

POLICY BRIEF

MOVING UPSTREAM: POLICY STRATEGIES TO ADDRESS SOCIAL, ECONOMIC, AND ENVIRONMENTAL CONDITIONS THAT SHAPE HEALTH INEQUITIES

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TABLE OF CONTENTS

Introduction.....1

Part I: Economic and Social Conditions That Impact Health.....1

1. Child and Youth Development and Education1

1.1 *Early Childhood Development*.....2

1.2 *Education*2

2. Economic Development3

2.1 *Training Incentives*.....4

2.2 *Entrepreneurship Training*.....4

2.3 *Enterprise Zones*.....4

2.4 *Empowerment Zones and Renewal Communities*.....4

3. Poverty Reduction.....5

3.1 *Increasing Economic Resources for Those in Poverty*5

3.2 *Buffering the Negative Health Consequences of Poverty*6

Part II: Living and Working Conditions That Impact Health.....7

4. Healthy Homes7

4.1 *Integrated Pest Management*.....7

4.2 *In-Home Tailored Interventions for Asthma*8

4.3 *Smoke-Free Policies*8

4.4 *Lead Hazard Control*.....9

4.5 *Tenant-Based Rental Assistance Programs*.....9

5. Healthy Neighborhoods10

5.1 *Spaces to Play and Exercise*.....11

5.2 *Access to Healthy Foods*.....11

5.3 *Violence Prevention*.....13

Conclusion14



FOREWORD

Public health researchers and practitioners increasingly recognize that social, economic, and environmental conditions in communities and settings where people live, work, and play powerfully shape health. The fact that these kinds of conditions are often systematically poorer in communities of color is a major determinant of racial and ethnic health inequities. Majority-minority communities are more likely than majority-white communities to face environmental health risks, such as those brought about by polluting industries and waste. They are less likely to have safe spaces for exercise and recreation. And they often face a poorer retail food environment, with fewer vendors selling fresh, low-cost fruits and vegetables and a heavier concentration of unhealthy foods such as fast foods and highly-processed, high-fat convenience products. These kinds of community conditions make it difficult for people to maintain healthy behaviors and reduce risks for disease and illness.

While many of these problems have persisted for years, if not generations, they are not intractable. A number of promising policy strategies can help to address the heavy concentration of health risks in communities of color, while at the same time building upon community strengths to improve access to health-enhancing resources and create healthier communities. Many of these policy strategies lie outside of the healthcare arena, in sectors such as housing, transportation, land use, economic development, and education. Expanding opportunity in these sectors often can have important health benefits, and can be more cost-effective in reducing health inequities than by trying to solve these problems through the provision of health care or individual education or awareness efforts alone.

This policy brief, “Moving Upstream: Policy Strategies to Address Social, Economic, and Environmental Conditions that Shape Health Inequities,” identifies some of the policy strategies that are being studied and implemented in communities across the country. Prepared by Bryant Cameron Webb, a rising leader in medicine and health policy, we expect that this brief will be useful for policymakers, public health practitioners, community organizations, researchers, and others committed to improving the health of people of color and eliminating health inequities. This analysis furthers the Joint Center’s long history of work to identify solutions to some of our nation’s most pressing policy issues, and ensure that people of color can continue to contribute to the fullest extent to the rich social, economic, and political life of the nation.

Ralph B. Everett, Esq.

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INTRODUCTION

Many racial and ethnic minorities in the United States experience a disproportionate burden of disease when compared to their white counterparts. These disparities have been consistently documented in a range of health conditions including asthma, diabetes, hypertension, and HIV infection, as well as infant mortality and deaths from coronary heart disease and stroke. There are similar disparities in the various factors that are known to influence health. These “social determinants of health” include social and economic factors, social support networks, physical and social environments, access to health services, and social and health policies.¹ Research indicates that social and economic conditions are more powerful in determining who is healthy and who is sick than access to medical care, genetic endowment, or other factors.²

Social, economic, and environmental conditions often vary by income and by race and ethnicity to create or contribute to inequities in health. For example, racial and ethnic minorities such as African Americans and Latinos are more likely than whites to live in neighborhoods with a high concentration of poverty, even when they possess the same income and education levels as whites.³ The differences observed in neighborhood conditions, work conditions, education, and income are examples of well-studied social factors that are associated with inequitable health outcomes.⁴ Because each of these factors is socially constructed, the policymaking process that helps to shape our society emerges as an appropriate tool for redress.

A number of evidence-based policy strategies have been described to reduce the disparities in health status and the social determinants of health. In the brief that follows, we review this evidence base and identify promising policy solutions. In Part I, we review some of the leading economic and social factors that impact health, such as early childhood development and education, economic development, and poverty reduction. In Part II, policies are described that address living and working conditions, such as unhealthy homes and neighborhoods. It is our hope that this brief can be used by many stakeholders—including policymakers, scholars, advocates, community members, and elected officials—to assist them in their efforts to eliminate health disparities.

PART I: ECONOMIC AND SOCIAL CONDITIONS THAT IMPACT HEALTH

Access to economic resources, including income and wealth, reflect access to material goods and services. Many longitudinal studies have demonstrated that economic resources predict health, even after adjusting for education.³ Additionally, the existence of inequalities in income between racial and ethnic groups have also been independently linked to disparate health outcomes.⁵

Just as depressed access to economic resources increases the burden of illness on individuals and groups, *social* disadvantage is also correlated with worse health outcomes. The literature is particularly extensive and persuasive on the impact of disadvantaged early childhood experiences on health. Additionally, a number of pathways link educational attainment to health. These include the relationship between education and social standing, employment opportunities, and health literacy—each of which subsequently exerts an impact on health outcomes.

While just over 8 percent of whites in the United States lived below the federal poverty level (FPL) in 2009, that percentage is much higher for racial and ethnic minorities: 19 percent for Hispanics and 20.6 percent for blacks.⁶ Moreover, while 9 percent of whites in the United States did not complete high school in 2009, the dropout rate was twice as high for blacks (18.1 percent) and reached over one-third for Hispanics.⁴ With such dramatic differences in education and income—and in light of the known impacts of poverty and low educational attainment on health—several policy approaches have been developed to eradicate these disparities among disadvantaged populations.

1. CHILD AND YOUTH DEVELOPMENT AND EDUCATION

Adequate early childhood development and education are strongly correlated with health in adulthood. Typically described as interventions in children from birth to age 5, three policy strategies have been found to have sufficient evidentiary support to warrant their broad implementation.

