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Generational Impacts of 1930s Housing Discrimination and the Imperative Need for the Healthy Start Initiative to Address Structural Racism

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Abstract

For nearly three decades, Healthy Start Initiative(HSI) has served communities with high rates of adverse pregnancy outcomes--with the goal to lower them by 50%. Despite a large focus on social determinants of health, HSI has narrowly addressed racism. The effects of legal housing discrimination continue to be felt and have profound implications for pregnancy. To understand the historical context of racism in these communities, we geospatially evaluated the relationship between HSI service areas and Home-Owners Loan Corporation(HOLC) graded maps. Using data from John Snow Inc, National Healthy Start Association, and Mapping Inequality we found that 73 of 100 communities served by HSI were subject to anti-Black housing discrimination. For majority, over 60% of the HOLC-assessed areas in the service areas were red or yellow graded. Given this we propose three programmatic shifts that HSI can implement to address structural racism and broaden their policy and advocacy efforts in the communities they serve.

Keywords

Cover Page Footnote

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ABSTRACT

For nearly three decades, Healthy Start Initiative (HSI) has served communities with high rates of adverse pregnancy outcomes--with the goal to lower them by 50%. Despite a large focus on social determinants of health, HSI has narrowly addressed structural racism. The effects of legal housing discrimination continue to be felt and have profound implications for pregnancy. To understand the historical context of racism in these communities, we geospatially evaluated the relationship between HSI service areas and Home-Owners Loan Corporation (HOLC) graded maps. Using data from John Snow, Inc, National Healthy Start Association, and Mapping Inequality we found that 73 of 100 communities served by HSI were subject to anti-Black housing discrimination. For majority, over 60% of the HOLC-assessed areas in the service areas were red or yellow graded. Given this we propose three programmatic shifts that HSI can implement to address structural racism and broaden their policy and advocacy efforts in the communities they serve.

Keywords: Redlining; HOLC assessment; Infant Mortality; Healthy Start Initiative; Structural Racism; Maternal Morbidity; Maternal Mortality

INTRODUCTION

Maternal Mortality has more than doubled in the United States (U.S.) in the past few decades, while majority of countries saw reductions in rates.(MacDorman et al., 2016, Neggers, 2016) Simultaneously, the U.S. has only experienced marginal declines in infant mortality rates (IMR) overall.(Khan et al., 2018) Black women and children bear the disproportionate burden of both outcomes compared to all other races.(Louis et al., 2015, Somer et al., 2017, Khan et al., 2018) In an effort to combat the long recognized disparities in IMR the Health Resources and

Services Administration launched the Healthy Start Initiative (HSI) in 1991. The original goal was to reduce infant mortality by 50% within 15 high risk communities that had at least 1.5 times the national IMR.(McCoy-Thompson, 1994) Over the decades, the program broadened its scope to also address adverse maternal pregnancy outcomes.(Escarne et al., 2017) This widened scope was aimed to improve women's and children's health from preconception through early childhood.(Escarne et al., 2017) In addition to increased IMR, communities must also have qualifying community rates for three of five maternal risk factors for pregnant women: diabetes (10.2% or more), obesity (39.2% or more), use of tobacco during pregnancy (10.8% or more), entering prenatal care in the first trimester (38.6% or less) or no prenatal care (2.4% or more). In 2018, there were 100 HSI grantee sites across the U.S., implementing various projects to address these inequities.

HSI has a novel tiered approach to addressing individual and community rates of morbidity and mortality for women and infants (Escarne et al., 2017). Each grantee site has a corresponding level which indicates the scope of the program.(Adamo, 2015) Level 1 sites are community based programs that utilize approaches to achieve individual level change.(Adamo, 2015) Level 2 sites are enhanced service programs that develop community action networks (CANs), public-private-community member collaborations, to achieve community level change (Escarne et al., 2017, Adamo, 2015). Level 3 sites are leadership and mentoring programs that ensure that maternal and women's health initiatives are implemented and support the development of HSI place-based initiatives. (Adamo, 2015) This approach is vital, because research shows that individual level factors do not fully explain the disparate incidence of adverse outcomes for Black women and infants but rather can be explained by exposure to structural factors at the neighborhood level, often driven by anti-Black racism.(Sealy-Jefferson et al., 2020, Mayne et al., 2018, Mehra et al., 2017)

Structural racism is defined as "the macrolevel systems, social forces, institutions, ideologies, and processes that interact with one another to generate and reinforce inequities among racial and ethnic groups"(Gee and Ford, 2011, Powell, 2007). The conceptualization of structural racism informs us that experiences of racism do not occur or impact health in isolation, but rather operate within a larger structure that cannot be disentangled (Bailey et al., 2017, Gee and Ford, 2011, Bonilla-Silva, 1997, Riley, 2018). One institutional policy that undergirds anti-Black structural racism by drastically exacerbating racial and economic residential segregation was the practice of "red-lining". As part of the Homeowners Loan Act of 1933, the Home Owners Loan Corporation (HOLC) was established, tasked with providing opportunities for federally backed loans to urban families who were at risk of losing their homes and families who were previously unable to qualify for home loans (Hillier, 2003). To determine which communities would be eligible for these benefits, HOLC hired independent auditors to develop maps based on the following factors: area desirability, geographic location, and racial demographics (Hillier, 2003). Auditors created color coded maps along with area descriptions in 239 metropolitan areas with a population of 40,000 or more. The maps specified four colors which corresponded to grades: green- A "best", blue- B "still desirable", yellow- C "definitely declining", and red- D "hazardous", also known as "red-lined". Individuals living in green and blue areas, predominantly white and high socioeconomic status, received home loans with very little restriction. However, individuals living within red and yellow areas, mostly Black and lower income, were deemed ineligible or had

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significant barriers placed upon loan origination, therefore, restricting access to home ownership (Hillier, 2003, Massey and Denton, 1993).

Researchers have documented the relationship between historic "red-lining" and increased risk for adverse health outcomes, including asthma (Huggins, 2017, Nardone et al., 2019). Recently, Krieger et. al documented the impact of historical redlining and preterm birth in New York City. They found that women living in a previously "red-lined" or D graded areas have 1.55 times the odds of having preterm birth compared to women living within A graded areas, and similar but smaller increased odds for women living in B and C neighborhoods (Krieger et al., 2020). They also show increased odds after controlling for maternal and neighborhood level characteristics (Krieger et al., 2020). Nardone et. al also examined redlining and birth outcomes in California and found that pregnant women living in D graded areas were more likely to use public insurance and social safety programs compared to women in A graded areas. They found additional variation of outcomes across the graded areas, with women in C graded areas having increased risk of adverse birth outcomes compared to women living in B and D graded areas (Nardone et al., 2020). Given the insidious and enduring effects HOLC assessments can have on neighborhood investments and adverse pregnancy outcomes, our primary objective was to geospatially evaluate the relationship between HSI sites and previously HOLC assessed areas. We believe that this understanding will inform us of the historical context of the communities that the HSI serves and inform the need for the HSI to directly address structural racism in its programmatic model to more effectively improve maternal and child health outcomes.

METHODS

Our methodology was informed by the Public Health Critical Race Praxis (PHCRP)(Ford and Airhihenbuwa, 2018, Ford and Airhihenbuwa, 2010b, Ford and Airhihenbuwa, 2010a) PHCRP pushes us to move beyond simply documenting disparities to actively using research to understand and challenge the racial and structural hierarchies that produce them.(Ford and Airhihenbuwa, 2010a) We also critically examined the community implications of this practice. This is essential when examining health inequalities at the community level, because it allows us to understand how these communities came to be, why many of these communities remain high risk, and identify opportunities to improve our current interventions to adequately address the remnants of the policies.

To assess the relationship, we utilized three sources of data: geospatial files of all HSI sites from John Snow Inc., administrative data from the National Healthy Start Association and shapefiles for graded 1930's HOLC maps obtained from Mapping Inequality which were available in December 2017. For maps that were not available through Mapping Inequality, San Antonio and Cincinnati, we used geosheeting of the digital scans of those maps to create the shapefiles.

Once we identified how many of the sites fell within HOLC assessed areas, we investigated what proportion of their current service areas were previously red or yellow lined. Due to constraints in internal resources, we were only able to deeply analyze a subset of 20 of the 70 sites located within HOLC assessed cities. To be able to make inferences about the sample, we utilized stratified sampling. We created stratum based on the HSI site levels (1, 2, 3) which corresponds to their level of funding and programming. Sites were selected without replacement using a random number generator. We oversampled in the western part of the U.S. due to fewer sites in this geographic location. Once sites were selected, a team member contacted each of the 20 selected

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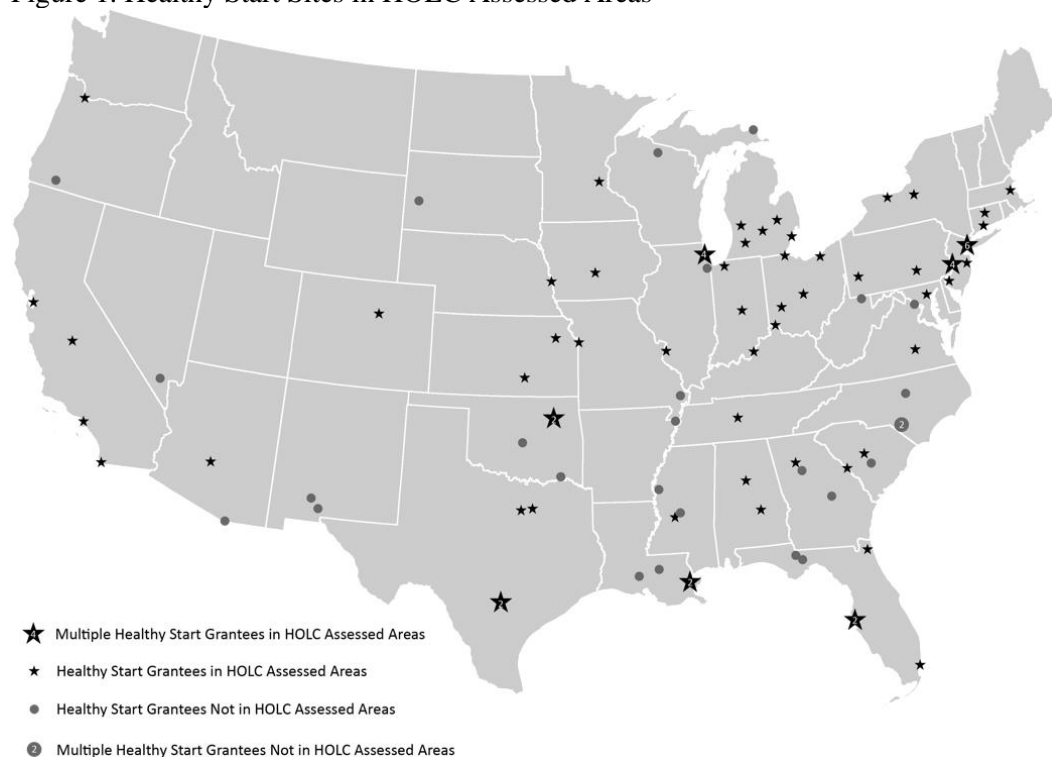Healthy Start Initiative to Address Structural Racism
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HS sites to obtain the specific zip codes for their respective service areas. If we could not obtain information for a selected site, another site was randomly selected from the corresponding strata using a random number generator. We then used 2010 census data to outline boundaries for the corresponding zip codes for each HSI site service area. To identify the proportion of each graded area in the HSI site catchment area, we conducted intersection analyses.(O'sullivan and Unwin, 2014)

Using the 2017 American Community Survey, we extracted data on various community level demographics to understand the populations being served by the HSI grantees. Since sites serve multiple zip codes, we extracted data for each zip code and used the median for each site. We also assessed the mean across the zip codes and found the median to be better reflective of the distribution by site. Community demographics were then aggregated up by HSI site level.

