The New Vital Sign: Where Do You Live?

Electra D. Paskett

It is widely accepted that differences in risk factors, incidence, mortality, or stage of disease among populations, collectively known as health disparities, should not exist. Populations that experience disparities include racial/ethnic minorities, rural, and inner city residents, those of low socioeconomic status (SES), and LGBT groups (1). It is clear that health disparities need to be addressed to reduce the burden of cancer in the population as a whole.

Populations that experience cancer health disparities often live in defined, segregated geographic areas that have in common features that promote disparities rather than facilitate reductions in disparities in cancer outcomes. For example, lower SES areas frequently have a higher per capita burden of stores that sell tobacco products and display tobacco advertising (2). The rural area of Appalachia, Ohio, where I conduct most of my research, has (i) counties without a grocery store to purchase fresh meat, vegetables, and fruit; (ii) fewer sidewalks and health clubs to engage in exercise; (iii) counties with one or no mammography facilities; (iv) fewer colonoscopy facilities; (v) no public transportation; and (vi) poor access to state-of-the-art treatment facilities. In metropolitan Chicago, women who reside in low SES neighborhoods do not have access to quality breast cancer screening and treatment facilities (3).

In all of these situations, the impact of living in unfavorable geospatial factors is the same: poorer cancer outcomes. Moreover, residence is a marker for poorer adherence to medical advice. For example, those who live in poorer areas are less likely to stop smoking (4, 5) and find it harder to travel to a quality facility for a screening test (6). Thus, where one lives is a risk factor for disease and mortality above the usual risk factors.

Asking a patient "where do you live?" could be used to identify geographic exposures associated with cancer risk and outcomes. As there are well-defined thresholds for other vital signs, such as high blood pressure, thresholds for geographic areas could be developed and programmed into electronic medical records (EMR). There are many scales developed to assess neighborhood SES, such as the RAND N-SES (7, 8) or even the U.S. government definition of economically "distressed" and "at-risk" counties (9) that could be used to identify high-risk neighborhoods. Research needs to be conducted to construct or select a measure that could easily be implemented within an EMR, and clinicians could easily obtain a "value" for a patient with "risk" defined. As with accepted vital signs like blood pressure, this measure would need to have meaning and value in terms of predicting disease risk status. Moreover, this metric should be easy to assess and interpret and be easily reproducible.

What could a health care provider do if they learn their patient lives in a "high risk" geographical area? One answer is found in the unfunded mandate in the Affordable Care Act for patient navigators. Patient navigation, first coined by Dr. Harold Freeman (10), has demonstrated the ability to improve screening uptake (11, 12), follow-up of abnormalities (13, 14), and receipt of prompt and proper care (15, 16). Navigation works, but it is not correctly or widely implemented. With limited resources, a navigator could be assigned to assist a patient with a "vital sign" that indicates they live in a high-risk geographic area. In addition, specialized navigators could be used as community health workers to go into high-risk geographic areas to educate and direct residents to appropriate care facilities to mitigate risk for poor cancer outcomes. The time has come to accept that where we live impacts our health and do something to mitigate risks associated with living in an unfavorable neighborhood.

See all articles in this *CEBP Focus* section, "Multilevel Approaches to Addressing Cancer Health Disparities."

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The Ohio State University Comprehensive Cancer Center, Columbus, Ohio.

Corresponding Author: Electra D. Paskett, The Ohio State University, 1590 N. High Street, Suite 525, Columbus, OH 43201. Phone: 614-293-3917; Fax: 614-293-5611; E-mail: electra.paskett@osumc.edu

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References

1. Centers for Disease Control and Prevention. CDC health disparities and inequalities report - United States, 2013; 2013. Available from: http://www.cdc.gov/mmwr/pdf/other/su6203.pdf.
2. Lee JG, Henriksen L, Rose SW, Moreland-Russell S, Ribisl KM. A systematic review of neighborhood disparities in point-of-sale tobacco marketing. Am J Public Health 2015;105:e8–18.
3. Mortel M, Rauscher GH, Murphy AM, Hoskins K, Warnecke RB. Racial and ethnic disparity in symptomatic breast cancer awareness despite a recent screen: the role of tumor biology and mammography facility characteristics. Cancer Epidemiol Biomarkers Prev 2015;24:1599–606.
4. Barbeau EM, Krieger N, Soobader MJ. Working class matters: socioeconomic disadvantage, race/ethnicity, gender, and smoking in NHIS 2000. Am J Public Health 2004;94:269–78.
5. Barbeau EM, Leavy-Sperounis A, Balbach ED. Smoking, social class, and gender: what can public health learn from the tobacco industry about disparities in smoking? Tob Control 2004;13:115–20.
6. Peipins LA, Graham S, Young R, Lewis B, Foster S, Flanagan B, et al. Time and distance barriers to mammography facilities in the Atlanta metropolitan area. J Community Health 2011;36:675–83.
7. Dubowitz T, Heron M, Bird CE, Lurie N, Finch BK, Basurto-Davila R, et al. Neighborhood socioeconomic status and fruit and vegetable intake among whites, blacks, and Mexican Americans in the United States. Am J Clin Nutr 2008;87:1883–91.
8. Merkin SS, Basurto-Davila R, Karlamangla A, Bird CE, Lurie N, Escarce J, et al. Neighborhoods and cumulative biological risk profiles by race/ethnicity in a national sample of U.S. adults: NHANES III. Ann Epidemiol 2009;19:194–201.

9. US Department of Commerce, Economic Development Administration. The code of federal regulations of the United States of America; 2007. Available from: https://www.eda.gov/pdf/EDAs_regs-13_CFR_Chapter_III.pdf.
10. Freeman HP, Muth BJ, Kerner JF. Expanding access to cancer screening and clinical follow-up among the medically underserved. Cancer Pract 1995; 3:19–30.
11. Burhansstipanov L, Dignan MB, Schumacher A, Krebs LU, Alfonsi G, Apodaca CC. Breast screening navigator programs within three settings that assist underserved women. J Cancer Educ 2010;25:247–52.
12. Wang X, Fang C, Tan Y, Liu A, Ma GX. Evidence-based intervention to reduce access barriers to cervical cancer screening among underserved Chinese American women. J Womens Health 2010;19:463–9.
13. Battaglia TA, Bak SM, Heeren T, Chen CA, Kalish R, Tringale S, et al. Boston Patient Navigation Research Program: the impact of navigation on time to diagnostic resolution after abnormal cancer screening. Cancer Epidemiol Biomarkers Prev 2012;21:1645–54.
14. Hoffman HJ, LaVerda NL, Young HA, Levine PH, Alexander LM, Brem R, et al. Patient navigation significantly reduces delays in breast cancer diagnosis in the District of Columbia. Cancer Epidemiol Biomarkers Prev 2012;21:1655–63.
15. Luckett R, Pena N, Vitonis A, Bernstein MR, Feldman S. Effect of patient navigator program on no-show rates at an academic referral colposcopy clinic. J Womens Health 2015;24:608–15.
16. Percac-Lima S, Benner CS, Lui R, Aldrich LS, Oo SA, Regan N, et al. The impact of a culturally tailored patient navigator program on cervical cancer prevention in Latina women. J Womens Health 2013;22:426–31.