



Whole Grains



ISSUE

How have school food service directors implemented the whole grain-rich provisions resulting from the Healthy, Hunger-Free Kids Act of 2010 (HHFKA)?

BACKGROUND

HHFKA required the U.S. Department of Agriculture (USDA) to issue new science-based nutrition standards to improve the nutritional quality of school meals. The standards are based on the recommendations of the Institute of Medicine¹ and are aligned with the 2010 Dietary Guidelines for Americans. The lunch standards specify weekly and daily requirements for low/non-fat fluid milk, fruits, vegetables, meat/meat alternates, and whole grain-rich items. The standards also set specifications for calories, sodium, saturated fat, and *trans* fat. Similar requirements apply to school breakfasts.

Starting in school year 2012-2013, half of the grains offered in school lunch had to meet the whole grain-rich criteria; starting in 2014-2015, all grains in school lunch had to meet the criteria.² For breakfast, starting in 2013-2014, half of the grains offered had to meet the whole grain-rich criteria; starting in 2014-2015, all grains in school breakfast had to meet the whole grain-rich criteria.

USDA provided technical assistance and guidance materials to help schools implement the whole grain-rich provisions. Additionally, USDA's Food and Nutrition Service has provided clarification regarding formulated whole grain-rich products; information on corn masa for use in tortilla chips, taco shells, and tamales; permanent flexibility for the grains weekly maximum levels; and a process for schools to request exemptions from the whole grain-rich requirements for school years 2014-2015 and 2015-2016.

The decisions to offer flexibility in the grains weekly maximum levels and the temporary exemptions were based on difficulty in obtaining suitable products, poor student acceptance of new menu items, and variation in portion sizes when serving multiple age/grade groups on a single serving line each day.

This research brief presents an overview of school food service directors' experiences in transitioning to the whole grain-rich provisions, a summary of the strategies that directors have used to overcome challenges and serve meals in their school districts that meet the requirements, and recommendations for technical assistance. The information comes from semi-structured discussions conducted by telephone (focus group or individual interview) with nine school food service directors in May 2015. Although the participants are not statistically representative of all directors, the qualitative data collection technique was particularly suited to gaining an in depth understanding of how directors implemented HHFKA. See Figure 1 for a summary of the size and level of the school food authorities represented by these directors.³

KEY FINDINGS

School food service directors in this study described a transition process that became easier as they developed a better understanding of the rules, learned from the results of their initial implementation efforts, and were able to obtain reformulated products from manufacturers. However, the directors cited five main challenges in implementing the new regulatory provisions for offering whole grain-rich foods: (1) identifying whole grain-rich products that comply with the provisions, (2) identifying venues for staff training and encouraging staff to test methods to prepare and serve whole grain-rich items, (3) using diverse cooking methods to enhance the flavor of foods, (4) improving student uptake of whole grain-rich items, and (5) overcoming staff and parent resistance to changes.

1. Renamed the National Academy of Medicine effective July 1, 2015.

2. U.S. Department of Agriculture, Food and Nutrition Service, Tools for Schools: Serving Whole Grain-Rich, <http://www.fns.usda.gov/healthier-school/day/tools-schools-serving-whole-grain-rich>. Whole grain-rich foods are defined as containing 100 percent whole grain or a blend of whole grain meal/flour and enriched meal/flour, of which at least 50 percent is whole grain.

3. This brief also includes strategies cited by directors who participated in focus group discussions and telephone interviews for research briefs in this series on other aspects of HHFKA implementation, including fruits and vegetables, sodium, Smart Snacks, plate waste, student participation, food service revenue, and childhood obesity.



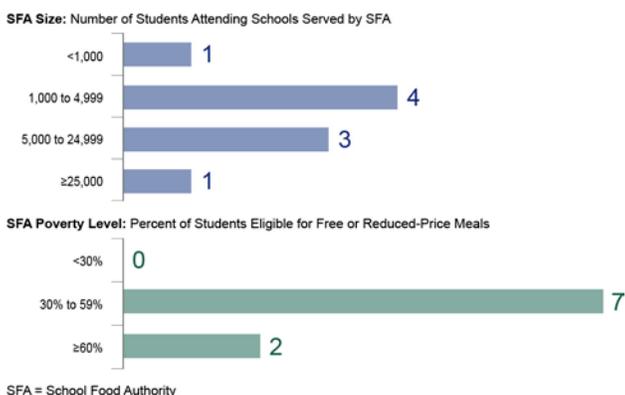
School food service directors described successful strategies that helped them address these challenges, including:

