

Methods and Challenges Related to Implementing the New National School Lunch Program Regulations in Indiana

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ABSTRACT

Purpose/Objectives

The Healthy, Hunger-Free Kids Act of 2010 resulted in updated National School Lunch Program (NSLP) regulations from the U.S. Department of Agriculture. The purpose of this research was to investigate the approaches used by school foodservice managers and directors in Indiana in complying with the new regulations and to identify the remaining challenges.

Methods

Expert review, interviews, and a focus group were used to develop a content valid survey about implementation of the NSLP regulations for the 2013-14 school year. Foodservice managers/directors working in Indiana were identified from the NSLP public contact list available through the Indiana Department of Education and were invited to respond to an online Qualtrics survey in Fall 2013.

Results

One hundred eight surveys were completed (27% response rate). The survey indicated that changes made in response to the regulations resulted in an increase in raw food costs, which managers offset in a number of ways. Implementing changes was a challenge managers faced with the help of vendor adjustments. The main difficulty reported was gaining student acceptance of the menu changes. Vegetables were identified as the main food group wasted. Respondents often adopted whole grain-rich products and legume dishes as new foods.

Applications to Child Nutrition Professionals

While most foodservice managers felt at least somewhat positive about the new NSLP regulations, concerns remained about the increased costs incurred to produce menus that comply with the new regulations and are acceptable to the students. Vendors seem to be providing most food items desired by foodservice staff, but since student acceptance of NSLP foods, especially vegetables, is still a challenge, additional efforts to improve the palatability of meals is needed.

Keywords: National School Lunch Program; school lunch, foodservice, menu changes, Healthy Hunger-Free Kids Act

INTRODUCTION

Administered at the federal level by the U.S. Department of Agriculture (USDA) Food and Nutrition Service (FNS), the National School Lunch Program (NSLP) is a federally funded foodservice program that provides subsidized, low-cost, or free lunches to more than 31 million children each school day in partnership with over 100,000 public and non-profit private schools and residential child care institutions (USDA-FNS, 2012, 2013). To receive reimbursement from

the USDA, participating schools must meet the published school meal regulations, which are required by law to be consistent with the most recent Dietary Guidelines for Americans (USDA & U.S. Department of Health and Human Services, 2010).

	ch Program Meal Pattern: Previous		
Food Group	Previous Requirements K-12 for Traditional Menu Planning	Current Requirements K-12	
Fruit and Vegetables	$\frac{1}{2} - \frac{3}{4}$ cup of fruit and vegetables	$\frac{3}{4}$ -1 cup of vegetables plus	
	combined per day	$\frac{1}{2}$ - 1 cup of fruit per day	
Vegetables	No specifications as to type of vegetable subgroup	Weekly requirement for: dark green; red/orange; beans/peas (legumes); starchy; and other	
Meat/Meat Alternate	1.5 – 2 oz equivalent (daily minimum)	Daily minimum and weekly ranges: Grades K-5: 1 oz eq. min. daily (8- 10 oz weekly) Grades 6-8: 1 oz eq. min. daily (9- 10 oz weekly) Grades 9-12: 2 oz eq. min. daily (10-12 oz weekly)	
Grains	8 servings per week (minimum of 1 serving per day)	Daily minimum and weekly ranges: Grades K-5: 1 oz eq. min. daily (8-9 oz weekly) Grades 6-8: 1 oz eq. min. daily (8- 10 oz weekly) Grades 9-12: 2 oz eq. min. daily (10-12 oz weekly)	
Whole Grains	Encouraged	At least half of the grains must be whole grain-rich by July 1, 2012. Beginning July 1, 2014, all grains must be whole grain-rich.	
Milk	1 cup daily Variety of fat contents allowed; flavor not restricted	1 cup Must be fat-free (unflavored/flavored) or 1% low fat (unflavored)	
Kcalories	Minimums established: 633 per day (K-3) 785 per day (Grades 4-12)	Ranges established. Daily average based on weekly ranges: Grades K-5: 550-650 Grades 6-8: 600-700 Grades 9-12: 750-850	
Trans fatty acids	No mention	Not allowed	

Table 1. Maal Dattana. Duminus and Cuppont

Source: U.S. Department of Agriculture, Food and Nutrition Service. (2012). Comparison of previous and current regulatory requirements under Final Rule: Nutrition standards in the National School Lunch and School Breakfast Programs. Retrieved from http://www.fns.usda.gov/sites/default/files/comparison.pdf

