

# Reconsidering the Supplemental Nutrition Assistance Program as Community Development

Benjamin W. Chrisinger, MUEP<sup>1,2</sup>

## ABSTRACT

The Supplemental Nutrition Assistance Program (SNAP) protects households from severe food insecurity or extreme poverty, buffers against certain adverse health effects, and exhibits a multiplier effect on the nation's economy. Nonetheless, SNAP remains contentious and benefit reductions are currently being debated. One new direction is to reconceptualize people-based SNAP allocations within place-based community development. Programs such as the federal Healthy Food Financing Initiative encourage retailer development in underserved neighborhoods, creating healthy options and opportunities to reinvest SNAP dollars locally. By exploring relationships between these programs, researchers and practitioners can better understand how to enhance their impact on individuals and neighborhoods.

**Key Words:** Supplemental Nutrition Assistance Program, food deserts, healthy food access, Healthy Food Financing Initiative, community development (*J Nutr Educ Behav.* 2015;47:273-277.)

Accepted October 22, 2014. Published online November 20, 2014.

## INTRODUCTION

Shortly after President Obama signed the Agricultural Act of 2014—commonly known as the Farm Bill<sup>1</sup>—into law, healthy food access supporters celebrated a victory. After years of advocacy and lobbying, the Healthy Food Financing Initiative (HFFI) was passed. It is the newest federal policy to address food deserts, or areas that are chronically underserved by large food retailers, joining existing local and state public-private partnerships. Although HFFI can be used to improve food deserts in a variety of ways, new retailer development represents the largest and most significant type of investment. Often modeled on successful state-level funds in Pennsylvania and California, healthy food financing programs steer flexible financing and development incentives to retailers who are willing to open stores in food deserts, thus helping them to overcome start-up obstacles that might otherwise render the developments unworkable.<sup>2</sup>

Much like similar state and local-level programs, HFFI is a promising method of increasing food access and stimulating community development, but it also belies a serious risk. Elsewhere in the Farm Bill, the Supplemental Nutrition Assistance Program (SNAP, formerly known as food stamps) was cut by nearly \$8.6 billion.<sup>3</sup> This occurred less than 4 months after a \$5 billion reduction owing to a sunset provision in the American Recovery and Reinvestment Act (ARRA).<sup>4</sup> With this, the Farm Bill sent a mixed message to poor communities by expanding food spending opportunities through HFFI while narrowing spending ability through SNAP.

Healthy food financing developments have not been conclusively shown to influence diet or health<sup>5-7</sup> but more is known about the protective health effects of SNAP.<sup>8</sup> In their efforts to improve diet-related health, researchers and practitioners should think of these programs in a larger ecosystem, in terms of both efficacy

and political viability. Considered in this more complex, yet more complete, environment, household SNAP allocations can be seen as a buffer against food insecurity and adverse health outcomes,<sup>8,9</sup> but also as community-level economic development. Given the political uncertainty surrounding SNAP, a shift toward more interdisciplinary and holistic thinking is required to better study, implement, reform, and defend the program.

## KEY FEATURES OF SNAP

Over half of the US Department of Agriculture (USDA) budget is dedicated to SNAP, which makes it the largest expense in the federal Farm Bill.<sup>10</sup> The cost of the program grew sharply during the recession as it enrolled more Americans and benefit amounts were raised by ARRA as a form of economic stimulus.<sup>9</sup> In October, 2013, Congress allowed the ARRA supplement to expire, returning benefit amounts to pre-recession levels.<sup>4</sup> Congress authorized further cuts in the Farm Bill, which was signed by President Obama in February, 2014.<sup>1</sup> Republican- and Democrat-controlled states have counteracted this additional benefit reduction through a provision that depends on state contributions to a separate welfare program, the Low Income Home

<sup>1</sup>Department of City and Regional Planning, University of Pennsylvania, Philadelphia, PA

<sup>2</sup>Leonard Davis Institute of Health Economics, University of Pennsylvania, Philadelphia, PA  
Address for correspondence: Department of City and Regional Planning, University of Pennsylvania, 127 Meyerson Hall, 210 S. 34th St, Philadelphia, PA 19104; Phone: (215) 898-8329; Fax: (215) 898-5131; E-mail: [benjc@design.upenn.edu](mailto:benjc@design.upenn.edu)

©2015 Society for Nutrition Education and Behavior. Published by Elsevier, Inc. All rights reserved.

