



Racial Disparities in the Location of Safe, Affordable Housing in Cuyahoga County, Ohio

Prepared for The Legal Aid Society of Cleveland & Ohio State Bar Foundation

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SEPTEMBER 2023

This report depicts the residential rental landscape of Cuyahoga County, one in which segregation continues to be intricately related to accessing good quality, affordable housing, with clear impacts on the health and safety of its residents. The analysis shows that among neighborhoods with moderate median rental values, there is a wide variation in the conditions of the housing stock and relatedly to the risk of lead exposure. Neighborhoods with affordable housing and the highest shares of nonwhite residents carry the burden of a deteriorated housing stock, which makes it more expensive to remediate or mitigate lead hazards. Neighborhoods with affordable housing and low lead risk are few, yet they tend to be found in the periphery of the county in areas where Black and other people of color were historically excluded and where transportation costs may constitute yet another barrier to access. And while tenant-based subsidized housing could provide a means to access higher quality, lead-safe neighborhoods, we find that only a few neighborhoods with very low lead risk have at least 5% of rentals linked with a housing choice voucher.

We highlight historical accounts of community action for racial equity in housing and draw from the data analysis to raise relevant questions that can invigorate current efforts to improve lead hazard control and housing stability, particularly for the most segregated areas in the county. The data analysis in this report can serve as an input for community and other stakeholder discussions around these important questions with the goal of advancing lead-safe housing equity in our region.

Notes: Lead data used in this report come from the Ohio Department of Health. This should not be considered an endorsement of this study or these conclusions by the Ohio Department of Health.

We thank Tsui Chan for her excellent curation of data used in the analysis.



INTRODUCTION

Historical racial discrimination in housing policy and practices continues to influence the geographic distribution of poverty and access to housing that is affordable and safe from sources of lead poisoning. Scholars point to a series of place-based policies layered over time that have contributed to contemporary racial inequality and the unequal distribution of opportunity (Hardy et al., 2018). Redlining and policy-aided discriminatory suburbanization of the 1940s and 1950s shifted jobs and educational resources away from the central cities to places not accessible to Black families. Urban renewal programs and highway construction during the 1950s and 1960s further contributed to a landscape of neighborhoods segregated by skin color and resources (Ware, 2021).

In Cleveland, Ohio, overt racial discrimination in access to home loans paired with organized violence perpetrated by citizen groups, businesses, and government institutions restricted the living space of Black families to small pockets of the city and its suburbs (Michney, 2017). Black families migrating from the South, seeking to escape Jim Crow and access better employment opportunities, were confined to ever more overcrowded neighborhoods. As housing demand increased in these neighborhoods, landlords partitioned rental units, charging high rents for low quality housing.

These neighborhood patterns were not unique to Cleveland. In the words of Isabel Wilkerson (Wilkerson, 2010), in most all northern cities, “[t]hese were the original colored quarters—the abandoned and identifiable no-man’s-lands that came into being when the least-paid people were forced to pay the highest rents for the most dilapidated housing owned by absentee landlords trying to wring the most money out of a place nobody cared about.”

History, however, offers many accounts of Black community-led efforts that either organized against asset deterioration in the central city neighborhoods or strived to establish in the suburbs. In Cleveland, Michney (2017) points to community organizations in Glenville, Mount Pleasant, Lee-Harvard, and elsewhere that worked with neighbors and city government to encourage property upkeep, maintain city services, and promote neighborhood safety and school quality. Black families also fought in court to build their homes in suburbs like Woodmere during the mid-1940s amidst a series of ordinances designed to exclude them from this new Cleveland suburb. According to Wiese (2005), “*Where arson had failed to stem black home building, local government proved an effective weapon in the contest for suburban space*”.



As late as 1977, Ms. Moore, a Black East Cleveland resident, successfully challenged in the U.S. Supreme Court a racially motivated city ordinance that was being used as an argument for her eviction (East Cleveland, Ohio, Housing Code § 1351.02- 1966 (Tyrrell, 1978)). Ms. Moore lived with her adult son and grandson but had recently brought home another grandson – an infant whose mother had died. The ordinance limited a dwelling’s occupancy to “single family occupancy” with a narrow definition of family that did not contemplate Ms. Moore’s family. By winning the case, Ms. Moore was able to raise her grandson at home and advance social justice in family law (Huntington & Lenhardt, 2017).

Today, prominent community-engaged initiatives are underway to address housing instability and lead exposure, which, due to this legacy of segregation, disproportionately impacts communities of color. In Cleveland, these efforts include Right to Counsel (United Way of Cleveland, n.d.) and initiatives for lead-safe housing (*CLASH*, n.d.; *Lead Safe Cleveland Coalition*, n.d.). Right to Counsel establishes a right to legal representation for tenants facing eviction, providing it free of charge if family income is at or below the Federal Poverty Line and there is at least one child in the household. In East Cleveland, city-supported neighborhood block clubs engage in community development efforts and public space upkeep (Anglin et al., 2020).

In this report, we build a census tract-level database of Cuyahoga County, Ohio to characterize racial disparities in the location and access to rental housing that is affordable and carries low risk of lead poisoning. We accomplish this by constructing a Cuyahoga County database of housing and population indicators at the census tract level. For the cities of Cleveland and East Cleveland, we also track eviction filing patterns over the last several years, identifying areas of high housing instability. Finally, we analyze whether the use of tenant-based housing subsidies offers residents sufficient access to areas with less risk of lead poisoning in the county. This analysis points to the limited opportunities available to low-income families threatened with a forced move to access safe, affordable housing. When contextualized by experiential knowledge, this data analysis may serve to inform current safe, affordable housing initiatives and garner strong, long-term community collaboration (Richter et al., 2023). Given the deep-rooted history of racism in housing, it will take continued investments through federal and local programs with strong community engagement to reach a state where the social construct of race no longer dictates access to the universal right to safe shelter.



DATA AND METRICS USED IN THIS REPORT

Our data integrates information from numerous sources into a database of Cuyahoga County housing and population indicators. Organized at the census tract level, the indicators and data sources utilized to construct the database include: demographic and renter household characteristics from the 2017-2021 American Community Survey (ACS; a product of the U.S. Census Bureau); counts of tenant- and place-based subsidized housing from the Department of Housing and Urban Development's (HUD) *Picture of Subsidized Housing*; lead testing records from the Ohio Department of Health (ODH); public property records from the Cuyahoga County Fiscal Office and City of Cleveland; and eviction filing records from the Cleveland Housing Court and East Cleveland Municipal Court. Appendix A provides a list of all variables used in the study and their source.

LEAD RISK: Data on lead tests (performed through a capillary puncture or venous lab draw) for children aged 0 to 6 residing in Cuyahoga County are reported to ODH and provided to the Center on Poverty and Community Development on an ongoing basis. *The address of the child at the time of the test is included in the records so we can associate a test with a specific address and neighborhood in a given year.* It is worth noting that a positive lead test does not unequivocally imply the presence of lead in the home of a child, as a child may be exposed to lead in other environments. Likewise, a negative lead test is suggestive but not a guarantee of a lead-safe home environment. Thus, far from characterizing properties according to lead tests, we obtain a neighborhood measure of lead risk by aggregating over space and time. For each year between 2017 and 2021, we calculate the share of unique addresses associated with a positive test among all addresses associated with a test in that year. A positive test is defined according to the current CDC threshold of ≥ 3.5 micrograms of lead per deciliter of blood, indicating an Elevated Blood Lead Level (EBLL). We define **Lead Risk** in a census tract as the average annual share of addresses associated with a positive test per year from 2017 to 2021.¹ We calculate this address-child-based Lead Risk metric for census tracts with at least 10 confirmed tests for each year in the study period.

¹ This child-address-year metric produces results that are almost identical to the child-year metric used in the Lead Safe Cleveland Coalition Data Dashboard. https://povertycentercle.github.io/lsccl_dashboard/, where only one test (the highest lead level) per child per year contributes to the metric. For our metric, if a child lives in two addresses in a year and is tested at each address, both tests will be used to assess risk.



EVICTION RATE: Eviction records are extracted from the civil case search portals of the Cleveland Housing Court and East Cleveland Municipal Court websites. The eviction filing rate is calculated as the number of unique eviction filings opened within a census tract in a given year divided by the ACS estimated number of rental housing units in the tract. We calculate the eviction filing rate for each year from 2017 to 2022 as well as the 6-year (2017-2022) average filing rate using the same method as described above to calculate the average lead risk.

