Deloitte.

NO KID HUNGRY
SHARE OUR STRENGTH

Arby's Foundation

Summer Nutrition Program Social Impact Analysis

Contributing Authors:

Katie Orovecz, *Analyst*
Erica Pincus, *Analyst*
Nell Todd, *Senior Manager*
Maura Welch, *Consultant*

Executive Summary

Providing children with access to nutritious food beyond the school year and into the summer months has clear health, education, and economic benefits. Federal summer nutrition programs provide dairy products, fruits, vegetables, and other healthy food to children who rely on federal nutrition programs during the school year. As a result, the summer nutrition programs give children the confidence to know with certainty when, and from where, their next meal is coming.

These programs enable children who participate to receive the nutrition they need and increase their food security. In the short-term, the programs can help mitigate summer weight gain, cognitive decline, and summer learning loss for children from low-income families. In the longer-term, the lasting effects may help increase high school graduation rates and reduce susceptibility to chronic diseases, which are otherwise each accompanied by large potential costs to the children and their communities.

The benefits of summer nutrition programs are also exhibited through a primary data analysis case study of Maryland schools conducted by Share Our Strength and Deloitte. This study shows an association between schools that offer summer nutrition programs and improvements in student math and reading proficiency, as well as high school graduation rates.

In the Appendix, the potential scale of summer nutrition programs' impacts is explored through a "imagine if" scenario focused on reaching all children not currently receiving food through these programs.

Background

Hunger and Food Insecurity in the Summer Months

Often thought of as a time to enjoy the break from school, summer poses a significant threat to the health and educational attainment of millions of children from low-income households across the nation. Summer can mean a break from food, as Child Nutrition Programs are not as easily accessible while children are not attending school. Trying to replace these meals creates economic hardship for already struggling families. During the summer, 43 percent of low-income families in America find it harder to make ends meet.[1]

In 2013, 44 percent of children in the US lived in low-income families[2] and 19.5 percent of households with children experienced food insecurity (i.e., limited or uncertain availability of nutritionally adequate foods)[3] at some point during the year.[4] Unable to regularly access nutritious food, these children are at risk of negative impacts affecting their health, education, and long-term livelihood.

Participation in Child Nutrition Programs drops to alarming levels during the summer, limiting children's access to healthy meals. In 2014, while 21.7 million children received free or reduced-price lunch during the school year, only 3.8 million children received meals through federal nutrition programs over the summer.[5]

Currently, the USDA supports meal service for children while schools are not in session through the Summer Food Service Program (SFSP) and the National School Lunch and Breakfast Programs (NSLP/SBP). These programs serve nutritious meals to children who live in low-income households and/or low-income communities.[6]

USDA has taken steps to find ways to reach the 17.9 million children who are not accessing summer meals. In 2010, Congress authorized the Enhanced Summer Food Service Program (eSFSP) and the Summer Electronic Benefit Transfer for Children (SEBTC) demonstration projects to develop, test, and evaluate the effectiveness of different options for providing access to food for children from low-income households in urban and rural areas during the summer months.[7]

This paper synthesizes the research on summer meals and presents a primary data analysis from Maryland schools to demonstrate the positive social impacts of providing children with better access to summer nutrition programs.

Focus on Family

1 of 3 (32%) low-income households report not having enough food during summer[8]

$316 increase in spending on food over the summer for low-income families[9]

Tradeoff Examples

Increased spending on food over the summer can lead to tradeoff decisions for households at risk of food insecurity served by Feeding America:[10]

vs. **2 of 3 (69%)** had to choose between food and utilities

vs. **2 of 3 (66%)** had to choose between food and medical care

Summer Nutrition Programs' Immediate Benefits on Nutrition and Food Security

The Problem: Decreased Food Security and Nutrition During the Summer

Though many children from low-income families receive nutritious meals through federal programs during the school year, more than 80 percent experience limited access to similar programs over the summer, exacerbating existing challenges with food insecurity. For families that depend on nutrition assistance programs during the school year, the summer can mean the loss of ten meals per week per child.[11] This can result in decreased access to nutritious food for each child, as 79 percent of households at risk of food insecurity served by Feeding America[12] who were surveyed during summer 2013 reported purchasing inexpensive, unhealthy food to feed their family.[13] Further, one regional study found that 58.1 percent of children consumed no fruit servings from home.[14] This lack of access to nutritious food is damaging to children's health and wellbeing.[15]

A Solution: Summer Nutrition Programs

Access to healthy food through summer nutrition programs improves children's nutrition and increases their food security. By law, these federal programs must provide healthy meals that meet nutritional standards based on the Dietary Guidelines for Americans. As a result, the meals provide more nutrition than the food consumed by the average American child, as evidenced by the below-standard average scores for the Healthy Eating Index.[16] These meals provide access to dairy products, fruits, and vegetables that are key to maintaining a healthy diet.

Providing children with access to food in the summer also reduces food insecurity, as evidenced by the USDA's SEBTC demonstration. The study provided families with eligible children a monthly benefit of $60 for them to use toward food during the summer using existing electronic benefit transfer (EBT) systems. This approach reduced the prevalence of very low food security[17] among children (who would have otherwise experienced it) by about one-third. "Analyses of related measures of food security—general food insecurity among children plus measures of both severe and general food insecurity among adults and households as a whole—indicate similarly large proportional reductions."[18] Further, the demonstration found that children in households with SEBTC ate more fruits and vegetables, whole grains, and dairy products.[19]

Immediate Impacts

Food Security
Reduced the number of children experiencing very low food security by about one-third[18]

Nutrition
Children ate more fruits and vegetables, whole grains, and dairy products[19]

Health and Education Impacts of Summer Nutrition Programs

Health Benefits of Summer Nutrition Programs

Because federal summer nutrition programs must provide meals that meet approved nutritional standards, they may mitigate summer weight gain and, in the longer term, make the children less susceptible to chronic diseases and mental illness and the ensuing costs to address them. As proven by USDA's SEBTC demonstration, improving access to food over the summer increases food security and consumption of nutritious food. Improved food security and nutrition can support children's health both physically and mentally.

