[LRH] Health and Housing

[RRH] R. Mehdipanah

Perspective

Without Affordable, Accessible, and Adequate Housing, Health Has No

Foundation

Roshanak Mehdipanah

School of Public Health, University of Michigan

Policy Points:

- Today's housing disparities are rooted in the increasing commodification of housing that has taken precedence over the need for shelter, a basic human right.
- With rising housing costs across the country, more residents are finding their monthly
 income going to rent, mortgage payments, property taxes, and utilities, leaving little
 for food and medication.
- Housing is a determinant of health, and with increasing housing disparities, action
 must be taken to ensure no individual is displaced, communities remain intact, and
 cities continue to thrive.

This is the author manuscript accepted for publication and has undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the <u>Version of Record</u>. Please cite this article as <u>doi:</u> 10.1111/1468-0009.12626.

Disparities in access to safe, adequate, and affordable housing contribute to health inequities worldwide. Today's housing disparities are rooted in the increasing commodification of housing that has taken precedence over the need for shelter, a basic human right. In the United States, historical and contemporary policies have created and maintained racial, ethnic, gender, and other systemic disparities in opportunities to access economic resources and quality housing. A 2022 report by the National Association of Realtors showed that although homeownership rates in the United States increased by 1.3% in 2020, the highest annual rise recorded, homeownership rates for Black Americans (43.4%) remained lower than White Americans (72.1%).

Such housing disparities can impact both the physical and mental well-being of populations. For example, mortgage foreclosures have been associated with worse mental health and physical symptoms like trouble sleeping, chest pain, and stomach cramps.² Furthermore, the impacts of foreclosure go beyond individuals directly affected. Existing research demonstrates that those who resided in neighborhoods that experienced high foreclosure rates were more likely to seek treatment in hospitals and emergency rooms for various conditions including mental health, stroke, and heart attacks.³

The neighborhood environment beyond housing also impacts health. Public health research has provided strong evidence on the connection between a neighborhood's social, economic, and physical environmental factors such as poverty, access to healthy food, and levels of crime to various mental and physical health outcomes, including anxiety, depression, heart disease, and stroke. ⁴⁻⁷ However, much of this research has overlooked the potential role of housing in moderating the effect of neighborhood conditions on health. For example, retrofitting older houses in neighborhoods with greater exposure to air pollution could provide a level of protection against toxins through better air filtration systems. ⁸ Also,

the stress of being at risk for eviction may offset the health benefits of neighborhood amenities.

This Perspective demonstrates that housing insecurity—which encompasses the dimensions of housing unaffordability, inaccessibility, and inadequacy—is a major public health issue with strong ramifications affecting households, neighborhoods, and cities. Here, I examine each of these dimensions in relation to health and health inequities and discuss policies that have contributed to each dimension, and, in the face of glaring housing disparities in the United States and their effect on health inequities, I propose the important role of public health research to provide additional evidence to inform and advance policies designed to mitigate negative neighborhood impacts, housing disparities, and health inequities.

Affordable Housing

Housing is unaffordable for many Americans. Nearly one-third of Americans spend 30% or more of their household incomes on housing costs, including rent or mortgage payments, property taxes, and utilities. Among all renters, half spend more than 30% of their income on housing costs, and a quarter spend 50% or more. Table 1 shows how unaffordability disproportionately impacts lower-income households, with 83.4% of renter and owner occupied households that make less than \$20,000 a year paying more than 30% of their income toward housing costs in the past 12 months. That is approximately 11.5 times more than households earning \$75,000 or more a year. Housing affordability can influence access to other goods, including food and medical care, that are critical for maintaining health. Research has also connected housing insecurity, which results from being cost-burdened, to poorer self-reported health, delayed doctor visits, and higher distress.

With housing prices steadily rising since the mortgage foreclosure crisis in the late 2000s, wages remaining relatively unchanged, overall living costs increasing due to inflation, and a housing supply that has not met the demand, the number of Americans considered to be cost-burdened is projected to increase. As homeownership has become less attainable for first-time buyers, rental prices have also increased across the country, with some major cities experiencing average rent increases of up to 40%. In 2021, the hourly wage necessary to afford a two-bedroom apartment at fair-market rent in the United States was \$24.90, well above the current federal minimum wage of \$7.25 per hour. In some states like California, the hourly wage needed was \$39.03. In that same year in California, the median hourly wage of firefighters was \$37.77, \$29.17 for bus drivers, and \$14.73 for a retail salesperson, all important positions for cities to function.

The COVID-19 pandemic has exacerbated housing disparities. From 2020 to 2022, there was a 20% rise in housing prices compared to the overall inflation rate. ²⁰ With more than 40 million jobs lost early in the pandemic and financial uncertainty, housing unaffordability placed a great burden on millions of Americans across the country. ²¹ According to the US Census Bureau's Household Pulse Survey data collected between April and July 2020, homeowners with mortgage debt and renters experienced greater mental distress and poorer self-rated health, compared to owners with no mortgage debt. ²² Renters were also more likely to experience job loss, food insecurity, and the inability to pay housing-related costs during this period compared to homeowners. ²²

On September 4, 2020, the Centers for Disease Control and Prevention (CDC) imposed a nationwide temporary federal moratorium on residential evictions, taking effect less than two weeks after the expiration of a different set of eviction protections established by the Coronavirus Aid, Relief, and Economic Security (CARES) Act earlier in the year.²³ Using evidence from public health research on the consequences of eviction for COVID-19

transmission, the CDC took unprecedented actions to mitigate many evictions and provide additional time for individuals to access emergency rental assistance. ²⁴ Although this helped in reducing overall evictions, in the three months following the end of the moratorium in August 2021, in some cities like Las Vegas and Houston, eviction filings were restored to historic numbers. ²⁵ Approximately half of the \$46 billion allocated by Congress for emergency tental assistance had been used by the time the program ended in the summer of 2022, resulting in some extensions. ²⁶ Nonetheless, the CDC's implementation of an eviction moratorium is an example of the role public health agencies can have on preventing housing instability, particularly in emergency situations. Eviction and health are intricately linked; several studies have documented the negative impacts of evictions on depression, stress, and hospital readmissions. ²⁷⁻³⁰ Also, the stigma associated with evictions, including referral checks, makes it more difficult for individuals to find housing posteviction, further contributing to negative health and health inequities.

Increasing rents, inflation, and climbing eviction rates have together contributed to higher rates of homelessness across the country, with shelters and encampments in US cities seeing a surge of people. The public health literature shows individuals experiencing homelessness are at greater risk of exposures to crime, violence, and extreme weather, all contributing to poorer physical and mental well-being. 32-34 Homelessness is not a new problem, dating back to decades of policies restricting the supply of housing. For example, single-family zoming has limited housing development to single-family homes rather than multifamily apartment buildings or duplexes, resulting in limited supply and increased housing costs. 35-36 The need for more long-term solutions is critical to prevent housing loss, a growing public health concern.