<http://dx.doi.org/10.1016/j.jneb.2014.10.005>



Energy Assistance Program, which has been characterized by some as a program loophole.<sup>11</sup> Congressional legislators, however, are currently discussing strategies to override this provisional strategy and initiate deeper cuts to SNAP.<sup>12</sup>

## Participants

The most recent American Community Survey data illustrate how SNAP participation exists across a variety of demographic and geographic variables.<sup>13</sup> Nearly 48% of SNAP households have at least 1 employed person, 56% have children, and 45% have at least 1 person with a disability. The median annual income for a SNAP household is about \$18,500, nearly \$35,000 less than the national median. The amount of benefit an individual or household receives is primarily based on income and household size, although additional state eligibility guidelines, such as asset tests, may count against income-only qualifications<sup>14</sup>; for instance, some states allow program applicants to exclude vehicles from the calculation of total household assets, whereas others do not.<sup>15</sup> Thus, state administrators may exert some degree of control over program enrollment through additional eligibility tests.

## Spending

Only food items sold at authorized food retailers can be purchased with SNAP benefits.<sup>15</sup> Furthermore, SNAP cannot be used at restaurants except in certain situations when the participant belongs to a vulnerable subpopulation, such as disabled or elderly persons.<sup>16</sup> Benefits are redeemed through a system called electronic benefit transfer, which enables participants to use SNAP to purchase food in a manner similar to a credit or debit card payment. To be eligible to accept SNAP benefits as payment, retailers are required to meet minimum standards for the amount and varieties of certain types of foods.<sup>17</sup> Reforms to these requirements, called retailer enhancement, would create more stringent item stocking requirements for retailers who wish to accept SNAP; these revisions are currently under consideration by the USDA.<sup>18</sup> As of September, 2014, over

250,000 food retailers are permitted to conduct sales using electronic benefit transfer.<sup>19</sup>

A USDA analysis of SNAP transactions revealed patterns about where and how benefits are spent.<sup>20</sup> According to this analysis, the vast majority of SNAP benefits are redeemed at supermarkets and supercenters, not convenience stores; these larger retailers represent about 64% of all SNAP transactions and 84% of benefit dollars, whereas convenience stores make up only 15% of transactions and 4% of SNAP dollars.<sup>20</sup> Nationwide, over 96% of participants spend at least some SNAP benefits in supermarkets.<sup>20</sup> The study also indicated that SNAP purchase amounts are larger at supermarkets than at small stores; on average, a supermarket transaction is about \$42, compared with only \$8 at convenience stores.<sup>20</sup> Participants also make multiple trips to use all of their benefits, with the average household recording approximately 9 transactions per month.<sup>20</sup>

## DISCUSSION

### Protective Qualities of SNAP

As defined by the USDA, food insecurity is the "reduced quality, variety, or desirability of diet,"<sup>21</sup> and it is estimated that that 14.5% of American households were at least temporarily food insecure during 2012.<sup>21,22</sup> Researchers find adverse health indicators associated with food insecurity, especially among vulnerable subpopulations, including negative psychosocial outcomes, increased hospitalizations, decreased adherence to medication regimens, and lower food intake.<sup>22-28</sup> Other studies attempted to disentangle the seemingly paradoxical association between food insecurity and obesity.<sup>23,29,30</sup> Some also suggested an obesity relationship to bingeing and restricting behaviors that may coincide with SNAP allocation schedules.<sup>30</sup>