RESULTS

Our geospatial analysis found that 73 of the 100 HSI sites (Figure 1) are in cities that were previously HOLC-assessed. Sixty-six of the 73 sites that were in the HOLC assessed areas, were located in the Northeast, Midwest, and Southern portion of the nation. The geographic patterning of HSI sites was very similar to the geographic patterning of HOLC assessed cities. (Appendix A)

Figure 1. Healthy Start Sites in HOLC Assessed Areas

★ Multiple Healthy Start Grantees in HOLC Assessed Areas

★ Healthy Start Grantees in HOLC Assessed Areas

● Healthy Start Grantees Not in HOLC Assessed Areas

② Multiple Healthy Start Grantees Not in HOLC Assessed Areas

The 20 sites used for the intersection analysis are representative of the locations of all Healthy Start sites (Appendix A). Of the 20 sites used, there were eight level 1 sites, six level 2 sites, and

six level 3 (Table 1). Over half the sites had at least 40% of their catchment area overlap with original HOLC maps. When we examined the areas graded by HOLC within the catchment zones and discard the "ungraded", the remaining overlapping areas are highly skewed to C and D graded areas, with the exception of two programs: Healthy Start-Cincinnati & Newark Community Health Centers which have sizable B graded and A grade areas as their majority. Notably, the entire overlapping areas for Westside Healthy Start (Chicago) were C and D graded areas (Table 1). For 19 of the 20 sites, over 60% of the previously HOLC-assessed areas inside the catchment were C or D graded areas with D graded areas ranging from 9%-66% and C graded areas ranging from 13%-89% (Table 1).

We also found that overall level 2 and 3 sites had larger parts of their catchment areas overlap with previous HOLC graded areas, 42% and 34% respectively, and these areas were highly skewed to C and D graded areas (Table 2). Community demographics did not significantly vary by level. All levels served neighborhoods with high utilization of public insurance, high unemployment rates, high rates of renters and highly segregated (Table 2).

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Table 1. Percentage of HOLC Graded Areas in Healthy Start Catchment Areas

Healthy Start Programs	A	B	C	D
Level 1 Sites				
Albert Einstein College of Medicine	0%	20%	52%	27%
Atlanta Healthy Start Initiative	2%	15%	42%	41%
Babies First	2%	17%	70%	11%
Five Rivers Healthy Start Health Centers	0%	22%	34%	43%
Healthy Start - Cincinnati	23%	52%	13%	12%
Kalamazoo County Healthy Babies Healthy Start	0%	22%	69%	9%
Newark Community Health Centers, Inc (NCHC)	0%	41%	38%	21%
Richmond Healthy Start Initiative	4%	15%	37%	45%
Level 2 Sites				
Columbus Public Health Caring For	10%	21%	44%	25%
Indianapolis Healthy Start	3%	7%	62%	28%
Kansas City Healthy Start Initiative (KCHSI)	2%	6%	34%	58%
Louisville Metro Healthy Start	0%	10%	42%	48%
Magnolia Project	0%	10%	23%	66%
Westside Healthy Start	0%	0%	89%	11%
Level 3 Sites				
Boston Healthy Start Initiative	0%	1%	61%	37%
Detroit Health Start Project	5%	17%	55%	23%
Healthy Start Brooklyn	0%	16%	26%	58%
Moms First	3%	10%	46%	41%
REACHUP, Inc./Central Hillsborough Healthy Start	1%	12%	24%	63%
San Antonio Healthy Start	10%	14%	46%	30%

Table 2. Percentage of HOLC Grade and Community Demographics by Healthy Start Levels

Level	% HOLC Overlap	% A	% B	% C	% D	% Black Residents	Median Home Value	Median Income	% Renters	% With Bachelor's Degree or Higher	% Unemployed	% Public Insurance	% No Insurance
1	13%	5%	24%	41%	30%	40%	$171,867	$39,182	64%	25%	12%	47%	11%
2	42%	3%	9%	50%	38%	49%	$117,311	$35,264	58%	21%	11%	47%	14%
3	34%	4%	13%	45%	38%	46%	$325,990	$45,811	65%	23%	11%	49%	11%
All Levels	27%	4%	14%	46%	36%	45%	$200,179	$39,883	63%	23%	11%	48%	12%

DISCUSSION

The Healthy Start Initiative is designed to decrease adverse pregnancy related outcomes in communities with rates that are at least 1.5 times the national average. The program outlines that it serves communities with high rates of poverty, low education, limited access to care, and other socioeconomic factors, which is supported by our data. Most communities with these characteristics are often segregated and disproportionally impacted by structural racism in housing and social policy (Rothwell, 2011). Seventy-three percent of the families that are being served by the Healthy Start Initiative, a federally funded community level intervention, reside in communities that were previously subjected to redlining, mortgage discrimination steeped in anti-Black racism, that continues to have effects today. To effectively combat rising rates of morbidity and mortality for women and infants in these communities we must acknowledge and address that the formation and maintenance of many of these "high-risk" communities are due to racist federal policies that have created and perpetuated marginalization for minoritized families. Without a focus on the underlying structural factors at play, the potential impacts of the program may be diminished. Despite a large focus on social determinants of health, the HSI has very narrowly addressed structural racism in the communities they serve. However, as the only federally funded community level program aimed to reduce disparities in adverse pregnancy related outcomes, HSI is uniquely positioned to leverage their existing infrastructure to address structural racism as key risk factor for adverse pregnancy outcomes for Black women and infants.

As organizations develop and implement interventions to combat adverse pregnancy outcomes, such as the HSI, they have often looked to attack more proximal and individual risk

factors, one of which is simply being Black, without understanding or addressing the importance of historical and current community context and the totality of experiences for Black women (McLemore et al., 2018) and how this context has profound implications for health. Our work shows that many communities served by HSI have faced historical trauma due to HOLC assessments and critical attention needs to be given to the historical and systematic disenfranchisement that these communities have faced in order to create sustainable community reduction in rates. By only focusing on individual level social determinants of health and clinical risk factors we may underestimate the reach and effects of structural racism (Hardeman et al., 2016). While the HSI has utilized language in its national mission and vision that seeks to addresses health equity and racism, its current design and approach does not adequately address structural racism in the communities at-large.

Population health researchers have offered frameworks on how we can address structural racism to advance health equity. Bailey et. al, describes how place-based partnerships focusing on equity efforts can be extremely valuable in placing pressure on the systems of structural racism operating in a specific geographical region (Bailey et al., 2017). Additionally, The Robert Wood Johnson Foundation has developed The Culture of Health Framework, which describes four pillars through which researchers and communities can take action to create healthy communities and lives: (1) Making Health a Shared Value, (2) Fostering Cross-Sector Collaborations, (3) Creating Healthier and More Equitable Communities, and (4) Strengthening Integration of Health Services and Systems (Chandra et al., 2017). Our work suggests that the program should directly address how these communities developed as a product of racist policies and actively engage in anti-racism paradigm shifting to truly create a community level reduction. Informed by these frameworks, we propose three ways in which we believe the HSI programs can begin to deepen its engagement in anti-racism paradigm programming and advocacy, with particular focus on how racist policies, both de jure and de facto, plague minoritized communities and create the health inequities that we see.

First, we recommend revising the HSI funding opportunity to require applicants to address the historical and current implications of structural racism within their respective community. By requiring grantees to understand the historical landscape and current practices of racism in their communities, the sites will better understand how key disparities came to be. Allowing them to think critically and develop strategies and programs to combat them. Additionally, a deeper understanding of the structural context will also inform the development of their CANs by directly informing who should be included as key stakeholders to most effectively make change in their communities.

Secondly, as part of HRSA's ongoing technical assistance to grantees, trainings should be provided about the mechanism through which racism and race related stressors impact birth outcomes, maternal mortality, and pregnancy risk factors and how the respective sites can use their programs to address these structures. These trainings can begin to change the narrative of individual behavioral and clinical actions as a driver of disparities to systematic oppression and marginalization as a key driver of disparities. The National Healthy Start Association, the membership association for the federal HS programs, in partnership with CityMatch and the Association of Maternal Child Health Programs, piloted the Infant Mortality and Racism Action Learning Collaborative in 2008. The collaborative educated six sites on how racism affects birth outcomes, how to communicate with families about racism with cultural humility, and how racism

operates on community, state, federal levels. However, this initiative did not appear to continue and was never scaled up to all grantees. Based on the evaluation of this effort, participating sites indicated that acknowledging and understanding prior and current injustices is critical to be effective in their communities. (The Association of Maternal & Child Health Programs, June 2009).

Finally, HRSA should provide trainings and technical assistance to the CANs on the health in all policies framework to deepen the understanding that many policies impact health outcomes even when health is not the focus.(Rudolph et al., 2013) This understanding will reinforce the various structural barriers that exist at the neighborhood level that can impact and the need to focus on broad scale local policies. This will also help with building more interdisciplinary CANs and projects.

These programmatic shifts will increase the sites understanding of how structural racism creates barriers and stressors for Black women and will directly impact the solutions and interventions they propose. With these internal programmatic shifts, HSI grantees will be better equipped to critically examine, propose and advocate for anti-racist institutional, local and state policy efforts. A focus on large scale policy, rather than solely on an individual need, will allow for greater community change for more women regardless of participation in the program.

For example, given that HSI grantees largely serve communities with higher rates of renters, an identified bi-product of "red-lining"(Aaronson et al., 2017) , grantees can address access to stable and affordable housing in their communities through local policy. With historical context, they will be better equipped to advocate for the need for stronger inclusionary zoning and land use policies to improve housing affordability and stability, as well as stronger renters' rights to protect from evictions. (Desmond, 2014) Additionally, research shows that homes in previously "red-lined" areas are severely devalued with the 2017 median value of homes in previously green rated areas being approximately $640,238 compared to $276,199 in previously red rated areas.(Mikhitarian, 2018) Understanding this context will better equip CANs to advocate for equitable solutions for community and social funding at the neighborhood level.

