UC San Diego
UC San Diego News Center

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UC San Diego Partners with San Ysidro Health to Expand COVID-19 Testing

$5 million grant from National Institutes of Health will fund program to use expansive, new testing platform to assess and assist underserved communities hard-hit by the pandemic

Researchers at University of California San Diego School of Medicine, in collaboration with local partners, have been awarded a $5 million grant from the National Institutes of Health (NIH) to implement a program of widespread testing for COVID-19 in San Ysidro, focused on pregnant women and children.

The two-year program, headed by Robert Tukey, PhD, professor of pharmacology, and Louise Laurent, MD, PhD, professor of obstetrics, gynecology and reproductive sciences, is part of the NIH's Rapid Acceleration of Diagnostics (RADx) Initiative for COVID-19.

"There is growing concern nationwide that asymptomatic, presymptomatic and mildly symptomatic children and adolescents may be unknowingly spreading COVID-19 infections to highly vulnerable populations—at home, at school and in their communities," said Tukey, who also directs the UC San Diego Superfund Research Center.

Across the country, communities of color have been disproportionately impacted by the pandemic. Like other diverse, low-income, and underserved communities, San Ysidro is particularly susceptible to the effects of SARS-CoV-2, the virus that causes COVID-19. The population is young and largely Hispanic, with one-third of residents under 18 years of age. Many residents live in large, multi-generational homes that may exacerbate viral transmission rates.

The San Ysidro Port of Entry is also among the busiest border crossings in the world, with an estimated 50,000 vehicles and 25,000 pedestrians crossing from Mexico into the United States each day.

San Diego County Health and Human Services estimates the infection case rate in San Ysidro at nearly 6,000 per 100,000 population, four times greater than the San Diego County average (approximately 1,400 per 100,000 population). However, accurate numbers are difficult to obtain because access to testing and contact tracing have been insufficient.

Laurent said UC San Diego and San Ysidro Health (SYH) have an established history of successful health care and research collaborations, with each bringing key strengths. In particular, the UC San Diego Superfund Research Center has a long-standing relationship with vulnerable and underserved communities in San Diego. SYH is a well-recognized and highly trusted provider of comprehensive health care, encompassing 41 program sites that provide medical, dental, and behavioral health services and school-based care to more than 105,000 patients throughout San Diego County.

A third partner — The Global Action Research Center (Global ARC) — will work with community members, the research team's implementation science experts and other key participants to identify and address concerns people may have about the safety and usefulness of testing. Global ARC is a nonprofit organization that specializes in connecting academic-based knowledge, technologies and programs with communities in need.

The testing effort will be conducted through the UC San Diego Biochemical Genetics and Metabolomics Laboratory under the direction of Laurent, Rob Knight, PhD, professor and director of the Center for Microbiome Innovation and Gene Yeo, PhD, professor of cellular and molecular medicine, all at UC San Diego School of Medicine. It will employ an automated testing system capable of processing up to 6,000 tests per day at one-third the cost of current clinical COVID-19 tests.

Tukey noted, however, that greater testing capacity doesn't automatically translate into more people being tested.

"This project will also apply 'implementation science' — an evidence-based approach to finding new ways to connect and communicate with persons and communities of color who have long suffered from systemic racism, health inequities and lack of resources. One of the most important aspects of this grant is the substantial support it provides to get serious about understanding factors that have led to disproportionate burden of the pandemic on underserved populations so that interventions can be implemented to decrease these disparities."

Global ARC will lead a process with community members to develop a “Theory of Change,” an inclusive, participatory method to identify ‘pathways to impact’ for research projects. Theory of Change builds teamwork, while gaining consensus around the identification of root causes of the local obstacles facing effective and efficient testing within underserved communities.

“This process will identify and characterize barriers to testing uptake, including stigma, distrust, fear, discrimination and lack of scientific knowledge — and develop a set of interventions to mitigate the effects of these barriers regarding COVID-19 testing in clinical and community settings,” said Laurent.

“It will also document the extent to which factors at multiple levels, such as environmental public health policies, strength of local civic engagement and interpersonal/family and individual variables impact rates of morbidity and mortality”.

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