Research indicates that SNAP participation improves food security and that increasing SNAP allocation amounts enhances this effect.<sup>8,9,25,31,32</sup> Although the effects may not be equal across all subpopulations, there is reason to believe that as SNAP reduces food insecurity, it also decreases or buffers against harmful health effects. Whereas SNAP is understood to be

protective in terms of food insecurity, there is mixed evidence on the program's ability to improve dietary quality among participants.<sup>8,32,33</sup> Given this uncertainty, other researchers point to the important influence of obesogenic environments on household behavior in future studies of SNAP participant outcomes.<sup>34</sup>

### SNAP Innovations to Encourage Healthier Eating

Several SNAP programs, such as state-level SNAP Education (SNAP-Ed) Guidance initiatives<sup>35</sup> and the USDA's Healthy Incentives Pilot,<sup>36</sup> have been recently implemented among groups of SNAP participants to promote healthy purchasing and eating. Supplemental Nutrition Assistance Program Education Guidance is a grant system intended to increase the nutritional knowledge and physical activity of SNAP-eligible populations through partnerships with state-level agencies. The program empowers states to use grant funds in a variety of ways, resulting in a broad range of approaches.<sup>37</sup> State-level evaluations of SNAP-Ed show promising results in both short-term adoption and long-term maintenance of healthy eating behaviors. Although encouraging, findings from these state-led initiatives may have limited generalizability nationwide because of their size and unique program designs.<sup>38-41</sup>

Other programs use SNAP to incentivize healthy purchasing by offering bonus allocations for benefits spent on fruits or vegetables. Interim results from the USDA's Healthy Incentives Pilot showed that fruit and vegetable consumption and perceptions among the intervention population improved compared with a control group.<sup>42</sup> Additional publicly and privately funded SNAP incentives are also favorable, with examples in Philadelphia,<sup>43,44</sup> New York City,<sup>45</sup> and Detroit.<sup>46</sup> Broadly speaking, the USDA favors these incentive-based efforts to increase healthy eating over previously debated item restrictions based on nutritional content.<sup>47</sup>

### Economic Stimulus

A strong multiplier effect is associated with SNAP spending; that is, for every



dollar spent with SNAP, a greater amount is returned to the nation's economy.<sup>48</sup> Under ARRA allocation levels, it is estimated that every \$5 of SNAP spending generated \$9 of economic activity.<sup>31</sup> The multiplied economic benefits are derived from increased consumption, which may drive businesses to add staff hours or jobs, or otherwise increase output to meet demand. Additional research suggests that raising benefit amounts could also stimulate a stronger food retailer environment.<sup>49</sup>

In underserved neighborhoods, SNAP beneficiaries typically export their food dollars to areas with full-service retailers, rather than shopping exclusively at local corner and convenience stores, as is sometimes suggested.<sup>20</sup> Given the economic multiplier effect of SNAP spending,<sup>31,48</sup> it is important to consider the possible effects on local economies, especially within communities in which SNAP participation rates are high.

### Neighborhood Preferences and Challenges

Research shows that low-income individuals, including SNAP participants, are willing to travel beyond their neighborhoods to access quality supermarkets, although they prefer to shop closer to home when acceptable options exist.<sup>20,50-53</sup> These smaller studies illustrate that consumer preference motivates consumers to travel past closer, yet smaller, stores in favor of supermarkets. For those without access to a personal vehicle, compensatory actions include arranging rides with friends or family, taking cabs, or riding public transit to access larger retailers beyond low-access neighborhoods.<sup>51,54</sup> Other research suggests that decreasing the transportation costs for using supermarkets may improve the welfare benefit to SNAP recipients.<sup>49,55</sup>

### Program Synergy

Synergistic opportunities exist within the numerous local, state, and federal healthy food financing initiatives designed to bring retailers into underserved neighborhoods. Although the health effects of these interventions are inconclusive, the place-based effects of food dollars spent in poor

neighborhoods are far more evident. An important portion of revenues for food retailers in low-income communities or who predominantly serve low-income populations is composed of SNAP dollars. Thus, the people-based SNAP allocations become place-based at the point of transaction.