Physically, children from low-income households may gain weight two to three times faster during the summer than during the school year.[20] Without access to nutritious summer meals, children from low-income families are more likely to suffer from food insecurity and may gain weight as they resort to less healthy, but easily accessible, food options. Improving nutrition and food security can help children maintain a healthy body mass index (BMI) during the summer.[21]

When a child gains weight, he/she is more susceptible to chronic diseases such as iron deficiency anemia,[22] asthma, type 2 diabetes, and heart disease,[23] any of which may result in frequent hospitalization. Food insecurity also affects a child's mental wellbeing, and may lead to conditions such as depression, anxiety, or aggression.[24] In addition, those experiencing food insecurity report higher rates of mental illness,[25] leading to a need for more mental

health services for them.[26] Ensuring access to proper nutrition through the federal nutrition programs can mitigate or prevent these conditions.

Health Impacts

Weight Gain
Children may gain weight two to three times faster during the summer than during the school year[20]

Chronic Diseases
When a child gains weight, he/she is more susceptible to chronic diseases such as iron deficiency anemia,[22] asthma, type 2 diabetes, and heart disease[23]

Mental Health
Children experiencing food insecurity report higher rates of mental illness[25]

Education Benefits of Summer Nutrition Programs

Proper nutrition from federal summer nutrition programs can support the continued brain development and the cognitive functioning necessary to maintain academic achievements made during the school year. By increasing children's food security and intake of healthy food, summer nutrition programs can improve cognitive functioning, which may help to mitigate summer learning loss and close the achievement gap.

A strong nutritional foundation is crucial to proper brain development and maintaining normal cognitive functioning.[27] Summer nutrition programs provide foods that contain essential nutrients (e.g., protein, iron, and zinc).[28] The SEBTC demonstration supports this, showing evidence that providing access to food over the summer increases children's food security and intake of fruits, vegetables, whole grains, and dairy products. Deficiencies in several essential nutrients found in such foods can otherwise lead to cognitive decline.[29]

Consumption of nutritious food not only supports better cognitive functioning in the summer, it also positions children from low-income families to learn and perform well once they return to the classroom.[30] One study found that while children from low-income and middle-class families had similar levels of cognitive growth during the school year, children from low-income families lagged far behind during the summer.[31] While most students lose about two months of grade level equivalency in mathematical computation skills over the summer, children from low-income families also fall behind more than two months in reading achievement compared with their peers from higher-income families.[32] Nutritious meals protect against cognitive decline, which can help mitigate summer learning loss.[33] A longitudinal study found that "food insecurity at kindergarten predicted impaired academic performance in reading and mathematics,"[34] providing further evidence of food security's importance to academic performance.

Summer learning loss, in particular loss in reading proficiency, compounded over several school years contributes to the achievement gap between children from low-income families and children from higher-income families. In fact, some have suggested that as much as 80 percent of the gap in reading achievement between students from low-income and high-income families may be attributable to summer learning.[35] As a result, by the end of fifth grade, children from low-income families are nearly three grade equivalents behind their peers from more affluent families in reading, and about two-thirds of the ninth grade achievement gap between lower- and higher-income youth can be explained by unequal access to summer learning opportunities during the elementary school years.[36]

The achievement gap due to early summer learning loss means that later in life, youth from low-income families are less likely to be placed in college preparatory high school curriculum, graduate from high school, and attend college.[37] As children build confidence and proficiency in the classroom, they are more likely to graduate, as some students list poor performance as their primary reason for dropping out of high school.[38] The case study "Impact of Summer Nutrition Programs in Maryland Schools" described in this paper explains the primary analysis Deloitte conducted, which shows that Maryland schools with summer nutrition programs experienced a higher percentage of students achieving proficiency in reading and math, and higher graduation rates.

Education Impacts

Cognitive Functioning and Development
Nutritious meals protect against cognitive decline[33]

Summer Learning Loss
Children from low-income families lose more than two months in reading achievement compared with their peers from higher-income families[32]

Achievement Gap
About two-thirds of the ninth grade achievement gap between lower- and higher-income youth can be explained by unequal access to summer learning opportunities during the elementary school years[36]

Potential Economic Impacts of Summer Nutrition Programs

The potential health and education benefits described above have associated economic benefits that may result from increased participation in summer nutrition programs.

A decrease in the obesity rate and the occurrence of chronic diseases and mental illness would be expected to lead to reduced health care costs and increased participation in the workforce, including better military preparedness. Negative health outcomes also prove expensive in the long term due to increased costs for health care and mental health services, and decreased economic output as a result of poor physical and/or mental wellbeing. In terms of labor force participation, "health conditions associated with food insecurity can translate into limited labor force participation and more absenteeism and turnover, all of which are costly for employers."[39] In addition, individuals with mental illness, which is correlated with food insecurity, require mental health services, and are less likely to be working due to an inability either to obtain or retain employment.[40]

A decrease in summer learning loss would be expected to lead to a reduction in the achievement gap and an increase in students graduating from high school. Studies show that high school graduates have greater long-term economic productivity than those who do not graduate.[41]

Fit to Fight: Nutrition & Military Readiness

Increases in BMI can have negative impacts on our national security as well, as the pool of potential young people who are able to serve in the military is limited by physical constraints. 10% of Americans applying for military service did not qualify because they were overweight.[42] One in four 17-to-24-year-olds is too overweight to serve in the military.[43]

