Improving the Health of Our Nation’s Children: Best Practices for Implementation of the New Child and Adult Care Food Program Nutrition Standards

by

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A paper submitted to the faculty of the University of North Carolina at Chapel Hill in partial fulfillment of the requirements for the degree of Master of Public Health in the Department of Nutrition

Chapel Hill
December, 8, 2016

Approved by:

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12/7/2016
**Introduction**

The prevalence of childhood obesity in the US is a pressing public health concern, especially among more vulnerable low-income and minority populations. Intervening in early childhood settings may help to alleviate poor health outcomes now and in the future, as well as prevent against academic, social and emotional difficulties that may continue throughout a child's critical developmental years. The Child and Adult Care Food Program (CACFP) is a federal-level entitlement program that addresses these issues primarily through offering low-income child care providers reimbursement for serving foods that meet healthy nutritional guidelines. CACFP affords children many health benefits and has done so since its inception as a food assistance pilot program back in 1968; however, no significant nutritional updates to the meal pattern have gone into effect since then. In 2010 under the passage of the Health Hunger-free Kids Act (HHFKA), CACFP received meal pattern changes that more closely align with the Dietary Guidelines for Americans, the latest nutritional science, and bring it more in line with other federal child nutrition programs. The new meal pattern will go into effect in October 2017.

With all of the new meal pattern changes, states may experience challenges to implementation. In order to ensure that updated nutritional requirements are fulfilled as intended, states will need guidance, support and technical assistance. This paper will offer states implementing the new CACFP meal pattern a set of best practice recommendations for implementation efforts. States will need to create collaborative partnerships and engage stakeholders, develop training infrastructure and materials, offer technical assistance to CACFP sponsors and providers and consider cost containment measures and funding in carrying out the new meal pattern. Best practices will help states effectively make the transition to the new meal pattern and ensure that millions of children participating in CACFP every day receive the
nourishment they need to maintain a healthy weight so they may continue to live healthy, productive lives.

**State of Childhood Obesity**

As it stands, the obesity epidemic in the US is a significant public health issue, especially among our nation’s youth. According to representative US data from the National Health and Nutrition Examination Survey (NHANES), 16.9% or about 1 in 6 children ages 2 to 19 is obese – a statistic that has more than tripled since the 1970s – with 31.8% of these children categorized as either overweight or obese today. During their critical years of growth and development, 8.1% of infants and toddlers from birth to age 2 exhibited high weight for recumbent length with respect to CDC growth chart standards in 2011-2012. Among young children ages 2 to 5 years, 12% to 14% were classified as obese between 2003 and 2010. The obesity rate for 2- to 5-year-olds declined to 8.4% in 2012; however, interpretation that obesity rates may be dropping for this age group should be taken with caution until a more stable obesity trend can be established. Even despite records of declining obesity rates, obesity continues to disproportionately impact young children of racial or ethnic minority backgrounds and those from low-income households. Obesity prevalence is higher among 2- to 5-year-old Hispanics (16.7%) and non-Hispanic Blacks (11.3%), in comparison to non-Hispanic whites (3.5%) or non-Hispanic Asians (3.4%). Low-income preschool-aged children 2 to 4 years old also showed rates of obesity higher than the 2012 national average of 8.4%, ranging from 9.2% to 17.9% in 2011 in states all across the country.

These statistics are troubling given that childhood overweight and obesity has serious emotional, social, academic, and health consequences. Childhood overweight and obesity contributes to symptoms of depression, anxiety and body dissatisfaction, as well as stigmatization, peer victimization and bullying. Behavioral problems, school absenteeism and poorer academic performance may befall overweight or obese children more profoundly than their normal
Furthermore, not only are overweight or obese children more likely to develop health complications at an earlier age, but children who are overweight by age 5 are more likely to become obese as adults. This thereby increases their risk for preventable chronic diseases, health complications and premature death in adulthood\textsuperscript{3,23,24,25,26,27}.

**The Role of Early Child Care Settings in Nutrition-related Health Promotion and Obesity Prevention Efforts**

To avoid these problems, health promotion and obesity prevention efforts must start early in life. The National Academy of Medicine (NAM), formerly the Institute of Medicine (IOM), recommends that obesity prevention interventions commence before children turn 5 years of age\textsuperscript{28}. Parents and caregivers play an integral role in shaping young children’s food preferences and eating patterns, which become defined in childhood and continue into adolescence and adulthood. In early childhood, parents and caregivers can positively impact the health of children by providing a variety of nutritious foods, modeling healthy eating behaviors, and allowing children to decide what and how much to eat through family-style meal service. Early intervention can help all children establish healthy lifelong habits that can help prevent obesity throughout the lifecycle\textsuperscript{28,29,30,31,32}.

Child care centers, Head Start programs, and family day care homes are a logical place to reach young children, as those children who attend child care in the US are at increased risk for obesity\textsuperscript{33}. About 60% of all children under the age of 5 receive some form of regular child care each week with 56% of all children in a non-parental arrangement receiving center-based care; more than half of all children living below the poverty threshold receive child care, as do roughly 70% of non-Hispanic Black children\textsuperscript{34}. Many of these children are in care for more than eight hours per day and receive a majority of their daily meals and snacks from their care provider\textsuperscript{35}. The food and nutrition provided to these children has the capacity to make a marked impact on the health of our
nation’s most vulnerable youth. In particular, the Child and Adult Care Food Program can play a significant role in reducing childhood obesity and improving health outcomes.

**The Current Child and Adult Care Food Program**

**Overview**

CACFP promotes improved health and the means to combat childhood obesity by offering child care providers a national infrastructure to reach primarily low-income children who are at greatest risk for obesity and most in need of nutritious food. The program offers eligible child care centers and family day care homes, as well as adult day care centers to a lesser extent, reimbursement for the cost of meals and snacks, food preparation, administration, and on-going training and technical assistance. Eligible sites for CACFP include group or family child care, child care centers, Head Start programs, recreation centers and after school programs that are either licensed or approved by the state. Most non-profit care facilities automatically qualify, but for-profit child care centers may also be eligible for CACFP if at least 25% of their children come from families with incomes below 185% of the poverty level. While some adults in adult care settings (ex. those with disabilities) are eligible for CACFP, the majority of those served under CACFP are children. Children 12 and under, migrant children ages 15 and under and children through age 18 in after-school programs or in emergency shelters may participate in CACFP. In Fiscal Year 2015, CACFP provided 2 billion total meals to more than 4 million children and 120,000 adults nationwide

