

# Arkansans' Preferred COVID-19 Testing Locations

Journal of Primary Care & Community Health  
Volume 12: 1–8  
© The Author(s) 2021  
Article reuse guidelines:  
sagepub.com/journals-permissions  
DOI: 10.1177/21501327211004289  
journals.sagepub.com/home/jpc



Pearl A. McElfish<sup>1</sup> , Don E. Willis<sup>1</sup>, Keneshia Bryant-Moore<sup>2</sup>, Martha O. Rojo<sup>2</sup>, Jennifer A. Andersen<sup>1</sup>, Kyle F. Kaminicki<sup>1</sup>, and Laura P. James<sup>2</sup>

## Abstract

**Introduction:** A contributing factor to racial and ethnic disparities during the COVID-19 pandemic may be the accessibility and acceptability of COVID-19 testing. Previous studies found that access to testing has not been equitable across several sociodemographic indicators. This study documents the preferred testing locations and examines differences across sociodemographic factors with a specific focus on race and ethnicity. **Methods:** This study includes a primary analysis of cross-sectional data using a self-administered digital survey distributed to Arkansas residents using ARresearch, a volunteer research participant registry. The survey had 1288 responses, and 1221 met eligibility criteria for inclusion in the survey. Participants provided sociodemographic information and were asked to select up to 3 preferred testing locations from 12 options. Chi-square tests assessed differences in testing site preference across relevant sociodemographic groups. **Results:** Participants preferred drive-through clinics as their top location for COVID-19 testing, with 55% reporting this was their preferred method of testing. This pattern was consistent across all comparison groups (ie, age, sex, race/ethnicity, education, insurance status). Significant differences in testing location preference were observed across age, race and ethnicity, and education, with the most differences observed across race and ethnicity. **Conclusion:** This study reveals that race and ethnicity are important to consider when deciding where to offer COVID-19 testing. The preferences for testing locations among the most vulnerable demographics will be used to develop targeted responses aimed at eliminating disparities in COVID-19 in Arkansas.

## Keywords

COVID-19, Arkansas, testing preferences, health disparities, race and ethnicity

Dates received 1 March 2021; revised 1 March 2021; accepted 2 March 2021.

## Introduction

Racial and ethnic disparities have been observed in the rates of COVID-19 infections and deaths in the US.<sup>1–8</sup> Black and Hispanic community members are less likely to receive testing than Whites, but more likely to test positive for COVID-19 when they do receive a COVID-19 test compared to Whites.<sup>8–11</sup> Black Americans diagnosed with COVID-19 were 3.57 times more likely to die than their White counterparts, and Hispanics were 1.88 times more likely to die than Whites.<sup>12</sup>

Racial and ethnic disparities have been observed at the state level in Arkansas, where minority communities were disproportionately affected by COVID-19. For example, Black Arkansans accounted for 22% of the total COVID-19 deaths in the state;<sup>13</sup> however, only 15.5% of the Arkansas

population are Black.<sup>14</sup> Hispanic Arkansans have not had a disproportionate death rate, representing 7% of the total COVID-19 deaths in Arkansas<sup>13</sup> and 8% of the state's population.<sup>14</sup> The Hispanic mortality rate, however, should be interpreted with a degree of caution, as how and when data on race and ethnicity are collected varies by setting and leads to potential misclassification.<sup>11</sup>

<sup>1</sup>University of Arkansas for Medical Sciences Northwest, Fayetteville, AR, USA

<sup>2</sup>University of Arkansas for Medical Sciences, Little Rock, AR, USA

### Corresponding Author:

Pearl A. McElfish, College of Medicine, University of Arkansas for Medical Sciences Northwest, 1125 N College Ave, Fayetteville, AR 72703, USA.

Email: PAMcelfish@uams.edu



One contributing factor to racial and ethnic disparities during the COVID-19 pandemic may be the accessibility and acceptability of COVID-19 testing. Previous studies found that access to testing has not been equitable across sociodemographic indicators. Rural areas, lower income areas, and areas with more minority residents have lower testing rates.<sup>10,15</sup> States such as Texas, North Carolina, and West Virginia have improved accessibility to testing by establishing testing sites in underserved communities and holding testing events in non-traditional locations such as churches, schools, and community centers.<sup>16-21</sup> There is limited peer-reviewed research addressing which COVID-19 testing locations are preferred and if those preferences vary by race and ethnicity or other sociodemographic factors. A better understanding of testing site preferences could improve testing and reduce delays in receiving a diagnosis. The purpose of this study is to document the preferred testing locations of Arkansans and to examine differences in preferred testing locations across sociodemographic factors.

