

Toward A Policy-Relevant Analysis Of Geographic And Racial/Ethnic Disparities In Child Health

Improving access to “opportunity neighborhoods” should be regarded as a vital public health intervention.

by Dolores Acevedo-Garcia, Theresa L. Osypuk, Nancy McArdle, and David R. Williams

ABSTRACT: Extreme racial/ethnic disparities exist in children’s access to “opportunity neighborhoods.” These disparities arise from high levels of residential segregation and have implications for health and well-being in childhood and throughout the life course. The fact that health disparities are rooted in social factors, such as residential segregation and an unequal geography of opportunity, should not have a paralyzing effect on the public health community. However, we need to move beyond conventional public health and health care approaches to consider policies to improve access to opportunity-rich neighborhoods through enhanced housing mobility, and to increase the opportunities for healthy living in disadvantaged neighborhoods. [*Health Affairs* 27, no. 2 (2008): 321–333; 10.1377/hlthaff.27.2.321]

ONE OF THE MOST STRIKING FEATURES of U.S. racial/ethnic health disparities is their persistence over time.¹ Over the past several decades, there have been many policy initiatives to reduce poverty and improve access to societal resources, including medical care, for disadvantaged population groups. Yet despite initiatives such as the War on Poverty, civil rights legislation, and Medicaid/Medicare, racial disparities in health have not changed much over the past fifty years.² Effectively addressing health disparities will require new approaches that seek to confront the key causes that underlie them.

Residential segregation between white and black populations continues to be

.....
Dolores Acevedo-Garcia is an associate professor in the Department of Society, Human Development, and Health, Harvard School of Public Health, in Boston, Massachusetts. Theresa Osypuk is an assistant professor of health science at the Bouvé College of Health Sciences, Northeastern University, in Boston. Nancy McArdle is a research analyst in the Department of Society, Human Development, and Health. David Williams (dwilliam@hsph.harvard.edu) is the Florence S. and Laura S. Norman Professor of Public Health and professor of African and African American studies and of sociology at Harvard University.

very high in U.S. metropolitan areas. Although residential segregation of Hispanics/Latinos is not yet as high as that of African Americans, it has been increasing over the past few decades, while black segregation has modestly decreased.³ Growing evidence suggests that segregation is a key determinant of racial inequalities for a broad range of societal outcomes, including health disparities.⁴

Racial/ethnic differences in socioeconomic status (SES) and housing affordability do not fully account for the high levels of segregation in U.S. metropolitan areas. In addition to affordability, blacks and Latinos have limited neighborhood choices because of persistent housing discrimination and whites' avoidance of integrated neighborhoods.⁵ Residential segregation has serious detrimental impacts on minorities because it is associated with the geographic accumulation of disadvantage (for example, poverty concentration) in minority neighborhoods.⁶

Residential segregation affects health outcomes through a variety of pathways. First, segregation constrains the socioeconomic advancement of minorities by limiting educational quality and employment, as well as by diminishing the returns to home ownership because school quality, job opportunities, and property values are lower in disadvantaged neighborhoods. Second, it increases minorities' exposure to unfavorable neighborhood environments, including crime, environmental hazards, inferior municipal services, and "food deserts" (limited availability of healthy food outlets).⁷ Third, it leads to segregation in health care settings, which in turn is associated with disparities in the quality of treatment. Even eliminating unequal treatment within health care settings would not eliminate racial disparities in health care because of the large disparities between health care facilities, which result from segregation.⁸

Public health research increasingly recognizes that racial/ethnic disparities in health are rooted in social factors such as SES, discrimination, and residential segregation.⁹ However, researchers often feel paralyzed by politically contentious redistributive policy implications of the literature on social determinants of health or suggest that absent systematic policies for reducing socioeconomic inequalities, only public health and health care interventions provide instruments for addressing health disparities.¹⁰

As a result, much of the literature falls short of suggesting concrete policies to address the social sources of health disparities. However, "it doesn't take a revolution"; social and economic policies can be enacted to tackle health inequalities without a vast redistribution of resources.¹¹ Since the chain of events leading from social circumstances (neighborhoods or housing) to health is long, there are likely to be critical intermediate steps in this causal chain at which interventions may be politically viable and effective. Moreover, since health is affected by a range of sectors not traditionally thought of as health-related, many possible nonhealth sectors can be engaged. Indeed, many professional, advocacy, and research communities outside of public health are working toward addressing some of the fundamental causes of health disparities.¹²

A Policy Framework For Addressing Unequal Geography Of Opportunity In Child Health

In this paper we introduce a policy framework for addressing the geographic aspect of child health disparities. First, we present an overview of the evidence that racial/ethnic disparities in child health are linked to an unequal geography of opportunity rooted in residential segregation. Second, we highlight two examples of concrete ongoing interventions to address neighborhood-based disparities, to illustrate how partnerships between public health and other professional communities can be forged to reduce health disparities.