1.1 Early Childhood Development

Five socioeconomic and demographic risk factors are correlated with healthy child development. These include poverty, single-parent household, low parental educational attainment, large family size, and the inability to buy or own a home.⁷ Unfortunately, 7 percent of American children experienced either four or all five of these factors, with minority and low-income children disproportionately represented in that group. These children are considered at higher risk for developmental problems because of their social circumstances. Two strategies have been recommended to address their needs.

Home Visiting

The 2009 Home Visiting Evidence of Effectiveness (HomVEE) review, conducted under the guidance of a U.S. Department of Health and Human Services (HHS) interagency working group, identified several models of home visitation that had favorable impacts on child development. Home visitation is defined as a program that includes visitation of parent(s) and child(ren) in their home by trained personnel who convey information about child health, development, and care; offer support; provide training; or deliver any combination of these services.⁸ Consistent success was seen in *high-intensity programs*—programs that lasted for greater than one year and consisted of at least one visit per week. The review found that these programs were associated with improved parenting and children's socio-emotional and cognitive development, as well as less risky adolescent behaviors among participating children. Home visiting programs for at-risk mothers and children yielded savings of greater than two dollars for every dollar invested, making them a very high-yield, budget-positive policy when implemented appropriately.⁹

Because research has shown that home visiting programs improve outcomes for children and families, HHS announced in September 2011 that it would provide \$224 million to help at-risk families receive home visitation services under evidence-based models. Seven home visiting models met the HHS criteria: Early Head Start-Home Visiting, Family Check-Up, Healthy Families America (HFA), Healthy Steps, Home Instruction for Parents of Preschool Youngsters (HIPPI), Nurse Family Partnership (NFP), and Parents as Teachers (PAT).¹⁰ Localities looking to implement a home visitation program—particularly in the context of the available federal funding—should look to these models as a starting point for planning.

Family Income Supplementation

The National Opinion Research Center (NORC) at the University of Chicago found sufficient evidence for the recommendation of family income supplementation to achieve better child health, development, and academic achievement.⁹ Income supplementation is the provision of cash or in-kind benefits in the form of food, housing, medical services, or child care. Increasing family economic resources through the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), subsidized school breakfast and lunch, and home energy assistance all have been shown to reduce family financial burdens and are positively related to child well-being. For example, the federal Earned Income Tax Credit (EITC) for low- and middle-income working families with children was credited with improvements of 2.1 percent and 3.6 percent of a standard deviation for children's math and reading test scores, respectively, with supplementation of \$1000. Additionally, experimentally designed income supplement programs have demonstrated these positive child health or developmental impacts. For example, in the 1990s New Hope program in Milwaukee, participating children demonstrated improved behavior and improved academic achievement.¹¹

1.2 Education

The 2003 Program for International Student Assessment survey of 15-year-olds in all 29 Organization for Economic Cooperation and Development (OECD) countries showed that American students on average ranked 24th on measures of mathematics literacy and problem solving.¹² While disaggregated statistics showed that white and Asian American children performed at or above the OECD average, Hispanic and black students' scores were significantly lower, with blacks' scores the lowest of all.¹³ These relative standings have not changed in at least a decade despite a range of efforts within the school systems themselves. This lends some credence to the contention that the problem lays primarily outside of the schools themselves and that the remedy must begin before children reach kindergarten.

Studies have directly linked development in early childhood with academic achievement.¹⁴ Because high-quality early childhood development interventions can ameliorate the effects of social disadvantage on children's cognitive development, policymakers must begin at this stage to augment the education-related

TABLE 1: EVIDENCE-BASED POLICIES TO PROMOTE CHILD AND YOUTH DEVELOPMENT AND EDUCATION

Category		Policy Recommendation
1.1	Early Childhood Development	Home Visiting Create and sustain high intensity home visiting programs conducted by trained individuals and consistent with the seven HHS program models.
		Family Income Supplementation Provide additional economic resources through local, state, or federal programs to low- and middle-income families to achieve better child health, development, and academic achievement.
1.2	Education	Comprehensive Early Childhood Development Programs Support publicly funded, center-based, comprehensive programs for children aged 3 to 5 years to prevent delay of cognitive development and increase readiness to learn.

impacts on health. The first five years of life appear to be the most critical—a finding echoed by the evidence base below.

Comprehensive Early Childhood Development Programs

The Task Force on Community Preventive Services recommends publicly funded, center-based, comprehensive early childhood development programs for low-income children aged 3 to 5 years.¹⁵ These programs have been shown to be effective in preventing delay of cognitive development, as well as increasing readiness to learn. The recommendation that such programs be “center-based”—or based in a public school or child development center—is due to the value of providing an alternative physical and social environment to the child’s home. Children participating in these programs were 13 percent less likely to be held back and 14 percent less likely to be in special education programs. An example of such a program is Head Start, administered by HHS. A longitudinal analysis found that children enrolled in Head Start for greater than a year were up to twice as likely to have higher levels of educational attainment than children with no preschool.¹⁶

There is a large body of research on the correlation between level of education and health; however, there were no generalizable, evidence-based strategies for improving educational attainment beyond investments in early childhood development programs.¹⁷ Studies have quantified health benefits of smaller class size, finding that reducing class sizes in kindergarten through third grade appears to be a cost-effective way to improve health in quality-adjusted life years.¹⁸ Still, there are strong disagreements

in the literature regarding the direct health effects of various other educational interventions.

2. ECONOMIC DEVELOPMENT

Though the “Great Recession” that began in 2007 has had a serious financial impact on the entire country, the implications for minority communities have been particularly harrowing. In November 2011, the unemployment rate for whites fell to 7.6 percent after peaking at just over 9 percent in October 2009. Meanwhile, the November 2011 unemployment rate for blacks was more than twice that for their white counterparts at 15.5 percent. The unemployment rate for Hispanics at that time was also higher than average, at 11.4 percent.¹⁹ While surviving without employment income is certainly a monumental task for individuals and families, the concentration of this effect in certain communities all but dooms these areas to a cycle of hardship.

Unemployment correlates to health disparities through two pathways. First, the lack of income often places unemployed individuals at a greater risk of poverty and income inequalities, both of which are correlated with decreased health. Additionally, unemployment in the United States is strongly correlated with a lack of health insurance, leaving individuals without access to necessary health services. Efforts to promote economic development at the local, state, and federal level can be helpful in reducing these inequalities in employment and the economic well-being of minority communities.

