The US National School Lunch Program: A Brief Overview

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ABSTRACT

Objective: The National School Lunch Program (NSLP) is a federally assisted meal program in the United States (US) that provides nutritionally balanced and free or low-cost lunches each school day to 30.4 million students, including more than 22 million low-income students. Since its inception in 1946, the program has undergone many modifications, including a shift in focus from addressing under- to over-nutrition. Most recently, the US Congress passed the Healthy, Hunger-Free Kids Act of 2010 to help address hunger and obesity among the nation’s children. The purpose of this paper is to provide a brief overview of the NSLP.

Methods: This paper is based on a review of relevant technical documents, peer-reviewed literature and grey literature. The authors also used their collective school lunch research and practice experience to identify the most salient points to address.

Results: The following areas of the NSLP are presented: how it is administered; recent changes to the meal patterns and nutrition standards; revenue and costs; research and evaluation conducted after passage of the Healthy, Hunger-Free Kids Act; and current initiatives to enhance the NSLP.

Conclusions: The Healthy, Hunger-Free Kids Act improved the NSLP meal patterns and nutrition standards by aligning them with the Dietary Guidelines for Americans. Early published research on the impact of the updated meal patterns and nutrition standards on student dietary outcomes is promising and efforts to further enhance the NSLP are being implemented across the nation.

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Key words: lunchtime, schools, United States, National School Lunch Program, Healthy Hunger-Free Kids Act

I. Introduction

The National School Lunch Program (NSLP) is a federally assisted meal program in the United States (US) that provides students with nutritionally balanced and free or low-cost lunches each school day1. The program was created by the Richard B. Russell National School Lunch Act2, which was signed into law in 1946 to promote the health and well-being of the nation’s children and to encourage the domestic consumption of agricultural commodities3. Although the US currently ranks in the top 15 richest countries in the world per capita3, 43% of the nation’s children live in families that don’t have incomes to meet their most basic needs4. The NSLP is a critical part of the nutrition safety net for these low-income families. During school year (SY) 2016–2017, the NSLP provided lunches to 30.4 million students, including more than 22 million low-income students, each school day at an annual cost of $13.6 billion4.

In response to the changing nutrient needs of US children, the NSLP has undergone many modifications over the past several decades, including a shift in focus from addressing under- to over-nutrition. Most recently, the US Congress passed the Healthy, Hunger-Free Kids Act of 2010, which included provisions to help address hunger and obesity among the nation’s children5. The Act is designed to help reduce disparities in dietary quality among students by increasing access to healthy foods dur-
The US National School Lunch Program

The purpose of this paper is to provide a brief overview of the NSLP. Topics addressed include how it is administered, meal patterns and nutrition standards, revenue and costs, research and evaluation, and initiatives to enhance the NSLP. Lunchtime in a typical US school lunch program is described first to provide context.

II. Methods

This paper is based on a review of relevant technical documents, peer-reviewed literature, and grey literature. Primary research studies and systematic review papers published in the last 10 years were retrieved from Science Direct, PubMed, and Google Scholar databases, using the following search terms: National School Lunch Program; school lunch; Healthy Hunger Free Kids Act. The authors also used their collective school lunch research and practice experience to identify the most salient points to address in a brief overview of the NSLP.

III. Results and Considerations

Lunchtime in US Schools

School lunchtime in the US varies from school to school, but some features are shared. Most US schools have a cafeteria where students eat their lunches. Cafeterias have a main dining area, a kitchen where food is either prepared on-site or received from a central kitchen and finished, and a serving line, which connects the kitchen to the main dining area. The lunch period is scheduled between 10:00 am and 2:00 pm; the four hour window allows schools with small cafeterias or large enrollments to accommodate all students through a rotating lunch period that is about 25 minutes long for elementary schools and 30 minutes long for middle and high schools. The lunch period typically includes travel time from the classroom to the cafeteria, time spent waiting in the lunch line, and time to bus trays after the meal. Some school cafeterias are used for the sole purpose of serving and eating meals, while others are also used for physical education classes, student study areas, or school assemblies for parts of the day when students are not eating.