Access to Housing

In the United States, beyond the financial barriers of obtaining and maintaining a home, historical and contemporary housing policies have disproportionately benefited non-Hispanic Whites by providing them more opportunities to become homeowners and build their wealth. Such policies have restricted housing choices for Hispanics and non-Hispanic Blacks to neighborhoods that are often economically underserved and overexposed to environmental toxins. 88,39

One example of a policy restricting housing access by race is the action taken by the Home Owner's Loan Corporation (HOLC), one of the many agencies designed by the Roosevelt administration as part of the New Deal. 40 In the early 1930s, to stabilize the nation's mortgage-lending system and help middle-income Americans purchase new homes by providing long-term and low-interest mortgages, the HOLC was formed. 41 The agency created maps to grade neighborhoods based on their level of risk: A (green) for "best"; B (blue) for "still desirable"; C (yellow) for "definitely declining"; and D (red) for "hazardous." Neighborhoods that had a larger proportion of non-White racialized groups, mainly non-Hispanic Blacks, were classified as "hazardous" or "too risky" for investment. This restricted homeownership opportunities in these areas and led to a heavy reliance on land contracts in which the buyer would pay the owner directly. Without the safety net offered through mortgages, if a buyer was unable to make a payment on time, they could be evicted and lose any equity they had built in their home. 42 Land contracts were also more expensive. A 2019 study of the Chicago area during the time redlining maps were widely used showed that on average, Black Americans were paying \$587 more per month (in 2019 dollars) for their home compared to those who had conventional mortgages. From 1940 to 1960, instead of Black residents building equity in their homes, approximately \$4 billion was taken from Black households attempting to become homeowners in this area. 43p19

While residential segregation, an outcome of such policies, has been studied in relation to health and neighborhood conditions cross-sectionally, 44,45 the role of the housing system in shaping these neighborhoods has been examined less over time. Researchers like Nancy Krieger have led some of the work examining historical redlining practices with present-day health outcomes, including preterm birth and cancer. 46,47 Other researchers have connected redlining practices to other health and health-related outcomes, including asthmarelated emergency department visits, lack of food retailers, and increased urban heat island effects. 48-5 Evidence from these studies and others is crucial for discussions around reparations for Black Americans and the development of policies addressing the racial wealth gap through housing opportunities.

Another example of a policy that contributed to the racial wealth gap in the United States is the GI Bill, or the Servicemen's Readjustment Act of 1944. The bill aimed to provide education, employment, medical, and housing opportunities to more than 8 million World War II veterans, but in practice the program restricted eligibility to certain discharge statuses not often given to Black veterans. This limited many Black veterans from accessing public assistance for housing purchase, restricting homeownership opportunities once again. However, the health impacts of these actions have rarely been discussed or studied in public health. Existing studies on the impacts of the GI Bill on health are limited to education benefits overall 4 and by race.

For those who have succeeded in becoming homeowners, studies have reported better health outcomes compared to renters, largely attributed to the stability and wealth accumulation homeownership can provide. ^{56,57} For example, among children, homeownership and the residential stability it provides has been linked to greater educational attainment and stronger vocabulary skills and contributing to positive childhood development. ⁵⁸ However, whether homeownership is always good for one's health has been

questioned in recent years, particularly after the 2008 mortgage foreclosure crisis in which predatory lending targeted low-income communities largely of color and led to disproportionate rates of default and dispossession.³⁷ During the foreclosure crisis, Black and Hispanic families wealth fell by 47.6% and 44.3%, respectively, while White families lost 26.2% of their wealth.⁵⁹ Even some who did not lose their property, especially those in neighborhoods with higher rates of foreclosures and vacancy, saw their home values never recover and were unable to move to a new house.^{60,61} Combined with the evidence linking historical policies such as redlining, these events question whether homeownership always provides health benefits.^{62,63}

One of the most important pieces of legislation to promote equal opportunities in housing is the Fair Housing Act (FHA) of 1968. The FHA, as amended, prohibits discrimination based on race, color, sex, religion, disability, national origin, and familial status at the time of purchase, rent, lease, sale, or finance of a home. ⁶⁴ The FHA protects individuals and communities from discrimination and provides opportunities for good-quality schools, as well as access to healthy foods and other resources that promote good health. ^{62,65} Although enforcement of the FHA across the country has reduced more overt types of discrimination, subtle incidents continue to exist and impact housing choice. ⁶⁶

Housing discrimination is linked to poor health outcomes. Research has connected racial discrimination in mortgage-lending practices to poor health, including poorer self-rated health, reduced colorectal cancer survival rates, and greater Black-White disparities in cancer generally. Additional studies have linked housing discrimination to higher stress levels and potentially greater exposure to environmental toxins. Research shows that experiencing housing discrimination could even outweigh the potential mental health benefits of moving into a lower-poverty neighborhood.

This growing literature on housing discrimination has disproportionately examined race and lacks studies on disability, which continues to account for the greatest number of complaints (54.6%) in the United States. This population is especially important to study because the average national rent for a studio/efficiency unit in 2016 was nearly equal to the monthly Supplemental Security Income payment that is usually the only source of income for non-elderly adults with disabilities. Furthermore, while we are learning more about the relationship between housing discrimination and health, few studies have focused on the role of neighborhood characteristics in predicting housing discrimination. T4-76

More research is needed to understand neighborhood dynamics, including how housing discrimination patterns correspond with changes in racial and economic patterns such as housing value shifts, financial investments, and local business closures. This evidence would allow policies to monitor neighborhoods for housing discrimination risk and engage neighborhoods with highest risk of housing discrimination.

Adequate Housing

The global use of stay-at-home orders as a method to prevent COVID-19 transmission highlights the importance of housing conditions. Staying at home limits the risks of acquiring and transmitting COVID-19. However, for some, staying at home posed other threats to their health and well-being, including infestations, mold, and structural housing problems. In 2019, the American Housing Survey, a joint initiative between the US Department of Housing and Urban Development and the US Census Bureau, published findings from 124.1 million occupied housing units. According to their findings, nearly 14 million households (11.3%) reported seeing signs of cockroaches in the past year, with more renters (15.9%) than owners (8.7%) reporting sightings. Furthermore, 3.6 million households (3.0%) reported signs of mold in their homes in the past year, with again more renters (4.4%) than owners

(2.1%) reporting mold.⁷⁸ A 2016 report showed that 30 million homes in the United States had some form of serious health and safety hazard, including damaged plumbing, gas leaks, and structural problems.^{80p24}

Historically, the public health and housing literature has well established the connection between physical conditions of a house—such as inadequate ventilation, lack of protection from extreme temperatures, pest infestation, exposure to toxins, and poor infrastructure—and health outcomes. Here are example, poor air ventilation can be linked to mold buildup, which is strongly associated with respiratory diseases like asthma and allergies. Overcrowding in the home has also been linked to increased exposures to various communicable diseases, including tuberculosis and more recently COVID-19, higher and other pest infestations have been associated with numerous diseases and disorders, including allergies. Finally, poor infrastructure from lack of maintenance has posed hazardous threats such as flooding and roof caving, resulting in an increased risk for home-based injuries.

