

# Balancing Nutrition, Participation, and Cost in the National School Lunch Program

**Constance Newman**  
cnewman@ers.usda.gov

**Katherine Ralston**  
kralston@ers.usda.gov

**Annette Clauson**  
aclauson@ers.usda.gov

- Schools face the dual constraints of meeting nutrition requirements and covering costs.
- The free-meal subsidy covers most of the per meal cost, but the price paid by most paying students covers only half of the per meal cost.
- School foodservice managers say that to appeal to students and raise revenues, they need to offer less nutritious a la carte foods and vending snacks.





© Owen Franken, Corbis

The National School Lunch Program (NSLP) provides federally subsidized meals to more than 30 million children each school day. Recently, reported high rates of obesity and overweight among children have focused attention on the nutritional quality of school lunches. But this attention has raised another fundamental question: Can schools meet the program's nutrition goals while covering costs, especially in times of rising food prices?

School districts are responsible for providing school meals. They receive a per meal subsidy and free agricultural commodities from USDA to help operate school lunch programs. Schools also get revenues from NSLP meal sales to students who are not eligible for free meals. The costs of running the program can exceed these two revenue sources, and schools often turn to other funding or food sales to make up the difference. For many schools, calls to raise nutrition standards could mean higher costs. Some schools say that to satisfy students and keep up revenues, they may need to offer foods of lower nutritional quality.

While nationally representative data are not available, several case studies have found that schools can keep their budgets in the black while still serving nutritious lunches. Some have succeeded by reducing costs, and others have raised revenues through increased student participation. And schools have found creative ways to make healthy food appealing to students. Federal nutrition guidelines, meal reimbursement, and commodity donations can help schools meet their objectives, although variation in food prices and nutrition goals present added challenges.

## USDA Provides Per Meal Subsidies and Commodities

USDA support is intended to cover much of the cost of providing NSLP lunches, and most of it is in the form of cash reimbursement for meals served. In 2007-08, USDA reimbursed schools \$2.47 for each free lunch served, \$2.07 for each reduced-price lunch, and \$0.23 for each paid lunch (see box, "The National School Lunch Program Feeds More Children in a Day Than McDonald's"). Basic Federal reimbursement rates are the same for all school districts across the country except in Hawaii and Alaska, which have higher rates to compensate for higher food prices in those States. Rates are also 2 cents more in districts where at least 60 percent of school meals are served free or at a reduced price. Reimbursement rates are adjusted by the Consumer Price Index for Food Away from Home for Urban Consumers once a year for inflation.

USDA also donates commodities to States to use in school lunches. In FY 2007, the commodities given to schools were worth 17 cents per meal for a total of \$1.04 billion. Donation amounts vary per year, depending on availability and prices. States select from a wide variety of foods (including fruit and vegetables), based on what school food authorities need for



Ken Hammond, USDA

their planned menus. The 2002 farm bill directed that USDA spend \$200 million of entitlement funds for fruit and vegetables from 2002 through 2007, and the 2008 farm bill increased that amount to \$406 million by 2012. In addition to the basic "entitlement" commodities, "bonus" commodities are sometimes available through USDA's price support and surplus removal programs.

The Fresh Fruit and Vegetable Snack Program is another program designed to increase fruit and vegetable availability to schools. Federal dollars are used directly by schools to purchase fresh fruit and vegetables for snacks. The 2008 farm bill called for a gradual expansion of this program to all States by 2012 and a total expenditure of \$1 billion.

## Schools Face Nutrition and Cost Constraints

School food authorities (SFAs) face the dual constraints of meeting Federal nutrition requirements and covering operating costs. In many cases, SFAs must meet State and local nutrition requirements that are more stringent than Federal standards.

Federal law requires that NSLP lunches provide one-third of the Recommended Dietary Allowances for protein, vitamin A, vitamin C, iron, calcium, and calories. Schools can use a food-based meal pattern, in which certain types of foods must be served, or use a nutrient-based meal pattern that requires an entree and side dish that meet the nutrient regulations. Schools must offer a variety of milk with every meal, and this can be some combination of whole, 2-percent, 1-percent, skim, or flavored milk. Since 1996, Federal standards require that no more than 30 percent of meal calories can come from total fat and 10 percent from saturated fat when averaged over the school week.