Students who participate in the NSLP select their meals, which include a choice of entrée, vegetable, fruit, and milk. The entrée item contains one or more of the following meal components: grains, meats or meat alternatives, vegetables, fruit. Examples of entrée items include hamburger, pizza, fish, chicken sandwich, peanut butter and jelly sandwich, tacos, and spaghetti. Students are also offered a choice between different types of fruits and vegetables and between non-fat plain or flavored milk (e.g. chocolate) and reduced-fat plain milk. Except for self-service salad bars, students are typically served their lunches by school staff. After students receive their meals, they complete their lunch purchase using their school lunch accounts, which are linked to a number to identify students who receive free or reduced-price meals or who pay full price for their lunches. Students who receive reduced-price meals or pay full price have a school lunch account paid for by their families. Students who do not participate in the NSLP bring lunch from home, obtain lunch from other sources (e.g. à la carte, off-campus location, other students), or do not eat lunch at all.

Program Administration

The NSLP is administered at the federal level by the US Department of Agriculture (USDA) and at the state level by education and agricultural agencies, which operate the program through agreements with local school food authorities. School food authorities are appointed by each state to be responsible for operating non-profit school lunch programs that meet NSLP meal patterns and nutrition standards at one of more schools or school districts (hereinafter called schools). School food authorities are also responsible for processing student applications for free- or reduced-price meals, maintaining program data for reporting and meal reimbursement purposes, and balancing program revenue and costs. Approximately 20% of school food authorities have turned to private management companies to assume responsibility for their school meals program.

Meal Patterns and Nutrition Standards

The Healthy, Hunger-Free Kids Act required the USDA to align the NSLP meal patterns and nutrition standards with the Dietary Guidelines for Americans. School food authorities must now use a food-based (versus nutrient-based or other) menu planning system to serve meals that offer the following five meal components: fruit, vegetable, grain, meat or meat alternate, milk. Changes to the meal patterns and nutrition standards focus on increasing the availability of fruits, vegetables, whole grains, and fat-free
Table 1 National School Lunch Program meal patterns and nutrition standards before and after passage of the Healthy, Hunger-Free Kids Act of 2010 by grade level5)

| Meal Pattern          | Before                                                                 | After                                                                 |
|-----------------------|------------------------------------------------------------------------|-----------------------------------------------------------------------|
|                       | Grade K–5  | Grades 6–8  | Grades 9–12 |
| Fruit (cups)          | 1/2–3/4 fruit or vegetable daily  | 1/2 daily, 2 1/2 weekly  | 1 daily, 5 weekly       |
| Vegetable (cups)      | 3/4 daily, 3/4 weekly  | 1 daily, 3 3/4 weekly  | 1 daily, 5 weekly       |
| Grains (ounce equivalent)† | ≥1 daily, 8 weekly  | 1 daily, 8–9 weekly  | 2 daily, 10–12 weekly  |
| Meat or meat alternate (ounce equivalent) | 1.5–2.0 daily  | 1 daily, 8–10 weekly  | 2 daily, 10–12 weekly  |
| Milk (cups)§          | 1 daily  | 1 daily, 5 weekly  | 1 daily, 5 weekly       |
| Calories (kcal)       | Grades K–6: minimum 664  | 550–650|| 600–700|| 750–850||
|                       | Grades 7–12: minimum 825  | 550–650|| 600–700|| 750–850||
| Saturated fat, % total calories | <10  | <10  | <10  |
| Sodium (mg)           | No standard  | <1,230|| <1,420|| <1,420||
| Trans-fat (g)         | 0  | 0  | 0

† Under the new requirements, dark green, red/orange, legumes, starchy, and other vegetables must be served weekly; the old requirements did not specify vegetable sub-groups.

‡ Under the new requirements, all grain products offered must be whole grain; the old requirements encouraged but did not require whole grain products.

§ Under the new requirements, milk must be fat-free (unflavored or flavored) or 1% low-fat (unflavored); the old requirements did not specify milk fat content or flavor.

|| Minimum and maximum calorie range and sodium amount is based on the average for a 5-day week.
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based on USDA guidance and varies across programs. During SY 2015–16, the average price for a full price lunch was $2.34 for elementary school children. Table 2 shows the per meal reimbursement rates for school lunch programs in the contiguous U.S. in which fewer than 60% of students received free or reduced-price meals. Programs that serve 60% or more of their lunches to students who qualify for free or reduced-price meals are considered “severe need” and receive an additional $0.02 per meal and those that are in compliance with the updated nutrition standards receive an additional $0.06 per meal.

