

Chapman University

Chapman University Digital Commons

Student Scholar Symposium Abstracts and Posters

Center for Undergraduate Excellence

Fall 12-2-2020

COVID-19 Viral Testing Disparities in Los Angeles City

Laura Cyphers

Chapman University, cyphers@chapman.edu

Follow this and additional works at: https://digitalcommons.chapman.edu/cusrd_abstracts



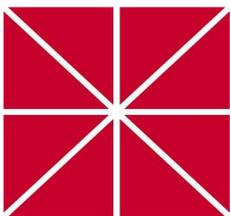
Part of the [Clinical Epidemiology Commons](#), [Epidemiology Commons](#), [Health Services Administration Commons](#), [Health Services Research Commons](#), [Medical Humanities Commons](#), [Other Public Health Commons](#), and the [Virus Diseases Commons](#)

Recommended Citation

Cyphers, Laura, "COVID-19 Viral Testing Disparities in Los Angeles City" (2020). *Student Scholar Symposium Abstracts and Posters*. 417.

https://digitalcommons.chapman.edu/cusrd_abstracts/417

This Poster is brought to you for free and open access by the Center for Undergraduate Excellence at Chapman University Digital Commons. It has been accepted for inclusion in Student Scholar Symposium Abstracts and Posters by an authorized administrator of Chapman University Digital Commons. For more information, please contact laughtin@chapman.edu.



COVID-19 Viral Testing Disparities in Los Angeles City

Laura Cyphers

Chapman University, Crean College of Health and Behavioral Sciences

Acknowledgments: Dr. Jason Douglas, Elmer Camargo-Pena, Alexis Hernandez, Eva Stanton



INTRODUCTION

Hispanic and Black communities have been disproportionately impacted by COVID-19-related morbidity and mortality [1]. Inequitable access to viral testing resources may have exacerbated these COVID-19-related racial and ethnic health disparities. For example, reports from the Los Angeles Department of Public Health revealed glaring viral testing disparities in April 2020 (early pandemic), with predominantly White communities in Los Angeles County receiving 65% more tests than Hispanic and Black communities [2]. This study aims to investigate access to viral testing in Los Angeles City and assess the disparities that remain following the implementation of testing-related policy in California.



BACKGROUND

COVID-19-Related Disparities among Black and Hispanic Communities

- Age-adjusted death rates in LA County [4] (November 2020)
 - **Hispanic:** 103 per 100,000
 - **Black:** 71 per 100,000
 - **White:** 37 per 100,000
- 52% of all deaths are Hispanic [5]
- In early pandemic, testing resources were more limited in poorer areas and communities of color [21]
- Early reports also indicated that there were fewer testing sites located in Black and Hispanic communities, despite the higher demand [21]
- Both Black and Hispanic residents are disproportionately affected by comorbidities and poverty [8]
- Inequalities in quality of healthcare, especially due to systemic racism [3,12]
- Majority in service/essential jobs: greater difficulty in social distancing [13,14]

Public Policies Implemented

- Announced in late April (early pandemic)
- California Governor Gavin Newsom announced a plan to increase COVID-19 testing
- Policy targeted rural areas and communities of color
- Plan intended to set up at least 86 new pop-up testing sites for underprivileged communities across California
- In May, new testing sites were created in LA County and increased capacity was added to several other testing sites [17]

METHODOLOGY

- Reverse transcription polymerase chain reaction (RT-PCR) testing sites available in September 2020 in LA County were mapped and identified within 105 Los Angeles City ZIP Code Tabulation Areas (ZCTA).
- ZCTA-level data was used to identify majority Black and Hispanic ($\geq 50.1\%$ Black and Hispanic) and majority White ($\geq 50.1\%$ White) ZCTAs.
- A buffer radius of 2.44 miles was then applied using SPSS to determine the mean number of testing sites per 1000 people within this distance of each LA city ZCTA centroid.
- Independent t- tests were performed comparing majority White ZCTAs versus majority Black and Hispanic ZCTAs for number of testing sites per 1000 people.

RESULTS

Table 1. ZCTA-level descriptive statistics.

	Minimum	Maximum	Mean	SD
Black	0	31330	3421.10	5773.669
White	0	36967	10699.41	8767.831
Hispanic	0	99654	17582.33	18914.692
Testing Sites Per 1000 People, 2.44 mi	0	4.05	.2213	.59180

- In Los Angeles city, the ZCTA-level mean number of residents by race is 3,421 for Black, 10,699 for White, and 17,582 for Hispanic. The large standard deviations for race reveal the variability in number of residents of each race in each ZCTA. The mean number of testing sites per 1000 people within 2.44 miles of each ZCTA centroid is .2213.
- An independent t-test indicated that the mean number of RT-PCR testing sites within a 2.44 mile radius of each ZCTA centroid per 1000 people in majority Black and Hispanic ZCTAs was not significantly different than the number of testing sites per 1000 people in majority White ZCTAs in Los Angeles city ($t = .224$, 95% CI [-.20906, .26765]) with .2087 and .2380 test sites per 1000 persons, respectively.

CONCLUSION

- Early pandemic disparities in geographical accessibility for RT-PCR testing sites for Hispanics and Blacks have been alleviated via policy changes.
- However, geographic access does not necessarily indicate **use**, as morbidity disparities continue despite improved test access [1].
- **Data collection and tracing** may benefit from comprehensive reporting of COVID-19 incidence by race and ethnicity.
- **Further accessibility questions remain** regarding the impact of language barriers, inequitable access to healthcare and health insurance, and immigration status on testing disparities [8,22].
- More free testing sites, without the need for health insurance, near communities of color may improve testing accessibility for the impoverished with fewer transportation options and undocumented immigrants [7,9]
- **Structural racism** continues to fuel testing and COVID-19 morbidity and mortality disparities, impacting the ability to obtain quality health care for COVID-19 prevention and treatment [3].