FRAC | ResearchWIRE

Welcome to the Food Research & Action Center's inaugural issue of ResearchWire. This newsletter focuses on the latest research, reports, and resources from government agencies, academic researchers, think tanks, and elsewhere at the intersection of food insecurity, poverty, the federal nutrition programs, and health.

DECEMBER 2017

IN THIS ISSUE

IN FOCUS

Food Insecurity, the Federal Nutrition Programs, and Health

Maintaining good health, consuming a nutritious diet, managing an existing chronic disease, or a combination of these can be a particularly difficult challenge for those struggling with poverty or food insecurity. Limited finances and resources, competing priorities, and stress exacerbate the challenge. In addition, those impacted by poverty or food insecurity are likely experiencing additional resource-related hardships (e.g., housing instability, energy insecurity) that, in turn, can contribute to poor nutrition, health, and disease management.

A new white paper from FRAC reviews the latest research on the harmful impacts of poverty, food insecurity, and poor nutrition on the health and well-being of children, adults, and older adults. Two other accompanying white papers describe the critical role of the Supplemental Nutrition Assistance Program (SNAP) and the federal Child Nutrition Programs in alleviating poverty, reducing food insecurity, and improving nutrition, health, and well-being. Key findings from, and links to, the three papers are provided below.

Food Insecurity is a Health Issue

In 2016, approximately 28.3 million adults (11.5 percent of all adults) and 12.9 million children (17.5 percent of all children) lived in food-insecure households.[1] Food insecurity — even marginal food security (a less severe level of food insecurity not included in these numbers) — is associated with some of the most common and costly health problems among adults and older adults, including fair or poor health status, diabetes, obesity (primarily among women), hypertension, and depression (including maternal depression).

The consequences of food insecurity — and, again, even marginal food security — are especially detrimental to the health, development, and well-being of children. Research shows a link for children between food insecurity and lower health status, low birth weight, birth defects, iron deficiency anemia, more frequent colds and stomachaches, asthma, developmental risk, mental health problems, and poor educational performance and academic outcomes — all of which have health and economic consequences in the short and long terms.

CONTINUED ON NEXT PAGE

IN FOCUS

CONTINUED FROM PREVIOUS PAGE

Because of limited financial resources, households that are food insecure also may use coping strategies to stretch budgets that are harmful for health, such as engaging in cost-related medication underuse or non-adherence, postponing or forgoing preventive or needed medical care, forgoing the foods needed for special medical diets (e.g., diabetic diets), or diluting or rationing infant formula. Food insecurity and coping strategies such as these can exacerbate existing disease and compromise health.

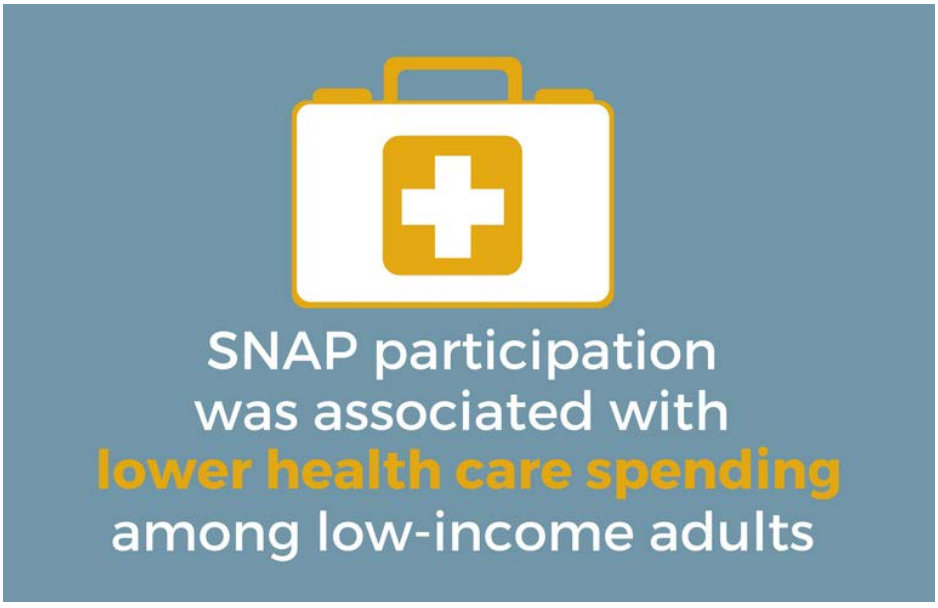
Not surprisingly, research shows that household food insecurity is a strong predictor of higher health care utilization and increased health care costs. The direct and indirect health-related costs of hunger and food insecurity in the U.S. have been estimated to be $160 billion for 2014 alone.[2]

