Food Research and Action Center

Replacing the Thrifty Food Plan in Order to Provide Adequate Allotments for SNAP Beneficiaries

Introduction

The Supplemental Nutrition Assistance Program (SNAP) is a profoundly important program that reaches tens of millions of vulnerable Americans. The program's fundamental strengths include: its anti-poverty as well as anti-hunger effects; its reach to a wide variety of types of people in need (children, parents, seniors, and others), working families and unemployed people, and people in every state; its use of normal, established commercial means of distribution to get food to people in need; and its ability to respond to surges of need among families and communities, as demonstrated in natural disasters and during the Great Recession.

The program's most important weakness is that benefits are not adequate to get most families through the whole month, let alone to allow them to buy the foods needed for a quality diet. Benefits are inadequate, in part, because they are based on the U.S. Department of Agriculture's (USDA) impractical Thrifty Food Plan. Even though it does not solve all of the weaknesses and challenges of the Thrifty Food Plan, the USDA's Low-Cost Food Plan – not the Thrifty Food Plan – is a much more appropriate basis for SNAP allotments. Such a change would improve the health and well-being of millions of low-income Americans.

This brief first provides background information on the four USDA Food Plans, including the Thrifty Food Plan and the Low-Cost Food Plan. The second section details the weaknesses and limitations of the Thrifty Food Plan. The final section discusses why a more adequate food plan should be the basis for SNAP benefit allotments rather than the current Thrifty Food Plan, and concludes with a brief overview of the favorable impact of more adequate benefit levels on food spending and health.

Background and Development of the USDA Food Plans

USDA's Four Food Plans

USDA began developing basic food plans for different cost levels in the 1930s to provide "consumers with practical and economic advice on healthful eating."¹ Currently, USDA has the following four food plans to represent a diet at home for four different cost levels: the Thrifty Food Plan (minimal cost), Low-Cost Food Plan, Moderate-Cost Food Plan, and Liberal Food Plan (highest cost). According to the latest figures for a family of four from October 2012*, the average monthly costs of the food plans are \$627 for the Thrifty Food Plan, \$822 for the Low-Cost Food Plan, \$1,024 for the Moderate-Cost Food Plan, and \$1,243 for the Liberal Food Plan.²

The monthly SNAP allotment is based on the Thrifty Food Plan (TFP), which USDA defends as "a national standard for a nutritious diet at a minimal cost."³ The TFP has its origins in the 1930s. At the time, USDA developed a Restricted Food Plan for Emergency Use and the Minimum-Cost Food Plan, both of which were used in programs for low-income families during the Depression.⁴ These two plans were replaced by the Low-Cost Food Plan in the 1940s.⁵ In 1961, USDA developed the Economy Food Plan for short-term or emergency use at a price lower than the Low-Cost Food Plan.⁶ The Economy Food Plan was replaced with the TFP in 1975, and – like earlier food plans – was updated to reflect new consumption behaviors, food price data, and dietary recommendations.⁷ However, the updating was

^{*} For the purposes of this paper, a reference family of four is composed of one male 19 to 50 years of age, one female 19 to 50 years of age, one child 6 to 8 years of age, and one child 9 to 11 years of age. This reference family is what USDA uses in setting SNAP benefits.

constrained by cost: the TFP had to maintain the same minimal cost as the Economy Food Plan.⁸ In other words, the assignment was to fit the new square peg into the same size round hole.

The purchasing power of the TFP has yet to be increased by USDA, even though the opportunity presented itself when the market baskets were revised in 1983, 1999, and 2006. Each time, the same neutral cost constraint was applied. As a result, the most recent 2006 TFP revision attempted to incorporate new data and reflect new national dietary recommendations, but was revised within the limits of the same (inflation-adjusted) cost of the previous TFP market baskets.⁹

The TFP is generally not used by government agencies for any purpose other than setting SNAP allotments. Government agencies, when determining the cost of food for certain purposes, generally use one of the three highercost food plans – the Low-Cost Food Plan, Moderate-Cost Food Plan, and Liberal Food Plan. For example, the Low-Cost Food Plan is used by bankruptcy courts to determine the amount of income to allocate to food costs, and the Liberal Food Plan is used by the military to set the food allowance for service members.¹⁰ All three higher-cost food plans are used to determine alimony, child support, and foster care guidelines or payments.^{11,12} These three plans were revised in 2007 for similar reasons as the TFP and also at the inflation-adjusted cost of the prior plans.¹³

USDA Food Plan Development

The methodology for creating the most recent USDA Food Plans was fairly comparable across all four plans. USDA created market baskets for 15 different age and gender groups (e.g., children 2 to 3 years of age, females 12 to 13 years of age) for each of the four USDA Food Plans (i.e., 60 market baskets total). These baskets were based on mathematical models that were intended to account for actual consumption, actual food prices, updated food composition data, and current dietary recommendations, while working within the constraint of maintaining the inflation-adjusted cost of the prior plans.^{14,15}

USDA used 2001-2002 national consumption data and food prices for all four plans, and attempted to align the market baskets with the most current dietary standards of the time (e.g., 2005 *Dietary Guidelines for Americans*, MyPyramid Food Guidance System).^{16,17} However, USDA based the TFP on reported consumption by low-income households (i.e., the diets of people who generally do not have enough resources for food) and, when available, food prices as reported by low-income households.¹⁸ The other three USDA Food Plans were based on quartiles of food spending – the Low-Cost Food Plan corresponds to consumption in the 25th to 50th percentile of food spending, Moderate-Cost Food Plan to the 50th to 75th percentile, and Liberal Food Plan to the 75th to 100th percentile.¹⁹ Compared to the TFP, the three higher-cost food plans, with their more generous budgets, also allowed for more food waste and for healthy foods that were not the least expensive (e.g., more fresh fish instead of canned tuna, more berries instead of bananas).^{20,21,22} And, as noted by USDA, more food choices and variety are available as the cost of the food plans increases.²³ (Additional details on the development of the four USDA Food Plans are provided in USDA's *Thrifty Food Plan, 2006* and *The Low-Cost, Moderate-Cost, and Liberal Food Plans, 2007*.)

Weaknesses of the Thrifty Food Plan

As discussed in detail below, research published since the 2006 revision shows that the TFP is impractical and inadequate. SNAP recipients cannot afford the plan and an adequate diet with their allotment.^{24,25,26,27,28} This is true despite the fact that SNAP participants use a variety of savvy shopping practices to stretch their limited food dollars.^{29,30,31} This section outlines the following, most substantial weaknesses of the TFP and its use in SNAP. The TFP:

- Includes impractical lists of foods,
- Lacks the variety called for in the Dietary Guidelines for Americans,
- Unrealistically assumes adequate facilities and time for food preparation,
- Unrealistically assumes food availability,
- Unrealistically assumes food affordability,

- Unrealistically assumes adequate, affordable transportation,
- Underestimates food waste,
- Is exacerbated in its inadequacy by SNAP benefit calculations,
- Costs more than the SNAP allotment in many parts of the country, and
- Ignores special dietary needs.