The Healthy, Hunger-Free Kids Act (2010) resulted in updated NSLP regulations intended to bring school meals in line with the *2010 Dietary Guidelines for Americans* (USDA & U.S. Department of Health and Human Services [USDHHS], 2010). Provisions were included in the Healthy, Hunger-Free Kids Act to address the increased costs expected once the new regulations were implemented. These included a 6-cent per lunch reimbursement increase coupled with an expected increase in NSLP participation and expected increase in revenue from a la carte foods (USDA-FNS, 2012). Most of the regulations were to be implemented by the beginning of the 2012-2013 school year. However, from 2012-2014, only half the grains offered needed to be whole grains, but starting in 2014, 100% of grains offered were required to be whole grain. Finally, schools were required to meet sodium regulations in three stages between 2014 and 2022.

Many of the new requirements are age specific as well as quality specific. To provide context for this research, a review of the new regulations compared to the old is given in Table 1. In addition to these changes, saturated fat must be less than 10% of kcalories, and maximum sodium levels were established in increments to be phased in fully by 2022 (USDA-FNS, 2012).

These are comprehensive changes that, depending on the existing school food environment, might require extensive menu changes for successful adherence to the new regulations and for acceptance by the students. The purpose of this research was to investigate the methods used by school foodservice managers and directors in Indiana to comply with the new regulations for the NSLP and to identify challenges remaining after the initial year of implementation.

METHODOLOGY

Questionnaire

Two researchers drafted a survey based on literature review and interviews with three school foodservice managers. The draft survey was reviewed by two nutrition and school foodservice experts for content validity. Next, the researchers conducted a focus group with 12 school foodservice managers whose feedback was incorporated into a revised survey, which was reviewed again by the earlier two experts and an editor for suggestions as to clarity and logical flow. The first 9 items in the survey consisted of demographic questions, with the remaining 42 questions covering the actual implementation plans and experiences of the respondents in adjusting to the new NSLP regulations. Question topics included how foodservice staff prepared for menu changes; how the upcoming changes were communicated to students, parents, and the general public; the effect of changes on food costs and NSLP participation; barriers to offering fresh fruit; plate waste issues; the role of vendors in making changes; and overall attitudes toward the NSLP regulations.

While the majority of questions were structured as multiple choice, questions were nested so that a "yes" or "agree" response could lead to a different follow-up question than a "no" or "disagree" response. All multiple choice questions with multiple stems included the opportunity to answer "other" and a comment box with the request to "Please specify." Five survey questions were structured for short answer responses, including the wrap-up question, "Are there any other comments you would like to make?" Respondents were able, therefore, to provide information not anticipated by the researchers and to comment freely about their experiences, insights,

successes, and frustrations. The final 51-item survey was converted to a web based survey using Qualtrics software (Qualtrics Research Suite, 2005, Qualtrics, Provo, UT). The Indiana University Institutional Review Board (IRB) approved all methods used in the study.

Sample and Data Collection

From the NSLP public contact list available through the Indiana Department of Education (http://www.doe.in.gov/nutrition), researchers identified those contacts whose job titles indicated they were foodservice managers or directors. In Fall 2013, a description of the study and the link to the online Qualtrics survey was sent via email to this sample. After a week, a reminder email was sent and potential participants were given 15 more days to complete the survey.

Data Analysis

The data generated by the Qualtrics software were downloaded to SPSS (SPSS Statistics for Windows Version 20, 2011, IBM Corp, Armonk, NY) to calculate descriptive statistics for the multiple choice questions. Comments generated from the open-ended questions and from the "other: please specify" responses were reviewed for qualitative information.

RESULTS AND DISCUSSION

Overview and Demographics

The survey was sent to a total of 393 foodservice managers/directors. One hundred twenty-three respondents initiated (31% initial response rate) the survey, and 108 respondents completed the survey (27% response rate). While a higher response rate would be preferred, 27% compares favorably to the lower response rates generally seen with online surveys targeting a non-college population (Shih & Fan, 2008).

Table 2.

