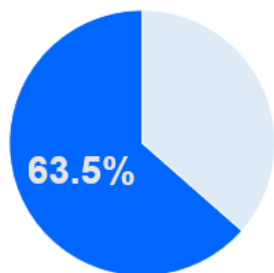
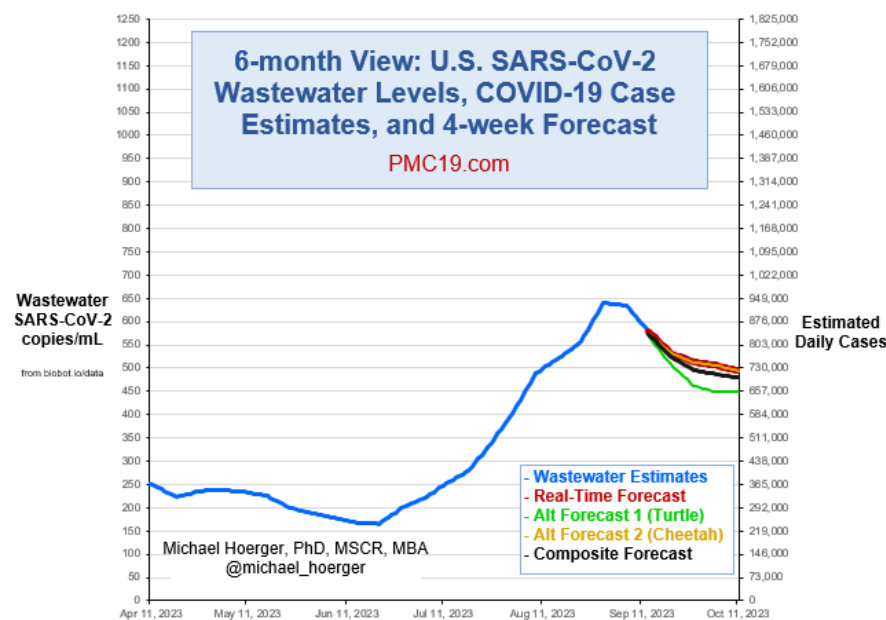
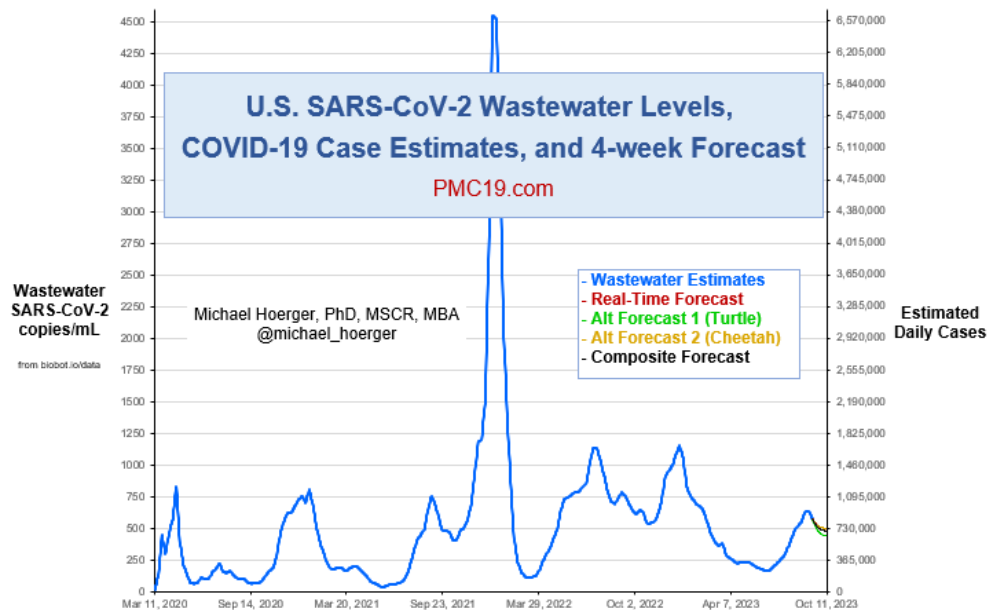


Michael Hoerger, PhD, MSCR, MBA, Pandemic Mitigation Collaborative
U.S. SARS-CoV-2 Wastewater Levels, COVID-19 Case Estimates, and 4-Week Forecast: Report for September 13, 2023, pmc19.com/data



There is more COVID-19 transmission today than during 63.5% of the pandemic.

