

# Virtual Mentor

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## Medicine and society

### Where you live matters to your health

by Abigail Silva, MPH

Sociologists have long recognized the importance of geography, particularly neighborhood, in the lives of individuals. After all, as Peter Rossi noted, neighborhoods are the places in which we find medical facilities that tend to our health, schools that teach us, factories and businesses that provide jobs, and parks in which to play and socialize [1]. However, with a few exceptions [2-4], the examination of the role of “place” in an individual American’s health has been a focus of study only during the last decade. Recent interest in the social determinants of health has drawn attention to the role of environment [5, 6]. In fact, during this short span, numerous studies have found that neighborhood context may be related to health independently of individual-level attributes [7-32].

One neighborhood characteristic that has been repeatedly associated with poor health outcomes is poverty. After adjusting for individual-level risk, living in an economically disadvantaged (often defined by level of income, education, employment status and other variables) neighborhood has been found to increase the risk of mortality [7-11], low weight births [12, 13], coronary heart disease incidence [14, 15] and childhood asthma [16, 17].

Another related environmental factor shown to affect health is racial residential segregation. All residential segregation, although most dramatically in the African American community, has been shown to result in racial disparities in socioeconomic status and has been linked to health outcomes such as all-cause mortality [18, 19], premature mortality [20], infant mortality [21, 22] and tuberculosis [23].

### Neighborhood stressors

While the exact pathways of stressors in economically disadvantaged and segregated environments may not always be clear, there are circumstances that are likely to affect health. For instance, it has been well established that the tobacco and alcohol industries market disproportionately to poor and minority neighborhoods [24-26]. These same disadvantaged neighborhoods are often plagued by high rates of violence, chronic illness and financial strain [27] that can contribute to increased levels of stress. Faced with these pressures, individuals often turn to tobacco and alcohol to cope. The combination of environmental stressors and the heavy advertising of alcohol and tobacco is not conducive to healthy behaviors.

Another characteristic of disenfranchised neighborhoods that impedes healthy behaviors is the paucity of supermarkets [28, 29]. While it is widely accepted that a nutritious diet is essential to good health, ready access to fresh produce and other healthful food often depends on where one lives. Many low-income and minority communities are plagued by vast fast-food choices and few alternatives [30]. Moreover, the price of fresh fruits and vegetables may be prohibitive to some low-income consumers [31, 32]. Combined, these conditions can lead to poorer nutrition.

Where one lives also partly determines access to medical care. For instance, it has been documented that health care facilities in poor and minority communities are more likely to close than those in higher income areas [33-35]. This leaves some neighborhoods with limited or no access to care. Those who live in such neighborhoods often delay treatment (and, even more so, preventive care) to the long-term detriment of their health.

It is vitally important to assess a patient's health risks and lifestyle stressors in the medical encounter in order to determine a diagnosis and prescribe treatment. Yet how often is the patient's environment assessed? Consider a patient with asthma who smokes. Why would anyone with this health problem take such a risk? Perhaps she lives in an environment with high rates of unemployment and crime, and smoking helps her cope with these conditions. How should a clinician use this information in the care plan? In this case a physician might deem it appropriate to refer the patient to a stress management program or a mental health professional who can help her find better ways of coping with stress. Another example is the patient whose health would benefit greatly by weight loss and a better diet. Such a patient might be willing to make these lifestyle changes but must overcome several barriers to do so. Suppose she lives in a neighborhood with poor recreational facilities and a limited number of supermarkets with fresh fruits and vegetables. These facts of the patient's life can be as important as the physical exam in creating a realistic treatment plan. And they most definitely influence whether the patient will be able to adhere to the plan.

### **Conclusion**

It is widely recognized that disparities in health among individuals in different racial and ethnic groups and socioeconomic levels are pervasive and that the causes are multifactorial. Moreover, these differences tend to be most striking when geographic location is taken into account. Clinicians who consider the effects of both individual and environmental risks when assessing a patient stand a better chance of being effective with their treatment and help to reduce disparities in health.

### **References**

1. Rossi PH. Community social indicators. In: Campbell A, Converse PE, eds. *The Human Meaning in Social Change*. New York, NY: Russell Sage Foundation; 1972:87-126.