The concept of food dollar leakage is critical to the economic viability of new grocers. Underserved areas are considered to have high leakage and their residents would likely spend food dollars closer to home if given the opportunity.<sup>56</sup> Many barriers to new business development—both actual and perceived—exist in urban areas with high leakage, leading to the existence of food deserts. Innovative policy and financial incentives, such as HFFI, can help retailers overcome these barriers, but there is still an important financial expectation that new stores will be able to capture local food dollars. When taking the risk of opening in low-income areas, retailers must develop a business plan that accounts for SNAP transactions and how participants cyclically reduce or stop shopping altogether after benefits are exhausted. Although some research points to SNAP spending as a method of considering food environments,<sup>57</sup> attention has not yet been paid to the ability of new retailers to stop SNAP leakage in their neighborhoods.

### IMPLICATIONS FOR RESEARCH AND PRACTICE

In a basic economic sense, HFFI and SNAP can and should work together. The programs exist on different orders of magnitude. The USDA's 2015 budget calls for \$80 billion in SNAP and only \$13 million to support HFFI.<sup>10</sup> However, advocates for these programs must understand that one program's success or failure directly influences the other. If HFFI is to succeed, SNAP must be appropriately funded: SNAP promotes economic access, putting food dollars directly into low-income communities. The local benefits of SNAP can be multiplied by HFFI. High-quality neighborhood spending opportunities enable SNAP dollars to stay inside a community, supporting local jobs and tax revenues.

Recent literature suggests that improving the health of food desert residents will require more than new supermarkets, which underscores the challenges of behavior change and maintenance.<sup>7</sup> Similarly, although SNAP benefits are known to have protective health effects, the program is far from a true healthy eating intervention. Nonetheless, the significant access infrastructure that new stores provide marks a profound change in the community food environment for many underserved areas, a change that is largely predicated on the presence of SNAP spending potential. New research is enabling a better understanding of relationships between SNAP participation and health, and between healthy food access and health, although each of these factors exists within a broader social and economic ecosystem that includes all 3 relationships and interdependencies. Building a more robust body of research to document these relationships will require new interdisciplinary thinking and methodologies.

Considering SNAP and healthy food financing separately misses an opportunity to increase positive place-based effects on health and community development. The critical importance of SNAP is not fully described by health or community development outcomes alone. Additional research is needed to integrate a scholarly understanding of these programs with their interactions and effects on participants and neighborhoods. Perhaps more important, a multi-stakeholder coalition of practitioners, researchers, and advocates will be needed to face future political uncertainty and discussions about additional SNAP reductions. By developing an interdisciplinary understanding of the dynamics between these programs, SNAP and HFFI can more meaningfully improve access, opportunity, and health for those who need it most.

### REFERENCES

1. Agricultural Act of 2014, Pub L No 113-79, 128 Stat 649 (2014).
2. Food Trust, ChangeLab Solutions, and National Policy and Legal Analysis Network. Understanding the role of community development finance in improving access to healthy food: a guide