By identifying the risks of housing conditions on health, public health research has played a vital role in changing industry practices. For example, studies examining the dangers of lead-based paint and lead poisoning ^{89,90} led to the federal government banning consumer uses of lead-based paints. ⁹¹ However, decades after the law was implemented, studies continue to show child lead poisoning across the country. ^{92,93} One recent study showed that lead-poisoning cases in Detroit, Michigan, were higher among children under the age of six living in rental properties owned by investors who purchased the properties in bulk out of foreclosure sales ⁹⁴ Other studies have shown the connection between investor-owned rentals and the deterioration of housing conditions. ^{95,96} With a chronic shortage of affordable housing across the country, the high demand for housing allows landlords to increase rent while failing to improve the conditions of their properties. This is of particular concern in

cities like Detroit, where large proportions of tax-foreclosed homes were sold to investors and speculators through tax auctions and 90% of eviction cases filed during the pandemic came from landlords whose property lacked a certificate of compliance, a quality assurance document certifying that the house is safe for occupancy. 97,98p21 Therefore, better understanding of landlord practices and business models as they relate to housing conditions and health outcomes is needed to develop policies that protect renters' health.

In attempts to improve housing conditions, state and local governments enact housing and building codes aimed at ensuring residential properties meet the minimum safety and health standards. However, code enforcement strategies differ across cities because resource constraints and priorities vary across local governments. 99,100p92 Enforcement of housing codes should be combined with financial resources to support repairs for renters and lowincome home where who may be especially impacted by punitive enforcement. 99 Cities have implemented cost-sharing programs to finance capital projects and property tax incentives, but these programs tend to be limited and benefit more resourced landlords, leaving nonprofit and small programs to address low-income landlords and renters. ¹⁰¹ The programs that exist to help low-income owners with repairs only benefit owner-occupied households. The Department of Agriculture's Section 504 Home Repair program assists low-income rural homeowners, 102 and the Department of Energy's Weatherization Assistance Program helps low-income homeowners make weather resistance modifications. ¹⁰³ As the housing stock continues to age, more government investment is needed to meet the growing demand. Federal programs should prioritize home repair investments, while state and local governments should provide home repair loans with 0% interest and no credit score requirement

Another pressing area needing more attention is the impact of climate change, notably rising temperatures and increasing natural disasters, on housing conditions. As cities continue

to sprawl and temperatures rise, more urban areas are experiencing the urban heat island effect, where temperatures are higher in cities than surrounding suburban areas. The urban heat island effect has been associated with increased risk of hospitalization, respiratory illness, and death. Homes that are energy efficient and equipped with cooling options provide a level of protection again rising heat levels, while those that do not have these features could increase the adverse risk effects of tenants. 108,109

Although rising temperatures affect health inside the home, natural disasters—which are becoming more common with climate change—can result in severe housing loss and displacement. In 2005, Hurricane Katrina ravaged New Orleans, leaving homes uninhabitable and disproportionately displacing thousands of Black residents. The Lower Ninth Ward, one of the hardest-hit neighborhoods, had some of the highest rates of Black homeownership in the city. Additionally, due to the mismanagement of funding and slow regeneration, more than two-thirds of New Orleans's Black residents moved to other cities without ever regaining their losses. With the climate change posing significant threats for housing in 21st-century cities, more research is needed to identify health outcomes related to housing in a climate-adverse environment and develop strategies to help urban populations stay safely housed.

Reducing Health Inequities Related to Housing Disparities

Housing is the foundation for a healthy life, but addressing housing disparities is becoming more challenging with a housing market that continues to ignore housing as a basic human right. The public health research makes the case for more affordable, accessible, and adequate housing to promote better physical and mental health. In Immediate action is needed to address and prevent the growing health equity gaps associated with housing. Public health can do more to protect certain populations, such as seniors, children, women, people of

color, those with low income, and those with disabilities, from experiencing housing instability and displacement. Such populations are at risk because they are considered placebound, meaning they tend to have greater interaction and time spent within their homes and neighborhoods. Research has highlighted significant health impacts of housing in the elderly population. A 2010 study by James and Sweany showed that cognitive decline in seniors could be slowed by improving the small percentage of housing in the worst physical conditions. As a result, the difference in cognitive decline associated with living in housing conditions considered "poor" compared to those rated "good" was nearly equivalent to aging six more years.

The negative health impacts of dispossession and displacement are also important themes to address. Displacement can result in the loss of social networks, lack of access to health care, and difficulties in adhering to medical treatment. 118-120 In cities with greater shortages of affordable housing, gentrification is displacing Black and brown Americans and immigrants. 121,122 In cities like Miami, where the effects of climate change are most prominent, investors and developers have dispossessed populations to build "safe zones," or areas considered to be less affected by climate change. 123 One of these neighborhoods is Little Haiti, where in the past decade, developers have purchased considerable land in the area for high-rise condos and upscale businesses, with little consideration for a community of Haitians that has been established there for 50 years. 124

To address these issues and others, a strong understanding of housing as a public health issue must be included across disciplines and incorporated into public and private decision making. Moreover, an understanding of health equity in housing is necessary to ensure that all individuals, regardless of their race, ethnicity, gender, socioeconomic position, and disability status, can access affordable and adequate housing. Therefore, strategies to retain affordable housing stock for low- and middle-income households must be prioritized.

Numerous strategies exist that can together improve affordability, accessibility, and adequacy in the housing market. To retain and increase affordable housing options, the National Housing Trust Fund can be used to build, rehabilitate, and preserve affordable housing for people with low income, while elimination of restrictive zoning policies would allow for the development of affordable units, and explanation of public housing can increase the affordable housing stock. 125,126 To keep rents affordable, the Housing Choice Voucher and the Low Income Housing Tax Credit programs can be used to subsidize rents, rent stabilization can be used to protect the affordable housing stock, and an extension of emergency rental assistance programs can provide temporary financial assistance to renters during unexpected financial hardships. To improve homeownership access, shared-equity homeownership models like community land trusts can provide homeownership opportunities for low- and middle-income residents while stabilizing property values and preserving affordability over the long term. To prevent housing discrimination and promote housing accessibility for marginalized populations, more education and resources are needed to enforce the Fair Housing Act of 1968. Finally, to ensure that all tenants live in safe and secure housing, housing and building code enforcement is needed alongside sufficient financial support.

