



Improving Health Outcomes Through Social Determinants of Health Initiatives

Breaking the compounded impacts of inequities in food and nutrition, lack of quality housing, and climate change on vulnerable populations





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Introduction

Countless factors play a role in how healthy or unhealthy any individual person is. These are known as social determinants of health (SDOH) and can include anything from where someone lives and works, their education and income level, their level of social support, and how easily they can access affordable health care. All of these feed into overall health status. In recent years, there has been a greater understanding of the importance these factors play in someone's health.

When looking at improving the health of vulnerable populations, including communities of color and women in particular, and ways to reduce longstanding disparities, it is useful to use the lens of SDOH. Communities of color in particular are negatively impacted by these factors. To that end, there has been an increased focus on initiatives that address various SDOH, including inequities in food and nutrition; lack of affordable, quality housing; and climate change.

These issues often compound and feed into one another. High rent can cause people to cut back on healthy foods and medications. Decades of discriminatory housing policies pushed people of color into areas with limited access to affordable grocery stores, limited recreation options, and close to pollution-emitting factories.

Vulnerable populations already face a host of health disparities, from worse outcomes due to discrimination in the health care system to higher rates of chronic illness. Racial and ethnic minorities are 1.5 to 2 times more likely to have a major chronic illness such as asthma, diabetes, cancer, hypertension, and other illnesses. This paper aims to examine the effects of SDOH on minority populations.



About the Author



HEALTH EQUITY COLLABORATIVE

The Health Equity Collaborative (HEC) is an advocacy initiative comprised of civil rights organizations, public health non-profits, and diverse patient groups centered around supporting equity and combatting disparities experienced by marginalized communities. HEC is officially a project of MANA Action, a 501c4 not-for-profit organization allied with MANA National, a National Latina Organization that advocates for equality and empowers Latinas through leadership development.

Food Insecurity and Nutritional Disparities

Food Insecurity in Communities of Color

The United States Department of Agriculture (USDA), which administers many federal food assistance programs, defines food insecurity as “a household-level economic and social condition of limited or uncertain access to adequate food.”

Many factors go into a family facing food insecurity. Due to long-term, structural racism, by nearly all measures, minorities, especially African Americans and Hispanics who have been historically economically disadvantaged. They tend to experience greater disparities in employment, home ownership, and housing affordability. They are more likely to live in food deserts and are less likely to be able to afford or have access to healthy food.

An infographic with a dark blue background. At the top, the text "1 in 4" is written in large white font. Below it, in a lighter blue section, the text "Nearly 1 in 4 African American children went hungry in 2020" is written in bold black font.

1 in 4

**Nearly 1 in 4
African American
children went
hungry in 2020**

African American families are three times more likely to experience hunger than Caucasian families. Latino families are two and a half times more likely. During the COVID-19 pandemic, as schools closed and families faced economic uncertainty, nearly one in four African American children went hungry in 2020. African American and Hispanic seniors are more than twice as likely to be food insecure as Caucasian seniors. Women across racial backgrounds are more likely to experience food insecurity. Households headed by single women both with and without children are more likely to be food insecure compared to households headed by single men.

Due to decades of discriminatory housing practices, many minorities live in areas with limited access to healthy food. Just 8% of African Americans have a grocery store in their census area, while nearly a third of Caucasians do.

Impact of Food Insecurity on Health

When facing food insecurity, the outcomes range from being worried food will run out to eating less to skipping meals for an entire day. The mental and physical toll this takes is profound. A lack of healthy food leads to an increased incidence of chronic, debilitating conditions including diabetes, obesity, depression, high blood pressure, and heart failure, among others.

Food insecure seniors are considered especially at-risk for many of these, specifically heart attacks, congestive heart failure, high blood pressure, diabetes, and depression.

Children who experience hunger are two times more likely to be in fair or poor health than those who do not. Children who are hungry are seven times more likely to get into a physical altercation, which can have long-term impacts on their education and lives.

A lack of access to healthy food has a negative impact on minority children. The rate of Type 2 diabetes in African American, Hispanic, and Native American children has “skyrocketed” in the last two decades.

Food insecurity presents unique risks to women. Not only are they more likely to experience food insecurity, but women are more likely to bear responsibility for keeping the household fed and healthy. They will often skip meals to ensure their children have enough. Concern over having the resources to feed their children leads to increased levels of anxiety and depression. Pregnant women who do not receive enough nutrients are at higher risk of adverse birth effects.

On the flip side, having access to affordable, healthy foods improves health across the board. It can prevent and help manage a host of diseases including Type 2 diabetes, heart disease, and obesity. However, for minority populations, options may be very limited – a distinction that is a consequence of race more than any other factor. Research from Kelly Bower, an Assistant Professor at the School of Nursing at John Hopkins University, has confirmed this. Bower writes, “the poverty level of a neighborhood certainly matters, but even beyond poverty, the racial composition matters.”

Even when compared to low-income Caucasian neighborhoods, Black and Hispanic low-income neighborhoods are less likely to have grocery stores with healthy and fresh food. This leaves residents reliant on convenience or liquor stores that are more likely to stock junk food rather than fresh fruit and vegetables.

Even when compared to low-income Caucasian neighborhoods, Black and Hispanic low-income neighborhoods are less likely to have grocery stores with healthy and fresh food.

New Opportunities

The COVID-19 pandemic presented significant challenges to many Americans, with a loss of jobs and school closures leaving children missing meals they otherwise would have gotten at school. It also prompted an expansion of many government interventions and piloting of new programs. This presents an opportunity to collect data on new government programs. For example, some districts brought back bus drivers to deliver school meals along their routes. Others required families to come to a central location to pick up food.