- Network with other school food service directors.
- Send staff to culinary training or invite local chefs to the district, and encourage kitchen staff to test new cooking methods and recipes.
- Do batch cooking, gradually introduce new products, streamline the menu to include items that are student accepted, offer whole grain-rich side dishes, and use spices and condiments.
- Obtain student input on new menu items while acknowledging product challenges and discussing attempts to find new products, reward students for trying new foods, serve items on multiple days to encourage uptake, and use Smarter Lunchroom concepts.
- Involve school staff and parents in promoting change.

Technical assistance in implementing the whole grain-rich provisions should include strategies for obtaining compliant whole grain-rich products, information about training opportunities, sample menus, step-by-step recipes with detailed instructions, strategies for marketing whole grain-rich items to students, and strategies for obtaining support from school personnel and parents.

“It’s much easier to follow the rules ... they laid it out in front of us and we all embraced it. ... We all figured it out. We were all resourceful.”

Figure 1. Characteristics of School Food Authorities (SFAs) Represented by Participating School Food Service Directors



OVERVIEW OF THE TRANSITION PROCESS

Whole Grain Product Use Prior to HHFKA

Most school food service directors who participated in this study said that prior to HHFKA, school districts were serving some whole grain-rich products, but there was not much of a push to do so. In general, directors agreed that the use of whole grain products “was never the norm,” and

whole grain-rich foods had been limited to breads and rolls. Directors also agreed that students generally did not eat whole grain products at home, and school districts preferred to offer foods that were familiar to students.

Two school food service directors noted that they made cheese sandwiches with one slice of white and one slice of wheat bread, and one director said their local baker had a sprouted whole wheat bread that students liked. One director said that even prior to HHFKA, their State required schools to offer one whole grain product for breakfast and one for lunch, even though doing so was not a USDA requirement. In two other districts, directors had started introducing whole grain-rich breads to students long before HHFKA. Another director recalled a longstanding desire to feed students healthy products that listed relatively few ingredients on the label. Directors agreed that because there was no requirement, suitable products were not always readily available.

Transitioning to Whole Grain-Rich Provisions

School food service directors in this study said State education administrators kept them updated about the anticipated changes related to HHFKA implementation. Directors reported that they started looking into whole grain-rich products before school year 2012-2013. Two directors said they asked for and received samples from vendors. Some directors said they were able to have an acceptable menu within 3 months, while others recalled that it took about 18 months to get it right.

“I figured you might as well do it right the first time than to have to go back and do it again, so we did it. We dug in and did it.”

School food service directors talked about the challenge of developing the fall 2012 menu in time for the school year, but noted that this was not entirely due to the need to implement the whole grain-rich provisions. One school food service director recalled that he had already procured USDA foods in the spring of 2012 and had to figure out how to adjust the menu in ways that would not waste the products in the warehouse. Some directors said they were able to meet the requirements with foods that were already available.

School food service directors said the purchasing process did not change much, but what they wanted to buy had changed. One director noted that the crucial change in food purchasing was the need to find products meeting the new requirements, and to obtain them cost effectively. Most directors said joining a food-buying co-op with other school districts provided more choices, better prices, greater bargaining power with some existing vendors, and a forum to exchange recipes and identify ready-to-serve products that were working well in other districts.



School food service directors recalled that early formulations of whole grain-rich foods available from vendors typically were very brown and not very appealing to children. Some directors whose kitchen staff engaged in scratch cooking said that during this initial planning phase, they could not easily find acceptable bread products. One director said kitchen staff began experimenting with using different amounts of whole grains in bread recipes.

“She [the cook in one school] would make the recipe with a little whole grain, and eventually we got it to [the required level], but it was changing some of the water and oil in the recipe to get the consistency right, and then having it rise.”

Some school food service directors assessed product acceptability in one school before rolling it out in another; others offered products that worked until a better product was available in the market. Other directors teamed up with their colleagues in other districts to conduct product taste testing. This allowed them to identify suitable products quickly and more efficiently.

“This way [by testing foods in a single school], if it was a mess, it was only in one school. If it was successful, it was easy to roll it out to other schools.”