States and local school districts, however, have been instituting their own stricter standards for years. In 2004, Congress called on SFAs to develop a "Local Wellness Policy," which would set goals for nutrition standards and physical activity. An estimated 33 States have instituted additional standards for school foods. Some States call for the complete

### The National School Lunch Program Feeds More Children in a Day Than McDonald's

The NSLP operated in over 101,000 public and nonprofit private schools in 2007.

Schools participating in the NSLP served over 5 billion lunches to more than 30 million children in 2007.

Of the 30 million students served in 2007, 15 million students qualified for free lunches, 3 million students paid a reduced price, and 12 million students paid full price. Children from families with incomes below 130 percent of the poverty level are eligible for free meals. Those with incomes between 130 and 185 percent of the poverty level are eligible for reduced-priced meals.

Federal Government contributions to the NSLP were \$8.7 billion in 2007, with \$7.7 billion in cash payments and \$1.04 billion in commodity donations.

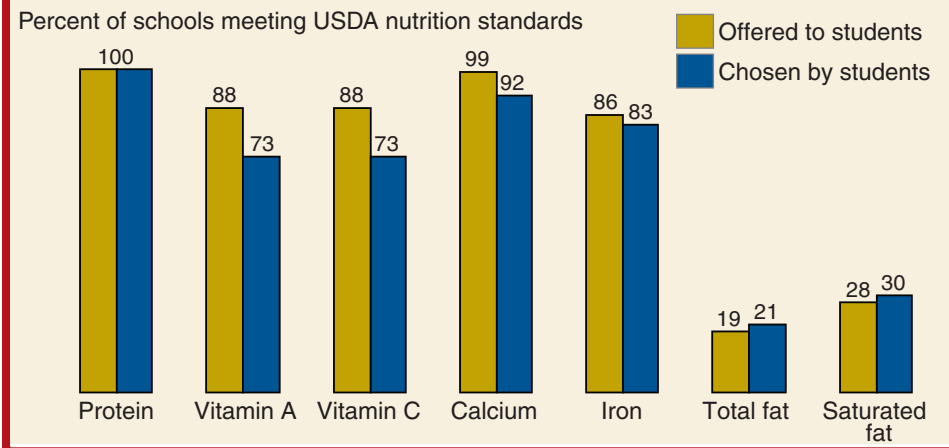
removal of non-NSLP foods from cafeterias or campuses, while others restrict the times when non-NSLP foods are available.

Cost pressures present a challenge to improving the school food environment. The costs of producing school meals are rising, driven partly by higher health care costs for employees and recently by increasing food costs. Although Federal reimbursement rates are adjusted for inflation, some observers question whether the rates accurately track cost increases.

**Report Card: Do NSLP Lunches Make the Grade?**

Studies show that students who get the NSLP meal have higher intakes of key nutrients (such as vitamins A, C, B<sub>6</sub>, folate, thiamin, iron, and phosphorus) than children who bring their lunches from home or buy a la carte items. Studies found that NSLP participants consume more milk and vegetables and fewer sweets, sweetened beverages, and snack foods than nonparticipants do at lunch, and the same trend

**Most schools meet USDA nutrition standards for NSLP lunches except for total fat and saturated fat**



Source: USDA, Food and Nutrition Service. *School Nutrition Dietary Assessment-III, Menu Survey*, Nutrition Assistance Program Report Series, November 2007.

holds for milk, vegetables, and candy over a 24-hour period.

In one study, NSLP participants were found to consume more calcium, fiber, fruits, and 100-percent juices, both at lunch and over 24 hours. The difference in intake between participants and nonparticipants was largest for calcium and was probably due to higher milk consumption