One underlying theme throughout this section is that there is no margin of error included within the TFP, which demands perfection across a range of household tasks, access to resources, and other attributes. Everything must be perfectly aligned for the TFP to work as intended – a person needs: access to a store (or multiple stores to bargain hunt) with a wide variety of foods at very competitive prices; transportation to the store; adequate resources to use at the store throughout the month; adequate and reliable storage space and cooking equipment; sufficient time for food preparation; less waste and spoilage than is commonly accepted as the norm; and so on. Low-income households have no buffers when things go – even slightly – off this course, as they typically do in one respect or another in the real world for families of all income levels. More and more demands for perfection are made on the low-income family. The result is a type of Potemkin village: a TFP that is an artificially constructed model that obscures the reality of the impossible struggles of low-income people.

The TFP is also flawed because it is built on circularity. The TFP is based on the reported consumption and food prices of low-income households, many of whom presumably have inadequate diets because of resource constraints and access challenges. For example, if low-income Americans only eat apples and bananas because that is the fruit they can afford, then SNAP recipients eating the TFP must adhere to those limits (if the foods are available to them), or reduce their intake of fruit, or spend more than they theoretically have to purchase the theoretical allotment of fruit. In other words, the TFP builds a very small box around the family: the calculation is based on inadequate diets and, therefore, the benefits are inherently inadequate. We should not be surprised when low-income households are unable to purchase adequate healthy foods for their families.

Includes Impractical Lists of Foods

The impracticality of the TFP perhaps is most evident in the market baskets themselves. The 15 age-gender market baskets are defined in terms of the quantities of food to be purchased for a one-week time period and are constructed artificially to assure the square SNAP allotment peg fits the round TFP hole.³² Under a USDA contract, Pennsylvania State University researchers developed and tested recipes, menus, and food lists that translated the 1999 market baskets into real-world terms.³³ Unlike the 1999 TFP, the 2006 baskets have not been translated into practical shopping lists or menus for consumers that could help them, to some extent, meet the TFP guidelines. It is unclear how low-income shoppers are expected to translate the 2006 weekly market basket food quantities (for individuals in pounds) into a weekly shopping list (for a household in actual product sizes). It requires an extraordinary amount of time and skill to even begin to undertake the effort, which is why university researchers have been the ones commissioned in the past to try it.

Furthermore, the market baskets are in terms of pounds of food per week and contain such small quantities of some foods, especially prepared foods, that the amounts are impractical and often meaningless for normal use. For instance, the weekly market basket for a reference family of four allots approximately 0.64 ounces of "frozen or refrigerated entrees" and approximately 2.1 ounces of "all cheese" – which, respectively, translates to about two-thirds of a fish stick and two slices of cheese for a family of four for a week. USDA intends for the weekly market baskets to be used as monthly market baskets,³⁴ which would still only amount to about three fish sticks and eight slices of cheese for a family of four for a month.

Lacks the Variety Called for in the Dietary Guidelines for Americans

The *Dietary Guidelines for Americans* emphasize variety throughout the recommendations (e.g., "eat a variety of vegetables"),³⁵ yet there is very limited variety in the TFP market baskets. The TFP has the narrowest range of food choices of the four USDA Food Plans. For example, fruits in the baskets are comprised mostly of apples, bananas, oranges/orange juice, and watermelon; the primary vegetables include potatoes, carrots, cabbage, and dark leafy greens; and the main fish are canned tuna and canned salmon.³⁶ The TFP technically meets the variety goals in the *Dietary Guidelines for Americans*,³⁷ but not in practical terms for long-term use. The overall lack of variety over time leads to a potentially monotonous, unpalatable diet. This is evident from a review of the TFP range of components, but the problem also is reported in the short-term by those taking the SNAP Challenge.[†]

The lack of variety also is inconsistent with other federal initiatives and efforts to change behavior. For instance, the USDA's Fresh Fruit and Vegetable Program promotes fruit and vegetable variety to low-income school children, encourages children to try a wide range of fruits and vegetables, and counts as a success the fact that children go home and ask their parents for that variety. However, the TFP does not allow parents to provide that variety because of cost constraints. That is, children are encouraged in one USDA program to ask for variety in fruits and vegetables for which USDA does not provide adequate resources in another program.

Unrealistically Assumes Adequate Facilities and Time for Food Preparation

Inherent in the TFP market baskets and the other USDA market baskets is the assumption that people have adequate and safe facilities for food storage and preparation. Some low-income families cannot afford the up-front costs for appliances or utensils that the TFP assumes, such as a working refrigerator and stove. Moreover, low-income families often struggle with high energy costs that are disproportionately larger as a share of income than higher-income households, which can lead to unpaid bills and utility disconnection.³⁸ The latter has serious implications for food preparation, including even the lack of water to clean or cook food, and the lack of electricity to power a refrigerator or stove. Households with limited budgets also may find it impossible to pay for costly repairs to or replacements for their (often aging) major kitchen appliances. Thus a broken or inefficient appliance may remain as such for a prolonged period of time.

An even more common shortage relates to time. The TFP frequently is criticized for requiring an unrealistic amount of time for food preparation (often from scratch), including the time necessary to shop (often in multiple places) for food at the right price, compare prices, prepare food, and clean up after a meal. For instance, Chef Mario Batali took the SNAP Challenge and reported shopping at four stores to make the budget work, a task he said was relatively easy in his area of New York City, but would be difficult for people living in food deserts.³⁹ In an effort to be more realistic about the time available for food preparation in the home, USDA reports incorporating more convenience foods and "somewhat" fewer foods prepared from scratch in the 2006 revision of the TFP compared to the 1999 version.⁴⁰ For example, more frozen vegetables, ready-to-serve breads, and canned beans are included in the 2006 TFP market baskets.⁴¹

USDA does not estimate how much preparation time is required to meet the 2006 TFP and, as noted previously, the 2006 market baskets have not been translated into practical shopping lists and menus that external researchers can use to make such time estimates. However, a number of researchers have made recent estimates in terms of the 1999 TFP lists and recipes, and demonstrate that the time needed to prepare foods to achieve the TFP is higher than social norms and practices.^{42,43} For instance, Virginia Tech researchers estimated that individuals spend about 4.41 hours per week in food production on average, but the TFP requires 13.1 hours per week.⁴⁴ Another estimate focused on

