Children's Hospital of Philadelphia PolicyLab

COVID-19 Outlook: Getting Past Peak Proving More Difficult After Thanksgiving

Population Health Sciences

Date Posted:

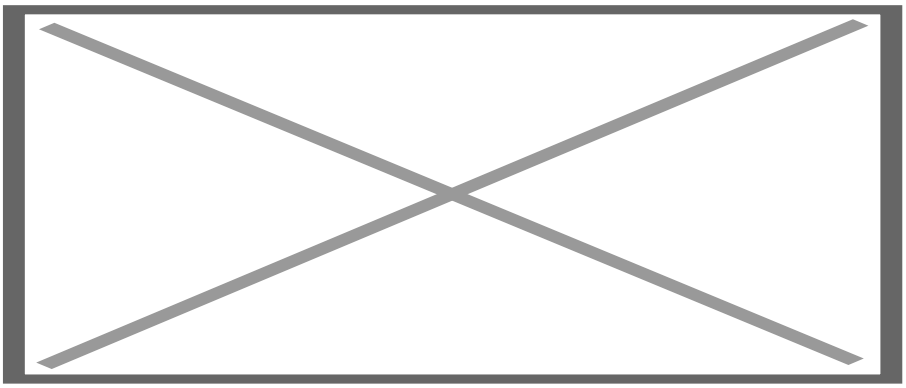
Dec 09, 2020



Below are the main findings from our COVID-Lab forecasting model update this week:

- The average test positivity rate across all of the 821 counties we follow in our model increased to nearly 15% this past week, and two-thirds of these counties saw their test positivity rate increase over the last week. Furthermore, a majority of counties have a weekly case incidence over 400 cases per 100,000 individuals. These data represent the anticipated post-Thanksgiving surge.
- California and the Sun Belt continue to be areas of concern. Case incidence in Los Angeles doubled since Thanksgiving, reaching nearly 10,000 new cases daily, and we are witnessing similar increases in Sacramento, San Francisco and San Diego. We are now projecting the Phoenix area to surpass 5,000 cases daily in the next few weeks.
- We are also seeing concerning increases in case incidence in the Northeast. Cases doubled over the past week in Essex County (Boston), where they have surpassed 700 weekly cases per 100,000 individuals, and we expect similar doublings over the next four weeks in cities across Maine, New Hampshire and Vermont. Further south, our model projects case incidence to double by early January in all five New York City boroughs, assuming no further mitigation strategies are enacted. Staten Island is leading the way with current weekly case incidence nearing 600 cases per 100,000 individuals. But it's not just the large cities; we forecast counties around Boston, New York City, and Philadelphia may also experience a doubling in case incidence over the next four weeks.
- In the Southeast, test positivity rates are increasing in the Carolinas, Georgia, Tennessee, Alabama, Mississippi and Louisiana, and faster than other areas of the country. We're forecasting case incidence will double by early January throughout the Atlanta region.

- While incidence rates in the Upper Midwest have improved over the last two weeks—particularly in Wisconsin, Illinois, Michigan and Iowa—we are now witnessing test positivity rate increases following Thanksgiving in the metropolitan areas of Milwaukee, Chicago, Indianapolis, Detroit, Omaha, St. Louis, and Kansas City, which raise concern for a second rise in case incidence and hospitalizations in these locations.
- More areas of Texas are also beginning to realize the winter surge, with Houston, San Antonio and Austin leading the way in case incidence growth. These cities, as well as Dallas, Amarillo and El Paso, have also sustained an increase in hospitalization numbers that always follows surges in incidence.



Above are the projections for Los Angeles County in California (left) and Fulton County (Atlanta) in Georgia (right).

Less than three weeks before Christmas, the pandemic continues to evolve and impact different regions in different ways. Some areas appear to have signs of early decline after their fall peak. Other areas continue to sustain high incidence rates. And still, new hotspots are emerging. For the past couple of weeks, we had been encouraged to see that several areas in the Midwest were moving past their peaks, but that is now tempered by evidence of bumps in test positivity again—likely related to Thanksgiving gatherings—which will, at the very least, extend the tail of decline. More uncertain is how the December holidays will confer additional risk to these regions; residents in these areas need to maintain their vigilance regarding mitigation strategies so they do not lose the progress they have made in the weeks to come.

How Might Airport Travel be Contributing to COVID-19 Case Surges?