“I did not worry about the 50% number. I did whatever I could prior to getting to [the required level]. When I came across a product, if it was there, I made the change. When it came time to [meet the provision], I was almost there.”

School food service directors attended State-organized training sessions, some of which consisted of hands-on training conducted by local chef that focused on scratch cooking.⁴ One director said directors in her State started a Facebook page to exchange recipes, product specifications, and ideas.

“We had a training ... for districts wanting to go to scratch cooking. And they had chefs and every-

thing there teaching us. And that kind of started it because there was a lot of school districts that we don't see in our normal area meetings or regional meetings. So from there, we kinda exchanged emails and then someone said, well you know, we should just do a Facebook page. ... We have kept it up ... and if there's new directors ... letting them know that we have that option and that we can all discuss things that way and get more ideas.”

Another school food service director reported finding helpful resources from their State and USDA Web sites. Directors with a restaurant or culinary background trained their staff and supported staff efforts to make food that would appeal to students. For staff who were used to the routine of simply opening a box and putting food items in a pan or in the oven, teaching culinary skills involved sharing advice on how to cook, hold, and present foods. Some staff were open to the change, while others were more resistant.

“My background is culinary, and that was something I was able to bring to some of the staff. ... In one district, I actually hired a district chef to go around from school to school. It really helped a lot to have that culinary support in the schools for the staff.”

Almost all school food service directors said the new whole grain-rich provisions did not require changes in the equipment needed for storing, preparing, or serving food. One director described buying equipment to make pizza pies, and then serving whole single-serve pizza instead of sliced pizza.

Introducing New Standards to Staff, Parents, and Students

School food service directors in this study agreed that the support of school staff was important for getting students to accept changes in school meals. One director emphasized that it was important to get the superintendent's buy-in, because once he had that, everyone else would follow.

“[Working] my way down through ... principals and teachers ... [I] let them know I need their support in this and that it's gonna be a big change, and in order to sustain our luncheon program, I need their support and backing to help get the kids ... used to this and on board with it. So I guess it

4. Chefs Move To Schools (<http://www.chefsmovetoschools.org>) is a resource that was originally launched by USDA with training offered by the National Food Service Management Institute (now the Institute of Child Nutrition).



was kind of a lot of me going out and promoting it to them. ”

Most school food service directors agreed that although teachers are not their “primary customers,” having them in the cafeteria helped with student participation. One director said that initially teachers stopped eating school meals that included the new whole grain-rich foods, but now the teachers are eating the meal and even praising the food.

School food service directors said their school districts took preliminary steps prior to school year 2012-2013 to explain the required changes to parents. Directors said they communicated the changes to parents through formal and informal channels, including notices in newsletters, discussions during parent-teacher organization meetings, and interactions with parents at other venues.

School nutrition staff began talking with students in lunch lines in the spring of 2012 about planned changes in the fall menu. In one school district, the school food service director recalled that elementary teachers helped introduce students to the new menus and read them stories about healthy eating and trying new foods. Another director who manages wellness education made sure the wellness curriculum discussed the importance of whole grains in a healthy diet.

School food service directors also sought to entice students to try new foods in the lunch line. In one school food authority, students who tried a new food got a voucher for a free snack after school. Another director recalled getting the principal involved in presenting certificates of recognition to students who tried new foods. Almost all directors agreed that older children were the most resistant to change. Younger students had been in school for a shorter time and therefore were more accepting of the new foods.

“The moment will come when our second and third graders become juniors and seniors in high school. ... They’re the ones that have eaten the whole grain the whole time. ”

Planning for School Year 2014-2015

School food service directors in this study agreed that the transition to the second set of requirements—offering only whole grain-rich items in school year 2014-2015—was a lot easier than the initial transition. One director observed that although they looked for quick fixes the first time around, as they started school year 2014-2015 they viewed the process with a long-term perspective.

School food service directors said they began this new phase equipped with an understanding of the rules, and experience in implementing the previous changes. As a

result, all of those involved in the transition were prepared to do what was required to achieve the updated goals.

All school food service directors attributed their success in part to the ability of manufacturers to formulate new products, provide samples for taste testing, and keep directors informed about the availability of the new products. The directors agreed that manufacturers “stepped up to the plate,” such as by offering whole grain products that looked “white.” Some directors noted that students readily accepted bleached whole grain products that were whiter in appearance.