PROPERTY DATA AND RENTAL UNIT ESTIMATES: Information on residential parcels (i.e., properties) comes from the Cuyahoga County Fiscal Office and the City of Cleveland Department of Building and Housing. The Cuyahoga County Fiscal Office assigns every parcel in the county a condition rating (e.g., “Excellent”, “Fair”, “Unsound”), for the purpose of calculating property taxes. We use this value to construct an indicator of poor-quality housing, defined as residential parcels with an assessed condition of "fair," "poor," "very poor," "sound value," or "unsound." Conversations with the Cuyahoga County Fiscal Office informed the groupings described.

We use records from the County Fiscal Office and the Cleveland Department of Building and Housing to identify Cuyahoga County’s “rental universe”: the subset of residential parcels in the county that are definitely or almost certainly used as rental. Within Cleveland, we use a combination of rental registration records provided by the Cleveland Department of Building and Housing and several indicators contained in the county property records to identify definite/likely rentals. In the suburban municipalities, we rely on county property records. For more details on the property data sources, and the process for identifying the local rental universe, see the appendix of Coulton et al. (2020).

LEAD-SAFE CERTIFICATE RATE: The 2019 Lead-Safe Cleveland ordinance requires that residential rental units built before 1978 obtain a lead-safe certification (Ord. 747-2019). Timelines for certification were organized by eight zones between January of 2021 and 2023. However, implementation has been slow due to the Covid-19 pandemic intersecting with long-term challenges in the city, namely high poverty rates, aging housing infrastructure, and weak housing markets.

We estimate compliance rate at the census tract-level as the number of units with a lead-safe certificate as of July 2023 divided by the number of rental units built before 1978 based on 2022 property data.



A SEGREGATED REGION

Like other post-industrial regions in the country, Cuyahoga County is highly segregated by phenotype or racial identity. According to the Othering and Belonging Institute, the city of Cleveland was the 6th most segregated city in the nation based on 2020 Census data (*Most to Least Segregated Cities in 2020 | Othering & Belonging Institute*, n.d.). The segregation of citizens by racialized groups is the product of a history of policies governing the spatial distribution of people by skin color interacting with policies that continue to disparately impact Black individuals because of where they live (Hardy et al., 2018).

In this section, we describe the level of residential segregation in the county as it is inextricably linked with exposure to lead-based paint and access to quality housing in the region. The Census Bureau estimates that in 2022, 58% of Cuyahoga County's population identified as non-Hispanic White. The majority of the 42% of nonwhite residents in the county identified as Black (30.5%).

If the county's population was fully geographically integrated, we would expect the demographic distribution of every neighborhood to resemble the county overall. In other words, in a hypothetical reimagining of Cuyahoga County in which a person's racial or ethnic background was completely unrelated to where they live, roughly 58% of residents in every census tract, zip code, and municipality would be non-Hispanic White and 42% would identify as nonwhite. And in this reimagining, we would expect more equitable housing across all neighborhoods due to the absence of racial segregation and discrimination.

Far from this fully integrated scenario, the histogram in Figure 1 illustrates the degree of segregation by racial identity in Cuyahoga County as it exists today. There are 443 populated census tracts in Cuyahoga County. The y-axis counts the number of tracts by their share of nonwhite population measured in 5 percentage point interval bins along the x-axis. For instance, the bar at the very right end of the figure represents 64 census tracts that have over 95% of their population identified as nonwhite.

The 443 tracts ranked by %nonwhite population can be divided into 4 groups of size 111 or 110 tracts each. The first fourth form the bottom quartile -those tracts with the least share of nonwhite population, ranging from 2% to 17% nonwhite population. Census tracts in the second and third quartiles range from 18% - 47% and 48% - 80% nonwhite population respectively. The top quartile consists of census tracts whose percentage of nonwhite population is over 80%. We color-code tracts by the quartile they belong

to and use this convention in subsequent graphs and maps to compare housing outcomes by level of residential segregation.

The two opposite peaks in Figure 1 reflect high levels of segregation with neighborhoods composed of either all white (left side) or all nonwhite (right side) households. The red dotted line distribution, centered around 42% of nonwhite residents, approximates the pattern we would expect to see in a more integrated Cuyahoga County in which the demographic profiles of the census tracts that make up the county tended to resemble the county itself. By contrast, we see a valley around the 42% mark, indicating that census tracts with a mix of both white and nonwhite residents are not the norm in the county.

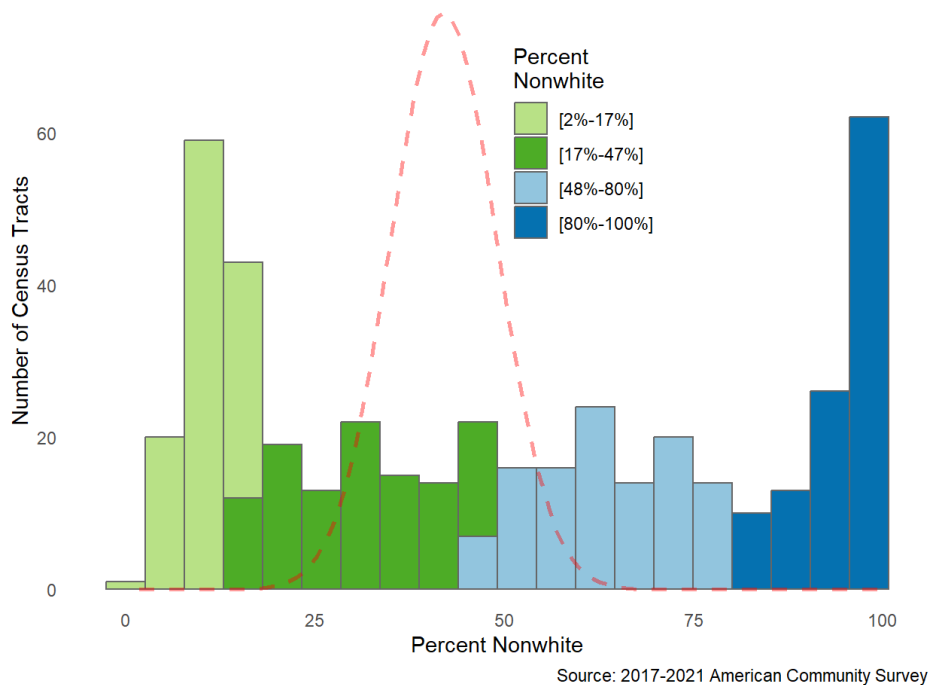
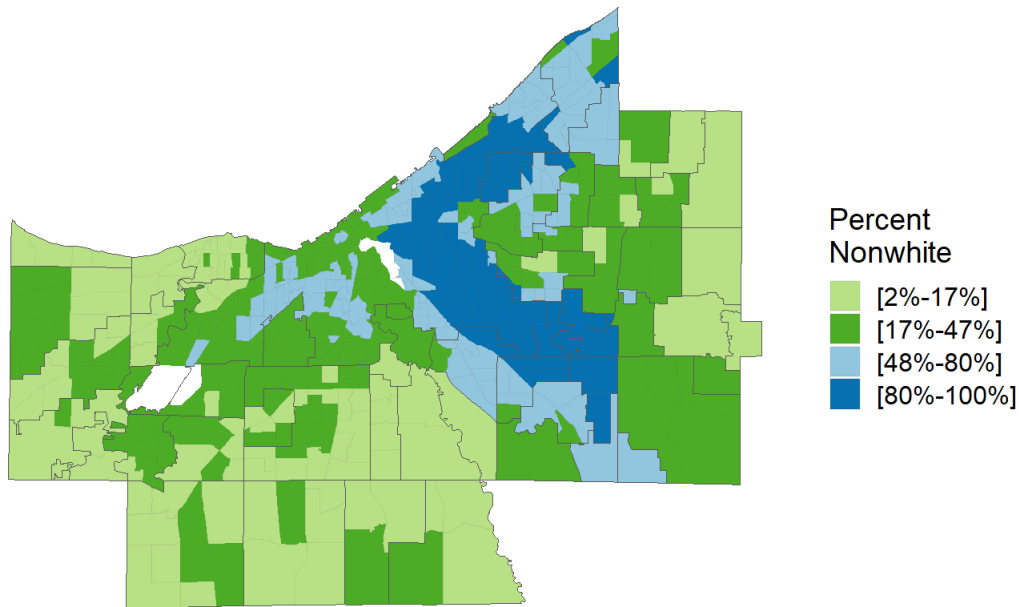


Figure 1. Distribution of census tracts by percent of nonwhite population in Cuyahoga County, color coded by segregation quartiles.