## Methods

### Study Design and Sample

The study was approved by the institutional review board (IRB) at the University of Arkansas for Medical Sciences (UAMS) (IRB#261226). Participants for the study were recruited from ARresearch, a volunteer research participant registry that was established by the Translational Research Institute, which houses the Clinical and Translational Sciences Award (CTSA) at UAMS. Participants in ARresearch mirror the ethnic and racial diversity of Arkansas and have agreed to receive information about research opportunities.<sup>22</sup> Recruitment emails inviting participants to participate in a research survey about COVID-19 testing were distributed to a total of 4431 individuals. Of those, 354 invitations were returned as invalid or undeliverable. Therefore a final total of 4077 invitations were sent to valid email addresses. The e-mails described the study and provided potential participants the opportunity to document their consent and complete the survey. Prior to consent, participants were required to attest to being 18 years or old and living, working, or receiving health care in Arkansas. Screening questions (first and last name, date of birth, email address) were used to eliminate duplicates. Participants received a \$20 gift card if they completed the survey.

The consent and survey instruments were created in REDCap (Research Electronic Data Capture), a widely used web-based software designed for research data capture and management.<sup>23,24</sup> The survey consisted of demographic questions from the Behavioral Risk Factor Surveillance System (BRFSS).<sup>25</sup> Participants were asked to select up to 3 preferred testing locations. The prompt stated: “We would like to understand where to make COVID-testing more

accessible to you and your community. Where would you prefer to have COVID-testing available? (Select up to 3).” Participants could select from the 12 options listed in Table 1. Those who chose “other” were given an open-ended option to describe the other location they preferred. Participants could also select that they did not know or that they preferred not to answer.

### Measures

All participants who responded were included in the analytical sample. Preference for testing sites was compared across sociodemographic groups, including age, sex, race and ethnicity, education, and insurance status. *Age* was grouped into 3 categories (18-34, 35-64, and 65+). *Sex* included male and female. *Race and Ethnicity* included the categories of non-Hispanic Black, non-Hispanic White, Hispanic, and non-Hispanic other—hereafter referred to as Black, White, Hispanic, and Other Racial/Ethnic Group. Native Hawaiians and Pacific Islanders, Asians, and American Indian or Alaskan Natives were combined into a single category of Other Racial/Ethnic Group due to the low number of participants in this category. *Education* included the participants’ highest level of education, ranging from a high school degree or less, some college, to a 4-year college degree. *Insurance status* indicated whether or not the participant currently had insurance at the time of the survey.

### Analysis

The tables provide percentages from the cross tabulation of a preference for a testing site and the group categories of age, sex, race and ethnicity, education, and insurance status. The percentages displayed are the percent that selected the corresponding location as a top 3 preference. Chi-square tests were run to assess whether differences in testing site preference were statistically significant across groups.

### Results

A total of 1288 individuals responded to the survey, and 1221 met the eligibility criteria for inclusion in this study. Eleven cases were determined to be duplicates and another 56 were excluded because they did not meet eligibility criteria for inclusion in the study. All participants who were eligible and provided answers to the questions of interest are included in each analysis. Table 1 presents descriptive statistics for age, race and ethnicity, education, insurance status, and the location preferences for all participants in the analytical sample. The majority of participants were between ages of 35 and 64, college educated, and insured. Overall, participants preferred drive-through clinics for COVID-19 testing. Clinics (without drive-through option) and

