Children's Hospital of Philadelphia
PolicyLab

New COVID-19 Projections Show At Least Half of U.S. States Will See Substantial Case Growth in Next Four Weeks

Philadelphia, Pa. – October 28, 2020 – Updated COVID-19 case projections and county-level test positivity data released today by PolicyLab at Children's Hospital of Philadelphia (CHOP) suggest that all states, except Hawaii, will see increased case counts over the next four weeks, with at least half expected to have substantial case growth. The researchers warn that the projected rate of growth of this fall wave could overwhelm contact tracing efforts and threaten the effectiveness of school safety plans, eventually necessitating many schools to revert to online learning, particularly for older students, until the surge has passed. This concern was articulated in PolicyLab's revised guidance for in-person schooling released last week.

The PolicyLab projections worsened significantly this week for most of the counties the model follows. In the Northeast, as colder weather increases the virus's ability to spread, New Hampshire, Massachusetts, Rhode Island, Connecticut and New Jersey are all forecast to see significant COVID-19 resurgence through late November. While case counts continue to rise more slowly in New York City than in its neighboring communities, explosive case growth in large, northern New Jersey communities just over the Hudson River will threaten the success achieved so far this fall. Furthermore, the Philadelphia region, which had been the only part of Pennsylvania not seeing widespread community transmission over the last few weeks, is now expected to see a rise in case counts as test positivity rates have increased.

The researchers are also concerned to see resurgence risk growing more quickly than anticipated in the warmer climate zones of the southern U.S. In the Southwest, weekly case counts are now exceeding 100 cases per 100,000 residents in Maricopa County (Phoenix), Arizona, and test positivity rates are rapidly increasing across New Mexico. Resurgence risk observed in recent weeks in northern Texas is now spreading south to Houston, and major cities in Alabama and Mississippi are already seeing concerning hospitalization rates, with case counts forecast to grow. Finally, following the first signs of growing transmission risk in southeast Florida, reported by PolicyLab last week, most counties across the state are now expected to see increasing case counts over the next four weeks.

This wave of growth happening throughout the country is quickly being followed by rapid increases in hospitalization rates. U.S. Department of Health and Human Services (HHS) and Centers for Disease Control and Prevention (CDC) data show that hospitalizations, and more specifically ICU admissions, are now increasing throughout the country, with significant growth in the areas of greatest concern over the past few weeks—including many counties in Wisconsin and Colorado, as well as large Midwestern cities like Chicago, Indianapolis, Cleveland and Milwaukee. Additionally, while numbers remain lower than in adults, 75% of states are now seeing increased COVID-related pediatric hospitalizations. Out of concern for overwhelming health care and contact tracing resources in many parts of the country, and with worsening four-week projections in all but one state, PolicyLab experts recommend school districts strengthen their safety plans for students and staff and begin to assess when they may need to revert to online learning for some or all of their students to avert the risk of outbreaks in schools.

"Since we first released our school reopening guidance in August, we knew there would be a time when many communities would see accelerating viral transmission and reach thresholds at which uncertainty would arise

as to whether contact tracing and school safety plans could safely keep students and teachers in the classroom," 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. "As test positivity rates, hospitalizations and case incidence rise, school leaders throughout the country will need to consult with their local health departments to make thoughtful, localized decisions—considering community vigilance to mitigation practices, capacity of local health care systems, sophistication of contact tracing, and more—about when distanced learning may become necessary for some or all of the student body until this fall wave diminishes."

For additional comments from COVID-Lab's lead investigators and collaborators on their updated forecasts and school reopening guidance, read this blog post: https://policylab.chop.edu/blog/covid-19-outlook-morning-america-election-day-unfold-amid-accelerating-resurgence

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 819 counties with active outbreaks, representing 82% 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. 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**.

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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**.