Children's Hospital of Philadelphia
PolicyLab

New COVID-19 Projections Show Mixed Picture of Community Spread from College Campus Outbreaks

Philadelphia, Pa. – September 9, 2020 – New four-week COVID-19 case projections released today by PolicyLab at Children's Hospital of Philadelphia (CHOP) suggest some outbreaks on college campuses will lead to increased community spread, while other schools will be likely to contain transmission. The updated forecasts also project upticks once again in communities across the Mid-Atlantic, such as Richmond and Baltimore, and the Sun Belt, from San Diego to Phoenix, that had stable or declining case count projections over the past few weeks.

Through their county-level forecasting model and test positivity data, the researchers have been closely monitoring whether college campus outbreaks are impacting transmission risk in their surrounding towns and communities—and the results are mixed. Projections are improving for South Bend, Ind., home to the University of Notre Dame, and the Research Triangle in North Carolina, which experienced significant outbreaks on the campuses of the University of North Carolina and North Carolina State University. The communities surrounding the University of Michigan, Purdue University and Duke University have not seen forecasts dramatically change as students returned. Vermont colleges have largely started their academic years without significant transmission, likely the result of both the low case counts that New England maintained throughout the summer, and the safety protocols that colleges are following throughout the state.

However, the researchers are detecting concerning risk for increased transmission to counties that neighbor some college towns, including communities near Boulder County, Colo. (University of Colorado Boulder), Washington County, Ark. (University of Arkansas), Leon County, Fla. (Florida State University), and Centre County, Pa. (Penn State University). The researchers believe the next 2-3 weeks of data will be crucial for understanding the impact of universities' mitigation plans on the risk for widespread community transmission.

While the effects of Labor Day weekend travel are not yet apparent in the data, the new projections show some areas along the I-95 corridor, from Virginia to southern New Jersey, are once again seeing increased risk. Richmond's projected case counts continue to rise and several counties surrounding Washington, D.C. are experiencing test positivity rates as high as 10%. Baltimore and Philadelphia's forecasts also worsened slightly this week.

In the Southwest, Pima, Pinal, and Maricopa Counties in Arizona experienced simultaneous increases in transmission risk for the first time in many weeks, signaling a need to watch reopening strategies, and San Diego, Imperial and Kings Counties in California are also expected to see spikes in case counts over the next four weeks. Finally, the projections show a continued challenging situation across much of the Midwest with transmission risk the highest across Minnesota, Wisconsin and Illinois. While hospitalizations have not increased with the rise in cases seen in these communities, the researchers stress the importance of watching hospitalization data over the next several weeks as the weather turns cooler for a sign of what much of the rest of the country could experience in the fall.

"While we weren't surprised to see outbreaks on college campuses as students returned, what's most important now is understanding which safety plans are most successful at containing the spread of the virus from reaching the surrounding community," 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. "It's encouraging to see that some universities have been able to reduce transmission risk off campus while keeping students on campus and continuing instruction, even if virtually. We must learn from these situations and ensure that if outbreaks occur, our safety protocols can protect the most vulnerable members of the community from additional risk."

For additional comments from COVID-Lab's lead investigators and collaborators, read this blog post: https://policylab.chop.edu/blog/covid-19-outlook-finding-our-bearings-after-labor-day

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 COVID-19 transmission and test positivity rates across all U.S. counties, and projects case counts for 817 counties with active outbreaks, representing 82% of the U.S. population and 88% 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. This is just one tool in a toolbox of resources policymakers and decision-makers can use as they manage their COVID-19 response efforts.

The application of this model, which focuses on time-varying transmission rates during the early months of the pandemic in the U.S., was released on July 23, following peer review, in ***JAMA Network Open***. You can read more about how the team validates their models for accuracy **in this blog post**. The data are publicly available in the form of **interactive maps and graphs**.

###

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**.