Figure 2 shows the geographical distribution of racial segregation, indicating that the patterns of racial segregation occur at multiple levels. Just as the county’s residents tend to live in neighborhoods where most of their neighbors share a common racial identity (Figure 1), neighborhoods with similar demographic profiles tend to be located in close proximity to one another as well.



There are large contrasts between the economic and housing conditions across these groupings. This is illustrated by comparing quartiles across average poverty levels, housing condition, and lead risk (Table 1). These averages are weighted accordingly by the number of individuals or housing units per tract, accordingly. In quartile 1, composed of primarily white neighborhoods, the average poverty rate is 6%; only 3% of housing units are in bad condition; and lead risk is 2%. These three indicators more than double in the 2nd quartile. In quartile 4, where on average 94% of the population is nonwhite, the poverty rate is 33%; 39% of housing is in bad condition; and lead risk is 15%.



Source: 2017-2021 American Community Survey

Figure 2. Spatial distribution of census tracts by percent of non-white population in Cuyahoga County, color coded by segregation quartiles.



	Percent Nonwhite			
	[2%-17%]	[17%-47%]	[48%-80%]	[80%-100%]
Number of tracts	110	111	111	111
Tract Averages				
Poverty Rate	5.9	13	24.7	33
Percent of housing units with a lead test per year, 2017-21 average	6.2	7.7	12.8	14.1
Lead Risk: Percent of tested units with EBLL result(>3.5µg/dl), 2017-21 annual average	2	4.9	10.1	14.7
Percent of rental parcels in poor condition	2.9	8.7	21.4	39.3
Number of project-based units per 100 rental units	1.8	6.8	9	18.8
Number of tenant-based units per 100 rental units	1	2.3	9.4	14.3
Percent Nonwhite	11	30.5	62.7	93.9

Table 1. Characteristics of Block Groups by Nonwhite Quartile

LEAD POISONING IN LOW-INCOME RENTAL HOUSING

The use of lead-based paint in housing was outlawed by the federal government in 1978, yet in the following decade little was done to address the risk of lead poisoning from paint chips or dust found in older housing. While researchers note that significant progress in federal policy has been made in more recent years to reduce residential lead exposure, there remains a critical need for additional, sustained investment (Jacobs & Brown, 2023).

The map in Figure 3 color-codes all census tracts by the combination of (a) median gross rent and (b) level of lead risk. The map highlights a polarized landscape dominated by (a) neighborhoods that are affordable but carry a high degree of lead risk (red; the bottom-right box in the color scale) and (b) places in which the risk of lead exposure is low but rents are high and unaffordable for many residents (blue; the top-left square in the color scale). Compared side-by-side with the racial distribution of the county’s population as shown in Figure 2, one prominent, unavoidable pattern that emerges is the prevalence of high lead risk and low (under \$800) rents in areas that are also in the top quartile of segregation.

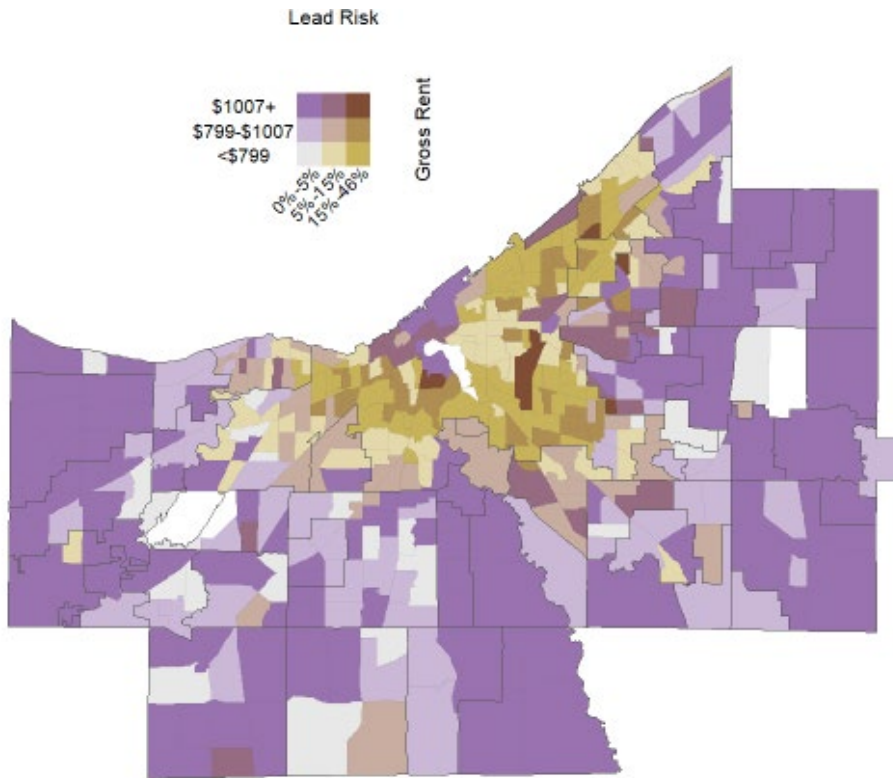


Figure 3. Bivariate map showing census tracts color coded by levels of lead risk and median gross rent. Ohio Department of Health and 2017-2021 American Community Survey.

In Cleveland, as in many post-industrial cities, the burden of lead poisoning is borne by low-income communities of color. Coulton et al. (2023) tracked two cohorts of Cleveland Metropolitan School District students from childhood to early adulthood to document the experiences and life outcomes of children poisoned by lead relative to their otherwise similar non or less exposed peers. They found that lead poisoning in early childhood has implications for a range of life outcomes, including educational achievement, involvement with the criminal justice system, homelessness, public assistance, and employment, pointing to the potential ways in which some of these negative outcomes may be driven by structural racism.

However, there is strong evidence that when lead hazards in housing are addressed at scale, it is possible to protect local children from lead poisoning and disrupt racial disparities in health outcomes (Aizer et al., 2018; Korfmacher et al., 2012; Rogers et al., 2014). This goal drives the motivation for current efforts underway in Cleveland. Through a combination of community, public, and private stakeholder

engagement, the Cleveland Lead Safe Coalition is spearheading an ongoing local initiative for a lead-safe Cleveland. After the landmark passage of a Lead-Safe ordinance by Cleveland City Council in 2019 and a devastating global pandemic, implementation is slowly progressing. According to the Lead-Safe Certification Dashboard, as of April 28, 2023, 5,436 properties had obtained a certificate, corresponding to 22,244 rental units.² We estimate an overall rental unit compliance rate of 21% across all census tracts in the city as of July 2023. However, as seen in Figure 4, estimated compliance rates at the census tract-level vary widely. Places with the highest rates of nonwhite population exhibit lower compliance rates partly due to the costs associated with lead-safe remediation in deteriorated housing structures and the pernicious link between poverty and race. In fact, the 25% most highly segregated census tracts in the City of Cleveland (44 tracts) have rates of nonwhite population of 97 to 100%. In these tracts, on average, only 8% of units are lead-safe certified. Experiences in other localities and behavioral economics insights suggest that further engaging collective action will be key to incentivize equitable compliance and support enforcement going forward (Richter et al., 2020).