■ The evidence: neighborhoods affect health, especially children's health.

America's children are more racially/ethnically diverse than the total population and are growing up in areas characterized by large proportions of what were once numeric minorities. The landscape of diversity and opportunity in metropolitan areas has a substantial impact on the well-being of America's children. And, in turn, the development of these children will have a strong influence on the economic and social prospects of these regions.¹³

As a result of segregation, neighborhood quality is much worse for racial/ethnic minorities. Minority children have limited access to neighborhoods with opportunities such as good schools and after-school programs, safe streets and playgrounds, and positive role models.¹⁴ There is consensus that experiences in early childhood are critical for healthy development throughout the life course and that childhood health matters for adult socioeconomic achievement and health status.¹⁵ Yet among America's children there are considerable racial/ethnic disparities in socioeconomic conditions across multiple contexts (such as families, neighborhoods, and schools), which suggests that inequality is forged from a very young age. Since the foundations of adult health, productivity, and well-being are established early on, childhood is an important time to intervene for improving population health and reducing health disparities.¹⁶

The rapidly growing evidence on neighborhood effects finds that after taking into account individual-level factors, disadvantaged neighborhood environments (for example, poverty concentration) are associated with detrimental health outcomes, negative health behavior, developmental delays, teen parenthood, and academic failure.¹⁷ And although neighborhood conditions may influence health outcomes in all age groups, exposure to neighborhood disadvantage during childhood may be particularly harmful, as the effects of this exposure may continue into adolescence and adulthood.¹⁸

■ **America's children face a highly unequal geography of opportunity.** The central premise of a "geography of opportunity" framework is that residents of a metropolitan area are situated within a context of neighborhood-based opportunities that shape their quality of life, including their health. Thus, the location of housing is a powerful impediment to or vehicle for accessing these opportunities.¹⁹ We define *opportunity neighborhoods* as neighborhoods that support healthy development.

“The typical neighborhood environment is much worse for black and Latino children than for white children.”

.....

High-opportunity neighborhood indicators include availability of sustainable employment, high-performing schools, healthy environments, access to high-quality health care, adequate transportation, high-quality child care, neighborhood safety, and institutions that facilitate civic engagement.²⁰ Because it is challenging to characterize neighborhoods in such a comprehensive manner, other more available indicators are often used to define *opportunity*—most commonly, the neighborhood poverty rate, but also the unemployment rate, the proportion of households headed by single females, and the proportion of adults without a high school diploma.²¹

■ **Analysis: racial/ethnic disparities in children’s access to opportunity neighborhoods.** The main objectives guiding our analysis were (1) to test whether children of different racial/ethnic groups have comparable access to “opportunity neighborhoods” across the largest U.S. metropolitan areas; and (2) to test whether access to opportunity neighborhoods for minority children is more limited in metro areas with higher segregation.

We analyzed neighborhood-level (that is, census tract-level) data for the 100 metropolitan areas with the largest child populations, which comprise forty-five million children. Within each metropolitan area, we looked at the distribution of all children and of poor children of various racial/ethnic groups across neighborhoods with different levels of opportunity. To examine opportunity, we looked at several indicators of neighborhood environment such as the neighborhood rates of poverty, rentership, and unemployment and the share of adults without a high school diploma.²²

The results from our analyses indicate two patterns that have particularly serious implications for the well-being of black and Latino children. First, black and Latino children consistently live in more disadvantaged neighborhoods than white children, even the worst-off white children. Second, a large fraction of black and Latino children consistently experience double jeopardy—that is, they live in poor families and in poor neighborhoods. White children very rarely experience double jeopardy.

The typical neighborhood environment is much worse for black and Latino children than for white children, and these disparities are not accounted for by differences in family poverty. In the 100 largest metropolitan areas, the typical (measured as the mean) white child lives in a neighborhood that has a poverty rate of 7.2 percent (Exhibit 1). As a reference point, a neighborhood poverty rate below 10 percent is widely regarded as a low poverty level. Empirically, neighborhoods with such low poverty tend to be safe, have good-quality schools, and have positive role models for children.²³ In contrast, the typical black child lives in a neighborhood with a poverty rate of 21.1 percent, and the typical Latino child, with a

EXHIBIT 1
Racial/Ethnic Disparities In Access To Opportunity Neighborhoods Among Children, 2000

	Neighborhood poverty rate (%)	Neighborhood rentership rate (%)	Neighborhood share of adults without diploma (%)	Neighborhood unemployment rate (%)
Typical white child	7.2	25.6	13.9	4.2
Typical black child	21.1	48.0	27.4	10.5
Typical Latino child	19.3	47.7	35.4	8.9
Typical poor white child	13.6	36.0	21.2	6.0
Typical poor black child	29.2	56.3	33.3	13.5
Typical poor Latino child	26.2	56.1	42.9	11.1

SOURCE: Calculated from U.S. Census Bureau, 2000 Census, Summary File 3, accessed through the Neighborhood Change Database; and U.S. Census Bureau, 2000 Census, Summary File 1.