Public health can inform these policy changes by continuing to provide the evidence on the impacts of policies and the health effects of housing insecurity and displacement. Public health departments, particularly at the local level, can also partner with city neighborhood and housing departments to use community health assessments and identify major housing needs of residents with the goal of addressing those needs. With a growing renter population, more affordable housing is needed, including the expansion of public housing in cities. In addition, greater protection of existing housing that is affordable is needed through mechanisms like rent stabilization.

Conclusion

Housing as a commodity has presented a fundamental threat to health and health equity by making housing less affordable, accessible, and adequate. Throughout this paper I have explored emerging issues as cities continue to become more economically exclusive by pricing out low- and middle-income residents. Public health must prioritize and address housing disparities in our society to reduce displacement and promote healthier and more vibrant cities. Housing is a determinant of health, and with increasing housing disparities, action must be taken to ensure no individual is displaced, communities remain whole, and cities continue to thrive.

References

- 1. National Association of Realtors. A snapshot of race and home buying in America. https://www.nar.realtor/research-and-statistics/research-reports/a-snapshot-of-race-and-home-buying-in-america. Published 2022. Accessed May 12, 2022.
- 2. Cannuscio CC, Alley DE, Pagán JA, et al. Housing strain, mortgage foreclosure, and health. *Nurs Outlook*. 2012;60(3):134-142.e1. doi:10.1016/j.outlook.2011.08.004.
- 3. Currie J, Tekin E. Is there a link between foreclosure and health? National Bureau of Economic Research. Working paper 17310. doi:10.3386/w17310. Published August 2011. Accessed December 5, 2022.
- 4. Barber S, Hickson DA, Wang X, Sims M, Nelson C, Diez-Roux AV. Neighborhood disadvantage, poor social conditions, and cardiovascular disease incidence among African American adults in the Jackson heart study. *Am J Public Health*. 2016;106(12):2219-2226. doi:10.2105/AJPH.2016.303471.

- 5. Caughy MO, O'Campo PJ, Muntaner C. When being alone might be better: neighborhood poverty, social capital, and child mental health. *Soc Sci Med*. 2003;57(2):227-237. doi:10.1016/S0277-9536(02)00342-8.
- 6. Masi CM, Hawkley LC, Piotrowski ZH, Pickett KE. Neighborhood economic disadvantage, violent crime, group density, and pregnancy outcomes in a diverse, urban population. *Soc Sci Med.* 2007;65(12):2440-2457. doi:10.1016/j.socscimed.2007.07.014.
- 7. Stulberg EL, Twardzik E, Kim S, et al. Association of neighborhood socioeconomic status with outcomes in patients surviving stroke. *Neurology*. 2021;96(21):e2599-e2610. doi:10.1212/WNL.000000000011988.
- 8. Walzer D, Gordon T, Thorpe L, et al. Effects of home particulate air filtration on blood pressure. *Hypertension*. 2020;76(1):44-50. doi:10.1161/HYPERTENSIONAHA.119.14456.
- 9. US Department of Housing and Urban Development (HUD). Measuring housing insecurity in the American Housing Survey. https://www.huduser.gov/portal/pdredge/pdredge-frm-asst-sec-111918.html. Published 2018. Accessed May 13, 2022.
- 10. US Census Bureau. ACS 2020: SE:A10025 Housing units by housing costs as a percentage of household income in the past 12 months.

 http://www.socialexplorer.com/tables/ACS2020_5yr/R13118465. Published 2022. Accessed May 13, 2022.
- 11. Schaeffer K. Key facts about housing affordability in the US. Pew Research Center. https://www.pewresearch.org/fact-tank/2022/03/23/key-facts-about-housing-affordability-in-the-u-s/. Published 2022. Accessed May 13, 2022.
- 12. Kirkpatrick SI, Tarasuk V. Housing circumstances are associated with household food access among low-income urban families. *J Urban Health*. 2011;88(2):284-296. doi:10.1007/s11524-010-9535-4.

- 13. Linton SL, Cooper HL, Kelley ME, et al. Cross-sectional association between ZIP code-level gentrification and homelessness among a large community-based sample of people who inject drugs in 19 US cities. *BMJ Open.* 2017;7(6):e013823.
- 14. Stahre M, Van Eenwyk J, Siegel P, Njai R. Housing insecurity and the association with health outcomes and unhealthy behaviors, Washington State, 2011. *Prev Chronic Dis*. 2015;12. doi:10.5888/pcd12.140511.
- 15. US Census Bureau, US Department of Housing and Urban Development. Median sales price of houses sold for the United States. https://fred.stlouisfed.org/series/MSPUS. Published January 1, 1963. Accessed May 13, 2022.
- 16. Rental market tracker: rents rise 14% in december—biggest jump in over two years. *Redfin News*. January 21, 2022. https://www.redfin.com/news/redfin-rental-report-december-2021. Accessed May 13, 2022.
- 17. Newman M, Salem W, Gallo DL, et al. Out of reach: the high cost of housing.

 National Low Income Housing Coalition. https://nlihc.org/sites/default/files/oor/2021/Out-of-Reach 2021.pdf. Published 2021. Accessed December 5, 2022.
- 18. Minimum wage. US Department of Labor website.https://www.dol.gov/general/topic/wages/minimumwage. Accessed May 13, 2022.
- 19. California—May 2021 OEWS state occupational employment and wage estimates.
 US Bureau of Labor Statistics website. https://www.bls.gov/oes/current/oes_ca.htm#(4).
 Published 2022. Accessed May 13, 2022.
- 20. US Bureau of Labor Statistics. Consumer price index for all urban consumers: all items in US city average. FRED, Federal Reserve Bank of St. Louis. https://fred.stlouisfed.org/series/CPIAUCSL. Published January 1, 1947. Accessed May 13, 2022.

- 21. Center on Budget and Policy Priorities. Tracking the COVID-19 economy's effects on food, housing, and employment hardships. https://www.cbpp.org/research/poverty-and-inequality/tracking-the-covid-19-economys-effects-on-food-housing-and. Published 2022.

 Accessed May 13, 2022.
- 22. Bushman G, Mehdipanah R. Housing and health inequities during COVID-19: findings from the national Household Pulse Survey. *J Epidemiol Community Health*. 2022;76(2):121-127. doi:10.1136/jech-2021-216764.
- 23. CDC/issues eviction moratorium order in areas of substantial and high transmission.

