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# How policy implementation shapes the impact of U.S. food assistance policies: the case study of the Child and Adult Care Food Program

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Much of the chronic disease burden in the U.S. population can be traced to poor diet. There has been a sustained focus on influencing children's diets and encouraging healthier eating habits by changing policies for what foods and beverages can be served to children through large federally-funded nutrition assistance programs. Yet without attention to how nutrition policies are implemented, and the surrounding context for these policies, these policy changes may not have the intended results. In this perspective, we used Bullock et al.'s (2021) Process Model of Implementation from a Policy Perspective to analyze how the complexities of the implementation process of large-scale nutrition policies can dilute potential health outcomes. We examine the Child and Adult Care Food Program (CACFP), a federal program focused on supporting the provision of nutritious meals to over 4 million children attending childcare, as a case study. We examine how the larger societal contexts of food insecurity, attitudes towards the social safety net, and a fragmented childcare system interact with CACFP. We review the "policy package" of CACFP itself, in terms of its regulatory requirements, and the various federal, state, and local implementation agencies that shape CACFP's on-the-ground implementation. We then review the evidence for how each component of the CACFP policy implementation process impacts uptake, costs, feasibility, equity, and effectiveness at improving children's nutrition. Our case study demonstrates how public health researchers and practitioners must consider the complexities of policy implementation processes to ensure effective implementation of nutrition policies intended to improve population health.

## KEYWORDS

policy, implementation science, nutrition assistance, childcare, public health

## 1. Introduction

The United States (U.S.) faces substantial public health challenges related to poor nutrition. Diet-related chronic diseases (1)—including heart disease, stroke, type II diabetes mellitus, and certain types of cancer (2, 3)—are experienced by most U.S. adults, contributing to poor health and early mortality (4, 5). Moreover, inequities in access to affordable, nutritious foods have resulted in socioeconomic and racial/ethnic disparities in

diet quality (6–8). Income and race are also closely linked with a higher risk of food insecurity (9), which further increases the risk of both poor diet and cardiometabolic diseases (10, 11). These problems start in childhood (2, 12, 13).

To address these population-wide challenges, policymakers have leveraged federal child nutrition assistance programs, such as the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), the National School Lunch and Breakfast Programs (NSLP/SBP), and the Child and Adult Care Food Program (CACFP), as policy levers for achieving public health nutrition goals (14–17). These programs, which provide financial support to improve food security and access for Americans, especially those with lower incomes, show promise for improving diet quality and reducing health inequities. In recent years, efforts to bring minimum nutrition standards for WIC and NSLP/SBP in line with current dietary science have resulted in substantial improvements in the diet quality and chronic disease risk of program participants (18–24), suggesting that policy changes to these programs can be a promising approach to population health. However, similar updates to CACFP appear to have had less strong effects (25).

In this perspective, we use a conceptual framework of policy implementation, developed by Bullock et al. (26), to outline the challenges in leveraging federal nutrition policies as public health interventions. We specifically examine CACFP, which provides reimbursements to child and adult daycare providers to support serving meals and snacks meeting basic nutritional standards (27), as a case study (we focus here solely on childcare providers and child-level outcomes, given that these are the majority beneficiaries of CACFP). Given that CACFP appears to have less consistently strong impacts on child nutrition compared to other federal nutrition programs, we seek to understand how its policy implementation process may explain why.

## 2. Conceptual framework for the analysis

Bullock et al.'s Process Model of Policy Implementation (2021) (26) posits that policies are first borne out of a larger context of existing ideas, interests, and other external factors that determine how a problem is defined and whether it is addressed by policy in the first place. This brings about the development of a policy package, a collection of strategies like regulations or statutes, economic incentives, voluntary guidelines, or information campaigns. The implementation process of the policy package then flows through implementing organizations to street-level bureaucrats to recipients. To evaluate policy implementation, outcomes at several levels can be considered, including implementation outcomes (28) (e.g., fidelity, uptake, acceptability, costs, feasibility, sustainability), service outcomes (e.g., effectiveness, equity, efficiency), recipient outcomes (e.g., changes in actual recipient behavior, satisfaction), and policy/system level outcomes (e.g., reductions in food insecurity at a population level).