“Our manufacturers perfected their grains. ... They were scrambling when the rules first came out. They were scrambling to meet our needs. Quite frankly some of the pizzas that we were purchasing were horrific. Finally they have it down. It’s like a typical Italian-style pizza with sauce, crust, and whatnot. ”

STRATEGIES FOR SUCCESS IN IMPLEMENTING WHOLE GRAIN-RICH PROVISIONS

School food service directors who participated in this study cited five main challenges to achieving compliance with the whole grain-rich provisions:

1. Identifying whole grain-rich products that comply with the provisions,
2. Identifying venues for staff training and encouraging staff to test methods to prepare and serve whole grain-rich items,
3. Using diverse cooking methods to enhance the flavor of foods,
4. Improving student uptake of whole grain-rich items, and
5. Overcoming staff and parent resistance to changes.

Directors described successful strategies that helped them address these challenges, as summarized below.

Challenge 1: Identifying whole grain-rich products that comply with the provisions.

✓ **Network with other school food service directors.** Directors said that being part of a network of school food service directors was helpful in learning what products were available and what other directors were buying for their schools. Avenues for developing collaborative relationships with other directors included regional meetings of directors and food-buying co-op meetings. Social networking tools also offered a useful platform for ex-



changing recipes, updates on product acceptability, and menu ideas.

✓ **Join a food-buying co-op.** Participating in food-buying co-ops helped school food service directors expand their whole grain product selection. Several directors pointed to the advantages of purchasing food products through a co-op, rather than doing so independently. They said the fee for co-op membership is a good investment, because members can buy products at significantly lower prices than nonmembers. One director said the food co-op serving the local area had grown from supplying 30 to 40 schools initially to serving more than 140 schools. By participating in a co-op, directors could apply greater leverage in working with brokers and vendors to obtain required new products at competitive prices.

Some school food service directors said they did most of their purchasing through the food co-op. Other directors who were satisfied with their current vendors but could not obtain all products from those vendors limited their co-op purchases to a few items and ordered most products directly from their suppliers; these directors also noted that being a part of the co-op better equipped them to discuss products with suppliers. Working together, directors found that they had more clout when communicating with vendors about the need for new products.

Challenge 2: Identifying venues for staff training and encouraging staff to test methods to prepare and serve whole grain-rich items.

✓ **Send school nutrition staff to culinary training or invite a local chef to provide hands-on instruction.** In schools where kitchen staff engaged in scratch cooking, school food service directors and kitchen staff attended culinary training to learn reformulated recipes. Some directors sent staff to a culinary training camp for hands-on training. In some instances, directors had a culinary background and worked with school staff to reformulate recipes; these directors said staff members were creative, and so they encouraged them to experiment with new recipes. Once a recipe was reformulated to achieve student satisfaction in a school, the director would train staff in other schools how to prepare the recipe.

“I actually hired a district chef to go around from school to school. It really helped a lot to have that culinary support in the schools for the staff.”

“A chef can help kitchen staff understand how to modify recipes, use spices, and do batch cooking to improve the flavor and appearance of whole grain menu items. Kitchen staff can review the chef’s re-

vised USDA recipes, taste test the results, and implement the new recipes.”

A few school food service directors worked with a local chef to develop whole-grain recipes from scratch. The local chefs demonstrated how to recreate USDA recipes in a step-by-step manner as school nutrition staff followed along. Directors can advertise school food service opportunities to culinary students who need experience and like the flexibility of school hours and summers off.

✓ **Encourage kitchen staff to test new recipes and cooking methods.** School food service directors attributed their success in part to the willingness of school cooks to keep trying new approaches and learn from trial and error. A few directors said they encouraged staff to experiment with recipes. The staff tried altering ingredients, cooking times, and holding temperatures until they could serve a consistent product that students accepted.

“I have three schools, and two of my three schools have wonderful cooks who love their jobs, love food, and love school lunch. They spent a lot of time with the recipes trying to find different things. ... They did a nice job.”

Almost all school food service directors said they temporarily took macaroni and cheese off the menu, and one director described putting macaroni and cheese back on the menu after staff developed a successful recipe that held its shape and visual appeal. Her kitchen staff learned that cooking pasta partially and then keeping it in the serving line with some water resulted in pasta that looked appetizing and was not soggy or dried out.

Challenge 3: Using diverse cooking methods to enhance the flavor of foods.