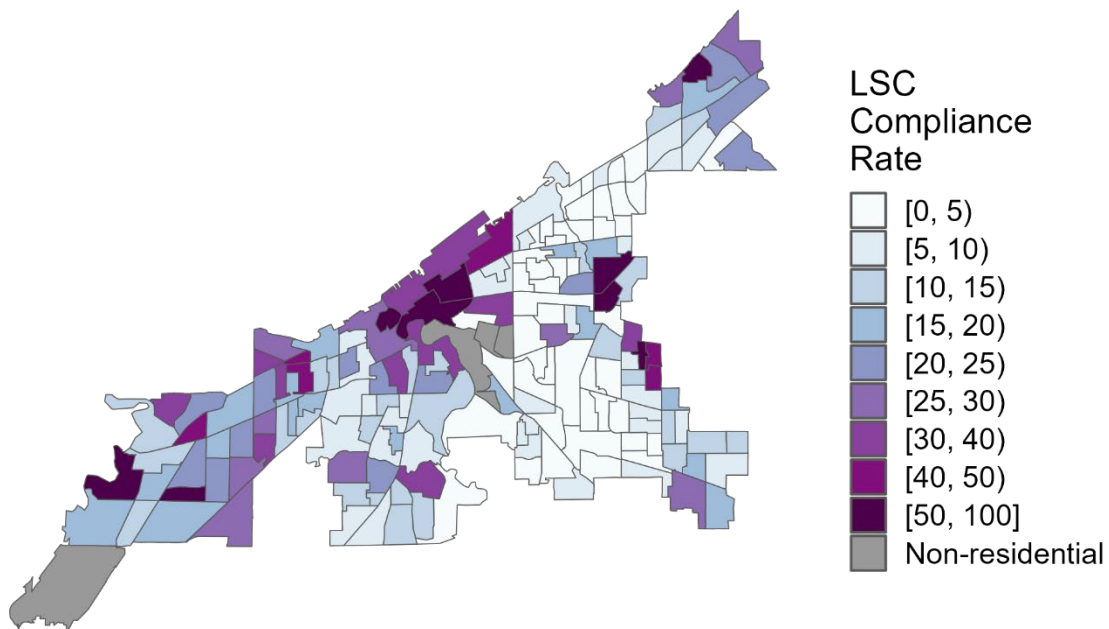
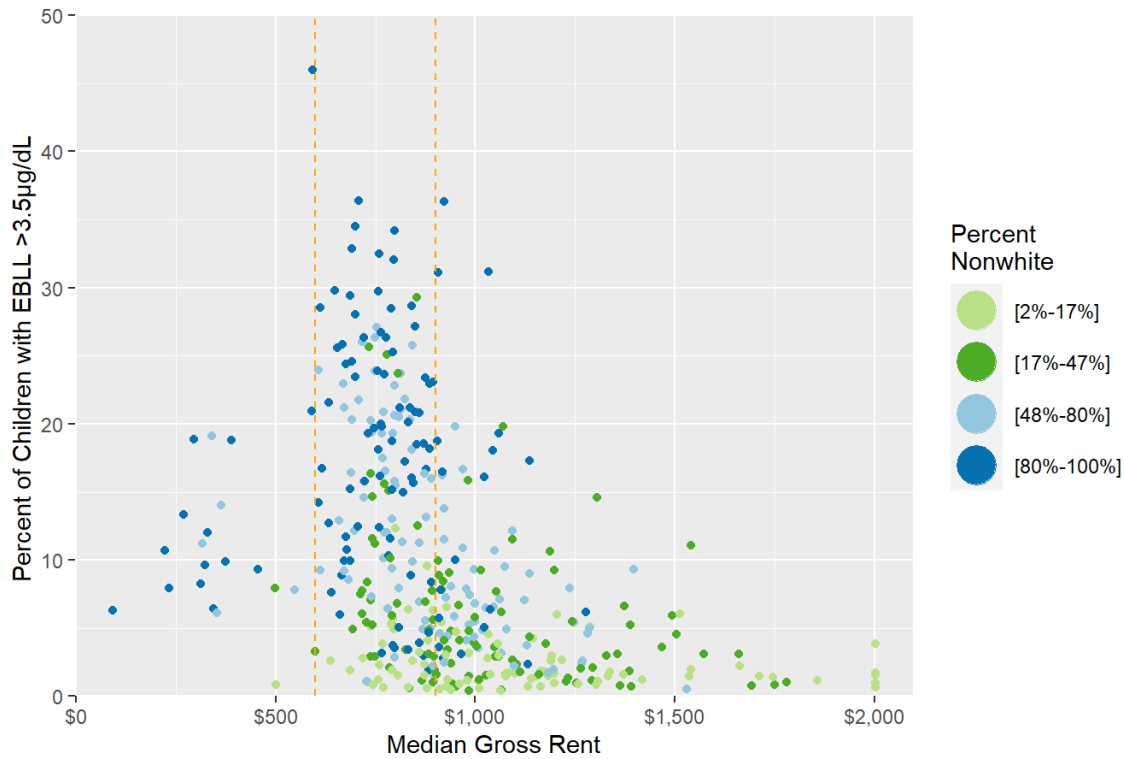


Figure 4: Lead safe certification - estimated compliance rate.

² https://cwru-urb-pov.shinyapps.io/lsc_dashboard/#section-lead-safe-certification. Retrieved August 14, 2023.

To further explore the relationship between lead risk, affordability, and segregation in Cuyahoga County, we plot in Figure 5 all census tracts in the county with median gross rent on the x-axis, lead risk on the y-axis, and color-coded by segregation quartile. Not surprisingly, we see that higher rents are positively associated with low lead risk. At first glance, there is one subset of census tracts that defies this association: places with lead risk under 20% and median gross rent below \$550. On closer examination, we found that most of these affordable, low lead risk tracts have a high number of public housing units that comply with stricter guidelines of housing quality and are thus less likely to be a source of lead poisoning.

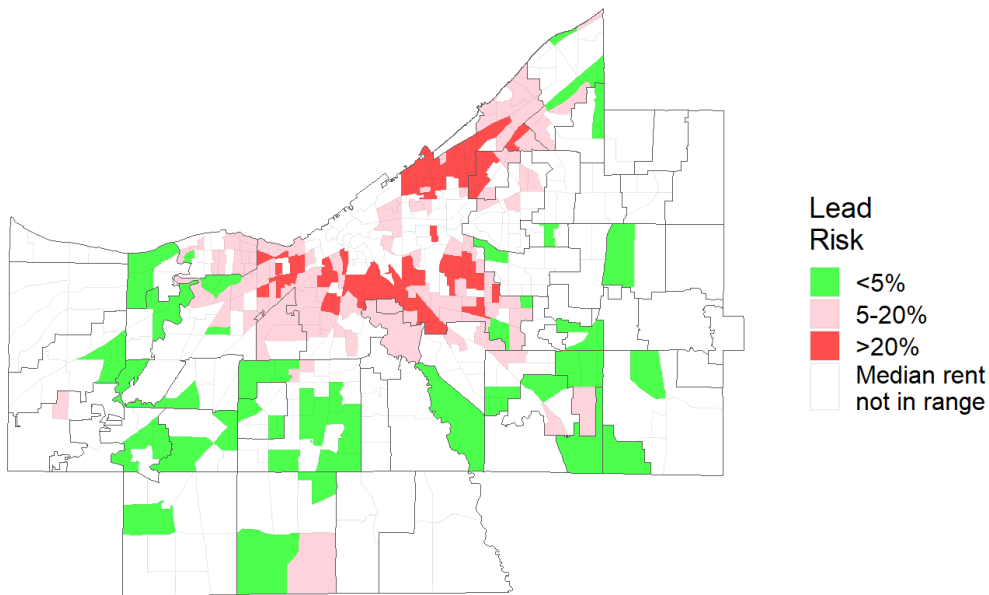
We also want to highlight the subset of affordable, moderate rent census tracts with median rents between \$600 and \$900, which is enclosed by the dotted lines in Figure 5. Within this subset, we see a large variation in lead risk. However, we also see that despite similar neighborhood median rental prices, communities of color are the most exposed to lead poisoning.



Sources: Ohio Department of Health;
 2017-2021 American Community Survey

Figure 5. Scatterplot showing the relationships between median rents, lead risk, and race.

This noted disparity in safe housing deserves further exploration, which we take by analyzing tracts with median rents between \$600 and \$900 in Figure 6 and Table 2. The map in Figure 6 shows that nearly all of the census tracts with affordable housing units and low levels of lead risk are located outside of Cleveland. Instead, they tend to be found in suburban Cuyahoga County, where Black families were historically excluded from living (Wiese, 2005) and continue to face barriers ranging from weak transportation systems to racially biased nuisance ordinances (Mead et al., 2017; Moy, 2022). In fact, recent work on Ohio municipalities by Bryant Moy (Moy, 2022) finds that the share of Black residents in a city is the primary driver of Criminal Activity Nuisance Ordinance (CANO) adoption over other potential explanatory variables such as poverty, rentership, or even crime.



Sources: Ohio Department of Health;
 2017-2021 American Community Survey

Figure 6. Map showing levels of lead risk in Cuyahoga County census tracts with moderate median rent (\$600-\$900/month) by level of lead risk.

Table 2 provides more details regarding the racial and health disparities among tracts with moderate to median rent. Among these tracts, 49 have an estimated lead risk under 5%. Less than 5% of parcels are in poor condition and, on average, a third of their population is nonwhite. At the other end, we see that

59 tracts have an estimated lead risk of over 20%. Almost half of parcels (49%) are in poor condition in this high lead risk group and their residents are primarily nonwhite (78%).