**Program Administration**

At the Federal level, the United States Department of Agriculture’s (USDA) Food and Nutrition Service (FNS) administers the CACFP program. It is a federally funded entitlement program authorized through Child Nutrition Reauthorization at a cost of roughly 3 billion dollars per year, which goes primarily toward covering reimbursement costs for every qualifying meal or
snack served. Regional FNS offices oversee and administer funding to states across the nation. Sponsoring organizations enter into agreements with their respective states and assume responsibility for administrative oversight and financial responsibility for CACFP operations of sponsored child care centers and family or group child care homes. The difference between family and group homes and centers is really just a matter of size: homes enroll an average of about 8 children and centers enroll many more - some only in the double digits, but others with enrollment in the hundreds. Alternatively, independent child care centers that are not sponsored by sponsoring organizations can enter agreements with the state CACFP agency directly and are responsible for fulfilling the CACFP requirements on their own. These centers are usually much larger and have the resources to be able to monitor and deliver requirements for CACFP to the state directly. For an organizational map of how the program is administered, see figure 1 below taken from the IOM’s report *Child and Adult Care Food Program: Aligning Dietary Guidance for All*\(^8\).

![Figure 1: Administrative organizational chart of CACFP](image)

**Current CACFP Meal Pattern Requirements**

Food currently served in CACFP must meet meal standards that are based on food patterns established by the 1968 3-year pilot program called the Special Food Service Program for Children that expanded nationally in 1978 and was renamed CACFP when the adult care component was added in 1989. These meals ensure that participants receive a balanced diet of grains, dairy
products, fruits, vegetables and meat and meat alternatives. Age-appropriate serving sizes of meals are determined to meet the general amount of food needed for healthy growth and development of infants, children and adults. However, the current meal pattern does not take into account specific nutritional considerations such as amount of sodium in foods, fat and saturated fat, sugar content and fiber in the diet that have been addressed in some states with enhanced standards.

Below is a set of tables provided by the USDA of the current meal requirements for children above the age of 1, broken down into daily meals and components, stratified by age-specific categories:

**Breakfast**

**All 3 components are required for a reimbursable meal**

<table>
<thead>
<tr>
<th>Food Components</th>
<th>Ages 1-2</th>
<th>Ages 3-5</th>
<th>Ages 6-12&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Milk&lt;sup&gt;b&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Fluid milk</td>
<td>½ cup</td>
<td>¾ cup</td>
<td>1 cup</td>
</tr>
<tr>
<td>1 Fruit/Vegetable</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Juice, fruit and/or vegetable</td>
<td>¼ cup</td>
<td>½ cup</td>
<td>½ cup</td>
</tr>
<tr>
<td>1 Grains/bread&lt;sup&gt;d&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- bread</td>
<td>½ slice</td>
<td>½ slice</td>
<td>1 slice</td>
</tr>
<tr>
<td>- cornbread/biscuit/roll/muffin</td>
<td>½ serving</td>
<td>½ serving</td>
<td>1 serving</td>
</tr>
<tr>
<td>- cold dry cereal</td>
<td>¼ cup</td>
<td>¼ cup</td>
<td>¾ cup</td>
</tr>
<tr>
<td>- hot cooked cereal</td>
<td>¼ cup</td>
<td>¼ cup</td>
<td>½ cup</td>
</tr>
<tr>
<td>- pasta/noodles/grains</td>
<td>¼ cup</td>
<td>¼ cup</td>
<td>½ cup</td>
</tr>
</tbody>
</table>

<sup>a</sup> Children ages 12 and older may be served portions greater than portions listed based on their increased nutritional needs. The may not be served less than the minimum serving sizes listed.

<sup>b</sup> Milk must be 1% low-fat or non-fat skim for children ages 2 years and older

<sup>c</sup> Fruit and vegetable juice must be full-strength
d. Breads and grains must be made from whole-grain or enriched meal or flour. Cereal must be whole-grain, enriched or fortified.

**Lunch or Supper**

All 4 components are required for a reimbursable meal

<table>
<thead>
<tr>
<th>Food Components</th>
<th>Ages 1-2</th>
<th>Ages 3-5</th>
<th>Ages 6-12&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1 Milk&lt;sup&gt;b&lt;/sup&gt;</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- fluid milk</td>
<td>½ cup</td>
<td>¾ cup</td>
<td>1 cup</td>
</tr>
<tr>
<td><strong>1 Fruit/Vegetable</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- juice; fruit and/or vegetable</td>
<td>¼ cup</td>
<td>½ cup</td>
<td>¾ cup</td>
</tr>
<tr>
<td><strong>1 Grains/bread&lt;sup&gt;d&lt;/sup&gt;</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- bread</td>
<td>½ slice</td>
<td>½ slice</td>
<td>1 slice</td>
</tr>
<tr>
<td>- cornbread/biscuit/roll/muffin</td>
<td>½ serving</td>
<td>½ serving</td>
<td>1 serving</td>
</tr>
<tr>
<td>- cold dry cereal</td>
<td>¼ cup</td>
<td>¾ cup</td>
<td>¾ cup</td>
</tr>
<tr>
<td>- hot cooked cereal</td>
<td>¼ cup</td>
<td>¼ cup</td>
<td>½ cup</td>
</tr>
<tr>
<td>- pasta/noodles/grains</td>
<td>¼ cup</td>
<td>¼ cup</td>
<td>½ cup</td>
</tr>
<tr>
<td><strong>1 Meat/Meat Alternate</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- meat/poultry/fish&lt;sup&gt;e&lt;/sup&gt;</td>
<td>1 oz.</td>
<td>1 ½ oz.</td>
<td>2 oz.</td>
</tr>
<tr>
<td>- cheese/alternate protein product</td>
<td>1 oz.</td>
<td>1 ½ oz.</td>
<td>2 oz.</td>
</tr>
<tr>
<td>- egg</td>
<td>½ cup</td>
<td>¾ cup</td>
<td>1 cup</td>
</tr>
<tr>
<td>- cooked dry beans or peas</td>
<td>¼ cup</td>
<td>¾ cup</td>
<td>½ cup</td>
</tr>
<tr>
<td>- peanut, other nut or see butters</td>
<td>2 tablespoons</td>
<td>3 tablespoons</td>
<td>4 tablespoons</td>
</tr>
<tr>
<td>- nuts and/or seeds&lt;sup&gt;f&lt;/sup&gt;</td>
<td>½ oz.</td>
<td>¾ oz.</td>
<td>1 oz.</td>
</tr>
<tr>
<td>- yogurt&lt;sup&gt;g&lt;/sup&gt;</td>
<td>4 oz.</td>
<td>6 oz.</td>
<td>8 oz.</td>
</tr>
</tbody>
</table>

<sup>a</sup> Children ages 12 and older may be served portions greater than portions listed based on their increased nutritional needs. The may *not* be served less than the minimum serving sizes listed.