Read the full white paper on food insecurity as a health issue as well as access citations for this section.

SNAP and Public Health: The Role of the Supplemental Nutrition Assistance Program in Improving Health and Well-Being

SNAP (formerly "food stamps") serves as the first line of the nation's public policy defense against hunger and undernutrition as well as an effective anti-poverty initiative. This invaluable program has a critical role, not just in reducing food insecurity, but in improving the health of the nation, especially among the most vulnerable Americans. Improving access to SNAP and improving SNAP benefit levels would further SNAP's role in improving the public's health. Consider the following selection of studies:

- SNAP participation was associated with lower health care spending among low-income adults in a national survey.[3] According to one estimate, annual healthcare expenditures averaged $1,409 lower in the case of SNAP participants versus non-participants, and even larger differences occurred among SNAP participants with hypertension or coronary heart disease.[4,5]



- Access to SNAP *in utero* and in early childhood reduced the incidence of metabolic syndrome (obesity, hypertension, diabetes, heart disease, heart attack), reduced the risk of stunting, and, for women, increased reports of being in good health in adulthood, based on a study of people who grew up in disadvantaged families and were born between 1956 and 1981.[6]
- SNAP participation was associated with reduced hospitalization and, among those who were hospitalized, less costly hospital stays, in a study of Maryland older adults dually enrolled in Medicare and Medicaid. According to the study team's estimates, "expanding SNAP access to nonparticipating dual eligible older adults in Maryland could have resulted in inpatient hospital cost savings of $19 million in 2012."[7] In addition, a companion study found an association between SNAP participation and reduced nursing home admissions and admission costs, with estimated cost savings of $34 million in 2012 if SNAP had been provided to eligible nonparticipants.[8]
- In Massachusetts, inpatient Medicaid cost growth significantly declined after the temporary increase in SNAP benefits pursuant to the American Recovery and Reinvestment Act (ARRA) of 2009, especially among people with chronic illnesses.[9] The cost declines were driven by reduced hospital admissions and, to a lesser extent, reduced length of stay per admission.

Read the full white paper on SNAP's role in alleviating poverty and food insecurity and in improving dietary intake, weight outcomes, and health.

CONTINUED ON NEXT PAGE

IN FOCUS

CONTINUED FROM PREVIOUS PAGE

Child Nutrition Programs and Public Health: The Role of the Federal Child Nutrition Programs in Improving Health and Well-Being

Poverty, food insecurity, and poor nutrition have detrimental impacts on the health and well-being of children in the short and long terms. One critical strategy to address these impacts is connecting vulnerable children and their families to the federal Child Nutrition Programs, i.e., the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC); National School Lunch Program (NSLP); School Breakfast Program (SBP); Child and Adult Care Food Program (CACFP); Summer Food Service Program (SFSP); and Afterschool Nutrition Programs.

