UNC Health rapidly launched a mobile Covid testing unit to underserved community sites in May 2020 to provide targeted testing of uninsured Black and Latinx community members. We engaged with existing Black and Latinx community leaders to co-develop the program, converting a mobile vascular screening unit into a testing site and resource center for patients at risk. In the first three months, 2,464 people were tested with an overall Covid-positive rate of 15.6% and a maximum single day positive rate of 41%. Over the course of the program, testing increased, community leader engagement increased, local community agency interest and participation grew, and patients received proactive testing and care who otherwise might have presented acutely ill or unintentionally spread Covid 19 throughout at-risk communities.

Key Takeaways:

- Community partner engagement allowed a large healthcare system to rapidly deploy a successful mobile Covid-19 testing program in underserved communities to address Covid-19 related health inequity.

- As a result of thoughtful planning and design, historically marginalized and underserved community members accepted our multidisciplinary healthcare teams, resources to address social drivers of health outcomes (e.g., food resources), behavioral health support, educational Covid-19 information, and the distribution of masks.
• In the first two months of the program, 1,935 patients received testing; 70% were from communities disproportionally impacted by the virus and 63% were uninsured.

The Challenge:

Covid-19 has disproportionally impacted Black and Latinx communities. As a health system, UNC Health was challenged to design a Covid-19 testing program tailored to these underserved communities in order to identify cases and connect Covid-19 positive patients with appropriate follow-up care, quarantine instructions, educational information, and face coverings to mitigate community spread. Previous experience and research identified key barriers to underserved community acceptance of health-system-sponsored, community-based interventions as credible and culturally appropriate. The need to address these barriers informed our community engagement strategy.

The Goal

The goal of the program is to increase Covid-19 testing and provide support services for underserved North Carolinians with historically limited access to care, by providing testing services directly in their community. To ensure success and address known and potential barriers, we engaged community leaders and local, trusted health care providers in decisions regarding programmatic design, logistics, and promotion.

The initiative was designed to go beyond Covid-19 testing and provide services to treat the whole person, including:

• Covid-19 education (i.e. transmission, physical distancing, guidance on wearing face coverings, how to talk to your child about Covid-19, how to disinfect your house if you test positive, etc.)

• Access to social support resources such as food, medication and financial assistance

• Access to virtual behavioral support resources

• Guidance to further primary care, as needed, such as Federally Qualified Health Centers and free clinics

• Cloth face coverings for day to day use

• Comprehensive nurse follow-up (UNC Health Chat) for patients who test positive

Execution

As a necessary first step, we mobilized community leaders and created a Community Advisory Board to co-create the program, design various elements of services, and actively engage community agencies. In the first two weeks, we connected with 11 community agencies and established a regular cadence of advisory board meetings.
Based on the Community Advisory Board direction, testing sites included churches, public and charter schools, and parking lots outside of free clinics that serve uninsured and underinsured community members. Advertising for these events occurs exclusively through community leaders, grassroots organizations and local healthcare providers’ social media channels and website postings.

"Based on the Community Advisory Board direction, testing sites included churches, public and charter schools, and parking lots outside of free clinics that serve uninsured and underinsured community members."

The unit was designed to operate three days per week, serving approximately 100 individuals per day. When an individual arrives at the unit, they receive a health assessment to understand their Covid-19 exposure history and symptoms. A nasal swab is taken and each sample is processed by the UNC Medical Center lab. We have worked to ensure that individuals tested receive their results within 24 to 48 hours. Those who test positive receive a routine daily follow up call from a team of nurses, enhanced by Chat technology, to monitor symptoms and connect to the appropriate care should their symptoms worsen. For individuals with insurance, testing is billed directly to their insurance company. The cost of testing for patients without insurance is covered through grant and foundation support.

Early results highlight the program’s success in reaching a high-need, high risk population and the importance of delivering testing services in underserved communities. As a result, services expanded to increase testing capacity, add additional days of operation, incorporate additional areas of identified need, and add other services (i.e. flu shots).

This program was started with an initial donation of $150,000 from the UNC Health Foundation’s COVID Response Fund.

**Hurdles**

It proved invaluable to engage community leaders, who were open and honest about potential hurdles, early in the process. Two possible barriers emerged quickly from our Community Advisory Board. First, there was a perceived lack of commitment that UNC Health would be involved for the “long haul.” Second, community leaders expressed concern that their voices and perspectives would not be incorporated into the program’s design and that community engagement was just a “box to check” for project leaders. The Community Advisory Board offered several examples of past outreach projects that community members perceived to be more about public relations than the needs of the community served, which led to poor attendance and engagement and were quickly abandoned by a variety of clinical partners. Community leaders articulated that building trust within the community was critical to program success. Through regular engagement and incorporating Community Advisory Board ideas into planning, operations and service delivery,
including routine follow-up from program leadership, we built and maintained community trust so that testing sites would be successful.