	Lead Risk		
	Under 5%	5-20%	20%+
Number of tracts	49	95	59
Tract Averages			
Poverty Rate	12.7	26.2	34.1
Percent of housing units with a lead test per year, 2017-21 average	6.2	12	18.4
Lead Risk: Percent of tested units with EBLL result(>3.5µg/dl), 2017-21 annual average	2.5	10.9	24.6
Percent of rental parcels in poor condition	4.8	23.5	49.2
Number of project-based units per 100 rental units	3	10	5.1
Number of tenant-based units per 100 rental units	7.4	9.1	12.8
Percent Nonwhite	33.4	59.2	78.3

Table 2. Characteristics of Cuyahoga County census tracts with moderate rent (\$600-\$900/month) by level of lead risk.

HOUSING CHOICE VOUCHERS BY GEOGRAPHIC LOCATION AND LEAD RISK

For many lower-income renters, there are multiple barriers to living in areas that carry a low risk of lead exposure, including higher rents, transportation costs, and the loss of existing social networks. As we saw in the previous section, there are neighborhoods in Cuyahoga County that are both relatively affordable and that feature rental housing options with low levels of lead risk. Unfortunately, even in these places where unaffordable housing is less of an issue, other barriers remain. One potential solution for offsetting these costs is by subsidizing rents for low-income families. Thus, we analyze data on Housing Choice Vouchers (HCV) to see if its use allows families to access neighborhoods with lead-safe housing.

The HCV program is the largest housing subsidy program in the country. It is administered by the U.S. Department of Housing and Urban Development (HUD). Eligibility is based on household income, with a maximum limit of 50% of the Area Median Income (AMI). Families can use a voucher to rent from landlords who agree to participate in the program, provided the rent is below the 40th to 50th percentile rent in the metro area (Garboden et al., 2018). However, not every household that meets this eligibility requirement is able to obtain a voucher due to program budgetary limitations. Rather, only about a quarter of eligible households are offered a voucher; and of those households that do receive a voucher, around 30% are unable to find a rental unit that meets program conditions (Ellen, 2020).



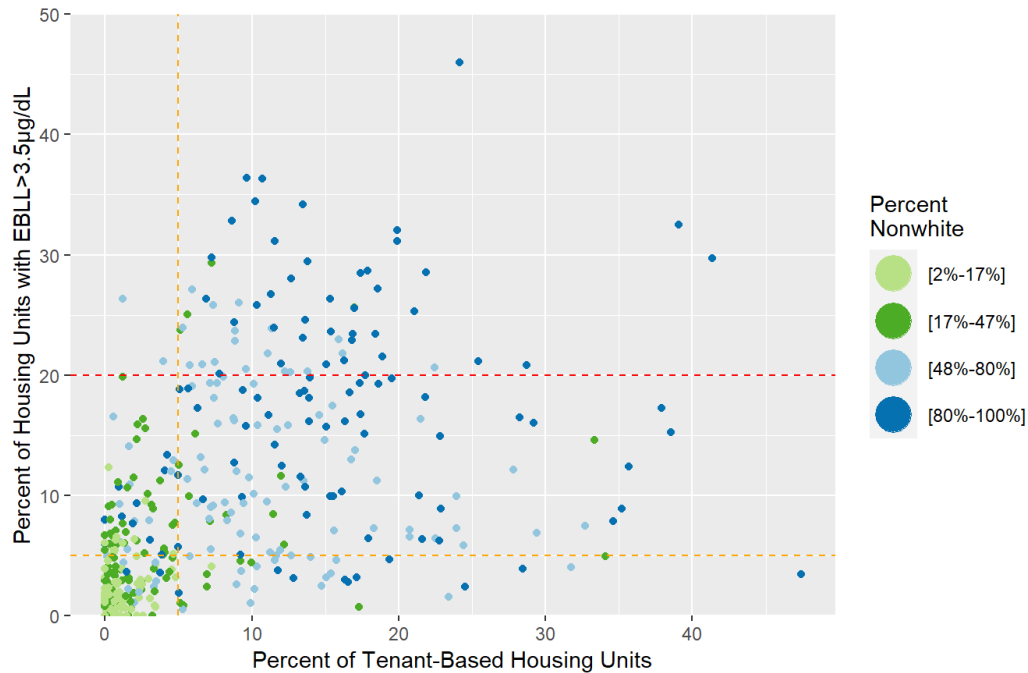
Researchers have identified several factors that hinder the chances of families from utilizing HCV to access neighborhoods with better schools and economic opportunities (Ellen, 2020). Among these factors are complicated program rules and landlord discrimination, misinformation, or costs associated with compliance (*A Pilot Study of Landlord Acceptance of Housing Choice Vouchers*, 2018; DeLuca et al., 2013). In response to these issues, a HUD demonstration program is currently underway aimed at providing qualifying households with homes in so-called Opportunity Areas.³ The Cuyahoga Metropolitan Housing Authority (CMHA) is one of eight housing authorities selected from around the nation to participate in this Community Choice Demonstration. The demonstration provides landlord incentives, search assistance to tenants, as well as pre- and post-move services, including financial assistance.

Figure 7 shows the relationship between lead risk (y-axis) and the share of units with HCV (x-axis), color-coded by segregation quartile. HCV utilization varies widely throughout Cuyahoga County. Here, we focus our attention on the subset of census tracts in which the percentage of HCV units in 2021 was at least 5% of the estimated total number of rental units. In other words, everything to the right of the orange vertical dotted line in Figure 7. Within this subset, we explore the differences between census tracts with low (<5%), moderate (5%-20%), and high (>20%) levels of lead risk, demarcated by the horizontal lines. Places with >20% lead risk are for the most part in the highest segregation quartile, as indicated by the mostly deep blue points in the top-right sector. Neighborhoods with <5% lead risk are fewer in number and are clearly less segregated.

The geographic distribution of these neighborhood groupings is shown in Figure 8. Just over half of populated census tracts (226 of 443) have a HCV rate under 5% (light blue). Of the 217 tracts with at least 5% HCV utilization, only 36 are classified as low lead risk (green) and are, for the most part, located in the periphery of Cleveland or in suburban Cuyahoga County.

For the most part, these places with higher rates of HCV utilization and low levels of lead risk are located in peripheral neighborhoods (in green), have low lead risk, and 16% of rental units with a voucher. In contrast, 62 neighborhoods (in red) have high lead risk and 13% of rental units with a voucher.

³ <https://cuyahogamobility.org/about/>



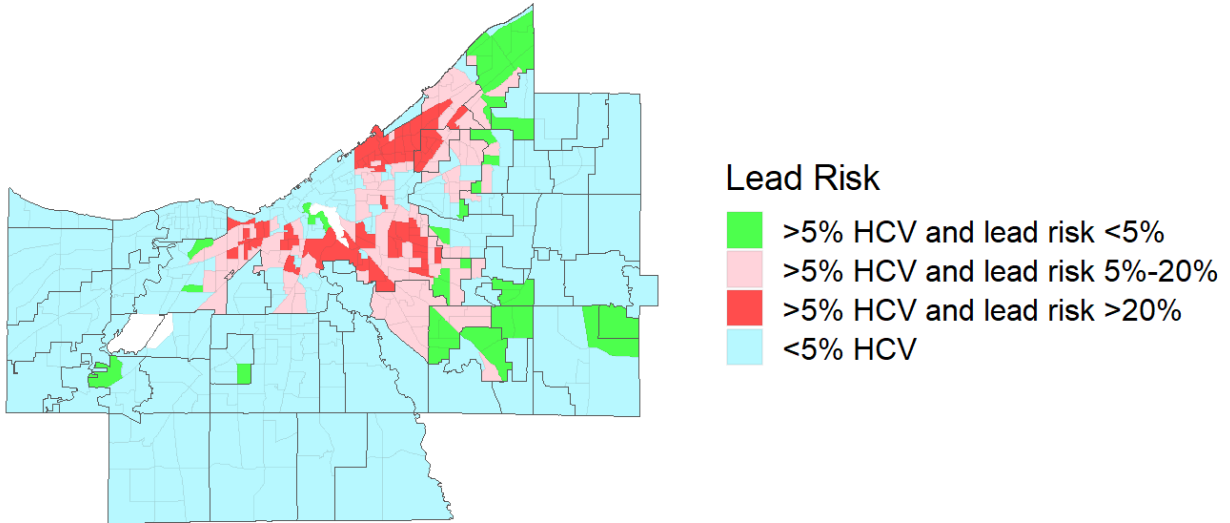
Sources: 2017-2021 American Community Survey;
 Ohio Department of Health;
 HUD Picture of Subsidized Housing (2021)

Figure 7. Scatterplot of Housing Choice Voucher utilization and Lead Risk, by percent nonwhite population.

This analysis finds that HCVs are more likely to be utilized in high lead risk neighborhoods. However, some notable exceptions (seen in the north and southeastern part of the county) suggest that HCVs can serve to access safer affordable housing and deserve further exploration.