Solutions

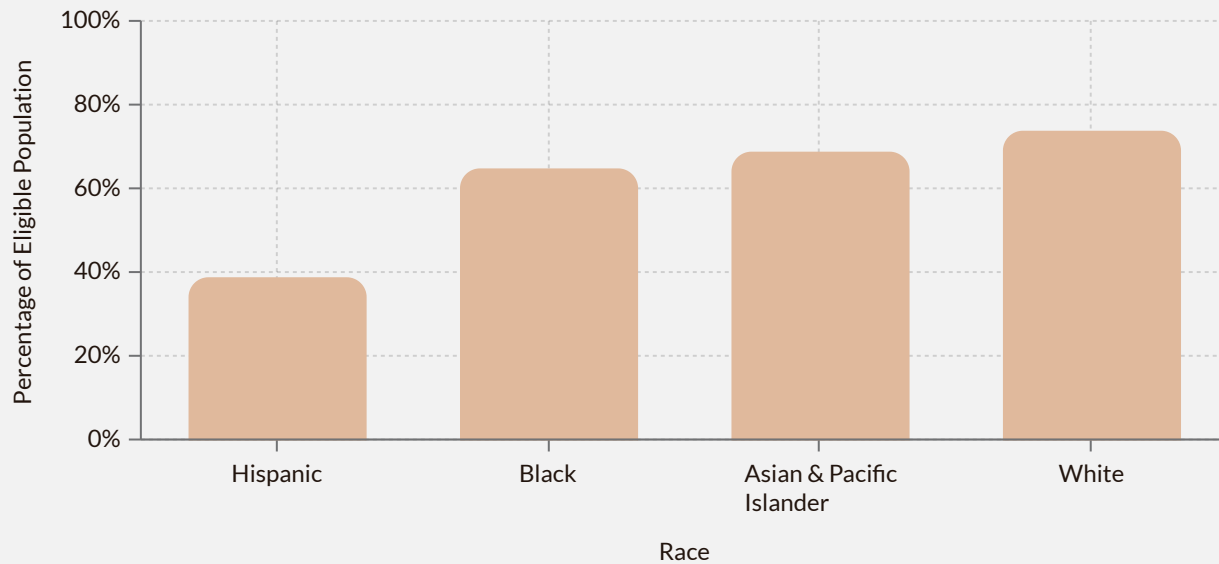
1. Legislative Spotlight

Due to COVID-19 and the long-term ripple effects it has caused, it's time to take a new look at how the federal government can end food insecurity, particularly in communities of color. A bill introduced by Senator Cory Booker (D-NJ) would create a White House Conference on Food, Nutritional, Hunger, and Health. Senator Booker's bill would bring together experts, policymakers, those who have experienced food insecurity firsthand, and others for a conference aimed at taking "a whole-of-government approach to ending hunger and combatting nutrition insecurity in America.

A previous White House conference, last held 50 years ago, led to the creation of multiple federal programs, including the Supplemental Nutrition Assistance Program (SNAP); Women and Special Supplemental Nutrition Program for Women, Infants, and Children (WIC); and the National School Breakfast and Lunch Program. All of these programs have made great strides in helping vulnerable populations access food, but it is time for a comprehensive update that takes into account new realities.

The statistics bear this out. Communities of color are more likely to need SNAP benefits but participate in the program at a disproportionately low rate. Nearly 75% of eligible Caucasian families participate in SNAP, compared to 65% of African American families. Only 39% of eligible Latino families participate in SNAP due to a lack of information or concerns status. Qualified immigrants without children have a five-year waiting period for SNAP benefits. For those who do enroll, benefits are often not sufficient. A 2018 report found that SNAP does not cover a low-cost meal in 99% of U.S. counties.

Participation in SNAP Benefits Among Eligible Population, By Race



Source: <https://moveforhunger.org/hunger-is-a-racial-equity-issue>

From a health perspective, SNAP is a crucial intervention. Minorities tend to forgo health care or skip medications at a higher rate due to concerns surrounding cost. SNAP and WIC also support the health of women, minimizing the tremendous stress of wondering where their family's next meal will come from.

Given the increased likelihood they qualify for this support, vulnerable populations stand to benefit the most from updates to the program. While not a comprehensive list, some updates to SNAP could include:

a. Information Sharing

Those eligible for SNAP are often eligible for other federal programs such as WIC, Medicare, or Medicaid. However, these programs can be complicated to determine eligibility and apply to. Improving data sharing between government agencies can allow for targeted outreach to eligible participants.

b. Better Funding

The SNAP program in general needs additional funding so all who are eligible can participate. In addition, the way benefits are calculated should be increased. The current formula grossly fails to cover food costs. When faced with limited resources, participants may choose cheaper, less healthy food to stretch the benefits further. By increasing the dollar amount going to participants, they can hopefully purchase healthier food.

c. Increase the income threshold to 200%

States have flexibility in determining eligibility requirements. Some states have increased their income threshold to 200% of the federal poverty level, the current upper level allowed under federal law. This helps more families access crucial benefits. All states should move to raise the threshold to 200%. In addition, some states have implemented phase-out programs as participants increase their income. This prevents a family from losing all benefits due to a modest increase in income.

d. Lift the savings threshold

One eligibility provision is that participants cannot hold assets above a certain threshold, \$2,500 for most families. This discourages families from saving, leaving them unable to cover an unexpected medical bill, for example. This threshold should be raised, to encourage families to build savings while still putting food on the table.