✓ **Use batch cooking.** When assembling heat-and-serve items to prepare a dish, use batch cooking to maintain product appeal from the first to the last serving. A few school food service directors said that when a school’s kitchen was mainly set up to serve heat-and-serve pre-made products, it was challenging to maintain the visual appeal of pizza and breaded items.

Regarding the assembly of pizza and breaded products, two school food service directors said a key technique was to use batch cooking and stagger cooking times throughout the day, instead of putting a lot of items in the oven at once and then keeping the items in a warm box for an hour or more. “That had the biggest impact. It inherently made the product look better,” one director said.



“It really came down to refining what the school lunch line looked like. ... It’s like putting out a banquet for 300 people every day. You want it to look good from the first person to the last person.”

✓ **Go slow and keep it simple.** Offering a simple menu with just a few whole grain-rich products allowed school food service directors to achieve compliance while looking for more products. One director said he kept his menu simple by featuring more breads and wraps. He did not offer pasta or rice to students until he identified products that students would accept. He said the kitchen staff was experienced enough to know what students would eat, and so he did not have to do taste tests to see what students would like. If a whole grain-rich entrée or side dish was not well accepted, school food service directors took it off the menu at least temporarily, and replaced it with an item that was more favorably received. For example, students often did not accept the new whole grain-rich macaroni and cheese entrée, so kitchen staff had to refine their approach to preparing the entrée.

“It [mac and cheese] would get a little mushier and tend to dry out a little more because of the consistency of the pasta. That was one we had to keep retooling and finding the right cooking times and recipes to get a consistency, a product that was acceptable to the kids.”

“So we don’t cook our noodles all the way before we get them in the new table. So that then they don’t dry out as much and we leave water in there with them. And that seems to work.”

School food service directors also said they removed pizza from their menus until they found a pizza base that looked “less dark brown” and tasted good, more like traditional pizza.

✓ **Offer whole grain-rich side dishes in addition to entrées.** A few school food service directors said they met the serving size requirements by offering a whole grain-rich entrée and a smaller whole grain-rich side dish. Some products were not available in required serving sizes. For example, it was difficult to find a suitable hamburger bun that supplied two servings of grains and did not exceed the calorie limit for the meal. One director solved this problem by adding whole grain-rich side dishes such as

graham crackers or some other whole grain-rich snack-like item. He noted that this strategy enabled him to meet the whole grain-rich provisions while offering products that students accepted, and thereby to maintain high meal participation rates.

✓ **Vary condiments and spices by grade level.** School food service directors noted that students’ preferences change with age; younger children generally prefer simple foods but older children tend to like spicy foods. Several directors said they “doctored up” foods served to older children by adding spices. All directors agreed that pre-packaged low-sodium ketchup and ranch dressing worked well for younger grade students, but other herbs and spices (such as red pepper flakes, or a garlic and cilantro mixture) appealed more to older grade students.

Challenge 4: Improving student uptake of whole grain-rich items.

✓ **Obtain feedback on new menu items.** All school food service directors emphasized the importance of serving foods that students will eat. Although directors credited manufacturers with formulating new whole grain-rich products, they noted that taste tests were important for promoting student participation. All directors said that a key factor in getting student buy-in and acceptance was an effort to involve students in the decision making process by openly discussing menu changes and getting their feedback about new products.

One school food service director said his staff encouraged children to try new products in the lunch line. Depending on the type and amount of sample product available, directors conducted taste tests in a variety of ways such as in home economics classes, among students at a grade level, within one school, or across an entire school district. Students gave verbal feedback or filled out brief written surveys.

One school food service director who was a part of a food co-op said they split new products across districts for conducting taste testing, an approach that enabled them to find student-tested products in a timely manner. Another director organized a student team known as the “lunch bunch”; these students have been involved in trying new recipes and advocating to other students.

✓ **Acknowledge product challenges and discuss attempts to find acceptable products.** All school food service directors talked with students formally and informally and were available to discuss concerns with students. Noting that children are frank about what they like and don’t like, the directors underscored the importance of listening to them.



“When students complain, listen to them. ... and acknowledge their complaints.”

Most school food service directors explained to students that they were serving nutritious meals and emphasized that they were making an effort to find products that the students would like.

