

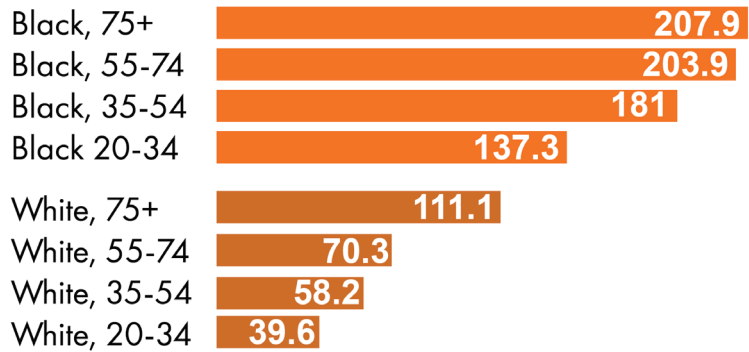


DATA BRIEF

COVID-19 IN CONTEXT: RACISM, SEGREGATION, AND RACIAL INEQUITIES IN PHILADELPHIA

RACIAL INEQUITIES IN COVID-19

On March 10, 2020 the city of Philadelphia reported its first case of coronavirus disease (COVID-19)- an infectious disease caused by the novel coronavirus SARS-Cov-2. While interpretations of early data framed the COVID-19 pandemic as the “great equalizer,” racial inequities in the city began to emerge in late March, with Blacks being disproportionately impacted.



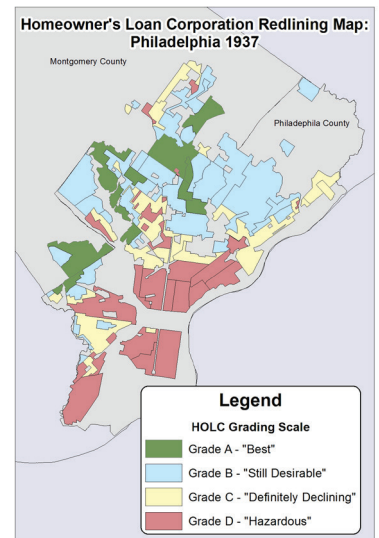
Cases per 10,000 residents

Figure 1: Confirmed COVID-19 Cases by Race in Philadelphia

As reported by the City of Philadelphia on May 29, 2020, forty-five percent of people with confirmed infection were known to be Blacks, 15 percent were white, 9 percent were Hispanic, 4 percent were Asian, and 23 percent were of unknown race. Blacks were 1.9-3.5 times more likely to have confirmed infection than whites (Figure 1). Mortality rates were substantially higher among Blacks (9.4 per 10,000 residents) than whites (6.3 per 10,000). While data disaggregated by race/ethnicity are critical, these data alone fail to fully capture the root causes of racial inequities in COVID-19 and mask the complex systems operating to produce them. This not only limits a more complete understanding of the problem, but it also restricts the scope of short- and long-term policy solutions. This brief uses foundational frameworks of racism and descriptive spatial analysis to place data on COVID-19 in Philadelphia *in context*, illustrating how structural racism and historical and contemporary patterns of residential segregation have converged to create racial inequities during this pandemic.

RACIAL RESIDENTIAL SEGREGATION IN PHILADELPHIA

Philadelphia is a hyper-segregated city and ranks within the top 10 big cities with the highest levels of segregation. According to data from the 2013-2017 American Community Survey (ACS), an estimated 67% of Blacks would have to relocate to have an even distribution of Black and white populations. But residential segregation in Philadelphia is not new; racist federal, state, and local policies (e.g. redlining, see Map 1) and discriminatory mortgage practices (e.g. predatory lending) have made it a persistent hallmark of the city for decades. Moreover, systematic disinvestment in segregated neighborhoods has resulted in the clustering of a wide array of adverse exposures that predispose residents to structural, behavioral, and psychosocial factors that lead to poor health outcomes. For example, differences in life expectancy between neighborhoods in Philadelphia are patterned by segregation, with large gaps (15 years in some instances) between poor, predominantly Black neighborhoods and wealthier, predominantly white neighborhoods. These existing inequities have created the foundation upon which racial inequities in COVID-19 are emerging in the city.



Map 1: HOLC Redlining Map of Philadelphia

HOW DO SYSTEMS OF RACISM IMPACT COVID-19?