	Lead Risk			
	>5% HCV and lead risk <5%	>5% HCV and lead risk 5%-20%	>5% HCV and lead risk >20%	<5% HCV
Number of tracts	36	107	62	226
Tract Averages				
Poverty Rate	16.5	27.1	34.3	11.1
Percent of housing units with a lead test per year, 2017-21 average	9.7	14.1	18.7	7
Lead Risk: Percent of tested units with EBLL result(>3.5µg/dl), 2017-21 annual average	3.2	11.7	25.1	3.5
Percent of rental parcels in poor condition	6.6	24.3	49.5	6.2
Number of project-based units per 100 rental units	2.4	12.2	5.7	10.6
Number of tenant-based units per 100 rental units	15.8	14	13.2	1.4
Percent Nonwhite	63.7	71.8	80.2	24.9

Table 3. Characteristics of census tracts with >5% HCV utilization by level of lead risk



Sources: Ohio Department of Health;
HUD Picture of Subsidized Housing (2021)

Figure 8. Map showing census tracts with > 5% HCV utilization by level of lead risk.

EVICTION PATTERNS IN CLEVELAND AND EAST CLEVELAND

The cities of Cleveland and East Cleveland are among those most impacted by housing instability, as measured by the number of eviction filings and the quality of the housing stock. A large body of research has shown that evictions destabilize families, as seen over a number of economic, housing, and health outcomes, with the heaviest burden shouldered by Black women (Collinson et al., 2022; Hepburn et al., 2020; Richter et al., 2021).

As shown in Table 4, Cleveland's East and West sides and the city of East Cleveland are typified by several key differences in the risk of eviction, socioeconomic characteristics, and local housing options. Notably, within the city of Cleveland, the average annual eviction filing rate between 2017 and 2022 is about 6% in the East and West sides of town. Despite similar eviction filing rates, a Cleveland household facing an eviction on the East Side is likely to face even more difficulties than if they were living on the West Side.

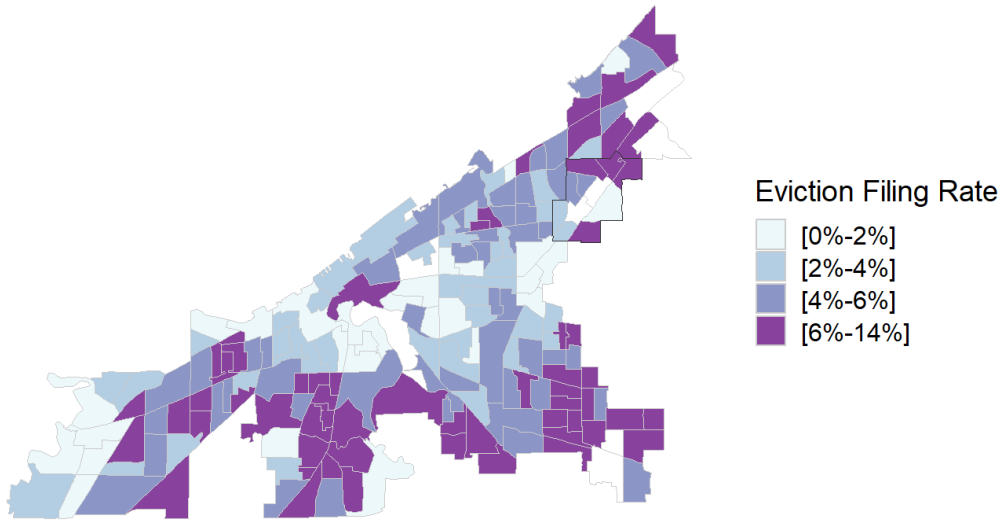
For one, they are more likely to be living below the poverty line. Furthermore, housing conditions are quite disparate with housing more than twice as likely to be in poor condition (44% vs. 21.8%) and also more likely to be associated with a recent EBLL result (16.2% vs. 11.8% among addresses associated with a blood lead test from 2017-2021). Compliance rates for lead-safe certification are comparable on both sides of the city, at 21%.

	Region		
	East Cleveland	East Side of Cleveland	West Side of Cleveland
Number of tracts	11	108	67
Tract Averages			
Poverty Rate	38.7	36	26.3
Percent of housing units with avg. 10+ lead test/yr, 2017-21	13.9	14.1	14.2
Lead Risk: Percent of tested units with EBLL result(>3.5µg/dl), 2017-21 annual average	22.8	16.2	11.8
Percent of rental units built before 1978	98.5	89.2	91.9
Percent lead safe certified rental units		20.9	20.8
Percent of rental units in poor condition	50.2	39.7	20.6
Number of project-based units per 100 rental units	26.5	21.8	11.7
Number of tenant-based units per 100 rental units	16.7	9.8	6.4
Eviction filing rate	7.7	5.8	5.2
Percent nonwhite	92.6	84.1	45.9

Table 4. 2017-2021 Average eviction filing rate and other census tract characteristics in East Cleveland and by Cleveland region.

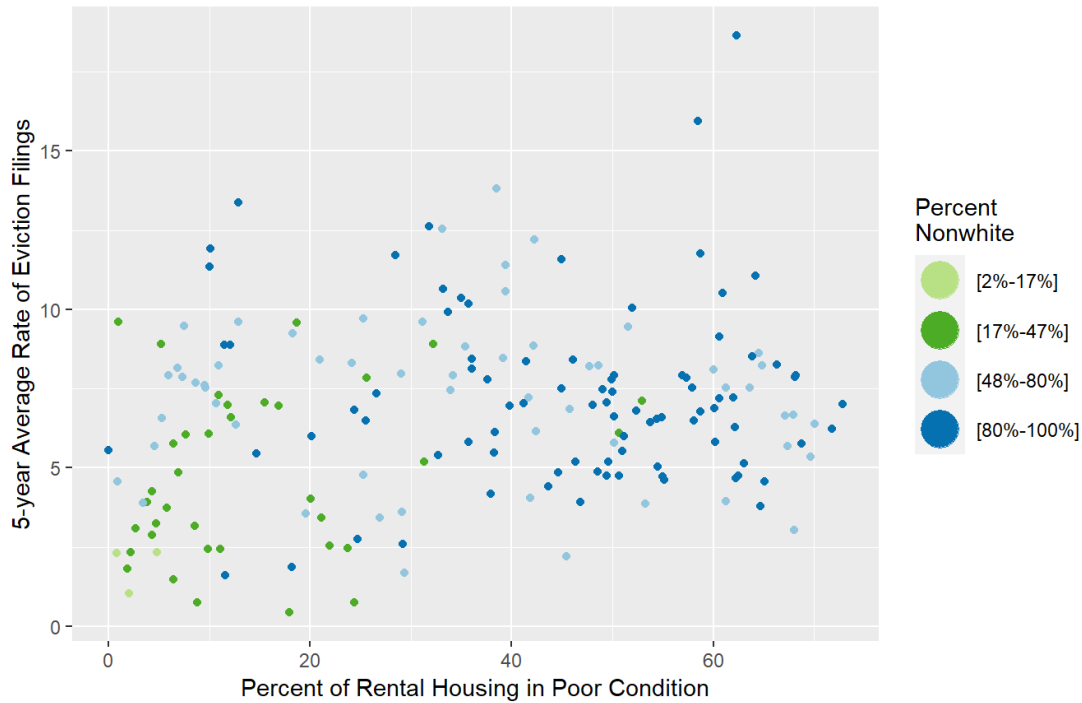
For a renter household facing eviction in the municipality of East Cleveland, the situation is even more dire. Eviction cases were filed at a rate roughly 1.4 times higher than in Cleveland from 2017 to 2022. With the highest poverty rate among the three areas examined here, the costs of eviction and moving into new housing would seem even harder to withstand in East Cleveland. East Cleveland also has the most distressed rental housing stock, with more than half of rental properties rated to be in poor condition and by far the highest level of lead risk at close to 23%. Unlike Cleveland, East Cleveland lacks an initiative to mitigate lead exposure from old paint.

Figure 9 shows the geographic distribution of 2022 eviction filings per estimated rental units in these two cities. Figure 10 points to another striking feature of racial inequities in housing. Neighborhoods in these two cities with over 20% of housing stock in bad condition are highly segregated and home to mostly nonwhite families. Among neighborhoods with less than 20% of their housing in bad condition, those with higher levels of eviction filings are again mainly home to nonwhite families.