Characteristic	n	%
Gender		
Male	9	8.3
Female	99	91.7
Level of education		
<12 th grade	15	13.9
High school/GED	28	25.9
Associate's degree	21	19.4
Bachelor's degree	37	34.3
Graduate degree	7	6.5
Years worked in school foodservice *		
0-5 years	20	18.7
6-10 years	21	19.6
11-15 years	22	20.6
16-25 years	28	26.2
>25 years	16	15.0

Demographic Characteristics of School Manager/Director Survey Participants (N=108)

*N is <108 due to missing values

The demographic characteristics of the respondents are provided in Table 2. Most were female (91.7%) with over 96% being employed full-time. Over 60% of the respondents had at least ten years of experience in foodservice. While almost 40% held at least a bachelor's degree, 26% completed their education as high school graduates, and 14% did not graduate from high school.

Of the respondents who completed the survey, 99% indicated they made changes to their school menu based on the new NSLP regulations. The majority (82.4%) indicated that gaining student acceptance of the changes was the major difficulty they faced (Table 3).

Communication of NSLP Changes

Over 60% of the participants felt they had received adequate training to enable them to implement the regulations while 32% felt the training they received was not enough. Over 50% of the respondents indicated that their staff received training on the new regulations from the state Department of Education (DOE). Those who did not participate in DOE training prepared for the changes by mandatory group meetings (37.0%), in-service handouts (22.2%), and word of mouth (24.1%) (Table 3). Nearly 54% of the participants indicated that students were able to provide input on menu changes, mainly through informal input (38.0%), taste testing (27.8%) and surveys/interviews (19.4%). The two main reasons provided by survey respondents for not soliciting student input were lack of time and managers' expectation that the feedback would not be worth the time involved.

(N = 108)		
Question Topic	n	%
Difficulties encountered in implementing NSLP changes*		
Gaining student acceptance of the changes	89	82.4
Informing faculty, students, and families of the new changes	57	52.8
Training staff	50	46.3
Ordering the food from vendors	45	41.7
Other	34	31.5
Method of preparing staff for NSLP changes*		
Department of Education training	56	52.8
Mandatory group meeting	40	37.0
Word of mouth	26	24.1
In-service handout	24	22.2
Email	7	6.5
Other	10	9.3
Notification of changes to parents, students and faculty*		
Signage in cafeteria	81	75.0
School website	63	58.3
Letter	48	44.4
Media outreaches	22	20.4
Email	15	13.9
Parent teacher organization meetings	11	10.2
Other	25	23.1

Table 3Methods and Challenges Related to Implementation of New NSLP Regulations in Indiana(N = 108)

Methods to offset increase in cost*		
Increase in meal price	64	59.3
Fewer food options		23.1
Salary freezes	17	15.7
Staff cuts	15	13.9
Other	24	22.2
With the implementation of the new guidelines, has there been an		
increase in plate waste? **		
Yes	88	85.4
No	15	14.6
If so, which food group has been discarded more**		
Vegetables	66	75.0
Fruits	9	10.2
Grains	9	10.2
Meat/meat alternatives	4	4.5
Methods used to incorporate vegetable subgroups into menu*		
Serve them straight as sides		87.0
Salad bar	53	49.1
Use them in sandwiches	23	21.3
"Hide" them in casseroles or other mixed dishes	17	15.7
Other	13	12.0
Barriers to offering more fresh fruits*		
Cost	69	63.9
Short shelf life		55.6
Labor required to prepare fresh fruit		37.0
Availability		34.3
Acceptance from students		13.9
Other	16	14.8
*Demonstration address to see them 1000/ horses mean address could also	11 41 4	

*Percent can add up to more than 100% because respondents could choose all that apply. **N is <108 due to missing values

Most respondents (98.1%) stated their constituent parents, students, and faculty were aware of the new regulations. According to the survey results, respondents used multiple methods to announce the changes including signage in the cafeteria (75.0%), use of the school website (58.3%), by letter (44%), other media outreach (20.4%), email (13.9%), or parent teacher organization (PTO) meetings (10.2%) (Table 3).

Effect of Changes on Costs and Participation

Most respondents (90.7%) indicated an increase in raw food costs resulting from menu changes. Such food cost increases were offset by increasing the meal price (59.3%), offering fewer food options (23.1%), freezing salaries (15.7%), instituting staff cuts (13.9%), or other (22.2%) strategies such as using existing surplus funds, foregoing equipment upgrades, or just absorbing the cost (Table 3).