Below are the health-related benefits of the Child Nutrition Programs:

- Low-income students who eat both school breakfast and lunch have significantly better overall diet quality than low-income students who do not eat school meals.[10]
- School breakfast, including breakfast offered at no cost to all students in a school, has been linked with fewer visits to the school nurse, particularly in the morning,[11] and positive impacts on mental health, including reductions in behavioral problems, anxiety, and depression.[12,13]

- Free or reduced-price school lunches reduce rates of poor health by at least 29 percent, based on estimates using national data.[14]
- Young children in subsidized child care whose meals are supplied by their child care provider — and, therefore, highly likely to be participating in CACFP — are less likely to be in fair or poor health, less likely to be hospitalized, and more likely to be at a healthy weight than similar children whose meals are supplied from home.[15]
- WIC enrollment and greater WIC food package utilization during pregnancy are associated with improved birth outcomes, including lower risk of preterm birth, low birth weight, and perinatal death.[16]

Read the full white paper on the important role of the Child Nutrition Programs in improving food and economic security, dietary intake, weight outcomes, health, and learning.

Conclusion

Protecting and improving the public's health is critically important for the nation. Far too many Americans struggle with poverty, food insecurity, inadequate dietary intake, and obesity. Research shows that the federal nutrition programs can alleviate these problems and improve overall health and well-being. Increasing access to, and strengthening, SNAP and the Child Nutrition Programs would further these programs' role in improving the health of the nation.

Research Highlights

Supplemental Nutrition Assistance Program (SNAP)

Supplemental Nutrition Assistance Program (SNAP) participation and health care expenditures among low-income adults

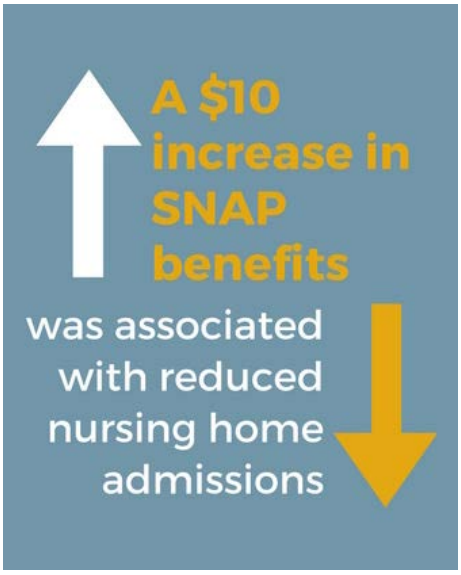
SNAP participation was associated with lower health care spending among low-income adults in a recent study published in *JAMA Internal Medicine*. Based on national survey data of 4,447 adults with income below 200 percent of the federal poverty line, researchers examined the relationship between SNAP enrollment and total health care expenditures (i.e., all paid claims and out-of-pocket costs). Annual healthcare expenditures averaged $1,409 lower in the case of SNAP participants versus non-participants, according to one estimate that accounted for demographics, socioeconomic factors, geography, health insurance, and self-reported medical conditions. Sub-group analyses found even larger differences for SNAP participants compared to non-participants: expenditures averaged $2,544 lower for SNAP participants, versus non-participants, receiving non-Medicare public insurance; $3,958 lower for participants with a disability; $2,654 lower for participants with hypertension; and $4,109 lower for participants with coronary heart disease. The authors conclude that "helping to address food insecurity by making SNAP enrollment easier may be an important way to contain health care costs for vulnerable Americans."

Does the Supplemental Nutrition Assistance Program affect hospital utilization among older adults? The Case of Maryland; and Food assistance is associated with decreased nursing home admissions for Maryland's dually eligible older adults

According to studies in *Population Health Management* and *BMC Geriatrics*, SNAP participation and higher SNAP benefit amounts are associated with reduced hospitalization, nursing home admissions, and health care costs among low-income older adults. In the study reported in *Population Health Management*, SNAP participation was associated with reduced hospitalization and, among those who were hospitalized, less costly hospital stays, based on a sample of 68,956 Maryland older adults dually enrolled in Medicare and Medicaid. The study team estimated that "expanding SNAP access to nonparticipating dual eligible older adults in Maryland could have resulted in inpatient hospital cost savings of $19 million in 2012." Furthermore, a $10 increase in monthly SNAP benefits was associated with reduced hospitalization and, among those who were hospitalized, less costly hospital stays.