Schools with high concentrations of low-income students can also choose to adopt the Community Eligibility Provision, which allows schools to offer meals at no charge to all students.

In addition to cash reimbursements, schools participating in the NSLP are entitled by law to receive USDA Foods, which free up money that would otherwise be spent on food, thus easing strain on school food budgets. USDA Foods, formerly known as commodity foods, are foods (e.g. fruits, vegetables, meats, cheese, dry and canned beans, pasta, rice, flour, cereal) purchased by the USDA from US farmers with surplus agricultural products and made available to states. Schools participating in the NSLP are eligible to receive $0.32 per lunch served to purchase USDA Foods.

The cost of producing a school lunch varies. On average, 37% is spent on food, 48% is spent on labor, and 5% is spent on supplies. In addition to food, labor, and equipment, many programs are expected to cover or contribute to shared expenses such as utilities, trash removal, and rent. Other expenses include marketing and promotion and professional development. School lunch reimbursement rates have gone up more slowly than the increase in the cost to produce a school lunch that meets program requirements, placing strain on school food budgets.

To help defray the overall cost of operating a school lunch program, most schools generate revenue through cash-only sales of foods and beverages, which are sold individually on an à la carte basis either through the cafeteria serving line or through separate lines that sell snack foods (e.g. chips, cookies) and beverages. While à la carte sales help to increase school foodservice revenue, some students may choose to purchase their lunch à la carte instead of participating in the NSLP, thus decreasing federal reimbursements from meals served to students. Until recently, à la carte foods and beverages were not required to meet federal nutrition standards. The Healthy, Hunger-Free Kids Act set nutrition standards (i.e. Smart Snacks standards) for à la carte items, which went into effect at the beginning of SY 2014–2015. To date, there is limited evidence to show that implementing Smart Snacks standards has resulted in student dietary changes or has had a negative impact on NSLP participation levels.

Research and Evaluation

The extent to which students benefit from the NSLP depends on whether students choose to participate in the program, the nutritional quality of the lunches served, and if students select and consume the meal components.

National School Lunch Program Participation. NSLP participation among low-income children eligible for free meals has been steadily increasing over the past decade owing, in part, to the introduction of the Community Eligibility Provision. During the same time, participation among students paying full-price for lunch has decreased due to several factors including the economy, increased lunch price for students who do not qualify for free- or reduced-price meals, and availability of à la carte foods and beverages. Decreased participation in the NSLP among students who pay full price for lunch is an important concern because strong participation by all students, including those who do not qualify for free- or reduced-price meals, is needed to sustain a financially viable school lunch program and because students who do not participate in the NSLP do not reap its benefits.

School Lunch Nutritional Quality. Recently published data by the USDA indicate that nearly all school food authorities nationwide have been certified as in compliance with the new NSLP requirements. Evidence also

Table 2 National School Lunch Program per meal cash reimbursement rates for school year 2017–2018 in the contiguous United States for schools that serve fewer than 60% of their lunches to students who qualify for free- or reduced-price meals

| Eligibility category | Reimbursement rate |
|---------------------|--------------------|
| Free                | $3.23              |
| Reduced-price       | $2.83              |
| Paid                | $0.31              |
shows improvements in the nutritional quality of school lunches as a result of the Healthy, Hunger-Free Kids Act\textsuperscript{18–21}. One study, for example, showed a statistically significant increase in the percentage of schools across the country offering two or more vegetables for lunch every day and reducing the amount of sodium in meals through practices such as increased use of low-sodium canned vegetables and low-sodium recipes\textsuperscript{20}.

Early published research on the impact of the updated meal patterns and nutrition standards on student dietary outcomes have focused on selection, consumption, and waste, especially for fruits and vegetables. Studies have shown that, as expected, a greater number of students selected a fruit or vegetable at lunch after, compared to before, implementation of the updated requirements, which stipulate that students must select a fruit or vegetable as part of the reimbursable meal\textsuperscript{22–25}. In addition, studies have found significant improvements in the nutritional quality of meals selected\textsuperscript{26, 27} and consumed\textsuperscript{23, 25} by students before and after implementation of the updated NSLP requirements. During the year immediately following implementation, one study found a decrease in fruit and vegetable consumption among students\textsuperscript{20}.