**Figure 1** presents an adaptation of Bullock et al.'s model for this paper's analysis of CACFP. In the following sections, we

explore each of the key phases of the implementation process described in the Process Model—context, developing the policy package, processing through implementing organizations, street-level bureaucrats, and recipients, and finally outcomes—for CACFP.

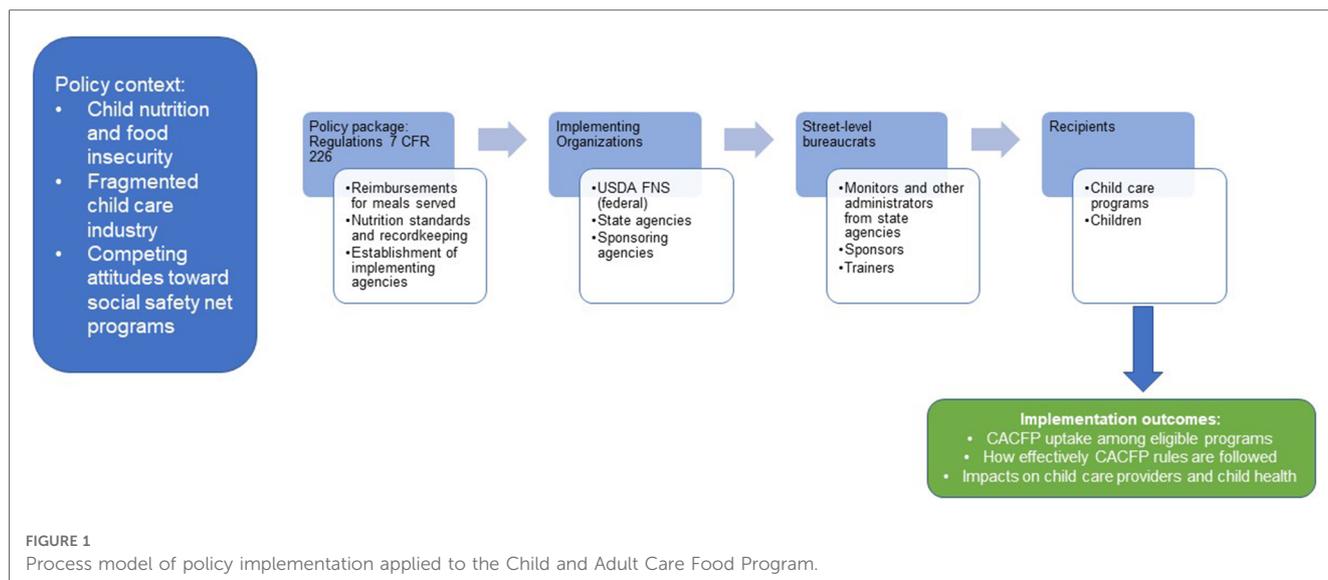
## 3. CACFP's implementation process and how its attributes determine implementation outcomes

### 3.1. Outer context: child food insecurity, child development, the childcare industry, and attitudes towards social safety net programs

CACFP exists in a larger context related to child health, and specifically children's nutrition, in the U.S. Food insecurity currently affects 12.5% of households with children in the U.S. (9). Additionally, even for children not experiencing food insecurity, the nutritional quality of foods available to and consumed by children is often poor, with high amounts of inexpensive, highly palatable ultraprocessed foods (29) and inadequate consumption of vegetables, whole grains, and lean protein sources (12, 30). Several decades ago, a key dietary concern was inadequate intake of essential micronutrients; more recently, overconsumption of foods and beverages that can lead to excess weight gain for healthy growth has become a concern for children (31–36).