 Centers for Disease Control and Prevention website.

 https://www.cdc.gov/media/releases/2021/s0803-cdc-eviction-order.html. Published

 September 16, 2021. Accessed May 13, 2022.
- 24. National Low Income Housing Coalition. Federal moratorium on evictions for nonpayment of rent. https://nlihc.org/sites/default/files/Overview-of-National-Eviction-Moratorium.pdf. Published 2021. Accessed December 5, 2022.
- 25. Eviction Lab. Preliminary analysis: eviction filing trends after the CDC moratorium expiration https://evictionlab.org/updates/research/eviction-filing-trends-after-cdc-moratorium. Published December 2021. Accessed May 13, 2022.
- 26. Ludden J. Eviction filings are up sharply as pandemic rental aid starts to run out. *NPR*. https://www.npr.org/2022/05/04/1095559147/eviction-filings-are-up-sharply-as-pandemic-rental-aid-starts-to-run-out. Published May 4, 2022. Accessed May 13, 2022.
- 27. Callejo-Black P, Biederman D, Douglas C, Silberberg M. Eviction as a disruptive factor in health care utilization: impact on hospital readmissions and no-show rates. *J Health Care Poor Underserved*. 2021;32(1):386-396. doi:10.1353/hpu.2021.0030.
- 28. Desmond M, Kimbro RT. Eviction's fallout: housing, hardship and health. *Soc Forces*. Published 2015. doi:10.1093/sf/sov044.

- 29. Hatch ME, Yun J. Losing your home is bad for your health: short- and medium-term health effects of eviction on young adults. *Hous Policy Debate*. 2021;31(3-5):469-489. doi:10.1080/10511482.2020.1812690.
- 30. Hoke MK, Boen CE. The health impacts of eviction: evidence from the national longitudinal study of adolescent to adult health. *Soc Sci Med.* 2021;273:113742. doi:10.1016/j.socscimed.2021.113742.
- 31. National Alliance to End Homelessness. State of homelessness: 2022 edition. https://endhomelessness.org/homelessness-in-america/homelessness-statistics/state-of-homelessness/. Published 2022. Accessed September 30, 2022.
- 32. Barnes AJ, Gilbertson J, Chatterjee D. Emotional health among youth experiencing family homelessness. *Pediatrics*. 2018;141(4). doi:10.1542/peds.2017-1767.
- 33. Coohey C, Easton SD. Distal stressors and depression among homeless men. *Health Soc Work*. 2016;41(2):111-119.
- 34. Saab D. Nisenbaum R, Dhalla I, Hwang SW. Hospital readmissions in a community-based sample of homeless adults: a matched-cohort study. *J Gen Intern Med*. 2016;31(9):1011-1018. doi:10.1007/s11606-016-3680-8.
- 35. Lee R. Out of reach: exclusionary zoning and land-use practices in the name of smart growth add fuel to the fire of the affordable housing crisis. (The New Segregation). *Builder*. January 1, 2005:85.
- 36. Von Hoffman A. Single-family zoning: can history be reversed? Joint Center for Housing Studies. https://www.jchs.harvard.edu/blog/single-family-zoning-can-history-be-reversed. Published October 5, 2021. Accessed September 30, 2022.
- 37. Schuetz J. Rethinking homeownership incentives to improve household financial security and shrink the racial wealth gap. Brookings Institution.

https://www.brookings.edu/research/rethinking-homeownership-incentives-to-improve-

- household-financial-security-and-shrink-the-racial-wealth-gap/. Published 2020. Accessed May 13, 2022.
- 38. Banzhaf S, Ma L, Timmins C. Environmental justice: the economics of race, place, and pollution. *J Econ Perspect*. 2019;33(1):185-208. doi:10.1257/jep.33.1.185.
- 39. Downey L, Hawkins B. Race, income, and environmental inequality in the United States. *Social Perspect*. 2008;51(4):759-781. doi:10.1525/sop.2008.51.4.759.
- 40. Aaronson D, Hartley D, Mazumder B. The effects of the 1930s HOLC "redlining" maps. *Am Econ J Econ Policy*. 2021;13(4):355-392. doi:10.1257/pol.20190414.
- 41. Rothstein R. *The Color of Law: A Forgotten History of How Our Government Segregated America*. New York, NY: Liveright; 2017. https://www.epi.org/publication/the-color-of-law-a-forgotten-history-of-how-our-government-segregated-america/. Accessed July 20, 2021.
- 42. Taylor K-Y. Race for Profit: How Banks and the Real Estate Industry Undermined Black Homeownership. Chapel Hill: University of North Carolina Press; 2019.
- 43. The Samuel Dubois Cook Center on Social Equity. *The Plunder of Black Wealth in Chicago: New Findings on the Lasting Toll of Predatory Housing Contracts*. https://socialequity.duke.edu/portfolio-item/the-plunder-of-black-wealth-in-chicago-new-findings-on-the-lasting-toll-of-predatory-housing-contracts/. Published 2019. Accessed May 5, 2022.
- 44. Acevedo-Garcia D, Lochner KA, Osypuk TL, Subramanian SV. Future directions in residential segregation and health research: a multilevel approach. *Am J Public Health*. 2003;93(2):215-221.
- 45. Williams DR, Collins C. Racial residential segregation: a fundamental cause of racial disparities in health. *Public Health Rep.* 2001;116(5):404-416.

- 46. Krieger N, Van Wye G, Huynh M, et al. Structural racism, historical redlining, and risk of preterm birth in New York City, 2013-2017. *Am J Public Health*. 2020;110(7):1046-1053. doi:10.2105/AJPH.2020.305656.
- 47. Krieger N, Wright E, Chen JT, Waterman PD, Huntley ER, Arcaya M. Cancer stage at diagnosis, historical redlining, and current neighborhood characteristics: breast, cervical, lung, and colorectal cancers, Massachusetts, 2001-2015. *Am J Epidemiol*. 2020;189(10):1065-1075. doi:10.1093/aje/kwaa045.
- 48. Eisenhauer E. In poor health: supermarket redlining and urban nutrition. *GeoJournal*. 2001;53:125-133.
- 49. Nardone A, Casey JA, Morello-Frosch R, Mujahid M, Balmes JR, Thakur N. Associations between historical residential redlining and current age-adjusted rates of emergency department visits due to asthma across eight cities in California: an ecological study. *Lancet Planet Health*. 2020;4(1):e24-e31. doi:10.1016/S2542-5196(19)30241-4.
- 50. Wilson B. Urban heat management and the legacy of redlining. *J Am Plann Assoc*. 2020;86(4):443-457. doi:10.1080/01944363.2020.1759127.
- 51. McClure E, Feinstein L, Cordoba E, et al. The legacy of redlining in the effect of foreclosures on Detroit residents' self-rated health. *Health Place*. 2019;55:9-19. doi:10.1016/j.healthplace.2018.10.004.
- 52. National Archives. Servicemen's Readjustment Act (1944).

 https://www.archives.gov/milestone-documents/servicemens-readjustment-act. Published

 September 22, 2021. Accessed May 14, 2022.
- 53. Blakemore E. How the GI Bill's promise was denied to a million Black WWII veterans. *History*. https://www.history.com/news/gi-bill-black-wwii-veterans-benefits. Accessed May 14, 2022.