NOTES: These statistics are exposure rates showing characteristics of the average neighborhood in which each group resides. For instance, the typical (mean) white child resides in a neighborhood where 7.2 percent of the population is in poverty; the typical black child, in a neighborhood where 21.1 percent of the population is in poverty. Table calculated using the 100 metropolitan areas with the largest child populations. "Poor black child" category includes both Hispanic and non-Hispanic blacks; other "white" and "black" categories include only non-Hispanic members of those racial groups. "Adults without diploma" refers to adults age twenty-five and older without a high school diploma.

poverty rate of 19.3 percent. Neighborhoods with poverty rates of 20 percent or higher are regarded as high poverty and tend to have significantly worse physical and social environments that may not support healthy child development.

One might argue that because black and Latino children are much poorer on average than white children (poverty rates of 30 percent, 26 percent, and 7 percent, respectively, in these 100 metro areas), this separation into different-quality neighborhoods may be primarily due to the differing abilities of white families (compared to minority families) to afford housing in better-off neighborhoods. Further analysis shows that this conclusion is too simplistic. Across metro areas, the typical poor white child lives in a neighborhood that has a poverty rate of 13.6 percent, while the typical poor black child experiences a neighborhood poverty rate of 29.2 percent, and the typical poor Hispanic child, 26.2 percent. In most metropolitan areas, the worst-off white children are better off than the majority of black and Hispanic children, and these disparities are not accounted for by differences in family poverty.

To illustrate the vast disparities in access to opportunity neighborhoods, we examined what proportion of black and Latino children live in higher-poverty neighborhoods than the worst-off white children. We defined "worst-off white children" as the 25 percent of white children who live in the highest-poverty neighborhoods for white children. On average, across metropolitan areas, about 76 percent of black children and 69 percent of Latino children live in neighborhoods with poverty rates higher than those found in the neighborhoods of the 25 percent worst-off white children (Exhibit 2).

We also conducted a separate analysis for poor children, to dismiss the notion that white children have access to higher-opportunity neighborhoods because

EXHIBIT 2
Proportion Of Black/Latino Children In Poorer Or Higher-Rentership Neighborhoods Than The Worst-Off White Children, 2000

	Proportion of black children in poorer neighborhoods than worst-off white children (%)	Proportion of Latino children in poorer neighborhoods than worst-off white children (%)	Proportion of black children in higher-rentership neighborhoods than worst-off white children (%)	Proportion of Latino children in higher-rentership neighborhoods than worst-off white children (%)
All metro areas	76	69	66	55
Five metro areas with highest segregation				
Metro 1 ^a	86	74	74	48
Metro 2	91 (Detroit)	60 (McAllen)	76 (Detroit)	14 (McAllen)
Metro 3	79 (Memphis)	63 (El Paso)	65 (Memphis)	24 (El Paso)
Metro 4	79 (New Orleans)	73 (San Antonio)	71 (New Orleans)	43 (San Antonio)
Metro 5	79 (Birmingham)	78 (Los Angeles)	80 (Birmingham)	56 (Los Angeles)
Metro 5	90 (Chicago)	70 (Fresno)	76 (Chicago)	51 (Fresno)
Five metro areas with medium segregation				
Metro 1 ^b	69	58	62	54
Metro 2	70 (Wilmington)	62 (West Palm)	64 (Wilmington)	59 (West Palm)
Metro 3	83 (Omaha)	49 (Tampa)	66 (Omaha)	47 (Tampa)
Metro 4	60 (Raleigh)	65 (Wichita)	54 (Raleigh)	65 (Wichita)
Metro 5	78 (Harrisburg)	62 (Salt Lake City)	75 (Harrisburg)	54 (Salt Lake City)
Metro 5	77 (Tulsa)	67 (Oklahoma City)	71 (Tulsa)	59 (Oklahoma City)
Five metro areas with lowest segregation				
Metro 1 ^c	57	44	48	47
Metro 2	55 (Orange County)	40 (Pittsburgh)	52 (Orange County)	46 (Pittsburgh)
Metro 3	53 (San Jose)	40 (Cincinnati)	42 (San Jose)	44 (Cincinnati)
Metro 4	53 (Tucson)	43 (Louisville)	48 (Tucson)	46 (Louisville)
Metro 5	64 (Phoenix)	46 (Baltimore)	50 (Phoenix)	53 (Baltimore)
Metro 5	28 (El Paso)	45 (St. Louis)	38 (El Paso)	43 (St. Louis)
ANOVA p value	0.0006	0.0001	0.0001	0.0589

SOURCE: Calculated from U.S. Census Bureau, 2000 Census, Summary File 3, accessed through the Neighborhood Change Database; and U.S. Census Bureau, 2000 Census, Summary File 1.