Food Insecurity Cost
Food insecure children are 31%[44] more likely to be hospitalized, and the average pediatric hospitalization costs approximately $12,000[45]

Elevated BMI Cost
The average total health expenses for a child treated for obesity under private insurance is more than 200 percent higher than the average health cost for a child covered by private insurance,[46] and elevated BMI in childhood is associated with $14.1 billion in health expenses and hospitalization costs annually[47]

Reteaching Cost
Two months of reteaching costs account for 22% of the school year and $1,540 per student[48]

Economic Output
Labor participation is directly correlated to one's education level, and high school graduates earn an average of $10,090 more annually than those who do not graduate[49]

Case Study: Impact of Summer Nutrition Programs in Maryland Schools

Research has proven that summer is a difficult time for children facing hunger; however, one of the gaps in this research is the quantification of the specific impacts of the USDA-funded summer nutrition programs. To address this gap, Share Our Strength and Deloitte collaborated to develop and conduct a case study on distributing summer meals to children through a school-based summer nutrition program site. Schools are a major sponsor of summer nutrition programs across the country. Studying the potential impact of expanding access to summer nutrition programs at schools suggested that there could be significant benefits for both schools and students. These findings are associations and do not necessarily illustrate a causal link between school participation in summer nutrition programs and improved academic achievement. This study combines publically available achievement data and summer site lists for the State of Maryland to compare achievement at schools that provided meals through federal nutrition programs during the summer to schools that did not.

In 2013, 263,841 students in Maryland received free or reduced-price lunch, while only 51,627 participated in summer meals.[50] However, Maryland's 19.5 percent participation rate in summer nutrition programs is higher than the national average of 15.1 percent.[51]

One area of focus for the No Kid Hungry Maryland Team is increasing the number of participating schools. In 2013, 28 percent of all Maryland schools served as a site for a summer nutrition program. According to the No Kid Hungry Maryland Team, "schools are an essential stakeholder in solving the summer hunger crisis. They have the physical location, equipment, knowledge, staff, and food access to successfully run summer meals programs and in a national survey[52] of low-income families, schools were listed as one of the most trusted places to receive information about these programs. When schools are actively engaged in the summer meals program, we can ensure that no child goes hungry in the summer months."[53]

Maryland schools that participate in summer nutrition programs are associated with higher percentages of children achieving academic proficiency

Increasing food security and nutritious food consumption over the summer months may mitigate the effects of summer learning loss for students from low-income families, as supported by an analysis of 2014 school achievement data for Maryland public schools and the 2013 list of sites for Maryland summer nutrition programs.

In analyzing data from over 1,200 schools in Maryland, the study found that schools offering a summer nutrition program saw up to 2.5 percent more students achieve math proficiency, up to 2 percent more students achieve reading proficiency, and up to 5.3 percent more students graduate from high school,[54] compared with schools that did not offer a summer nutrition program. These findings are statistically significant and suggest that summer nutrition programs are associated with benefits for students at all levels of the education system.

The following graphs display the analysis Deloitte conducted for schools in Maryland. Each point on the graph represents a school in Maryland and is color-coded based on whether or not the school offers a summer nutrition program. The x-axis of the graph represents the percentage of students at the school that are eligible for free and reduced-price meals based on federal income eligibility. The y-axis of the graph represents the

percentage of students at the school achieving proficiency in reading or math, or graduating from high school, respectively. Color-coded trend lines show the distribution of the schools' proficiency or graduation rates in relation to their free and reduced-price meal eligibility.

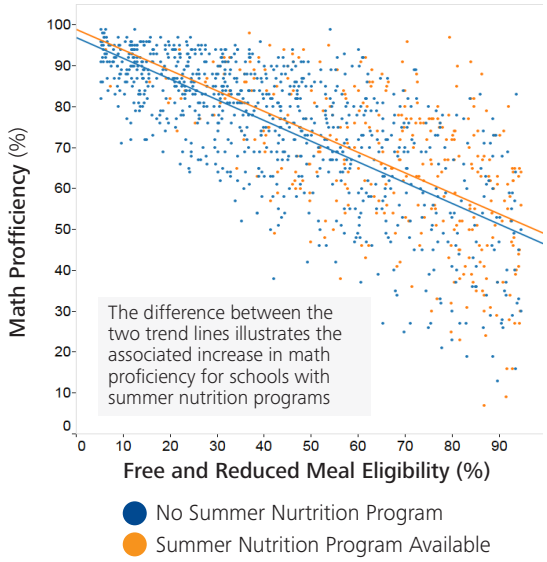
Maryland schools that offer a summer nutrition program are associated with a higher percentage of students achieving math proficiency.*[55]

Schools that offered a summer nutrition program in summer 2013 had 2.0 – 2.5 percent more students achieving math proficiency in 2014.

While math proficiency decreases as the percentage of students from low-income households in a school increases, schools with summer nutrition programs are associated with a higher percentage of students achieving proficiency throughout all levels of free and reduced-price meal eligibility.

*A student who achieves proficiency has met a threshold on state-wide tests to demonstrate grade-level math skills.