CURRENT ESTIMATES FOR September 13, 2023	
Wastewater Levels (copies/mL)	579
New Daily Cases	843,000
% of Population Infectious	1.76% (1 in 57 people)
New Daily Long COVID Cases	42,000 to 169,000

WEEKLY ESTIMATES FOR September 13, 2023	
New Weekly Cases	5,900,000
New Weekly Long COVID Cases	295,000 to 1,180,000

2023 CUMULATIVE ESTIMATES AS OF September 13, 2023	
Total 2023 Cases To Date	175,200,000
Total 2023 Long COVID Cases To Date	8,760,000 to 35,040,000

4-WEEK FORECAST FOR October 11, 2023	
Wastewater Levels (copies/mL)	479 (-17% lower)
New Daily Cases	697,000
% of Population Infectious	1.46% (1 in 69 people)
New Daily Long COVID Cases	35,000 to 139,000

What's the COVID Risk in an Office or in a Classroom?

Number of People	Chances Anyone is Infectious	Number of People	Chances Anyone is Infectious
1	1.8%	25	35.9%
2	3.5%	30	41.4%
3	5.2%	35	46.4%
4	6.9%	40	50.9%
5	8.5%	50	58.9%
6	10.1%	75	73.7%
7	11.7%	100	83.1%
8	13.3%	150	93.1%
9	14.8%	200	97.2%
10	16.3%	300	99.5%
15	23.4%	400	>99.9%
20	29.9%	500	>99.9%

Cite as: Hoerger, M. (2023, September 13). *U.S. SARS-CoV-2 wastewater levels, COVID-19 case estimates, and 4-week forecast: Report for September 13, 2023*. Pandemic Mitigation Collaborative. <http://www.pmc19.com/data>

Informal Commentary:

U.S. #wastewater levels are higher than during 64% of the pandemic:

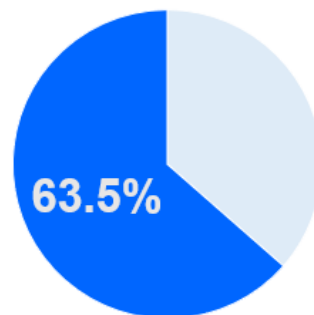
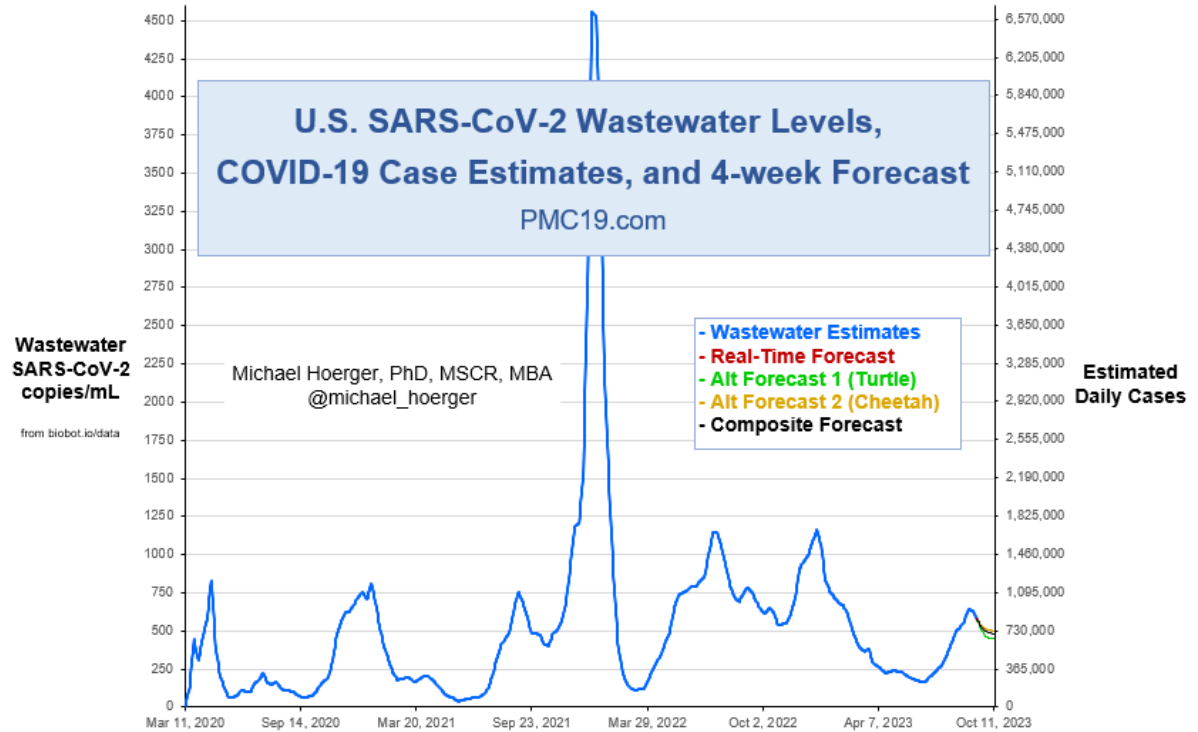
- ◆ 1.8% (1 in 57) are infectious
- ◆ >800,000 COVID cases per day
- ◆ >40,000 #LongCovid cases per day