Since CANs include both public and private partnerships, they are uniquely positioned to collaborate with local stakeholders, like hospital systems to shift institutional policies while centering community members. With a deeper understanding of structural racism, HSI grantees can assist hospital systems in developing plans to address racial bias by physicians which directly impact Black pregnant women's treatment and experience (Vedam et al., 2019), the need to introduce doulas that have found to be extremely effectively in reducing adverse birth outcomes for Black women, especially women using Medicaid (Kozhimannil et al., 2013, Thomas et al., 2017), and developing effective and meaningful strategies for hospitals and local payers to engage in community benefit spending to address community level social determinants of health (Rosenbaum et al., 2016).

Finally, a strong understanding of structural racism will provide HSI grantees with a unique lens to understand how state and local level policy are used to maintain marginalization. For example, sites are serving communities that predominantly using public insurance and other social programs. CANs can advocate against work requirements for social services because they are unethical, inappropriately enforced, disproportionately impact minoritized families, and lead to greater instability (Pavetti, 2018). They can also push for the expansion of Medicaid which would

significantly reduce barriers to care and has been shown to significantly reduce Black infant mortality (Bhatt and Beck-Sagué, 2018).

HSI sites are also uniquely equipped to allow women to bring their lived experiences to the policy advocacy process through their community engaged model. It is extremely vital to engage and bring the entire experience of marginalized women, not only for equitable engagement but also to make sure that their needs are truly met.(Wallace et al., 2017) By integrating community engagement and narrative in policy advocacy, HSI can increase civic engagement and awareness of how policies directly impact the health of the community.

The geospatial analysis had a few limitations. Population size and city limits have grown since the 1930s, and therefore some of the current service areas of HSI sites are larger than previously redlined areas. Additionally, gentrification and displacement of minority and low-income residences happens in many large metropolitan areas causing shifts in service areas and population distribution. We conducted both the primary and secondary analysis to combat these limitations. We first wanted to see how many sites were in cities that met the qualifications for HOLC surveying. Then we conducted our secondary analysis to examine the direct overlap of service are and HOLC assessed areas. This provided us with information about the specific areas that remain disproportionately affected by the previous policies. A major strength of this research was our ability to use and develop geocoded maps of prior HOLC assessed communities. These maps allowed us to not just make inference about the cities that HSI serves but we were able to see zip code level data to be able to make direct inferences about the service area of the healthy start sites.

CONCLUSION

Our analysis contributes to a growing body of literature that examines how communities with numerous risk factors and health inequities were intentionally impacted by anti-Black racist policies. Until the last quarter of the twentieth century, racially explicit policies of federal, state, and local governments have reinforced racial and economic segregation. The origin and evolution of many of these higher risk communities did not occur naturally. Today's residential segregation and neighborhood deprivation, limited access to resources, educational disparities, and growing health inequities are not the consequence of individual choice, but rather the result of public policy that explicitly marginalized many metropolitan areas in the United States. When developing and implementing programmatic interventions in communities with this historical context, anti-racism practices need to be at the core in order to make lasting and substantial change. While research shows that women in the program, especially Black women, have seen reductions in adverse outcomes, without transformative change through policy we will not completely fulfill the Healthy Start Initiative's purpose of improving health outcomes before, during, and after pregnancy, and reduce racial/ethnic differences in rates of infant death and adverse perinatal outcomes.

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Appendix A: Additional Maps and Tables

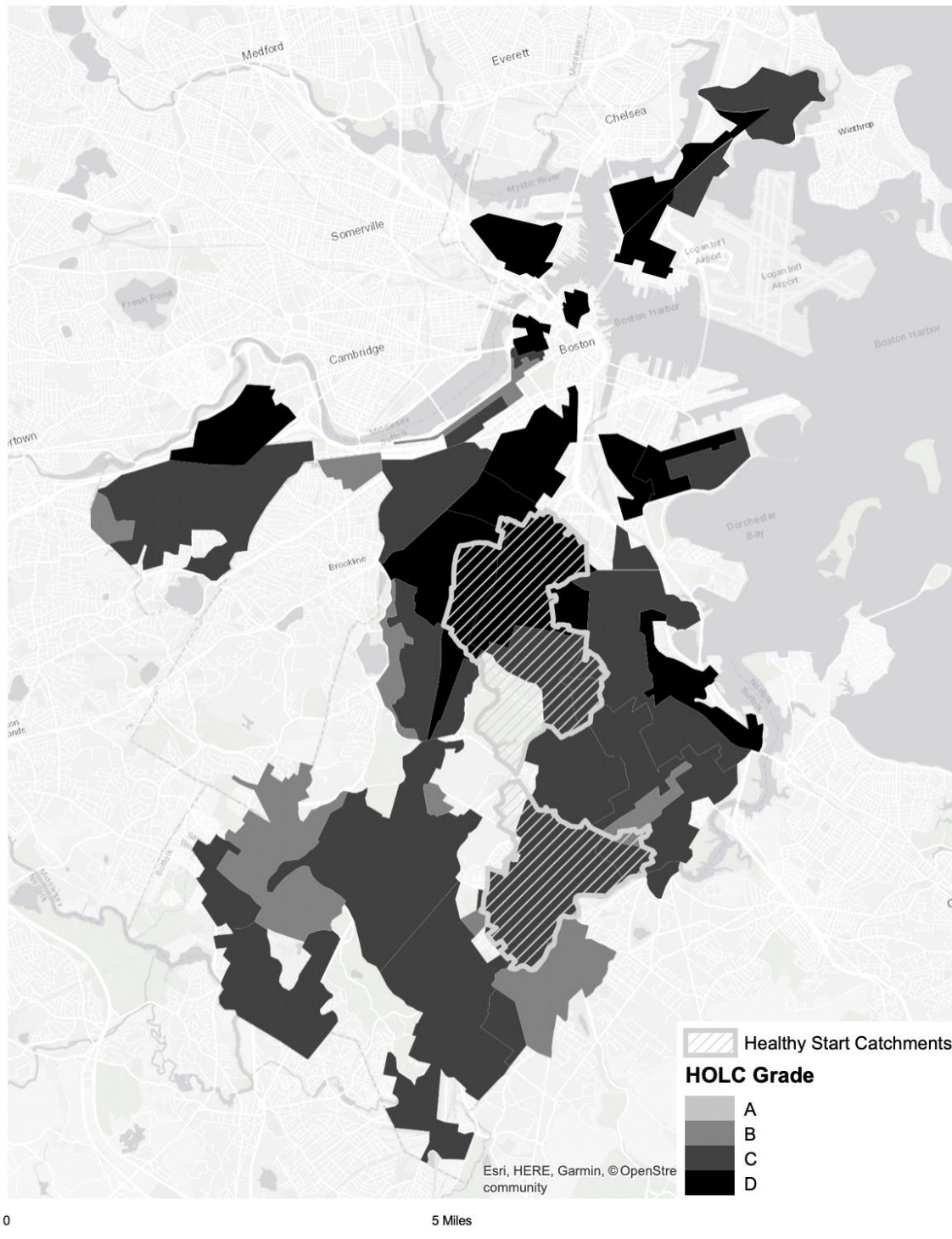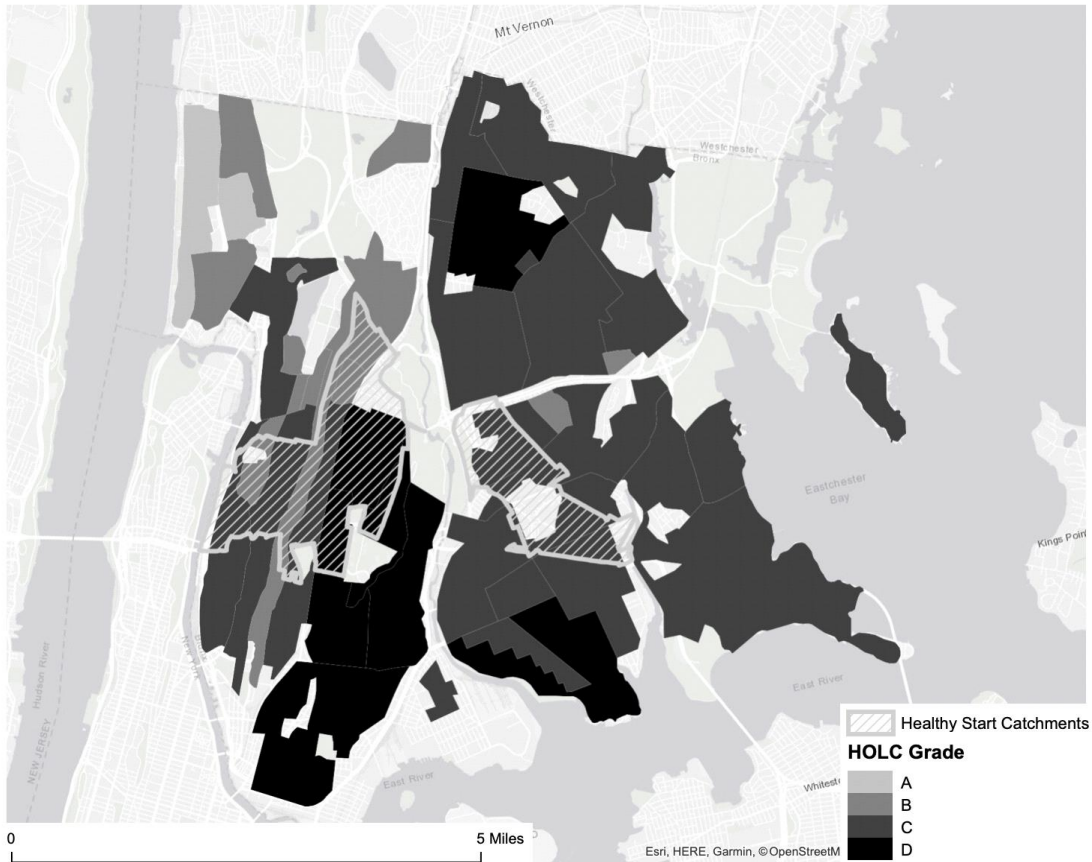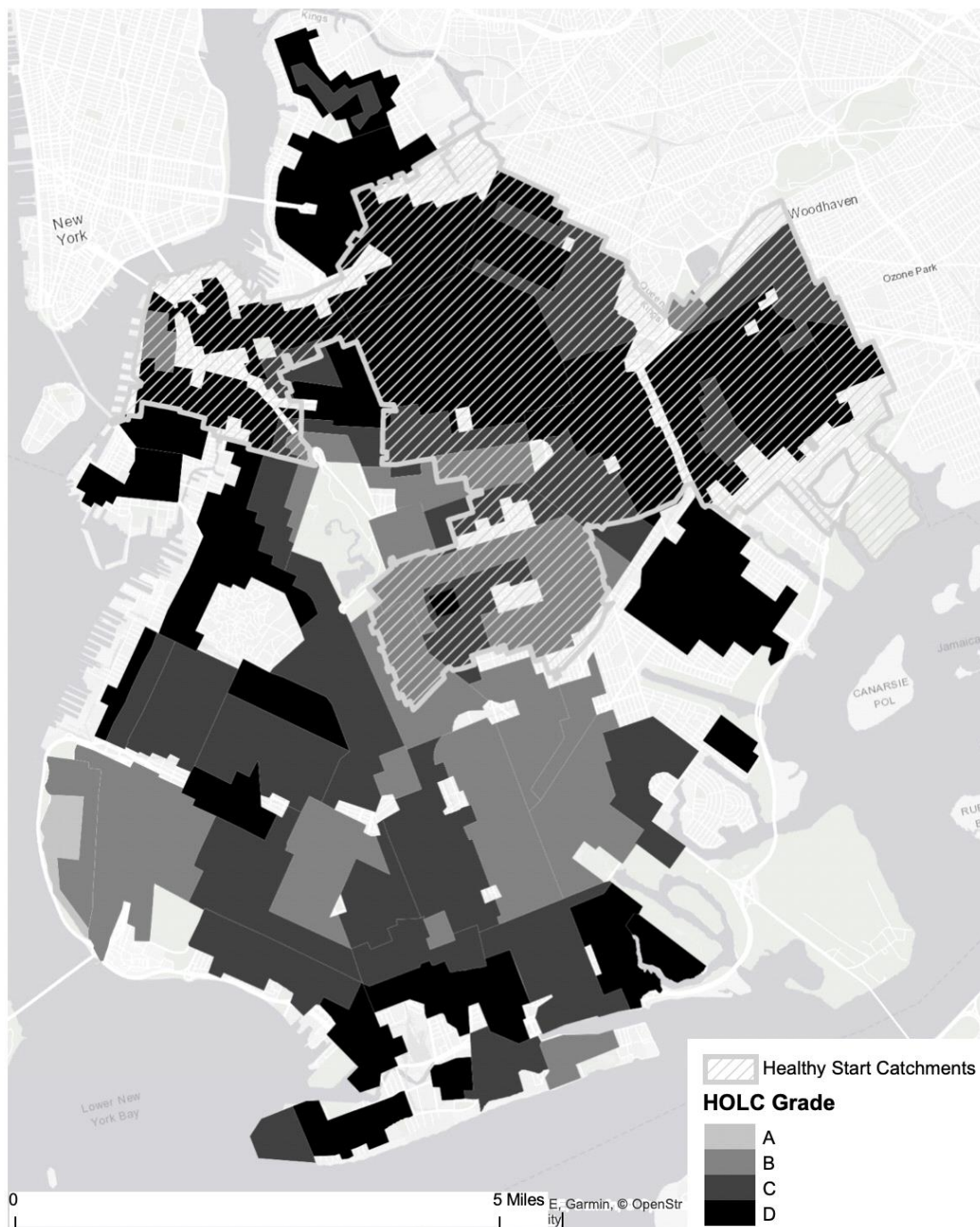Figure 1. Geographical Distribution of Health Start Sites and HOLC Assessed Cities