While social safety net programs have been designed to mitigate these public health nutrition challenges for households with low incomes, there are disagreements on how comprehensive the programs should be (37). CACFP falls within this challenging context.

This struggle can be seen in CACFP's history (38). CACFP's roots lie in a federal pilot program called the Special Food Service Program for Children, started in 1968, at a time in U.S. history when the social safety net was being radically expanded through President Lyndon B. Johnson's "War on Poverty". This program was expanded and formalized into CACFP across the 1970s and 1980s providing childcare providers with resources to serve free rather than including meal costs in tuition or not serving meals at all (38). However, in the Personal Responsibility and Work Opportunity Reconciliation Act of 1996—a law which made several safety net programs more difficult to access—CACFP was modified to cut costs. This law reduced the number of meals for which providers could receive reimbursements and introduced an income-based tiering system for reimbursements that reduced the overall financial support most providers could receive and also introduced additional administrative burden (39) to the program, as it necessitated providers' collection of income information for the families they served (38). Although future legislative actions allowed for relatively small expansions of the program after this, little changed about CACFP until 2017, when the nutrition standards for CACFP meals were updated as part of the Healthy, Hunger Free Kids Act of 2010 (40, 41). A report



by the National Academies of Medicine in 2011 suggested sweeping changes were needed to bring CACFP meal pattern standards in line with dietary science regarding child health and development (38), yet no additional federal funding was appropriated to support these changes (41).

An additional complexity is how fractured and underfunded the childcare system is in the U.S. Unlike most other economically developed countries; the U.S. has no universal public system of childcare (42). The childcare industry mostly relies on tuition payments from families and depressed wages for childcare workers in order to function (43). The industry has been referred to as a “textbook example” of a broken market (44): parents have to pay so much in tuition that it prohibits many from participating in the workforce at all, educators and other staff are underpaid, and owners are often barely able to keep the programs breaking even. Childcare providers and

educators, who face substantial physical and mental health challenges personally (45), thus often face multiple intense challenges related to simply maintaining operations and adhering to their state’s existing regulatory requirements. In this organizational context, participating in CACFP, or even serving meals in the first place, can add an additional layer of complexity to an already challenging situation.

### 3.2. Policy package: what are the regulations and unofficial rules that make up CACFP?

The regulations for CACFP (7 CFR Part 226) (46) outline minimum requirements for foods and beverages served for various age groups (see Table 1). Participating providers can

TABLE 1 CACFP meal pattern requirements and reimbursements per meal, 2023–2024.

|                               | Required components   | Reimbursement for centers                             | Reimbursement for daycare homes <sup>a</sup> |
|-------------------------------|---|---|--|
| Breakfast                     | Fluid milk (4 oz for ages 1–2, 6 oz for ages 3–5, 8 oz for ages 6 and up)<br>Vegetables, fruits, or both (1/4 cup for ages 1–2, ½ cup for ages 3 and up)<br>Grains (1/2 oz for ages 1–5, 1 ounce for ages 6 and up)   | Free: \$2.28<br>Reduced price: \$1.98<br>Paid: \$0.38 | Tier I: \$1.65<br>Tier II: \$0.59            |
| Lunch and supper              | Fluid milk (4 oz for ages 1–2, 6 oz for ages 3–5, 8 oz for ages 6 and up)<br>Meat/meat alternates (serving sizes vary by type, generally between 1 and 2 oz)<br>Vegetables (1/8 cup for ages 1–2, ¼ cup for ages 3–5, ½ cup for ages 6 and up)<br>Fruits (1/8 cup for ages 1–2, ¼ cup for ages 3 and up)<br>Grains (1/2 oz for ages 1–5, 1 ounce for ages 6 and up)   | Free: \$4.25<br>Reduced price: \$3.85<br>Paid: \$0.40 | Tier I: \$3.12<br>Tier II: \$1.88            |
| Snack                         | Select two of the components listed above for lunch, with larger serving sizes for fruits/vegetables and smaller serving sizes for meat/meat alternates   | Free: \$1.17<br>Reduced price: \$0.58<br>Paid: \$0.10 | Tier I: \$0.93<br>Tier II: \$0.25            |
| Other nutrition requirements: | Milk must be unflavored, whole milk for children aged one, unflavored low fat or skim milk for children ages 2–5, and unflavored or flavored low fat milk for ages 6 and up.<br>Yogurt must contain no more than 23 g total sugars per 6 ounces.<br>100% juice may be used to meet a vegetable or fruit requirement at only one meal each day<br>Vegetables may be used to meet entire fruit + vegetable requirement at lunch<br>At least one serving of whole grains is required each day<br>Breakfast cereals cannot contain >6 g sugar per dry ounce |   |  |