A companion study in *BMC Geriatrics* found an association between SNAP participation and reduced nursing home admissions and admission costs among a sample of 77,678 Maryland older adults dually enrolled in Medicare and Medicaid, with estimated cost savings of $34 million in 2012 if SNAP had been provided to eligible nonparticipants. A $10 increase in SNAP benefits was associated with reduced nursing home admissions and, among those who were admitted, shorter and less costly stays.

According to the research teams, increasing SNAP access and benefit amounts may help improve health outcomes and quality of life for low-income older adults.



The affordability of MyPlate: an analysis of SNAP benefits and the actual cost of eating according to the Dietary Guidelines

Across most age and gender groups, SNAP benefits were insufficient to cover what it costs to consume a diet that meets federal dietary guidelines, according to a study published earlier this fall in the *Journal of Nutrition Education and Behavior*. Researchers estimated what it costs (including food and labor costs) to follow a diet consistent with the U.S. Department of Agriculture's MyPlate dietary guidelines for children, adolescents, female adults, male adults, female seniors, male seniors, and a 4-person

CONTINUED ON NEXT PAGE

CONTINUED FROM PREVIOUS PAGE

household. Across all age and gender groups in the various diet scenarios, the most expensive diet included only fresh forms of fruits and vegetables, and the most inexpensive was a vegetarian diet. In terms of SNAP recipients, current SNAP benefit levels plus expected personal expenditures were sufficient to cover the dietary needs of children under eight and female seniors, but insufficient for older children, adolescents, female adults, male adults, male seniors, and a 4-person family. For example, a 4-person SNAP household with an adult male, adult female, child, and adolescent would need an additional $487 to $627 a month to cover the cost of a diet consistent with MyPlate.

Supplemental Nutrition Assistance Program participation and emergency food pantry use

According to research in the *Journal of Nutrition Education and Behavior*, participation in SNAP for six months was associated with a 24 percent reduction in food pantry use. In this national survey of 3,191 SNAP households, researchers compared food pantry use at SNAP enrollment to food pantry use after approximately six months of participation. Food pantry use was defined as having received emergency food from a church, food pantry, or food bank in the past 30 days.

Participation in SNAP for six months was associated with a decrease in food pantry use by 5.2 percentage points among all households (or a 24 percent reduction), after accounting for demographic and economic characteristics of households. SNAP participation also was associated with

24%
reduction in food pantry use after six months' participation in SNAP

significant decreases in food pantry use among certain households, including households with children, households without an elderly member, households in urban areas, households in urban areas with neighborhood grocery store access, lower-income households (i.e., income less than or equal to the sample median), and households with lower or higher SNAP benefits relative to the maximum benefit. However, about 76 percent of households that used a food pantry at SNAP enrollment continued to do so after six months of program participation, which, according to the authors, "underscores the need to assess the adequacy of SNAP benefit allotments in ensuring access to sufficient food for a healthy, active life."

Child Nutrition Programs

The relationship between the School Breakfast Program and food insecurity

A study in the *Journal of Consumer Affairs* found that school breakfast availability reduced low food security and very low food security among elementary school children. Researchers examined the relationship between state requirements to offer school breakfast and student breakfast consumption and food insecurity, using national, state, and school data. Elementary-aged students attending schools that were required to offer breakfast through the School Breakfast Program were more likely to consume breakfast. Similarly, elementary-aged students attending schools that were required to offer breakfast were less likely to experience low food security and very low food security. No effects on breakfast consumption or food insecurity were observed among students 11 to 16 years of age, which the researchers hypothesized may be a result of the higher perceived stigma of eating breakfast at school among this age group.