<sup>b</sup> Milk must be 1% low-fat or non-fat skim for children ages 2 years and older.
c. Fruit and vegetable juice must be full-strength.

d. Breads and grains must be made from whole-grain or enriched meal or flour. Cereal must be whole-grain, enriched or fortified.

e. A serving consists of the edible portion of cooked lean meat, poultry or fish.

f. Nuts and seeds may meet only one half of the total meat/meat alternate serving and must be combined with another meat/meat alternate to fulfill the lunch or supper requirement.

g. Yogurt may be plain, flavored, sweetened or unsweetened.

## Snack

2 out of the 4 components listed are required for a reimbursable meal

<table>
<thead>
<tr>
<th>Food Components</th>
<th>Ages 1-2</th>
<th>Ages 3-5</th>
<th>Ages 6-12a</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1 Milk</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- fluid milk</td>
<td>½ cup</td>
<td>½ cup</td>
<td>1 cup</td>
</tr>
<tr>
<td><strong>1 Fruit/Vegetable</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- juice, fruit and/or vegetable</td>
<td>½ cup</td>
<td>½ cup</td>
<td>¾ cup</td>
</tr>
<tr>
<td><strong>1 Grains/bread</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- bread</td>
<td>½ slice</td>
<td>½ slice</td>
<td>1 slice</td>
</tr>
<tr>
<td>- cornbread/biscuit/roll/muffin</td>
<td>½ serving</td>
<td>½ serving</td>
<td>1 serving</td>
</tr>
<tr>
<td>- cold dry cereal</td>
<td>¼ cup</td>
<td>½ cup</td>
<td>¾ cup</td>
</tr>
<tr>
<td>- hot cooked cereal</td>
<td>¼ cup</td>
<td>¼ cup</td>
<td>½ cup</td>
</tr>
<tr>
<td>- pasta/noodles/grains</td>
<td>¼ cup</td>
<td>¼ cup</td>
<td>½ cup</td>
</tr>
<tr>
<td><strong>1 Meat/Meat Alternate</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- meat/poultry/fish</td>
<td>½ oz.</td>
<td>½ oz.</td>
<td>1 oz.</td>
</tr>
<tr>
<td>- cheese/alternate protein product</td>
<td>½ oz.</td>
<td>½ oz.</td>
<td>1 oz.</td>
</tr>
<tr>
<td>- egg</td>
<td>½ cup</td>
<td>½ cup</td>
<td>½ cup</td>
</tr>
<tr>
<td>- cooked dry beans or peas</td>
<td>¼ cup</td>
<td>¼ cup</td>
<td>¼ cup</td>
</tr>
<tr>
<td>- peanut, other nut or see butters</td>
<td>1 tablespoons</td>
<td>1 tablespoons</td>
<td>2 tablespoons</td>
</tr>
<tr>
<td>- nuts and/or seeds</td>
<td>½ oz.</td>
<td>½ oz.</td>
<td>1 oz.</td>
</tr>
<tr>
<td>Yogurt</td>
<td>2 oz.</td>
<td>2 oz.</td>
<td>4 oz.</td>
</tr>
<tr>
<td>--------</td>
<td>-------</td>
<td>-------</td>
<td>-------</td>
</tr>
</tbody>
</table>

- Yogurt

a. Children ages 12 and older may be served portions greater than portions listed based on their increased nutritional needs. The may not be served less than the minimum serving sizes listed.

b. Milk must be 1% low-fat or non-fat skim for children ages 2 years and older.

c. Fruit and vegetable juice must be full-strength.

d. Breads and grains must be made from whole-grain or enriched meal or flour. Cereal must be whole-grain, enriched or fortified.

e. A serving consists of the edible portion of cooked lean meat, poultry or fish.

f. Nuts and seeds may meet only one half of the total meat/meat alternate serving and must be combined with another meat/meat alternate to fulfill the lunch or supper requirement.

g. Yogurt may be plain, flavored, sweetened or unsweetened.

**State-specific Enhanced Standards**

Many states have even further improved upon required CACFP standards to offer ‘enhanced standards’ that better align with current nutritional evidence and dietary guidelines. These enhanced standards vary state-by-state, but include specifications for nutritional content and types of foods served within the normal CACFP meal pattern. Of the states that developed and implemented their own enhanced standards, 83% are committed to serving whole grains and low-sugar cereals, 78% have chosen to limit high-sugar desserts and juice to one serving per day, 74% have requirements for reducing fat intake by restricting high-fat entrees and fried foods and serving only low-fat or fat-free milk, and 52% have some sort of sodium standards on foods served\(^3\). While participation in CACFP is not directly tied to child care licensing, in cases where licensed states must follow guidelines very similar to CACFP or further enhanced standards to meet licensing criteria, it only makes sense that eligible child care centers and homes would opt into CACFP.
Reimbursement

The CACFP program is not mandatory. That said, a majority of those providing child care are enrolled in the CACFP program as it provides reimbursement for meals and snacks that can be used to provide healthy food for children and to offset other costs of child care. This is particularly true in states that have chosen to adopt CACFP nutrition standards, or even state-specific enhanced standards, as a baseline requirement for all meals served in child care settings to meet Quality Rating Improvement Standards (QRIS)\textsuperscript{28}. Up to 3 meals per day meeting the meal pattern requirements – 2 meals and 1 snack OR 2 snacks and 1 meal – may be reimbursed under CACFP. To receive reimbursements for meals and snacks served that meet meal pattern requirements, children must receive meals that child care centers and homes provide as opposed to meals brought from home. Reimbursement rates are determined based on the household income level of CACFP participants and depend on whether or not a child is enrolled in a child care center or child care home.

In child care centers, reimbursements rates are broken down into the categories of free, reduced and paid:

**Free**: Participants from households with incomes at or below 130\% of the poverty level are eligible for free meals.

**Reduced**: Those between 130 and 185\% of the poverty level are eligible for meal reimbursement at a reduce price rate.

**Paid**: The paid rate is for any CACFP participant who is above 185\% of the poverty level.

From July 1\textsuperscript{st} 2016-June 30\textsuperscript{th} 2017 for the contiguous 48 states, reimbursement rates are as follows\textsuperscript{40}: 
<table>
<thead>
<tr>
<th></th>
<th>Free</th>
<th>Reduced</th>
<th>Paid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breakfast</td>
<td>$1.71</td>
<td>$1.41</td>
<td>$0.29</td>
</tr>
<tr>
<td>Lunch and Supper</td>
<td>$3.16</td>
<td>$2.76</td>
<td>$0.07</td>
</tr>
<tr>
<td>Snack</td>
<td>$0.86</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: CACFP reimbursement rates for centers are higher in Hawaii and Alaska

In child care *homes*, reimbursement rates are broken down into “Tier I” and “Tier II” homes.