- Rumery ZR, Patel N, Richard P. The association between the use of the education benefits from the G.I. Bill and veterans' health. *Mil Med.* 2018;183(5-6):e241-e248. doi:10.1093/milmed/usx102.
- 55. Turner S, Bound J. The G.I. Bill, World War II, and the education of Black Americans. *The Digest*. 2002;(12). https://www.nber.org/digest/dec02/gi-bill-world-war-ii-and-education-black-americans. Accessed May 13, 2022.
- Mason KE, Baker E, Blakely T, Bentley RJ. Housing affordability and mental health: does the relationship differ for renters and home purchasers? *Soc Sci Med.* 2013;94:91-97. doi:10.1016/j.socscimed.2013.06.023.
- 57. Pollack CE, Griffin BA, Lynch J. Housing affordability and health among homeowners and renters. *Am J Prev Med*. 2010;39(6):515-521. doi:10.1016/j.amepre.2010.08.002.
- 58. Sandstrom H, Huerta S. The negative effects of instability on child development: a research synthesis. Urban Institute.

http://www.urban.org/sites/default/files/publication/32706/412899-The-Negative-Effects-of-Instability on-Child-Development-A-Research-Synthesis.PDF. Published 2013. Accessed May 31, 2017.

- 59. McKernan SM, Ratcliffe C, Steuerle CE, Zhang S. Impact of the great recession and beyond. Urban Institute. https://www.urban.org/sites/default/files/alfresco/publication-pdfs/413102-Impact-of-the-Great-Recession-and-Beyond.PDF. Published 2014. Accessed December 6, 2022.
- 60. Aven PG. Recession impacted near-retirees housing wealth. https://www.benefitspro.com/2012/05/22/recession-impacted-near-retirees-housing-wealth/?slreturn=20230216123238. Published 2012. Accessed December 6, 2022.

- 61. Engelhardt GV, Eriksen MD, Greenhalgh-Stanley N. A profile of housing and health among older Americans. Social Science Research Network.
- https://papers.ssrn.com/abstract=2359676. Published 2013. Accessed October 11, 2019.
- 62. Evans DN, Blount-Hill KL, Cubellis MA. Examining housing discrimination across race, gender and felony history. *Hous Stud.* 2019;34(5):761-778. doi:10.1080/02673037.2018.1478069.
- 63. National Fair Housing Alliance. 2021 fair housing trends report. https://nationalfairhousing.org/wp-content/uploads/2021/07/2021-Fair-Housing-Trends-Report_FINAL.pdf. Published 2021. Accessed December 6, 2022.
- 64. US Department of Justice. The Fair Housing Act, Title VIII of the Civil Rights Act of 1968, Pub. L. 90–284 (Apr. 11, 1968), as Amended by Fair Housing Amendments Act of 1988, Pub. L. 100-430 (Sept. 13, 1988). The Fair Housing Act Is Codified at 42 USC. §§ 3601-3619. https://www.justice.gov/crt/fair-housing-act-1. Published 2017. Accessed February 10, 2018.
- 65. Roscigno VJ, Karafin DL, Tester G. The complexities and processes of racial housing discrimination. *Soc Probl.* 2009;56(1):49-69. doi:10.1525/sp.2009.56.1.49.
- 66. Turner MA, Santos R, Levy DK, Wissoker DA. Housing discrimination against racial and ethnic minorities 2012: full report. Urban Institute.
- https://www.urban.org/research/publication/housing-discrimination-against-racial-and-ethnic-minorities-2012-full-report. Published June 4, 2016. Accessed February 10, 2018.
- 67. Gee GC. A multilevel analysis of the relationship between institutional and individual racial discrimination and health status. *Am J Public Health*. 2008;98(Suppl.1):S48-S56. doi:10.2105/AJPH.98.Supplement_1.S48.

- 68. Zhou Y, Bemanian A, Beyer KMM. Housing discrimination, residential racial segregation, and colorectal cancer survival in southeastern Wisconsin. *Cancer Epidemiol Biomarkers Prev.* 2017;26(4):561-568. doi:10.1158/1055-9965.EPI-16-0929.
- 69. Beyer KMM, Laud PW, Zhou Y, Nattinger AB. Housing discrimination and racial cancer disparities among the 100 largest US metropolitan areas. *Cancer*. 2019;125(21):3818-3827. doi:10.1002/cncr.32358.
- 70. Currie CL, Motz T, Copeland JL. The impact of racially motivated housing discrimination on allostatic load among indigenous university students. *J Urban Health*. 2020;97(3):365-376. doi:10.1007/s11524-020-00446-6.
- 71. Christensen P, Sarmiento-Barbieri I, Timmins C. Housing discrimination and the toxics exposure gap in the United States: evidence from the rental market. *Rev Econ Stat*. 2022;104(4):807-818. doi:10.1162/rest a 00992.
- 72. Osypuk TL, Schmidt NM, Kehm RD, Tchetgen Tchetgen EJ, Glymour MM. The price of admission: does moving to a low poverty neighborhood increase discriminatory experiences and influence mental health? *Soc Psychiatry Psychiatr Epidemiol*. 2019;54(2):181-190. doi:10.1007/s00127-018-1592-0.
- 73. Schaak G, Sloane L, Arienti F, Zovitoski A. Priced out: the housing crisis for people with disabilities. Technical Assistance Collaborative. https://www.tacinc.org/wp-content/uploads/2020/04/priced-out-in-2016.pdf. Published December 2017. Accessed December 7, 2022.
- 74. Yang TC, Chen D, Park K. Perceived housing discrimination and self-reported health: how do neighborhood features matter? *Ann Behav Med*. 2016;50(6):789-801. doi:10.1007/s12160-016-9802-z.

- 75. Mehdipanah R, Bess K, Tomkowiak S, et al. Residential racial and socioeconomic segregation as predictors of housing discrimination in Detroit metropolitan area. *Sustainability*. 2020;12(24):10429. doi:10.3390/su122410429.
- 76. Hanson A, Hawley Z. Where does racial discrimination occur? An experimental analysis across neighborhood and housing unit characteristics. *Reg Sci Urban Econ*. 2014;44:94-106. doi:10.1016/j.regsciurbeco.2013.12.001.
- 77. Sabbeth K, House S. When the home is the hazard: pandemic responses must address housing conditions. *Next City*. March 4, 2021. https://nextcity.org/urbanist-news/when-the-home-is-the-hazard-pandemic-responses-address-housing-conditions. Accessed May 13, 2022.
- 78. US Department of Housing and Urban Development (HUD). HUD and Census Bureau release new American housing survey.

 https://www.hud.gov/press/press_releases_media_advisories/hud_no_20_147. Published September 2020. Accessed May 13, 2022.
- 79. Sellner M, Wicht J. Residents of 14 million housing units reported seeing roaches, 14.8 million saw rodents in last 12 months. US Census Bureau website. https://www.census.gov/library/stories/2021/04/how-many-american-homes-have-pests.html. Published April 21, 2021. Accessed May 13, 2022.
- 80. Ross T, Parsons C, Vallas R. Creating safe and healthy living environments for low-income families. Center for American Progress.

https://www.scribd.com/document/318290956/Creating-Safe-and-Healthy-Living-Environments-for-Low-Income-Families. Published 2016. Accessed December 7, 2022.