Continued staffing, due to competing demands, has become a barrier. The unit was established when our health system in-person clinic volumes and hospital censuses were much lower than usual and we could easily shift staff to this project. As our clinic and hospital volumes ramped back up – along with slowed hiring across the health system – regular staffing became a recurring challenge. These staffing challenges led to a decrease in the number of patients served in July and August. We subsequently secured short-term funding from the UNC Health Foundation, while seeking longer-term funding, to hire positions specifically allocated to this outreach program.

We additionally had mechanical problems with the mobile unit itself which led to being unable to test the week of July 19.

**The Team**

The team was led by a Project Lead and staffed by five medical assistants, two registration staff, two community health workers, one registered nurse, and one physician or advanced practice provider per day. Licensed clinical social workers were available remotely to provide behavioral health services. Results for Covid-19 testing followed the same process as results from other ambulatory clinic testing sites across our health system, including daily nurse communication for all positive cases, and Chat enabled notification for negative tests.

**Metrics**

As of September 16th, 2,464 patients were tested (Table 1). The number of tests performed per day ranged from 9 to 151. Of the patients tested, 1,732 (70%) were minorities from communities disproportionately impacted by the virus. A majority of the patients, 1,331 (53%), were uninsured. African Americans make up 21% of North Carolina’s population and 41% of those tested. Similarly, Latinx make up 10% of North Carolina’s population and accounted for 30% of those tested. To this date, 385 out of 2,464 (15.6%) patients tested positive, the highest positivity rate for an ongoing testing program within UNC Health. During the months of June and July, the weekly positive rate for tests completed at the Mobile Unit was consistently higher than the Wake County average rates. (Figure 1) As more testing was added in the County (from the week of May 3 there were 4,195 estimated tests performed weekly in Wake County compared to 19,642 the week of August 23), the demand for testing at the mobile site decreased and the percent positive rates aligned with overall positive rates for Wake County.
Table 1. Characteristics of patients tested through 9/16/20