**Table 1.** Descriptive Statistics.

Variables	Number of responses	%
Age group (n = 1205)		
18-34	309	25.6
35-64	706	58.6
65+	190	15.8
Sex (n = 1203)		
Female	905	75.2
Male	298	24.8
Race and ethnicity (n = 1202)		
Black	161	13.4
White	918	76.4
Other	43	3.6
Hispanic (any race)	80	6.7
Education (n = 1202)		
High school or less	145	12.1
Some college	331	27.5
Four-year college degree	726	60.4
Insurance status (n = 1002)		
Insured	950	94.8
Uninsured	52	5.2
Where would you prefer to have COVID-19 testing available? <sup>a</sup> (n = 1205)		
Drive-through clinic	670	55.6
Clinic	349	28.9
Drive-through in my neighborhood	334	27.7
Drive-through at school in my neighborhood	184	15.2
Worksite	158	13.1
Community-based org. in my neighborhood	148	12.2
Drive-through clinic at my worksite	140	11.6
Arkansas Department of Health	133	11.0
Church/faith-based org.	109	9.0
Health worker at my home	85	7.0
School in my neighborhood	60	4.9
Other	34	2.8
Don't know/not sure	54	4.4
Prefer not to answer	9	0.7

Percentages do not include missing data. Percentages may not total 100 due to rounding.

<sup>a</sup>Participants were allowed to select 3 response options.

drive-through locations in their neighborhood were second and third most preferred testing locations in this sample.

Table 2 presents the COVID-19 testing location preferences for participants by 3 age categories. Although there are many small differences in location preference across age, those found to be statistically significant include preferences for testing at drive-through options in their neighborhood ( $P < .05$ ) and worksite ( $P < .001$ ), community-based organizations in their neighborhood ( $P < .001$ ), on-site testing at their worksite ( $P < .05$ ), and the Arkansas

Department of Health ( $P < .05$ ). A preference for drive-through testing in their neighborhood and an on-site worksite option was reported more often by the 2 youngest age categories compared to those age 65 and older. The preference for COVID-19 testing access at a community-based organization is where the age differences were most pronounced; a higher proportion of the youngest age group reported community-based organizations as their preferred testing location compared to older age categories. In addition, drive-through clinics at worksites were reported as a preferred testing location more often in each of the 2 younger age categories.

### Race and Ethnicity

Table 3 presents the location preferences for participants by race and ethnicity. Of all the group comparisons, the differences across race and ethnicity were the most striking. Statistically significant differences in location preference across race were found for drive-through clinics ( $P < .001$ ), drive-through options in their neighborhood ( $P < .05$ ), drive-through options at a school in their neighborhood ( $P < .01$ ), community-based organizations in their neighborhood ( $P < .001$ ), the Arkansas Department of Health ( $P < .01$ ), church/faith-based organizations ( $P < .001$ ), health workers at their home ( $P < .01$ ), and schools in their neighborhood ( $P < .05$ ). Among Hispanic participants, community-based organizations in the neighborhood were indicated as a preferred testing location almost as often as drive-through clinics and clinics in general. More than 19.8% of Black participants chose Community-based organizations as a preferred testing locations compared to 8.93% of White participants. Church and faith-based organizations were selected more often among Black participants than all other racial and ethnic groups. A larger proportion of Black and Hispanic participants reported a preference for testing through a health worker coming to the participant's homes and through the Arkansas Department of Health. The drive-through clinic option had the highest proportion of participants who reported it as their preferred testing site regardless of racial and ethnic group; however, the proportions drop off significantly for Hispanic participants (Figure 1).

### Education

Table 4 presents the location preferences for participants by education. Preferences for a testing location at a drive-through at their worksite ( $P < .01$ ), community-based organizations in their neighborhood ( $P < .01$ ), on-site clinic at their worksite ( $P < .01$ ), and by health workers who visit the home ( $P < .05$ ), were statistically different across education levels. A testing location at a participants' worksite or a drive-through clinic at their worksite was most popular