Maryland Math Profficiency and Free and Reduced Meal Eligibility (by school)



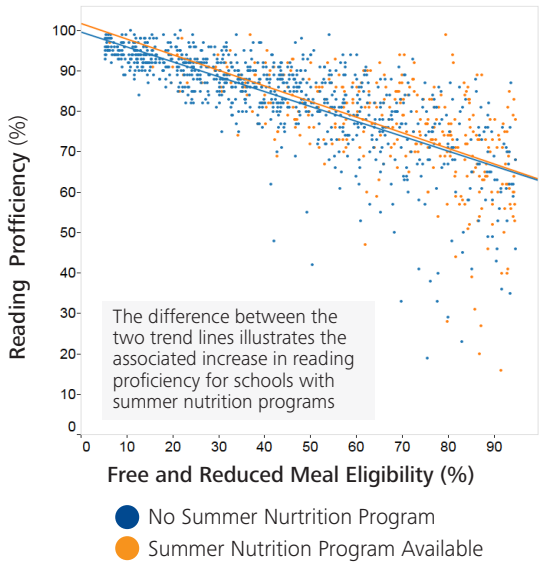
Maryland schools that offer a summer nutrition program are associated with a higher percentage of students achieving reading proficiency.†[56]

Schools that offered a summer nutrition program in summer 2013 had 0.4 – 2.0 percent more students achieving reading proficiency in 2014.

While reading proficiency decreases as the percentage of students from low-income households in a school increases, schools with summer nutrition programs are associated with a higher percentage of students achieving proficiency throughout all levels of free and reduced-price meal eligibility.

†A student who achieves proficiency has met a threshold on state-wide tests to demonstrate grade-level reading skills.

Maryland Reading Profficiency and Free and Reduced Meal Eligibility (by school)

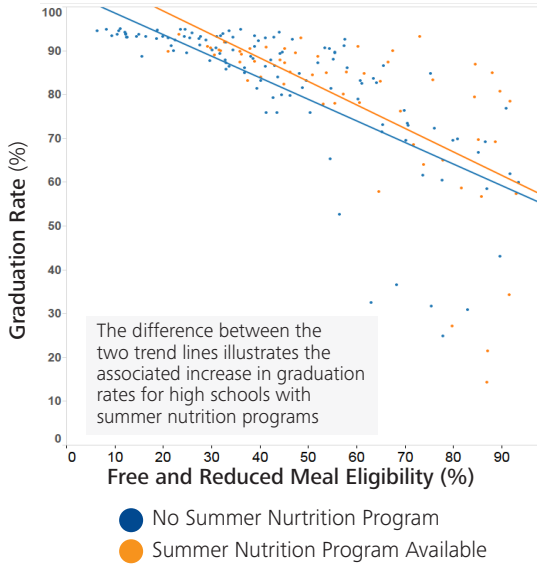


Maryland high schools that offer a summer nutrition program are associated with a higher percentage of students graduating.[57]

High schools that offered a summer nutrition program in summer 2013 had 2.2 – 5.3 percent more students graduating in 2014.

While graduation rate decreases as the percentage of students from low-income households in a school increases, schools with summer nutrition programs are associated with a higher percentage of students graduating throughout all levels of free and reduced-price meal eligibility.

Maryland Graduation Rate and Free and Reduced Meal Eligibility (by school)



If all Maryland schools were to offer summer nutrition programs and the percentages above proved consistent, then one might see:

5,600 more students achieving math proficiency each year[58]

1,150 more students achieving reading proficiency each year[59]

760 more high school graduates each year[60]

$4.7 million increase in earnings each year[61]

Conclusion

Access to healthy and nutritious food should not be limited to the months that fall within the school year. Imagine closing the gap between 21.7 million children receiving free or reduced-price lunch during the school year, and the 3.8 million children receiving meals through federal nutrition programs over the summer. Millions more children would experience the associated health and education benefits, including increased food security, improved physical and mental health, and decreased summer learning loss. Ultimately, this can lead to long-term economic improvements for the children and their communities.

Appendix: Impact Extrapolation

What if all children who receive free and reduced-price lunch during the school year were able to access summer nutrition programs?

The extrapolation of impacts is based on statistics detailed in this paper; however, these statistics may not have the same scale of impacts everywhere. The following extrapolation should only be used to imagine the possibilities.

Across the United States:

Connecting children who receive free or reduced-price lunch during the school year to the meals in the federal summer nutrition program is a key strategy in ending childhood hunger in America. The higher the participation rates, the more children are able to get the nutritious food they need to thrive.

Imagine closing the gap between the 21.7 million children receiving free or reduced-price lunch during the school year, and the 3.8 million children currently receiving meals through federal nutrition programs over the summer.…

17.9 million more children would benefit from summer nutrition programs

Imagine the impact this could have on the ultimate goal of ending childhood hunger...

As many as 1 million fewer children would be food insecure[62]

Resulting in…

Potentially 22,800 less child hospitalizations annually[63]

$274 million in associated cost savings for potential hospitalization costs annually[64]

Imagine if the increased graduation rates from the Maryland Case Study were to hold true at the national level…

At the lower end of the range, 81,600 more children would graduate from high school annually[65]

Imagine contributing to the prevention of summer learning loss through proper nutrition...

Up to $50.6 billion in re-teaching costs could be reallocated towards teaching new information annually, which is equal to about 10% of total US spending on K-12 education[66]

1. Share Our Strength Center for Best Practices, "Summer Meals Survey of Parents," http://bestpractices.nokidhungry.org/summer-meals/summer-meals-survey-findings, accessed March 12, 2015.

2. Jiang, Y., M. Ekono, and C. Skinner, Basic Facts About Low-Income Children, National Center for Children in Poverty, January 2015, http://www.nccp.org/publications/pub_1099.html, accessed March 23, 2015.

3. More specifically, the USDA defines food insecurity as "limited or uncertain availability of nutritionally adequate and safe foods or limited or uncertain ability to acquire acceptable foods in socially acceptable ways" (Definitions are from the Life Sciences Research Office, S.A. Andersen, ed., "Core Indicators of Nutritional State for Difficult to Sample Populations," The Journal of Nutrition, 120 [1990]: pp. 1557S-1600S).

