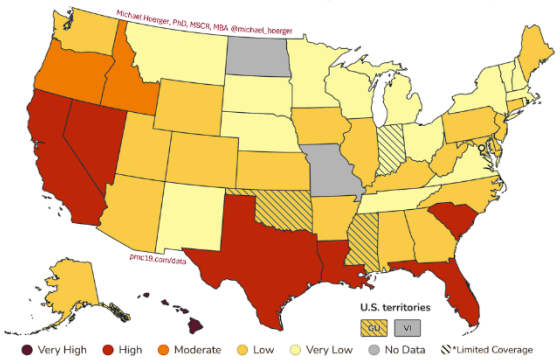
COVID-19 Heat Map, CDC Data & Risk Levels, Higher Transmission in Deeper Red



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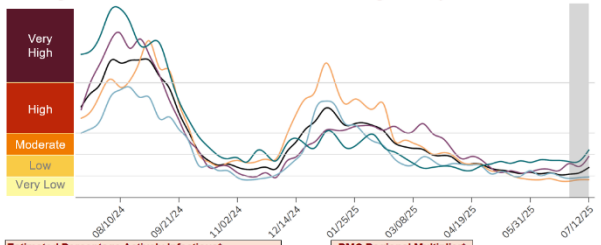

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A separate document called a Technical Appendix appears on the dashboard page and has more methodologic info.