**Table 2.** Testing Location Preferences for Arkansas Adults by Age Group.

Where would you prefer to have COVID-testing available?	18-34	35-64	65+	P
	n (%)	n (%)	n (%)	
Drive-through clinic	182 (58.90)	385 (54.53)	87 (54.21)	.399
Clinic	90 (29.13)	196 (27.76)	63 (33.16)	.346
Drive-through in my neighborhood*	74 (23.95)	194 (27.48)	66 (34.74)	.032
Drive-through at school in my neighborhood	46 (14.89)	115 (16.29)	23 (12.11)	.355
Worksite*	44 (14.24)	102 (14.45)	12 (6.32)	.013
Community-based org. in my neighborhood***	59 (19.09)	68 (9.63)	21 (11.05)	.000
Drive-through clinic at my worksite***	309 (17.15)	81 (11.47)	6 (3.16)	.000
Arkansas Department of Health*	45 (14.56)	66 (9.35)	22 (11.58)	.049
Church/faith-based org.	20 (6.47)	71 (10.06)	18 (9.47)	.182
Health worker at my home	30 (9.71)	43 (6.09)	12 (6.32)	.107
School in my neighborhood	17 (5.50)	38 (5.38)	5 (2.63)	.268
Other	7 (2.27)	22 (3.12)	5 (2.63)	.742
Don't know/not sure	9 (2.91)	34 (4.82)	11 (5.79)	.257
Prefer not to answer	3 (0.97)	6 (0.85)	0 (0.00)	.419

n = 1205.

\* $P < .05$ . \*\* $P < .01$ . \*\*\* $P < .001$ .**Table 3.** Testing Location Preferences for Arkansas Adults by Race and Ethnicity.

Where would you prefer to have COVID-testing available?	Black	White	Other race/ ethnicity	Hispanic (all races)	P
	n (%)	n (%)	n (%)	n (%)	
Drive-through clinic***	83 (51.55)	536 (58.39)	23 (53.49)	26 (32.50)	.000
Clinic	53 (32.92)	253 (27.56)	15 (34.88)	26 (32.50)	.344
Drive-through in my neighborhood*	39 (24.22)	263 (28.65)	17 (39.53)	14 (17.50)	.036
Drive-through at school in neighborhood**	13 (8.07)	154 (16.78)	9 (20.93)	7 (8.75)	.008
Worksite	15 (9.32)	127 (13.83)	5 (11.63)	11 (13.75)	.464
Community-based org. in neighborhood***	32 (19.88)	82 (8.93)	9 (20.93)	35 (31.25)	.000
Drive-through clinic at my worksite	20 (12.42)	102 (11.11)	4 (9.30)	14 (17.50)	.356
Arkansas Department of Health**	25 (15.53)	85 (9.26)	7 (16.28)	15 (18.75)	.006
Church/faith-based org.***	36 (22.36)	64 (6.97)	2 (4.65)	7 (8.75)	.000
Health worker at my home**	16 (9.94)	53 (5.77)	4 (9.30)	12 (15.00)	.006
School in my neighborhood*	14 (8.70)	36 (3.92)	3 (6.98)	7 (8.75)	.022
Other	2 (1.24)	31 (3.38)	0 (0.00)	1 (1.25)	.216
Don't know/not sure	4 (2.48)	48 (5.23)	0 (0.00)	2 (2.50)	.143
Prefer not to answer	2 (1.24)	6 (0.65)	1 (2.33)	0 (0.00)	.443

n = 1202.

\* $P < .05$ . \*\* $P < .01$ . \*\*\* $P < .001$ .

among those with a 4-year college degree. A larger percentage of participants with a high school education or less—compared to those with some college or a college degree—reported a preference for testing to be available at community-based organizations in the neighborhood and by health workers who visit the home.

## Sex

The only statistically significant difference between sex is in the preference to have tests available at drive-through

clinics at their worksite. Although 13% of female participants selected this option among their top 3 preferences, only 7% of males selected it ( $P < .01$ ).

## Insurance

Although there are slight differences across insurance status, most differences are small and non-significant. The only significant difference across insurance status is the preference to have tests available at a school in the neighborhood. While 11.5% of uninsured participants selected