**Tier I**: Child care homes that are located in low-income areas or run by providers with family income at or below 185% of the poverty level

**Tier II**: Homes that do not meet the Tier I requirement for either location for provider-based income level. But note that Tier II homes may request that a sponsoring organization identify income-eligible children for Tier I reimbursement rates. These children who qualify may receive meals that are reimbursed at the higher Tier I rates.

From July 1st 2016-June 30th 2017 for the contiguous 48 states, reimbursement rates are as follows:

<table>
<thead>
<tr>
<th></th>
<th>Free</th>
<th>Reduced</th>
<th>Paid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tier I</td>
<td>$1.31</td>
<td>$2.46</td>
<td>$0.73</td>
</tr>
<tr>
<td>Tier II</td>
<td>$0.48</td>
<td>$1.49</td>
<td>$0.20</td>
</tr>
</tbody>
</table>

Note: CACFP reimbursement rates for homes are higher in Hawaii and Alaska

**Monitoring and Evaluation of CACFP**

States are required to monitor and review the extent to which CACFP providers comply with CACFP requirements; at least one-third of all CACFP institutions in a state must be monitored annually, though states may conduct extra reviews if desired. The whole CACFP operation is inspected: from a provider’s ability to plan, prepare and serve meals that meets nutritional standards for reimbursement down to financial management and general management practices.
Licensing records are reviewed, meal counts and production records are checked, menu planning and meal observations are assessed and, for CACFP sponsors, training and monitoring of their designated facilities covered is evaluated. Insufficiencies in nutritional menu components or in meals served during observation may result in the non-reimbursement of meals. All deficiencies are noted and CACFP institutions are required to come up with an action plan to fix any compliance violations. Additional observation and technical assistance may be given to states that do not meet CACFP requirements.

**Benefits of CACFP**

CACFP is vital to ensuring good nutrition and access to quality affordable child care, which facilitates appropriate child development, encourages the maintenance of a healthy weight and prepares children to enter school ready to learn. Research has demonstrated the many positive benefits of CACFP. CACFP sites tend to provide more nutritious foods in comparison to non-CACFP sites, which promotes superior diet quality and positive health outcomes of children in these care settings. In the first known study to provide nationally-based evidence for the improvement of nutritional outcomes in CACFP, researchers used nation-wide data from the Early Childhood Longitudinal Survey-Birth Cohort (ECLS-B) to determine dietary intake of children in child care sites participating in CACFP versus nonparticipating sites. Findings indicate that CACFP improves the overall dietary consumption of vegetables and milk and reduces sugar-sweetened beverage intake of children, especially among those who are lower-income and more likely to be food-insecure than their non-CACFP counterparts.

Although these results may not be deemed to have a directly causal relationship with respect to CACFP participation, given that observational data was used, a strong association between CACFP and better nutritional outcomes is still present after taking into account issues such as selectivity of child care, non-random CACFP participation and mandatory CACFP participation by
Head Start centers. A separate large-scale cross-sectional study in which 429 child care sites were administered a state-wide food and beverage frequency checklist mirrored national findings, demonstrating that CACFP sites – and Head Start sites in particular – served more nutritious options to children under their care. More fruits and vegetables, milk, and meat/meat alternatives, as well as fewer sugar-sweetened beverages, sweets and snack-type items were served at CACFP sites as compared to non-CACFP sites.

Little existing research points to any nutritional drawbacks associated with CACFP. Even when a small study of 92 licensed child care centers in Mississippi gave a critical assessment of CACFP with respect to lower macronutrient and micronutrient content of CACFP sponsored meals, upon closer examination, CACFP providers were about as likely to supply recommended amounts of most key nutrients as non-participating providers. In fact, CACFP meals were higher in calcium, higher in vitamin A and lower in total saturated fat and cholesterol. These results followed even despite study limitations such as sample size, lack of information how food was prepared, and no evidence of how much food prepared was consumed by children as the study relied on data from meal planning menus only.

Foods served in participating CACFP child care settings are often even healthier than those foods provided to children from home. Meals brought from home are less likely to include fruits, vegetables, milk and lean meat and more likely to include packaged snacks, desserts and fruit drinks. Children who eat meals reimbursable under CACFP consume greater amounts of key nutrients including calcium, vitamin A and iron.

A favorable nutrient profile of meals and overall quality and variety of foods offered under CACFP is associated with positive health outcomes, including maintenance of a healthy weight and prevention of overweight obesity. National data extrapolated from the aforementioned study using the ECLS-B cohort shows that CACFP does not contribute overweight and may, in fact, have the
potential to decrease the prevalence of overweight, particularly among low-income children. Similarly, data from the Fragile Families and Child Wellbeing Study shows that low-income children who participate in school and child care nutrition programs, including CACFP, have a lower body mass index (BMI) than non-participating children. The NAM, echoes these findings, citing research on the association between participation in federal nutrition assistance programs, improved dietary quality, and decreased risk of overweight among children. Participation in CACFP has been identified as an important strategy in addressing the childhood obesity epidemic.

**Updated Child and Adult Care Program Nutrition Standards**

Despite the nutritional benefits it has yielded, CACFP has received no major meal pattern updates from its inception as a food assistance pilot program back in 1968. In the interim, but really only over the last decade or so, nearly half of all US states have taken it upon themselves to improve upon the CACFP meal pattern in their state by developing nutritionally enhanced standards that have amalgamated as a patchwork of nutritional enhancements for infants and children across the nation. Many of these enhanced standards have helped to inform the revision of the CACFP meal pattern that were established with the passage of the Healthy Hunger-Free Kids Act of 2010. Changes made to the CACFP meal pattern, under HHFKA, are part of the encompassing act to improve core federal childhood nutrition programs including the National School Lunch Program, the Summer Food Service Program and the Special Supplemental Program for Women, Infants, and Children (WIC).

