Spotlight on the Safety Net

A Community Collaboration

Deploying Mobile COVID-19 Testing Programs in North Carolina as an Approach to Improving Health Equity

The novel coronavirus (COVID-19) pandemic has highlighted significant disparities in rates of infection and mortality among Latinx and Black North Carolinians, reflecting similar inequities described across the United States [1-4]. The lack of adequate access to COVID-19 testing, especially in the early months of the pandemic, led multiple health systems across North Carolina to develop mobile COVID-19 testing programs to reduce barriers to testing in underserved communities. This article briefly describes several approaches to mobile COVID-19 testing implemented by North Carolina health systems, highlighting shared and divergent tactics deployed. While the programs described in this article were developed within individual health systems (Novant Health, Atrium Health, NeighborHealth, Cone Health, and UNC Health) remarkably similar programmatic solutions were implemented. All programs offered no-cost testing options for North Carolinians without health insurance. Started as early as March, these programs have proven durable, flexible, and responsive to shifts in number of cases and geographic areas disproportionately impacted by the pandemic.

Site Selection Process and Locations

The programs described here reached more than 13 North Carolina counties. Each program brought testing to underserved communities, and venues for testing were selected with community partners. Testing sites included churches, community centers, food processing plants, homeless services agencies, shopping centers, and farms. The UNC Rex Health mobile unit established a Community Advisory Board (CAB) from organizations serving Black and Latinx individuals to assist with selecting sites in Southeast Raleigh. NeighborHealth Center partnered with existing community agencies (churches, Urban Ministries, and Raleigh Rescue Mission) to aide in site selection, using state data to identify areas in Wake County with high poverty rates among Black and Latinx individuals.

Novant Health, Cone Health, and Atrium Health relied most on data-driven approaches. Atrium Health reviewed geographic information system (GIS) data weekly to identify emerging COVID-19 hotspots in underserved communities of color to pinpoint where testing was most needed and deployed a unit to these sites. Novant Health mined internal and public health data to identify zip codes with higher COVID-19 diagnosis rates, as well as higher COVID-19 mortality. Through this approach, Novant leveraged existing clinic locations in those communities, bringing the mobile testing unit to those sites. Cone Health's Enterprise Analytics updated a map daily with information on testing rates, COVID-19 prevalence, and social vulnerability by census block group, allowing for a tight and timely focus on specific communities.

Cone Health has also completed on-site COVID-19 testing at homeless shelters and hotels in which the City of Greensboro provided rooms for those who could not safely stay in shelters. These mobile sites had low positivity rates. Regular testing allowed leaders to know they were performing the correct infection prevention procedures to ensure the ongoing safety of this vulnerable population.

The UNC School of Medicine Health on Wheels mobile van worked with partners at Piedmont Health, a large community health center network, departments of health (Chatham, Lee, and Nash), employers, and the state Department of Health

Electronically published January 4, 2021.

Address correspondence to Lynne Fiscus, 2000 Perimeter Park Drive, Suite 200, Morrisville, NC 27560 (Lynne.Fiscus @unchealth.unc.edu).

N C Med J. 2021;82(1):80-82.
0029-2559/2021/82118

and Human Services (NCDHHS) to identify locations with substantial mismatches in rates of testing and COVID-19 diagnoses, including at meat processing plants and farms with large communities of Latinx workers.

Advertising to Local Communities

Each program partnered with community stakeholders to develop strategies for disseminating messaging about the availability of COVID-19 testing. With the different approaches, community organizations—such as churches and local minority-owned media outlets—used their social media channels and community networks for word-of-mouth sharing about these events. Novant partnered with recording artists Doug E. Fresh and Anthony Hamilton to amplify key messages to underserved communities and reached out to the Latinx community through a Spanish language helpline and an online COVID-19 assessment tool that connected those in need to mobile testing sites and options. UNC Health and NeighborHealth leveraged their community partners' social media sites and communications channels. Atrium Health established a task force to provide culturally responsive communications to minority communities, engaged with leaders from minority media outlets and clergy leaders, and launched specific initiatives to further engage with Latinx communities on how to stay safe and healthy.