What's the Current State of the Pandemic?

Let's zoom out from the 6-month view to the full pandemic.

If things holds, the 7th U.S. COVID wave appears to have leveled off as slightly smaller than Delta, still a huge wave.

We're seeing about 6 million infections/week in the U.S., much higher than people realize.



There is more COVID-19 transmission today than during 63.5% of the pandemic.

CURRENT ESTIMATES FOR September 13, 2023
Wastewater Levels (copies/mL) 579
New Daily Cases 843,000
% of Population Infectious 1.76% (1 in 57 people)
New Daily Long COVID Cases 42,000 to 169,000

WEEKLY ESTIMATES FOR September 13, 2023
New Weekly Cases 5,900,000
New Weekly Long COVID Cases 295,000 to 1,180,000

2023 CUMULATIVE ESTIMATES AS OF September 13, 2023
Total 2023 Cases To Date 175,200,000
Total 2023 Long COVID Cases To Date 8,760,000 to 35,040,000

Forecast for the Next Month

The "Good" News

Peaking. Transmission is slowing down a little and forecasted to decline further over the next month. If the Biobot data hold up against data corrections, the late summer wave peaked on August 30 at approximately 931,000 cases per day. By October 11, we expect to be closer to 700,000 cases per day. Less morbidity and mortality are always good news.