4. Coleman-Jensen, A., C. Gregory, and A. Singh, Household Food Insecurity in the United States in 2013, US Department of Agriculture, September 2014, p. 8, http://www.ers.usda.gov/media/1565415/err173.pdf, accessed April 15, 2015.

5. US Department of Agriculture, "Child Nutrition Tables," http://www.fns.usda.gov/pd/child-nutrition-tables, accessed May 15, 2015.

6. "The USDA uses the criteria for identifying a census tract as low-income from the Department of Treasury's New Markets Tax Credit (NMTC) program. This program defines a low-income census tract as any tract where: (1) the tract's poverty rate is greater than 20 percent; or (2) the tract's median family income is less than or equal to 80 percent of the State-wide median family income; or (3) the tract is in a metropolitan area and has a median family income less than or equal to 80 percent of the metropolitan area's median family income" (US Department of Agriculture, Food Access Research Atlas, http://www.ers.usda.gov/datafiles/Food_Access_Research_Atlas/ Download_the_Data/Current_Version/documentation.pdf, accessed April 15, 2015).

7. US Department of Agriculture, "Summer Food for Children Demonstrations," http://www.fns.usda.gov/ops/summer-food-children-demonstrations, published March 21, 2014.

8. US Department of Agriculture. "Read and Feed: Feeding Young Minds and Bodies During the Summer," http://www.fns.usda.gov/read-and-feed-feeding-young-minds-and-bodies-during-summer, published May 2, 2014.

9. Share Our Strength Center for Best Practices, "Summer Meals Survey of Parents," http://bestpractices.nokidhungry.org/summer-meals/summer-meals-survey-findings, accessed March 12, 2015.

10. Feeding America, Hunger in America 2014: Executive Summary, Feeding America, p. 9, http://help.feedingamerica.org/HungerInAmerica/hunger-in-america-2014-summary.pdf, accessed March 20, 2015.

11. RTI International Center for Health and Environmental Modeling, Current and Prospective Scope of Hunger and Food Security in America: A Review of Current Research, July 2014, p. 4-9, http://www.rti.org/pubs/full_hunger_report_final_07-24-14.pdf, accessed March 18, 2015.

12. Feeding America households are households that receive food through Feeding America's nationwide network of 200 member food banks that serve all 50 states, the District of Columbia, and Puerto Rico. 89% of Feeding America households with children are food insecure. (Source: Feeding America, Hunger in America 2014: Executive Summary, Feeding America, p. 2, http://help.feedingamerica.org/HungerIn America/hunger-in-america-2014-summary.pdf, accessed March 20, 2015).

13. Feeding America, Hunger in America 2014: Executive Summary, Feeding America, p. 8, http://help.feedingamerica.org/HungerInAmerica/hunger-in-america-2014-summary.pdf, accessed March 20, 2015.

14. Social IMPACT Research Center for the Greater Chicago Food Depository. Running on Empty: Nutritional Access for Children in Cook County, IL (Executive Summary), February 2010, p. 11, http://www.chicagosfoodbank.org/site/DocServer/Running_on_Empty_Executive_Summary_FINAL.pdf?docID=6041, accessed March 18, 2015.

15. US Department of Agriculture, "Why is it important to eat vegetables?" http://choosemyplate.gov/food-groups/vegetables-why.html, accessed May 4, 2015.

16. US Department of Agriculture, "Diet Quality of Children Age 2-17 Years as Measured by the Healthy Eating Index-2010," Nutritional Insight, 52, http://www.cnpp.usda.gov/sites/default/files/nutrition_insights _uploads/Insight52.pdf, published July 2013.

17. Very low food security is present when there are reports of multiple indications of disrupted eating patterns and reduced food intake (US Department of Agriculture, "Definitions of Food Security," 2014, http://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/definitions-of-food-security.aspx, accessed April 16, 2015).

18. US Department of Agriculture, Summer Electronic Benefits Transfer for Children (SEBTC) Demonstration: Evaluation Findings for the Full Implementation Year: 2012 Final Report, August 2013, http://www.fns.usda.gov/sites/default/files/SEBTC2012.pdf, accessed March 14, 2015.

19. Ibid.

20. von Hippel, P., et al., "The Effect of School on Overweight in Childhood: Gain in Body Mass Index During the School Year and During Summer Vacation," American Journal of Public Health, April 2007, pp. 696-702, http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1829359/, accessed April 28, 2015.

21. Kimbro, R., and E. Rigby, "Federal Food Policy And Childhood Obesity: A Solution Or Part Of The Problem?" Health Affairs, 29, no. 3 (2010): pp. 411-418.

22. RTI International Center for Health and Environmental Modeling, Current and Prospective Scope of Hunger and Food Security in America: A Review of Current Research, July 2014, p. 3-4, http://www.rti.org/pubs/full_hunger_report_final_07-24-14.pdf, accessed March 18, 2015.

23. US Department of Agriculture, "Read and Feed: Feeding Young Minds and Bodies During the Summer."

24. Cook, J., and D.A. Frank, "Food security, poverty, and human development in the United States, Annals of the NY Academy of Sciences, 1136 (2008): pp. 193-209.

25. McLaughlin, K., et al., "Food Insecurity and Mental Disorders in a National Sample of US Adolescents," Journal of the American Academy of Child and Adolescent Psychiatry, 51, no. 12 (2012).

26. Brown, L., et al., "The Economic Cost of Domestic Hunger: Estimated Annual Burden to the United States," Sodexho Foundation, June 5, 2007, http://www.sodexofoundation.org/hunger_us/Images/Cost%20 of%20Domestic%20Hunger%20Report%20_tcm150-155150.pdf, accessed March 12, 2015.