NOTES: Aggregate statistics include the 100 metropolitan areas with the largest child populations, weighted by the metro-area child population size. Individual metro-area analysis excludes those metros with less than 5,000 of the specified minority child population. The neighborhoods of the “worst-off” white children are those occupied by the 25 percent of white children living in the poorest or highest-rentership neighborhoods. Segregation was measured using the Isolation Index among minority children (for example, black child isolation and Latino child isolation). Analysis of variance (ANOVA) tests compared the proportions of minority children in poorer neighborhoods than worst-off white children, by level of segregation, among these fifteen metro areas. The proportions for black children were compared across levels of black segregation, and the proportions for Latino children were compared across levels of Latino segregation.

^a Among the five highest-segregation metros, Metro 1 has the highest segregation.

^b Among the five medium-segregation metros, Metro 1 has the highest segregation. Medium-segregation metros were defined as the median segregation value and the two metros above and two below the median segregation value.

^c Among the five lowest-segregation metros, Metro 1 has the lowest segregation.

their families are less likely than minority families to be poor. We found that even poor white children are likely to live in high-opportunity neighborhoods, while the majority of poor black and Latino children live in low-opportunity neighborhoods (results not shown). About 74 percent of poor black children and 60 percent of poor Hispanic children live where poverty rates are higher than those found in the neighborhoods of the worst-off poor white children.

■ **Residential segregation is at the root of racial/ethnic disparities in access to opportunity neighborhoods.** Children live in such different neighbor-

hoods because of high levels of residential segregation. Our analysis shows that the metropolitan areas with the highest segregation levels have the most unequal geographies of opportunity. As shown in Exhibit 2, in the five metro areas with the highest residential segregation for black children, 86 percent of black children live in higher-poverty neighborhoods than the worst-off white children, while in the five metro areas with the lowest segregation, 57 percent of black children are worse off than the worst-off white children.²⁴ The corresponding figures for Latino children in high- and low-segregation areas are 74 percent and 44 percent. These differences are highly significant by segregation level for each minority group ($p < 0.005$).

■ **Double jeopardy.** Not only are black and Hispanic children more likely to live in poor families than other children are, but they also experience neighborhoods with unfavorable socioeconomic environments—double jeopardy.²⁵ This is of concern because child development experts agree that the accumulation of environmental risks rather than a singular risk exposure may be an especially pathogenic aspect of childhood poverty.²⁶ However, not all poor children experience multiple environmental risks, since for the most part, poor white children in U.S. metropolitan areas do not live in high-poverty neighborhoods.

We examined the proportion of poor children who live in high-poverty neighborhoods (poverty rate greater than 20 percent). Only 1.4 percent of white children live in poor families and in high-poverty neighborhoods; that is, double jeopardy is rare for white children. The disparity with black and Latino children is overwhelming. On average, 16.8 percent of black children and 20.5 percent of Latino children experience double jeopardy (Exhibit 3). Moreover, the prevalence of minorities experiencing double jeopardy is significantly patterned by segregation level ($p < 0.0004$).

Toward A Broader View Of Health Policy

In summary, we have shown striking racial/ethnic disparities in children's access to opportunity neighborhoods—disparities that are not accounted for by household poverty status. Moreover, based on current evidence, these neighborhoods will profoundly affect the future health and well-being of these children, and of the adults they will become. A limited but growing body of evidence indicates that interventions in improving the opportunity structures in neighborhoods, even in the absence of explicit health interventions, can lead to improvements in health.²⁷ However, there is inadequate recognition of the potential to address inequalities by improving access to opportunity neighborhoods.