A critical part of ensuring that the production and interpretation of empirical evidence on racial inequities in COVID-19 informs effective action is using frameworks that explicitly incorporate the histories and realities of structural racism in ways that explicitly recognize the full experience of Black communities. Critical Race Theory and Systems Thinking are two such frameworks that offer complementary insights into racial inequities in COVID-19 emerging in Philadelphia. Specifically, Critical Race Theory requires an “explicit acknowledgment of the workings of race and racism in social contexts” and a clear description of how systems of power produce racial health inequities. Systems Thinking requires seeing complex problems as more than the sum of their parts and focuses on how the parts of a system act synergistically to produce the outcomes that we observe around us.

For individuals living in racially segregated neighborhoods, interlocking systems of structural racism related to the housing market, access to healthcare, food access and food insecurity, transportation systems, the labor market, toxic environmental exposures, and criminal justice combine to influence COVID-19 related outcomes. Racial bias embedded within each of these systems feeds back into other characteristics to amplify racism across these domains, creating a dynamic system that reinforces mechanisms that drives exposure to, transmission of, and mortality from COVID-19 for Blacks.

To take the example of essential workers, racial bias in the labor market disproportionately exposes Blacks to jobs within the service sector. The low wage nature of these jobs means that essential workers have few options for affordable housing, are more likely to live in racially segregated neighborhoods with low quality housing and in housing situations that are more likely to be crowded.

Neighborhoods in which low quality housing is concentrated are also the neighborhoods with low access to employment opportunities and poor transportation options, meaning that essential workers in these communities must travel further to their jobs and use a public transportation system that may require taking multiple modes of transit to reach their destinations. Finally, jobs within the service sector, by their very nature, rely on direct interaction with customers, often within exploitive industries that provide limited worker and occupational protections (e.g. personal protective equipment, paid sick leave, and hazard pay). At each node of this system, risk of exposure is amplified, creating a vicious cycle of increased exposure and increased rate of transmission for Black communities. Residential segregation co-locates this cycle within confined geographic areas further amplifying the rate at which coronavirus exposure increases for Blacks (see Figure 2).