Sources: Available at: <https://www.fns.usda.gov/cacfp/meals-and-snacks>; Available at: <https://www.fns.usda.gov/cacfp/reimbursement-rates>.

<sup>a</sup>Amounts presented are for contiguous U.S. states; amounts are higher for Alaska, Hawaii, and U.S. territories.

receive reimbursements for up to three meals and/or snacks. The reimbursement amount for centers varies according to the household income status of the recipient child; reimbursements for family childcare providers (who provide care in their home to a smaller group of children compared to childcare centers) vary based on neighborhood-level income metrics (using either Census or local school meals data) (46). To participate in CACFP, providers must prove that they either have a nonprofit status or that they serve at least 25% of children from low income households (47) and must prove financial viability (46). They must submit paperwork on the foods and beverages served for each meal, the amounts served, and child attendance as well as documentation of receipts and compliance with civil rights law. Providers and key staff participate in annual trainings and periodic monitoring visits from state auditors to assess compliance (46).

### 3.3. Implementing organizations and street-level bureaucrats: who implements CACFP?

CACFP is a federal program that is administered by state agencies. At the federal level, the U.S. Department of Agriculture Food and Nutrition Service (USDA FNS) tracks participation, issues guidance to state agencies on how to comply with regulations, releases technical assistance tools (like recipes and worksheets), and commissions program evaluations. State agencies, however—typically education or public health agencies—are the organizations that are responsible for most administrative activities, including approving and onboarding new participating providers, disbursing reimbursements, monitoring compliance, providing technical assistance, and maintaining participation records (48).

The state agency is also responsible for registering and working with sponsoring agencies or sponsors, which also support implementation. Family childcare providers are required to work with sponsors so that these agencies can complete some of their administrative paperwork and provide technical assistance; depending on the state, some centers can also work with sponsors, or operate independently (49).

The “street-level bureaucrats” involved in implementing CACFP on the ground are state agency staff responsible for auditing participating programs and sponsors, as well as sponsors themselves, who help participating providers comply with program rules.

### 3.4. Recipients: childcare programs and children

One unusual aspect of CACFP is that childcare providers can be thought of both as the recipients of the program—they receive the reimbursements for the meals they serve—and also a type of “street-level bureaucrat” as they are implementing the program day-to-day: planning menus, obtaining or preparing food,

gathering families’ income-eligibility information, participating in training, maintaining paperwork, and submitting to monitoring visits. The other recipients of the program are the children receiving the meals and snacks.

## 3.5. Outcomes: what do we know about CACFP’s impact?

### 3.5.1. Implementation outcomes

These include acceptability, adoption, appropriateness, costs, feasibility, fidelity, uptake (penetration), and sustainability (26, 28). We present evidence for four of these constructs with existing evidence below.

#### 3.5.1.1. Penetration

While the USDA estimates that CACFP served up to 4.6 million children in 2021, it does not track the percentage of eligible programs that participate. A recent analysis of state administrative records, however, estimated that only about a third of licensed childcare centers participate in CACFP nationwide, with large variability across states (16%–86%) (50).