2. City Level Intervention

Expanded benefits that are easier for families to access is necessary, but they need to be able to spend it somewhere on healthy foods. As has been noted, communities of color are less likely to have brick and mortar supermarkets. Even with additional benefits, it can be difficult to access food without a car or store within walking distance. Starting in 2010, the city of Baltimore, which is 62% African American, took steps to address this and mitigate the lack of access to grocery stores.

Working with local authorities, private grocery stores, and other entities, the city offers residents a suite of options to improve access to food. A leading program is the Virtual Supermarket Program, which allows residents to place online orders from major supermarkets. The groceries are then delivered to common spots, such as senior housing, for residents to pick-up in their communities.

A study of the program found significant benefits. Many respondents said their biggest barrier to healthy food was a lack of transportation to and from the store, an issue the program successfully addressed. Of the respondents, 92% felt the program made it easier to eat healthy. Crucially, more than half also felt the program educated them on making better food choices.

The report found that the Virtual Supermarket Program “has demonstrated that online food stores and food delivery is a feasible, innovative model that may increase access to healthy foods and beverages in low-income underserved neighborhoods.” The report also offers advice for cities to build out their own similar programs, such as ensuring SNAP was fully integrated in the online ordering portal and having people from the community help participants shop online.

Access to Quality, Affordable Housing

Housing Challenges Facing Communities of Color

Given that we spend on average two thirds of our time at home, an individual's home can be one of the biggest social determinants of health. For vulnerable populations, housing factors can negatively impact their health. These include decades of racially discriminatory policies, such as redlining, that prevent minorities from owning property and essentially cordon them into lower-quality housing.

African American and Latino families are almost two times as likely to be housing burdened as Caucasian families. The U.S. Department of Housing and Urban Development defines this as spending more than 30% of your income on housing and having "difficulty affording necessities such as food, clothing, transportation, and medical care."

Discriminatory housing practices mean communities of color are less likely to own their own home and more likely to be renters. 20% of African American households, 16% of Latino households, and 18% of Indigenous households are classified as extremely low-income renters, compared to just 6% of Caucasian households.



Women in particular are at disproportionate risk of being housing burdened. Across the board, due to systemic discrimination, women earn less compared to men. They make up 66% of the low-wage job force and earn on average 80 cents on the dollar compared to men with greater disparities for minority women. Nearly a third of households headed by a woman live below the federal poverty line. This forces them to spend a higher proportion of their income on housing. 83% of households who use housing vouchers are headed by a woman.

Almost one in four renters spend over half their income on housing, squeezing budgets for health care and healthy food. It is only getting worse, with rent rising four times as fast as income. Minorities also face evictions, a deeply traumatic and stressful event, at higher rates. For example, African Americans make up one in five renters, but they receive a third of all evictions. There is also a significant disparity in the quality of housing. For example, only 2.8% of Caucasian Americans live in substandard housing, compared to 7.5% of African Americans. This can include poor ventilation, lead paint, and unsafe neighborhoods.

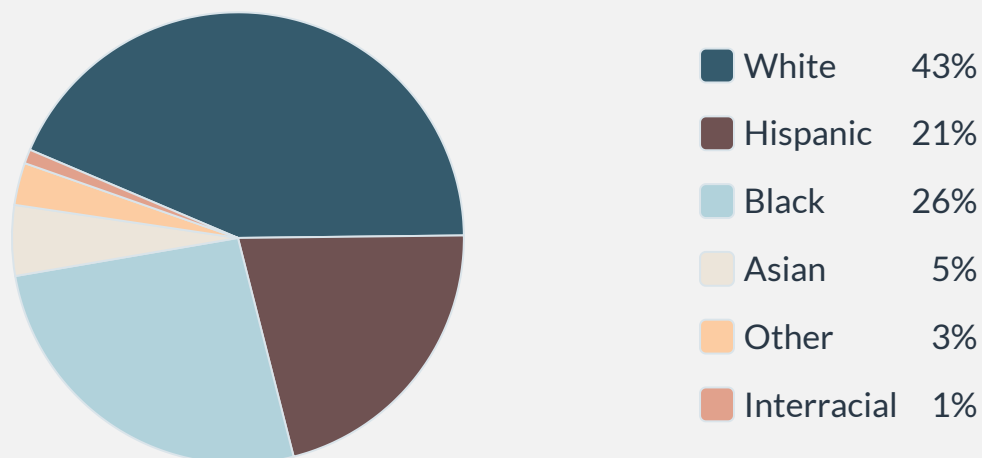
Impact of Housing Instability on Health

Unstable, unsafe, or unaffordable housing exacerbates nearly every health problem. Those in unstable housing situations are more likely to have health issues including anxiety, depression, and high blood pressure. Those with significant housing costs are more likely to cut back on food or health care to cover housing costs. These tough choices increase the toll on a person's mental health. They might be far from a doctor or unable to afford regular visits. Those who are unhoused are more likely to have a chronic disease and die earlier than those who are not homeless.

Due to a higher proportion of the population living in substandard housing, communities of color are at increased risk for additional health problems. A study by the American Public Health Association and the National Center for Healthy Housing lays out these significant health risks. Over 24 million homes have lead-based paint, which is particularly dangerous to children whose brains are still developing. Over 20,000 lung cancer deaths were due to radon in homes. Nearly a third of asthma cases were due to home conditions. Units may not have air conditioning or adequate heat, which can increase cardiovascular disease or cause death, especially in the elderly.