78 Generational Impacts for 1930s Housing Discrimination and the Imperative Need for the
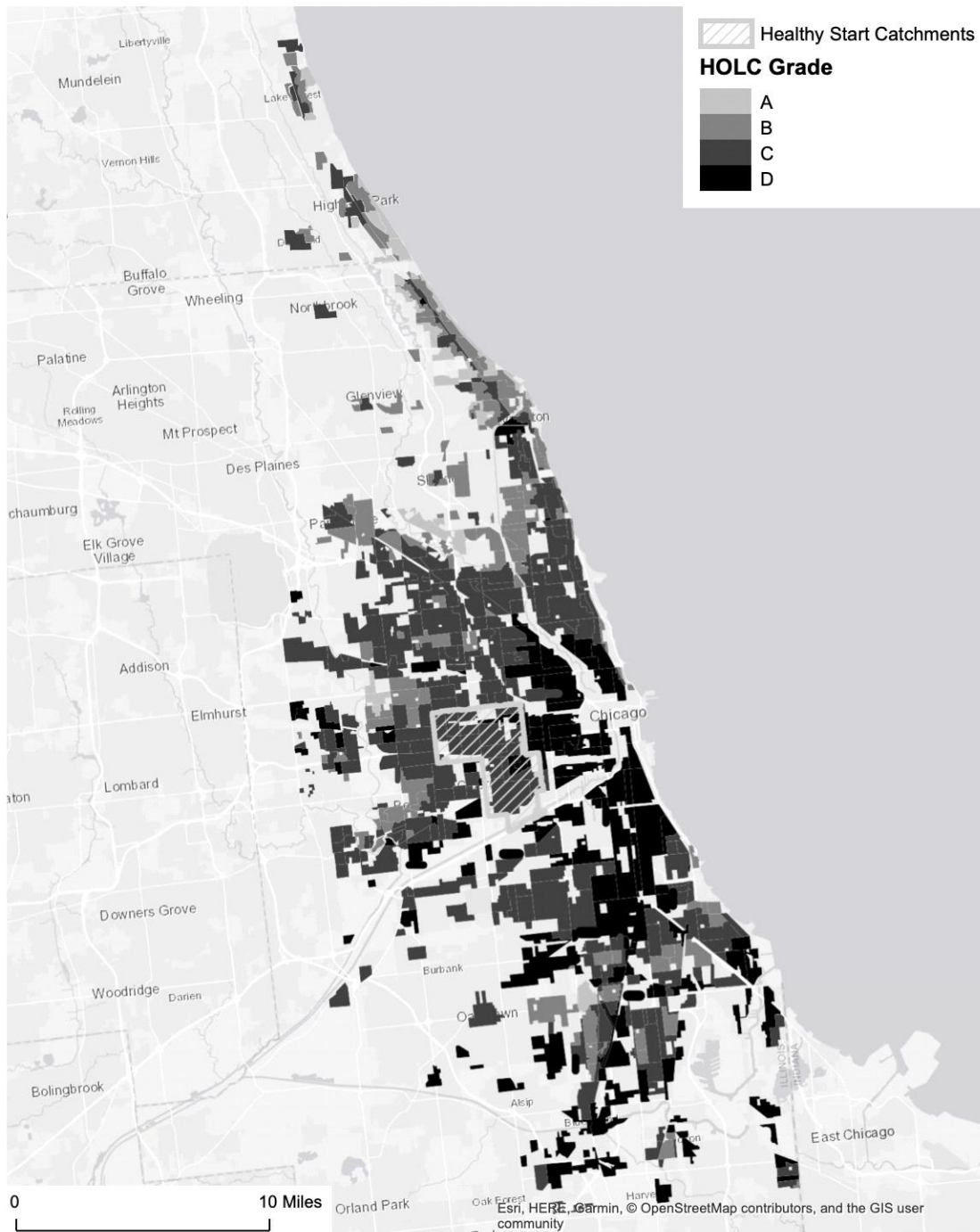Healthy Start Initiative to Address Structural Racism
Butler, et al.
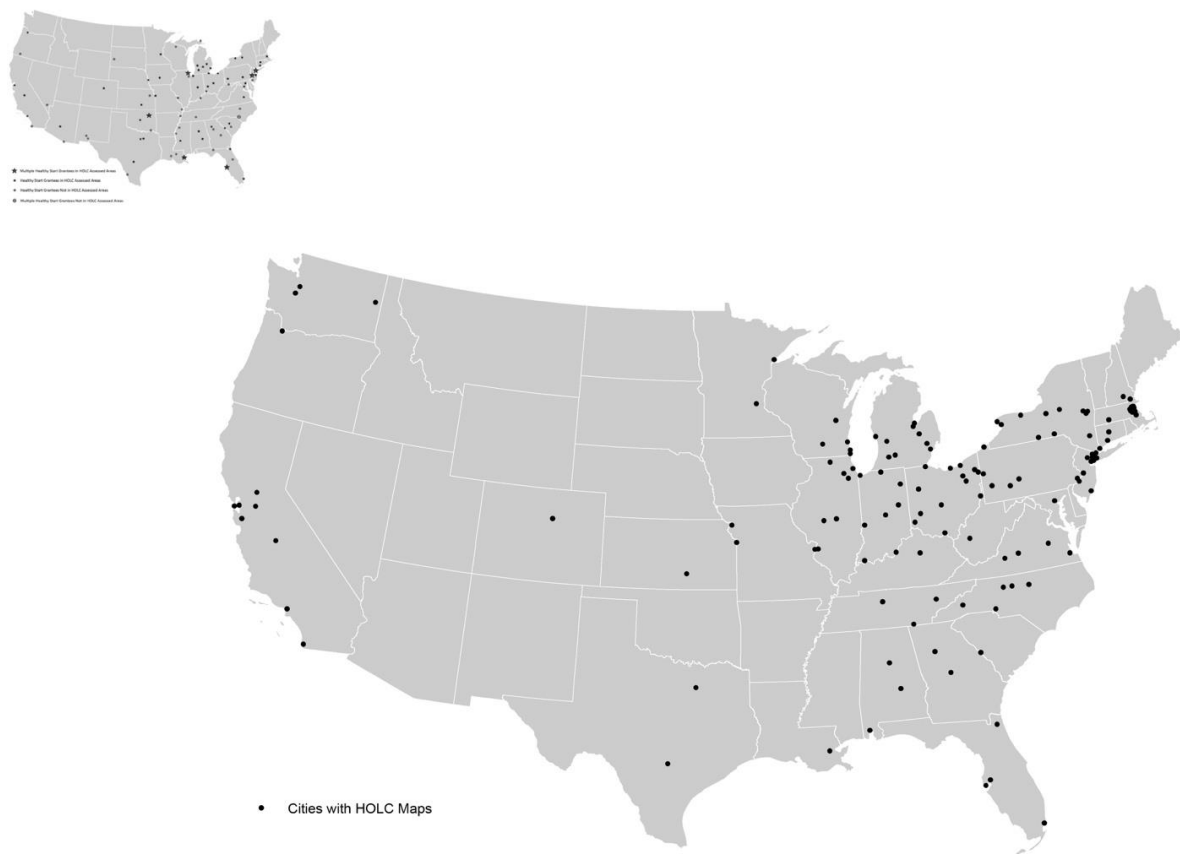
Figure 2. Selected Healthy Start Sites for Secondary Analysis

79 Generational Impacts for 1930s Housing Discrimination and the Imperative Need for the
Healthy Start Initiative to Address Structural Racism
Butler, et al.