For schools where the cost of lunch meals increased, 68.0% of respondents claimed the price increase affected meal purchases. Forty-four percent indicated an increase in students purchasing

a la carte items, and an equal 44% reported no change in a la carte sales. Coincident with the new regulations, 21.2% of schools reported an increase in free/reduced lunch participation, 23.1% reported a decrease, and 55.8% reported no change.

Nearly 60% of the respondents (58.6%) reported offering fresh fruit every day while 51.5% reported offering canned fruit every day. Major barriers reported for not offering fresh fruit were cost (63.9%), short shelf life (55.6%), the labor required to prepare fresh fruit (37.0%), availability (34.3%), and acceptance by students (13.9%) (Table 3).

Plate Waste Issues

Over 85% of the respondents indicated that implementation of the new regulations resulted in an increase in plate waste, with 75% identifying vegetables as the most discarded food group (Table 3). This finding aligns with a 2014 study in which food waste after NSLP changes was highest for vegetables compared to other food groups (Byker, Farris, Marcenelle, Davis, & Serrano, 2014). While this implies that vegetables are not being accepted under the new regulations, it should be noted that vegetables have been a highly discarded food group all along (Cohen, Richardson, Austin, Economos, & Rimm, 2013; Gase, McCarthy, Robles, & Kuo, 2014). While vegetable waste remains high, research indicates that vegetable consumption has nevertheless increased with the implementation of the new NSLP regulations (Cohen, Richardson, Parker, Catalano, & Rimm, 2014). Such a finding aligns with studies that have shown an increase in consumption of fruits and vegetables after an increase in availability and accessibility of fruits and vegetables (Blanchette & Brug, 2005; Hearn et al., 1998).

Seventy-five percent of respondents in the current study reported that students were aware of the minimum weekly requirement for vegetables. As seen in Table 3, the top strategy for serving vegetable subgroups in the menu was serving them straight as sides (87.0% of respondents), followed by offering them in a salad bar (49.1%), using them in sandwiches (21.3%), and hiding them in casseroles or other mixed dishes (15.7%). NSLP schools have found other creative methods to increase vegetable consumption such as showcasing chef creations in the Chefs Move to Schools pilot program in upper New York state (Just, Wansink, & Hanks, 2014). According to survey results, most respondents dropped an item from the menu when the food or recipe was not well accepted by students. Others offered an alternative or tried to improve the item; still others offered samples in an effort to improve acceptance. Finally, some respondents continued to serve the item because it fit regulations, as reflected in this comment by one respondent: *"If it is required we continue to serve it and watch it be discarded. We have very healthy garbage cans."*

The Role of Vendors

All respondents reported their vendors to be aware of the new regulations, and almost all of them (96.1%) reported the introduction of new food items by vendors based on the new regulations. Most respondents reported adopting whole grain products (such as breading for meats, bread, and pizza crusts) and legume dishes (such as hummus) as new foods. Over two-thirds of the respondents reported having no difficulty in getting food items that meet the regulations. However, the most difficult food groups to source were reported by the others to be whole grains (19.4%) and protein foods without extra breading (10.2%). Comments indicated that new vendor

items usually required testing to find those that were acceptable and that whole grain pastas were routinely rejected by students.

Overall Attitudes toward the NSLP Changes

According to the Final Rule updating the NSLP regulations in the *Federal Register* (USDA-FNS. 2012), most public comments concerning the proposed changes were supportive. Similarly, survey respondents were generally in favor of the new regulations, but tended to feel the regulations went too far. The whole grain requirement was a specific example used by multiple respondents to illustrate this viewpoint. Since the NSLP regulations are to reflect the current *Dietary Guidelines for Americans*, which state that half of one's grains should be whole grains (USDA & USDHHS, 2010), respondents questioned why the USDA requires all grains in the NSLP to be whole grains. Whole grain foods, particularly whole grain pastas, were cited as difficult foods for students to accept. As one respondent commented, *"I like many aspects of the new standards, and I agree that schools need to be serving the healthiest meal they can to students, but I also feel that some of the requirements are hard to reach...For example, it's very hard to reach the goal of 100% whole grains. Pasta is the most difficult item to get students to accept in the whole grain form. Many of our pasta dishes will be phased out because of this."*

Another respondent noted, "When introducing any new or different type of foods (i.e. whole grain or skim milk), the acceptance and participation always decreases initially. In the past, we have always seen a rebound once the children get used to the change. The new menu regulations have definitely had a slower rebound effect."