2. Harburg E, Erfurt J, Chape C, Hauenstein LS, Schull WJ, Schork MA. Socioecological stressor areas and black-white blood pressure. *J Chronic Dis.* 1973;26:595-611.
3. James SA, Kleinbaum DG. Socioecologic stress and hypertension related mortality rates in North Carolina. *Am J Public Health.* 1976;66:354-358.
4. Kasl SV, Harburg E. Mental health and the urban environment: some doubts and second thoughts. *J Health Soc Behav.* 1975;16:268-282.
5. Krieger N. Epidemiology and the web of causation: Has anyone seen the spider? *Soc Sci Med.* 1994;39:887-903.
6. Kaplan GA, Lynch JW. Whither studies on the socioeconomic foundations of population health? *Am J Public Health.* 1997;87:1409-1411.
7. Haan M, Kaplan GA, Camacho T. Poverty and health. Prospective evidence from the Alameda County Study. *Am J Epidemiol.* 1987;125:989-998.
8. Anderson RT, Sorlie P, Backlund E, Johnson N, Kaplan GA. Mortality effects of community socioeconomic status. *Epidemiology.* 1997;8:42-47.
9. Waitzman NJ, Smith KR. Phantom of the area: poverty-area residence and mortality in the United States. *Am J Public Health.* 1998;88:973-976.
10. Winkleby MA, Cubbin C. Influence of individual and neighborhood socioeconomic status on mortality among black, Mexican-American, and white women and men in the United States. *J Epidemiol Community Health.* 2003;57:444-452.
11. Borrell LN, Diez Roux AV, Rose K, Catellier D, Clark BL, and Atherosclerosis Risk in Communities Study. Neighbourhood characteristics and mortality in the Atherosclerosis Risk in Communities Study. *Int J Epidemiol.* 2004;33:398-407.
12. Collins JW Jr, Schulte NF, Drolet A. Differential effect of ecologic risk factors on the low birthweight components of African-American, Mexican-American, and non-Latino white infants in Chicago. *J Natl Med Assoc.* 1998;90:223-229.
13. Baker AN, Hellerstedt WL. Residential racial concentration and birth outcomes by nativity: Do neighbors matter? *J Natl Med Assoc.* 2006;98:172-180.
14. Diez Roux AV, Merkin SS, Arnett D, et al. Neighborhood of residence and incidence of coronary heart disease. *N Engl J Med.* 2001;345:99-106.
15. Sundquist K, Winkleby M, Ahlen H, Johansson SE. Neighborhood socioeconomic environment and incidence of coronary heart disease: a follow-up study of 25,319 women and men in Sweden. *Am J Epidemiol.* 2004;159:655-662.
16. Litonjua AA, Carey VJ, Weiss ST, Gold DR. Race, socioeconomic factors, and area of residence are associated with asthma prevalence. *Pediatr Pulmonol.* 1999;28:394-401.
17. Pearlman DN, Zierler S, Meersman S, Kim HK, Viner-Brown SI, Caron C. Race disparities in childhood asthma: Does where you live matter? *J Natl Med Assoc.* 2006;98:239-247.
18. Polednak AP. Poverty, residential segregation, and black/white mortality rates in urban areas. *J Health Care Poor Underserved.* 1993;4:363-373.

19. Hart KD, Kunitz SJ, Sell RR, Mukamel DB. Metropolitan governance, residential segregation, and mortality among African Americans. *Am J Public Health*. 1998;88:434-438.
20. Cooper RS, Kennelly JF, Durazo-Arvizu R, Oh HJ, Kaplan G, Lynch J. Relationship between premature mortality and socioeconomic factors in black and white populations of US metropolitan areas. *Public Health Rep*. 2001;116:464-473.
21. Polednak AP. Black-white differences in infant mortality in 38 standard metropolitan statistical areas. *Am J Public Health*. 1991;81:1480-1482.
22. Polednak AP. Trends in US urban black infant mortality, by degree of residential segregation. *Am J Public Health*. 1996;86:723-726.
23. Acevedo-Garcia D. Zip code-level risk factors for tuberculosis: neighborhood environment and residential segregation in New Jersey, 1985-1992. *Am J Public Health*. 2001;91:734-741.
24. Hackbarth DP, Schnopp-Wyatt D, Katz D, Williams J, Silvesteri B, Pflieger M. Collaborative research and action to control the geographic placement of outdoor advertising of alcohol and tobacco products in Chicago. *Public Health Rep*. 2001;16:558-567.
25. Stoddard JL, Johnson CA, Sussman S, Dent C, Boley-Cruz T. Tailoring outdoor tobacco advertising to minorities in Los Angeles County. *J Health Commun*. 1998;3:137-146.
26. Moore DJ, Williams JD, Qualls WJ. Target marketing of tobacco and alcohol-related products to ethnic minority groups in the United States. *Ethn Dis*. 1996;6:83-98.
27. Evans GW, Saegert S. Residential crowding in the context of inner city poverty. In: Wapner S, Demisk J, Yamamoto T, et al., eds. *Theoretical Perspectives in Environment-behavior Research*. New York, NY: Kluwer Academic Publishers; 2000:247-267.
28. Morland K, Wing S, Diez Roux A, Poole C. Neighborhood characteristics associated with the location of food stores and food service places. *Am J Prev Med*. 2002;22:23-29.
29. Zenk SN, Schulz AJ, Israel BA, James SA, Bao S, Wilson ML. Neighborhood racial composition, neighborhood poverty, and the spatial accessibility of supermarkets in metropolitan Detroit. *Am J Public Health*. 2005;95:660-667.
30. Block JP, Scribner RA, DeSalvo KB. Fast food, race/ethnicity, and income: a geographic analysis. *Am J Prev Med*. 2004;27:211-217.
31. Dibsall LA, Lambert N, Bobbin RF, Frewer LJ. Low-income consumers' attitudes and behaviour towards access, availability, and motivation to eat fruits and vegetables. *Public Health Nutr*. 2003;6:159-168.
32. Jetter KM, Cassady DL. The availability and cost of healthier food alternatives. *Am J Prev Med*. 2006;30:38-44.
33. Whiteis DG. Hospital and community characteristics in closures of urban hospitals, 1980-87. *Public Health Rep*. 1992;107:409-416.

34. McLafferty S. Neighborhood characteristics and hospital closures: a comparison of the public, private, and voluntary hospital systems. *Soc Sci Med.* 1982;16:1667-1674.
35. Rice MF. Inner-city hospital closures/relocations: race, income status, and legal issues. *Soc Sci Med.* 1987;24:889-896.

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