2.1 Training Incentives

In order to increase the number of jobs in low-income communities, states can provide customized job training to help individuals gain skills necessary for employment. In doing so, new or expanding businesses would be provided with free training, typically provided by community colleges, that is customized to the individual business's needs for worker skills. These customized job-training efforts are sometimes tied to efforts to hire unemployed local residents. Focusing the efforts in minority or distressed communities could serve the dual purposes of decreasing the unemployment rate and investing in the education of the community. Additionally, while tax incentives are frequently used to attract businesses to an area, customized job training incentives are 10 to 16 times more effective in jobs created per dollar of incentives than tax incentives.²⁰

2.2 Entrepreneurship Training

A second economic development policy strategy that would have a downstream health benefit is entrepreneurship training. Entrepreneurship programs provide training in developing business, marketing, and financing plans. These programs are known to result in an increase in the number of business start-ups locally, which can also have a positive impact on the state economy. At the same time, they can decrease unemployment and provide skills training for disadvantaged populations. The evidence base for these programs is regarded as the most scientifically rigorous of all economic development policies, and is consistently verified as good economic development policy.²²

2.3 Enterprise Zones

Place-based initiative programs, referred to as enterprise zones, have been used in the economic development policy of 43 states.²¹ These enterprise zones are intended to encourage investment and economic growth in distressed communities through tax and regulatory relief to entrepreneurs and investors who launch businesses in the area. Central to the goals and functions of enterprise zones is the ultimate increase of the well-being of the communities and families inside the zone boundaries. Despite the popularity of enterprise zones as an economic development tool, there is great variation in the success of, and commitment to, these programs across the country.²²

Academic reviews of enterprise zones have found little evidence that enterprise zone programs actually result in net job creation and increased community investment. Yet comprehensive reports by several states indicate that such programs have been successful in meeting their stated goals. Still, in some communities and states, enterprise zones have been successful in producing significant cost-effective employment growth.²⁵

2.4 Empowerment Zones and Renewal Communities

Beginning in 1993, Congress established the Empowerment Zone (EZ) and Renewal Community (RC) programs to reduce unemployment and generate economic growth in selected census tracts. Distressed communities with the EZ or RC designation receive tax incentives to help them achieve economic change through strategic vision, community-based partnerships, and sustainable community development. By December 2011, there were a total of 30 designated EZs and 40 designated RCs. Of those 70 designated communities, 58 were in urban areas, with the 12 rural sites all designated as RCs.

A 2008 report by the U.S. Department of Housing and Urban Development (HUD) captured some of the successes in these EZs and RCs. According to the report, in communities across the country businesses were indeed moving into communities on account of EZ and RC tax incentives—incentives ranging from wage credits and deductions to bond financing. Additionally, businesses were noted to be advancing with financial and technical assistance. The report also detailed the impact on families and communities. Features of 14 communities detailed how they were advancing with job creation, training, and assistance, while families improved with community services and housing and homeownership assistance. On the whole, these case studies seemed to indicate that the majority of the designated EZ and RC communities were seeing the desired impact of the initiative.²³

Based on the success of the program and the economic challenges facing states and localities, President Obama signed the Tax Relief, Unemployment Insurance Reauthorization, and Job Creation Act of 2010 (Public Law 111-312) on December 17, 2010. Sections 753 and 754 of this law extended the designations of the 30 EZs through December 31, 2011.

TABLE 2: EVIDENCE-BASED POLICIES TO PROMOTE ECONOMIC DEVELOPMENT

Category		Policy Recommendation
2.1	Training Incentives	Provide customized job training as an incentive for new or expanding business to come to the region. This not only brings jobs to the region, but provides adult education and training to the population.
2.2	Entrepreneurship Training	Provide training in developing business, marketing, and financing plans for aspiring entrepreneurs. Create new small businesses that add to local economy, as well as decrease unemployment and provide skills training.
2.3	Enterprise Zones	Encourage investment and economic growth in distressed communities through tax and regulatory relief to entrepreneurs and investors who launch businesses in the area.
2.4	Empowerment Zones & Renewal Communities	Provide tax incentives to help achieve economic change in distressed communities through strategic vision, community-based partnerships, and sustainable community development.

3. POVERTY REDUCTION

One in five black and Hispanic individuals in the United States lives below the federal poverty level. Family income during childhood, in particular, has been found to be a significant predictor of adult health even after controlling for prior health status.²⁴ Unfortunately, longitudinal studies have demonstrated the role of economic resources, or the lack thereof, as a predictor of health. This correlation persists even after adjusting for education. A number of evidence-based strategies for raising the income of the poor could lead to corresponding improvements in health outcomes.²⁵

3.1 Increasing Economic Resources for Those in Poverty

Studies show that increasing economic resources for those in poverty helps to improve their health outcomes. This is particularly true for children. The benefits associated with improved health accrue not only to these individuals, but also to society at large. Three strategies are described below: increasing income through education, transfer programs, and living wage ordinances.

Education

Earlier sections have described evidence-based policies to improve educational outcomes—specifically through early childhood and youth development and education. Greater educational attainment has been linked to lower rates of unemployment, as well as higher compensation. Just as education impacts employment, employment opportunities,

in turn, impact income. This manifests as a benefit to minority communities in the form of better housing, access to more desirable neighborhood conditions, better nutrition, and lower stress. These factors, both independently and collectively, demonstrate the primacy of improving educational outcomes to impact income and subsequently health.

Transfer Programs

Programs such as Temporary Assistance for Needy Families (TANF), Supplemental Security Income (SSI), the Supplemental Nutrition Assistance Program (SNAP), and WIC operate at the federal or state level to increase economic resources for those in poverty. For an impoverished family of three, the increase in income ranges from nearly \$150 per month for WIC, roughly \$300 per month for SNAP, and up to \$900 for TANF.^{26,27,28} Studies have shown that additional financial resources for those in poverty is linked with—among other things—improved health outcomes.² These studies, however, have thus far been relatively short run. With little evidence that short-term income improvements will have large health benefits, longitudinal studies must still be developed to determine the potential for long-term investments in raising incomes to improve health over generations.