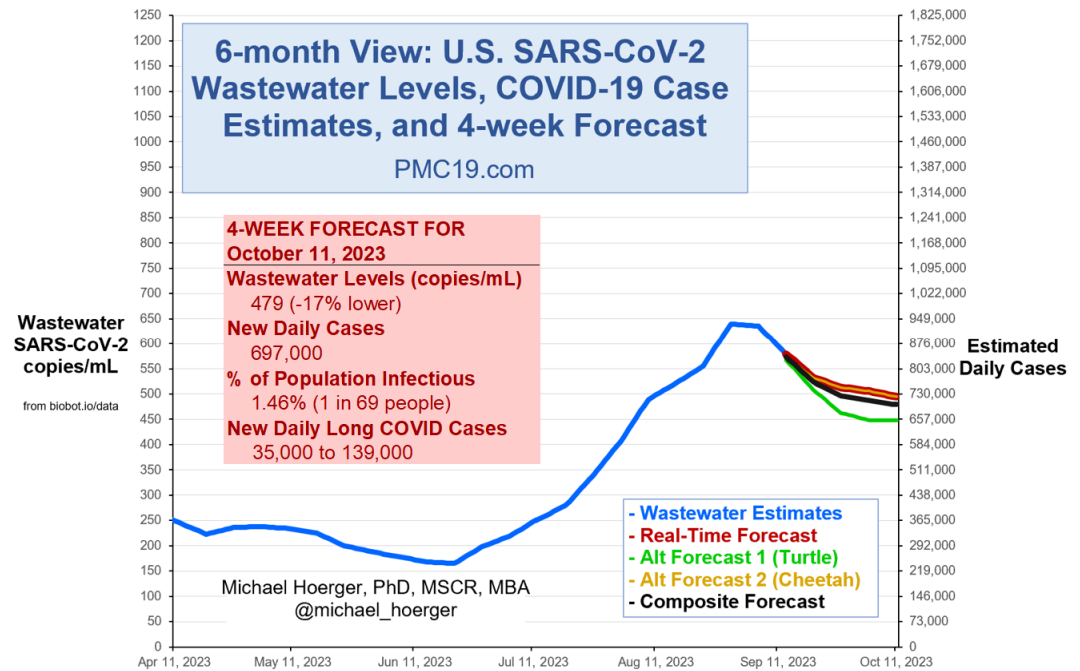
Modeling. Our models generally predicted that the peak would be sometime between Aug 23 and Sep 14, even amid some noisy wastewater data from Biobot. We regularly predicted that wastewater levels would fluctuate between 400-700 copies/mL from August to October, even amid much scolding and taunting from people who believed it would be much better or worse. The current forecasts show much convergence. The composite (black line) forecast is comprised of a real-time forecast (assumes Biobot's real-time wastewater data are accurate), turtle forecast (ignores the most recent week's Biobot data), and cheetah forecast (corrects the most recent week's Biobot data), all of which are quite similar at the moment. At present, this looks like a win for forecasting, with more improvements on the way. Good forecasts can help people make better predictions in an uncertain world.

Dissemination. The final bit of good news is that people are using this data to inform friends, their workplaces, and schools. In this regard, the time to act is NOW. People who do not follow wastewater are watching the anecdotal evidence in their lives pick up (personal reinfection, friends and coworkers infected, more masking, near-misses at schools, etc.). As reality glimmers through denial, now is the time to show people the data that validates what they are subjectively experiencing (still amid much second-guessing and gas-lighting). Anyone "flipped" toward watching the data will be much better prepared for the winter.

The Bad News

High valley. Although a decline in transmission is always good, we're headed toward what is likely a very high valley in October at 700,000 infections per day, and then the picture will likely get much worse in November, December and January, unless we see an unanticipated level of vaccinations.

Grim Implications. In the "good" times of October, we will still see 1.5% of Americans (1 in 69) actively infectious at any given moment. Our low-end estimate suggests 35,000 new Long COVID cases from such infections. That's grim.



Media narrative. The psychological dynamics are bleak. Expect the news media to focus on the fact that transmission is going down (the "good" news) instead of the much bigger picture that it's leveling off at very high rates (the very bad news). The over-optimism will likely undermine vaccinations and masking. The narrative should be "plan to take multi-layered precautions like using masks, getting boosters, and using remote options through January," but will more likely be "cases are headed back down."

What's the Risk in an Office or in a Classroom?

The office and classroom risks remain quite bad. In a group of 10 people (daycare, team meeting, etc.), there's a >16% chance someone will have infectious COVID. In a group of 20-25 people (e.g., K-12 classroom, department meeting, busy hospital waiting room, etc.), there's 30-35% chance someone would have infectious COVID. In a university classroom of 40-50 people, it should be assumed someone has infectious COVID. This is quite troubling for instructors or students who mix time with multiple groups of classmates each week.

Not all classrooms and meetings are the same. ***The CDC has recently approved an updated booster, available to anyone older than 6 months, and can be scheduled as early as next week.***

Virtual meetings reduce risk close to zero. Outdoor meetings are often safer than indoors. Testing reduces risk, as do policies that encourage people to stay home when symptomatic. High-quality, well-fitting masks greatly reduce risk. Air quality monitoring and improved air cleaning reduce risk. Recent boosters reduce risk. It remains troubling that elected leaders and public health officials choose to model poor mitigation when ongoing risk is so high.

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