Wraparound Services

All sites offered services such as interpreters to facilitate whole-person care and screenings for social drivers of health such as food insecurity. Several offered coordination with community services referrals for identified needs, including resources for food and housing insecurities and behavioral health. All programs worked closely with local health departments to ensure that those who tested positive were contacted for case inves-

TABLE 1.
Selected North Carolina Health System COVID-19 Mobile Testing Program Characteristics

Mobile Program	Counties Served	Unit	Site Selection	Advertising	Tests Performed (% identifying as nonwhite)	Average positive rates
Atrium Health	Mecklenburg, Union, Cabarrus, Stanly	Pop-up testing sites	GIS data	Social media, community partnerships, earned media opportunities through local minority-owned media outlets	15,945 (76.2%)	22.9%
Cone Health	Guilford, Alamance, Rockingham	Mobile van and pop-up testing sites	Analysis of prevalence and social vulnerability by census block group	Networks of existing community partnerships, churches, social media	8,074 (79.1%)	4.9%
NeighborHealth	Wake	Weekly mobile testing sites	Community partner input	Community partners, NHC website	935 (64.7%)	4%
Novant Health	Mecklenburg, Forsyth	Stationary temporary sites	Data-driven zip code selection	Partnering with celebrities	Greater Charlotte 22,323 (84%) Winston-Salem 12,320 (74%)	20% 19%
UNC Rex Wake County	Wake, Orange	Mobile vascular bus	Community Advisory Board	Social media through Community Advisory Board	2,454 (79.9%)	15.6%
UNC School of Medicine	Orange, Lee, Chatham, Nash	Mobile van	Community request, NC DHHS data	Employers, FQHCs, community partners	2,302 (87.3%)	17.3%

Source. Fiscus et al.

tigation and contact tracing. Several also established a medical home for all who were tested either at their institution or a partner clinic.

Conclusions

Health systems across North Carolina rapidly deployed multiple programs during the COVID-19 pandemic to enhance access to testing for historically marginalized communities. Over 64,442 people were tested by these programs and more than 18% were found to be infected (Table 1). Most programs had higher positivity rates than state-reported general testing results at the time [5], implying that the site selection criteria, while different across programs, served the aim of bringing access to testing to high-risk individuals. While programs differed in several operational aspects, all relied heavily on community partnerships and real-time epidemiologic data to select locations. Testing events were promoted using nontraditional approaches to advertising through targeted celebrities and trusted social media channels. Mobile testing rapidly established by health systems across the state has provided underserved North Carolinians with critical access to diagnostics and care and has facilitated the application of public health measures to help stem transmission within these communities. NCMJ

Lynne Fiscus, MD, MPH president and CEO, UNC Physicians Network, UNC Health, Chapel Hill, North Carolina.
Randi Towns program manager, Office of Health Equity, UNC Health, Chapel Hill, North Carolina.
Sally Wood, MD, MPH medical director, Respiratory Diagnostic Centers, UNC Physicians Network, UNC Health, Chapel Hill, North Carolina.
Pamela Oliver, MD, MSPH executive vice president, Novant Health and president, Physician Network, Novant Health, Winston-Salem, North Carolina.
Suzanna Fox, MD deputy chief physician executive and senior medical director, Women's Service Line, Atrium Health, Charlotte, North Carolina.
Andrea Weathers, MD, DrPH COVID project director, NeighborHealth Center, Raleigh, North Carolina.
Kathy Colville, MSW, MSPH director, Healthy Communities, Cone Health, Greensboro, North Carolina.
Michael Herce, MD, MPH, MSc assistant professor, Department of Medicine, Division of Infectious Diseases, UNC School of Medicine, Chapel Hill, North Carolina.
David Wohl, MD, MPH professor of medicine, Division of Infectious Diseases, UNC School of Medicine, Chapel Hill, North Carolina.

Acknowledgments

Potential conflicts of interests. The authors report no conflicts of interest.

References

1. Newsome M. Yes, COVID-19 does discriminate. NorthCarolinaHealthNews.org. https://www.northcarolinahealthnews.org/2020/04/08/covid-19-african-americans/. Published April 8, 2020. Accessed October 5, 2020.
2. Webb Hooper M, Nápoles AM, Pérez-Stable EJ. COVID-19 and racial/ethnic disparities. JAMA. 2020;323(24):2466–2467. doi: 10.1001/jama.2020.8598
3. Garg S, Kim L, Whitaker M, et al. 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(15):458-464. doi: 10.15585/mmwr.mm6915e3
4. Yancy CW. COVID-19 and African Americans. JAMA. 2020;323(19):1891-1892. doi: 10.1001/jama.2020.6548
5. Towns R, Corbie-Smith GD, Richmond A, Gwynne M, Fiscus L. Rapid deployment of a community-centered mobile COVID-19 testing unit to improve health equity. New England Journal of Medicine Catalyst: Innovations in Care Delivery website. https://catalyst.nejm.org/doi/full/10.1056/CAT.20.0522. Published October 22, 2020. Accessed October 28, 2020.