Living Wage Ordinances

A report by the Economic Policy Institute on the economic impact of local living wages found that living wage laws benefit working families with few or no negative effects, while raising productivity and decreasing turnover among affected employers.²⁹ A living wage is the minimum hourly income necessary for a worker to meet basic needs—whether determined

TABLE 3: EVIDENCE-BASED POLICIES TO REDUCE POVERTY

Category		Policy Recommendation
3.1	Increase Economic Resources for Those in Poverty	Transfer Programs Increase income for families in poverty, resulting in improved health and development outcomes for children.
		Living Wage Ordinances Raise minimum wage to equal either the federal poverty level or a calculated cost of living for the community.
3.2	Buffer Negative Health Consequences	Health Insurance Subsidize health insurance based on income to ensure access to needed health care services by all individuals, particularly those in poverty.

by a calculation of average expenses or derived from the federal poverty level. Since the first living wage ordinance was passed in Baltimore in 1994, over 140 other ordinances have also been enacted.³⁰ Beyond the impact on the workers receiving a living wage (which is typically \$3 to \$7 above the federal minimum wage), studies have demonstrated that living wage laws have small to moderate effects on municipal budgets, with the budgetary costs averaging one-tenth of 1 percent of the overall budget.²⁴

Despite the evidence supporting transfer programs and living wage ordinances as mechanisms to reduce poverty and improve health, several unanswered questions remain in the literature. First, it is uncertain as to whether there are distinguishing health impacts of temporary income versus effects related to permanent increases in income. For instance, temporary increases may actually be associated with more harmful behaviors in the short term, such as increased affordability of fast food, cigarettes and alcohol. On the other hand, permanent increases in income may improve a person's prospects for the future and lead to increased incentives to invest in their longevity. Additionally, more research needs to be conducted on the optimal life course stage for income-related interventions. While increasing evidence suggests the importance of family income during early childhood as a determinant of health in later life, the effects of adult income on adult health seem much weaker. Finally, identifying the role of income as a determinant of health in environments with strong safety nets is important for clarifying the interaction between multiple policy initiatives.

3.2 Buffering the Negative Health Consequences of Poverty

In addition to reducing poverty through increasing income, another mechanism for poverty reduction is through mitigating the health risks associated with poverty. Though a variety of buffers have been proposed to help protect individuals in poverty from the negative health consequences of their higher exposure risks, we will focus our discussion on the role of health insurance. In the U.S. health care system, being insured has become largely synonymous with having access to care. Of the range of interventions to offset exposure risks associated with poverty, obtaining health insurance has been described as the most important of these, the best studied, and the one with the largest welfare impact.³¹

A lack of health insurance can have a serious impact on an individual's health. Those who are uninsured often postpone seeking care, have difficulty obtaining care when they ultimately seek it, and may face non-discounted health care costs. With prolonged periods without insurance, these factors accumulate over time, leaving individuals at great risk for suboptimal health care and depressed health status.

A noteworthy example of a policy aimed at increasing insurance is found in the Patient Protection and Affordable Care Act. Effective in 2014, "health reform" will expand Medicaid eligibility to all Americans at or below 133 percent of FPL. This expansion raises the bar for all states' eligibility requirements, and it includes additional federal payments to help offset the increase in state Medicaid enrollees. It is estimated that Medicaid expansions will extend coverage to nearly one-quarter of the

nation's poorest individuals, particularly in states with the most restrictive eligibility at present. With Texas, Alabama, and other Southern states setting their income eligibility for Medicaid at less than 20 percent of FPL, this provision will greatly expand coverage for individuals in these states—a large number of whom are members of racially and ethnically diverse groups.³²

PART II. LIVING AND WORKING CONDITIONS THAT IMPACT HEALTH

As the health equity movement took shape, those leading the charge sought consistent messaging rooted in research. Few messages resonated as much as the headline of an April 23, 2009 article in the Huffington Post: “Why Your Zip Code May Be More Important to Your Health Than Your Genetic Code.”³³

The phrase aptly describes the all-important role of living and working conditions on the health of all populations, as well as the centrality of these conditions on the persistence of health disparities. Place, it turns out, truly matters. Unfortunately, the environments where many minority community members “live, learn, work, play, eat and pray” are too often the insidious cause of their illnesses.

Unhealthy housing and neighborhood conditions are among the most proximate and well-defined threats to the health of disadvantaged communities. Through the identification of the specific threats, however, residents, organizers, and policymakers are able to propose and implement thoughtful solutions to the problems that disproportionately plague their communities. Below, we describe a range of housing and neighborhood policies to help optimize living and working conditions for health.

4. HEALTHY HOMES

The Centers for Disease Control and Prevention (CDC) defines unhealthy housing as the presence of characteristics that might negatively affect the health of its occupants.³⁴ These characteristics include evidence of rodents, water leaks, peeling paint in homes built before 1978, and absence of a working smoke detector. Analyzing data from the 2009 American Housing Survey, the CDC found that over 28 percent of blacks lived in unhealthy housing units, totaling nearly 4 million housing units.²⁸ An additional 3 million housing units occupied by Hispanics were considered unhealthy as well.²⁸ Both blacks and Hispanics were

found to be more likely than their white counterparts to live in unhealthy housing.²⁸ Additionally, the CDC acknowledged that unhealthy housing disproportionately affects the populations that have the fewest resources.²⁸ The agency called for substantial actions to reduce the overall proportion of unhealthy housing among these persons.

The presence of rodents and mold in such unhealthy houses can manifest as a health problem in the form of asthma. Not surprisingly, racial and ethnic minority and low-income children experience a disproportionate burden of asthma. While the overall prevalence of asthma was 9.3 percent, current asthma prevalence is higher among Puerto Rican Hispanics (18.4 percent), blacks (14.6 percent), and the multiracial (13.6 percent) than among whites (8.2 percent).³⁵ Poor children, Puerto Rican children, multiracial children, and non-Hispanic black children had higher asthma prevalence (23.3 percent, 21.1 percent, and 15.8 percent, respectively) than poor non-Hispanic white children (10.1 percent).²⁹ Observed differences in asthma prevalence among certain demographics and socioeconomic groups have been somewhat attributed to higher levels of exposure to environmental irritants (e.g., tobacco smoke or air pollutants) and environmental allergens (e.g., house dust mites, cockroach particles, cat and dog dander, and mold).²⁹

The impact of the disproportionate burden of unhealthy housing is apparent. Among children aged 5 to 17, asthma is the leading cause of school absences from a chronic illness.³⁶ It accounts for an annual loss of approximately eight days for each student with asthma, as well as more hospitalizations than any other childhood disease.³⁰ Given the significant and disproportionate impact on the health and education of minority children, it is all the more imperative that preventable, housing-related causes of asthma be prevented. This section describes strategies to augment both the prevalence of asthma based on housing interventions as well as other efforts to achieve healthier housing.