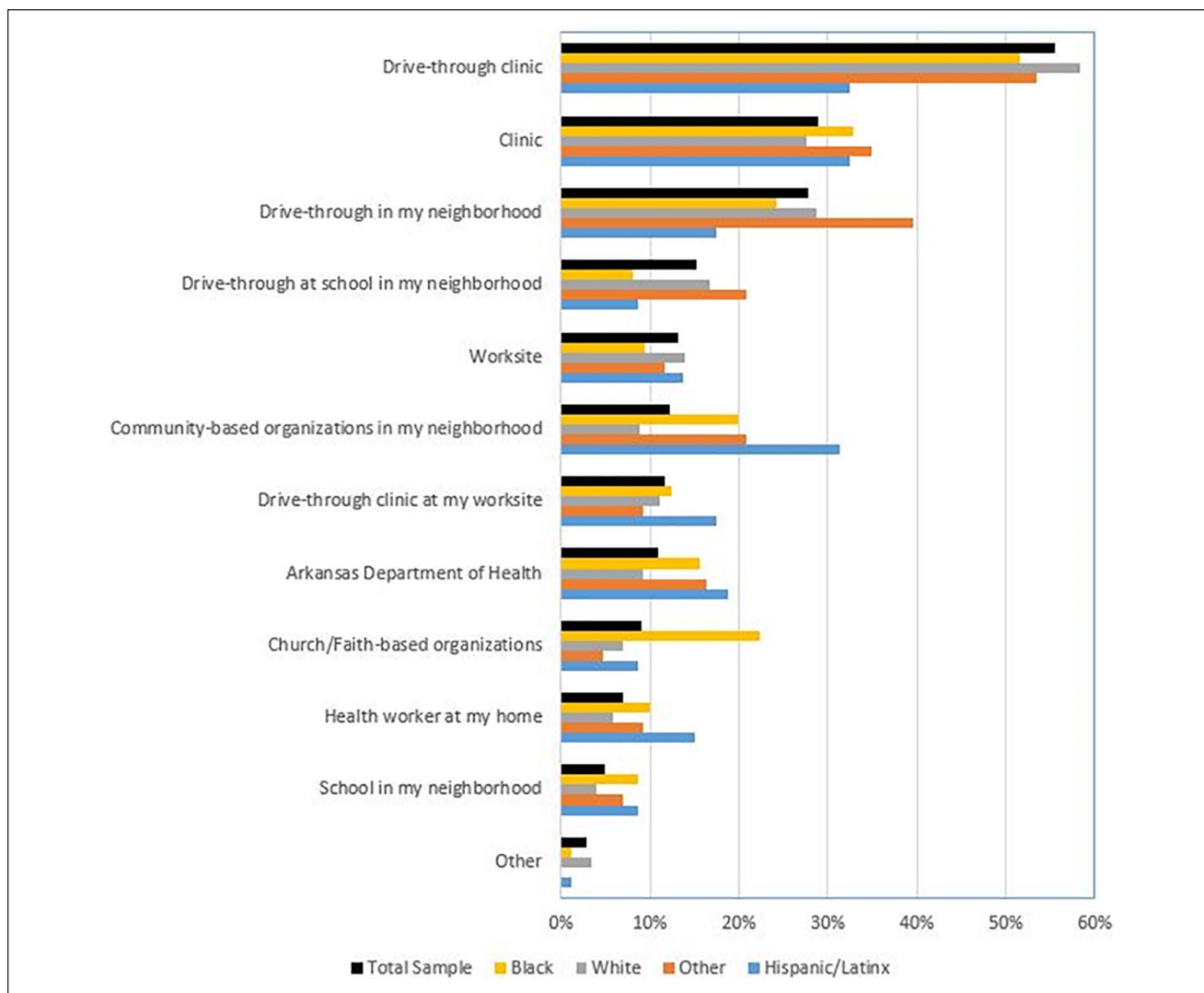


Figure 1. Arkansasans' COVID-19 testing location preferences by race/ethnicity.

Table 4. Testing Location Preferences for Arkansas Adults by Education.

Where would you prefer to have COVID-testing available?	HS diploma or less	Some college	College graduate	P
	n (%)	n (%)	n (%)	
Drive-through clinic	145 (52.41)	331 (53.47)	726 (57.44)	.335
Clinic	47 (32.41)	103 (31.12)	198 (27.27)	.273
Drive-through in my neighborhood	30 (20.69)	86 (25.98)	218 (30.03)	.050
Drive-through at school in my neighborhood	13 (8.97)	51 (15.41)	120 (16.53)	.069
Worksite**	11 (7.59)	31 (9.37)	116 (15.98)	.001
Community-based org. in my neighborhood**	32 (22.07)	39 (11.78)	77 (10.61)	.001
Drive-through clinic at my worksite**	13 (8.97)	23 (6.95)	104 (14.33)	.001
Arkansas Department of Health	17 (11.72)	39 (11.78)	77 (10.61)	.822
Church/faith-based org.	7 (4.83)	34 (10.27)	68 (9.37)	.148
Health worker at my home*	19 (13.10)	21 (6.34)	45 (6.20)	.010
School in my neighborhood	11 (7.59)	12 (3.63)	37 (5.10)	.185
Other	4 (2.76)	10 (3.02)	20 (2.75)	.970
Don't know/not sure*	12 (8.28)	15 (4.53)	25 (3.44)	.032
Prefer not to answer	3 (2.07)	1 (0.30)	5 (0.69)	.115