For CACFP, the updated healthier meal pattern guidelines will go into effect in all states in October 2017, making an already good program even better. Changes made to the CACFP meal pattern are based on recommendations from NAM, will more closely align with the most up-to-date nutritional science and research that have informed the most recent Dietary Guidelines for Americans and have been made to streamline consistency with other child nutrition programs,
including WIC. Some of the required key improvements to the updated CACFP meal pattern, retrieved from the final ruling, are outlined in the table below:

**Key Required Changes to the New CACFP Meal Pattern**

<table>
<thead>
<tr>
<th>Category</th>
<th>Improvements Made</th>
</tr>
</thead>
</table>
| **Fruits and Vegetables** | - The previously combined fruit and vegetable component has been broken down into a separate fruit and a separate vegetable component. One serving of fruit and one serving of vegetables is required at lunch and supper and is optional at snack.  
  - Two servings of different vegetables may be substituted for the one serving of fruit and one serving of vegetables requirement at lunch and supper.  
  - 100% fruit or vegetable juice may be used to meet the fruit or vegetable requirement only once per day at a meal or snack; juice may not be served to infants. |
| **Grains**             | - At least 1 serving per day must be whole grain rich, containing at least 50% whole grain; grain-based desserts may not be served to contribute to the whole grain requirement.  
  - Meat or meat alternatives may be served in place of the entire grains requirement at breakfast a maximum of 3 times per week  
  - Breakfast cereals must contain less than 6g of sugar per dry ounce, or 21.2g sugar per 100 grams. |
| **Milk and Dairy**     | - Unflavored whole milk may be served to children less than 1 year of age. Medical accommodation for lower-fat milk can be made based on propensity for obesity.  
  - Children ages 2 and older must be served low-fat or fat-free milk; flavored milk is prohibited for children ages 2-5.  
  - Non-dairy beverages that are nutritionally equivalent to milk may be substituted for those with a medical or dietary need.  
  - Yogurt must contain no more than 23g sugar per 6 ounces. |
| **Other Improvements** | - Three infant age groups have been reduced to two – 0-5 months and 6-11 months. This is consistent current WIC age categories, streamlines the record-keeping process for child care providers and is consistent with and American Academy of Pediatric recommendations for encouragement of breastfeeding and the delayed introduction of solid foods linked with obesity later in life when solid foods are introduced before 4 months of age. |
- Introduction of a new fourth age group of 13-18 year-olds to appropriately meet their nutritional needs.

- Prohibition of the deep-fat frying foods on-site.

- Water must be made available to children throughout the day, at meal times and upon request, where nutritionally appropriate.

- Expansion of offer versus serve style of meal service to at-risk afterschool programs.

Note that additional optional best practices have been included in the final policy ruling as well. These practices encourage providers to go above and beyond compulsory meal pattern requirements to make further strides in improving the health of infants and young children. These recommendations include increasing whole-grain rich foods to two servings per day instead of one, limiting the servings of fried foods to not more than once per week, serving a fruit or vegetable as at least one of the two components for a snack, and avoiding non-reimbursable CACFP foods that are sources of added sugar such as sugar-sweetened beverages, candies and cookies. These optional best practices offer a glimpse of where future CACFP nutritional guidelines may be headed in the future.

Federal-level policy updates to the new required CACFP meal pattern mark a fundamental national shift in thinking about early care and education (ECE) settings as critical sites for obesity prevention. The new meal pattern requirements represent one of the first significant sweeping changes made to the diet of millions of low-income infants and children living in the US, bringing innovation to scale in a big way. Targeting ECE spaces using a cohesive top-down policy approach will help to standardize and unify efforts across states aimed at improving nutritional and health outcomes, including the prevention of obesity. The next challenge will be figuring out how state agencies can most effectively implement the new meal pattern requirements.
The IOM’s review committee for the development of recommendations and revisions to CACFP meal requirements presented insightful suggestions for implementation of the new meal pattern that may serve as an outline for adoption of best practices. Combining this expert advice with a review of the literature and lessons learned collectively from states that have already chosen to adopt their own enhanced standards has yielded several best practices for implementation of the updated CACFP nutrition standards. These are outlined in the subsequent sections and include: 1) collaborative partnership development and stakeholder engagement; 2) training, support and technical assistance for implementation; and 3) cost considerations for the new meal pattern. States may use these best practices in helping to guide how they choose to implement the new federally mandated CACFP meal pattern.

**Best Practices for State-level Implementation of the Revised Child and Adult Care Food Program Nutrition Standards**

**1) Collaborative Partnership Development and Stakeholder Engagement**

In any public health setting, including the ECE setting, building collaborative partnerships is important in creating, promoting and sustaining conditions and behavior that support good health and well-being on a large scale. Multisectoral and coordinated approaches to building collaborative partnerships may serve as facilitators of community and systems change efforts. These efforts may help lead to environmental changes that result in positive population-level health outcomes such as reduced rates of obesity or incidence of chronic disease.

Implementation of the new CACFP meal pattern, as an example of community and systems change, requires that CACFP state agencies develop a strong set of robust partnerships with those invested in improving the health of infants and children in ECE settings. In the past, working with key partners has been vital to the success of implementing state-based CACFP enhanced nutritional standards among state agencies that have already done so. All CACFP state agencies with enhanced
standards have built, maintained and utilized their partnerships to effectively implement new meal patterns changes; partnerships supported the policy change to make its implementation viable. For states without enhanced standards, such as Minnesota, the passage of the HHFKA has helped to provide the impetus for coalition-building around regulatory changes made to CACFP and other child nutrition programs. In this state, the Child Nutrition and Wellness Advisory group (CWNA) was formed with members representing the state departments of education, human services, and public health; the University of Minnesota; Head Start; CACFP sponsors; child care organizations; the Public Health Law Center; and the Institute for Agriculture and Trade Policy for Farm to Child Care, among others. The CWNA is tasked to improve childhood nutrition, focus on program planning of child nutrition program, and assist with implementation efforts of programs including CACFP52.

As exemplified by the Minnesota example, partners and stakeholders are diverse. Possible partners for implementation of the new CACFP meal pattern may include, but are not limited to: national and state-level CACFP associations, government agencies such as the Child Care Bureau or the National Head Start Association, colleges, universities and cooperative extensions, health and nutrition-focused organizations, health care professional associations, food service organizations and food retailers. Once partners are identified, partners should convene to assess their resources and needs and come up with a common vision or goal for implementing their work together. For example, when figuring out how to best implement new state enhanced standards for CACFP in North Carolina, the legislative Task Force on Childhood Obesity conducted listening sessions with various stakeholders such as child care directors, pediatricians, health educators, teachers, dietitians and cooks to gather feedback about what resources they would need to successfully implement nutritionally enhanced CACFP standards. Stakeholder needs and potential challenges were taken into account and used to develop operative training programs and support systems. Recognizing that all states are different in terms of their assets, resources, and needs, state CACFP
agencies are encouraged to seek feedback from their partners and stakeholders to ensure a smooth transition to improved nutrition standards for CACFP approaching in October 2017\textsuperscript{53}.

