Children's Hospital of Philadelphia PolicyLab

COVID-19 Outlook: Reemerging from the Holiday Weekend to Parse Signal from Noise

Population Health Sciences

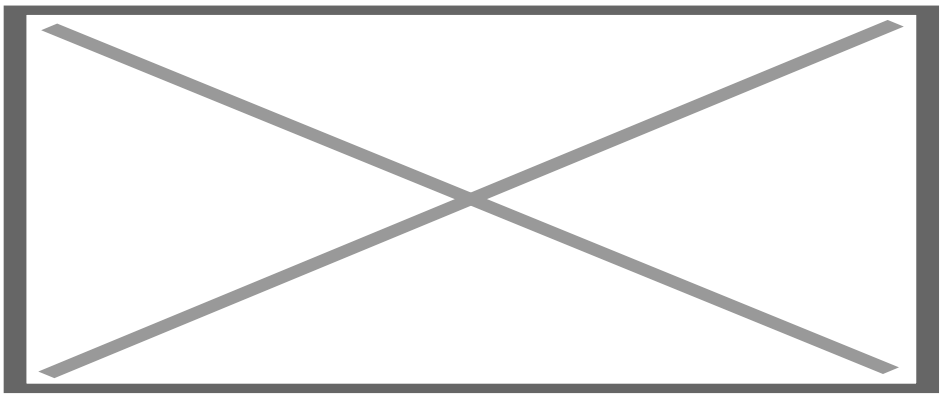
Date Posted:

Dec 02, 2020

We are more cautious this week in our interpretation of the data from our weekly COVID-Lab forecasting model—more on that later—but here are some signals we are seeing:

- The Northeast has become the most concerning area of the country with growing testing positivity rates in nearly all counties. This was especially noticeable given declining testing positivity rates in many other regions of the country during the Thanksgiving holiday weekend, which is likely attributed to many asymptomatic individuals seeking testing in advance of holiday gatherings.
- Areas of New York (and northern New Jersey) stand out for growing and widespread increases in case incidence. We are projecting that all boroughs of New York City will see cases double in the next four weeks—Staten Island is already nearing 400 weekly cases per 100,000 individuals. In upstate New York, Buffalo, Rochester, and Syracuse are now reporting over 300 weekly cases per 100,000 individuals, which we forecast will double by the end of the month. Areas of northern New Jersey now exceed 500 weekly cases per 100,000 individuals.
- Out West, California and the Sun Belt are moving in a similar direction to the Northeast. We are predicting another doubling of cases over the next few weeks in the Sacramento and San Francisco areas, as well as substantial increases in and around Los Angeles, which may have somewhat abated due to the stay-at-home order that went into effect this week. We foresee a similar doubling in case incidence in the Phoenix area. We're also concerned to see that there has been a significant increase in ventilator use across California, and deaths are approaching 100 per day.
- In the Pacific Northwest, we're projecting case incidence to double in and around Portland, Seattle and Spokane over the next four weeks.
- In the Midwest, some states (e.g., Wisconsin, North Dakota, Minnesota, Illinois) may be near or just past their peaks, while we see stabilizing testing positivity rates and case incidence in other places (e.g., Michigan, Ohio and Indiana). Still, as weekly case incidence levels remain over 500 cases per 100,000 individuals in some of these areas, we suspect that this flattening is an aberration of the holiday weekend data challenges we discuss below.
- COVID-19 cases are growing again in the Mid-Atlantic and Southeast where, just like in the Northeast, testing positivity rates did not slow or decrease around Thanksgiving. Some of the largest testing positivity rate increases were realized in counties across North Carolina, Georgia, Tennessee and Louisiana. Our forecasts in Mississippi and Alabama—where hospitalization and death rates are on the rise—project continued increased transmission over the next four weeks. We expressed concern last week about this area, and that concern has not abated.
- Counties in Florida are also experiencing growth in case incidence again. This is accompanied by an increase in hospitalizations and deaths. For now, this growth is at a slower pace than other areas to the north; however, with growing testing positivity rates in the majority of its counties, Florida bears watching

over the next few weeks.



Above are the projections for Richmond County (Staten Island) in New York (left) and Tuscaloosa County in Alabama (left).

Many predicted that Thanksgiving gatherings would translate into an acceleration in viral transmission across the country. While this may ultimately happen, such transmission will not be apparent in this week's results. We know based on our prior experience that the impact of a holiday weekend is not immediately detectable, but rather one to two weeks later.

Therefore, as we review this updated data, we need to recognize a number of challenges that the preceding holiday weekend presents in interpreting what we're seeing:

- **More demand for testing before Thanksgiving:** As demand for testing increased before and during the holiday weekend, we are witnessing backlogs from national testing companies and difficulty accessing testing locations.
- **Weekend under-reporting:** Reported case incidence has tended to dip during regular weekends throughout the pandemic, and that drop is often greater during a holiday weekend. Weekend under-reporting is the reason we now include a day-of-week variable in our models to avoid over-estimating growth following increased test reporting on Mondays (see more discussion of this update to our models in our Nov. 18 blog post).
- **Delays in testing results from large testing facilities:** This scenario is marked by a prolonged absence of new cases followed by sharp outlier increases on a single day or the reverse, a sharp fall-off of incidence after a steady increase. This week, we see evidence of the former in Louisiana and Mississippi, and the latter in Missouri and Nebraska. These data concerns are often amplified after a long holiday weekend, and the Thanksgiving holiday weekend will not be different. This leads us to be reserved in our interpretations of the results. For example, is the observed decline in incidence in these particular areas real or an artifact of these data concerns? Based on prior experience we worry it is the latter, but time will tell.

Alongside these considerations and our case incidence data, our team is also now systematically reviewing hospital and fatality data at the county and state levels. We are hopeful that assessing these local data points in combination with our projections will provide additional confidence in our forecasts for continued increase in cases for a region or in predictions that suggest a region is actually reaching their peak in transmission.

All told, the fanning out of the pandemic beyond the Midwest to the coasts and to the South continues. This in the setting of increased gatherings during the holiday weekend raises the prospect of a much larger peak to come, as many have predicted. We will be back next week to show how these trends continue to unfold.

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