Abbreviation: HS, high school.  
 n = 1202.  
 \*P < .05. \*\*P < .01. \*\*\*P < .001.

this option among their top 3 preferences, only 4.8% of those who were insured selected it ( $P < .05$ ).

## Discussion

The burden of COVID-19 is disproportionate across age, race and ethnicity, and socio-economic status.<sup>1-8</sup> Minority community members are less likely to receive testing, and are more likely to test positive for COVID-19 when they are tested.<sup>8-11</sup> The inequities in testing are, in part, due to lack of testing sites situated in areas preferred by minority groups. Given the higher positivity rates among racial minorities, barriers to testing for those communities may increase spread among some of the same groups who are at highest risk for hospitalization and death. To address the unequal COVID-19 burden, public health practitioners and health care providers need to understand how to increase testing among those experiencing COVID-19 disparities. Participants overwhelmingly preferred drive-through clinics for COVID-19 testing—the preference for drive-through clinics was consistent across all comparison groups. Clinics (without drive-through option) and drive-through locations in their neighborhood were second and third most preferred testing locations among Arkansans in this sample.

Few differences were found across sex or insurance status. However, several differences were found across age, race and ethnicity, and education. The most significant differences were found across race and ethnicity. This finding suggests that race and ethnicity may be the most important variable in determining differences in preferred testing location.

All location preferences were statistically different across race and ethnicity except for the preference for options at participants' worksite or a clinic. Notably, church and faith-based organizations were more often selected by Black participants than other any racial/ethnic groups. These findings are consistent with prior literature, which has shown that Black community members report trust in faith-based organization and choose them as an alternative location for research recruitment, health education, and health care access.<sup>26-30</sup> This finding is also consistent with literature that has documented that predominately Black churches are trusted locations for COVID-19 testing and information.<sup>31-33</sup>

The preference of a community-based organization in a participant's neighborhood as a location for COVID-19 testing was reported among both Hispanic and Black participants. The finding is consistent with prior research that shows that Black and Hispanic community members report trust in community-based nonprofits for research recruitment, health education, and health care access.<sup>26-30</sup> A health worker at participants' homes and the Arkansas Department of Health were also selected more often among Black and

Hispanic participants. This finding is consistent with prior studies, which have shown that community health workers using outreach to participants' homes can be effective with Black and Hispanic community members.<sup>26-30</sup>

## Strengths and Limitations

The sample was drawn from a research registry in Arkansas, which may introduce self-selection bias. The response rate was high for an e-mail survey. Within the sample, 76.4% were non-Hispanic White, 13.4% were non-Hispanic Black, and 3.6% were Hispanic. This is similar to the current census estimates, which show that of the approximately 3 million residents of Arkansas, 72.0% are non-Hispanic White, 15.4% are non-Hispanic Black, and 7.7% of residents report that they are of Hispanic origin (of any race).<sup>14</sup> Although the sample size was large and diverse, the responses may not be representative of the general population or the population outside of Arkansas. Participants were asked to select up to 3 preferred locations, but they were not asked to rank those responses, which reduces a potentially more nuanced conclusion. Despite the limitations, this article makes a significant contribution to the literature as the first article to document preferred testing locations among a large and diverse sample in Arkansas.

## Conclusion

The findings from this article have important practical implications for both testing and vaccination outreach. Race and ethnicity are one of the most critical social determinants of the burden of COVID-19. This study reveals that race and ethnicity are an important consideration when deciding where to offer COVID-19 testing and vaccinations. A "color-blind" approach to determining locations may reproduce racial and ethnic inequities rather than reduce them. An anti-racist approach to addressing COVID-19 must consider the differing preferences for testing and vaccination locations across racial groups and other socio-demographic factors. This analysis reveals the preferences for testing locations among the most vulnerable demographics and will be used to develop targeted testing and vaccination responses aimed at eliminating disparities in COVID-19 in Arkansas.

## Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

## Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

## ORCID iD

Pearl A. McElfish  <https://orcid.org/0000-0002-4033-6241>

## References

- Price-Haywood EG, Burton J, Fort D, Seoane L. Hospitalization and mortality among Black patients and White patients with COVID-19. *N Engl J Med*. 2020;382:2534-2543.
- Kim SJ, Bostwick W. Social vulnerability and racial inequality in COVID-19 deaths in Chicago. *Health Educ Behav*. 2020;47:509-513. doi:10.1177/1090198120929677
- Wadhwa RK, Wadhwa P, Gaba P, et al. Variation in COVID-19 hospitalizations and deaths across New York City boroughs. *JAMA*. 2020;323:2192-2195. doi:10.1001/jama.2020.7197
- Rentsch CT, Kidwai-Khan F, Tate JP, et al. Patterns of COVID-19 testing and mortality by race and ethnicity among United States veterans: a nationwide cohort study. *PLoS Med*. 2020;17:e1003379. doi:10.1371/journal.pmed.1003379
- Selden TM, Berdahl TA. COVID-19 and racial/ethnic disparities in health risk, employment, and household composition: study examines potential explanations for racial-ethnic disparities in COVID-19 hospitalizations and mortality. *Health Aff*. 2020;39:1624-1632.
- Rogers TN, Rogers CR, VanSant-Webb E, Gu LY, Yan B, Qeadan F. Racial disparities in COVID-19 mortality among essential workers in the United States. *World Med Health Policy*. 2020;12:311-327.
- Garg S. 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;69:458-464.
- Moore JT, Ricaldi JN, Rose CE, et al. Disparities in incidence of COVID-19 among underrepresented racial/ethnic groups in counties identified as hotspots during June 5-18, 2020—22 States, February-June 2020. *MMWR Morb Mortal Wkly Rep*. 2020;69:1122-1126.
- Vahidy FS, Drews AL, Masud FN, et al. Characteristics and outcomes of COVID-19 patients during initial peak and resurgence in the Houston metropolitan area. *JAMA*. 2020;324:998-1000. doi:10.1001/jama.2020.15301
- Lieberman-Cribbin W, Tuminello S, Flores RM, Taioli E. Disparities in COVID-19 testing and positivity in New York city. *Am J Prev Med*. 2020;59:326-332. doi:10.1016/j.amepre.2020.06.005
- Holtgrave DR, Barranco MA, Tesoriero JM, Blog DS, Rosenberg ES. Assessing racial and ethnic disparities using a COVID-19 outcomes continuum for New York State. *Ann Epidemiol*. 2020;48:9-14. doi:10.1016/j.annepidem.2020.06.010
- Gross CP, Essien UR, Pasha S, Gross JR, Wang S, Nunez-Smith M. Racial and ethnic disparities in population level Covid-19 mortality. *J Gen Intern Med*. 2020;35:3097-3099. doi:10.1101/2020.05.07.20094250
- Arkansas Department of Health. COVID-19 update. September 21, 2020: 1-6.
- United States Census Bureau. American Community Service demographic and housing estimates. Accessed October 19, 2020. <https://data.census.gov/cedsci/table?q=arkansas&tid=ACSDP1Y2019.DP05>
- Souch JM, Cossman JS. A commentary on rural-urban disparities in COVID-19 testing rates per 100,000 and risk factors. *J Rural Health*. 2021;37:188-190.
- McMinn S, Carlsen A, Jaspers B, Talbot R, Adeline S. In large Texas cities, access to coronavirus testing may depend on where you live. *Shots: National Public Radio*. 2020. Accessed October 19, 2020. <https://www.npr.org/sections/health-shots/2020/05/27/862215848/across-texas-black-and-hispanic-neighborhoods-have-fewer-coronavirus-testing-sit>
- Price J. With expanded COVID-19 testing, NC aims to reach minority communities. *North Carolina Public Radio*. 2020. Accessed October 19, 2020. <https://www.wunc.org/post/expanded-covid-19-testing-nc-aims-reach-minority-communities>
- West Virginia Department of Health and Human Resources. Testing opportunities for minorities and other vulnerable populations. 2020. Accessed October 19, 2020. <https://dhhr.wv.gov/News/2020/Pages/Testing-Opportunities-for-Minorities-and-Other-Vulnerable-Populations.aspx>
- Tribune News Service. Undetected: lack of access to testing among minorities keeps virus alive. *Health: Tampa Bay Times*. 2020. Accessed October 19, 2020. <https://www.tampabay.com/news/health/2020/05/10/undetected-lack-of-access-to-testing-among-minorities-keeps-virus-alive/>
- City of San Antonio. New locations announced for mobile and walk-up COVID-19 testing. 2020. Accessed October 19, 2020. <https://www.sanantonio.gov/gpa/News/ArtMID/24373/ArticleID/18893/New-locations-announced-for-mobile-and-walk-up-COVID-19-testing>
- Nikiforova B. *Meet Communities Where They Are: COVID-19 Testing for Vulnerable Populations*. Network for Regional Healthcare Improvement; 2020. Accessed October 19, 2020. <https://www.nrhi.org/covid-19-off-site-testing-project/testing-for-vulnerable-populations/>
- McSweeney JC, Boateng B, James L, et al. Developing and launching a research participant registry. *Health Commun*. 2019;34:1159-1165. doi:10.1080/10410236.2018.1465794
- Harris P, Taylor R, Thielke R, Payne J, Gonzalez N, Conde J. Research electronic data capture (REDCap)—a metadata-driven methodology and workflow process for providing translational research informatics support. *J Biomed Inform*. 2009;42:377-381. doi:10.1016/j.jbi.2008.08.010
- Harris PA, Taylor R, Minor BL, et al. The REDCap consortium: building an international community of software platform partners. *J Biomed Inform*. 2019;95:103208. doi:10.1016/j.jbi.2019.103208
- Centers for Disease Control and Prevention. 2019 BRFSS Questionnaire. Centers for Disease Control and Prevention. Accessed June 24, 2020. <https://www.cdc.gov/brfss/questionnaires/pdf-ques/2019-BRFSS-Questionnaire-508.pdf>
- Su D, Garg A, Wiens J, Meyer E, Cai G. Assessing health needs in African American churches: a mixed-methods study. *J Relig Health*. Published online October 8, 2019. doi:10.1007/s10943-019-00924-5
- Berkley-Patton J, Thompson CB, Bradley-Ewing A, et al. Identifying health conditions, priorities, and relevant multilevel health promotion intervention strategies in African American churches: a faith community health needs assessment. *Eval Program Plann*. 2018;67:19-28. doi:10.1016/j.evalprogplan.2017.10.012