Appendix B: Maps from Secondary Analysis

80 Generational Impacts for 1930s Housing Discrimination and the Imperative Need for the
Healthy Start Initiative to Address Structural Racism
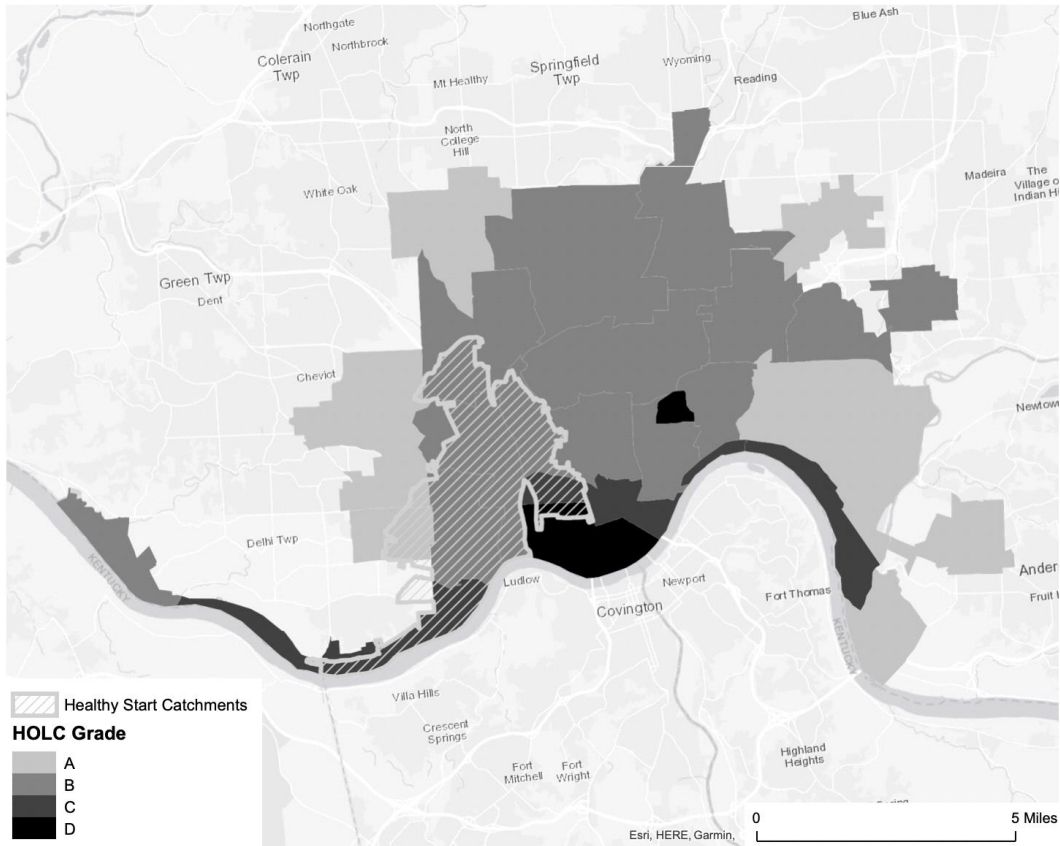Butler, et al.

Atlanta
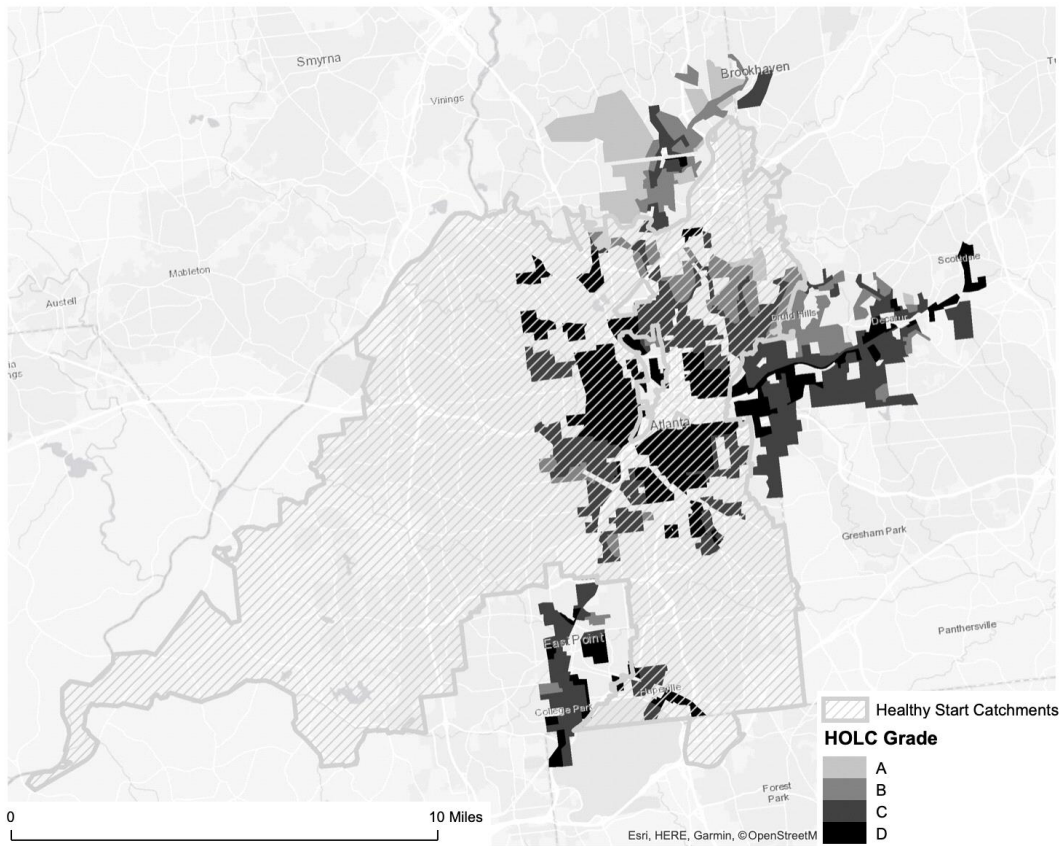
Legend:
Healthy Start Catchments