[†] During the SNAP Challenge, people live on the average or maximum daily SNAP benefit, often for one week, and get glimpses of what shopping and eating can be like for SNAP households. Challenge participants find they have to make difficult food shopping choices, and typically find it difficult to avoid hunger throughout the week, afford nutritious foods, and stay healthy. Many report a loss of energy and less ability to do their work. For more information on the SNAP Challenge, visit FRAC's website: www.frac.org.

females found that preparing and cooking TFP recipes takes 16.1 hours per week (excluding shopping and clean-up time), yet women actually spend 4.5 to 13.9 hours per week in meal preparation, varying by employment status and SNAP participation.⁴⁵ Furthermore, a recent USDA study estimates that SNAP participants spend more time in meal preparation, meal clean-up, and grocery shopping than income-eligible non-participants and higher income individuals.⁴⁶ And yet, SNAP participants spend about 10.5 hours per week in food production, which is much lower than the estimated hours required to achieve the TFP.[‡]

While the 2006 revision may have narrowed these time gaps to some extent, it is unrealistic to expect low-income families and individuals – especially single-headed households, households with children, and those working multiple jobs or commuting long hours – to find several such hours a week to dedicate to food preparation. Contrary to stereotypes, SNAP household heads are mainly seniors, people with disabilities, workers, and working parents for whom these hours of food preparation are impractical.⁴⁷

Unrealistically Assumes Food Availability

Low-income neighborhoods frequently lack full-service grocery stores.^{48,49,50,51,52} Residents of such neighborhoods may be restricted to shopping at small convenience and corner stores (where fresh produce, low-fat items, and other foods often are limited, and food generally may be more expensive and of poor quality), or restricted to one shopping trip a month to a bigger store.^{53,54,55,56} According to a recent USDA report, "the lack of full-service stores in some neighborhoods may also make participation in [SNAP] less attractive if it is more difficult to redeem benefits."⁵⁷

Even in normal commercial environments, the TFP market baskets are so constrained that purchasing all or most of the components can be very difficult. Research published since the 2006 TFP revision shows that obtaining an adequate diet with the TFP is challenging because of the minimal availability of stores offering foods to fill a TFP market basket.^{58,59,60} For instance, Brown University researchers created theoretical market baskets of foods based on the TFP and found that only three of 22 retail stores in one low-income community of Rhode Island offered enough food variety to fill the baskets.⁶¹ In Children's HealthWatch studies of urban stores (16 stores in Boston and 16 stores in Philadelphia), 16 percent of the 104 items on their TFP food list were not available in the Boston stores and 35-38 percent were not available in the Philadelphia stores, on average.^{62,63} The most commonly missing foods were fresh fruits and vegetables, whole grain products, low-fat dairy products, fish, and lean meat.^{64,65}

Unrealistically Assumes Food Affordability

Part of the reason why SNAP benefits are insufficient for many participants is that healthy food to meet the TFP guidelines, even if available, is often more expensive, whereas refined grains, added sugars, and fats generally are less expensive and often readily available in low-income communities.^{66,67,68,69} For instance, a Seattle study found that higher intakes of fiber and key nutrients (e.g., vitamin C, iron, potassium) were associated with higher diet costs, whereas higher intakes of saturated fat and added sugars were associated with lower diet costs.⁷⁰ Those with lower socioeconomic status were more likely to consume lower quality and lower cost diets. Similarly, consuming higher quality diets was more costly for low-income women in California.⁷¹ Another study, based in a rural area of South Carolina and focused on several staple foods, found that healthier versions of food often were more expensive than the less healthful versions (e.g., a loaf of high-fiber bread cost 23 to 61 cents more than a loaf of low-fiber bread depending on the store type).⁷²

Fruit and vegetable prices may be especially challenging for low-income households. Although a recent USDA report argues that individual portions of some healthier foods are not necessarily more expensive than less healthy food, the

[‡] USDA estimates that SNAP participants spend 75 minutes on an average day in meal preparation and clean-up, and 54 minutes on an average day in grocery shopping, among those participants engaging in these activities. To convert these daily figures into approximate weekly figures for comparison purposes, the weekly figure (i.e., 10.5 hours) assumes that SNAP participants spend 75 minutes every day of the week in meal preparation and clean-up (75 minutes x 7 days) and 54 minutes twice a week for grocery shopping (54 minutes x 2 days).

report did conclude that meeting federal vegetable recommendations is the most expensive recommendation to meet, followed by protein and fruit recommendations, respectively.⁷³ Another USDA report found considerable variation in fruit and vegetable prices across the country, as most fruits and vegetables were 30 to 70 percent more expensive in the highest priced market compared to the lowest priced market.⁷⁴ Furthermore, a recent FRAC analysis of Gallup survey data found that fresh fruit and vegetable affordability and access challenges were considerably worse among households with low incomes and for households experiencing food hardship (the Gallup survey analogue to food insecurity).⁷⁵

As a result of food affordability issues, households with limited resources to buy enough food may try to stretch their food budgets by purchasing cheap, energy-dense foods that are filling – that is, they try to maximize their calories per dollar in order to stave off hunger.^{76,77,78} And not surprisingly, purchasing foods to fill the TFP market baskets – with approximately 40 percent of the baskets allotted to fruits and vegetables in terms of pounds per week for a family of four⁷⁹– is difficult, if not impossible, for struggling low-income families. The latter will be discussed in greater detail in a section focused on the real cost of the TFP in a number of U.S. localities.

Underestimates Food Waste

Since the early 1980s, USDA has used a food waste factor of 5 percent in the TFP market baskets to account for food lost to spoilage, spillage, or plate waste.⁸⁰ (The food waste factors for the three higher-cost USDA Food Plans range from 10 to 30 percent.⁸¹) The 1985 Subcommittee on Domestic Marketing, Consumer Relations, and Nutrition of the House of Representatives Committee on Agriculture concluded that low-income household food waste was much higher than this 5 percent figure, while still less than the food waste of higher income households. Food spoilage is particularly problematic for low-income households who may experience food loss during long trips from the grocery store (e.g., frozen foods thaw to the point of being unusable), who may lack adequate freezer and refrigeration space, or who are buying less fresh fruits and vegetables and day-old bread to begin with. In short, the dated and inaccurate food waste factor is another reason why the TFP is inadequate for many SNAP households. And although any level of food waste is undesirable, it is unrealistic to ignore this issue given the nature of food shopping and preparation that result in some waste for households.