Breastfeeding is associated with higher retention in WIC after age 1

A study in the *Journal of Nutrition Education and Behavior* identified a number of factors associated with greater retention in WIC after age one, including breastfeeding, technology-based strategies, and Medicaid participation. (WIC is the Special Supplemental Nutrition Program for Women, Infants, and Children.) Among a sample of 9,632 WIC participants in California who were 14 months old between July and September 2016, fully breastfeeding, mostly breastfeeding, and some breastfeeding from six to 12 months of age were significantly associated with higher retention in WIC by 14 months of age. Other factors linked with higher retention included prenatal breastfeeding intention, online nutrition education, prenatal WIC participation, having other family members in the household receiving WIC, and participation in Medicaid. On the other hand, a number of factors were associated with lower retention in

CONTINUED ON NEXT PAGE

CONTINUED FROM PREVIOUS PAGE

WIC by 14 months of age, including under-redemption of WIC benefits, missing benefits, and preferred language being English (used as a proxy for race/ethnicity). The study offers a number of areas for WIC programs to target in efforts to encourage ongoing participation, which is especially important given the substantial decline in WIC participation rates among children above age one compared to infants under age one.

Health and Dietary Quality

Food insecurity and cardiometabolic risk factors in adolescents

Food insecurity was associated with skipping breakfast, insufficient sleep, and current cigarette and alcohol use among adolescents, based on a study in *Preventing Chronic Disease*. In a weighted sample of 495,509 ninth through 12th grade students in Pennsylvania, researchers examined the relationship between food insecurity and cardiometabolic risk factors after accounting for sex, race/ethnicity, grade, and neighborhood safety. Adolescents reporting food insecurity had an increased likelihood of skipping breakfast, reporting less than eight hours of sleep per day, current cigarette smoking, and current alcohol consumption, when compared to their food-secure peers. Food insecurity was not associated with fruit and vegetable consumption, soda consumption, overweight or obesity, physical activity, or screen time. The authors conclude that increasing participation in the federal nutrition programs, especially the School Breakfast Program, and increasing food insecurity screening in primary care settings are important strategies to address food insecurity among adolescents.

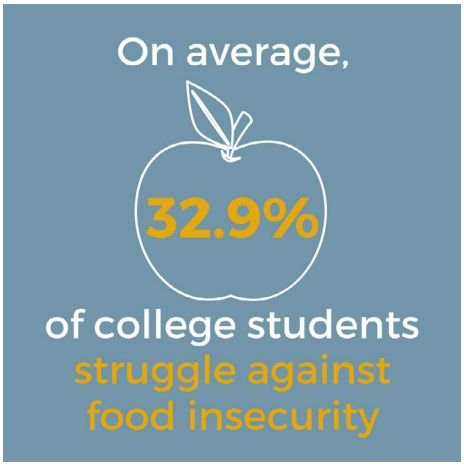
Differences in US adult dietary patterns by food security status

A recent study in the *Journal of Consumer Affairs* found few differences in dietary patterns based on food security status. In this study of 20,363 adults using national data, U.S. adults, overall, had similar dietary patterns across a wide range of dietary measures and levels of food insecurity. However, adults with marginal, low, and very low food security had lower fruit and vegetable intake, and consumed a diet with a greater contribution of calories from non-alcoholic beverages and flavored milk. These findings are consistent with prior research on dietary intake and the coping strategies households use when approaching or experiencing food insecurity (e.g., reducing fruit and vegetable consumption, prioritizing calories over nutrients).

College Students

The struggle is real: a systematic review of food insecurity on postsecondary education campuses

Postsecondary students in the U.S. and abroad experience high rates of food insecurity, but more research on this complex problem and effective solutions are needed, according to a review published in the *Journal of the Academy of Nutrition and Dietetics*. The review identified 59 studies focused on food insecurity among undergraduate and graduate students at postsecondary institutions of higher education based in the U.S. or other countries. Among the U.S. studies, the review included nine peer-reviewed studies and 37 studies in the "gray literature." (The gray literature refers to published reports, conference presentations, student theses, data on websites, and other similar studies that are not peer reviewed.)