Sources: 2020 American Community Survey;
 Cleveland Housing Court;
 East Cleveland Municipal Court

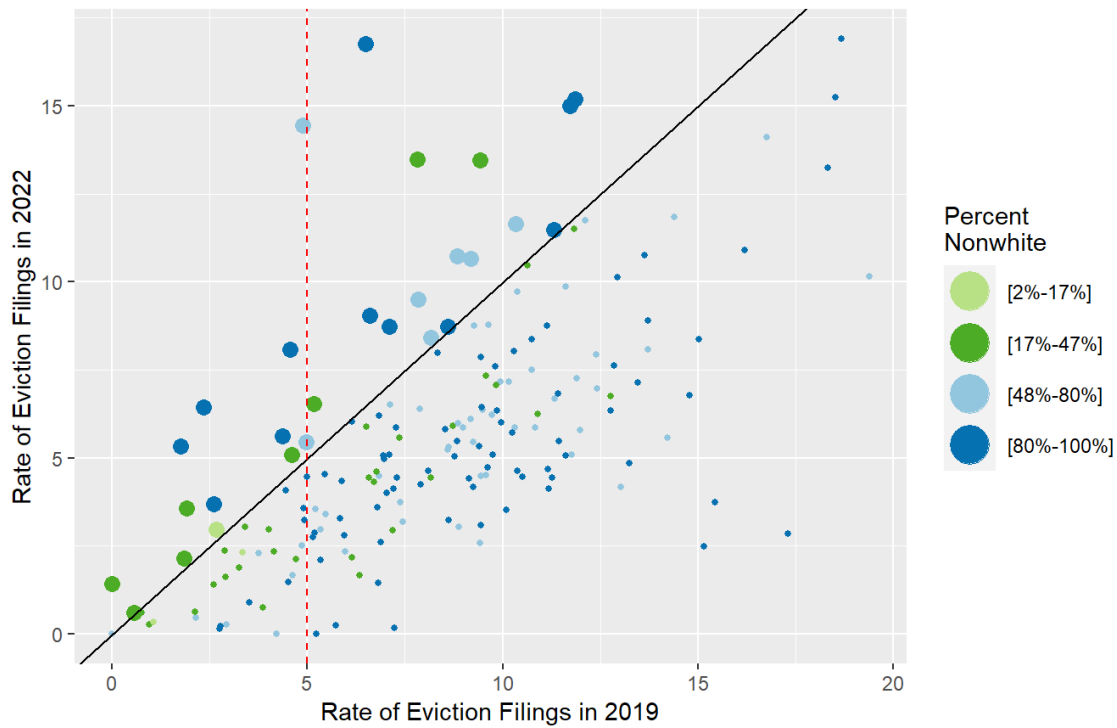
Figure 9. Eviction filing rate in Cleveland and East Cleveland from 2017-2022



Sources: Cleveland Housing Court;
 2017-2021 American Community Survey;
 Cuyahoga County Fiscal Office

Figure 10. Relationship between rental housing quality and eviction filings, by degree of racial segregation

Figure 11 compares census tracts by eviction filing rate pre- and post-pandemic (2019 vs. 2022). Places with identical eviction rates in 2019 and 2022 would fall exactly along the diagonal line. Most neighborhoods (158 of 186, or 85% of census tracts in Cleveland/East Cleveland) in 2022 had eviction filing rates that have not reached pre-pandemic levels (to the right of the diagonal). However, we point to those neighborhoods that in 2022 have already exceeded 2019 eviction rates (to the left of the diagonal line, with enlarged circle labels). As seen by their eviction filing rates, these neighborhoods are experiencing a higher degree of instability in the post-pandemic period, pointing to the need for targeted interventions to support housing stability.



Sources: Cleveland Housing Court;
 East Cleveland Municipal Court;
 2017-2021 American Community Survey

Figure 11. Eviction rates pre- and post-pandemic in Cuyahoga County census tracts, by racial segregation. Larger bubbles highlight tracts with post-pandemic eviction rates above pre-pandemic levels.



DISCUSSION

Cuyahoga County's current-day geographic patterns of concentrated poverty and disadvantage are a lasting legacy of discriminatory housing policies and practices. It is no coincidence that the redlined areas deemed "hazardous" by the Home Owner's Loan Corporation in the 1930s, which were systematically deprived of access to capital and homeownership opportunities for residents, are the same places in which children today face the greatest risk of lead exposure due to the deterioration and chronic disinvestment in the housing stock. Current social programs and local legislation have been inadequate to counteract these effects and sometimes have continued to perpetuate segregated disadvantage.

Racial discrimination continues to impact housing stability and access to good quality housing. As recently as the 2000s, a wave of subprime lending and subsequent foreclosures decimated low-income neighborhoods with disproportionate impacts on Black families and Black wealth. Black and Latino borrowers were close to 1.3 times likelier to get a high-priced loan than white borrowers with the same credit scores (Unfair Lending: The Effect of Race and Ethnicity on the Price of Subprime Mortgages | Center for Responsible Lending, n.d.). While subprime borrowing was negatively associated with income for white borrowers, research finds that their receipt was positively associated with income for Black borrowers (Faber, 2013). Furthermore, other formal mechanisms such as Criminal Activity Nuisance Ordinances (CANOs) or the lack of Source of Income protections for voucher holders continue to erode the ability of nonwhite families to access lead-safe, suburban rental housing (Cummings, 2023; Mead et al., 2017).

Despite these long-standing challenges, resilient communities, occasionally in collaboration with local agencies or government, have not been dismayed in efforts to uplift their neighborhoods or to increase access to places with more opportunities for their children and less risk of lead poisoning.

The data analysis provided in this report shows that rental values are not solely indicative of the quality of housing in a region marked by high levels of racial residential segregation. Among neighborhoods with moderate median rental values, there is a wide variation in the conditions of the housing stock and relatedly to the risk of lead exposure. Neighborhoods with the highest shares of nonwhite residents carry the burden of a deteriorated housing stock, which makes it more expensive to remediate or mitigate lead hazards.



Neighborhoods with affordable housing and low lead risk are scarce, yet not absent; unfortunately, most of these places are situated in the periphery of the county, in areas from which Black people and other people of color were historically excluded and where transportation costs may constitute yet another barrier to access. And while tenant-based subsidized housing could provide a means to access higher quality, lead-safe neighborhoods, we find that only a few neighborhoods with very low lead risk have at least 5% of rentals linked with a housing choice voucher.

In that sense, this analysis can inform decision-making pertaining to individual-level cases in which families are being forced to move due to an eviction; it also calls on the need to strengthen system-level initiatives for more equitable access to safe housing.

For instance, what mediation or rental support programs can keep families in affordable, safe housing when they experience an unexpected income shock and are at risk of being evicted? And if the family is required to move, can supports be provided for a less stressful move along with information readily available about the lead-safe status of prospective rental units?

At the system level, how can lead-safe certification compliance continue to increase, particularly in areas with the highest levels of historical segregation? Now that landlords are no longer required to have their rental units lead-safe certified in order to file for eviction in court, the need to build a strong system of community engagement and monitoring is ever more critical to increasing compliance (Richter et al., 2020). Can community members in Cleveland easily determine whether a property is certified or not? Is financial assistance to landlords and tenants for lead-safe compliance continuously revised to disrupt the geographic patterns of residential segregation in the city?

Finally, how can more landlords and tenants participate in a more effective Housing Choice Voucher program that fosters equitable access to safe housing? Recent initiatives like the ongoing Community Choice Demonstration and efforts by HUD to reduce administrative burdens for landlords and local housing agencies are encouraging (Housing and Urban Development, 2023). How is the Community Choice demonstration in Cuyahoga County accounting for lead risk, and how is it integrating community knowledge about transportation barriers and assets in historically disadvantaged neighborhoods?

The data analysis in this report can serve as an input for community and other stakeholder discussions or data chats (Richter et al., 2023) around these important questions. In doing so, the data, contextualized by experiential knowledge, may serve to garner strong, long-term community collaboration with the goal of advancing racial equity in lead-safe housing in our region.