81. Howden-Chapman P. How real are the health effects of residential energy efficiency programmes? *Soc Sci Med.* 2015;133:189-190. doi:10.1016/j.socscimed.2015.03.017.

- 82. Runyan CW, Perkis D, Marshall SW, et al. Unintentional injuries in the home in the United States: part II: morbidity. *Am J Prev Med*. 2005;28(1):80-87. doi:10.1016/j.amepre.2004.09.017.
- 83. Wang C, El-Nour MMA, Bennett GW. Survey of pest infestation, asthma, and allergy in low-income housing. *J Community Health*. 2008;33(1):31-39. doi:10.1007/s10900-007-9064-6.
- 84. Jones R, Recer GM, Hwang SA, Lin S. Association between indoor mold and asthma among children in Buffalo, New York. *Indoor Air*. 2011;21(2):156-164. doi:10.1111/j.1600-0668.2010.00692 x.
- 85. Sahakian NM, Park JH, Cox-Ganser JM. Dampness and mold in the indoor environment: implications for asthma. *Immunol Allergy Clin North Am*. 2008;28(3):485-505. doi:10.1016/j.iac.2008.03.009.
- 86. Antunes JLF, Waldman EA. The impact of AIDS, immigration and housing overcrowding on tuberculosis deaths in São Paulo, Brazil, 1994-1998. *Soc Sci Med*. 2001;52(7):1071-1080. doi:10.1016/S0277-9536(00)00214-8.
- 87. Karnis C, Stolte A, West JS, et al. Overcrowding and COVID-19 mortality across U.S. counties: are disparities growing over time? *SSM Popul Health*. 2021;15:100845. doi:10.1016/j.ssmph.2021.100845.
- 88. Shields W, McDonald E, Frattaroli S, Bishai D, Ma X, Gielen A. Structural housing elements associated with home injuries in children. *Inj Prev.* 2016;22(2):105-109. doi:10.1136/injuryprev-2015-041621.
- 89. Sayre JW, Charney E, Vostal J, Pless IB. House and hand dust as a potential source of childhood lead exposure. *Am J Dis Child*. 1974;127(2):167-170. doi:10.1001/archpedi.1974.02110210017002.

- 90. Vostal JJ, Taves E, Sayre JW, Charney E. Lead analysis of the house dust: a method for the detection of another source of lead exposure in inner city children. *Environ Health Perspect*. 1974;7:91-97. doi:10.1289/ehp.74791.
- 91. Lead regulations. US Environmental Protection Agency website.

 https://www.epa.gov/lead/lead-regulations. Published February 12, 2013. Accessed May 6, 2022.
- 92. Gagliardi MP. Stirring up the debate in Rhode Island: should lead paint manufacturers be held liable for the harm caused by lead paint notes and comments. *Roger Williams Univ Law Rev.* 2001;7(2):341-382.
- 93. Jacobs DE, Clickner RP, Zhou JY, et al. The prevalence of lead-based paint hazards in U.S. housing. *Environ Health Perspect*. 2002;110(10):A599-A606. doi:10.1289/ehp.021100599.
- 94. Eisenberg A, Seymour E, Hill AB, Akers J. Toxic structures: speculation and lead exposure in Detroit's single-family rental market. *Health Place*. 2020;64:102390. doi:10.1016/j.healthplace.2020.102390.
- 95. Fields D, Uffer S. The financialisation of rental housing: a comparative analysis of New York City and Berlin. *Urban Stud.* 2014;53(7):1486-1502. doi:10.1177/0042098014543704.
- 96. Travis A. The organization of neglect: limited liability companies and housing disinvestment. *Am Sociol Rev.* 2019;84(1):142-170. doi:10.1177/0003122418821339.
- 97. Akers J, Seymour E. Instrumental exploitation: predatory property relations at city's end. *Geoforum.* 2018;91:127-140. doi:10.1016/j.geoforum.2018.02.022.
- 98. Eisenberg A, Brantley K. Crisis before the emergency: evictions in Detroit before and after the onset of COVID-19. Poverty Solutions.

https://sites.fordschool.umich.edu/poverty2021/files/2022/PovertySolutions-Covid-Evictions-PolicyBrief-r2-2.pdf. Published June 2022. Accessed December 7, 2022.

99. NYU Furman Center. Cracking code enforcement: how cities approach housing standards. https://furmancenter.org/files/Up_To_Code-

How_Cities_Enforce_Housing_Standards_Final.pdf. Published August 2021. Accessed December 7, 2022.

100. Stacy C, Schilling J, Barlow S. Strategic housing code enforcement and public health.

Urban Institute.

https://www.urban.org/sites/default/files/publication/99190/strategic_housing_code_enforce ment_and_public_health_0.pdf. Published October 2018. Accessed December 7, 2022.

- 101. Cost recovery programs—LAHD. Los Angeles Housing Department website. https://housing.lacity.org/rental-property-owners/cost-recovery-programs. Published 2021. Accessed May 13, 2022.
- 102. Single family housing repair loans & grants: rural development. US Department of Agriculture website. https://www.rd.usda.gov/programs-services/single-family-housing-programs/single-family-housing-repair-loans-grants. Published January 5, 2015. Accessed May 14, 2022.
- 103. Where to apply for weatherization assistance. Energy.gov. https://www.energy.gov/eere/wipo/where-apply-weatherization-assistance. Accessed September 25, 2019.
- 104. Eisenberg A, Wakayama C, Cooney P. Reinforcing homeownership through home repair: evaluation of the Make It Home repair program. Poverty Solutions. https://poverty.umich.edu/files/2021/02/PovertySolutions-Make-It-Home-Repair-Program-

Feb2021-final.pdf. Published February 2021. Accessed July 20, 2021.