School Lunch Food Waste. The new meal patterns and nutrition standards have been criticized in the media for increasing food waste due its requirement that students must select a fruit or vegetable\textsuperscript{20}. Studies assessing change in food waste before and after implementation of the updated requirements have reported mixed results\textsuperscript{22–21}. However food waste, which costs an estimated 1 billion dollars annually\textsuperscript{20}, has been a long standing problem of the NSLP. A recently published systematic review of food waste in the NSLP shows that since the 1970s, most studies have reported that more than 30% of food was wasted and no studies have reported food waste of less than 5%\textsuperscript{28}. Food waste of school meals occurs for many reasons, including student preference for meal components, student satiety level, overproduction of meal components, insufficient time to eat lunch, and the requirement for students to choose specific foods as part of their meal.

Initiatives to Enhance the National School Lunch Program

Several initiatives across the nation have been implemented to increase NSLP participation, improve school lunch quality, and reduce food waste.

Student participation in the NSLP depends, to a great extent, on the perceived palatability of meals\textsuperscript{20}. Chef partnerships, in which volunteer chefs use their culinary expertise to help school lunch staff improve school meals, is one example of an initiative designed to create more palatable meals that meet NSLP meal patterns and nutrition standards. The Chef Initiative, a partnership in Boston (Massachusetts) resulted in healthier meals and significantly greater whole grain selection and vegetable consumption before versus after hiring a professional chef to work with school lunch staff to create healthier, more flavorful lunches\textsuperscript{31}. Increasingly, schools are also serving lunches that reflect the regional and cultural preferences of their student bodies. For example, salmon, a traditional food in the Alaska Native diet, is served for lunch in the Lower Yukon School District (Alaska) where 98% of the student body is Yup’ik Eskimo. In the Portland Public Schools (Oregon) Japanese immersion program, students enjoy Japanese School Lunch Day.

Farm-to-school, which represents a range of activities that connect schools with local farmers and other food producers, is among the most commonly implemented school lunch program initiatives\textsuperscript{6}. During the 2013–2014 school year, more than 42,000 schools across the country participated in farm-to-school activities\textsuperscript{32}. Serving local foods in the cafeteria is the most common farm-to-school activity and has been shown to increase fruit and vegetable intake among students\textsuperscript{20}. Efforts to serve locally grown foods in the cafeteria are central to the farm-to-school concept\textsuperscript{34}; other activities included school gardens and agriculture education. Federal and state governments and non-profit organizations have supported farm-to-school through policies, grant programs, training, and technical support that encourage schools to purchase locally grown foods.

Food waste remains one of the most salient challenges facing school lunch programs\textsuperscript{20}. Various strategies are being employed to simultaneously increase consumption of healthy foods and reduce food waste, including extending the lunch period, which studies suggest is generally too short. Insufficient time to eat has been associated with decreased entrée, milk, and vegetable consumption\textsuperscript{20}. A lunch period longer than 30 minutes, which may allow students to enjoy their lunch for at least 20 minutes at the
table, has been positively associated with increased fruit and vegetable consumption\(^{29}\). Thousands of schools nationwide have also implemented Smarter Lunchroom (www.smarterlunchrooms.org) strategies — simple, no- or low-cost ways to increase school lunch participation and nudge students to eat better and waste less — including, offering vegetables in two locations in the lunch line, holding recess before lunch, and offering sliced instead of whole fruit. Studies have shown that such strategies have the potential to increase consumption of healthy foods and decrease the amount of food wasted\(^{28, 37}\).

IV. Conclusion

The US NSLP helps to address hunger and obesity among the nation’s children by providing millions of students with nutritionally balanced and free or low-cost lunches each school day. The Healthy, Hunger-Free Kids Act improved the NSLP meal patterns and nutrition standards by aligning them with the Dietary Guidelines for Americans. Early published research on the impact of the updated meal patterns and nutrition standards on student dietary outcomes is promising and efforts to further enhance the NSLP are being implemented across the nation. School lunch researchers, practitioners, policy makers, and other stakeholders will continue to evaluate the NSLP to ensure that it is meeting its central goal – to help improve the dietary quality for US students by providing options for balanced and affordable meals in the school cafeteria.

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Conflict of Interest

There exist no items constituting a conflict of interest.

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