27. Katz, D.L., and R.S.C. Friedman, "Diet and Cognitive Function," Nutrition in Clinical Practice: a Comprehensive, Evidence-Based Manual for the Practitioner (Philadelphia: Lippincott Williams & Wilkins, 2008), pp. 362-368.

28. US Department of Agriculture, "SFSP Meals and Snacks," http://www.fns.usda.gov/sfsp/sfsp-meals-and-snacks, published March 16, 2015; Federal Register, Department of Agriculture, Nutrition Standards in the National School Lunch and School Breakfast Programs; Final Rule, vol. 77, no. 17, http://www.gpo.gov/fdsys/pkg/FR-2012-01-26/pdf/2012-1010.pdf, accessed January 26, 2012.

29. Bryan, J., et al., "Nutrients for Cognitive Development in School-aged Children," Nutrition Reviews, 62, no. 8 (2004): pp. 295-306; Oregon State University Linus Pauling Institute Micronutrient Information Center, "Cognitive Function," http://lpi.oregonstate.edu/mic/micronutrients-health/cognitive-function#zinc-deficiency, accessed May 12, 2015.

30. US Department of Agriculture, "USDA Summer Food Service Program," http://www.fns.usda.gov/sites/default/files/sfsp/SFSP-Fact-Sheet.pdf, accessed April 15, 2015.

31. Heyns, B., Summer Learning and the Effects of Schooling, (Orlando, FL: Academic Press, 1978).

32. Cooper, H., et al., "The Effects of Summer Vacation on Achievement Test Scores: A Narrative and Meta-Analytic Review." Review of Educational Research, 66, no. 3 (1996): pp. 227-268.

33. US Department of Agriculture, "USDA Summer Food Service Program," http://www.fns.usda.gov/sites/default/files/sfsp/SFSP-Fact-Sheet.pdf, accessed April 15, 2015; Katz D.L. and Friedman, R.S.C., "Diet and Cognitive Function," Nutrition in Clinical Practice: a Comprehensive, Evidence-Based Manual for the Practitioner (Philadelphia: Lippincott Williams & Wilkins, 2008), pp. 362-368.

34. Jyoti, D., E. Frongillo, and S. Jones, "Food Insecurity Affects School Children's Academic Performance, Weight Gain, and Social Skills," The Journal of Nutrition,134, no. 12 (2005): pp. 2831-2839. http://jn.nutrition.org/content/135/12/2831.full.pdf+html, accessed May 7, 2015.

35. Hayes, D.P., and J. Grether, "The school year and vacations: When do students learn?" Cornell Journal of Social Relations, 17 (1983): pp. 56–71.

36. Alexander, K., D. Entwisle, and L. Olson, "Lasting Consequences of the Summer Learning Gap," American Sociological Review, 72 (2007): pp. 167-180, http://www.vanneman.umd.edu/socy789b/AlexanderEO07.pdf, accessed March 16, 2015.

37. Ibid.

38. Rumberger, R., "High School Dropouts: A Review of Issues and Evidence," Review of Educational Research, 57, no. 2 (1987): pp. 101-121.

39. RTI International Center for Health and Environmental Modeling, Current and Prospective Scope of Hunger and Food Security in America: A Review of Current Research, July 2014, p. 3-2, http://www.rti.org/pubs/full_hunger_report_final_07-24-14.pdf, accessed March 18, 2015.

40. Dewa, C., and D. McDaid, "Investing in the Mental Health of the Labor Force: Epidemiological and Economic Impact of Mental Health Disabilities in the Workplace," Work Accommodation and Retention in Mental Health (New York: Springer-Verlag, 2011), p. 39.

41. Deloitte, Ending Childhood Hunger: A Social Impact Analysis, 2013, p.4, http://www.nokidhungry.org/pdfs/school-breakfast-white-paper.pdf, accessed April 10, 2015.

42. Costello, C., "America: Too Fat to Fight," CNN, April 21, 2015, http://www.cnn.com/2015/04/21/opinions/costello-america-fat/index.html, accessed April 22, 2015.

43. Center of Accessions Research (CAR), United States Army Accessions Command, Fort Knox, KY, data provided by Lt. Colonel Gregory Lamm, Chief, Marketing and Research Analysis Division, February 25, 2010. Cawley, J. & Maclean, J.C. (2010). Unfit for service: The implications of rising obesity for US Military recruitment. Cambridge, MA: National Bureau of Economic Research. The Accession Command's estimate that 27 percent of 17- to 24-year-old Americans are too heavy to join is based in part on a survey done for them by the Lewin Group in 2005. The National Bureau on Economic Research (NBER) study is an analysis of data from the National Health and Nutrition Examination Survey (NHANES) study. The NBER analysis looks at eligibility rates for males and females based on BMI and body fat and exclusion criteria for the different services. Based on the NBER analysis, the study concludes that approximately 23 percent of adults eligible by age would not be able to join the Army because of excess body fat. Taking both studies into account, the NBER analysis of NHANES data and the Accessions Command's analysis, the study concludes that approximately one quarter of young Americans would be too heavy to join the military if they chose to do so.

44. Cook, J., et al., "Food Insecurity Is Associated with Adverse Health Outcomes among Human Infants and Toddlers," Journal of Nutrition 134 (2004): 1432–38. http://www.ncbi.nlm.nih.gov/pubmed/15173408, accessed May 15, 2015.