✓ **Reward students for trying new foods.** Rewarding students for trying new foods resulted in better meal acceptance. In one school food authority, students received a sticker if they tried two bites of a new item. Another school food authority gave students a voucher for a free afternoon snack if they tasted a new product. In one school food authority, a wellness coach talked with children about the new foods. Staff also gave certificates of recognition to students who tried new foods.

✓ **Serve items on multiple days.** All school food service directors said it takes time for students to accept new products. On any given day, directors offered students at least two or three entrées, and offered even more choices for students at higher grade levels. Directors agreed that it was important to introduce foods slowly.

“There are times when it comes down to numbers. ... If you are making food that is creating a ton of plate waste and then you get the calls from the parents ... it does cause a lot of frustration, but after three times we have a good sense of what worked and what didn’t.”

School food service directors said they offered a new product at least three times before deciding whether to keep it on the menu. This was true for heat-and-serve products as well as for items made from scratch. Directors noted that when students have several menu choices, the school is likely to end up with leftovers. Information about leftovers can be used to plan future menus—and leftovers often can be circulated back into the next day’s menu. Indicators of student acceptance include what students pick up for breakfast and lunch, plate waste, verbal comments from students, and telephone calls from parents.

✓ **Use Smarter Lunchroom strategies.** School food service directors emphasized that presentation and terminology play a large role in student acceptance. One director who relied primarily on heat-and-serve products said they try to “give their cafeteria more of that retail food court type appearance” and the “grab-and-go items have definitely helped the overall appearance.”

Another school food service director discontinued the use of the five-compartment tray. Instead, students took a tray at the start of the food line and placed each pre-plated item from the lunch line on the tray. Her staff started pre-plating warm entrées and keeping them in the warmer, then encouraged them to try the products. This director also introduced Chinese food in a pagoda pail and rice bowls with a clear cover; covering the rice with colorful meat or vegetables improved the visual appeal of the food.

Several school food service directors said that giving entrées attractive names can increase the appeal. For example, students are more willing to try “cowboy chili” than just “chili.”

Challenge 5: Overcoming staff and parent resistance to changes.

✓ **Involve school administrators and teachers in promoting change.** School food service directors said that although school staff were not their “primary customers,” it was important to obtain their buy-in. Directors noted that students ate better and complained less when school staff ate in the cafeteria.

In two districts, school food service directors had local chefs on the team and served meals at school events, including staff and parent-teacher organization meetings. Directors said that serving school staff the same meals that children ate helped to get their buy-in. In a few districts, teachers and staff complained about the new whole grain-rich entrée and the absence of cookies. Involving them in a dialogue about the changes helped in obtaining their support.

✓ **Invite parents to the cafeteria and keep them informed.** By obtaining support from parents, schools can accelerate student acceptance of new menus. Almost all school food service directors noted that initial media coverage had focused on parents’ concerns about the changes. Directors also noted that parents of children receiving free and reduced-price meals had other priorities and generally had little to say about the changes.

School food service directors communicated with parents through quarterly newsletters, monthly updates, and parent-teacher organization meetings. A few directors who were local to the area and knew most of the parents said it was important to have conversations with parents at all venues. One director from a smaller school district said he grew up there, had children in the district, and coached their baseball team. Those connections made it easier to have conversations with friends of his children and with other parents about the need for the changes and their perceptions.

Some school food service directors said parents whose children participated in sports complained that their children were coming home hungry because they were not getting enough food at school. The directors informed the



parents of the options available and invited them to eat at school. The experience of eating in the cafeteria helped the parents develop a more positive view of the new menus and foods.

TECHNICAL ASSISTANCE RECOMMENDATIONS

School food service directors in this study have used a variety of strategies to achieve success in implementing USDA's whole grain-rich provisions in school meals. Their experiences and approaches provide relevant insights that can be applied in developing training and technical assistance materials. Such materials should focus on the following areas:

1. **Product purchasing:** Offer strategies for identifying and obtaining whole grain-rich products that meet the guidelines.
2. **Providing staff training and support:** Provide information about training opportunities, step-by-step recipes with detailed instructions, and sample 3-week and 5-week menus.
3. **Marketing to students:** Offer strategies for introducing, presenting, and marketing whole grain-rich items to students.
4. **Marketing to school personnel and parents:** Offer strategies for addressing concerns of parents, school administrators, staff, and teachers, including responses to frequently asked question, and for encouraging school administrators, staff, and teachers to be positive role models by supporting the new meal patterns and eating meals with students.

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