Rates of food insecurity for this population in the U.S. ranged from 14.1 to 58.8 percent and averaged 32.9 percent, based on the nine peer-reviewed studies.

Across all of the studies in the review, certain groups of students were more likely to report food insecurity, including students of color, younger students, students with children, and students who were financially independent (e.g., financial independence from parents). In addition, multiple studies found associations between food insecurity and lower self-reported health status, poorer eating behaviors, lower grade point average, and adverse academic outcomes (e.g., difficulty concentrating, withdrawing from class or the institution). Many of the studies in the review offered suggestions for addressing food insecurity among postsecondary students, such as increasing financial aid, creating a basic living stipend for students, and allowing students to receive Supplemental Nutrition Assistance Program (SNAP) benefits.

Moving From Hardship to Health

FRAC wishes to thank Richard Sheward, MPP, Deputy Director of Innovative Partnerships at Children's HealthWatch for contributing this column to ResearchWire.

When money is tight, every family expense has to be balanced with its impact on other needs. If we pay for this light bill, will we have enough money for rent? If we pay for the rent, will we have enough money left over for medicine and food? This can be an overwhelming situation for families, leaving them wondering if things will ever get better. Recent research from Children's HealthWatch shows that, yes, it can get better. In fact, improving a family's ability to afford enough food for all family members releases the squeeze on other parts of the household budget.

In the Children's HealthWatch report card, From Hardship to Health, researchers examined the changes in food security status among 913 families who participated in the Children's HealthWatch survey at least twice, at least six months apart (on average a 12-month interval), and who reported being food insecure at their first visit to the emergency department or primary care clinic. In this sample of families facing hardship at a first visit, nearly half (48 percent) of the families surveyed became food secure by the second visit. Twenty-nine percent remained food insecure and another 23 percent reported child food insecurity — a more severe level of food insecurity — during the second visit.

Compared to those who were persistently food insecure at both visits, families who experienced improved food security over time more frequently reported that they were able to afford a stable home (65 percent were stably housed), utility bills (57 percent became energy secure), and prescription medicine and medical care at their subsequent visit (44 percent did not forgo health care and 58 percent paid for medical care without making trade-offs for other needs).

For those families who remain food insecure, it is important to ask why, and perhaps more importantly, ask what can be done to alleviate their food insecurity and ultimately improve their health.

A key lesson to be learned here is that the medical community has an important role to play in addressing the social needs of families with young children to ensure better health outcomes and lower health care costs on a systems level. By first asking, "how can we address this family's hardships?" the answer to, "how can we effectively treat this child's asthma and make sure she doesn't return to the emergency room in a few weeks or months?" will be less vexing to figure out.

With the release of this report card from Children's HealthWatch, there is a clearer picture of how some families move from hardship to health, while others do not. For those families who remain food insecure, it is important to ask why, and perhaps more importantly, ask what can be done to alleviate their food insecurity and ultimately improve their health. Shifting the focus toward moving families from hardship to health is what will ultimately improve health outcomes, bend the cost curve, and likely improve several other markers for societal health — economic strength, a thriving workforce, and even national security.

Endnotes

[1] Coleman-Jensen, A., Rabbitt, M. P., Gregory, C. A., & Singh, A. (2017). Household food security in the United States in 2016. *Economic Research Report,* 237. Washington, DC: U.S. Department of Agriculture, Economic Research Service.

[2] Cook, J. T., & Poblacion, A. P. (2016). Estimating the Health-Related Costs of Food Insecurity and Hunger. In *The Nourishing Effect: Ending Hunger, Improving Health, Reducing Inequality (2016 Hunger Report).* Washington, DC: Bread for the World Institute.