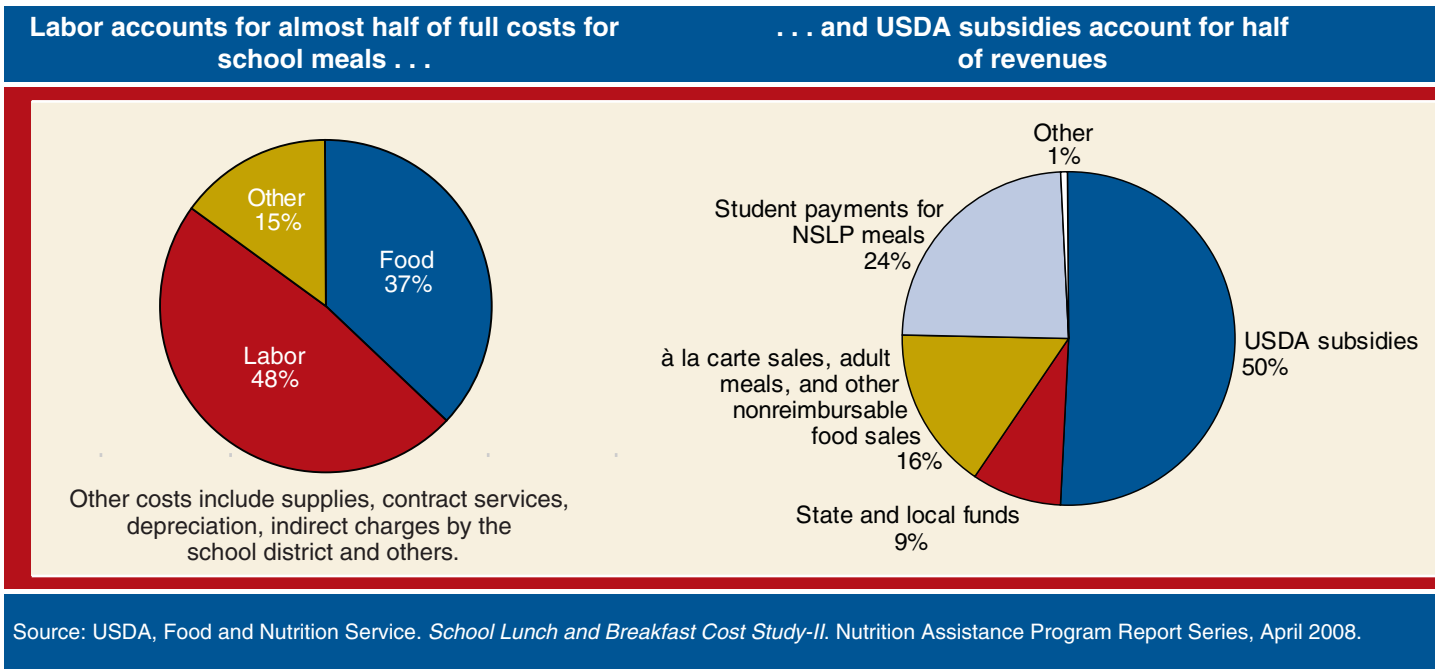
for participants—about half a serving on average. The fact that differences were maintained over 24 hours indicates improvement in the overall daily diet, as opposed to improvement only at the lunch meal and counteracted at other meals.

Studies of nutrient intake also show similar calorie intake for participants and nonparticipants but higher fat and sodium intake for participants. Whether the higher fat intake extends to weight gain is not clear: One study shows no effect of school meal participation on children's obesity, and another study shows that NSLP participants have a 2-percentage-point higher probability of obesity.

Despite Federal regulations, many NSLP lunches do not actually meet fat and nutrient requirements. The most recently available data, the 2005 School Nutrition Dietary Assessment (SNDA), showed improvement in saturated fat content from the 1998-99 SNDA, but it found that only one in four elementary schools served lunches that met the standard for fat and one in three met the standard for saturated fat. For high schools, the numbers were even lower: 1 in 10 for fat and 1 in 5 for saturated fat.



Ken Hammond, USDA



### The Free-Meal Subsidy Covers Most, but Not All, Costs

In 2005-06, USDA's Food and Nutrition Service (FNS) sponsored a national study—the School Lunch and Breakfast Cost Study II—to evaluate the adequacy of reimbursements. The study measured cost in two ways: the *reported cost* and the *full cost* of producing a reimbursable or nonreimbursable meal.

Reported costs are those incurred by SFAs in providing meals; these costs are charged to their foodservice accounts. Full costs are the reported costs plus unreported costs that the school districts, not the SFAs, incur on behalf of the program. Unreported costs can include meal-time supervisory labor, administrative labor, such as that needed for payroll and accounting, as well as indirect costs, such as those associated with equipment and utility costs that are not charged to the SFA. In school year 2005-06, full costs were composed of food (37 percent), labor (about 48 percent), and other costs (about 15 percent), which included supplies, contract services, and indirect costs.