Neighborhoods also have an impact on health. According to a study by the Robert Wood Johnson Foundation, a "concentration of substandard housing in less advantaged neighborhoods further compounds racial and ethnic as well as socioeconomic disparities in health." If the neighborhood is unsafe, residents will be less likely to get exercise outside. They also are more likely to not have access to supermarkets and parks for outdoor recreation.

Americans Living in Unstable Low-Income Rental Housing



New Opportunities

Similar to food insecurity, the actions taken during the pandemic offer a window into what policies could be leveraged to help families facing housing instability. A federal eviction moratorium went into effect, removing the stress of paying rent for families who lost a job or were otherwise impacted. Nearly 20% of Latinos were unemployed in April 2020, as were 16.6% of African Americans and 13.7% of Asians, all higher rates than for Caucasians. Since women are more likely to be in low-wage jobs or bear childcare responsibilities, they also saw higher unemployment rates during the pandemic. From February to April 2020, the unemployment rate for women increased to more than 12%, compared to less than 10% for men.

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Additionally, Congress approved more than \$46 billion to help cover rent during the pandemic. When not faced with the choice of putting food on the table or skipping a doctor's appointment, were vulnerable populations able to make a choice that improved their health?

This is particularly intriguing given that three quarters of households that are eligible for federal renter's assistance do not receive help. Studies on a ten-year program offered by the U.S. Department of Housing and Urban Development (HUD), called Moving to Opportunity, found significant benefits associated with renters' assistance. The program provided a voucher and counseling to help families move to a neighborhood with less poverty.



Those who used the voucher to move to a better neighborhood were a third less likely to experience depression and had significantly lower rates of diabetes and obesity. In general, rental assistance is an effective way of helping families bridge the gap between what they can afford and safe housing. If federal rental assistance was expanded, what would the impact be on housing stability and overall health?

Solutions

Housing is incredibly personal. Many factors go into where a person chooses to live. This is true even and especially for those who are unhoused. Those experiencing housing instability may not trust the government or other institutions to follow through on promises to help. Therefore, when it comes to addressing housing instability it is particularly crucial to take a trauma-informed approach.

1. Congressional Champion

Rep. Cori Bush (D-Mo.) has been a tireless advocate for extending the rent eviction moratorium enacted during the pandemic. Rep. Bush knows firsthand how evictions are deeply traumatic for the entire family and can impact the ability to secure safe, affordable housing in the future. In summer 2021, Rep. Bush led a sleep-in protest on the steps of the U.S. Capitol after the moratorium expired. Following her advocacy, the Biden administration eventually reversed course and reinstated the ban, which was soon struck down by the courts. Rep. Bush has continued to lead on the issue, introducing legislation to codify the federal eviction moratorium and putting together a resource for those looking to tap into federal rental assistance.

2. Private Sector Partners

Health care companies have noticed the impact housing instability has on health outcomes. To combat rising costs and improve patient outcomes, they are seeing the benefit of investing in safe, affordable housing in their communities. For example, UnitedHealthcare has invested \$800 million in building 19,000 housing units. “The need for affordable housing and the connection between housing and health continues to be top of mind throughout the communities we serve,” said the CEO of UnitedHealthcare.

Hospitals have also seen that quality public housing is one way to lower costs and help patients. Those in safe housing need less care and are less likely to seek out the emergency room. Hospitals have also seen that quality public housing is one way to lower costs and help patients. Those in safe housing need less care and are less likely to seek out the emergency room. Kaiser Permanente has partnered with an affordable housing coalition in Oakland, California, to build affordable housing for patients with chronic conditions. Another program in Chicago takes a supportive housing approach, which provides financial assistance as well as wrap-around service. This is especially useful for unhoused populations who often face complex medical needs. For patients who frequently visited the emergency room prior to moving into a unit, the program saved hospitals \$6,000 per person a year.

Impact of Climate Change on Health

"Climate change is a threat multiplier. All the inequities that any community is facing, whether social, economic or health, climate change just compounds that."

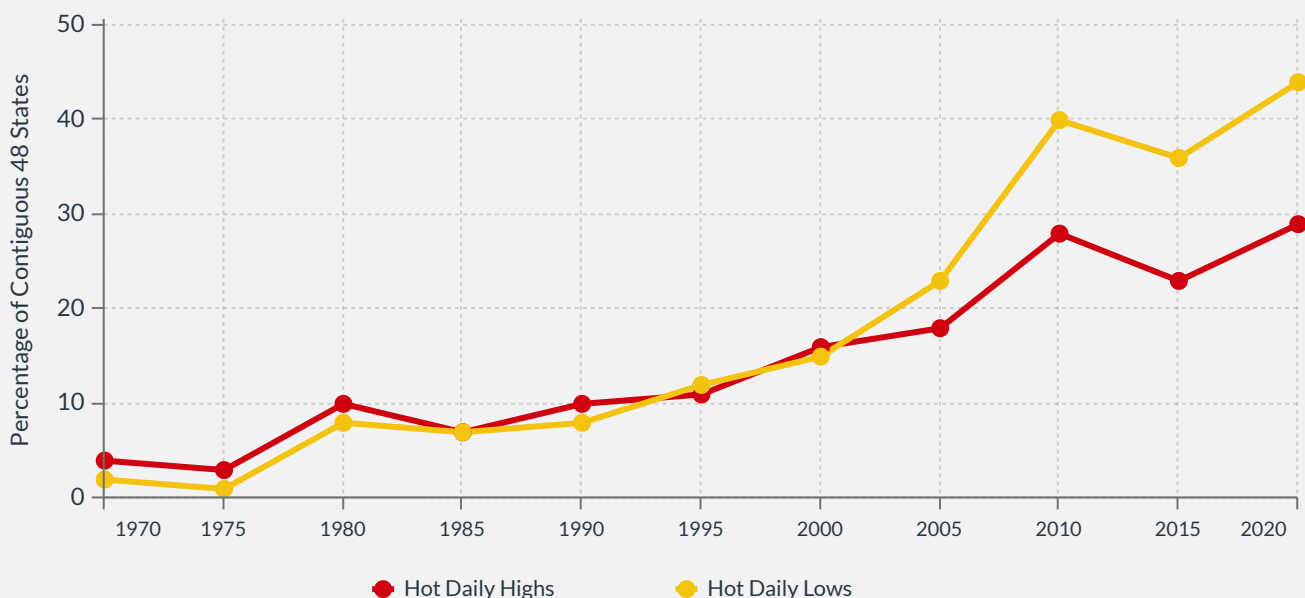
*-- Shamar Bibbins, Senior Program Officer
at the Kresge Foundation*