4.1 Integrated Pest Management

Integrated Pest Management (IPM) is a system that controls pests through denial of access, harborage, food, and water; resident education; and use of the least toxic pesticides.³⁷ When incorporated into housing policy as an effort to ensure healthy housing, IPM can help to reduce asthma rates in children. IPM has been studied for both cockroaches and rodents.

Cockroaches

The IPM approach to cockroach management has several elements. It includes carefully assessing the presence and location of roaches, removing food sources through proper food storage and cleaning, educating residents, repairing structural defects that allow roaches to gain access, applying low-toxicity gel-bait pesticides as needed, and monitoring and continuing intervention until roaches are eliminated.³⁸

Three randomized controlled studies have demonstrated the effectiveness of IPM in reducing exposure to cockroaches.^{39,40,41} A fourth study showed a modest benefit on clinical outcomes, though it was an intervention that addressed other allergens besides cockroaches alone.⁴²

Rodents

There is less statistical confirmation of the effectiveness of IPM for reducing exposure to rodent allergens. A small study showed no significant improvement in asthma symptoms or forced expiratory volume but did show a significant decline in mouse allergen levels.⁴³

Although IPM is a strategy to improve health, it is not a true health policy alone. The job of incorporating this strategy for healthier housing into housing policy is left to activists and policymakers. The strategy itself has been proven to work, but it requires a policy vehicle to be truly incorporated into practice. This could be accomplished, for example, as a provision in a resident landlord and tenant act, or as a requirement for HUD subsidies in public housing. In any case, economic incentives or financial penalties could be promising drivers to encourage adoption of this and other evidence-based strategies for healthier housing.

4.2 In-Home Tailored Interventions for Asthma

Home-based interventions that use a multifaceted approach to help residents decrease exposure to multiple asthma triggers are effective in reducing exposure, decreasing asthma symptoms and short-term health care use, and improving quality of life. These interventions tailor activities to triggers found in an individual's home or to which the individual is sensitized.³²

Interventions include home environmental assessment by trained personnel, education about the home environment, use

of mattress and pillow covers, use of high-efficiency particulate air (HEPA)—or equivalent—vacuums and HEPA air filters, smoking cessation and reduced environmental tobacco smoke exposure, cockroach and rodent management, minor repairs, and intensified household cleaning. These types of multitier, multicomponent environmental interventions have been strongly recommended for children to improve symptom control and reduce missed days of school.³²

Based on 23 studies reviewing the effectiveness of in-home tailored interventions for asthma, there was a median decrease of 21 asthma symptom-days per year among children and adolescents. Additionally, there was a median decrease of 12 school days missed per year. The findings of these studies were most applicable in the homes of U.S. urban minority children. In the different analyses, a wide range of organizations led effective interventions, including state and local health departments, health care systems, and community organizations.⁴⁴

4.3 Smoke-Free Policies

While the health impact of smoking is well documented for smokers, it is often regarded as a personal decision and simply a negative health behavior. The impact of smoking on nonsmokers by proximity, however, is a public health issue. Exposure to secondhand smoke (SHS) can cause asthma in children who have not previously exhibited symptoms.⁴⁵ Additionally, it places children at increased risk of pneumonia and bronchitis, as well as middle ear infections.³⁹ Exposure to SHS has been shown to cause lung cancer in adults who do not smoke.³⁹ The Environmental Protection Agency (EPA) estimates that exposure to SHS causes approximately 3,000 lung cancer deaths per year in nonsmokers.³⁹ Additionally, exposure to SHS has been shown to increase the risk of heart disease.³⁹ Due to these serious health consequences of SHS for nonsmokers, smoke-free home policies have been recommended to help mitigate the risks.

Bans on Smoking in the Home

Three conclusions have been drawn from the literature regarding the impact specifically on children that accompany bans on smoking in the home. First, bans on smoking in the home reduce exposure of children to SHS. In so doing, these bans serve as another means of reducing the prevalence of asthma in children, as well as reducing the risk for the other SHS-associated child illnesses mentioned above. Second, smoke-free home policies

are shown to reduce adult smoking. Finally, there is strong evidence that smoke-free home policies reduce youth smoking.⁴⁶ The combination of the second and third conclusions from the evidence base suggest that bans on smoking in the home would have the effect of preventing future smoking-related illness due to the impact on deterring smoking initiation in youths and cessation of smoking among adults.

Lessons From Bans on Smoking in Public Areas

Beyond the home, evidence-based policy strategies have been presented to protect nonsmokers from the health effects of SHS. The literature clearly establishes that separating smokers from nonsmokers, cleaning the air, and ventilating buildings cannot effectively eliminate exposures of nonsmokers to SHS.⁴⁷ Instead, only eliminating smoking in indoor spaces fully protects nonsmokers from secondhand smoke exposure.³¹ Regarding outcomes, the Institutes of Medicine (IOM) found sufficient evidence for a causal relationship between smoke-free laws and decreases in acute coronary events. The IOM further concluded that eliminating smoking in indoor spaces fully protects nonsmokers from SHS exposure.⁴⁸

Based on the effectiveness of smoking bans in a wide variety of public and private workplaces and health care settings, the Task Force on Community Preventive Services recommends the implementation of indoor smoking bans, both within the home and beyond. These bans are effective, whether used alone or as part of a multicomponent community or workplace intervention to reduce exposure to environmental tobacco smoke.⁴⁹

4.4 Lead Hazard Control

In 1991, HUD created the Office of Healthy Homes and Lead Hazard Control (OHHLHC) to eliminate lead-based paint hazards in privately owned and low-income housing across the country.⁵⁰ The strategy that was ultimately adopted included a number of population-level interventions. A combination of the gasoline lead phase-out, lead-based paint ban, and lead-soldered food can phase-out eliminated the main causes of acute and chronic lead poisoning. Additional efforts were made to target high-risk subpopulations in housing contaminated with lead paint hazards.⁵¹

The impact of these and other efforts was a reduction in childhood lead poisoning cases by 70 percent between 1992

and 2010; over 335,000 housing units have been made lead-safe over the past 15 years. That benefit, however, has not been evenly distributed. Data published by the CDC in 2005 indicated that African American children ages 1 to 5 are still twice as likely to experience lead poisoning than their white peers. In fact, the blood lead levels of African American children were 80 percent greater than among white children. Decreasing blood lead levels of African American and Latino children to the levels of white children will result in more than \$50 billion of increased lifetime earnings.^{52,53}

The policy efforts to control lead hazards are certainly an admirable public health effort. They have clearly resulted in a great reduction in childhood lead poisoning and have changed the root causes through a multiphase, agency-led initiative. Still, the example of lead hazard control shows how minority communities can still experience great disparities despite improvements in exposures. The focus must turn to rooting out the disparities that persist in lead poisoning among children. Successful interventions for lead hazard control include a combination of building component replacement, paint stabilization, enclosure, encapsulation, education, and limited paint removal, followed by specialized cleaning and clearance testing.²³ Only through continued vigilance, renewed focus, and a commitment to eliminating disparities—whether led by OHHLHC or by communities themselves—can the goal of controlling lead hazards be fully reached.