During the implementation process for the new CACFP meal pattern changes, partnerships may leveraged to help to increase acceptance and compliance of centers and family child care homes in following the updated nutritional standards. CACFP state agencies may utilize unique skillsets and resources, seek technical assistance, and acquire the tools needed to be successful from their partners and stakeholders. For example, food retailers and food suppliers could develop educational tools for effective store shopping trips or offer financial help in the form of discounts they provide. Professionals in nutrition-oriented or food service groups such as the Academy of Nutrition and Dietetics or the National Food Service Management Institute could offer meal planning advice and development. Or, even programs such as the Expanded Food and Nutrition Education Program (EFNEP) could help to deliver training for child care homes and centers. This is consistent with prior recommendations on stakeholder engagement for implementation of new meal pattern requirements\textsuperscript{28}.

One of the best instances of bringing partners and stakeholders together and leveraging resources is exemplified by the Delaware CACFP state agency. Delaware CACFP was one of the earliest adopters of enhanced standards as part of a larger multi-pronged, multi-level approach to childhood obesity prevention efforts developed and sustained by Nemours Health and Prevention Services (NHPS). In conjunction with the support of a variety of stakeholders in state government, professional organizations, the health care field, community-based organizations, state licensing organizations and child care centers and homes, Delaware CACFP enacted its enhanced nutritional standards that apply to all licensed child care facilities in 2008 and have been enforced since January 2011\textsuperscript{54,55}. Child care sites reported that they largely had the support and resources needed to implement Delaware’s enhanced nutritional standards, given the backing received from the
many partners and stakeholders brought together by NHPS. Key elements of implementation such as technical assistance as well as training that a network of partners and stakeholders provides has helped to ensure a smooth rollout process\textsuperscript{56}. Delaware’s implementation of CACFP enhanced standards, owing to its strong foundation of partnership collaboration and stakeholder engagement, has been deemed a success and used as a template for implementation of enhanced standards in West Virginia, with elements adopted by other states across the nation\textsuperscript{57}.

2) Training, Technical Assistance and Support

\textit{Training Infrastructure}

A comprehensive training infrastructure from state agencies down to providers will be necessary in order to implement the new CACFP meal pattern with greatest efficacy and fidelity. Given that state agencies play an integral role in training and providing technical assistance to CACFP sponsors and providers down the line, they will require ample training to begin with. The USDA has carried out one training session in Fall of 2016 and will conduct another in-depth training session with state agencies in the springtime of 2017. The federal trainings cover required knowledge, skills and resources for implementing the updated CACFP meal pattern and offer ways for participants to improve their productivity. Trainings for state agencies should be reinforced with federal support and resources so that states may offer their CACFP providers adequate training and materials, as providers will ultimately be responsible for implementation of the new meal standards through the foods they serve to infants and children.

The IOM has previously stated that “the delivery of effective training for the CACFP providers is the most essential component of successful implementation”\textsuperscript{28}. CACFP state agencies, as well as sponsoring organizations, will be essential leaders in making meals healthier for CACFP participants through their capacity to train providers, share information and provide technical assistance. States that have already enacted enhanced standards for CACFP shed some light on how
the uniformly-prescribed new meal pattern may be implemented in the best way possible, with top-down support critical to its success. A recent report highlighting lessons learned among CACFP providers across the country revealed several opportunities for execution of a successful training infrastructure. In-person training programs were preferred by providers; however, providers found that those which offered experiential training such as workshops and culinary classes were more beneficial in giving them the hands-on tools needed to produce healthier meals. In-person trainings have been shown to be effective at improving knowledge of CACFP requirements among providers, making them more likely to carry out the implementation of enhanced nutrition standards to the best of their ability. In Delaware, in-person trainings have offered an increase in baseline knowledge for key components of the state’s CACFP enhanced nutrition standards, including rules on juice, grains and pre-fried foods. Other states have also focused on bolstering training in-person, such as California that signed a bill into law in 2013 requiring that licensed child care centers to undergo at least 1 hour of in-person nutrition education training as part of 15 hours of total training to help prevent childhood overweight and obesity.

Although in-person trainings may be effective and many providers may prefer them, barriers do exist such as cost, access and staffing. Making use of training technologies like webinars, audio and visual conferencing and interactive on-line modules can help break down barriers to reach providers without excessive travel and cost. An online sharing portal, including the USDA’s state sharing portal healthy meals resource system, may further help states, sponsors and child care providers share what works for them regardless of location-based obstacles.

Mentoring programs are another piece of useful training infrastructure that states and sponsoring organization can use to stimulate training efforts by encouraging more experienced providers to connect and share their knowledge, resources and know-how with providers who have less experience. The IOM has recommended this as a strategy for implementation – particularly as it applies to continued performance improvement throughout the implementation
process. To assess progress and determine where additional support may be needed, regular self-assessment on part of providers can help. The Nutrition and Physical Activity Self-Assessment for Child Care (NAP-SACC) is an evidence-based tool providers can use to assess their current healthy eating practices, set goals for organizational change and create an action plan to improve the nutritional environment. NAP-SACC has been implemented in about a dozen states across the nation as a statewide ECE obesity prevention tool. The more recently developed online version of the tool called Go NAP SACC has been successfully used in child care centers and homes across the country and is being piloted at the state-level in Louisiana, Maine, Massachusetts, Oklahoma and Virginia.

**Essential Training Content and Technical Assistance**

Aside from the infrastructure used by states to train CACFP providers, states will need to develop materials containing in-depth information on requirements for the new CACFP meal pattern along with instruction on how to go about implementing these requirements. In general, new rules that are more obtuse and that have multiple component requirements such as those that include quantity and time-bound components should be addressed with extra training, given that these types of rules are more difficult for CACFP providers to follow. For example, the rule that allows meat or meat alternatives to be served in place of the entire grains requirement up to three times per week at breakfast may need additional emphasis. States should also focus those rules that are more complicated or more difficult to understand, such as the obligation to serve at least one grain product per day made with 50% or more whole grain. In one of the few studies out there that compares current CACFP practices to the new meal pattern, Schwartz et al. (2015) found that of the 38 participating pre-schools, only two served 100% whole grain bread while half of these centers thought they were serving whole grain bread. This is consistent with prior research noting consumers’ difficulty in the identification of whole grain products and speaks to the crucial need for
training on how to identify whole-grain rich products for CACFP providers\textsuperscript{62,63}.

While the updated separate fruit and vegetable requirement is not overly complicated, it is another new rule requiring additional training for desired implementation outcomes that also brings up larger issues surrounding the overall implementation process of the new meal pattern. Infants and young children do not consume recommended amounts of fruits and vegetables daily at this point in time, including those enrolled in CACFP\textsuperscript{62}.