The FNS cost study found that in school year 2005-06, the average reported cost for producing a reimbursable lunch was \$2.36 across SFAs. Summing the cash reimbursement for free lunches from that year (\$2.32 and \$2.34 for qualifying low income districts) and the entitlement commodity rate for that year (\$0.175), the midpoint reimbursement rate was \$2.51, which was higher than the average reported cost. Most schools had costs below the reimbursement rate: 78 percent of schools had reported per lunch costs that were below the USDA free-lunch subsidy rate.

On the other hand, in school year 2005-06, the average full cost for producing a reimbursable lunch was \$2.91 across SFAs, which is 40 cents higher than the midpoint free subsidy of \$2.51. Only 32 percent of schools had full lunch costs that were below the USDA free-lunch subsidy. The finding that full costs are generally not covered by the free-meal rate points to the larger problem of hidden or, perhaps, unanticipated costs that can affect the long-term financial health of the program.

Schools with a larger share of students receiving free or reduced-price meals were likely to cover both types of costs. In schools where more than 60 percent of lunches served were free or reduced-price, revenues averaged 125 percent of reported costs and 107 percent of full costs. By contrast, in schools with less than 60 percent of free and reduced-price lunches served, revenues averaged 111 percent of reported costs and 88 percent of full costs. The greater amount of Federal subsidies received for those meals makes an important difference to schools in covering their costs.

### Schools Turn to Competitive Foods for Revenues

Revenues for school meal programs come from various sources: USDA subsidies, student payments for NSLP meals, sales of other foods, and State and local funds. According to the FNS cost study, 45 percent of revenues for the average SFA came from per meal reimbursements in 2005-06; 5 percent from commodity donations; 24 percent from student payments for NSLP meals; 16 percent from other

food sales; and 10 percent from local and State government funds and other cash revenues. The sales of other foods have become a flash point for SFAs: The foods are less nutritious in general and yet their sales are considered necessary by many SFAs for financial survival.

These other foods, known as "competitive" or "nonreimbursable" foods, can include a wide variety of foods available at or near schools, including a la carte items sold in the cafeteria and snacks sold in vending machines. Vending machines were in 98 percent of senior high schools, 97 percent of middle/junior high schools, and 27 percent of elementary schools in 2004-05. A la carte items were available for sale in 75 percent of elementary schools and over 90 percent of middle and high schools.

Competitive foods are generally lower in key nutrients and higher in fat than the NSLP reimbursable meal. USDA requires only that "foods of minimal nutritional value" not be sold in foodservice areas during mealtimes. However, this requirement covers a limited number of foods, a small area of the school, and a short part of the day. The availability of competitive foods in a school has been found to reduce participation in NSLP, decrease nutrient intake from lunches, and increase the amount of food left uneaten and thrown away by students. The availability of unhealthy foods also sends a mixed message to students about the importance of nutrition.

Surprisingly, FNS's cost study finds that the revenues from nonreimbursable food sales do not cover their costs on average. Revenues from nonreimbursable

foods covered less of their costs (both full and reported costs) than was the case for NSLP lunches. Revenues from NSLP lunches covered 93 percent of their full costs, compared with 61 percent for nonreimbursable meals. For reported costs, revenue from NSLP lunches covered 115 percent of costs versus 71 percent for nonreimbursable meals. Perhaps nonreimbursable sales serve other purposes for schools—such as attracting more students to the cafeteria. Or the costs incurred in selling nonreimbursable foods may be difficult to accurately separate from costs for reimbursable foods. The study assigns labor costs proportionately to the costs of nonreimbursable and reimbursable foods, and this may explain why the costs for nonreimbursable foods seem higher than expected.

### Building a Healthy School Lunch Program

The available evidence, while limited, suggests that nutrition and financial health do not have to conflict. A study of SFAs in Minnesota found that meal costs were not higher for cafeterias that met regulations for nutritional quality than for those that did not. Some, but not all, SFAs in a pilot study in California were able to improve nutritional quality while continuing to break even.