HOLC Grade
A
B
C
D

0   10 Miles

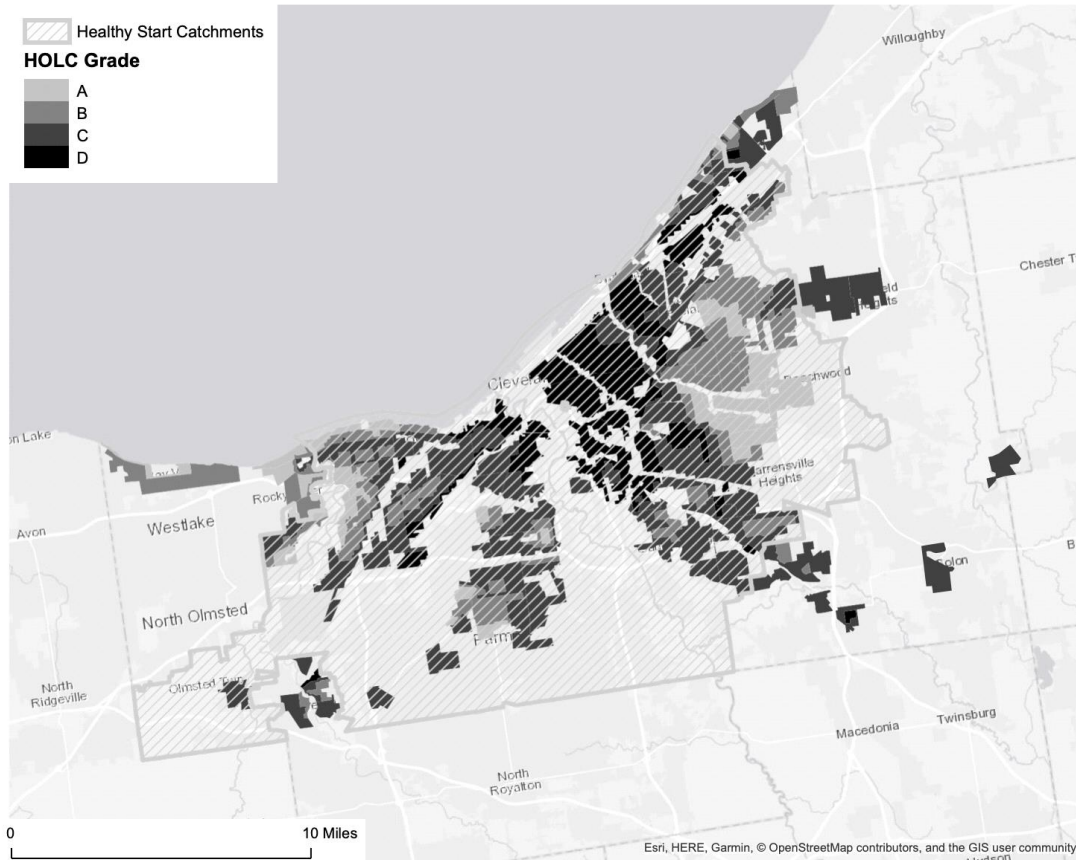Esri, HERE, Garmin, ©OpenStreetM

Boston

82 Generational Impacts for 1930s Housing Discrimination and the Imperative Need for the
Healthy Start Initiative to Address Structural Racism
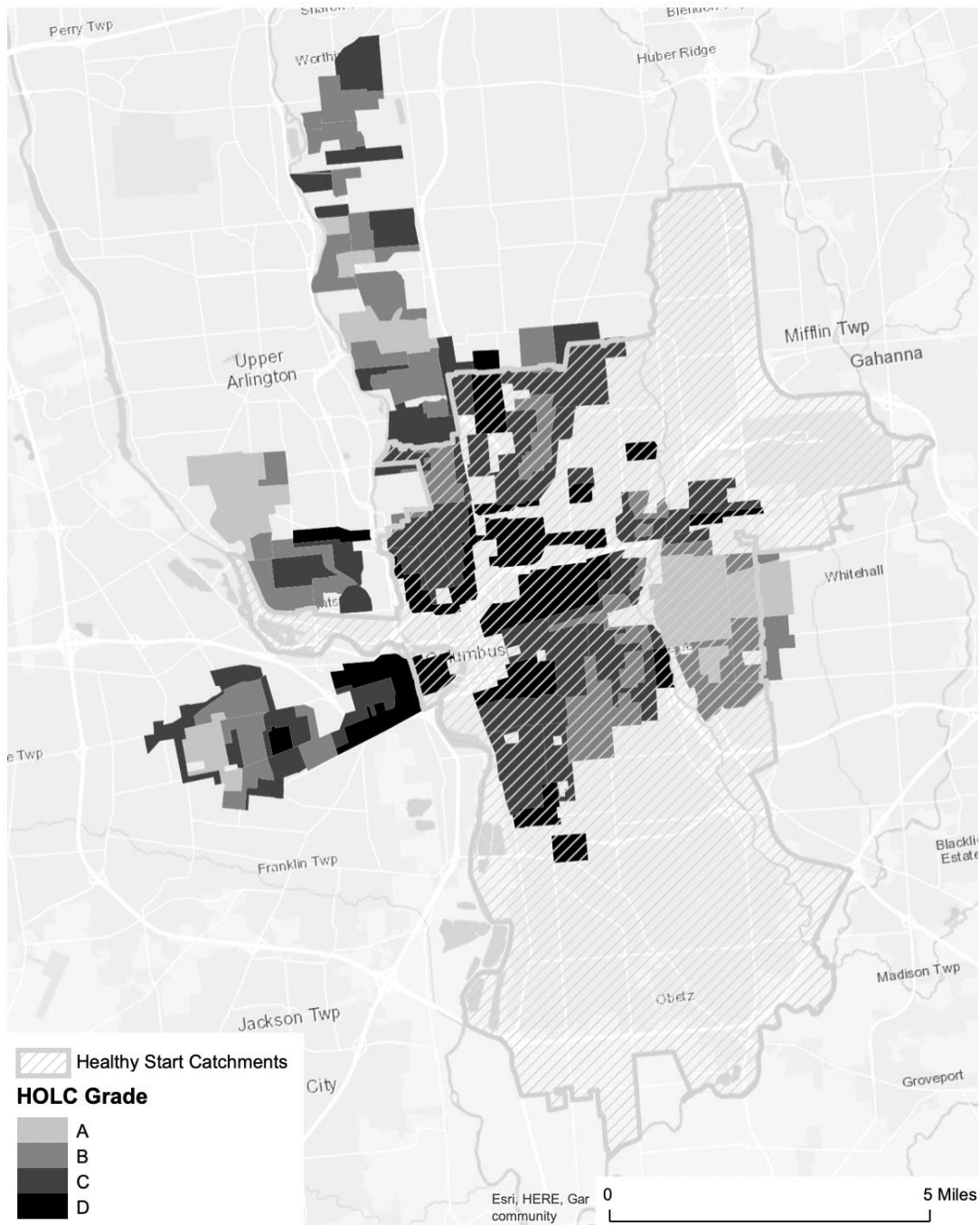Butler, et al.

Bronx

83 Generational Impacts for 1930s Housing Discrimination and the Imperative Need for the
Healthy Start Initiative to Address Structural Racism
Butler, et al.

Brooklyn

Legend:

Healthy Start Catchments

HOLC Grade

A
B
C
D

0   5 Miles   E, Garmin, © OpenStr
                       ity

84 Generational Impacts for 1930s Housing Discrimination and the Imperative Need for the
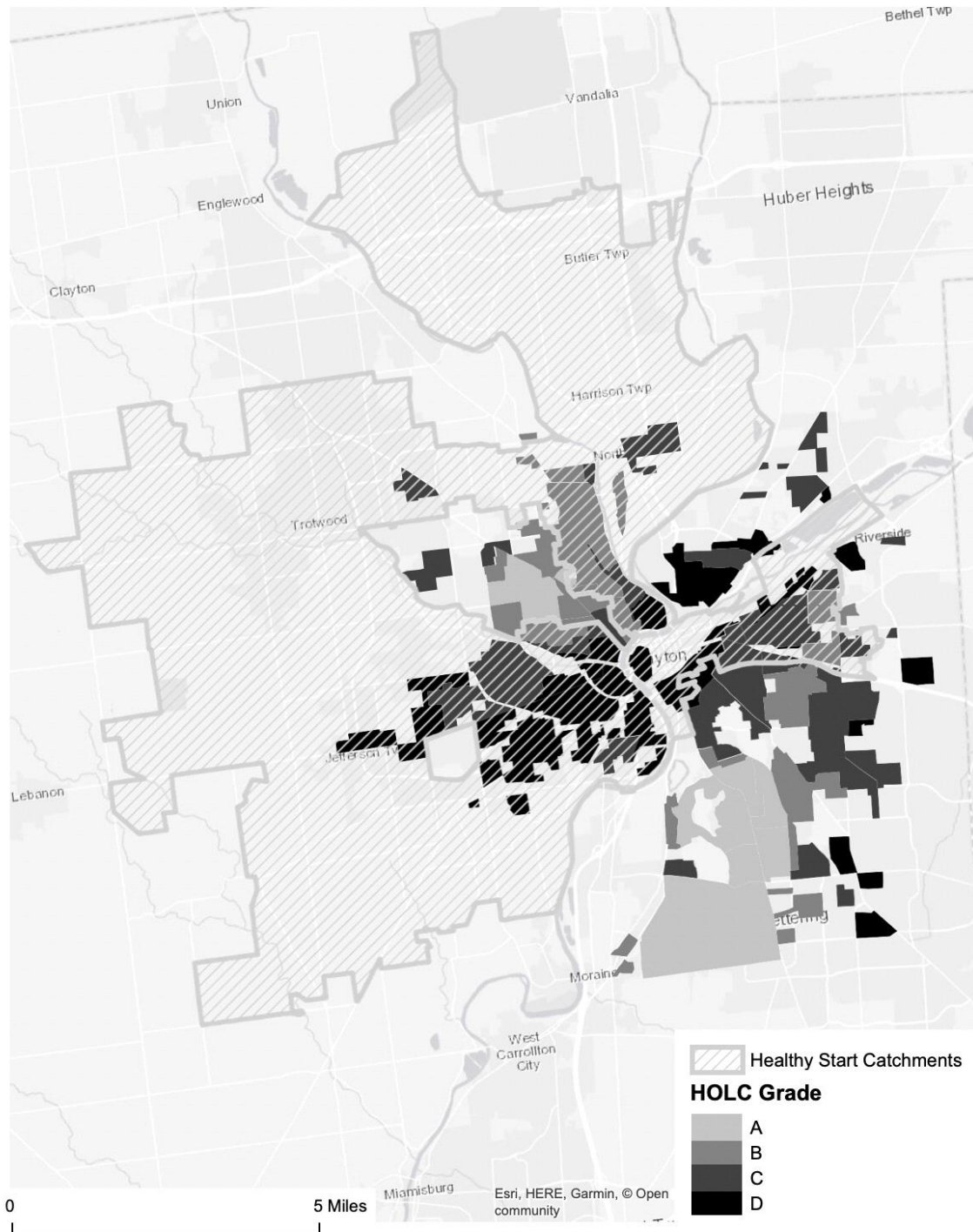Healthy Start Initiative to Address Structural Racism
Butler, et al.

Chicago
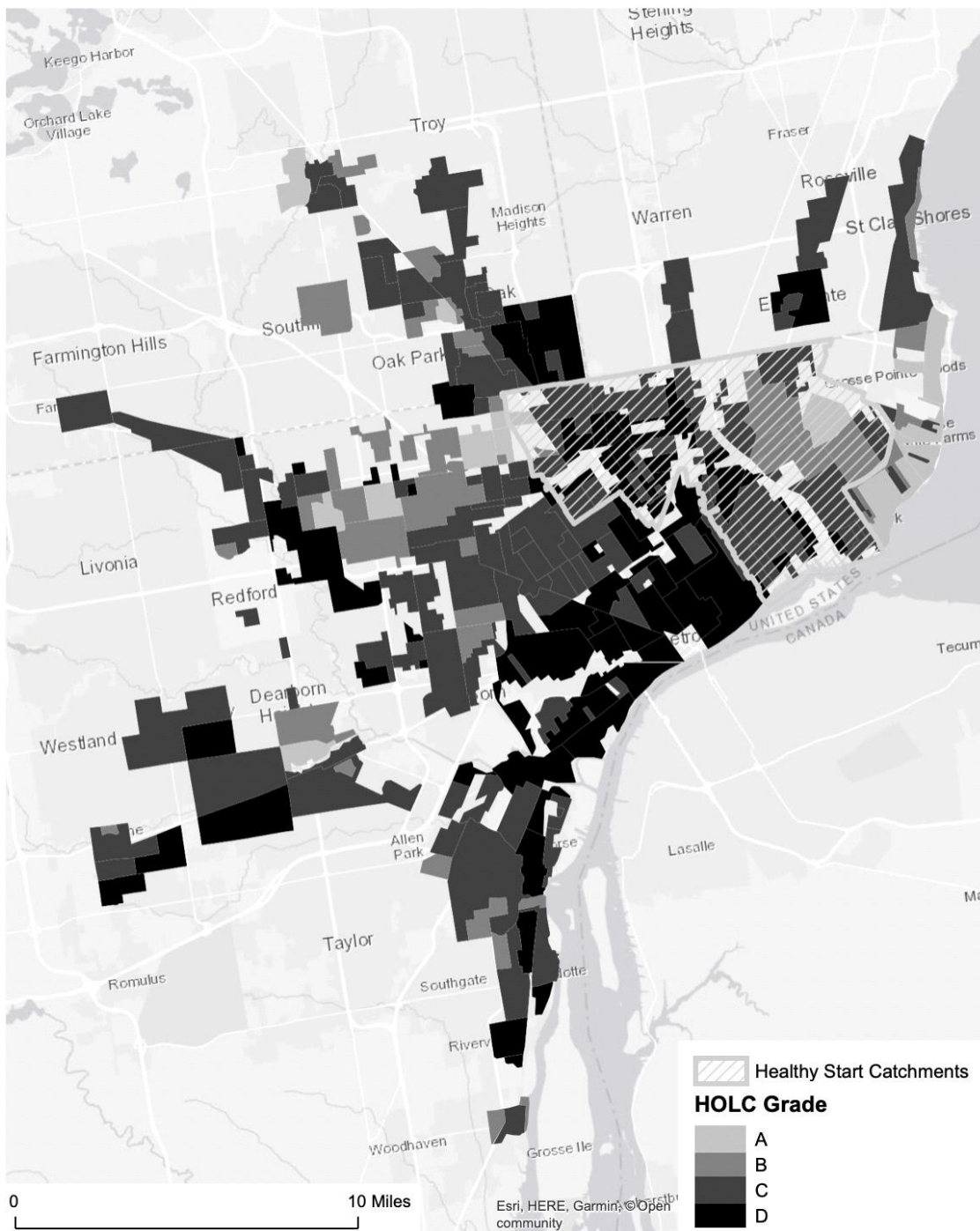
85 Generational Impacts for 1930s Housing Discrimination and the Imperative Need for the
Healthy Start Initiative to Address Structural Racism
Butler, et al.

