Geographic Disparities in COVID-19 Testing: An Urgent Call to Action

Shannon M Monnat and Kent Jason G Cheng

Testing for the novel coronavirus disease (COVID-19) is essential to help researchers understand the epidemiology of the disease and to help policymakers and healthcare professionals reduce spread, strategically deliver treatment resources, and devise appropriate policy responses. There is already evidence that U.S. states with more confirmed infections (which can only be determined with testing) are more likely than their peer states with fewer confirmed cases to enact physical distancing protocols, thereby dramatically reducing travel and other mechanisms for virus spread. In his March 23 media briefing,[1] the World Health Organization (WHO) Director General made a strong call for the testing of every suspected case as part of an "aggressive and targeted" tactic against COVID-19.

Testing Rates are Lowest in the Unhealthiest States

Unfortunately, there have been substantial resource constraints and other challenges with conducting adequate testing. Resources (e.g., testing kits, medical personnel, personal protective equipment) and political will to conduct widespread testing have varied substantially across countries and even across states within the U.S. As of April 7, 2020, testing rates ranged from 308.9 per 100,000 population in Texas to 1,740.1 per 100,000 population in New York. To be sure, these testing data are dynamic and changing every day. However, this widespread variation in testing has implications for disparities in COVID-19 outcomes.

Last week, we showed that testing rates were lower in states with larger percent black and poor populations. Based on testing data from this week, those testing disparities have largely disappeared thanks to drastic increases in testing in D.C., Louisiana, and Mississippi (states with large percent black and poor populations). Nonetheless, these early disparities in testing rates are troubling because delays in testing increase the risk of a surge in silent spread and severe COVID-19 cases in these states. There is already mounting evidence that black Americans are suffering from disproportionately high rates of infection and death from COVID-19.

What has remained consistent over the past several weeks is that testing rates are lowest in the unhealthiest states. Figure 1 shows the number of coronavirus tests that have been conducted per

KEY FINDINGS

- COVID-19 testing rates are lowest in the least healthy states. Rates are lower in states with lower life expectancy, higher percentages of adults reporting fair/poor health, higher rates of obesity, and higher diabetes prevalence.
- COVID-19 testing rates are lowest in states with the least health care access. Testing rates are lower in states with fewer primary care physicians per capita and in states with higher percentages of uninsured adults.
- Several states with the lowest testing rates are among those who elected not to expand Medicaid under the Affordable Care Act.
- Disparities in testing rates are troubling because delays in testing increase the risk of a surge in silent spread and severe COVID-19 cases in these states.
- This epidemic not only reveals, but is also exacerbating, large health disparities across U.S. states.