A new report from the Environmental Protection Agency (EPA) found that, out of multiple at-risk populations, minorities are the most likely to live in areas prone to the impacts of climate change. This means that, due to where they live and work, people of color are more likely to suffer health impacts due to climate change.

Climate change worsens health outcomes. For example, increased smog and pollution can cause asthma and make it worse. People of color are more than three times more likely to live in an area with unhealthy air. African Americans are 34% more likely than Caucasians to live in areas with the highest pollution-related asthma diagnoses. Latino children are twice as likely to die of asthma compared to Caucasian children.

People of color are also more likely to live near toxic, pollution-emitting facilities. According to the NAACP, "Race — even more than class — is the number one indicator for the placement of toxic facilities." 1.8 million Hispanics live within a half-mile of an oil or gas facility. Slightly fewer — 1.78 million — live in an area so polluted that the EPA designates it as a cancer risk.

Area of the Contiguous 48 States with Hazardous Summer Heat



Source: EPA, <https://www.epa.gov/climate-indicators/climate-change-indicators-high-and-low-temperatures>

Heat is the biggest weather-related killer every year. African Americans are up to 200% more likely to die of heat-related causes than Caucasians. Lower-income Americans, disproportionately people of color, are more likely to work in jobs that keep them outside. Extreme temperatures can cause health issues if they stay on the job or a loss in wages if they prioritize their health. Native Americans and Alaskan natives are more dependent on fishing and hunting for food – a way of life that is threatened by climate change.

The hurricanes, forest fires, tornados, and other inclement weather events that are now more prevalent than ever have an outsized impact in locations where minorities live. Other factors, such as lack of resources, make it harder for minority Americans to evacuate or stay safe during extreme weather events. African American residents had a mortality rate four times higher than White residents in New Orleans during Hurricane Katrina.



Maternal Health and Climate Change

The United States has a higher maternal death rate than nearly any other developed country, with African American, Hispanic, and Native American women faring worse than their White counterparts. African American women are three times as likely to die in childbirth or shortly after than Caucasian women. Tragically, there is also a link between both sustained climate change impacts, such as pollution and one-off extreme weather events, and poor outcomes for pregnant women, particularly minority women, including but not limited to African American, Hispanic, and Asian and Pacific Islander women.

A report found a link between repeated exposure to heat and pollution and adverse outcomes including preterm birth, low birth weight, stillbirths, and other defects. One of the highest at-risk subgroups was African American women, closely followed by Hispanic women and Asian and Pacific Islander women. Natural disasters can cause extreme stress to pregnant women and their unborn children, who may fear giving birth during a storm or have to flee their home while expecting. As these events become more frequent, more women of color will be affected.



Solutions

1. Congressional Champion

U.S. Representative Laruen Underwood (D-ILL.) has taken note of the impact climate change has on pregnant women. She has introduced the Protecting Moms and Babies Against Climate Change Act, which in part calls for additional research into the connection between climate change, maternal mortality, and adverse birth outcomes. This bill is part of the Black Maternal Health Momnibus Act that Underwood has worked on with Senator Booker.

2. Administration Spotlight:

The Biden administration is also addressing the link between climate change and the health of communities of color. In May 2022, the U.S. Department of Health and Human Services (HHS) launched an Office of Environmental Justice “to better protect the health of disadvantaged communities and vulnerable populations on the frontlines of pollution and other environmental health issues.” The new initiative is part of the Office of Climate Change and Health Equity, also launched by the Biden administration. These offices are tasked with identifying communities most exposed to climate change, taking action to blunt the impacts, and working within the health care system to decrease pollution and greenhouse gas emissions.

“The blunt truth is that many communities across our nation – particularly low-income communities and communities of color – continue to bear the brunt of pollution from industrial development, poor land use decisions, transportation, and trade corridors,” said HHS Secretary Xavier Becerra.

3. Build Back Better

Unlike tackling food inequity or unstable housing, it is difficult to take an immediate action on climate change that leads to better health for any given individual. The Biden administration and some in Congress have proposed bold actions on climate change in the Build Back Better plan. President Biden laid out a goal of cutting greenhouse gas emissions by at least 50% by 2030, crucial to stemming the impact of climate change on air quality and temperature. Rising temperatures are also a major contributor to the worsening hurricanes, fires, and other extreme weather events.