- for public health practitioners. [http://changclabsolutions.org/sites/default/files/CDFI\\_Report-FINAL-20140708.pdf](http://changclabsolutions.org/sites/default/files/CDFI_Report-FINAL-20140708.pdf). Accessed September 1, 2014.
3. Bolen E, Rosenbaum D, Dean S. *Summary of the 2014 Farm Bill Nutrition Title: includes bipartisan improvements to SNAP while excluding harsh House provisions*. Washington, DC: Center on Budget and Policy Priorities; 2014. <http://www.cbpp.org/files/1-28-14fa.pdf>. Accessed November 7, 2014.
4. US Department of Agriculture, Food and Nutrition Service. ARRA: American Recovery and Reinvestment Act of 2009. Arlington, VA, 2013. <http://www.fns.usda.gov/arra/supplemental-nutrition-assistance-program-snap>. Accessed November 7, 2014.
5. Wrigley N, Warm D, Margetts B. Deprivation, diet and food retail access: findings from the Leeds "Food Deserts" study. *Environ Planning A*. 2003;35:151-188.
6. Cummins S, Petticrew M, Higgins C, Findlay A, Sparks L. Large-scale food retailing as health intervention: quasi-experimental evaluation of a natural experiment. *J Epidemiol Commun Health*. 2005;59:1035-1040.
7. Cummins S, Flint E, Matthews SA. New neighborhood grocery store increased awareness of food access but did not alter dietary habits or obesity. *Health Aff*. 2014;33:283-291.
8. Gregory C, Ver Ploeg M, Andrews M, Coleman-Jensen A. *Supplemental Nutrition Assistance Program (SNAP) Participation Leads to Modest Changes in Diet Quality*. Washington, DC: Economic Research Service, US Dept of Agriculture; 2013. Report 147.
9. Nord M, Prell M. Food security of SNAP recipients improved following the 2009 stimulus package. *Amber Waves*. 2011;9:16-23.
10. US Department of Agriculture. *FY 2015 Budget Summary and Annual Performance Plan*. Washington, DC: US Dept of Agriculture; 2014.
11. Rosenbaum D, Dean S, Greenstein R. Cuts contained in SNAP bill coming to the House floor would affect millions of low-income Americans. Washington, DC: Center on Budget and Policy Priorities; 2013. <http://www.cbpp.org/files/9-6-13fa.pdf>. Accessed November 7, 2014.
12. Wilde P. After long argument, then compromise, Congress agrees on nutrition assistance benefit cuts in the Agricultural Act of 2014. *Choices*. 2014;29(2).
13. US Census Bureau. American Community Survey, 2008–2012 American Community Survey 5-Year Estimates. Table S2201. Generated by B. Chrisinger using American FactFinder. <http://factfinder2.census.gov>. Accessed June 1, 2014.
14. US Department of Agriculture, Food and Nutrition Service, Program Development Division. *State Options Report, 10th ed*. Arlington, VA, 2012. [http://www.fns.usda.gov/sites/default/files/10-State\\_Options.pdf](http://www.fns.usda.gov/sites/default/files/10-State_Options.pdf). Accessed November 7, 2014.
15. US Department of Agriculture, Food and Nutrition Service. Supplemental Nutrition Assistance Program: eligibility. <http://www.fns.usda.gov/snap/eligibility>. Accessed September 1, 2014.
16. Use of identification cards and redemption of coupons by eligible households. 7 C.F.R. § 274.10 (2014).
17. US Department of Agriculture, Food and Nutrition Service. Retail store eligibility USDA Supplemental Nutrition Assistance Program. <http://www.fns.usda.gov/snap/retail-store-eligibility-usda-supplemental-nutrition-assistance-program>. Accessed September 1, 2014.