45. Cook, J., and K. Jeng, Child Food Insecurity: The Economic Impact on our Nation: A report on research on the impact of food insecurity and hunger on child health, growth and development commissioned by Feeding America and The ConAgra Foods Foundation, Feeding America, 2009, p.2, http://www.nokidhungry.org/sites/default/ files/child-economy-study.pdf, accessed March 23, 2015.

46. "The average total health expenses for a child treated for obesity under private insurance are $3,743, while the average health cost for a child covered by private insurance is $1,108." - Marder W and Chang S, Childhood Obesity: Costs, Treatment Patterns, Disparities in Care, and Prevalent Medical Conditions, Thomson Medstat Research Brief, 2006, http://www.medstat.com/pdfs/childhood_obesity.pdf, accessed March 2010.

47. Trasande, L., and S. Chatterjee, "The Impact of Obesity on Health Service Utilization and Costs in Childhood." *Obesity*, 17(9):1749-54, 2009.

48. Fairchild, R., and M. Boulay, "What if Summer Learning Loss Were an Education Policy Priority?" presented at the 24th Annual APPAM Research Conference: "Asking What if…Assessing the Public Policy & Management Implications of Social Science Research," Baltimore, MD, November 9, 2002, http://www.whatkidscando.org/ archives/whatslearned/WhatIfSummerLearning.pdf, accessed March 18, 2015.

49. United States Department of Commerce, Census Bureau, "Table A-3: Mean Earnings of Workers 18 and Over, by Educational Attainment, Race, Hispanic Origin and Sex: 1975-2012."

50. Maryland Hunger Solutions, "The Federal Nutrition Programs in Maryland," http://www.mdhungersolutions.org/pdf/countydata/maryland_jul14.pdf, accessed April 9, 2015.

51. Food Research and Action Center, "Summer Food Participation Grows Across Nation," http://frac.org/summer-food-participation-grows-across-nation/, accessed April 21, 2015.

52. Share Our Strength Center for Best Practices, "National Summer Meals Survey Major Findings," http://bestpractices.nokidhungry.org/sites/default/files/resources/National%20Summer%20Meals%20Survey%20Major%20Findings.pdf, accessed May 12, 205.

53. Jillien Meyer, No Kid Hungry Maryland Team Lead, Interview, May 13, 2015.

54. More specifically, in looking at over 1,200 schools in Maryland, the study found that for schools that offered a summer nutrition programs, 2% - 2.5% more students achieved math proficiency, 0.4% - 2% more students achieved reading proficiency, and 2.2% - 5.3% more students graduated from high school in 2014. Graduates from high school are defined as students who graduated within four years.

55. The analysis was conducted using data from Maryland State Report Card (2014) and the Site List from the Share Our Strength Maryland Team (2013). 2014 Maryland Report Card, "Data Downloads," http://www.mdreportcard.org/downloadindex.aspx, accessed March 26, 2015. Reports used include: 2014 MSA Data, 2014 Student Receiving Special Services Data, and 2014 School Progress

56. Ibid.

57. The analysis was conducted using data from Maryland State Report Card (2014) and the Site List from the Share Our Strength Maryland Team (2013). 2014 Maryland Report Card, "Data Downloads," http://www.mdreportcard.org/downloadindex.aspx, accessed March 26, 2015. Reports used include: 2014 Cohort Graduation Rates, 2014 Student Receiving Special Services Data, and 2014 School Progress

58. The lower end of the range (2.0%) was used to determine the possible benefit if summer nutrition programs were expanded to all schools not currently offering them. This was calculated using the number of students attending a school that does not offer a summer nutrition program and the primary data analysis findings that show a 2.0 - 2.5% increase in the number of students achieving math proficiency associated with schools that offered summer nutrition programs. The lower end of the range was used because schools at all analyzed free and reduced-price eligible levels could see at least this increase in math proficiency.

59. The lower end of the range (0.4%) was used to determine the possible benefit if summer nutrition programs were expanded to all schools not currently offering them. This was calculated using the number of students attending a school that does not offer a summer nutrition program and the primary data analysis findings that show a 0.4 - 2.0% increase in the number of students achieving reading proficiency associated with schools that offered summer nutrition programs. The lower end of the range was used because schools at all analyzed free and reduced-price eligible levels could see at least this increase in reading proficiency.

60. The lower end of the range (2.2%) was used to determine the possible benefit if summer nutrition programs were expanded to all schools not currently offering them. This was calculated using the number of students attending a school that does not offer a summer nutrition program and the primary data analysis findings that show a 2.2 - 5.3% increase in the number of students graduating associated with high schools that offered summer nutrition programs. The lower end of the range was used because schools at all analyzed free and reduced-price eligible levels could see at least this increase in graduation rates.

61. 2014 cohort graduation data shows that 5,422 of the 8,835 students (61%) that did not graduate dropped out of high school and the other percentage (39% of 8,835) did not graduate on time. Economic extrapolation of the 760 students is based on the 465 students (61% of 760) that would have been expected to drop out. Graduates of high school, on average, earn $10,090 more annually than those who do not graduate. The extrapolation is based on possible expected increase of annual earnings if all 465 students did not drop out, and rather successfully graduated from high school. (Sources: United States Department of Commerce, Census Bureau, "Table A-3: Mean Earnings of Workers 18 and Over, by Educational Attainment, Race, Hispanic Origin and Sex: 1975-2012")

