

Building Regional Infrastructure for Mitigating the Impact of COVID-19 within Racial/Ethnic Minority, Socially Vulnerable, and Rural Communities

Elizabeth City State University (ECSU) is the only public university in the northeastern region of North Carolina and serves primarily 21 counties of which most are designated as Tier 1 counties. During the COVID-19 pandemic, many of these counties have been adversely affected. In particular, Bertie, Halifax, and Northampton have experienced per-capita coronavirus rates higher than some urban centers. In fact, Bertie County has the second highest per-capita burden of coronavirus among rural counties in the state.

Statement of the Problem

Emerging data suggest that racial and ethnic minority populations bear a disproportionate burden of illness and death from COVID-19. As of last month, African-Americans accounted for 29.5% of confirmed COVID-19 cases despite making up 13.4% of the U.S. population. A recent Centers for Disease Control and Prevention (CDC) analysis found that 33% of hospitalized patients with lab-confirmed COVID-19 were African-Americans compared to 18% in the community, suggesting an overrepresentation of blacks among hospitalized patients.

Several factors contribute to the disproportionate burden of public health crises on certain populations. Racial and ethnic minorities are at greater risk for exposure to and adverse outcomes from COVID-19 due to these social determinants of health and living and working conditions. Such conditions limit their ability to comply with public health measures to prevent infection like physical distancing, handwashing, and quarantine measures. Other exposure risks for racial and ethnic minority populations include a greater likelihood of being employed in the essential workforce (e.g., service industry, agriculture) and lack of paid sick leave. A greater prevalence of underlying health conditions also put racial and ethnic minorities at higher risk for severe illness and death from COVID-19.

Persistent disparities in access to healthcare pose challenges for racial and ethnic minority, rural, and socially vulnerable populations for receiving COVID-19 services. These vulnerable groups also live in areas that are further from medical facilities or where medical facilities are under-resourced. Existing disparities in vaccination rates could mean racial and ethnic minorities may experience continued susceptibility to COVID-19, even after a vaccine is available.

It is very important to detect the prevalent variants such as delta or lambda among the northeastern North Carolina population. We could only perform rapid testing by RT-PCR and sequencing the positive samples for determining the variant strains. Henceforth, this proposed project of collecting and testing, deidentified samples and sending them to UNC Chapel Hill for sequencing will enable us to determine the variant strains.

Proposed Strategy to Address COVID-19 Challenges

Overall Goal

The overarching goal of the proposed project is to enhance capacity and infrastructure to support COVID-19 response, recovery, and resilience for racial and ethnic minority, socially

vulnerable, and rural communities in northeastern North Carolina (NENC).

Implementation Design

The proposed initiative will support a RT-PCR station where we will collect and analyze nasal samples from NE- NC population to determine COVID infection status. The positive samples will be sent to Dr. Dittmer's lab at UNC Chapel Hill for sequencing. The sequenced data will be used to determine the particular strain of the COVID virus by bioinformatics and be submitted to GISID database. The ECSU COVID testing lab is equipped with multiple RT-PCR machines and trained graduate students to efficiently isolate RNA from the collected samples and do RT-PCR following the CDC directed guidelines.

(i) Regional Site for COVID-19 Testing

The site is equipped with the capability for diagnostic testing of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The site will also develop campaign activities to support increased awareness and adoption of public health practices (e.g., physical distancing, COVID- 19 testing, vaccination, etc.) among vulnerable subgroups in the selected communities. ECSU will work with community-based organizations (CBOs) in coordinating strategic dissemination and delivery of information through a variety of formats including electronic, print, audio, etc. and through communications channels including websites, social media, public service announcements (PSAs), print and radio media, ethnic media, fact sheets, infographics, newsletters, grassroots channels, events, etc.

ECSU will also collaborate with community organizations to host free COVID-19 mobile and popup testing clinics across the region. ECSU recognizes the importance of increasing access to testing in communities across the region, which is especially critical in rural and underserved communities where residents may have limited access to healthcare. The mobile testing clinics will help bring testing, potentially vaccines, and essential supplies to these communities so that residents can get tested for free and continue to take the steps they need to help stop the spread of COVID-19. The screening and specimen collections will be free for residents and will be part of ECSU's role as a regional site to increase testing in underserved and rural communities across the state. The project webpage will provide real-time information to help one locate where testing is scheduled in their community.

Summary

The proposed initiative at ECSU is expected to result in: (i) improved reach of COVID-19-related public health messaging to racial and ethnic minorities, rural and socially vulnerable populations; (ii) this project will reveal the dominant variant strain infecting the northeastern North Carolina population which will ultimately help in designing booster vaccination and COVID mitigation.

| Category | Requested Funds |
|---|------------------------|
| Personnel | |
| Project coordinator salary including Fringe | \$4,000 |
| Research assistant salary | \$11,000 |
| Subtotal Personnel | \$15,000 |
| Materials and Supplies | |
| Reagents cost | \$14,000 |
| Subtotal Materials and Supplies | \$14,000 |
| Miscellaneous | |
| Collection costs including transportation, phlebotomist, etc. | \$1,000 |
| Subtotal Miscellaneous | \$1,000 |
| Total Funds Requested | \$30,000 |

Table 1: Cost breakdown for ECSU's COVID-19 Response Initiative