Policies to address the vast disparities in access to opportunity neighborhoods, which underlie disparities in health and well-being, do not fall within the range of conventional public health interventions. Therefore, we advocate for a broader view of what is considered “health policy.” Reducing the exposure of young children to highly disadvantaged neighborhoods entails an important set of policy options. In addition to the evidence we have discussed here about the long-term de-

EXHIBIT 3
Racial/Ethnic Disparities In The Proportion Of Children Who Experienced Double Jeopardy, By Segregation Level, 2000

	White children (%)	Black children (%)
All metropolitan areas	1.4	16.8
Five metro areas with highest black segregation	1.0	26.4
Five metro areas with medium black segregation	0.8	14.6
Five metro areas with lowest black segregation	1.4	10.0
ANOVA <i>p</i> value	0.2518	0.0044

	White children (%)	Latino children (%)
All metropolitan areas	1.4	20.5
Five metro areas with highest Latino segregation	3.5	25.1
Five metro areas with medium Latino segregation	1.5	10.8
Five metro areas with lowest Latino segregation	1.2	5.0
ANOVA <i>p</i> value	0.0309	0.0004

SOURCE: Calculated from U.S. Census Bureau, 2000 Census, Summary File 3, accessed through the Neighborhood Change Database; and U.S. Census Bureau, 2000 Census, Summary File 1.

NOTES: Double jeopardy refers to the share of children living in poor families and in neighborhoods with poverty rates over 20 percent. “All metro area” statistics include the 100 metropolitan areas with the largest child populations. High, medium, and low segregation subgroups exclude those metros with less than 5,000 of the specified minority child population. Segregation was measured using the Isolation Index among minority children (for example, black child isolation and Latino child isolation). Medium-segregation metros were defined as the median segregation value and the two metros above and two below the median segregation value. Analysis of variance (ANOVA) tests compared the proportions of children in double jeopardy for each racial group, by level of segregation, among these fifteen metro areas.

velopmental consequences of living in harmful neighborhood environments, housing policy is an appropriate arena for intervention for several reasons. Housing constitutes the typical household’s largest monthly expense, and home ownership is the primary avenue for household wealth accumulation.²⁸ The American public supports a range of governmental interventions to address housing affordability, and working families list neighborhood safety as the primary consideration for where to live.²⁹

There are potential policy solutions for correcting the limited access to opportunity neighborhoods facing black and Latino children. Such policies have been characterized as people- and place-based policies. People-based policies refer to improving the ability of minority households to find housing in better-off neighborhoods; for example, housing mobility policies, increasing rental and affordable housing in the suburbs, and enforcing housing antidiscrimination laws. Place-based policies involve intervening upon and improving the conditions within disadvantaged neighborhoods. Housing policy experts increasingly agree that both types of policies are needed.³⁰

Several professional and advocacy communities (for example, regional equity, affordable housing, and fair housing) are committed to reducing racial/ethnic disparities in access to opportunity neighborhoods. And although the public health community has prioritized reduction of racial/ethnic health disparities, traditional public health strategies do not address disparities in access to opportunity

“There may be mental health benefits associated with moving from high- to low-poverty neighborhoods.”

neighborhoods. Despite the increasing evidence on social determinants of health, most public health interventions address proximal risk factors but not social determinants.³¹ We suggest that improving access to neighborhoods of opportunity should be regarded as a public health intervention.

Below we consider two examples of actual neighborhood interventions in which health considerations have been incorporated explicitly. Although combining neighborhood and public health interventions is still rare, these two examples suggest directions for partnerships between public health and nonhealth sectors.

■ **People-based interventions: moving to opportunity.** Housing mobility programs throughout the country have helped low-income families who receive housing assistance move to better neighborhoods by providing them with housing search counseling, and pre- and postmove information and support services to ease their transition to neighborhoods of opportunity.³² Examples of these initiatives include the Gautreaux program in Chicago; the Moving to Opportunity (MTO) policy demonstration in five U.S. metropolitan areas; and regional housing mobility programs in Baltimore, Dallas, and Westchester County in New York. There has been limited research on the health effects of these housing mobility interventions, but the evidence from MTO indicates that there may be mental health benefits associated with moving from high- to low-poverty neighborhoods. Some commentators are discouraged because the evidence from MTO is mixed: mental health benefits were apparent for adults and girls, but there were some negative effects on boys in regard to substance use and injuries. On the other hand, it is remarkable that a housing mobility intervention that did not address health issues directly has been shown to be effective for improving mental health.³³

The Baltimore Regional Housing Campaign, a current promising approach to increase access to opportunity neighborhoods, grew out of a successful lawsuit by the American Civil Liberties Union (ACLU) on behalf of 14,000 black tenants and potential beneficiaries of public housing in Baltimore. In 2005 the District Court found the U.S. Department of Housing and Urban Development (HUD) in violation of the Fair Housing Act and liable for failing to implement an effective regional plan for desegregation.³⁴ “Baltimore City,” said the judge, “should not be viewed as an island reservation” to contain all of the region’s poor. John Powell of the Kirwan Institute for the Study of Race and Ethnicity designed a remedy accepted by the plaintiffs that involves identifying and ranking “communities of opportunity” across the Baltimore metropolitan area based on school performance, employment, transportation, child care, health care, and institutions facilitating civic and political activity. The plan is a voluntary process through which families eligible for housing assistance can choose to move out of public housing into

“communities of opportunity.”³⁵

A group of public health professionals is beginning to collaborate with the Baltimore Regional Housing Campaign to incorporate a health intervention into the housing mobility strategy. This may include using health criteria to define *opportunity neighborhoods* (for example, neighborhood safety, access to open space and “walkability,” access to healthy food, and availability of health care providers); providing health-related counseling to participating families; working with families to identify health concerns and needs; and tracking families’ health status over time.