Unrealistically Assumes Adequate, Affordable Transportation

According to USDA, "vehicle access is perhaps the most important determinant of whether or not a family can access affordable and nutritious food."⁸² Therefore, meeting the TFP guidelines is especially challenging for the many households in low-income communities without vehicle access.⁸³ For instance, focus groups of predominantly SNAP participants reveal that store accessibility is a major factor in shopping frequency because many do not have their own vehicle.⁸⁴

Shopping frequency may increase – and the ability to buy in bulk decrease – because of limits on how much can be carried when walking or using public transit.^{85,86} Depending on transportation availability (e.g., getting a ride with a friend), some consumers also may be limited to one large shopping trip a month when they buy the majority of their monthly food purchases.⁸⁷ Such a practice requires ample food storage space and may restrict the types of products that can be purchased (e.g., fewer perishable items like fruits and vegetables). It also runs head-on into the unrealistic food spoilage/waste assumption built into the TFP (discussed previously). Furthermore, transportation costs cut into the already limited resources of SNAP households, and these costs can be substantial. For example, a New Orleans study of urban SNAP recipients found that average travel costs for grocery shopping trips were 2.7 times greater for people without cars, and taxis and buses were more expensive and slower modes of transit than cars.⁸⁸

TFP Is Exacerbated in its Inadequacy by SNAP Benefit Calculations

The main use of the TFP in American society is to define SNAP benefits. Its shortcomings, therefore, have the primary impact of making SNAP allotments inadequate. And it is worth noting that flaws in SNAP rules make the TFP shortfall

worse. One such problem is that the timing of the annual SNAP cost of living adjustment by definition means that the actual SNAP allotment is almost always less than the TFP. While the SNAP benefit allotment is adjusted for inflation each year, the increases come only after a time lag, adjusted in October for inflation through the prior June. Therefore, the allotment during the year reflects not current prices but the prices of the (already inadequate) TFP from between four months earlier (in October) and 16 months earlier (as the year progresses).[§] As food prices rise, SNAP households lag further behind in purchasing power.

Furthermore, SNAP benefit allotments are calculated based on household income, resources, and size.⁸⁹ The many families with earnings, Social Security, or other forms of income are assumed to be able to use some of that income for food, so they receive less than the full allotment. This adjustment is in theory logical, but the computation of the share of a family's income available for food is so flawed that it frequently leads to unjust results. For example, households cannot deduct medical bills from income, no matter how large their payments are, unless there is an elderly or disabled member. And even among those entitled to the SNAP medical deduction, few receive it due to the complexity of gathering the appropriate paperwork. As a result, SNAP households often are assumed to have money for food that actually is going to medical bills. As a second example, households with very high shelter costs (e.g., mortgage or rent, utilities) can only deduct part of these costs from income unless there is a senior or disabled household member. The deduction for most SNAP households – those with no senior or disabled members – is capped, so the resulting amount of income assumed to be available for food because it is not needed for rent is often unrealistic. Many households wind up having to devote money to shelter which SNAP assumes is available to help purchase food.

Costs More than the SNAP Allotment in Many Parts of the Country

One other reason benefits are inadequate for many SNAP beneficiaries is that the TFP is based on a national average of food prices, but food prices vary widely across the nation, as concluded in several USDA reports.^{90,91,92} As a result, higher food prices in many communities – especially urban areas – make it difficult to meet TFP guidelines and afford a healthful diet, because SNAP consumers have less purchasing power with their program benefits.^{93,94,95,96,97} (Such price variation exists for the other three USDA Food Plans, too, but their higher cost levels mean people in a much broader range of places can afford healthy food.)

For example, Children's HealthWatch researchers in 2008 (prior to the temporary boost in SNAP benefits^{**}, described more fully in a subsequent section) found that families of four receiving the maximum SNAP benefit needed to spend an additional \$2,520 in Boston and \$3,165 in Philadelphia per year to purchase foods that meet the TFP guidelines.⁹⁸ In a comparable study in 2011 in Philadelphia (after the temporary increase in benefits), the Children's HealthWatch research team found that the boost brought SNAP benefit levels closer to the TFP guidelines, but there was still an average annual shortfall of \$2,352.⁹⁹ (We argue below that the Low-Cost Food Plan is a more appropriate food plan for calculating SNAP benefits, and it is worth noting that the deficits in some of these studies are roughly equivalent to the difference between the current average monthly cost of the TFP and Low-Cost Food Plan (e.g., \$195).) For rural areas, the Vermont Campaign to End Childhood Hunger drew similar conclusions as Children's HealthWatch based on an assessment of four Vermont stores in November 2008: the actual cost of the TFP exceeded the maximum SNAP allotment for a family of four by \$1,869 to \$4,482 per year, depending on the store type.¹⁰⁰ In short, SNAP beneficiaries trying to follow the TFP will necessarily fall short if faced with prices that are higher than the national average.

Ignores Special Dietary Needs

The USDA market baskets do not account for the additional nutritional needs of pregnant or breastfeeding women, persons engaging in heavy physical labor, children and adults engaging in vigorous physical activity, or those

[§] The annual adjustment in the allotment went to 103 percent of the cost of the Thrifty Food Plan to compensate for this problem, but Congress cut this to 100 percent beginning in 1996.

^{**} Average benefits in FY2011 reflected a temporary boost in allotments pursuant to the American Recovery Reinvestment Act (ARRA) of 2009.

requiring special medical diets (e.g., gluten-free, low-sodium). This means that the amount or types of food in the market baskets likely are insufficient or inappropriate for a significant number of households.

A More Adequate Food Plan as Basis for SNAP Allotments

To make SNAP adequate for the families the program serves requires abandoning the current square-peg-in-a-round hole TFP approach. One strategy, a legislative solution, is for Congress to replace the TFP as the basis for SNAP with a more adequate food plan. An alternate strategy is for the Secretary of USDA to use his authority to allow TFP to be studied, redefined, and rebudgeted as an adequate plan with a higher SNAP allotment amount to purchase it.

The amount of the federal government's own Low-Cost Food Plan – the lowest of three government budgets for normal use – is approximately 30 percent higher than the TFP, depending on household composition. While the Low-Cost Food Plan shares a number of the limitations of the TFP and cannot solve all of problems of the TFP, the Low-Cost Food Plan should be the basis for SNAP allotments for two key reasons. First and foremost, the plan is generally in line with what low- and moderate-income families report that they need to spend on food, as opposed to the lower amount the TFP-based SNAP allotment provides.¹⁰¹ Second, the Low-Cost Food Plan allows for greater food variety and choices to support a healthful, palatable diet. USDA researchers in the early 1980s found that households spending at the Low-Cost Food Plan level had more nutritionally adequate diets than those households spending at the TFP level.¹⁰² This is consistent with a more recent study which found that increases in food spending positively impact the dietary quality of SNAP participants.¹⁰³

Basing SNAP allotments on the Low-Cost Food Plan means participants will have more adequate benefits, less food insecurity, and healthier diets. The nation in fact has just de facto run a large experiment involving more adequate SNAP benefits, and it worked. Benefits beginning in April 2009 reflected a temporary boost in allotments pursuant to the American Recovery Reinvestment Act (ARRA) of 2009 – initially by 13.6 percent for those receiving the maximum allotment. Since normal annual inflation adjustments were suspended while the temporary boost was in effect, the amount of the boost has shrunk over time. (Congress has also subsequently passed legislation terminating any boost in October 2013, while the President in his budget has proposed continuing the temporary boost.)