- 105. Tong S, Prior J, McGregor G, Shi X, Kinney P. Urban heat: an increasing threat to global health. *BMJ*. 2021;375:n2467. doi:10.1136/bmj.n2467.
- 106. Heaviside C, Vardoulakis S, Cai XM. Attribution of mortality to the urban heat island during heatwaves in the West Midlands, UK. *Environ Health Glob Access Sci Source*. 2016;15(Suppl.1):27. doi:10.1186/s12940-016-0100-9.
- 107. Heaviside C, Macintyre H, Vardoulakis S. The urban heat island: implications for health in a changing environment. *Curr Environ Health Rep.* 2017;4(3):296-305. doi:10.1007/s40572-017-0150-3.
- 108. Sera F, Armstrong B, Tobias A, et al. How urban characteristics affect vulnerability to heat and cold: a multi-country analysis. *Int J Epidemiol*. 2019;48(4):1101-1112. doi:10.1093/ije/dyz008.
- 109. Anderson BG, Bell ML. Weather-related mortality: how heat, cold, and heat waves affect mortality in the United States. *Epidemiol Camb Mass*. 2009;20(2):205-213. doi:10.1097/EDE.0b013e318190ee08.
- 110. Brunkard J, Namulanda G, Ratard R. Hurricane Katrina deaths, Louisiana, 2005.

 Disaster Med Public Health Prep. 2008;2(4):215-223. doi:10.1097/DMP.0b013e31818aaf55.
- 111. Moskowitz P. New Orleans' Lower Ninth Ward targeted for gentrification: "It's going to feel like it belongs to the rich." *Guardian*. January 23, 2015.

https://www.theguardian.com/us-news/2015/jan/23/new-orleans-lower-ninth-ward-condosgentrification. Accessed May 14, 2022.

112. Aune KT, Gesch D, Smith GS. A spatial analysis of climate gentrification in Orleans Parish, Louisiana post-Hurricane Katrina. *Environ Res.* 2020;185:109384. doi:10.1016/j.envres.2020.109384.

- 113. Fussell E, Sastry N, Vanlandingham M. Race, socioeconomic status, and return migration to New Orleans after Hurricane Katrina. *Popul Environ*. 2010;31(1-3):20-42. doi:10.1007/s11111-009-0092-2.
- 114. Hernández D, Swope CB. Housing as a platform for health and equity: evidence and future directions. *Am J Public Health*. 2019;109(10):1363-1366. doi:10.2105/AJPH.2019.305210.
- 115. Dunn JR, Hayes MV, Hulchanski JD, Hwang SW, Potvin L. Housing as a socio-economic determinant of health: findings of a national needs, gaps and opportunities assessment. *Can'l Public Health*. 2006;97:S11-S15.
- 116. Mehdipanah R, Manzano A, Borrell C, et al. Exploring complex causal pathways between urban renewal, health and health inequality using a theory-driven realist approach. *Soc Sci Med.* 2015;124:266-274. doi:10.1016/j.socscimed.2014.11.050.
- 117. James R III, Sweany A. Housing dissatisfaction and cognitive decline in older adults. J Hous Elder. 2010;24(1):93-106. doi:10.1080/02763890903547104.
- 118. Baussan D. When you can't go home. Center for American Progress.

 https://www.americanprogress.org/article/when-you-cant-go-home/. Published August 18,

 2015. Accessed May 14, 2022.
- 119. Atkinson R, Wulff M, Reynolds M, Spinney A. Gentrification and displacement: the household impacts of neighbourhood change. AHURI Final Report No. 160. Australian Housing and Urban Research Institute.
- https://www.ahuri.edu.au/sites/default/files/migration/documents/AHURI_Final_Report_No1 60_Gentrification_and_displacement_the_household_impacts_of_neighbourhood_change.pdf . Published 2011. Accessed December 7, 2022.

- 120. Mehdipanah R, Marra G, Melis G, Gelormino E. Urban renewal, gentrification and health equity: a realist perspective. *Eur J Public Health*. 2018;28(2):243-248. doi:10.1093/eurpub/ckx202.
- 121. Kirkland E. What's race got to do with it? Looking for the racial dimensions of gentrification. *Western Journal of Black Studies*. 2008;32(2):18-30. https://cpb-us-e1.wpmucdn.com/blogs.uoregon.edu/dist/4/8542/files/2014/09/Whats-Race-Got-to-Do-With-It-1iiw6hz.pdf. Accessed December 7, 2022.
- 122. Freeman I, Cai T. White entry into Black neighborhoods: advent of a new era? *Ann Acad Pol Soc Sci.* 2015;660(1):302-318. https://www.jstor.org/stable/24541839.

 Accessed December 7, 2022.
- 123. Keenan JM, Hill T, Gumber A. Climate gentrification: from theory to empiricism in Miami-Dade County, Florida. *Environ Res Lett.* 2018;13(5):054001. doi:10.1088/1748-9326/aabb32.
- 124. Santiago E. Weathering the storm: climate gentrification in Miami's Little Haiti.
 University of Michigan School of Public Health.
- https://sph.umich.edu/pursuit/2020posts/weathering-the-storm-climate-gentrification-in-miami.html. Published February 10, 2020. Accessed May 14, 2022.
- 125. National Low Income Housing Coalition. Solutions to the affordable housing crisis. https://nlihe.org/sites/default/files/Solutions-to-the-Affordable-Housing-Crisis.pdf. Published 2019. Accessed December 7, 2022.
- 126. Choi M, Van Zandt S, Matarrita-Cascante D. Can community land trusts slow gentrification? *J Urban Aff.* 2018;40(3):394-411. doi:10.1080/07352166.2017.1362318.
- 127. Coulter B, Reyes AG, Taylor RS, Adams C, Larsosa J. 2018 Detroit community health assessment. Detroit Health Department.

https://detroitmi.gov/sites/detroitmi.localhost/files/2019-04/4pm_April11_DHD_report.pdf. Published 2018. Accessed September 28, 2022.

Cript

Acknowledgments: I would like to thank Alexa Eisenberg, Jamison Koeman, and Natasha Pilkauskas for their feedback throughout this process.

Address correspondence to: Roshanak Mehdipanah, School of Public Health, University of Michigan, 1415 Washington Heights, Ann Arbor, MI 48109 (email: rmehdipa@umich.edu).

or Ma

Table 1. Proportion of Housing Cost Burden and Household Income of Renters and Owners in the United States^a

Percentage of Renter and
Owner-Occupied Households
Paying >30% of Income
Toward Housing Costs in the

Proportion of Households
by Household Income
Among Renters and
Owners^c

	Ξ
	5
	_
_	5

	Past 12 Months ^b	
Less than \$20,000	83.4%	12.6%
\$20,000 to \$34,999	63.0%	13.0%
\$35,000 to \$49,999	41.9%	12.1%
\$50,000 to \$74,999	24.4%	17.5%
\$75,000 or more	7.2%	44.8%

Data from the American Community Survey 2016-2020 five-year estimates.

^a Total number of renters and owner-occupied households excludes households with zero or negative income and those with no cash rent, making up less than 2% of the population.

^b Denominator is all renter and owner-occupied households within that income bracket.

^c Denominator is all renter and owner-occupied households.