28. Campbell M, Hudson M, Resnicow K, Blakeney N, Paxton A, Baskin M. Church-based health promotion interventions: evidence and lessons learned. *Annu Rev Public Health*. 2007;28:213-234.
29. Debnam K, Holt CL, Clark EM, Roth DL, Southward P. Relationship between religious social support and general social support with health behaviors in a national sample of African Americans. *J Behav Med*. 2012;35:179-189. doi:10.1007/s10865-011-9338-4
30. DeHaven MJ, Hunter IB, Wilder L, Walton JW, Berry J. Health programs in faith-based organizations: are they effective? *Am J Public Health*. 2004;94:1030-1036.
31. University of Minnesota. Tackling COVID-19 and health equity: east side church partners with M Health fairview for drive-up testing. *News & Stories blog*. Accessed October 19, 2020. <https://www.mhealth.org/blog/2020/june-2020/tackling-covid-19-and-health-equity-partnership-brings-testing-to-east-side>
32. KARK4 News. Churches, community leaders and the ADH team up for COVID-19 testing. Nexstar Inc. 2020. Accessed October 19, 2020. <https://www.kark.com/news/local-news/churches-community-leaders-and-the-adh-team-up-for-covid-19-testing/>
33. Gilbert KL, Hodges S. Church parking lots fill for COVID-19 testing. *UM News*. The People of the United Methodist Church; 2020. Accessed October 19, 2020. <https://www.umnews.org/en/news/church-parking-lots-fill-for-covid-19-testing>