Changes in the fruit and vegetable requisite presents a meal planning challenge many CACFP providers will be faced with, as they may have to prepare and serve more fruits and vegetables for reimbursement. Healthy meal planning tools provided by state agencies and sponsoring organizations that review meal development, offer sample menus and include a menu cycling system can help providers track and meet CACFP meal pattern requirements\textsuperscript{28}. Cycle menus in particular can help providers with the planning, purchasing and staff scheduling around meal preparations\textsuperscript{28,56}.

Resources and materials should be paired with training and technical assistance needed to create healthier meals. About two thirds of state CACFP agencies interviewed in a national survey responded that improved availability of nutrition education and training materials would help with implementation of nutrition requirements and more than half indicated a “lack of practical skills in healthy cooking and meal planning” as a barrier to successful implementation of prior enhanced standards\textsuperscript{39}. Technical assistance that focuses on developing practical meal planning and healthy cooking skills reinforces what resources providers have to make implementation of the new meal pattern requirements work for them. This may include offering services such as assistance from a dietitian in tailoring menus, culinary skills classes and grocery shopping tours that teach how to purchase a variety of healthy foods on a budget. Technical assistance should take into account the preparation of healthy foods with common difficulties providers face in food service such as time constraints, convenience, cost, and ease of making meals\textsuperscript{28,39,56}. 
Considerations for Communication of Training Materials

States will need to frame information regarding the new meal pattern so that those they serve can understand it to the best of their ability. Among CACFP state agencies interviewed nationally, 67% noted that they needed more low-literacy resources to offer to child care providers. Resources that are easy to follow and understand and that are written for those with low-literacy skills would help many providers obtain the information they need in the most clear way possible. Furthermore, states that have with high levels of non-English speakers should translate materials into languages that their constituents can understand. About 65 million people over the age of 5 speak a language other than English, with Spanish being the most prominent, and of these people who speak languages other than English, 40% speak English “less than very well.” 83% of CACFP state agencies interviewed nationally said that they needed resources in languages other than English to meet the language-specific needs of child care providers in their state. Some CACFP resources in other languages may be available from federal or state sources; however, states may need to reach out to their partners and stakeholders to find groups willing to translate or even develop language-specific tools for non-English speaking providers.

Akin to developing language-specific resources, materials should also be tweaked in each state to take into consideration ethnic, cultural and local differences. For example, menus may need to be adapted for cultural preferences, food preferences of the area, or for dietary restrictions related to religious beliefs or otherwise. Appropriate nutrition education may improve positive healthful behavior change and increase consumption of nutritious foods among CACFP participants and their families. Making changes such as these during implementation will better align with children’s specific food preferences and improve buy-in for those administering and participating in CACFP.
3) Cost Considerations for the New Meal Pattern

Meal Pattern Cost

The new CACFP meal pattern is projected to be “cost-neutral;” no additional funding will be allocated to the program. In choosing to implement the new meal pattern as a “cost-neutral” endeavor, the USDA adopted only those meal pattern recommendations from the IOM that would not attribute to incurred cost such as the IOM’s proposed recommendation for a substantial increase in the amount of fruits and vegetables served. The USDA conducted a Regulatory Impact Analysis (RIA) of the ruling to establish what its projected costs might be. The most logical way to estimate the cost of the new meal pattern would be to assess the difference between baseline data of foods currently served and foods projected to be served upon implementation of the new meal pattern. However, without national baseline data for meals served, as this not been evaluated nationally since 1996, the USDA came up with a method of establishing baseline cost estimates using food data gathered from over 100,000 family homes and 5,000 centers across 35 states that was accessed through a CACFP management and claims processing company. Pricing for meals was retrieved from the national Nielson Homescan Data for households under 185% of the poverty line as a proxy for the purchasing habits of potential CACFP providers. Baseline data was then compared to the projected cost of the new meal pattern.

Results revealed an overall slight cost-savings of 0.7% for the entire ruling. Among the new infant provisions, there is a slight decrease in overall meal cost at breakfast, lunch/supper and snack largely due to changes in the amount of infant formula provided and solid foods introduced to infants, despite increased cost of serving whole fruits and vegetables. Among the child feeding pattern, the omission of grain-based desserts contributes significantly to cost-savings, with more than 110 million dollars expected to be saved over the course of 4 years during the implementation of the new meal pattern. The new whole grain requirement will cost more over time, but is
expected to be more than offset by disallowing grain-based desserts for reimbursement\textsuperscript{65}.

There are some limitations associated with the analysis. In terms of the grain requirement, the assumption made was that all providers would opt to serve whole grain bread as opposed to any other whole grain products that are typically more expensive. This may not entirely be the case. Increases in minimum serving sizes for grain-based cereals based on ounce equivalents, beginning in October 2019, may also increase food costs if providers continue to serve these for breakfast and snacks. However, it is noted in the RIA that if providers find this to be too expensive, they may switch to a less expensive grain\textsuperscript{65}. These postulations assume economic rationality on part of providers and may not take into account realistic considerations such as convenience and food preparation time. Furthermore, the separation of the fruit and vegetable requirement was not evaluated for cost, but may realistically lead to an increase in cost in practice, particularly given considerations such as providers opting to serve more of a variety of fruits and vegetables and the new limit on juice that can now only be provided up to once per day. Increased flexibility offered by other provisions like, for example, allowing providers who already serve yogurt to be reimbursed for this as part of the milk component, was not thoroughly assessed due to a lack of data and ability to accurately model food purchasing behavior. This could either attribute to greater cost or cost-savings to providers depending on what they choose to adopt.

\textit{Food Purchasing}

Lower-income providers who maintain smaller operations may require additional time to shop for food given new specifications such as the whole grain requirement and limits on grams of sugar allowed in cereals and yogurt served. Those living in ‘food deserts’ who do not have as much access to cost-effective healthier foods may need to travel further to buy food items. Additional staff time required for food purchasing must also be weighed in\textsuperscript{28}. Larger operations may need to negotiate contracts with existing suppliers or find new ones who can better meet CACFP
requirements and the needs of those they serve. This may lead a one-time increase in time and cost and may remain at a higher cost if healthier options negotiated for are more expensive overall.

**Meal Planning and Preparation**

The planning and preparation of meals may take additional time with new meal pattern requirements. Sample menus and meal planning tools and technical assistance are expected to be offered by federal and state agencies as CACFP providers will need help in implementing the new meal pattern. Providers may also need to tailor their menus for the specific populations they serve. There will be additional costs for meal planning and training that are not properly accounted for in the RIA. Also, changes such as the separation of the fruit and vegetable component, removal of eligibility of grain-based desserts for reimbursement and inability to fry foods on-site may compel some providers to change their food preparation methods and make more foods from scratch. Knowledge and proficiency required for greater food preparation may compel providers to hire more skilled, more expensive labor and/or conduct training on how to cook healthy, appealing and cost-effective meals will present an initial up-front cost.