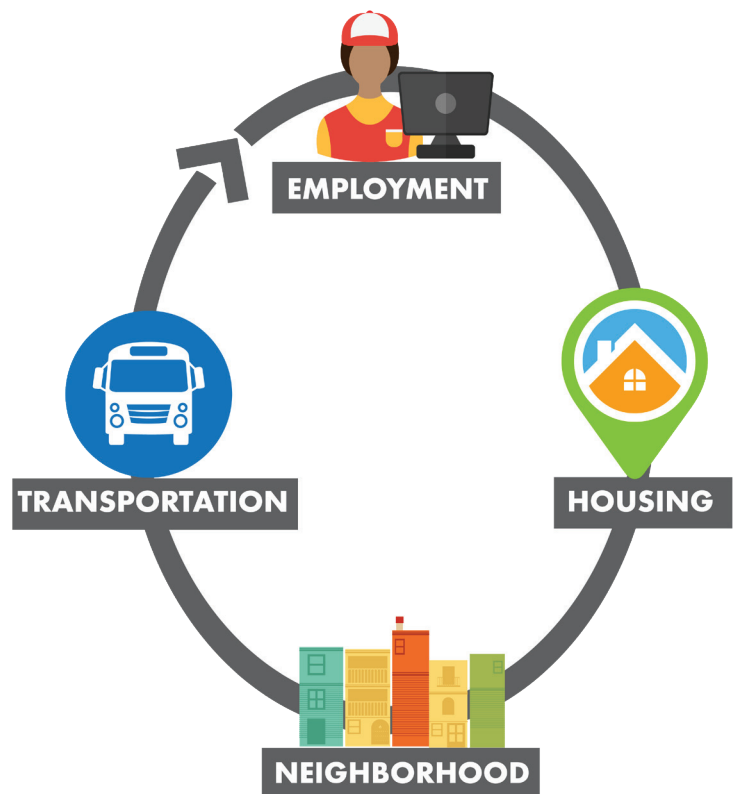


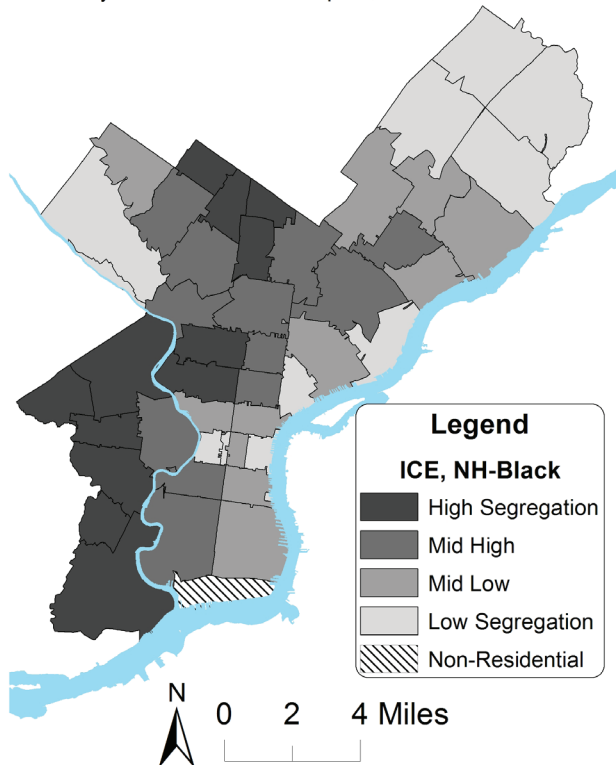
Figure 2: Example of multiple systems of racism interacting to impact COVID-19 outcomes in racially segregated neighborhoods.

Interlocking systems of racism amplify exposure and transmission in racially segregated neighborhoods which put residents at increased risk during the COVID-19 pandemic.

NEIGHBORHOOD DATA

The following maps show racial residential segregation for Non-Hispanic Blacks and structural susceptibility for ZIP codes in Philadelphia (n=46) using data from the 2014-2018 American Community Survey (ACS).

Index of Concentration at the Extremes for NH-Blacks
by ZIP Code in Philadelphia, ACS 2014-2018

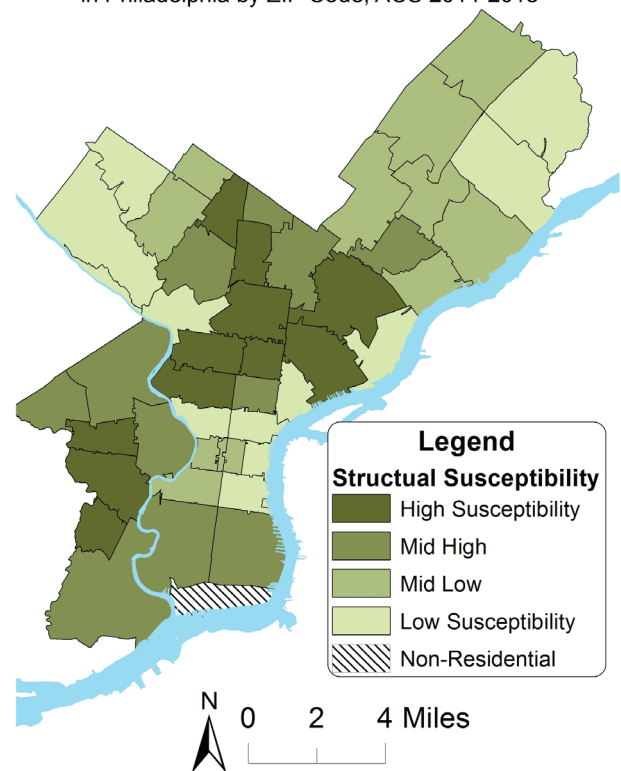


Map 2: Racial Residential Segregation in Philadelphia

Racially segregated neighborhoods have structural characteristics produced by systems of racism that make residents susceptible to COVID-19. The map to the right shows a composite score of neighborhood indicators from the 2014-2018 ACS that increase the likelihood of exposure and community transmission (e.g. percent crowding, percent service workers, percent utilize public transportation), inhibit access to testing and treatment (e.g. percent uninsured) or capture the potential for short-term and long-term economic hardship (e.g. percent poverty). Higher scores denote higher levels of susceptibility (Range: -10.3 to 12.7). The most structurally susceptible neighborhoods in Philadelphia are located in sections of West and North Philadelphia.