Cincinnati

Cleveland

87 Generational Impacts for 1930s Housing Discrimination and the Imperative Need for the
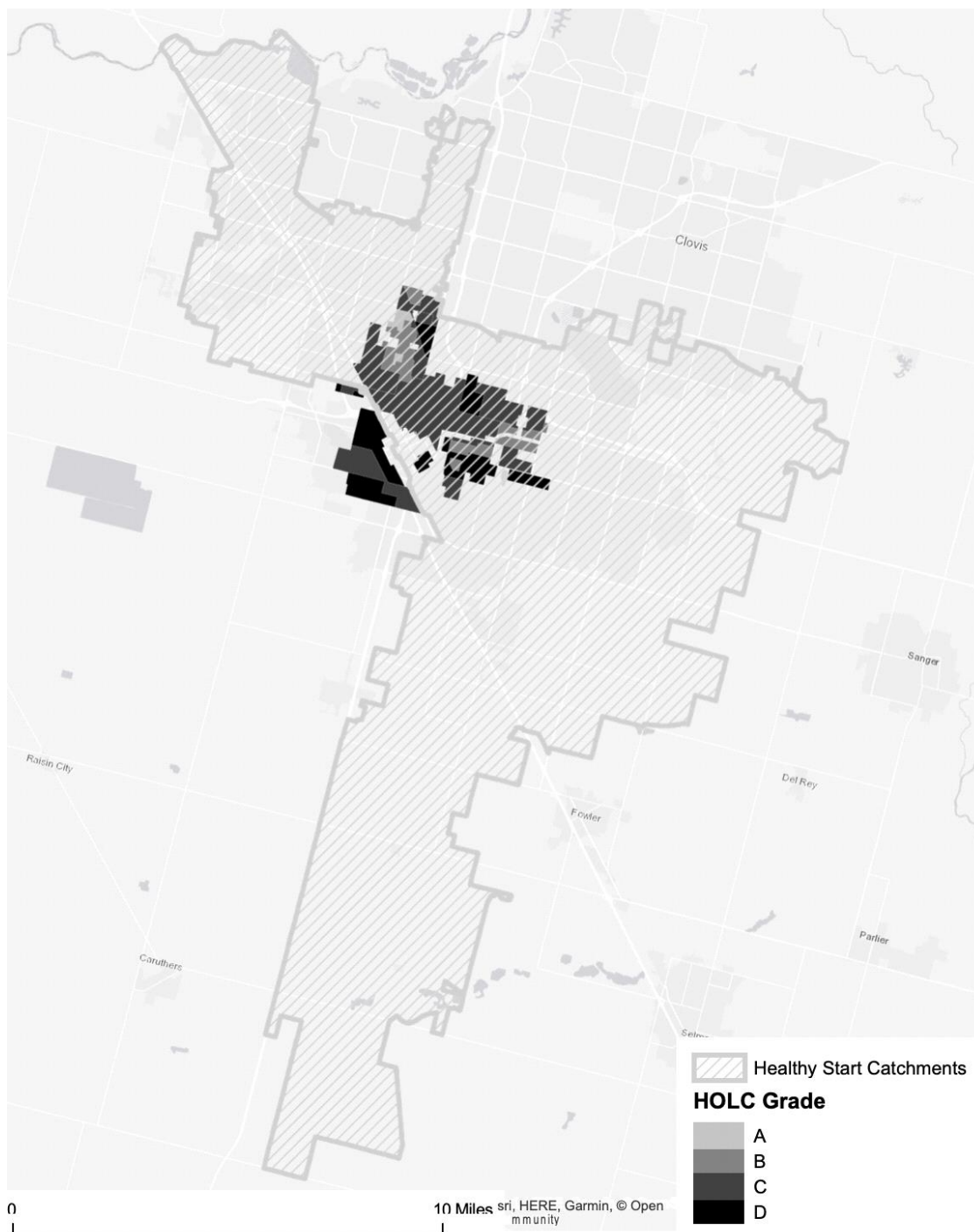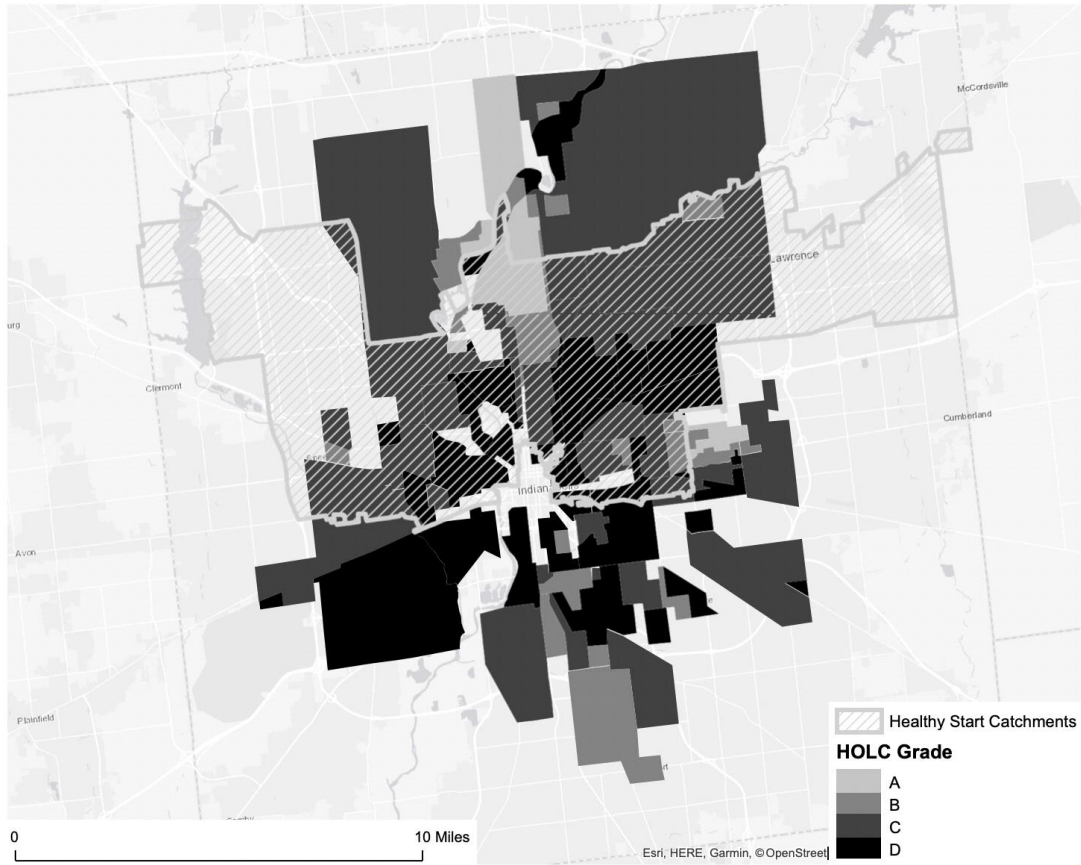Healthy Start Initiative to Address Structural Racism
Butler, et al.

Columbus

88 Generational Impacts for 1930s Housing Discrimination and the Imperative Need for the
Healthy Start Initiative to Address Structural Racism
Butler, et al.

Dayton

Detroit

90 Generational Impacts for 1930s Housing Discrimination and the Imperative Need for the
Healthy Start Initiative to Address Structural Racism
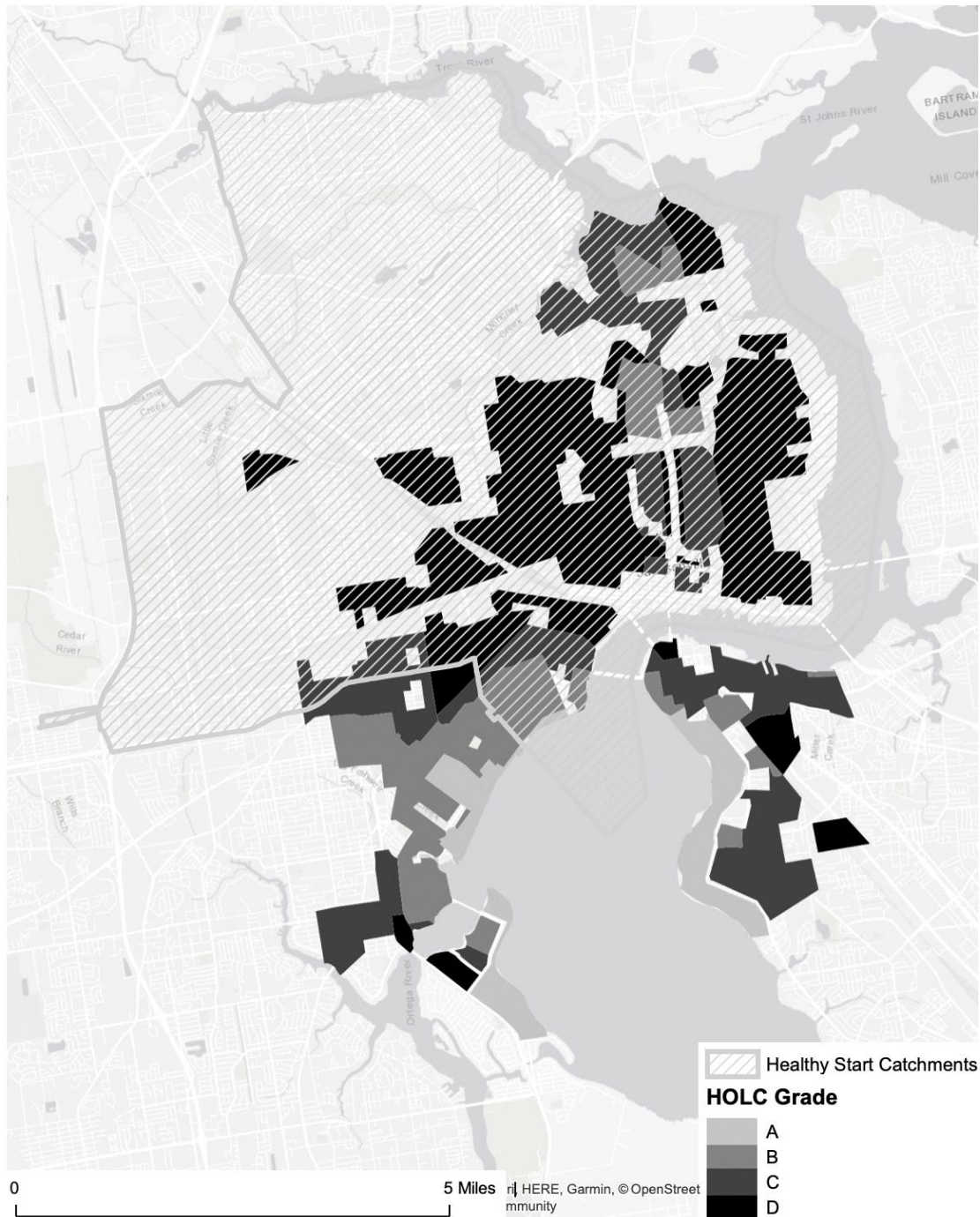Butler, et al.