The Baltimore initiative suggests important lessons. First, although an opportunity framework is being used to implement the desegregation plan, the initiative grew out of a civil rights case. Thus, antidiscrimination litigation can be an invaluable tool in combating disparities. Second, although the core initiative involves mobility to better neighborhoods, positive changes in health status are more likely to occur if a public health intervention is explicitly integrated with the mobility initiative. Third, these types of collaborations between housing mobility and public health advocates are not easy to implement but are needed if we are serious about addressing the social determinants of health. However, a new generation of public health interventions, such as this Baltimore initiative, offer promising directions for addressing social determinants of health such as housing.

■ **Place-based interventions: improving opportunities for healthy eating in disadvantaged neighborhoods.** Opportunities to have a healthy diet—an important determinant of body mass index (BMI) and obesity—are constrained in poor neighborhoods, not only because their residents have lower incomes, but also because there is less availability of healthy foods and a higher density of unhealthy food outlets. Supermarkets with a wide variety of food choices are less common in minority and poor neighborhoods than in primarily white and higher-income neighborhoods. On the other hand, convenience stores and other suboptimal food outlets are more common in minority and low-income neighborhoods.³⁶ Therefore, the “grocery gap” particularly hurts black, Latino, and low-income households. Some evidence suggests that neighborhood food-retail interventions may be effective in changing dietary patterns, but more evaluation studies are needed.³⁷

Policy changes could help improve the food environment in disadvantaged neighborhoods. For instance, states could help reduce the “grocery gap” by enacting legislation to create low-cost financing sources dedicated to grocery store ventures in underserved communities.³⁸ The Pennsylvania Fresh Food Financing Initiative (2003) provides economic incentives for supermarket chains to locate in low-income communities by providing financing options for them from a combination of public and private funds. California is considering similar legislation to establish a Healthy Food Retail Innovations Fund aimed at improving healthy food retail options in underserved communities.

The Pennsylvania and California interventions go beyond a narrow health edu-

cation approach to address neighborhood infrastructure issues, not unlike nineteenth-century infrastructure interventions to improve public health via sewage and drinking water. Notably, although these initiatives focus on improving the food environment at the neighborhood level, they are state-level initiatives. Local efforts such as work by community development corporations are also needed, but equalizing opportunities in access to healthy food across neighborhoods requires initiatives at a higher level of government.

Current Challenges To Race-Based Policy Remedies

■ **School integration.** The nation is committed to reducing the large racial/ethnic health disparities, as articulated in Healthy People 2010. Our analyses suggest that making progress on reducing disparities will require addressing the inequality that is embedded in residential segregation. The unfinished civil rights agenda of addressing segregation seems a particularly urgent issue in 2008, the year of the fortieth anniversary of the Fair Housing Act.³⁹ However, addressing racial/ethnic disparities in access to opportunity neighborhoods and schools is becoming more difficult in a policy environment in which race-based solutions are being challenged. The Supreme Court recently ruled against school integration programs that seek to improve minority children's access to high-quality schools by trying to balance the racial composition across schools within school districts. School segregation experts anticipate that it is only a matter of time before there are legal challenges to school integration across school districts. Although very limited in scope, given the small number of children they affect, school integration programs are one of very few policy tools based on the premise that residential segregation is at the root of disparities affecting children.⁴⁰

■ **Opportunity versus desegregation.** Going forward, policy remedies to correct racial/ethnic disparities will likely have to invoke principles other than racial integration. In fact, several ongoing public housing desegregation programs are relying on an opportunity framework instead of on neighborhood racial composition.⁴¹ Given the racialized patterning of opportunity, such a framework may yield very similar results while being more tenable from a legal and policy standpoint.

RECOGNITION THAT HEALTH DISPARITIES are rooted in social factors such as residential segregation and an unequal geography of opportunity should not have a paralyzing effect on the public health community. However, effectively addressing health disparities will require policymakers to go beyond conventional public health approaches to consider policies to improve access to opportunity-rich areas through enhanced housing mobility and to increase the opportunities for healthy living in disadvantaged neighborhoods.