The Index of Concentration at the Extremes (ICE) is a measure of residential segregation that captures the extent to which the population in a given area is concentrated at either extreme of a social metric (e.g. race or income) and ranges from -1 (everyone in the most socially disadvantaged group, i.e. high racial segregation) to 1 (everyone in the least socially disadvantaged group, i.e. low racial segregation). The map to the left shows the ICE for Non-Hispanic Blacks for ZIP codes in Philadelphia based on data from the 2014-2018 ACS. The proportion of Blacks in ZIP codes in the top quartile of ICE is high, ranging from 73.2 percent to 93.6 percent. The most racially segregated neighborhoods in the city are located in West Philadelphia, North Philadelphia, and Southwest Philadelphia.

Structural Susceptibility to COVID-19
in Philadelphia by ZIP Code, ACS 2014-2018

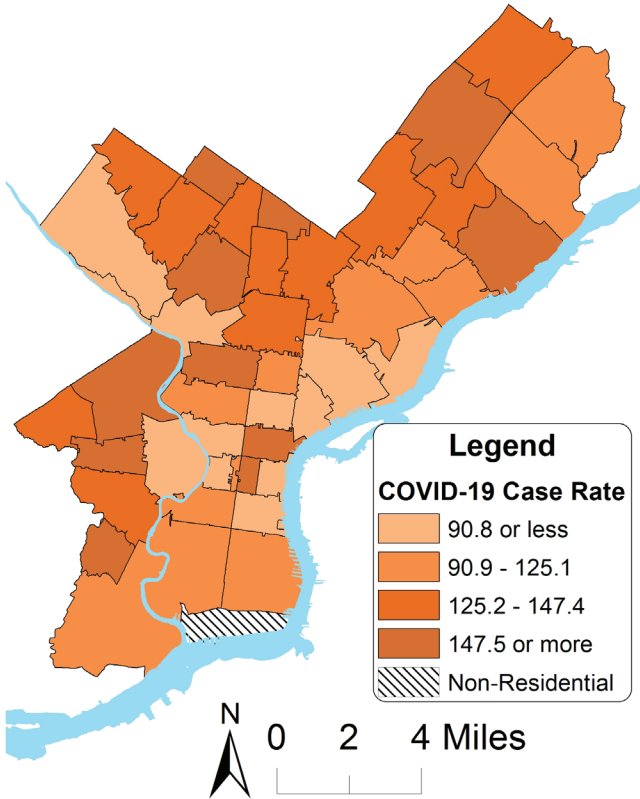


Map 3: Structural Susceptibility in Philadelphia

Racial residential segregation and structural susceptibility are highly correlated ($\rho=0.71$) such that racially segregated neighborhoods tend to have higher levels of structural susceptibility.

The following maps show COVID-19 outcomes (i.e. Cumulative Incidence and Percent Positive Tests) for ZIP codes in Philadelphia as of May 15, 2020.

Confirmed COVID-19 Cases per 10,000 Residents by ZIP Code in Philadelphia, as of May 15, 2020