**Labor and Administrative Cost**

The USDA’s RIA has noted that there will be a "small, temporary increase in labor and administrative costs to implement the rule". This includes potential increased costs experienced in food purchasing, for labor in planning and preparing meals and in maintaining documentation of foods served for reimbursement purposes. State agencies and sponsoring organizations will experience an increase in staff required for training and implementation of the new CACFP meal pattern. Informational materials and resources will need to be adapted, developed and dispersed to child care providers to meet new guidelines. Technical assistance will have to be delivered to sponsoring organizations on part of state agencies and, in turn, sponsoring organizations will need
to pass on their own technical expertise to providers. In-depth training will be required, and thus will increased cost, to ensure that providers will comply with the new meal pattern. Monitoring for the implementation may present another cost in developing monitoring materials and continuing to document progress over time.

**Cost Containment and Funding Recommendations**

Finding cost-effective ways to implement the new CACFP meal pattern will be key to its success from figuring out how to best acquire foods, down to training and technical assistance considerations. In-store training on how to shop for low-cost and healthy options that meet the CACFP meal pattern requirements would offer child care homes the means to procure inexpensive yet nutritious food choices. Flexibility and greater variety in the new meal pattern may help providers find more low-cost alternatives eligible for reimbursement than they had before, such as preparing more vegetarian meals. Costs for food procurement among larger child care center operations could be renegotiated to reduce expenses, or agreements could be made with local stores or vendors to buy items at a lower retail value than competitors. Development of new cycle menus can allow for purchasing in greater bulk, which is often cheaper per unit, and can give providers a way to offset higher cost items on their menus with lower cost items.

In terms of training and technical assistance, helping providers with challenges like recipe development or insufficient cooking skills, could have help child care providers arm current staff with new knowledge and skills in implementing the new meal pattern without having to hire more skilled and potentially more expensive labor. Assistance from the USDA in terms of training states and offering new meal pattern training to anyone interested at conferences such as the National CACFP Conference or the National Anti-Hunger Policy Conference may decrease need for additional training down the line. On-line training and technical assistance such as webinars, video calls and message boards could be a cost-effective alternatives to in-person delivery methods as information
may be disseminated to many individuals at the same time without paying for the time and travel required to deliver expertise in person. Outside of federal and state benefactors, partners and stakeholders will have to play an increasingly essential role in decreasing costs through offering free or reduced price services.

All that stated, the IOM has noted that for the new meal pattern implementation to be successful, sufficient funding will be required. Two-thirds of CACFP state agencies have noted that budget limitations are barriers to implementation of CACFP under HHFKA. In the past, temporary funding sources such as Team Nutrition Grants or Child Care Wellness Grants acted as facilitators of implementation efforts (FRAC). And while the meal pattern itself may be cost-neutral, as USDA has intended to best of its ability, administrative costs will be incurred. Offering temporary funding or small grants could help to offset some of the costs associated with initial implementation. States, sponsors and providers may need to reach out to the government, for-profit companies or non-profits for financial assistance. Otherwise, increase in costs of implementation – administrative or otherwise – could result in the unintended loss of enrollment in CACFP or a passing on of increased program costs to low-income clients who are likely already cash-strapped. Ensuring adequate funding presents a noteworthy challenge to implementation of the new meal pattern.

**Future Considerations**

**Early Implementation**

Providers and administrators in states across the US will be presented with many future challenges in implementing best practices for the new meal pattern requirements, as outlined in this paper. Those states that already have enhanced meal standards in place are at an advantage as they have gone through similar implementation challenges in the past. States that have not done so may be at a disadvantage in terms not only implementation know-how, but also as it relates to constructing an implementation framework complete with coalition building and aggregating state
and local resources. Early implementation will be integral for all state transitions to the new meal pattern, but especially for those states without enhanced standards. The USDA has issued a memorandum that outlines the option for early implementation ahead of the official October 1, 2017 compliance date\textsuperscript{66}. States may choose to allow their CACFP operators to start implementing specific options for reimbursement under the new meal pattern, such as serving meat or meat alternative in place of the grain component no more than three times per week or allowing soy and tofu to count as meat alternates. Alternatively, states may choose to allow CACFP providers that ability to adopt the entire new meal pattern ahead of time on a case-by-case basis\textsuperscript{66}. These options may allow providers a chance to phase in requirements ahead of the official compliance date.

**Monitoring and Evaluation of Implementation**

Monitoring progress made on the implementation of the new meal pattern will be necessary to ensure compliance among CACFP institutions. Monitoring for compliance of the new CACFP meal pattern is expected to stay the same, requiring that states inspect at least one-third of all CACFP institutions. However, many child care providers currently experience difficulty in meeting reporting and documentation requirements and the new meal pattern may further complicate things. In its previous report on recommendations for the new CACFP meal pattern, the IOM recommended a two-stage approach to ensure short-term and longer-term compliance. During the first stage of implementation over the next several years, it might be advisable to more closely monitor progress on new meal pattern requirements – particularly on elements that may be more difficult to implement such as the whole grain requirement - identify where states, sponsoring organizations and providers need extra help, and offer the technical assistance necessary to fill in any gaps. In the second stage, gathering information that could be used to improve implementation and more thoroughly assessing for compliance between menu items and those meals actually served\textsuperscript{28}.

Furthermore, development of real-world national baseline data of nutritional content of
meals provided to CACFP participants and their costs will be essential, given that this data has not been updated over the past 20 years. Doing so would fill a gap in research that has made it difficult to accurately evaluate the CACFP program. Less-than-perfect estimates for the nutritional content of foods served to those in CACFP and their associated expenses have been used in place of data that could better approximate true values. Having this data set as a baseline would give the USDA, and others, the resources needed to evaluate implementation and assess its outcomes over both the short-term and long-term in terms of cost and impact on health, including rates of childhood obesity.

**Final Thoughts**

Looking forward, implementation of the new CACFP meal pattern presents an arduous task that will require the collaboration with partners and stakeholders, the involvement multiple sectors and will take adequate time, coordination and resources to implement effectively. But it has the potential to yield marked benefits in terms of improving the health and well-being of infants and children all across the nation. Best practices may help to ease the transition and help all of those involved implement the new meal pattern successfully. Although challenges lie ahead, states will hopefully be endowed with the support, tools and assistance they need to make the existing CACFP program even better than it is today.
References


preventing weight-related disorders. *Archives of Pediatric and Adolescent Medicine, 156*(2), 171-178.