.....
 Dolores Acevedo-Garcia gratefully acknowledges a Research Enabling Grant from the Office of Faculty Development and Diversity at Harvard University, as well as funding for DiversityData.org from the W.K. Kellogg Foundation and the Joint Center for Political and Economic Studies Health Policy Institute. Theresa Osypuk thanks the Robert Wood Johnson Foundation's Health and Society Scholars Program for financial support.

NOTES

1. D. Satcher et al., "What If We Were Equal? A Comparison of the Black-White Mortality Gap in 1960 and 2000," *Health Affairs* 24, no. 2 (2005): 459–464.
2. D. Williams and P. Jackson, "Social Sources of Racial Disparities in Health," *Health Affairs* 24, no. 2 (2005): 325–334.
3. J. Iceland et al., *Racial and Ethnic Residential Segregation in the United States: 1980–2000*, Pub. no. 3 (Washington: U.S. Government Printing Office, 2002).
4. J. Carr and N. Kutty, eds., *Segregation: The Rising Costs for America* (New York: Routledge, forthcoming); D. Acevedo-Garcia and T. Osypuk, "Impacts of Housing and Neighborhoods on Health: Pathways, Racial/Ethnic Disparities, and Policy Directions," in *Segregation*, 197–235; D.R. Williams and C. Collins, "Racial Residential Segregation: A Fundamental Cause of Racial Disparities in Health," *Public Health Reports* 116, no. 5 (2001): 404–416; D. Acevedo-Garcia et al., "Future Directions in Residential Segregation and Health Research: A Multilevel Approach," *American Journal of Public Health* 93, no. 2 (2003): 215–221; and D. Acevedo-Garcia and K.A. Lochner, "Residential Segregation and Health," in *Neighborhoods and Health*, ed. I. Kawachi and L.F. Berkman (New York: Oxford University Press, 2003).
5. M.A. Turner et al., *Discrimination in Metropolitan Housing Markets: Phase 1* (Washington: Urban Institute, December 2002); and C.Z. Charles, "Processes of Racial Residential Segregation," in *Urban Inequality: Evidence from Four Cities*, ed. A. O'Connor, C. Tilly, and L.D. Bobo (New York: Russell Sage, 2001), 217–271.
6. D.S. Massey and N.A. Denton, *American Apartheid: Segregation and the Making of the Underclass* (Cambridge, Mass.: Harvard University Press, 1993).
7. Acevedo-Garcia and Osypuk, "Impacts of Housing and Neighborhoods on Health"; Williams and Collins, "Racial Residential Segregation"; and Acevedo-Garcia et al., "Future Directions in Residential Segregation and Health Research."
8. D.B. Smith et al., "Separate and Unequal: Racial Segregation and Disparities in Quality across U.S. Nursing Homes," *Health Affairs* 26, no. 5 (2007): 1448–1458; and K. Baicker, A. Chandra, and J.S. Skinner, "Geographic Variation in Health Care and the Problem of Measuring Racial Disparities," *Perspectives in Biology and Medicine* 48, no. 1 Supp (2005): s42–s53.
9. Williams and Jackson, "Social Sources"; and D. Mechanic, "Population Health: Challenges for Science and Society," *Milbank Quarterly* 85, no. 3 (2007): 533–559.
10. S.L. Syme, B. Lefkowitz, and B.K. Krimgold, "Incorporating Socioeconomic Factors into U.S. Health Policy: Addressing the Barriers," *Health Affairs* 21, no. 2 (2002): 113–118; and C.J. Murray et al., "Eight Americas: Investigating Mortality Disparities across Races, Counties, and Race-Counties in the United States," *PLoS Medicine* 3, no. 9 (2006): e260.
11. Syme et al., "Incorporating Socioeconomic Factors."
12. N. Lurie, "What the Federal Government Can Do about the Nonmedical Determinants of Health," *Health Affairs* 21, no. 2 (2002): 94–106.
13. D. Acevedo-Garcia et al., *Children Left Behind: How Metropolitan Areas Are Failing America's Children*, Pub. no. 1 (Boston: Harvard School of Public Health, Center for the Advancement of Health, January 2007).
14. *Ibid.*
15. J.P. Shonkoff and D.A. Phillips, eds., *From Neurons to Neighborhoods: The Science of Early Childhood Development* (Washington: National Academies Press, 2000).
16. Acevedo-Garcia et al., *Children Left Behind*.
17. Kawachi and Berkman, eds., *Neighborhoods and Health*; and J. Brooks-Gunn, G.J. Duncan, and J.L. Aber, *Neighborhood Poverty: Context and Consequences for Children*, vol. 1 (New York: Russell Sage Foundation, 1997).
18. Shonkoff and Phillips, eds., *From Neurons to Neighborhoods*.
19. J.G. Iannotta, J.L. Ross, and National Research Council, *Equality of Opportunity and the Importance of Place: Summary of a Workshop* (Washington: National Academies Press, 2002); X.d.S. Briggs, ed., *The Geography of Opportunity: Race and Housing Choice in Metropolitan America* (Washington: Brookings Institution Press, 2005); and J.