The increase in SNAP benefits through ARRA was in recognition of the effective and quick stimulative effect of SNAP benefits on the economy as well as the recognition that hard-hit families needed additional assistance. The boost initially covered roughly half of the gap between the TFP and Low-Cost Food Plan. Research on the ARRA boost and benefit adequacy suggest that more adequate benefit levels – as can be achieved if allotments are based on the Low-Cost Food Plan – favorably impact food spending and health, as detailed more fully in the following two sections.

Implications of More Adequate Benefit Levels on Food Spending

- According to one USDA estimate, every additional dollar in SNAP benefits generates 17 to 47 cents in new food spending.¹⁰⁴
- The temporary increase in SNAP benefit levels from ARRA helped increase food expenditures by 5.4 percent among low-income households between December 2008 (pre-ARRA) and December 2009 (about eight months post-ARRA).¹⁰⁵
- SNAP households also made slightly more monthly transactions after the ARRA boost: the numbers rose from 8.5 transactions per month pre-ARRA to 10.1 transactions per month post-ARRA.¹⁰⁶ After the increase, SNAP households also exhausted benefits later in the month they were able to save slightly more benefits for use at the end of the month.¹⁰⁷

Implications of More Adequate Benefit Levels on Health

The evidence also shows that SNAP alleviates food insecurity,¹⁰⁸ improves dietary quality,^{109,110} protects against obesity,^{111,112} and improves health,^{113,114} especially among children. The following selection of studies suggests that such impacts are greater if there is a higher level of SNAP or EBT benefits.

Food Insecurity and General Health

- The temporary ARRA increase in SNAP benefit levels helped reduce food insecurity by 2.2 percentage points and reduce very low food insecurity by 2.0 percentage points among low-income households between December 2008 (pre-ARRA) and December 2009 (about eight months post-ARRA).¹¹⁵
- While not limited to SNAP recipient children, a demonstration project providing \$60 per month in EBT-delivered benefits to purchase food for low-income children in summer months found a 19 percent reduction in food insecurity and 20 percent reduction in very low food security during the summer of 2011.¹¹⁶
- Improved SNAP benefit levels positively impacted child health. During the two years after the temporary ARRA boost, young children in households receiving SNAP benefits were significantly more likely to be "well" than children from non-participating low-income households, according to a study of nearly 3,400 young children in emergency rooms and primary care clinics.¹¹⁷ Such a difference was not observed prior to the benefit boost, suggesting the positive role of benefit levels closer to adequacy.

Dietary Quality

- Based on national food consumption data, each additional SNAP dollar increases a household's score for overall dietary quality (as measured by USDA's Healthy Eating Index).¹¹⁸ The higher the level of SNAP benefits, the larger the positive nutritional effect of program participation.
- In a report from USDA examining the potential impact of an increase in SNAP benefits on a number of measures of dietary quality, spending more money on food was associated with positive improvements in dietary quality, energy density, nutrient density, and fruit and vegetable consumption.¹¹⁹
- Three of the 18 questions in the USDA's food security scale address dietary quality (i.e., affording to eat balanced meals, relying on a few kinds of low-cost food to feed children, feeding children balanced meals); therefore, improvements in food security as seen through the ARRA boost also reflect improvements in dietary quality.¹²⁰

Obesity

- A larger amount of SNAP dollars received in the previous month was associated with significantly lower body mass index (BMI) and waist circumference among women reporting SNAP benefit levels, according to a national study that used 2005-2006 data.¹²¹
- Food insecurity was significantly related to increased BMI among North Carolina women receiving less than \$150 in SNAP benefits per household member, but not related among those women receiving \$150 or more in benefits.¹²² In addition, the mean BMI of women receiving at least \$150 in benefits per household member was significantly lower than the mean BMI of women receiving less than \$150 in benefits. These findings "suggest that the provision of adequate SNAP benefits per household member might partially ameliorate the negative effects of food insecurity on BMI."

Conclusion

For many reasons (e.g., many households rotating in and out of poverty; the decline in pay of the lower quintiles of American earners over recent decades), research estimates that half of all American children will receive SNAP at some point during childhood, and half of all adults will do so at some point between the ages of 20 and 65 years.^{123,124} This underscores how important SNAP benefit adequacy is to the health and well-being of the nation. Yet the TFP, the basis for SNAP benefits, is impractical and inadequate. While it is theoretically possible to purchase and prepare an adequate

diet with the plan, the overwhelming weight of the evidence is that, in the real world, only a tiny minority of families are able to overcome the real-world constraints, such as lack of the prescribed time for food preparation and lack of access to affordable foods, to accomplish a goal that was set by experts using mathematical models to achieve a predetermined outcome. The Low-Cost Food Plan, with its more adequate budget, better reflects the food shopping needs and practices of low-income consumers, and should be the basis for SNAP allotments.

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Endnotes

¹ Carlson, A., Lino, M., Juan, W., Hanson, K., & Basiotis, P. P. (2007a). *Thrifty Food Plan, 2006 (CNPP-19)*. Alexandria, VA: U.S. Department of Agriculture, Center for Nutrition Policy and Promotion.

- ³ Carlson et al., 2007a.
- ⁴ Carlson et al., 2007a.
- ⁵ Carlson et al., 2007a.
- ⁶ Carlson et al., 2007a.
- ⁷ Carlson et al., 2007a.
- ⁸ Carlson et al., 2007a.
- ⁹ Carlson et al., 2007a.