4.5 Tenant-Based Rental Assistance Programs

The Housing Choice Voucher Program (or “Section 8”) is a federal program that assists very-low-income families, older persons, and persons with disability in accessing safe and healthy housing in the private market while also partially subsidizing rent payments.⁵⁴ To provide housing choice and mobility, participants can use the vouchers in any neighborhood with available housing units that meet the HUD health and safety standards. The program aims to help families move out of unhealthy homes and racially segregated neighborhoods. After a review of the evidence, the Task Force on Community Preventive Services recommended that the Section 8 program had sufficient evidence to justify implementation or expansion.⁵⁵

While the Section 8 program was the only tenant-based rental assistance program with sufficient field evaluation to support

TABLE 4: EVIDENCE-BASED POLICIES TO ENSURE HEALTHIER HOMES

Category		Policy Recommendation
4.1	Integrated Pest Management	Incorporate IPM into standard requirements for housing receiving federal subsidies. Create statutes to require IPM as necessary under a residential landlord-tenant agreement.
4.2	In-Home Tailored Interventions for Asthma	Provide funding for such interventions through state and local health departments. Use Medicare payment incentives to health care providers to incorporate these interventions in their asthma care protocols.
4.3	Smoke-Free Policies	Require smoke-free home policies for all housing receiving federal subsidies. Promote bans on smoking in public areas to protect nonsmokers from the dangers of secondhand smoke.
4.4	Lead Hazard Control	Intensify targeting of high-risk subpopulations in housing contaminated with lead paint hazards for testing, treatment, and housing interventions to eliminate disparities.
4.5	Tenant-Based Rental Assistance Programs	Increase funding for Section 8 program. Streamline implementation to achieve program goals.

its widespread implementation, a number of other housing interventions at the neighborhood level were reviewed by Lindberg et al.⁵⁶ These included programs to relocate residents to low-poverty neighborhoods, such as the Moving to Opportunity (MTO) program, as well as programs for the demolition of distressed public housing and relocation of residents, such as the HOPE VI program. In October 2011, the long-term study of the MTO program found that moving to lower-poverty neighborhoods as part of an MTO-type residential mobility program does not appear to improve educational outcomes, employment, or earnings. However, the study found that MTO-induced improvements in housing and neighborhood conditions led to reductions in extreme obesity and diabetes, as well as better mental health for adults.⁵⁷ At present, demolition and relocation projects such as HOPE VI still require additional field evaluation to determine their effectiveness.

The determination of effectiveness of the Section 8 program was based on evidence of reductions in exposure to crimes against person and property (median decrease of 6 percent), as well as decreases in neighborhood social disorder (median decrease of 15.5 percent).⁴⁹ Additionally, it was suggested that housing vouchers might mitigate some of the negative health consequences of food insecurity on children.⁵⁰

This recommendation is not to suggest that the Section 8 program is without fault. Criticism over the program's design, implementation, and impact are not without merit. Of the roughly 2 million households in the program, because of funding

limitations only 25 percent actually receive assistance. Still, it is the positive impact on the health of the program participants that warranted the recommendation for expansion from the Task Force.

5. HEALTHY NEIGHBORHOODS

Just as the housing environment can have a significant health impact, so too can the surrounding community. Neighborhoods can influence health through physical characteristics as well as through the structure and composition of the built environment. Physical characteristics of a neighborhood that impact health include air and water quality, as well as proximity to facilities that produce or store hazardous materials. The built environment in a neighborhood and its impact on health will be the focus of this section of the brief.

The health of neighborhood residents can be impacted by the availability of safe places to exercise; access to nutritious foods; the availability and quality of neighborhood services, such as schools, medical facilities, and the transportation system; and the availability of jobs. Additionally, social relationships within the neighborhood can impact health, as neighborhoods that have high levels of mutual trust and respect experience less violence, while less closely knit communities are marked by higher levels of social disorder.⁵⁸

Far too often, the negative characteristics of neighborhoods impact minority communities. With the high prevalence of chronic diseases in these communities across the country, we have focused our analysis on the neighborhood characteristics that either ameliorate or exacerbate the burden of illness. First, we discuss the keys to developing safe places to play and exercise. Next, we discuss barriers to, and facilitators of, access to healthy foods in vulnerable communities. Finally, we'll conclude with strategies to address the violence in minority communities.

5.1 Spaces to Play and Exercise

The availability of safe spaces for people to play and exercise is critical to the promotion of health and prevention of illness in all communities. Exercise has been linked with reduced risk of obesity, heart disease, high blood pressure, diabetes, high cholesterol, and several forms of cancer.⁵⁹ Similarly, exercise (along with diet) is often recommended as a first-line therapy for many of those same diseases. In the absence of a neighborhood that is conducive to such physical activity, both the prevention and first-line treatment options for these diseases are not actually options at all. The policies described below work to redesign neighborhoods to encourage fitness and health and are necessary to the health and wellness of the community.