As we reviewed the modeling data this week, we couldn't help noticing that the most concerning areas of the country in our forecasts are adjacent to our busiest airports, including Denver, Los Angeles, Boston, Newark, Washington D.C., Charlotte, Atlanta and Dallas. For example:

- In Clayton County, Georgia, where Atlanta's airport is located, we're projecting cases to double at least twice over the next few weeks, surpassing other counties in the region.
- The Virginia Washington, D.C. suburbs, home to Reagan International and Dulles Airports, have seen more explosive growth than the Maryland suburbs.
- Case incidence in Essex County, New Jersey, home to Newark Liberty International Airport, is projected to double despite significant restrictions put in place there.

These are not likely coincidental happenings, but rather serve as circumstantial evidence that the movement of people through these facilities over the Thanksgiving weekend led to local transmission in these areas. We should consider this as we plan for the upcoming holidays.

Continuing to Ensure the Safety of Students and Teachers

While our focus over the last couple of weeks has been on post-Thanksgiving impacts, our team continues to receive many questions about school safety. We featured our guidance for schools during the holiday season in blog posts leading up to the Thanksgiving weekend. In these posts, we emphasized the need for flexibility to permit continued in-school instruction, particularly for students in elementary school and those with special education needs.

Of note, over the last two weeks, France has seen significant reductions in case incidence by instituting strong community restrictions on indoor dining and gatherings, while keeping their elementary schools open. Despite a nationwide test positivity rate over 10%, new infections have been few among these younger students. These are the first data that support the notion that school openings for lower grades does not impede attempts to reduce community transmission via other mitigation strategies, even when case incidence is very high.

However, the French data are not generalizable to older students, as high school students have been participating in virtual classes during this period. Because high schools host adolescents and young adults, the risk for transmission is likely greater in this setting than within an elementary school. As such additional caution is warranted.

Since the start of the school year, we have learned that each municipality, school district, and even each school has had a highly variable experience through the pandemic; recognizing this and providing flexibility to institute plans responsive to the local experience has been imperative. For more on this topic, we would direct you to two recent news stories (here and here) to which we had the opportunity to contribute.

Ending On an Optimistic Note: Vaccines and Testing Availability

This week, we are anticipating one of the most important turning points of the pandemic: formal authorization in the U.S. of the first COVID-19 vaccine. This announcement will bring much needed optimism, but also additional questions. In particular, we have been receiving inquiries regarding vaccine distribution. Youth will not be included in the first wave of vaccinations, as there are no data from clinical trials available yet for children. The focus currently is on vaccinating adults in health care professions, including those working in health care centers and long-term care facilities. Essential workers in other high-exposure jobs will be among the next group.

We are advocating strongly that teachers and school staff (e.g., bus drivers)—as essential workers at high risk of exposure—be designated as a priority population for early access to the COVID-19 vaccine. Vaccinating school staff will expedite the goal of returning as many children and teens as possible to schools as soon as possible. Although vaccine hesitancy may be common early on, we expect that early success with the vaccine, additional safety data from continued surveillance of those vaccinated, and public messaging campaigns will boost participation in the months to come.

Finally, we should be encouraged that additional testing options through rapid point-of-care tests are becoming increasingly available. This is enabling opportunities to test asymptomatic individuals with greater regularity. Such efforts on college campuses throughout the fall served to drive down transmission among students, as schools were able to quickly isolate those infected and abate continued transmission risk not only on campus, but also within the wider communities.

In a similar way, we can now envision providing this type of regular testing to teachers and critical populations of students (e.g., children with disabilities and other special educational needs). This approach to testing offers the ability to identify asymptomatic individuals that might otherwise go undetected, and offer the chance to limit that individual's potential to transmit to others within the school. This would also provide a level of comfort for teachers, parents and school staff. There are growing school-based testing programs in Texas, Missouri and Connecticut. Our region will soon join them—we'll share more on that in the coming weeks.

As we reach the end of a very difficult year, still in throws of this pandemic, we can see signs that the other side of mountain is within reach. Nonetheless, we need to understand that widespread distribution of the vaccine

and targeted testing approaches won't come until later this winter. As such, it's critical that we navigate the next 10-12 weeks with a renewed resolve to masking and distancing, as these are still our best ways to mitigate transmission and avoid the morbidity and mortality around us. It will certainly be a sobering few weeks ahead, but we are looking forward to 2021 with a sense of renewed purpose and optimism.

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