18. US Department of Agriculture, Food and Nutrition Service. Request for information: Supplemental Nutrition Assistance Program (SNAP) enhancing retail food store eligibility. [http://www.fns.usda.gov/sites/default/files/RFI\\_Retailer\\_Enhancement.pdf](http://www.fns.usda.gov/sites/default/files/RFI_Retailer_Enhancement.pdf). Accessed September 1, 2014.
19. US Department of Agriculture. SNAP retailer locator. <http://www.fns.usda.gov/snap/retailerlocator>. Accessed September 1, 2014.
20. Castner L, Henke J. *Benefit Redemption Patterns in the Supplemental Nutrition Assistance Program*. Washington, DC: Food and Nutrition Service, US Dept of Agriculture; 2011.
21. US Department of Agriculture, Economic Research Service. Definitions of food security. Washington, DC, 2014. [http://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/definitions-of-food-security.aspx#U5X01\\_lDUZ5](http://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/definitions-of-food-security.aspx#U5X01_lDUZ5). Accessed November 7, 2014.
22. Coleman-Jensen A, Nord M, Andrews M, Carlson S. *Household Food Security in the United States in 2010*. Washington, DC: Economic Research Service, US Dept of Agriculture; 2011.
23. Olson CM. Nutrition and health outcomes associated with food insecurity and hunger. *J Nutr*. 1999;129:521S-524S.
24. Tarasuk VS. Household food insecurity with hunger is associated with women's food intakes, health and household circumstances. *J Nutr*. 2001;131:2670-2676.
25. Cook JT, Frank DA, Berkowitz C, et al. Food insecurity is associated with adverse health outcomes among human infants and toddlers. *J Nutr*. 2004;134:1432-1438.
26. Seligman HK, Bolger AF, Guzman D, Lopez A, Bibbins-Domingo K. Exhaustion of food budgets at month's end and hospital admissions for hypoglycemia. *Health Aff (Millwood)*. 2014;33:116-123.
27. Berkowitz SA, Seligman HK, Choudhry NK. Treat or eat: food insecurity, cost-related medication underuse and unmet needs. *Am J Med*. 2014;127:303-310.
28. Kalichman SC, Hernandez D, Cherry C, Kalichman MO, Washington C, Grebler T. Food insecurity and other poverty indicators among people living with HIV/AIDS: effects on treatment and health outcomes. *J Commun Health*. 2014;39:1133-1139.
29. Adams EJ, Grummer-Strawn L, Chavez G. Food insecurity is associated with increased risk of obesity in California women. *J Nutr*. 2003;133:1070-1074.
30. Dinour LM, Bergen D, Yeh M. The food insecurity–obesity paradox: a review of the literature and the role food stamps may play. *J Am Diet Assoc*. 2007;107:1952-1961.
31. Senauer B. The role of food stamps in the recession. <http://www.bostonfed.org/commdev/c&b/2012/fall/role-of-food-stamps-in-the-recession.htm>. Accessed June 1, 2014.
32. Caswell JA, Yaktine AL. *Supplemental Nutrition Assistance Program: Examining the Evidence to Define Benefit Adequacy*. Washington, DC: National Academies Press; 2013.
33. Leung CW, Clugish S, Villamor E, Catalano PJ, Willett WC, Rimm EB. Few changes in food security and dietary intake from short-term participation in the Supplemental Nutrition Assistance Program among low-income Massachusetts adults. *J Nutr Educ Behav*. 2014;46:68-74.
34. DeBono NL, Ross NA, Berrang-Ford L. Does the food stamp program cause obesity? A realist review and a call for place-based research. *Health Place*. 2012;18:747-756.