- ¹³ Carlson et al., 2007b.
- ¹⁴ Carlson et al., 2007a.
- ¹⁵ Carlson et al., 2007b.
- ¹⁶ Carlson et al., 2007a.
- ¹⁷ Carlson et al., 2007b.
- ¹⁸ Carlson et al., 2007a.
- ¹⁹ Carlson et al., 2007b.
- ²⁰ Carlson et al., 2007b.
- ²¹ Lino, M. (2011). The USDA Food Plans and Their Immediate Impact on 1 in 8 American Households. Presentation at the 2011 Agricultural Outlook Forum, February 25, 2011, Crystal Gateway Marriott, Arlington, VA. Available at: www.usda.gov/oce/forum/2011_Speeches/Lino.pptx. Accessed on November 26, 2012.
- ²² Lino, M. (2012). Personal communication on May 24, 2012.
- ²³ Carlson et al., 2007b.
- ²⁴ Breen, A. B., Cahill, R., Ettinger de Cuba, S., Cook, J., & Chilton, M. (2011). The Real Cost of a Healthy Diet: 2011. Boston, MA: Children's HealthWatch.
- ²⁵ Dammann, K. W. & Smith, C. (2009). Factors affecting low-income women's food choices and the perceived impact of dietary intake and socioeconomic status on their health and weight. *Journal of Nutrition Education and Behavior*, 41(4), 242-253.
- ²⁶ Davis, G. C. & You, W. (2010). The Thrifty Food Plan is not thrifty when labor cost is considered. *Journal of Nutrition*, 140(4), 854-857.
- ²⁷ Sheldon, M., Gans, K. M., Tai, R., George, T., Lawson, E., & Pearlman, D. N. (2010). Availability, affordability, and accessibility of a healthful diet in a low-income community, Central Falls, Rhode Island, 2007-2008. *Preventing Chronic Disease*, 7(2), A43.
- ²⁸ Thayer, J., Murphy, C., Cook, J., Ettinger de Cuba, S., DaCosta, R., & Chilton, M. (2008). *Coming Up Short: High Food Costs Outstrip Food Stamp Benefits*. Boston, MA: Children's HealthWatch.
- ²⁹ Bradbard, S., Michaels, E. F., Fleming, K., & Campbell, M. (1997). Understanding the Food Choices of Low Income Families: Summary of Findings. Alexandria, VA: U.S. Department of Agriculture, Food and Consumer Service, Office of Analysis and Evaluation.
- ³⁰ Seefeldt, K. S. & Castelli, T. (2009). Low-income women's experiences with food programs, food spending, and food-related hardships: evidence from qualitative data. *Contractor and Cooperator Report*, 57. Washington, DC: U.S. Department of Agriculture, Economic Research Service.
- ³¹ Wiig, K. & Smith, C. (2009). The art of grocery shopping on a food stamp budget: factors influencing the food choices of low-income women as they try to make ends meet. *Public Health Nutrition*, 12(10), 1726-1734.
- ³² Carlson et al., 2007a.
- ³³ U.S. Department of Agriculture. (2000). Recipes and Tips for Healthy, Thrifty Meals. Washington, DC: U.S. Department of Agriculture, Center for Nutrition Policy and Promotion.
- ³⁴ Lino, M. (2012). Personal communication on May 24, 2012.
- ³⁵ U.S. Department of Health and Human Services & U.S. Department of Agriculture. (2010). Dietary Guidelines for Americans, 2010. 7th ed. Washington, DC: U.S. Government Printing Office.
- ³⁶ Lino, M. (2012). Personal communication on May 24, 2012.
- ³⁷ Lino, M. (2012). Personal communication on May 24, 2012.
- ³⁸ Child Health Impact Working Group. (2007). Unhealthy Consequences: Energy Costs and Child Health. Boston, MA: Child Health Impact Working Group. Available at: http://www.hiaguide.org/sites/default/files/ChildHIAofenergycostsandchildhealth.pdf. Accessed on November 26, 2012.
 ³⁹ Batali, M. (2012). Mario Batali Completes Food Stamp Challenge. Interview on MSNBC's The Last Word, May 2012. Available at:
- http://video.msnbc.msn.com/the-last-word/47471105/#47471105. Accessed on November 26, 2012.
- ⁴⁰ Carlson et al., 2007a.
- ⁴¹ Carlson et al., 2007a.
- ⁴² Davis, G. C. & You, W. (2011). Not enough money or not enough time to satisfy the Thrifty Food Plan? A cost difference approach for estimating a money-time threshold. *Food Policy*, 36, 101-107.
- ⁴³ Rose, D. (2007). Food Stamps, the Thrifty Food Plan, and meal preparation: the importance of the time dimension for US nutrition policy. *Journal of Nutrition Education and Behavior*, 39, 226-232.
- 44 Davis & You, 2011.

² U.S. Department of Agriculture. (2012). *Official USDA Food Plans: Cost of Food at Home at Four Levels, U.S. Average, October 2012.* Alexandria, VA: U.S. Department of Agriculture, Center for Nutrition Policy and Promotion.

¹⁰ Carlson, A., Lino, M., & Fungwe, T. (2007b). *The Low-Cost, Moderate-Cost, and Liberal Food Plans, 2007 (CNPP-20)*. Alexandria, VA: U.S. Department of Agriculture, Center for Nutrition Policy and Promotion.

¹¹ Carlson et al., 2007b.

¹² Carlson, A., Lino, M., & Fungwe, T. (2008). USDA's Low-Cost, Moderate-Cost, and Liberal Food Plans: Development and Expenditure Shares. Paper for the American Agricultural Economics Association, July 27-29, 2008, Orlando, FL. Available at:

http://ageconsearch.umn.edu/bitstream/6216/2/464070.pdf. Accessed on November 26, 2012.

⁴⁵ Rose, 2007.