To achieve that goal, Build Back Better included \$555 billion to develop renewable energy sources and clean transportation options. This includes funding to install solar panels on roofs, tax rebates for electric cars, and incentives for power companies to shift to renewable energy sources. While there has been Congressional opposition, now is the time to double down to slow and hopefully reverse some of the worst impacts of climate change.

Conclusion

For vulnerable populations, social determinants of health (SDOH) have an outsized impact. As this paper lays out, the issues of food access, housing, and climate change directly relate to and feed into one another. Policymakers should recognize that impacting one can have ripple effects on the others. Helping cover part of someone's rent allows them to go to the doctor, pay for a medication, or make better food choices. Concentrated efforts to improve air quality can reduce asthma and encourage children to play outside. Efforts to do so should recognize that these issues impact communities of color at a disproportionately high rate.



However, as has been noted, many of these issues stem from decades of discrimination. Enacting meaningful change to improve the health of communities of color will require tackling larger, systemic issues at the heart of where people live, work, and play. The housing gap between African American and Caucasians is wider today than when fair housing laws went into effect. Fair Housing laws should be better enforced. Making it easier to apply for a loan, helping minorities access credit, and ensuring terms are equal to what Caucasian counterparts would receive are all places to start. Women need access to affordable child care.

All Americans have a right to lead healthy, safe lives. The initiatives laid out in this paper offer solutions to make that closer to reality for vulnerable populations. By addressing inequities in food and nutrition; lack of affordable, quality housing; and climate change, federal, state, and local policymakers, as well as the private sector, can improve the health of people of color.

References

- [1] Price, James H, et al. "Racial/Ethnic Disparities in Chronic Diseases of Youths and Access to Health Care in the United States." *BioMed Research International*, Hindawi Publishing Corporation, 2013, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3794652/>.
- [2] "Definitions of Food Security." *USDA*, <https://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-u-s/definitions-of-food-security/>.
- [3] Sevilla, Nina. "Food Apartheid: Racialized Access to Healthy Affordable Food." *NRDC*, 5 Apr. 2021, <https://www.nrdc.org/experts/nina-sevilla/food-apartheid-racialized-access-healthy-affordable-food>.
- [4] Health Equity Collaborative. "Coalition Letter: Greater Oversight and Accountability of Federal Relief Program Needed to Combat Food Insecurity." *Health Equity Collaborative*, 3 Dec. 2021, <https://healthequitycollaborative.org/coalition-letter-greater-oversight-and-accountability-of-federal-relief-program-needed-to-combat-food-insecurity/>.
- [5] Walljasper, Christopher. "Hunger Rose for U.S. Minorities, Children in 2020, despite Federal Pandemic Aid." *Reuters*, Thomson Reuters, 8 Sept. 2021, <https://www.reuters.com/article/us-usa-hunger-idCAKBN2G423J>.
- [6] Ziliak, James, and Craig Gunderson. "The State of Senior Hunger in 2018 ." *Feeding America*, <https://www.feedingamerica.org/sites/default/files/2020-05/2020-The%20State%20of%20Senior%20Hunger%20in%202018.pdf>.
- [7] Coleman-Jensen, Alisha, et al. "Household Food Security in the United States in 2015 ." *USDA*, <https://www.ers.usda.gov/webdocs/publications/79761/err-215.pdf>.
- [8] "Hunger Is a Racial Equity Issue." *Move For Hunger*, <https://moveforhunger.org/hunger-is-a-racial-equity-issue>.
- [9] Johnson-Green, Margaux. "Gender and Racial Justice in SNAP ." *National Women's Law Center*, <https://nwlc.org/wp-content/uploads/2020/10/Gender-and-Racial-Justice-in-SNAP.pdf>.
- [10] Hassanein, Nada. "'Extraordinarily Concerning': Type 2 Diabetes Is Soaring among Black, Hispanic Youth, Study Shows." *USA Today*, Gannett Satellite Information Network, 25 Aug. 2021, <https://www.usatoday.com/story/news/health/2021/08/24/type-2-diabetes-black-hispanic-youth-study/5572778001/>.
- [11] Jorss, Meredith. "Beyond Missing Meals: How Food Insecurity Affects Women." *No Kid Hungry*, <https://www.nokidhungry.org/blog/beyond-missing-meals-how-food-insecurity-affects-women>.
- [12] Johnson-Green, Margaux. "Gender and Racial Justice in SNAP ." *National Women's Law Center*, <https://nwlc.org/wp-content/uploads/2020/10/Gender-and-Racial-Justice-in-SNAP.pdf>.
- [13] Brooks, Kelly. "Research Shows Food Deserts More Abundant in Minority Neighborhoods." *The Hub*, 10 Mar. 2014, <https://hub.jhu.edu/magazine/2014/spring/racial-food-deserts/>.