35. US Department of Agriculture, Food and Nutrition Service. United States Department of Agriculture Supplemental Nutrition Assistance Program Education Guidance: Nutrition Education and Obesity Prevention Grant Program. <http://snap.nal.usda.gov/snap/Guidance/FinalFY2015SNAP-EdGuidance.pdf>. Accessed November 7, 2014.
36. Bartlett S, Klerman J, Wilde P, et al. *Healthy Incentives Pilot (HIP) Interim Report*. Alexandria, VA: US Dept of Agriculture, Food and Nutrition Service, Office of Research and Analysis; 2013.
37. US Department of Agriculture, Food and Nutrition Service. United States Department of Agriculture Supplemental Nutrition Assistance Program Education Guidance: Nutrition Education and Obesity Prevention Grant Program. <http://snap.nal.usda.gov/snap/Guidance/FinalFY2015SNAP-EdGuidance.pdf>. Accessed September 1, 2014.
38. Koszewski W, Schi N, Behrends D, Tuttle E. The impact of SNAP-ED and EFNEP on program graduates 6 months after graduation. *J Extension*. 2011;49:1-8.
39. Conway C, Kennel J, Zubieta AC. Assessing optimal nutrition education dosage and long-term behavior change retention in SNAP-ed participants. [www.nifa.usda.gov/nea/food/fsne/pdfs/ohio\\_improv\\_SnapEd\\_ACZ\\_Fin.pdf](http://www.nifa.usda.gov/nea/food/fsne/pdfs/ohio_improv_SnapEd_ACZ_Fin.pdf). Accessed June 1, 2014.
40. Wardlaw M, Baker S. Long-term evaluation of EFNEP and SNAP-Ed. <http://ncsu.edu/ffci/publications/2012/v17-n2-2012-summer-fall/wardl>. Accessed June 1, 2014.
41. Hersey JC, Cates SC, Blitstein JL, Williams PA. *SNAP-Ed Can Improve Nutrition of Low-Income Americans Across Life Span*. Research Triangle Park, NC: RTI Press; 2014.
42. Bartlett S, Klerman J, Wilde P, et al. *Healthy Incentives Pilot (HIP) Interim Report*. Washington, DC: Food and Nutrition Service, US Dept of Agriculture; 2013.
43. Get Healthy Philly. Philly Food Bucks. <http://www.foodfitphilly.org/eat-healthy/philly-food-bucks/>. Accessed September 1, 2014.
44. Young CR, Aquilante JL, Solomon S, et al. Improving fruit and vegetable consumption among low-income customers at farmers markets: Philly Food Bucks, Philadelphia, Pennsylvania, 2011. *Prev Chronic Dis*. 2013;10:120356.
45. New York City Department of Health and Mental Hygiene. Health Bucks. <http://www.nyc.gov/html/doh/html/living/cdp-farmersmarkets.shtml#hb>. Accessed September 1, 2014.
46. Fair Food Network. Double Up Food Bucks. <http://doubleupfoodbucks.org/>. Accessed September 1, 2014.
47. US Department of Agriculture. *Implications of Restricting the Use of Food Stamp Benefits—Summary Report*. Washington, DC: US Dept of Agriculture, Food and Nutrition Service; 2007.
48. Hanson K. *Food Assistance National Input-Output Multiplier (FANIOM) Model and Stimulus Effects of SNAP*. Washington, DC: Economic Research Service, US Dept of Agriculture; 2010. Report 103.
49. Andrews M, Bhatta R, Ver Ploeg M. An alternative to developing stores in food deserts: can changes in SNAP benefits make a difference? *Appl Econ Persp Policy*. 2013;35:150-170.
50. Sohi I, Bell BA, Liu J, Battersby SE, Liese AD. Differences in food environment perceptions and spatial attributes of food shopping between residents of low and high food access areas. *J Nutr Educ Behav*. 2014;46:241-249.
51. Hillier A, Cannuscio CC, Karpyn A, McLaughlin J, Chilton M, Glanz K. How far do low-income parents travel to shop for food? Empirical evidence from two urban neighborhoods. *Urban Geography*. 2011;32:712-729.
52. Clifton KJ. Mobility strategies and food shopping for low-income families: a case study. *J Plann Educ Res*. 2004;23:402-413.
53. Kerr J, Frank L, Sallis JF, Saelens B, Glanz K, Chapman J. Predictors of trips to food destinations. *Int J Behav Nutr Phys Act*. 2012;9:58.
54. Hirsch JA, Hillier A. Exploring the role of the food environment on food shopping patterns in Philadelphia, PA, USA: a semiquantitative comparison of two matched neighborhood groups. *Int J Environ Res Public Health*. 2013;10:295-313.
55. Feather PM. Valuing food store access: policy implications for the food stamp program. *Am J Agric Econ*. 2003;85:162-172.
56. The Reinvestment Fund. Searching for markets: the geography of inequitable access to healthy and affordable food in the United States. <http://www.trfund.com/wp-content/uploads/2013/07/SearchingForMarketsFullReport.pdf>. Accessed June 1, 2014.
57. Shannon J. What does SNAP benefit usage tell us about food access in low-income neighborhoods? *Soc Sci Med*. 2014;107:89-99.