- ⁴⁶ Hamrick, K. S., Andrews, M., Guthrie, J., Hopkins, D., & McClelland, K. (2011). How much time do Americans spend on food? *Economic Information Bulletin*, 86. Washington, DC: U.S. Department of Agriculture, Economic Research Service.
- ⁴⁷ Strayer, M., Leftin, J., & Eslami, E. (2012). Characteristics of Supplemental Nutrition Assistance Program Households: Fiscal Year 2011. Report No. SNAP-12-CHAR. Alexandria, VA: U.S. Department of Agriculture, Food and Nutrition Service, Office of Research and Analysis.
- ⁴⁸ Block, D. & Kouba, J. (2006). A comparison of the availability and affordability of a market basket in two communities in the Chicago area. *Public Health Nutrition*, 9(7), 837-845.
- ⁴⁹ Beaulac, J., Kristjansson, E., & Cummins, S. (2009). A systematic review of food deserts, 1966-2007. *Preventing Chronic Disease*, 6(3), A105.
- ⁵⁰ Larson, N. I., Story, M. T., & Nelson, M. C. (2009). Neighborhood environments: disparities in access to healthy foods in the U.S. American Journal of Preventive Medicine, 36(1), 74-81.
- ⁵¹ Ver Ploeg, M., Breneman, V., Farrigan, T., Hamrick, K., Hopkins, D., Kaufman, P., Lin, B. H., Nord, M., Smith, T., Williams, R., Kinnison, K., Olander, C., Singh, A., Uckermanty, E., Krantz-Kent, R., Polen, C., McGowan, H., & Kim, S. (2009). Access to Affordable and Nutritious Food: Measuring and Understanding Food Deserts and Their Consequences – Report to Congress. Washington, DC: U.S. Department of Agriculture, Economic Research Service.
- ⁵² Ver Ploeg, M., Breneman, V., Dutko, P., Williams, R., Snyder, S., Dicken, C., & Kaufman, P. (2012). Access to affordable and nutritious food: updated estimates of distance to supermarkets using 2010 data. *Economic Research Report*, 143. Washington, DC: U.S. Department of Agriculture, Economic Research Service.
- ⁵³ Andreyeva, T., Blumenthal, D. M., Schwartz, M. B., Long, M. W., & Brownell, K. D. (2008). Availability and prices of foods across stores and neighborhoods: the case of New Haven, Connecticut. *Health Affairs*, 27(5), 1381-1388.
- 54 Block & Kouba, 2006.
- ⁵⁵ Franco, M., Diez Roux, A. V., Glass, T. A., Caballero, B., & Brancati, F. L. (2008). Neighborhood characteristics and availability of healthy foods in Baltimore. *American Journal of Preventive Medicine*, 35(6), 561-567.
- ⁵⁶ Ver Ploeg et al., 2009.
- ⁵⁷ Ver Ploeg et al., 2012.
- ⁵⁸ Breen et al., 2011.
- ⁵⁹ Sheldon et al., 2010.
- ⁶⁰ Thayer et al., 2008.
- 61 Sheldon et al., 2010.
- 62 Breen et al., 2011.
- 63 Thayer et al., 2008.
- 64 Breen et al., 2011.
- 65 Thayer et al., 2008.
- ⁶⁶ Drewnowski, A., Monsivais, P., Maillot, M., & Darmon, N. (2007). Low-energy-density diets are associated with higher diet quality and higher diet costs in French adults. *Journal of the American Dietetic Association*, 107, 1028-1032.
- ⁶⁷ Drewnowski, A. & Specter, S. E. (2004). Poverty and obesity: the role of energy density and energy costs. *American Journal of Clinical Nutrition*, 79, 6-16.
- ⁶⁸ Monsivais, P. & Drewnowski, A. (2007). The rising cost of low-energy-density foods. *Journal of the American Dietetic Association*, 107, 2071-2076. ⁶⁹ Monsivais, P. & Drewnowski, A. (2009). Lower-energy-density diets are associated with higher monetary costs per kilocalorie and are consumed
- by women of higher socioeconomic status. Journal of the American Dietetic Association, 109, 814-822.
- ⁷⁰ Aggarwal, A., Monsivais, P., & Drewnowski, A. (2012). Nutrient intakes linked to better health outcomes are associated with higher diet costs in the US. *PLoS ONE*, 7(5), e37533.
- ⁷¹ Townsend, M. S., Aaron, G. J., Monsivais, P., Keim, N. L., & Drewnowski, A. (2009). Less-energy-dense diets of low-income women in California are associated with higher energy-adjusted diet costs. *American Journal of Clinical Nutrition*, 89(4), 1220-1226.
- ⁷² Liese, A. D., Weis, K. E., Pluto, D., Smith, E., & Lawson, A. (2007). Food store types, availability, and cost of foods in a rural environment. *Journal of the American Dietetic Association*, 107(11), 1916-1923.
- ⁷³ Carlson, A. & Frazao, E. (2012). Are healthy foods really more expensive? It depends on how you measure the price. *Economic Information Bulletin*, 96. Washington, DC: U.S. Department of Agriculture, Economic Research Service.
- ⁷⁴ Leibtag, E. & Kumcu, A. (2011). The WIC fruit and vegetable cash voucher does regional price variation affect buying power? *Economic Information Bulletin*, 75. Washington, DC: U.S. Department of Agriculture, Economic Research Service.
- ⁷⁵ Weill, J., Cooper, R., Hartline-Grafton, H., & Burke, M. (2011). A Half-Empty Plate: Fruit and Vegetable Affordability and Access Challenges in America. Washington, DC: Food Research and Action Center.
- ⁷⁶ Basiotis, P. P. & Lino, M. (2002). Food insufficiency and prevalence of overweight among adult women. *Nutrition Insight*, 26. Alexandria, VA: U.S. Department of Agriculture, Center for Nutrition Policy and Promotion.
- ⁷⁷ Drewnowski & Specter, 2004.
- ⁷⁸ Drewnowski, A. (2009). Obesity, diets, and social inequalities. *Nutrition Reviews*, 67(Supplement 1), S36-S39.
- ⁷⁹ Carlson et al., 2007a.
- ⁸⁰ Carlson et al., 2007a.
- ⁸¹ Carlson et al., 2007b.
- 82 Ver Ploeg et al., 2009.
- ⁸³ Ver Ploeg et al., 2012.
- ⁸⁴ Wiig & Smith, 2009.
- ⁸⁵ Walker, R. E., Block, J., & Kawachi, I. (2012). Do residents of food deserts express different food buying preferences compared to residents of food oases? A mixed-methods analysis. International Journal of Behavioral Nutrition and Physical Activity, Epub ahead of print (April 10, 2012).
- ⁸⁶ Wiig & Smith, 2009.
- ⁸⁷ Wiig & Smith, 2009.

⁸⁸ Rose, D., Bodor, J. N., Swalm, C. M., Rice, J. C., Farley, T. A., & Hutchinson, P. L. (2009). Deserts in New Orleans? Illustrations of Urban Food Access and Implications for Policy. Prepared for the University of Michigan National Poverty Center/USDA Economic Research Service. Available at: http://www.npc.umich.edu/news/events/food-access/rose_et_al.pdf. Accessed on November 26, 2012.

⁸⁹ U.S. Department of Agriculture, Food and Nutrition Service. (2012). *Supplemental Nutrition Assistance Program – Eligibility*. Available at: http://www.fns.usda.gov/snap/applicant_recipients/eligibility.htm. Accessed on November 26, 2012.

⁹⁰ Leibtag, E. S. (2007). Stretching the Food Stamp dollar: regional price differences affect affordability of food. *Economic Information Bulletin*, 29-2. Washington, DC: U.S. Department of Agriculture, Economic Research Service.

⁹¹ Leibtag, E. & Kumcu, A. (2011). The WIC fruit and vegetable cash voucher – does regional price variation affect buying power? *Economic Information Bulletin*, 75. Washington, DC: U.S. Department of Agriculture, Economic Research Service.

⁹² Todd, J. E., Leibtag, E., & Penberthy, C. (2011). Geographic differences in the relative price of healthy food. *Economic Information Bulletin*, 78. Washington, DC: U.S. Department of Agriculture, Economic Research Service.