100,000 population in the state on y-axis and four state-level health outcomes on the X-axis: life expectancy, percentage of adults reporting fair/poor health, percentage of obese adults, and percentage of adults with a diabetes diagnosis. The patterns are clear. Unhealthier states have lower testing rates. States with higher life expectancy have higher testing rates. Conversely, states with a larger share of residents reporting fair/poor health, higher rates of obesity, and higher rates of diabetes have lower testing rates. This is a major concern given that the populations in these unhealthier states are at the greatest risk of serious complications and death from coronavirus. This epidemic not only reveals, but is also exacerbating, large health disparities across U.S. states.
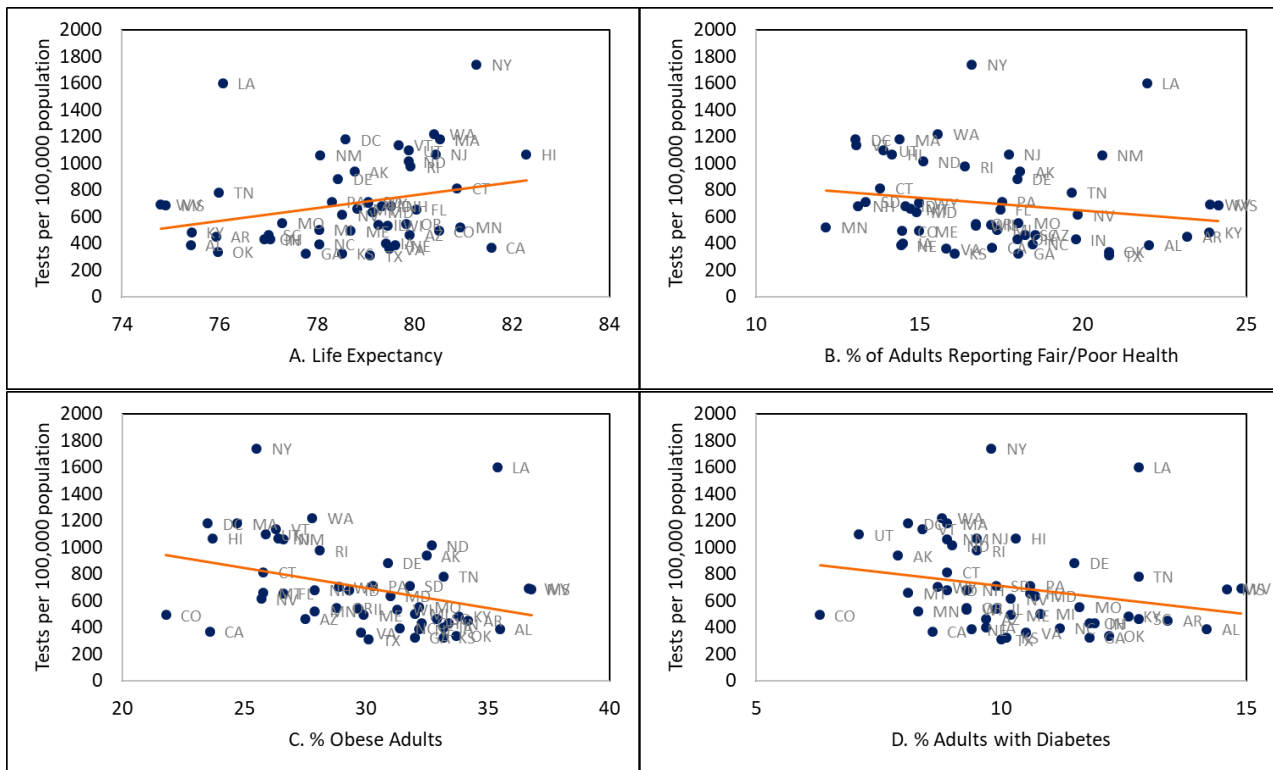

Figure 1. Scatterplot of State-Level COVID-19 Testing Rates (tests per 100,000 population) by State-Level (A) Life Expectancy, (B) Percentage of Adults Reporting Fair/Poor Health, (C) Percentage of Adults who are Obese, and (D) Percentage of Adults with a Diabetes Diagnosis
Data Sources: Testing rates are current as of 4/08/2020 and come from the COVID Tracking Project; State-level health indicators come from the Robert Wood Johnson Foundation County Health Rankings; *Figures*: Shannon Monnat

Testing Rates are Lowest in States with the Worst Health Care Access

Further exacerbating these disparities is that the same states with the unhealthiest populations also have worse health care access. Testing rates are lower in states with lower health care access. Figure 2 shows the relationship between state testing rates and two measures of health care access. States with fewer primary care physicians per capita have lower testing rates (Fig. 2A). Particularly concerning is that states with fewer medical personnel are going to be the least equipped to deal with a surge in cases when they occur. They will not have the facilities, equipment, or medical personnel to handle the surge. This could dramatically increase case fatality rates in these states. States with a larger share of adults without health insurance also have lower testing rates (Fig. 2B). Several of the states with the lowest testing rates (Texas, Georgia, Kansas, Oklahoma, and Alabama) elected not to expand Medicaid under the Affordable Care Act, a choice that is bound to have harmful COVID-19 related impacts on lower-income populations in these states. The uninsured are likely to face substantial barriers to testing for COVID-19 and are at higher

