Children's Hospital of Philadelphia
PolicyLab

COVID-19 County-level Forecasts Show Limited Impact of Memorial Day Travel, Except in Established High-risk Areas

Philadelphia, Pa. – June 10, 2020 – Updated modeling data released today by PolicyLab at Children's Hospital of Philadelphia (CHOP) show many U.S. counties, even those home to vacation destinations, are not projected to see a resurgence in COVID-19 cases through mid-July following increased travel and activity around Memorial Day weekend. However, the model's four-week forecasts are more concerning for several areas of the country, such as Texas and the greater Southwest, that already had significant disease burden or elevated risk going into the holiday weekend.

The model continues to show that as communities relax social distancing, measured as increased travel to non-essential businesses, they are experiencing a rise in COVID-19 infections. However, many counties included in the analysis are not projected to see sustained spikes in cases; if they continue on the current path, they may avoid a second wave this summer. These communities include major metropolitan cities—such as Philadelphia and Boston—as well as popular beach locations along the New Jersey shoreline and Lake Michigan. The researchers maintain that high temperatures and humidity levels, alongside suspected vigilance in personal protection in crowded indoor locations and recommended hygiene practices, appear to be limiting widespread community transmission in these counties.

Nevertheless, data from the model also suggest that warmer weather alone does not mitigate the risk for virus resurgence, as Memorial Day activities had a greater impact in several locations. Forecasts worsened for several southern and western communities—including Phoenix, Tampa, Houston, Dallas and Los Angeles—that the researchers have been closely monitoring for weeks. The Southwest has heightened risk through multiple states, including California, Arizona and Utah, and clusters of communities in North Carolina and South Carolina are also beginning to show signs of heightened risk, increasing the researchers' concern for a regional second wave in the Southeast. Many factors may be contributing to projected increased risk for transmission in these areas, including the inability to lower case counts; poor vigilance among community members in masking and hygiene; inadequate protection of locations at high risk for local outbreaks, such as nursing homes and prisons; and reopening too quickly.

"Since we first launched our models, we have predicted that if communities took a more cautious approach to reopening—relaxing social distancing policies more slowly, maintaining limited gathering sizes and practicing vigilance in masking in crowded indoor locations—they could avoid a second wave of coronavirus cases, and that is what we see realized in today's updated, but mixed, forecasts," said David Rubin, MD, MSCE, director of PolicyLab at CHOP and a professor of Pediatrics at the University of Pennsylvania's Perelman School of Medicine. "While some areas appear headed for a relatively normal summer, we are concerned by the new epicenters that have formed over Texas and the greater Southwest—particularly in light of reports that ICU bed capacity is worsening in large cities like Houston and Phoenix—as well as growing risk in smaller cities like Greenville and Columbia, S.C., and Charlotte and Winston Salem, N.C. It's these types of indicators that tell us which areas may be headed for a second wave of coronavirus cases and crisis."

For additional comments from the lead investigators on their updated forecasts and findings, read this blog post: https://policylab.chop.edu/blog/covid-19-outlook-memorial-day-effect-comes-view

Background

Researchers at PolicyLab at CHOP and the University of Pennsylvania developed the model, known as COVID-Lab: Mapping COVID-19 in Your Community, which tracks and projects COVID-19 transmission across 384 U.S. counties with active outbreaks, representing 67% of the U.S. population and 85% of all identified coronavirus cases. The researchers built their model to observe how social distancing, population density, daily temperatures, and humidity affect the number and spread of COVID-19 infections over time across a county, accounting for test positivity rates and population characteristics such as age, insurance status, crowding within homes and diabetes prevalence. COVID-Lab's projections forecast the number of coronavirus cases communities could experience over the next four weeks based on a three-day average of their current social distancing practices, defined by the change in travel to non-essential businesses as compared to pre-epidemic. A scientific review of the team's model and findings is available as a pre-print article ahead of peer review on medRxiv. The data are publicly available in the form of interactive maps and graphs.

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About PolicyLab at Children's Hospital of Philadelphia: PolicyLab at Children's Hospital of Philadelphia (CHOP) is dedicated to achieving optimal child health and well-being by informing program and policy changes through interdisciplinary research. Founded in 2008, PolicyLab is a Center of Emphasis within the CHOP Research Institute, one of the largest pediatric research institutes in the country. With more than 30 highly regarded faculty and 60 passionate staff who bring expertise from myriad of fields covering health, research and health policy, our work focuses on improving public systems, improving health care delivery and improving child health outcomes. For more information, visit **http://www.policylab.chop.edu**.