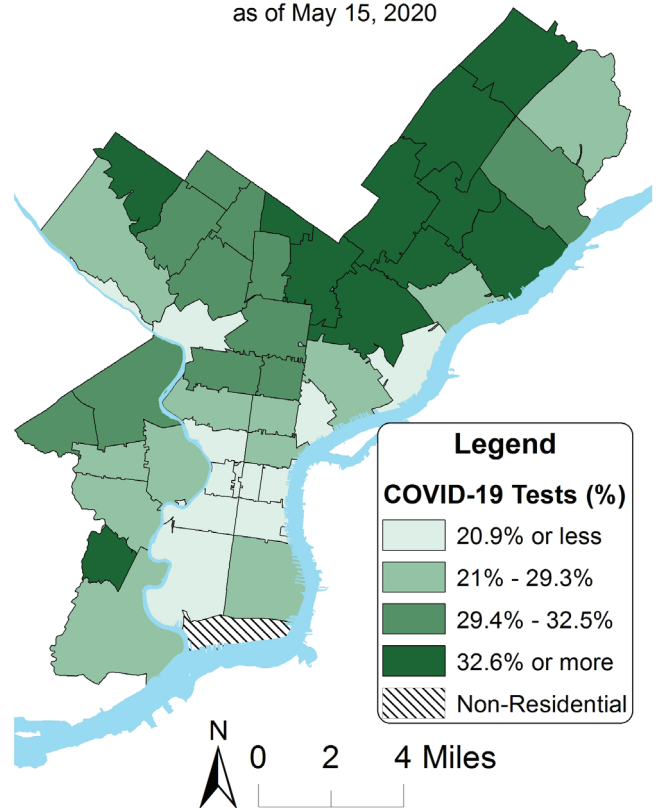


Map 4: COVID-19 Rates by ZIP Code in Philadelphia

The map to the left shows cumulative incidence of COVID-19 by ZIP code in Philadelphia as of May, 15, 2020. COVID-19 rates ranged from 43.6 to 281.2 cases per 10,000 residents. The ZIP codes with the highest rates are located in sections of West Philadelphia, Southwest Philadelphia, North Philadelphia, and Northeast Philadelphia while ZIP codes with the lowest rates are located in northwest Philadelphia, portions of Center City, and along the Delaware River.

The map to the right shows the percentage of positive COVID-19 cases among individuals tested by ZIP code in Philadelphia as of May 15, 2020. The percentage of positive COVID-19 tests range from 12 percent to 43 percent. ZIP codes with the highest proportion of positive tests are located in Southwest Philadelphia and sections of North Philadelphia and Northeast Philadelphia while ZIP codes with the lowest proportion of positive tests are located in northwest Philadelphia and sections of Center City.

Positive COVID-19 Tests per ZIP Code in Philadelphia, PA as of May 15, 2020



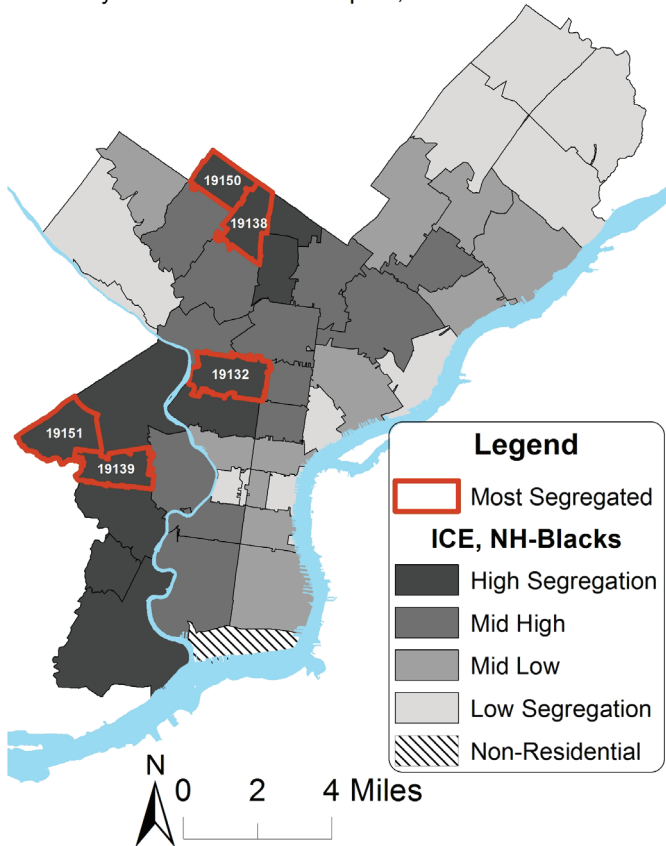
Map 5: Percent Positive COVID-19 Tests by ZIP Code in Philadelphia

Table 1: COVID-19 Outcomes Overall and by Segregation in Philadelphia, PA as of May 15, 2020

ZIP Code	ICE Rank	% NH Black	Structural Susceptibility	% Positive Tests	Cases per 10,000
5 Most Segregated ZIP Codes					
19150 (Most Segregated)	1	93.6	-1.31	30.2	159.6
19138	2	91.6	5.22	29.4	138.6
19132	3	90.6	8.39	30.1	153.4
19139	4	87.0	9.62	29.0	157.6
19151	5	87.1	1.04	31.4	147.4
Most Segregated, Overall		90.0	4.59	30.0	151.3
5 Least Segregated ZIP Codes					
19106	42	8.1	-6.78	11.7	43.6
19154	43	8.5	-8.57	29.0	101.0
19125	44	3.9	6.74	19.2	70.1
19127	45	9.4	-10.32	16.1	44.4
19137 (Least Segregated)	46	2.3	-6.22	15.0	44.8
Least Segregated, Overall		6.44	-5.03	18.2	74.3
Philadelphia		42.3	0.00	29.0	122.8

Note: Data for neighborhood indicators were retrieved from the 2014-2018 American Community Survey. Data on COVID-19 outcomes were retrieved from publicly available data on the PDPH website as of May 15, 2020.