- [14] Sevilla, Nina. "Food Apartheid: Racialized Access to Healthy Affordable Food." *NRDC*, 5 Apr. 2021, <https://www.nrdc.org/experts/nina-sevilla/food-apartheid-racialized-access-healthy-affordable-food>.
- [15] "Booker, Braun, McGovern, and Walorski Introduce Bipartisan, Bicameral Bill That Would Convene a White House Conference on Food, Nutrition, Hunger and Health." *U.S. Senator Cory Booker*, 26 Oct. 2021, <https://www.booker.senate.gov/news/press/booker-braun-mcgovern-and-walorski-introduce-bipartisan-bicameral-bill-that-would-convene-a-white-house-conference-on-food-nutrition-hunger-and-health>.
- [16] "Hunger Is a Racial Equity Issue." *Move For Hunger*, <https://moveforhunger.org/hunger-is-a-racial-equity-issue>.
- [17] Waxman, Elaine, et al. "How Far Do SNAP Benefits Fall Short of Covering the Cost of a Meal?" *Urban Institute*, 23 Feb. 2018, <https://www.urban.org/research/publication/how-far-do-snap-benefits-fall-short-covering-cost-meal>.
- [18] "Hunger Is a Racial Equity Issue." *Move For Hunger*, <https://moveforhunger.org/hunger-is-a-racial-equity-issue>.
- [19] "Improving Data Coordination between Snap and Medicaid." *Center for Health Care Strategies*, 12 July 2022, <https://www.chcs.org/project/improving-data-coordination-between-snap-and-medicaid/>.
- [20] Johnson-Green, Margaux. "Gender and Racial Justice in SNAP ." *National Women's Law Center*, <https://nwlc.org/wp-content/uploads/2020/10/Gender-and-Racial-Justice-in-SNAP.pdf>.
- [21] "Baltimore Population." *World Population*, <https://www.populationu.com/cities/baltimore-md-population#:~:text=Baltimore%20is%20the%20most%20populous,and%205.7%20percent%20are%20hispanics>.
- [22] Lagisetty, Pooja, et al. "A Multi-Stakeholder Evaluation of the Baltimore City Virtual Supermarket Program - BMC Public Health." *BioMed Central*, BioMed Central, 23 Oct. 2017, bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-017-4864-9.
- [23] "How Does Housing Affect Health?" *Robert Wood Johnson Foundation*, 1 June 2021, <https://www.rwjf.org/en/library/research/2011/05/housing-and-health.html#:~:text=Substandard%20housing%20such%20as%20water,increased%20risk%20of%20cardiovascular%20disease>.
- [24] "Housing Instability." *HealthyPeople.gov*, <https://www.healthypeople.gov/2020/topics-objectives/topic/social-determinants-health/interventions-resources/housing-instability>.
- [25] "Rental Burdens: Rethinking Affordability Measures ." *U.S. Department of Housing and Urban Development*, https://www.huduser.gov/portal/pdredge/pdr_edge_featd_article_092214.html

- [26] "Racial Disparities among Extremely Low-Income Renters." *National Low Income Housing Coalition*, 15 Apr. 2019, <https://nlihc.org/resource/racial-disparities-among-extremely-low-income-renters>.
- [27] "Women and Housing Factsheet." *Nevada County Habitat for Humanity*, <https://nchabitat.org/women-and-housing-factsheet/>.
- [28] "Gender and Racial Justice in Housing." *National Women's Law Center*, https://nwlrc.org/wp-content/uploads/2021/05/GenderRacialJusticeFSNLIHC_8pages-2.pdf.
- [29] Cantu, Tony. "US Rent Prices Rising Four Times Faster than Income." *Mortgage Professional*, 27 May 2022, <https://www.mpamag.com/us/news/general/us-rent-prices-rising-four-times-faster-than-income/407606>.
- [30] (Eviction Lab. "In a Typical Year, Landlords File 3.6 Million Eviction Cases." *Eviction Lab*, https://evictionlab.org/?utm_source=newsletter&utm_medium=email&utm_campaign=newsletter_axiosdeepdives&stream=top.
- [31] "Housing Affordability and Quality." *American Public Health Association*, https://apha.org/-/media/Files/PDF/pubs/Housing_Health_Community_Driver.ashx.
- [32] "Housing Affordability and Quality." *American Public Health Association*, https://apha.org/-/media/Files/PDF/pubs/Housing_Health_Community_Driver.ashx.
- [33] *National Healthy Housing Standard*. American Public Health Association and National Center for Healthy Housing, <https://nchh.org/resource-library/national-healthy-housing-standard.pdf>.
- [34] "How Does Housing Affect Health?" *Robert Wood Johnson Foundation*, 1 June 2021, <https://www.rwjf.org/en/library/research/2011/05/housing-and-health.html#:~:text=Substandard%20housing%20such%20as%20water,increased%20risk%20of%20cardiovascular%20disease>.
- [35] "Racial Disparities in Unemployment during the COVID-19 Pandemic." *Boston Fed*, <https://www.bostonfed.org/-/media/Documents/events/2021/racial-disparities-in-todays-economy/Racial-Disparities-in-Unemployment-during-the-COVID-19-Pandemic-and-Recovery.pdf?la=en>.
- [36] Bateman, Nicole, and Martha Ross. "Why Has Covid-19 Been Especially Harmful for Working Women?" *Brookings*, Brookings, 6 Jan. 2021, <https://www.brookings.edu/essay/why-has-covid-19-been-especially-harmful-for-working-women/#:~:text=ones%20at%20risk-,COVID%2D19%20is%20hard%20on%20women%20because%20the%20U.S.%20economy,%2C%20low%2Dwage%20and%20otherwise>.
- [37] "76% Of Low-Income Renters Needing Federal Rental Assistance Don't Receive It." *Center on Budget and Policy Priorities*, <https://www.cbpp.org/research/housing/three-out-of-four-low-income-at-risk-renters-do-not-receive-federal-rental-assistance>.