| Characteristic                                      | % Total | Positive | % Positive | Negative | Total |
|-----------------------------------------------------|---------|----------|------------|----------|-------|
| **Total Patients**                                  | 338     | 17.5%    | 1597       | 935      | 1930  |
| **Symptomatic**                                     |         |          |            |          |       |
| Yes                                                 | 47.1%   | 272      | 29.8%      | 639      | 912   |
| No                                                  | 52.9%   | 66       | 6.4%       | 957      | 1024  |
| **Close contact with a known positive**             |         |          |            |          |       |
| Yes                                                 | 39.2%   | 210      | 27.7%      | 548      | 758   |
| No                                                  | 60.8%   | 128      | 10.9%      | 1048     | 1177  |
| **Attended large gathering**                        |         |          |            |          |       |
| Yes                                                 | 8.4%    | 19       | 11.7%      | 143      | 162   |
| No                                                  | 91.6%   | 319      | 18.0%      | 1454     | 1773  |
| **Chronic Conditions**                              |         |          |            |          |       |
| Yes                                                 | 36.3%   | 57       | 8.1%       | 646      | 703   |
| No                                                  | 63.7%   | 281      | 22.8%      | 951      | 1232  |
| **Healthcare Worker**                               |         |          |            |          |       |
| Yes                                                 | 3.2%    | 4        | 6.5%       | 58       | 62    |
| No                                                  | 96.8%   | 334      | 17.8%      | 1539     | 1873  |
| **Recent Travel History**                           |         |          |            |          |       |
| Yes                                                 | 5.2%    | 9        | 8.9%       | 92       | 101   |
| No                                                  | 94.8%   | 329      | 17.9%      | 1505     | 1834  |
| **Insurance type**                                  |         |          |            |          |       |
| Uninsured                                           | 62.7%   | 300      | 24.7%      | 913      | 1213  |
| Medicaid                                            | 5.7%    | 18       | 16.2%      | 93       | 111   |
| Medicare                                            | 7.5%    | 1        | 0.7%       | 145      | 146   |
| Private Insurance                                   | 24.0%   | 19       | 4.1%       | 446      | 465   |
| **Gender**                                          |         |          |            |          |       |
| Male                                                | 43.2%   | 175      | 21.0%      | 660      | 835   |
| Female                                              | 56.8%   | 163      | 14.8%      | 937      | 1100  |
| **Ethnicity**                                       |         |          |            |          |       |
| Hispanic/Latinx                                     | 33.0%   | 260      | 40.8%      | 378      | 638   |
| Not Hispanic/Latinx                                 | 58.9%   | 59       | 5.2%       | 1080     | 1139  |
| Unknown                                             | 7.9%    | 19       | 12.5%      | 133      | 152   |
| Patient Refused                                     | 0.3%    | 0        | 0.0%       | 6        | 6     |
| **Race**                                            |         |          |            |          |       |
| Black/African American                              | 37.2%   | 29       | 4.0%       | 691      | 720   |
| White or Caucasian                                  | 20.1%   | 23       | 5.9%       | 336      | 389   |
| Other Race (predominately Hispanic/Latinx)          | 31.4%   | 243      | 40.0%      | 364      | 607   |
| Unknown                                             | 9.7%    | 36       | 19.1%      | 152      | 188   |
| Asian                                               | 1.2%    | 4        | 17.4%      | 19       | 23    |
| American Indian/Alaska Native                       | 0.2%    | 0        | 0.0%       | 3        | 3     |
| Native Hawaiian or other Pacific Islander           | 0.1%    | 0        | 0.0%       | 1        | 1     |
| Patient Refused                                     | 0.2%    | 3        | 75.0%      | 1        | 4     |
| **Language Preference**                             |         |          |            |          |       |
| English                                              | 68.4%   | 98       | 7.4%       | 1226     | 1324  |
| Spanish                                              | 27.4%   | 233      | 43.9%      | 298      | 531   |
| Vietnamese                                          | 0.3%    | 0        | 0.0%       | 5        | 5     |
| Lingala                                             | 0.1%    | 0        | 0.0%       | 1        | 1     |
Of the patients who tested positive, 284 (74%) identify as Hispanic/Latinx and 287 (75%) were uninsured. Daily positive test rates ranged from 0% to 41%. That peak occurred on June 9 at a testing event hosted at a free medical clinic. This clinic had a number of patients with Covid symptoms; however, the patients were not a member of a high-risk group and therefore they did not meet the criteria for most testing sites. At the time, the mobile unit was one of the few testing sites in area that included, as criteria for testing eligibility, members of racial and ethnic communities disproportionately impacted by the Covid-19 pandemic.
Screening for social needs and providing relevant resources was a stated aim of the initiative. More than 200 social resources were provided, including referrals to local food banks, medication assistance programs, and financial assistance programs (Table 2). For immediate resource needs, the team coordinated with local non-profit agencies for same-day contactless delivery of essential items. To address identified behavioral health needs, including acute stress reactions and anxiety due to the pandemic, 23 patients were referred for a same-day virtual appointment with a licensed clinical social worker. Another 53 patients had additional healthcare needs and were connected to providers who cater to uninsured and low-income patients. In addition, community members donated more than 1,400 homemade cloth masks to patients for day-to-day use.

Table 2. Social resources provided through Covid-19 mobile testing program

| Type of Resource         | Number of Resources Provided |
|--------------------------|-----------------------------|
| Food Resources           | 91                          |
| Medication Assistance    | 45                          |
| Insurance Assistance     | 26                          |
| Financial Assistant      | 46                          |
| Total                    | 208                         |

Source: UNC Health

“Screening for social needs and providing relevant resources was a stated aim of the initiative. More than 200 social resources were provided, including referrals to local food banks, medication assistance programs, and financial assistance programs”

Where to Start

Leverage existing trusted community partners and incorporate their feedback into program development, including location selection and communication channels.

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References

1. Webb Hooper M, Nápoles AM, Pérez-Stable EJ. COVID-19 and Racial/Ethnic Disparities. JAMA. 2020;323(6):2466-7

2. Garg S, Kim L, Whitaker M. Hospitalization rates and characteristics of patients hospitalized with laboratory-confirmed Coronavirus Disease 2019—COVID-NET, 14 States, March 1-30, 2020. MMWR Morb Mortal Wkly Rep. 2020;69(6):458-64

3. Yancy CW. COVID-19 and African Americans. JAMA. 2020;323(6):1891-2

4. Isler MR, Miles MS, Banks B. Across the Miles: Process and Impacts of Collaboration with a Rural Community Advisory Board in HIV Research. Prog Community Health Partnersh. 2015;9(6):41-8

5. Isler MR, Miles MS, Banks B, Corbie-Smith G. Acceptability of a mobile health unit for rural HIV clinical trial enrollment and participation. AIDS Behav. 2012;16(6):1895-901

6. Carolina Demography. 2018 County Population Estimates: Race & Ethnicity, Data accessed 13 July 2020. https://www.ncdemography.org/2019/12/05/2018-county-population-estimates-race-ethnicity/

7. COVID-19 North Carolina Dashboard. NC Department of Health and Human Services, Wake County COVID-19 NC EDSS data report. Accessed 16 September 2020. https://covid19.ncdhhs.gov/dashboard