Urban Design and Land Use

Community-scale urban design and land use policies are efforts to change the physical environment of urban areas of several square miles in ways that support physical activity. Street-scale urban design and land use policies involve efforts to change the physical environment of small geographic areas, generally limited to a few blocks, to similarly facilitate greater physical activity. Both of these practices employ a combination of building codes, roadway design standards, and environmental changes to increase physical activity. Design components of such policies include improved street lighting, infrastructure projects to increase safety of street crossing, the use of traffic calming approaches, and enhanced street landscaping.⁶⁰

Communities can also restructure the physical environment to facilitate the incorporation of physical activity into daily life. This restructuring includes increasing the proximity of residential areas to stores, jobs, schools, and recreation areas, as well as continuity and connectivity of sidewalks and streets. Additional efforts include creating walking trails, building exercise facilities,

and providing access to existing nearby facilities.⁶⁵

The Task Force for Community Preventive Services recommends design and land use policies and practices that support physical activity in urban areas of several square miles or more as well as in small geographic areas (generally a few blocks). These recommendations for community-scale and street-scale urban design and land use initiatives are based on sufficient evidence of effectiveness in facilitating an increase in physical activity. Median improvement in some aspect of physical activity was 35 percent for street-scale projects and 161 percent for community-scale initiatives.⁵⁴

5.2 Access to Healthy Foods

Just as safe outdoor exercise space is fundamental to the maintenance of health, so too is access to healthy foods. Areas with significantly limited access to healthy foods have been referred to as “food deserts.” The U.S. Department of Agriculture defines food deserts as low-income census tracts where a substantial number or share of residents has low access to a supermarket or large grocery store.⁶¹ As many as 5.9 percent of households across the country in majority-black communities are currently located in areas described as food deserts.⁶² The policy strategies described below are literature-supported mechanisms to achieve greater access to healthy foods for these disadvantaged communities.

Community-Level Interventions

The development and support of farmers’ markets can provide access to healthy food, especially fresh fruits and vegetables. Farmers’ markets promote regional agriculture while ensuring the availability of fresh, local produce for state residents. Markets can also accept food stamps and WIC coupons for low-income community members. Additionally, the use of SNAP benefits at farmers’ markets is an important policy consideration, as it would involve a component of the largest U.S. food and nutrition assistance program and is effectively a mechanism by which the federal government can increase access to healthy foods.

Another option to bring healthy foods to the community is the development of community gardens. These collaborative projects use open spaces for participants to share in the maintenance and products of the garden, including healthy and affordable fresh fruits and vegetables.⁶³ At the same time, the gardens encourage

residents to engage in physical activity, skill building, and creation of green space. They help to beautify vacant lots, revitalize communities in industrial areas, revive and beautify public parks, and sometimes even create green rooftops. Finally, they have been shown to decrease violence in some neighborhoods and improve social well-being through strengthening social connections.⁵⁷

While significant data exist on the successful operation and sustainability of farmers' markets and community gardens, there is a growing evidence base for the health impacts of these efforts. For example, a number of studies have demonstrated that vouchers to farmers' markets increase consumption of fresh fruits and vegetables.^{64,65} One study even noted that the increased consumption was sustained even six months after termination of the intervention.⁴² Additionally, studies have indicated that community gardeners consumed fruits and vegetables 1.4 more times per day than those who did not participate, and were 3.5 times more likely to consume fruits and vegetables at least five times daily.⁶⁶

Transportation-Related Improvements

In some communities, the healthy food access issue is rooted in a poor transportation system. Individuals and families who do not own a car and do not have access to reliable or affordable public transportation may be forced to choose from the food options directly available to them—options that can be largely unhealthy. A number of transportation policy improvements have been studied and supported. These include increasing bus routes to food retailers, creating transit routes connecting low-income neighborhoods with supermarkets, and creating supermarket-sponsored shuttle services.⁶⁷

Another proposed consideration for SNAP is to create a transportation benefit in conjunction with SNAP benefits for participants who do not own cars and who have poor access to healthy food retailers. SNAP benefits for people who live in areas with poor access could include a transportation subsidy in addition to the food benefit that could be used to compensate for the expenses associated with traveling to the supermarket. Another option could be to deduct transportation costs from total income for applicants with limited access to healthy foods, effectively providing them with a larger benefit. Although these interventions seem promising, additional research should be conducted to determine the feasibility, costs, and consumer reactions to these efforts.⁷³

Designing Communities for Healthier Food Options

Several opportunities exist through zoning regulations to help design and maintain healthier communities. First, community food gardens or farmers' markets could be designated within the zoning code. Next, zoning can be used to limit commercial food retail, such as fast food businesses, or to allow as-of-right or incentives to those businesses that increase access to healthy food.⁶⁸

The economic feasibility of these types of interventions depends on the ability of policymakers to identify communities most at need. By targeting economically disadvantaged communities with high prevalence of obesity-related diseases, computer models have provided an effective means of identifying areas where policy implementation will be most beneficial for improvements in health outcomes, such as body-mass index.⁶⁹

Additionally, there are multiple policy options to improve access to healthy food by making changes to the retail food environment. The interplay between factors of cost and demand for food retailers (supermarkets and grocery stores) and consumers, respectively, leave many areas underserved by certain types of food retail stores. Focusing on the supply side, efforts to reduce costs have been proposed that include subsidizing the development of new or expanded stores. Efforts range from financing for new large-scale supermarkets to small incentives to existing stores to stock healthier foods.⁶¹

One example is the Pennsylvania Fresh Food Financing Initiative, a public-private partnership involving the state of Pennsylvania, The Food Trust, the Greater Philadelphia Urban Affairs Coalition, and the Reinvestment Fund. This program provides grants of up to \$250,000 or loans of up to \$2.5 million for the development of new supermarkets or other grocery stores where infrastructure costs or credit are lacking.⁷⁰ Similarly, New York City's Food Retail Expansion to Support Health (FRESH) program provides zoning and financial incentives to promote the establishment and retention of neighborhood grocery stores in underserved communities throughout the five boroughs.⁷¹ Financial incentives in the FRESH program include real estate tax reductions, sales tax exemptions, and mortgage recording tax deferrals each over 25 years. Federally, financing and incentive programs, including grants and low-interest financing, tax incentives, and training or technical assistance in community development, have been used to encourage new store

TABLE 5: EVIDENCE-BASED POLICIES TO ENSURE HEALTHIER NEIGHBORHOODS

Category		Policy Recommendation
5.1	Spaces to Play and Exercise	Use community-scale and street-scale urban design and land use policies and practices to support physical activity in urban areas.
5.2	Access to Healthy Foods	Farmers' Markets Provide vouchers for low-income populations to use farmers' markets.
		Transportation Increase bus routes to food retailers. Create transit routes connecting low-income neighborhoods with supermarkets. Incentivize supermarket-sponsored shuttle services. Provide SNAP benefits for individuals in food deserts to account for cost of transportation to healthy foods.
		Zoning Limit commercial food retailers within certain areas. Allow incentives for businesses that increase access to healthy food. Fund Healthy Food Financing Initiative and similar programs to assist populations in food deserts.
5.3	Violence	Create and support universal, school-based programs to teach children of all ages about the problem of violence and its prevention.

development. Examples of these federal programs include New Market Tax Credits, Community Development Block Grants, the Empowerment Zone program described earlier, and HUD's Section 108 loan program.