#### 3.5.1.2. Fidelity

Studies of the degree to which programs adhere to CACFP’s regulatory standards generally suggest that programs meet the standards most of the time, but not perfectly (25, 51, 52).

#### 3.5.1.3. Feasibility

Providers have consistently reported that CACFP is difficult to use, citing the burden of paperwork, inadequate staff, insufficient reimbursements, mismatch of the meal pattern standards with child preferences, and inflexibility of the standards for cultural foods as being key barriers to feasibility (53–56).

#### 3.5.1.4. Cost

Although CACFP reimburses providers for each qualifying meal and snack served (as described above), many studies have found that the reimbursement is not adequate. While some studies have found that the reimbursement covers the costs of food (57–59), studies have also found that the reimbursement is not adequate for supporting foods with more variety that can improve diet quality and support children’s preferences (60, 61), and that the reimbursement is not adequate to cover labor costs (59).

### 3.5.2. Service outcomes

Include efficiency, safety, effectiveness, equity, client-centeredness, and timeliness (26, 28). We present analysis for four of these constructs with existing evidence below.

#### 3.5.2.1. Efficiency

As described above, there are substantial monitoring activities involved that make CACFP’s efficiency questionable. Daily meal and attendance counts, menu planning, managing food receipts to demonstrate compliance, reviewing food labels to assess whether foods are creditable, and also the work involved in soliciting and organizing income-eligibility paperwork from parents all contribute to substantial administrative burden (39).

### 3.5.2.2. Effectiveness

A recent systematic review of studies of the impact of CACFP on the nutritional quality of meals served in childcare programs found mixed evidence overall for a beneficial impact of CACFP, partly due to a lack of rigorous, large-scale studies. Existing studies either find null associations between CACFP and nutritional quality or typically very small positive associations (62).

### 3.5.2.3. Equity

It is unknown whether CACFP is accessed inequitably. There are concerns, however, in how programs located in food deserts—which often track with both rural locale and with areas subjected to racialized segregation (63, 64)—may have difficulty accessing foods compliant with CACFP meal pattern standards. Additionally, the administrative burden of this program itself may produce inequities. Childcare providers serving higher income families can opt out of CACFP. Such programs can either have parents provide meals themselves, or pay extra in tuition to cover meal service costs. Therefore, the administrative burden is borne by providers serving children from households with lower income.

## 3.5.3. Recipient outcomes

### 3.5.3.1. Providers

It is unclear the extent to which CACFP benefits providers themselves; most studies evaluate the impacts of CACFP on childcare program practices and policies. For example, it is unclear whether CACFP actually helps providers financially so that they have less business challenges or are able to keep program tuition lower. It is also unclear whether CACFP helps with providers' own health and wellness. Notably, despite the fact that childcare teachers are strongly encouraged to sit and eat with children during mealtimes, meals for teachers are not reimbursable through CACFP currently.

### 3.5.3.2. Children

Similar to what has been found in evaluations of CACFP's impact on childcare program-level food practices and policies, evidence for a beneficial impact of CACFP on child-level outcomes, including diet quality, food security, and healthy weight, are mixed, with studies either finding null or very slightly positive associations (62).

## 3.5.4. Policy outcomes

Overall, it is unclear whether CACFP has population-level impacts on childcare meal quality or child health.