- Powell, *Expert Remedial Report in Thompson v. Hud.* (Columbus: Kirwan Institute for the Study of Race and Ethnicity, 2005).
20. Powell, *Expert Remedial Report.*
 21. Acevedo-Garcia et al., *Children Left Behind*; and G.C. Galster and S.P. Killen, "The Geography of Metropolitan Opportunity: A Reconnaissance and Conceptual Framework," *Housing Policy Debate* 6, no. 1 (1995): 7–43.
 22. More methodological details are available from the authors; send your request to Dolores Acevedo-Garcia, dacevedo@hsph.harvard.edu. See also Acevedo-Garcia et al., *Children Left Behind.*
 23. Galster and Killen, "The Geography of Metropolitan Opportunity."
 24. Shonkoff and Phillips, eds., *From Neurons to Neighborhoods.*
 25. Acevedo-Garcia et al., *Children Left Behind.*
 26. Shonkoff and Phillips, eds., *From Neurons to Neighborhoods.*
 27. J. Goering and J.D. Feins, eds., *Choosing a Better Life? Evaluating the Moving to Opportunity Social Experiment* (Washington: Urban Institute Press, 2003); and D. Acevedo-Garcia et al., "Does Housing Mobility Policy Improve Health?" *Housing Policy Debate* 15, no. 1 (2004): 49–98.
 28. N.P. Retsinas and E.S. Belsky, eds., *Low-Income Homeownership: Examining the Unexamined Goal* (Washington: Joint Center for Housing Studies, Harvard University, and Brookings Institution Press, 2002).
 29. Fannie Mae Foundation, "Results of the Fannie Mae Foundation Affordable Housing Survey," May/June 2002, http://www.novoco.com/low_income_housing/resource_files/research_center/FannieMae_Survey_061602.pdf (accessed 10 January 2008).
 30. B. Katz, *Neighborhoods of Choice and Connection: The Evolution of American Neighborhood Policy and What It Means for the United Kingdom* (Washington: Brookings Institution, July 2004); and P.D. Tegeler, "Connecting Families to Opportunity: The Next Generation of Housing Mobility Policy," in *All Things Being Equal: Instigating Opportunity in an Inequitable Time*, ed. B. Smedley and A. Jenkins (New York: New Press, 2007), 79–95.
 31. Mechanic, "Population Health."
 32. G. Rizzor, "Essential Elements of Successful Mobility Counseling Programs," in *Keeping the Promise: Preserving and Enhancing Housing Mobility in the Section 8 Housing Choice Voucher Program*, Conference Report of the Third National Conference on Housing Mobility, ed. P. Tegeler, M. Cunningham, and M.A. Turner (Washington: Poverty and Race Research Action Council, 2005), 79–94.
 33. Acevedo-Garcia and Osypuk, "Impacts of Housing and Neighborhoods on Health"; and Acevedo-Garcia et al., "Does Housing Mobility Policy Improve Health?"
 34. Poverty and Race Research Action Council, "Metropolitan Housing Desegregation in Greater Baltimore: An Agenda for Action," January 2005, <http://www.prrac.org/pdf/BaltimoreDesegregation.pdf> (accessed 10 January 2008).
 35. Powell, *Expert Remedial Report.*
 36. L.V. Moore and A.V. Diez Roux, "Associations of Neighborhood Characteristics with the Location and Type of Food Stores," *American Journal of Public Health* 96, no. 2 (2006): 325–331.
 37. N. Wrigley, D. Warm, and B. Margetts, "Deprivation, Diet, and Food-Retail Access: Findings from the Leeds 'Food Deserts' Study," *Environment and Planning A* 35, no. 1 (2003): 151–188.
 38. R. Flournoy and S. Treuhart, *Healthy Food, Healthy Communities: Improving Access and Opportunities through Food Retailing*, Fall 2005, <http://www.policylink.org/pdfs/HealthyFoodHealthyCommunities.pdf> (accessed 10 January 2008).
 39. Carr and Kutty, eds., *Segregation.*
 40. Acevedo-Garcia et al., *Children Left Behind.*
 41. Briggs, ed., *The Geography of Opportunity*; and Powell, *Expert Remedial Report.*