Index of Concentration at the Extremes for NH-Blacks by ZIP Code in Philadelphia, ACS 2014-2018



Map 6: ZIP Codes with highest levels of residential segregation in Philadelphia

The table above shows neighborhood data (i.e. residential segregation, percent NH Black and structural susceptibility) and COVID-19 outcomes for Philadelphia ZIP codes with the highest and lowest segregation (10 percent of zip codes with highest and lowest levels of segregation values). The map to the left further highlights the most racially segregated ZIP codes in Philadelphia (19150, Cedarbrook; 19138, Germantown East; 19132, North Philadelphia-West; 19139, West Philadelphia-West Market, and 19151, Overbrook). Nearly one quarter of Blacks in the city live in these neighborhoods (n= 147,809). Collectively, these neighborhoods have higher levels of structural susceptibility (4.59) compared to the least segregated neighborhoods and the city as whole (-5.03 and 0, respectively). These neighborhoods also have some of the highest COVID-19 rates ranging from 159.6 to 138.6 confirmed cases per 10,000 residents. The COVID-19 rates in the least segregated neighborhoods range from 43.6 to 101.0 cases per 10,000 residents. In Philadelphia overall, the COVID-19 rate is 122.8 per 10,000 residents.

The COVID-19 rate in the most segregated neighborhoods in Philadelphia is 23 percent higher than the overall rate in the city (151.3 versus 122.8 per 10,000 residents, respectively) and two times the rate of the least segregated neighborhoods (74.3 per 10,000 residents).

SUMMARY AND CONCLUSIONS

Racially segregated communities in Philadelphia are being disproportionately impacted by the COVID-19 pandemic. Neighborhoods with the highest levels of residential segregation are more likely to have structural characteristics that increase likelihood of exposure, community transmission, and mortality, making segregation a fundamental driver of racial inequities in the city. These findings have implications for both short- and long-term multi-sectoral solutions to mitigate inequities.

During the pandemic

- Sustained access to free testing and follow-up treatment coupled with increased public health capacity to engage in community-based contact tracing and access to safe and humane facilities for isolation and quarantine
- Personal protective equipment, hazard pay, paid sick leave and employment protections for low-wage essential workers to limit exposure and mitigate household and community transmission
- A moratorium on evictions and disruptions in utility services
- Modifications to public transportation systems that are responsive to the unique challenges of segregated communities (e.g. more frequent service to limit crowding)
- Uniform and coordinated data collection on COVID-19 cases, hospitalizations, and deaths disaggregated by multiple dimensions of marginalization (e.g. race/ethnicity, zip code, income, occupation) to document the disproportionate impact and monitor efforts to mitigate inequities

Beyond the pandemic

- Free, universal healthcare coupled with investments in public health infrastructure for the most marginalized communities
- Equitable employment opportunities that offer living wages and worker's rights
- Equitable public and private investments in racially segregated communities (without displacement) to improve housing, transportation, access to employment and other services necessary for communities to thrive

Far from being a great equalizer, COVID-19 is reinforcing longstanding inequities that existed in Philadelphia prior to the pandemic. As this public health crisis continues to unfold, data on racial inequities must be properly contextualized and grounded in history and foundational frameworks that place structural racism at the center. Data must also be rooted in the lived experiences of the individuals and communities most directly impacted by the pandemic and used as a tool for action and not as a weapon that further stigmatizes Black communities. Emerging data on other racial groups that have been impacted by systems of structural marginalization (e.g. xenophobia) must also be contextualized in a similar manner. Finally, efforts to mitigate the effects of this pandemic must work in tandem with an ongoing commitment to anti-racist policies and practices that dismantle the structural and institutional drivers of racial health inequities that existed before this crisis.

REFERENCES AND OTHER RESOURCES

For more information and a complete list of references, as well as additional resources on this topic, visit drexel.edu/uhc/resources.

CITATION

Barber S, Headen I, Branch B, Tabb L, Yadeta K. COVID-19 in Context: Racism, Segregation and Racial Inequities in Philadelphia: Drexel University Urban Health Collaborative; June 2020.



The mission of the Drexel Urban Health Collaborative is to improve health in cities by increasing scientific knowledge and public awareness of urban health challenges and opportunities, and by identifying and promoting actions and policies that improve population health and reduce health inequities.

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