- [38] Bailey, Peggy. "Housing and Health Partners Can Work Together to Close the Housing Affordability Gap." *Center on Budget and Policy Priorities*, 17 Jan. 2020, https://www.cbpp.org/research/housing/housing-and-health-partners-can-work-together-to-close-the-housing-affordability#_ftn12.
- [39] "Housing Affordability and Quality." *American Public Health Association*, https://apha.org/-/media/Files/PDF/pubs/Housing_Health_Community_Driver.ashx.
- [40] Fandos, Nicholas. "With Capitol Sit-in, Cori Bush Galvanized a Progressive Revolt over Evictions." *The New York Times*, The New York Times, 4 Aug. 2021, <https://www.nytimes.com/2021/08/04/us/politics/cori-bush-eviction-moratorium.html>.
- [41] "Cori Bush, Elizabeth Warren Introduce the Keeping Renters Safe Act of 2021." *U.S. Rep. Bori Bush*, 21 Sept. 2021, <https://bush.house.gov/media/press-releases/cori-bush-elizabeth-warren-introduce-the-keeping-renters-safe-act-of-2021>.
- [42] Minemyer, Paige. "UnitedHealth Makes \$100M Investment in Affordable Housing." *Fierce Healthcare*, 8 Apr. 2022, <https://www.fiercehealthcare.com/payers/unitedhealth-makes-100m-investment-affordable-housing>.
- [43] "Enterprise and Kaiser Permanente Announce New Funds." *Enterprise Community Partners*, <https://www.enterprisecommunity.org/blog/enterprise-kaiser-permanente-announce-new-funds>.
- [44] Bailey, Peggy. "Housing and Health Partners Can Work Together to Close the Housing Affordability Gap." *Center on Budget and Policy Priorities*, 17 Jan. 2020, https://www.cbpp.org/research/housing/housing-and-health-partners-can-work-together-to-close-the-housing-affordability#_ftn12.
- [45] Grucza Ash Center for Democratic Governance and Innovation April 07, Sarah. "Climate Change a Multiplier for Racial Inequities Warns Panel." *Harvard Kennedy School*, 7 Apr. 2022, <https://www.hks.harvard.edu/faculty-research/policy-topics/environment-energy/climate-change-multiplier-racial-inequities-warns>.
- [46] "Climate Change and Social Vulnerability in the United States." *U.S. Environmental Protection Agency*, https://www.epa.gov/system/files/documents/2021-09/climate-vulnerability_september-2021_508.pdf.
- [47] "Key Findings: State of the Air." *American Lung Association*, <https://www.lung.org/research/sota/key-findings>.
- [48] "Climate Change and Social Vulnerability in the United States." *U.S. Environmental Protection Agency*, https://www.epa.gov/system/files/documents/2021-09/climate-vulnerability_september-2021_508.pdf.
- [49] "The Fight for Clean Air: The Latino Community at the Forefront." *League of United Latin American Citizens*
- [50] Freedman, Andrew. "Heat Wave to Set More Records from Midwest to the South This Week." *Axios*, 20 June 2022.

- [51] "An Introduction to Climate Change, Health, and Equity - Apha.org." *American Public Health Association*, https://www.apha.org/-/media/files/pdf/topics/climate/apha_climate_equity_introduction.ashx?hash=B40A6A0109D9C5474B7C7362176BEA9E9DFC16CC&la=en.
- [52] "Climate Change and Social Vulnerability in the United States." *U.S. Environmental Protection Agency*, https://www.epa.gov/system/files/documents/2021-09/climate-vulnerability_september-2021_508.pdf.
- [53] Brunkard, Joan, et al. "Hurricane Katrina Deaths, Louisiana, 2005." *Disaster Medicine and Public Health Preparedness*, U.S. National Library of Medicine, <https://pubmed.ncbi.nlm.nih.gov/18756175/#:~:text=Forty%2Dnine%20percent%20of%20victims,18%20years%20old%20and%20older>.
- [54] Renwick, Danielle. "The US Is Facing a Maternal Health Crisis. Climate Change Is Making It Worse." *The Nation*, 17 Mar. 2022, <https://www.thenation.com/article/environment/climate-change-maternal-health/?bblinkid=259270331&bbemailid=39113194&bbejrid=-1991684980>.
- [55] Bekkar, Bruce, et al. *Association of Air Pollution and Heat Exposure With Preterm Birth, Low Birth Weight, and Stillbirth in the US*. https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2767260?utm_source=For_The_Media&utm_medium=referral&utm_campaign=ftm_links&utm_term=061820.
- [56] Renwick, Danielle. "The US Is Facing a Maternal Health Crisis. Climate Change Is Making It Worse." *The Nation*, 17 Mar. 2022.
- [57] "Black Maternal Health Omnibus." *Black Maternal Health Caucus*, 15 Feb. 2022.
- [58] Chen, Shawna. "HHS Launches New Office Focused on Climate Risks to Underrepresented People." *Axios*, 31 May 2022, <https://www.axios.com/2022/05/31/hhs-environmental-justice-race-climate>.
- [59] Division, News. "HHS Establishes Office of Climate Change and Health Equity." *HHS.gov*, 7 Sept. 2021, <https://www.hhs.gov/about/news/2021/08/30/hhs-establishes-office-climate-change-and-health-equity.html>.
- [60] Chen, Shawna. "HHS Launches New Office Focused on Climate Risks to Underrepresented People." *Axios*, 31 May 2022, <https://www.axios.com/2022/05/31/hhs-environmental-justice-race-climate>.
- [61] Sommer, Lauren. "What Losing Build Back Better Means for Climate Change." *NPR*, NPR, 20 Dec. 2021, <https://www.npr.org/2021/12/20/1065695953/build-back-better-climate-change>.
- [62] Salmon, Felix. "Why the Racial Homeownership Gap Persists." *Axios*, 19 Dec. 2020, <https://www.axios.com/2020/12/19/hard-truths-deep-dive-housing-racial-homeownership-gap>.