The largest subgroup of respondents (41.2%) reported that they had "mixed feelings about the new standards." Positive views were held by 21.6% (2.0% and 19.6% very positive and positive, respectively), while 20.6% held negative views (4.9% and 15.7% very negative and negative, respectively). The remaining 16.6% chose to only write comments to this question; these primarily reflected mixed feelings such as the comment, "Guidelines are fine, but these are actually mandates. They are too stringent."

The USDA has reported that nationwide implementation of the new NSLP regulations resulted in an increase in school lunch revenue, an increase in NSLP participation, and no increase in food waste (USDA, 2014). Unfortunately, this news release did not include the source of those claims. The findings of this present study do not align with these claims; however, this study gathered data from just one Midwestern state, not the entire nation.

In contrast to the USDA claims and despite the intended cost protections identified in the Healthy, Hunger-Free Kids Act of 2010 (Public Law 111-296), many survey respondents reported an increase in NSLP meal costs that remains a challenge. Given certain meal items required to meet the NSLP regulations, respondents complained they have to throw out a lot of food because the students do not eat specific items such as vegetables and whole grain foods. Certain respondents expressed concern about the overall effect on students' nutrient intakes. The comment that represents this concern was: "Once the students do not eat the NSLP foods, they go away hungry. And when they get home they eat a bag of potato chips instead."

CONCLUSIONS AND APPLICATION

Based on the current study, most foodservice managers/directors in Indiana who responded to the survey feel at least somewhat positive about the new NSLP regulations. Concerns remain about the increased costs to produce menus that comply with the new regulations and are acceptable to the students. Vendors seem to be providing most food items desired by foodservice directors. However, since student acceptance of NSLP meals, especially vegetables and whole grain foods, is still a challenge, additional efforts to improve the palatability of meals is needed.

Limitations of the Research

One limitation of the present study was the 27% response rate, which is acceptable for an online survey but still represents a subset of school foodservice managers/directors in Indiana. Secondly, the survey used in this research was carefully vetted for content validity, with 12 current foodservice managers in the focus group, over a decade of foodservice experience shared by the two initial survey writers, and over fifty years of experience shared between the school foodservice director and the foodservice educator who reviewed the survey twice. However, the survey was not tested for reliability because the re-testing necessary to establish reliability was considered not feasible. Internal reliability testing would have required a much longer survey with repeated questions and was again considered unfeasible. Also, as a self-reported survey, this study did not directly measure school lunch outcomes, but elicited respondents' perceptions of the outcomes after most of the new regulations went into effect. Such perceptions could be inaccurate or biased by personal reaction to the new regulations.

A related limitation concerns the possible effect of the demographics of each individual school on how the NSLP regulations were implemented or on student acceptance of meals. School size, geographic location, and the free and reduced-price lunch participation rate of a given school could well influence the survey responses. However, nearly 73% of survey respondents were foodservice directors who carried responsibility for entire school systems rather than managers of a single school. Therefore the researchers could not connect survey responses to the demographics of any one school.

Considerations and Applications

Plate waste was a problem before the new NSLP regulations went into effect and remains a problem afterwards (Cohen et al., 2013; Byker et al., 2014). Offer versus serve regulations can mandate that students take a minimum amount of food, but only taste and acceptability will result in those foods being eaten instead of discarded. Therefore attention must always be given to increasing the palatability of meals (Cohen et al., 2013) along with increasing student exposure to and therefore familiarity with healthful foods. Familiarity and repeated exposure to foods has been shown to increase preference for those foods, a result observed even for specific fruits and vegetables served in school cafeterias (Lakkakula et al., 2011).

While not the main focus of the Chefs Move to Schools pilot program, Just, Wansink, and Hanks observed a significant increase in vegetable intake when consumed in salads accompanying chef designed pizzas (2014). Since vegetables remain a highly discarded NSLP food group and are usually served straight as a side dish according to the current survey, research comparing

vegetable acceptance when served straight versus served in salads, sandwiches, or in mixed dishes could be beneficial to improving vegetable consumption.

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