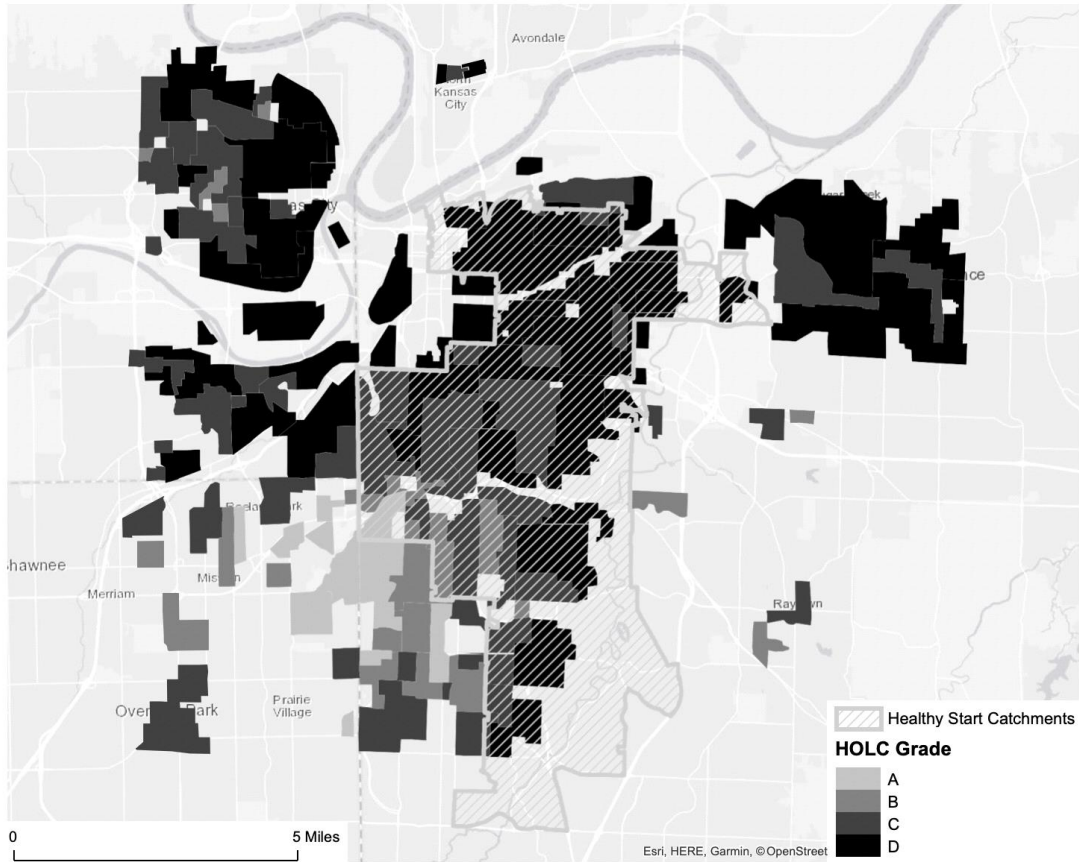## Fresno

91 Generational Impacts for 1930s Housing Discrimination and the Imperative Need for the
Healthy Start Initiative to Address Structural Racism
Butler, et al.

Indianapolis

92 Generational Impacts for 1930s Housing Discrimination and the Imperative Need for the
Healthy Start Initiative to Address Structural Racism
Butler, et al.

Jacksonville

93 Generational Impacts for 1930s Housing Discrimination and the Imperative Need for the
Healthy Start Initiative to Address Structural Racism
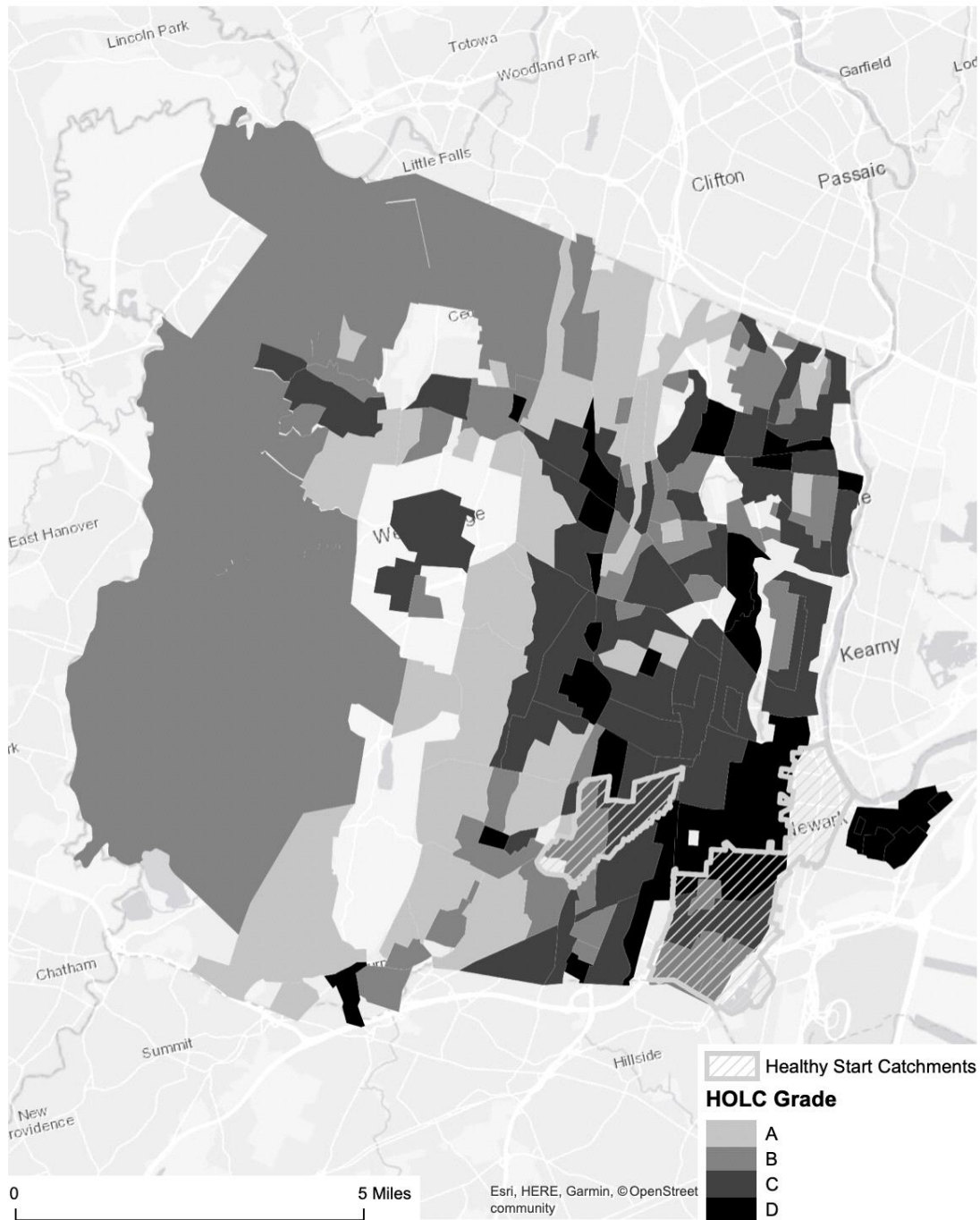Butler, et al.

Kalamazoo

Kansas City

95 Generational Impacts for 1930s Housing Discrimination and the Imperative Need for the
Healthy Start Initiative to Address Structural Racism
Butler, et al.

Louisville

Healthy Start Catchments

HOLC Grade
A
B
C
D

0   5 Miles
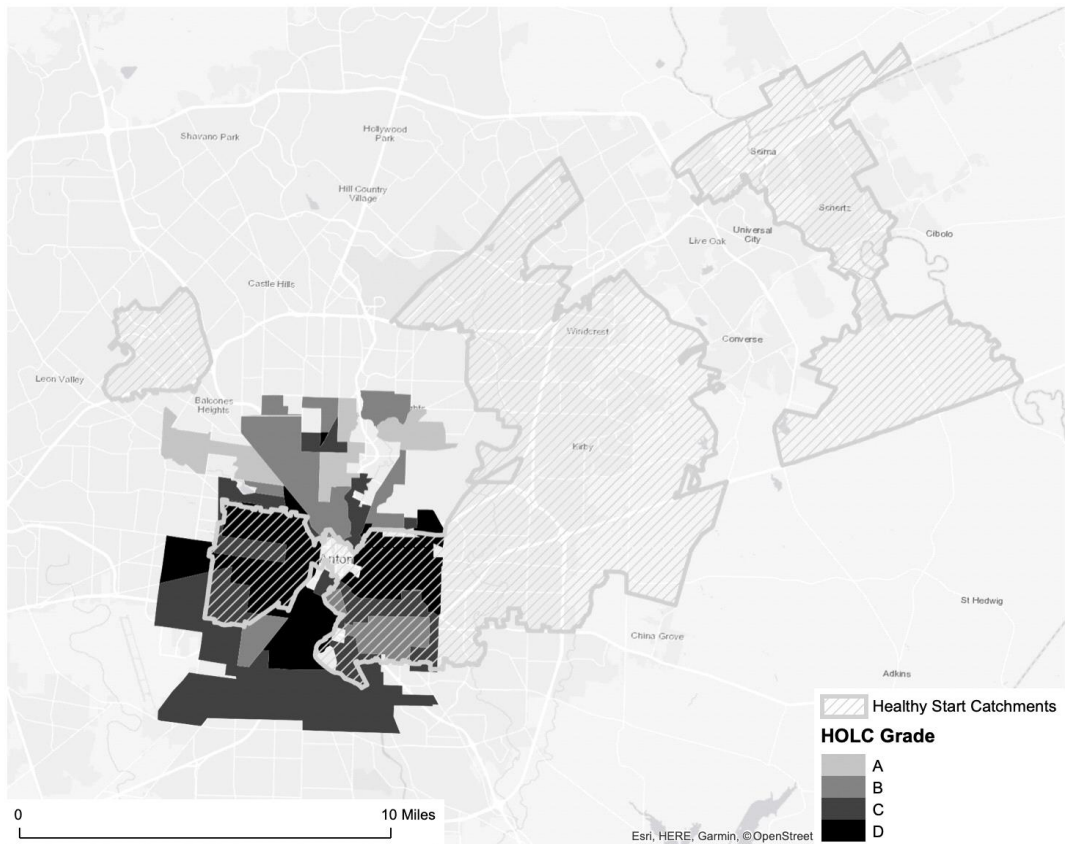
Esri, HERE, Garmin, ©OpenStreet

96 Generational Impacts for 1930s Housing Discrimination and the Imperative Need for the
Healthy Start Initiative to Address Structural Racism
Butler, et al.

Newark

Richmond

98 Generational Impacts for 1930s Housing Discrimination and the Imperative Need for the
Healthy Start Initiative to Address Structural Racism
Butler, et al.

San Antonio

99 Generational Impacts for 1930s Housing Discrimination and the Imperative Need for the
Healthy Start Initiative to Address Structural Racism
Butler, et al.

Tampa