REFERENCES

- A Pilot Study of Landlord Acceptance of Housing Choice Vouchers*. (2018, August 20). Urban Institute.
<https://www.urban.org/research/publication/pilot-study-landlord-acceptance-housing-choice-vouchers>
- Anglin, R., Brown, G., Date, K., Sutton, E., Johnson, D., Nardi, E., & Vokes, E. (2020). City of East Cleveland Visioning Project. *All Maxine Goodman Levin School of Urban Affairs Publications*, 1–28.
https://engagedscholarship.csuohio.edu/urban_facpub/1685
- CLASH. (n.d.). Retrieved April 3, 2023, from <https://www.clashcle.org/>
- Collinson, R., Humphries, J. E., Mader, N. S., Reed, D. K., Tannenbaum, D. I., & van Dijk, W. (2022). *Eviction and Poverty in American Cities* (Working Paper 30382). National Bureau of Economic Research. <https://doi.org/10.3386/w30382>
- Coulton, C., Richter, F. G.-C., Cho, Y., Park, J., & Fischer, R. (2023, April). *Making the case for lead safe housing: Downstream effects of lead poisoning on systems interacting with children and youth*. Midwest Economic Association Conference.
- Coulton, C., Urban, A., Richter, F. G.-C., Henderson, M., Schramm, M., Jeon, J., & Fischer, R. (2020). *Characteristics of Rental Properties and Landlords in Cleveland: Implications for Achieving Lead Safe Rental Housing*.
- Cummings, A. (2023). *The State of Fair Housing in Northeast Ohio*. Fair Housing Center for Rights & Research. <https://www.thehousingcenter.org/publications/research-and-reports/state-of-fair-housing/>
- DeLuca, S., Garboden, P. M. E., & Rosenblatt, P. (2013). Segregating Shelter: How Housing Policies Shape the Residential Locations of Low-Income Minority Families. *The ANNALS of the American Academy of Political and Social Science*, 647(1), 268–299.
<https://doi.org/10.1177/0002716213479310>
- Ellen, I. G. (2020). What do we know about housing choice vouchers? *Regional Science and Urban Economics*, 80, 103380. <https://doi.org/10.1016/j.regsciurbeco.2018.07.003>
- Garboden, P. M. E., Rosen, E., DeLuca, S., & Edin, K. (2018). Taking Stock: What Drives Landlord Participation in the Housing Choice Voucher Program. *Housing Policy Debate*, 28(6), 979–1003.
<https://doi.org/10.1080/10511482.2018.1502202>



- Hardy, B. L., Logan, T. D., & Parman, J. (2018). The Historical Role of Race and Policy for Regional Inequality. *The Hamilton Project*.
- Hepburn, P., Louis, R., & Desmond, M. (2020). Racial and Gender Disparities among Evicted Americans. *Sociological Science*, 7, 649–662. <https://doi.org/10.15195/v7.a27>
- Huntington, C., & Lenhardt, R. A. (2017). *Moore Kinship: Celebrating the 40th Anniversary of Moore v. City of East Cleveland* (SSRN Scholarly Paper 3048515). <https://papers.ssrn.com/abstract=3048515>
- Jacobs, D. E., & Brown, M. J. (2023). Childhood Lead Poisoning 1970-2022: Charting Progress and Needed Reforms. *Journal of Public Health Management and Practice*, 29(2), 230. <https://doi.org/10.1097/PHH.0000000000001664>
- Lead Safe Cleveland Coalition. (n.d.). Lead Safe Cleveland Coalition. Retrieved April 3, 2023, from <https://leadsafecle.org/home>
- Mead, J., Hatch, M., Tighe, J., Pappas, M., Andrasik, K., & Bonham, E. (2017). Who is a Nuisance? Criminal Activity Nuisance Ordinances in Ohio. *All Maxine Goodman Levin School of Urban Affairs Publications*, 1–22. https://engagedscholarship.csuohio.edu/urban_facpub/1509
- Michney, T. M. (2017, May 31). Beyond ‘White Flight.’ *Belt Magazine*. <https://beltmag.com/beyond-white-flight-history-one-cleveland-neighborhood-can-teach-us-race-housing-inequality/>
- Most to Least Segregated Cities in 2020 | *Othering & Belonging Institute*. (n.d.). Retrieved May 18, 2023, from <https://belonging.berkeley.edu/most-least-segregated-cities-in-2020>
- Moy, B. J. (2022). *Racial Threat and Criminal Activity Nuisance Ordinances*. <https://static1.squarespace.com/static/6268b888592ce56235001050/t/62d9bd5728622762bbfb6166/1658436980357/polmeth22>
- Richter, F. G.-C., Coulton, C., & Fischer, R. (2020). *Considerations for the Design and Implementation of a Lead Hazard Control System*.
- Richter, F. G.-C., Coulton, C., Urban, A., & Steh, S. (2021). An Integrated Data System Lens Into Evictions and Their Effects. *Housing Policy Debate*, 31(3–5), 762–784. <https://doi.org/10.1080/10511482.2021.1879201>
- Richter, F. G.-C., Nelson, E., Coury, N., Bruckman, L., & Knighton, S. (2023, June). *FAIR2: A framework for addressing discrimination bias in social data science*. Proceedings of the Polytechnic University of Valencia Congress, CARMA 2023 - 5th International Conference on Advanced Research Methods and Analytics <http://ocs.editorial.upv.es/index.php/CARMA/CARMA2023/paper/view/16400>



Tyrrell, K. (1978). Moore v. City of East Cleveland. *Hofstra Law Review*, 6(4).

<https://scholarlycommons.law.hofstra.edu/hlr/vol6/iss4/8>

United Way of Cleveland. (n.d.). Free Eviction Help. *Right to Counsel - Cleveland*. Retrieved April 3, 2023, from <https://freeevictionhelp.org/about-us/>

Ware, L. (2021). Plessy's Legacy: The Government's Role in the Development and Perpetuation of Segregated Neighborhoods. *RSF: The Russell Sage Foundation Journal of the Social Sciences*, 7(1), 92–109. <https://doi.org/10.7758/rsf.2021.7.1.06>

Wiese, A. (2004). *Places of Their Own: African American Suburbanization in the Twentieth Century*. University of Chicago Press. <https://press.uchicago.edu/Misc/Chicago/896412.html>

Wilkerson, I. (2010). *The Warmth of Other Suns: The Epic Story of America's Great Migration*. Penguin Random House. <https://www.penguinrandomhouse.com/books/190696/the-warmth-of-other-suns-by-isabel-wilkerson/>



APPENDIX – DATA TABLE AND SOURCES

Variable	Description	Source
<i>tr10/tract10</i>	Census tract ID	US Census Bureau
<i>total_units</i>	Total number of housing units	HUD Picture of Subsidized Housing 2021
<i>program</i>	Number denoting type of subsidized housing program	HUD Picture of Subsidized Housing 2021
<i>pb_units</i>	Number of housing units in programs 2, 5, 8 and 9: Public Housing, Project-based Section 8, 202/PRAC, 811/PRAC	HUD Picture of Subsidized Housing 2021
<i>tb_units</i>	Number of housing units in program 3: Housing Choice Vouchers	HUD Picture of Subsidized Housing 2021
<i>rocch2021</i>	Number of renter-occupied housing units in 2021	2017-2021 American Community Survey (ACS) 5-Year Estimates (note: the ACS is a product of the US Census Bureau)
<i>tb_rate</i>	Share of tenant-based housing out of the number of renter-occupied housing units	Calculated rate (tb_units / rocch2021)
<i>avg_tested</i>	Average number of addresses in the census tract associated with at least one blood lead test of a child under age 6 per year. Calculated as the 5-year annual average from 2017-2021	Ohio Department of Health
<i>_avg_ebll_c</i>	Number of addresses in the census tract with at least one confirmed elevated blood lead level (EBLL) test result (defined as $\geq 3.5\mu\text{g}$ lead per dL of blood) among children under age 6, as a percentage of all parcels associated with at least one blood lead test. Calculated as the 5-year annual average from 2017-2021	Ohio Department of Health
<i>med_grent2021</i>	Median gross rent	2017-2021 ACS 5-Year Estimates
<i>_nonwhite2021</i>	Percent of people that are non-white	2017-2021 ACS 5-Year Estimates
<i>pct_bad</i>	Percent of residential parcels with an assessed property condition of "Fair" or worse (e.g., "Fair", "Poor")	Cuyahoga County Fiscal Officer property characteristic records
<i>pct_bad_rent</i>	Percent of rental parcels with an assessed property condition of "Fair" or worse (e.g., "Fair", "Poor")	Cuyahoga County Fiscal Officer property characteristic records
<i>evict20XX</i>	Number of eviction cases filed in the given year	Cleveland Municipal Court of Housing
<i>_evict20XX</i>	Number of eviction cases filed per rental housing unit in a given year	Cleveland Municipal Court of Housing
<i>_avg_evict</i>	Number of eviction cases filed per rental housing unit (5-year average)	Cleveland Municipal Court of Housing
<i>_tbelpv2021</i>	Percent of people living below the poverty level	2017-2021 ACS 5-Year Estimates
<i>region</i>	Region within Cuyahoga County in which the census tract is located	Geographical data