Programs to improve offerings in existing stores include increasing the availability of nutritious food, decreasing the availability of less healthy food, adjusting the relative prices of both of these types of food, or rearranging store layouts to highlight healthy products. Projects that use improvements such as these include New York's Healthy Bodegas Initiative, Baltimore Healthy Stores, and Apache Healthy Stores. Each of these programs has been regarded as successful and serves as a model for changes that can be made to existing stores.

Looking ahead, a new program to help create communities with adequate food access is the Healthy Food Financing Initiative (HFFI). Modeled after the Pennsylvania Fresh Food Financing Program, this national program is a partnership between the Departments of Treasury, Agriculture, and Health and Human Services. The goal of the HFFI is to eliminate food deserts across the country by 2018—only seven years after the initiative's launch. HFFI will bring grocery stores and other healthy food retailers to underserved urban and rural communities across America through a federal investment of over \$400 million. Additionally, the initiative promotes a range of interventions

that expand access to nutritious foods. These include developing and equipping grocery stores and other small businesses and retailers selling healthy food in communities that currently lack these options. Despite the political support for this national, multiagency project, budgetary challenges faced by the government could place the funding for the HFFI at risk in the near future.

5.3 Violence Prevention

To categorize violence in the community as a disruptive force is an understatement. In fact, violence can paralyze a community psychologically while deterring economic growth, social interaction, and outdoor activities. While community gardens, mentioned earlier, have been described as a mechanism to promote social interactions in the community and reduce violence, only one strategy has been scientifically validated to reduce violence in communities: universal, school-based programs.

Universal, School-Based Programs

Universal, school-based programs to reduce violence are designed to teach all students about violence prevention or aim to reduce aggressive or violent behavior. Programs are offered in pre-kindergarten, kindergarten, elementary, middle school, and high school classrooms. All children in a given grade or school,

regardless of prior violence or risk for violent behavior, receive the programs.⁷²

A number of studies have demonstrated the effectiveness of these programs. For all grades combined, the median effect was a 15 percent reduction in violent behavior among students who received the program. Combining the findings of four studies, the reduction in violent behavior among high school students was 29.2 percent. A meta-analysis of 26 studies involving elementary school students found a violent behavior reduction of 18 percent. Finally, the greatest reduction in violent behavior was seen among pre-kindergarten and kindergarten students. In that group, six studies yielded a median relative reduction of 32.4 percent. The Task Force on Community Preventive Services notes that all intervention strategies (e.g., informational, cognitive/affective, and social skills building) were associated with a reduction in violent behavior, and that the programs appeared to be effective in reducing violent behavior among students in all school environments, regardless of socioeconomic status or crime rate. Additionally, these programs were effective among all school populations, regardless of the predominant ethnicity of students.

CONCLUSION

Just as society has created inequalities in health, society has the tools to remedy them. Several strategies identified in this brief have great potential to reduce inequities that are at the root of racial and ethnic health inequalities. For example, the impact of economic conditions on the health of minority and low-income populations can be mitigated by the provision of income supplements. Investments in early childhood development and education can have large impacts on improving adult health. Neighborhoods can be designed to facilitate health by ensuring healthy housing, improving access to healthy foods, creating safe spaces to play and exercise, and reducing violence in the community. For each of these interventions, there is a strong evidence base to support implementation of the program or policy. Still, without the political will to achieve these improved outcomes, change is not possible. Awareness of proven policy solutions to the social ills that create and exacerbate health disparities is a powerful tool in the hands of a mobilized community.

While we acknowledge that health care services are a social determinant of health and health disparities, we chose not to

include this factor in our analysis. Policy approaches to problems in the health care sector have been discussed in a number of different publications, and we felt that this would be an issue that would warrant an analysis all its own.

Moving forward, additional research needs to be conducted to identify how these strategies perform over the long term and to fill gaps in the evidence base. Metrics that acknowledge the concept of “health in all policies” must be established to protect against the continuation or development of policies that disproportionately harm minority and low-income populations. For example, Health Impact Assessments (HIAs) have been effective in helping policymakers understand the potential consequences of policies and practices in a range of different sectors, such as housing and transportation, on health.

The body of research on the nature of health disparities continues to build. Now, however, the body of research on the best mechanisms to eliminate these disparities builds too. By utilizing evidence-based strategies to eliminate disparities in the social determinants of health, communities make a pivotal move toward health equity.

**TABLE 6: LEVELS OF EVIDENCE-BASED ADVOCACY TO ADDRESS DISPARITIES
IN THE SOCIAL DETERMINANTS OF HEALTH**

In order to be most effective, advocacy for the various policy strategies described in this review must be directed to the proper policymaking entity. This table provides a guide for which level of government advocates should approach for the respective evidence based policy strategies.

Policy to Modify Factors Influencing Health	Point(s) of Policy Advocacy		
	Local	State	Federal
Economic and Social Conditions			
Child and Youth Development/Education			
Home Visiting	•	•	•
Family Income Supplementation	•	•	•
Early Childhood Development Programs*	•	•	•
Economic Development			
Training Incentives		•	
Entrepreneurship Training	•	•	
Enterprise Zones		•	•
Empowerment Zones			•
Poverty Reduction			
Transfer Programs		•	•
Living Wage Ordinances	•	•	•
Expanded Health Insurance		•	•
Living and Working Conditions			
Healthy Homes			
Integrated Pest Management	•	•	
In-Home Tailored Asthma Interventions*	•	•	
Smoke-Free Policies*	•	•	
Lead Hazard Control*	•	•	•
Housing Choice Voucher Program*		•	•
Healthy Neighborhoods			
Urban Design and Land Use*	•		
Farmers' Markets	•		
Community Gardens	•		
Transportation-Related Improvements	•	•	
Zoning Ordinances	•		
Retail Food Stores	•	•	•
School-Based Violence Reduction*	•		

*Sufficient evidence-base to support wide-spread implementation

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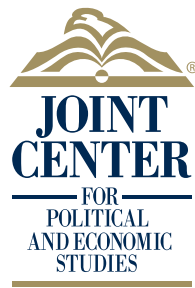
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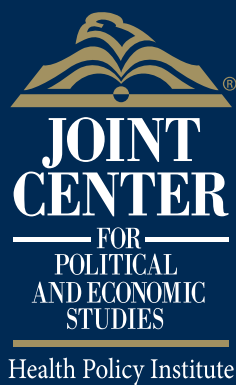
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