93 Breen et al., 2011.

⁹⁴ da Costa Nunez, R., Kannegaard, J., & Clark, A. (2012). *The Impact of Food Stamp Benefits on Family Homelessness in New York City*. New York, NY: Institute for Children, Poverty, and Homelessness.

⁹⁵ Nord, M. & Hopwood, H. (2007). Higher cost of food in some areas may affect Food Stamp households' ability to make healthy food choices. *Economic Information Bulletin*, 29-3. Washington, DC: U.S. Department of Agriculture, Economic Research Service.

⁹⁶ Sheldon et al., 2010.

⁹⁷ Thayer et al., 2008.

⁹⁸ Thayer et al., 2008.

⁹⁹ Breen et al., 2011.

¹⁰⁰ Stovell, M. (2009). *The Thrifty Food Plan and Food Costs in Vermont*. Burlington, VT: Vermont Campaign to End Childhood Hunger. ¹⁰¹ Nord & Hopwood, 2007.

- ¹⁰² Peterkin, B. B. & Kerr, R. L. (1982). Food stamp allotments and diets of U.S. households. *Family Economics Review*, Winter edition.
- ¹⁰³ Mabli, J., Castner, L., Ohls, J., Fox, M. K., Crepinsek, M. K., & Condon, E. (2010). Food Expenditures and Diet Quality Among Low-Income Households and Individuals. Report to the U.S. Department of Agriculture, Food and Nutrition Service. Washington, DC: Mathematica Policy Research, Inc.
- ¹⁰⁴ U.S. Department of Agriculture, Economic Research Service. (2002). Food and Nutrition Assistance Programs and the General Economy: Links to the General Economy and Agriculture. Washington, DC: U.S. Department of Agriculture, Economic Research Service.
- ¹⁰⁵ Nord, M. & Prell, M. (2011). Food security improved following the 2009 ARRA increase in SNAP benefits. *Economic Research Report*, 116. Washington, DC: U.S. Department of Agriculture, Economic Research Service.
- ¹⁰⁶ Castner, L. & Henke, J. (2011). *Benefit Redemption Patterns in the Supplemental Nutrition Assistance Program*. Alexandria, VA: U.S. Department of Agriculture, Food and Nutrition Service, Office of Research and Analysis.

¹⁰⁷ Castner & Henke, 2011.

- ¹⁰⁸ Ettinger de Cuba, S., Weiss, I., Pasquariello, J., Schiffmiller, A., Frank, D. A., Coleman, S., Breen, A., & Cook, J. (2012). *The SNAP Vaccine: Boosting Children's Health*. Boston, MA: Children's HealthWatch.
- ¹⁰⁹ Lee, B. J., Mackery-Bilaver, L., & Chin, M. (2006). Effects of WIC and Food Stamp Program participation on child outcomes. *Contractor and Cooperator Report*, 27. Washington, DC: U.S. Department of Agriculture, Economic Research Service.

¹¹⁰ Rose, D., Habicht, J. P., & Devaney, B. (1998). Household participation in the Food Stamp and WIC programs increases the nutrient intakes of preschool children. *Journal of Nutrition*, 128(3), 548-555.

¹¹¹ Karnik, A., Foster, B. A., Mayer, V., Pratomo, V., McKee, D., Maher, S., Campos, G., & Anderson, M. (2011). Food insecurity and obesity in New York City primary care clinics. *Medical Care*, 49(7), 658-661.

¹¹² Jones, S. J., Jahns, L., Laraia, B. A., & Haughton, B. (2003). Lower risk of overweight in school-aged food insecure girls who participate in food assistance: results from the Panel Study of Income Dynamics Child Development Supplement. Archives of Pediatric and Adolescent Medicine, 157(8), 780-784.

¹¹³ Cook, J. T., Frank, D. A., Levenson, S. M., Neault, N. B., Heeren, T. C., Black, M. M., Berkowitz, C., Casey, P. H., Meyers, A. F., Cutts, D. B., & Chilton, M. (2006). Child food insecurity increases risks posed by household food insecurity to young children's health. *Journal of Nutrition*, 136(4), 1073-1076.

- ¹¹⁶ Collins, A., Briefel, R., Klerman, J. A., Bell, S., Bellotti, J., Logan, C. W., Gordon, A., Wolf, A., Rowe, G., McLaughlin, S. M, Enver, A., Fernandes, M., Wolfson, C., Komarovksy, M., Cabili, C., & Owens, C. (2012). *Summer Electronic Benefits Transfer for Children: Evaluation Findings for the Proofof-Concept Year*. Prepared by Abt Associates, Mathematica Policy Research, and Maximus under Contract No. AG-3198-C-11-002. Alexandria, VA: U.S. Department of Agriculture, Food and Nutrition Service.
- ¹¹⁷ March, E. L., Ettinger de Cuba, S., Bailey, K., Cook, J., Coleman, S., Schiffmiller, A., & Frank, D. A. (2011). *Boost to SNAP Benefits Protected Young Children's Health*. Boston, MA: Children's HealthWatch.

¹¹⁸ Basiotis, P. P., Kramer-LeBlanc, C. S., & Kennedy, E. T. (1998). Maintaining nutrition security and diet quality: the role of the Food Stamp Program and WIC. *Family Economics and Nutrition Review*, 11(1 & 2), 4-16.

¹¹⁹ Mabli et al., 2010.

¹²⁰ Coleman-Jensen, A., Nord, M., Andrews, M., & Carlson, S. (2011). Household food security in the United States, 2010. *Economic Research Report*, 125. Washington, DC: U.S. Department of Agriculture, Economic Research Service.

- ¹²¹ Jilcott, S. B., Liu, H., Dubose, K. D., Chen, S., & Kranz, S. (2011). Food Stamp participation is associated with fewer meals away from home, yet higher body mass index and waist circumference in a nationally representative sample. *Journal of Nutrition Education and Behavior*, 43(2), 110-115.
- ¹²² Jilcott, S. B., Wall-Bassett, E. D., Burke, S. C., & Moore, J. B. (2011). Associations between food insecurity, Supplemental Nutrition Assistance Program (SNAP) benefits, and body mass index among adult females. *Journal of the American Dietetic Association*, 111(11), 1741-1745.

¹²³ Rank, M. R. & Hirschl, T. A. (2009). Estimating the risk of food stamp use and impoverishment during childhood. *Archives of Pediatrics and Adolescent Medicine*, 163(11), 994-999.

¹²⁴ Rank, M. R. & Hirschl, T. A. (2005). Likelihood of using food stamps during the adulthood years. *Journal of Nutrition Education and Behavior*, 37(3), 137-146.

¹¹⁴ Lee et al., 2006.

¹¹⁵ Nord & Prell, 2011.