risk of contracting the virus because they are more likely to work in jobs that may increase their risk of exposure (e.g., service work and other employment that cannot be done from home).
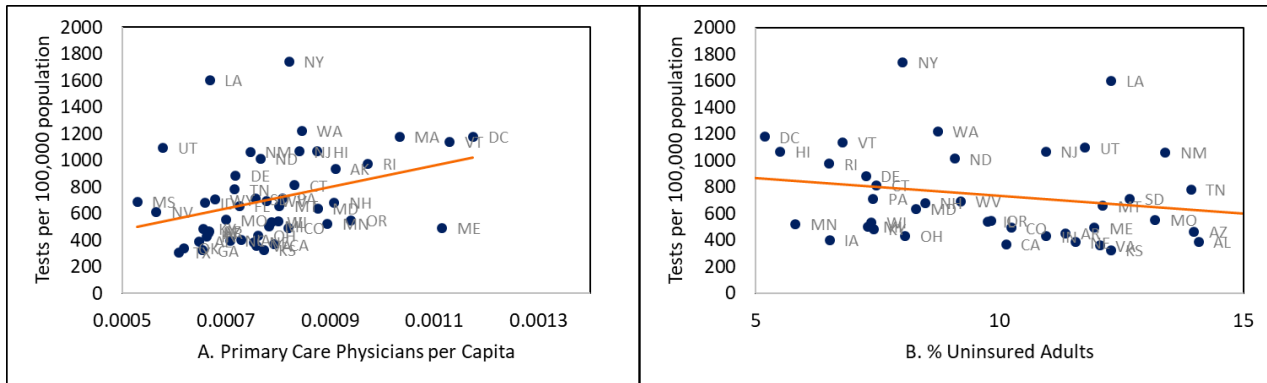

Figure 2. Scatterplot of State-Level COVID-19 Testing Rates (tests per 100,000 population) by State-Level (A) Primary Care Physicians per Capita, (B) Percentage of Adults without Health Insurance
Data Sources: Testing rates are current as of 4/08/2020 and come from the COVID Tracking Project; State-level health care access measures come from the Robert Wood Johnson Foundation County Health Rankings; *Figures*: Shannon Monnat

Recommendations for Policy and/or Practice

The Families First Coronavirus Response Act, with its mandate on free testing, presents an opportunity to mitigate current testing disparities. The CDC recommends widespread testing for symptomatic individuals including older adults, those who have chronic health conditions, and those who are immune-compromised.[2] Beyond that, we advocate for prevalence testing above and beyond testing only those with symptoms. Testing for prevalence (rather than just diagnosis) informs us about the progress and trajectory of the epidemic and can help government officials to better allocate resources and make informed decisions about the appropriate timing for lightening social distancing protocols. We implore national, state, and local governments to ramp up testing as part of the overall strategy to fight COVID-19. This is a health equity issue. We also call for better data collection and research to understand testing capacity and disparities in testing access and utilization.

References

1. World Health Organization. (2020). WHO Director-General's opening remarks at the media briefing on COVID-19 - 23 March 2020. Retrieved March 25, 2020, from https://www.who.int/dg/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---23-march-2020
2. Centers for Disease Control and Prevention. (2020). Evaluating and Testing Persons for Coronavirus Disease 2019 (COVID-19). Retrieved March 20, 2020, from https://www.cdc.gov/coronavirus/2019-nCoV/hcp/clinical-criteria.html

Acknowledgements

About the Authors

Shannon Monnat is the Lerner Chair for Public Health Promotion and Lerner Center Director, Associate Professor of Sociology, and Co-Director of the Policy, Place, and Population Health Lab in the Maxwell School of Citizenship and Public Affairs at Syracuse University (smmonnat@syr.edu). Kent Jason G. Cheng is a PhD Social Science Student at the Maxwell School of Citizenship and Public Affairs, Syracuse University (kgcheng@syr.edu).