62. There are 25,188,294 children eligible for free/reduced-price lunch. Latest estimates of food insecurity include 8.6 million children and 80% of food insecure children are in households below 185% income of the poverty line (i.e., eligible for free and reduced-price meals. This means that approximately 6.88 million children are food insecure and eligible for free and reduced-price meals. 6.88/25.19 = .2731 so 27.31% of children eligible for free and reduced-price meals are food insecure. Therefore 27.31% of the children not receiving summer meals (17.9 million) are food insecure (i.e., 27.31% of 17.9 million = 4.89 million). SEBTC led to a 19% decrease in food insecure children, so if the same percentage decrease is assumed for all summer nutrition programs, 928,567 children would no long be food insecure if they received summer meals (i.e., 19% of 4.89 million = 928,567). (Sources: National Center for Education Statistics, "Number and percentage of public school students eligible for free or reduced-price lunch, by state: Selected years, 2000-01 through 2012-13," http://nces.ed.gov/programs/digest/d14/tables/dt14_204.10.asp?current=yes, accessed May 21, 2015; US Department of Agriculture, "Food Security in the US: Key Statistics & Graphics," http://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/key-statistics-graphics.aspx, accessed May 21, 2015; Feeding America, Map the Meal Gap: Highlights of Findings for Overall and Child Food Insecurity, p. 29, http://www.feedingamerica.org/hunger-in-america/our-research/map-the-meal-gap/2012/2012-mapthemealgap-exec-summary.pdf, published 2014).

63. In 2012, 7.928% of all children were hospitalized. Since food insecure children are 31% more likely to be hospitalized, food insecure children have a 10.386% likelihood of being hospitalized. With the reduction in food insecurity above, we can expect a decrease in hospitalizations by 22,820. This would lead to approximately $274 million in cost avoidance each year because each pediatric hospital visit is estimated to be $12,000. (Sources: Cook, J., et al., "Food Insecurity Is Associated with Adverse Health Outcomes among Human Infants and Toddlers," Journal of Nutrition 134 (2004): 1432–38. http://www.ncbi.nlm.nih.gov/pubmed/15173408; Cook, J., and K. Jeng, "Child Food Insecurity: The Economic Impact on our Nation: A report on research on the impact of food insecurity and hunger on child health, growth and development commissioned by Feeding America and The ConAgra Foods Foundation," Feeding America, 2009, p.2, http://www.nokidhungry.org/sites/default/ files/child-economy-study.pdf, accessed March 23, 2015; Witt, W., A. Weiss, and A. Elixhauser, "Overview of Hospital Stays for Children in the United States, 2012," Healthcare Cost and Utilization Project, http://www.hcup-us.ahrq.gov/reports/statbriefs/sb187-Hospital-Stays-Children-2012.pdf, published December 2014).

64. Ibid.

65. In 2009, there were an estimated 3,711,128 students enrolled in ninth grade. The estimated 2013 public high school 4-year adjusted cohort graduation rate for this class was 81%. If the graduation rate increased by 2.2% to 83.2%, 81,645 students would have graduated from high school in 2013. (Sources: National Center for Education Statistics, "Public high school 4-year adjusted cohort graduation rate (ACGR) for the United States" https://nces.ed.gov/ccd/tables/ACGR_2010-11_to_2012-13.asp, accessed May 21, 2015; US Census Bureau, "Estimates of School Enrollment by Grade in the American Community Survey, the Current Population Survey, and the Common Core of Data", https://www.census.gov/hhes/school/files/ACS-CPS-CCD_02-18-14.pdf, accessed May 21, 2015).

66. There are an estimated 49.8 million students in the US enrolled in public elementary and secondary schools. 66% of teachers across the country said that it takes them at least 3 – 4 weeks to re-teach previous year's skills at the beginning of a new school year. Therefore, 32.9 million (66% of 49.8 million) are in classrooms with teachers who are re-teaching material due to summer learning loss. Four weeks of re-teaching is estimated to cost $1,540 per students so annually re-teaching costs nationally equate to $50.6 billion ($1,540 x 32.9 million). Total education expenditures for K-12 was $490.9 billion for the year the survey was conducted, and the re-teaching cost of $50.6 billion is 10% of $490.9 billion. (Sources: National Center for Education Statistics, "Public School Enrollment, https://nces.ed.gov/programs/coe/indicator_cga.asp, updated May 2015; National Summer Learning Association, "Summer's Influence on Teaching and Learning All Year," http://c.ymcdn.com/sites/www.summerlearning.org/resource/resmgr/Publications/Impact_on_Teaching_and_Learn.pdf, accessed May 6, 2015; Fairchild, R. and M. Boulay, "What if Summer Learning Loss Were an Education Policy Priority?" presented at the 24th Annual APPAM Research Conference: "Asking What if…Assessing the Public Policy & Management Implications of Social Science Research," Baltimore, MD, November 9, 2002, http://www.whatkidscando.org/; US Dept. of Education, "Total US Expenditures for Elementary and Secondary Education", http://www2.ed.gov/about/overview/fed/10facts/edlite-chart.html#1, accessed May 15, 2015).

About Share Our Strength's No Kid Hungry campaign

No child should go hungry in America, but 1 in 5 kids will face hunger this year. Using proven, practical solutions, No Kid Hungry is ending childhood hunger today by ensuring that kids start the day with a nutritious breakfast, have healthy meals during the summer months, and families learn the skills they need to shop and cook on a budget. When we all work together, we can make sure kids get the healthy food they need. No Kid Hungry is a campaign of national anti-hunger organization Share Our Strength. Join us at *NoKidHungry.org*.

About Deloitte Community Involvement

Deloitte helps its communities thrive by leveraging innovative thinking to strengthen nonprofit capacity by helping with strategic, operational and financial challenges, so nonprofits can help more people and communities faster and better; complementing innovative thinking with an investment of financial resources at the national and regional level; and creating and sharing new research, content and insights on ways organizations can leverage skills-based volunteerism.

Share Our Strength and Deloitte have previously worked together on *Ending Childhood Hunger: A Social Impact Analysis* and the *No Kid Hungry School Calculator*.