[3] Berkowitz, S. A., Seligman, H. K., Rigdon, J., Meigs, J. B., & Basu, S. (2017). Supplemental Nutrition Assistance Program (SNAP) participation and health care expenditures among low-income adults. *JAMA Internal Medicine,* published online ahead of print.

[4] Berkowitz, S. A., Seligman, H. K., & Basu, S. (2017). *Impact of Food Insecurity and SNAP Participation on Healthcare Utilization and Expenditures.* University of Kentucky Center for Poverty Research Discussion Paper Series. Lexington, KY: University of Kentucky Center for Poverty Research.

[5] Berkowitz, S. A., Seligman, H. K., Rigdon, J., Meigs, J. B., & Basu, S. (2017). Supplemental Nutrition Assistance Program (SNAP) participation and health care expenditures among low-income adults. *JAMA Internal Medicine,* published online ahead of print.

[6] Hoynes, H., Schanzenbach, D. W., & Almond, D. (2016). Long-run impacts of childhood access to the safety net. *American Economic Review,* 106(4), 903–934.

[7] Samuel, L. J., Szanton, S. L., Cahill, R., Wolff, J. L., Ong, P., Zielinskie, G., & Betley, C. (2017). Does the Supplemental Nutrition Assistance Program affect hospital utilization among older adults? The case of Maryland. *Population Health Management,* published online ahead of print.

[8] Szanton, S. L., Samuel, L. J., Cahill, R., Zielinskie, G., Wolff, J. L., Thorpe, R. J. Jr., & Betley, C. (2017). Food assistance is associated with decreased nursing home admissions for Maryland's dually eligible older adults. *BMC Geriatrics,* 17(1), 162.

[9] Sonik, R. A. (2016). Massachusetts inpatient Medicaid cost response to increased Supplemental Nutrition Assistance Program benefits. *American Journal of Public Health,* 106(3), 443–448.

[10] Hanson, K. L., & Olson, C. M. (2013). School meals participation and weekday dietary quality were associated after controlling for weekend eating among U.S. school children aged 6 to 17 years. *Journal of Nutrition,* 143, 714–721.

[11] Bernstein, L. S., McLaughlin, J. E., Crepinsek, M. K., & Daft, L. M. (2004). Evaluation of the School Breakfast Program Pilot Project: final report. *Nutrition Assistance Program Report Series,* CN-04-SBP. Alexandria, VA: U.S. Department of Agriculture, Food and Nutrition Service, Office of Analysis, Nutrition, and Evaluation. (The findings on school nurse visits were only observed for the 2001–2002 school year in this report.)

[12] Kleinman, R. E., Hall, S., Green, H., Korzec-Ramirez, D., Patton, K., Pagano, M. E., & Murphy, J. M. (2002). Diet, breakfast, and academic performance in children. *Annals of Nutrition and Metabolism,* 46(Supplement 1), 24–30

[13] Murphy, J. M., Pagano, M. E., Nachmani, J., Sperling, P., Kane, S., & Kleinman, R. E. (1998). The relationship of school breakfast to psychosocial and academic functioning: cross-sectional and longitudinal observations in an inner-city school sample. *Archives of Pediatrics and Adolescent Medicine,* 152(9), 899–907.

[14] Gundersen, C., Kreider, B., & Pepper, J. (2012). The impact of the National School Lunch Program on child health: a nonparametric bounds analysis. *Journal of Econometrics,* 166, 79–91.

[15] Gayman, A., Ettinger de Cuba, S., March, E., Cook, J. T., Coleman, S., & Frank, D. A. (2010). *Child Care Feeding Programs Support Young Children's Healthy Development.* Boston, MA: Children's HealthWatch.

[16] Fingar, K. R., Lob, S. H., Dove, M. S., Gradziel, P., & Curtis, M. P. (2017). Reassessing the association between WIC and birth outcomes using a fetuses-at-risk approach. *Maternal and Child Health Journal,* 21(4), 825–835.