## 4. Discussion

Nutrition policies, especially federal nutrition assistance programs, show enormous potential for supporting children's nutrition on a population level. CACFP could be particularly promising given that it focuses on supporting healthy meals for young children, who are at a crucial stage of development. Yet despite its promise, it has not been shown to have strong impacts on child food insecurity, growth, or diet quality (62). While it is often suggested that CACFP participants need more training or

technical assistance to support better adoption of CACFP, the analysis above suggests that simply providing training or technical assistance is not enough; rather, we argue that several key misalignments between CACFP's policy implementation process and the current structure of the childcare industry have contributed to weaker impacts. These include:

### 4.1. Fractured childcare industry and conflict over resources for safety net programs

The daily challenges that childcare providers face in maintaining operations—low wages, high staff turnover, high operating costs, and the need to comply with multiple regulations outside of food-related rules—may make participation in CACFP infeasible for many programs; they just may not have the bandwidth given the current structure of childcare. While increasing operational and financial support given through CACFP could increase its feasibility for programs, as well as providing more support and structure to the childcare industry in general, this would require expansions of the existing social safety net that are controversial in the current political climate.

### 4.2. Insufficient financial support for providers to effectively implement the program

While existing reimbursements may cover food costs on average, they do not appear to be adequate for covering the cost of the labor needed to complete CACFP's administrative requirements or to plan and prepare meals. They also may not be adequate for supporting a variety of foods that can fit children's preferences or help towards introducing children to new foods, leaving providers with a situation where they are repeating the same few meals and reducing satisfaction with the program. Reimbursements that fairly cover the costs of labor and can support a truly healthful food service—with the provision of a variety of foods that meet CACFP's nutritional standards and children's preferences—are needed.

### 4.3. Inadequate implementation structure for some programs

An implementation structure more similar to that of the NSLP/SBP—where there are agencies with dedicated staff for overseeing compliance paperwork, planning meals, and preparing and serving meals—could be helpful. For many childcare providers, especially those without a sponsor, participating in CACFP would be akin to asking school principals and teachers to add school meal compliance paperwork and food service to their workloads. Sponsoring agencies help support family childcare providers and some centers in overseeing administrative duties; perhaps a more robust role for these agencies, with support available for more center-based programs and more help with

the meal planning and food preparation tasks necessary for participation, could be a solution.

Additionally, increasing communication across levels of implementation (federal, state, sponsor, provider) is needed. The agency involved in setting policy—USDA—is far removed from the day-to-day activities involved in implementation. One implication of this is that some of the policy memorandums that USDA provides to try to support implementation, as well as informational resources designed to help providers comply, may be out of sync with what providers need. For example, one co-author, who is involved in providing food service for CACFP-participating programs, has found that USDA's example recipes often include foods that are too expensive (like nuts or dried fruits) and/or foods that are not creditable for that dish. Communication between state agencies and food vendors could be further developed, rather than relying on childcare centers to navigate those communications. Finally, supporting newly-formed childcare providers in the transition of opening could be a useful investment to ensure the food programs are a support rather than a burden to newly-formed business enterprises.

## 5. Conclusions

Policymakers and others involved in policy formulation and implementation processes should consider strategies to reshape CACFP's implementation to better fit the existing context of childcare in the U.S.—not only through more robust financial support, but also through perhaps a reconsideration of what administrative paperwork is truly necessary for program participation and a retooling of existing implementation supports, like training, technical assistance, and meal planning, that are available to childcare programs. Meanwhile, as this analysis demonstrates, we suggest that researchers, policymakers, and public health practitioners who want to leverage food policies to promote public health nutrition must go beyond focusing only on requiring the provision of foods and beverages in line with dietary science—we must also carefully consider the context in which these policies operate, and the implementation process that can determine their success.

## Data availability statement

The original contributions presented in the study are included in the article/Supplementary Material, further inquiries can be directed to the corresponding author.

## Author contributions

EK: Conceptualization, Data curation, Funding acquisition, Investigation, Project administration, Writing – original draft,

Writing – review & editing. MP: Conceptualization, Writing – original draft, Writing – review & editing. NF: Conceptualization, Data curation, Investigation, Writing – review & editing. KK: Data curation, Writing – review & editing. RM: Data curation, Formal Analysis, Project administration, Writing – review & editing. TA: Conceptualization, Writing – review & editing.

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## Conflict of interest

NF is employed by Seed 2 Roots LLC.

The remaining authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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