

Eliminating COVID-19 related disparities in Arizona in partnership with underserved and vulnerable communities

Abstract

Arizona has had the highest rates of increases in COVID-19 cases and hospitalizations and the highest positive test rate (approximately 25%) of any state in the United States. COVID-19 morbidity and mortality disparities are disproportionately high in Arizona, driven by comorbidities and known social determinants of health (SDoH). Socioeconomic and cultural barriers to health care access are producing COVID-19 testing deserts. In comparison to non-Hispanic Whites, ethnic/racial communities in the state have significantly lower COVID-19 testing rates but the positivity rates of those who are tested are much higher than the positivity rates of Whites.

This application proposes to strengthen the capacity of ethnic/racial minority communities to eliminate testing deserts in Arizona through the implementation and evaluation of an innovative community-engaged intervention. The project combines the R.A.P.I.D. testing model of **Equality Health** with a FDA-authorized saliva-based diagnostic test developed by the Arizona State University's **Biodesign Institute**. Convenient, repeatable, large-scale molecular testing for SARS-CoV-2 would be a key weapon to help control the COVID-19 pandemic among underserved and vulnerable communities. In partnership with underserved and vulnerable communities of Arizona, the intervention will increase access to COVID-19 testing and will identify and decrease barriers to testing associated to Social Determinants of Health (SDoH). The project will address disparities in COVID-19 diagnostics, related repeat testing, contact tracing, wraparound services and referrals. The project will assess the effectiveness of the proposed approach and will advance knowledge about SDoH related to accessing testing and receiving vaccinations once they are available.

Our existing NIMHD-funded **U54 Specialized Center of Excellence on Minority Health and Health Disparities** (RFA-MD-17-005) at Arizona State University (ASU) is eligible to respond to this NOSI. The specialized center (5U54MD002316-14; Marsiglia, PI) focuses on the prevention of disease among underserved and vulnerable communities of Arizona. The U54 is part of a 20-year-old trajectory of community-based participatory research (CBPR) guided by a highly engaged **Community Advisory Board (CAB)**. The CAB members were closely involved in the planning for this application; they will continue to advise the team throughout the project with the addition of scientific advisors.

The lead community partner is the **Equality Health**, the developer of the R.A.P.I.D. community-based model and the convener of a growing COVID-19 coalition of communities of color providers from across the state of Arizona. The **ASU Biodesign Clinical Testing Laboratory (ABCTL)** developed saliva-based SARS-CoV-2 molecular diagnostic test provides significant advantage to increase testing and participation at non-clinical community settings. Its main features are: a) minimal to no PPE requirements compared to Nasopharyngeal (NP) swabs; b) convenience and economy of specimen collection; c) ease of multiple sampling; d) can be administered by a minimally trained community worker and e) studies has shown that saliva may be more sensitive and consistent than NP swabs.

During the first three months of the project, our target is to administer 10,000 tests. We aim at testing 500 community members per week during the first month of the grant and 1,000 community members every week during months 2 and 3. We will evaluate the impact of the intervention through a longitudinal (6 months) evaluation. We will randomly select a cohort of 500 participants in the R.A.P.I.D. program and compare them with a matching randomly selected group of 500 participants receiving the same saliva test but without the R.A.P.I.D. component. Participants will also complete a pre and post survey regarding SDoH and their knowledge, attitudes and behaviors regarding COVID-19. The assembled transdisciplinary team has the capacity, infrastructure, and established community-engaged relationships to implement the proposed large-scale intervention for increasing access and uptake of diagnostic COVID-19 tests, therapeutics and vaccines in partnership with underserved and vulnerable populations of Arizona.

Specific aims

Aim 1: Strengthen and expand the Coalition supported by Equality Health into a Community Collaborative to eliminate COVID-19 Testing Deserts (CCETCD) in Arizona. The Community Advisory Board (CAB) of the U54 Center will guide these efforts and will involve multi-sectorial key stakeholders, and support community-led strategies to address testing disparities disproportionately affecting American Indian, Latinx, and African American communities living in zip codes identified as testing deserts of Arizona. This network of influential community organizations will also provide the infrastructure to engage community members in vaccination (when available) and to respond to future pandemics.

Aim 2: Identify *testing deserts* based on real-time data input from the Arizona Department of Health Services (ADHS) and provide bi-weekly updated data on testing deserts in based on the testing priority areas for the next month. The CCETCD will support coordination of testing sites, collaboration with local and tribal governments, and involvement of local community partners in those testing deserts for community wide testing campaigns (e.g., advertisement to local residents).

Aim 3: Promptly, implement the R.A.P.I.D model of Equality Health, a CHW intervention tailored to American Indian, Latinx, and African American communities in Arizona underserved by COVID-19 testing. ASU's innovative saliva-based testing will be available at non-clinical community sites in order to improve accessibility to testing and shorten the testing results' notification time.

Aim 4: Advance knowledge about social, economic, and ethical issues related to testing by comparing a randomly selected cohort of test takers recruited by the CHW-led R.A.P.I.D team (N=500) with a comparison group (N=500). We will compare the outcomes of the participants in the CHW-led R.A.P.I.D programs with those in the comparison group, to be recruited from other free testing sites in Arizona delivered by ASU Biodesign Institute.

For more information or questions, please contact Dr. Flavio F. Marsiglia at marsiglia@asu.edu

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School of Social Work – Watts College
Mail Code 4320 – 411 N. Central Avenue – Suite 720
Phoenix, AZ 85004-0693
(602) 496-0700 Fax: (602) 496-0958
<http://sirc.asu.edu>