According to the case studies, schools have found ways to lower costs and increase revenues. Some SFAs have switched to part-time labor with lower health care benefits, some buy more food in bulk, and some use more ready-to-eat foods. In some cases, SFAs have outsourced meal provision to private foodservice management companies. Schools have joined purchasing cooperatives to reduce food costs, and a small but increasing number of schools are purchasing directly from local farmers. As of May 2008, 1,929 school districts have an operational "farm-to-school" program,

Kathryn L. Lipton, USDA/ERS



## New Ideas From School Kitchens

Schools have successfully implemented a wide range of changes in their lunch rooms, from dramatic changes to small tweaks. Many have substantially modified their lunch programs by remodeling their kitchens and serving areas and, in some cases, by hiring new foodservice directors. Kitchen renovations can provide needed space for fresh food preparation, storage, and new serving areas, such as salad bars, which are typically popular with students. The Berkeley Unified School District in Berkeley, CA, as part of a public/private partnership called the School Lunch Initiative, has upgraded school kitchens to better handle fresh food and reheat meals made from scratch in a central kitchen. They now have a salad bar in each school; they serve fresh fruits and vegetables daily, and they give priority to locally produced, organic food.

New management can also make a difference. In 2003, Hopkins School District in Minneapolis, MN, hired a new foodservice director with professional foodservice management experience. The initial changes made by the new director were small: Healthy foods were made available as an option and the soda vending machine contract was canceled. After the community approved a bond initiative, more major changes were made: Meals were prepared completely onsite and fresh, low-fat, and whole-grain foods became the only options. Food costs rose, and they charged more for the meal to paying students, but the director was able to keep labor and other non-food costs down to where they had been before the change. Also, students were not allowed to go off campus to buy other food.

Smaller innovations at other schools have included bringing students into the food selection process through tastings and demonstration events. Schools have used marketing-style promotions, games, and parties to highlight different new foods. Wolftrap Elementary in Vienna, VA, sponsors monthly “tasting parties,” where students are asked to rate different versions of a healthy entree or snack. Student participation provides the unique perspective that an adult may completely miss, such as whether the food is too messy to eat or whether it can get caught in one’s braces. And schools get student buy-in as they move to more nutritious meal options.

Other successful strategies have included changes to the cafeteria environment—longer lunch periods, shorter lunch lines, and pleasant seating areas. Studies have found that, when students have more time to eat and especially when lunch follows recess, they are more likely to eat all of their lunch and thus more likely to eat a balanced meal. Also, when the cafeteria is designed to reduce time in lunch lines, students spend more time eating. Schools have also found that students eat well when there are nice seating areas that are conducive to socializing.

### For more information, see . . .

*Making It Happen! School Nutrition Success Stories*, FNS-374, USDA, Food and Nutrition Service, U.S. Health and Human Services, Centers for Disease Control and Prevention, and U.S. Department of Education, January 2005, available at: [www.fns.usda.gov/TN/Resources/makingithappen.html](http://www.fns.usda.gov/TN/Resources/makingithappen.html)

according to the National Farm to School network.

Schools have also found creative ways to increase revenues through higher student participation. Most of these strategies have revolved around food preparation changes, lunch scheduling changes, and nutrition education. Smaller efforts have brought students into the process of

tasting, selecting, and learning about nutrition through games and parties. Some schools have completely revamped their lunch programs, while others have implemented more gradual changes (see box, “New Ideas From School Kitchens”).

Studies have identified several supporting factors as necessary complements to lunch program changes. First, eliminat-

ing or greatly reducing competitive foods has been essential. Students eat more healthful foods and purchase more NSLP meals when their options are reduced. Second, school lunch programs can benefit from buy-in from all stakeholders: superintendents, principals, school foodservice personnel, parents, and students. Efforts to improve nutritional quality have

proven successful when everyone is onboard, and particularly when leadership is energetic.

The economics of providing school meals needs to be further investigated, especially in light of recent food and fuel price increases. The 2005-06 FNS cost study is the only study that provides national estimates of the revenues and costs of school lunch operations, and it provides important insights. Contrary to conventional wisdom, the findings suggest that competitive foods are not especially profitable for school food services. Instead, the study suggests that financial solvency is likely to be gained via the most profitable component, the NSLP meals themselves. In FY 2008, 62 percent of public and private school students received or purchased an NSLP meal on an average day, so there is room to expand participation. Serving additional meals raises revenues while spreading the cost of the cafeteria and other fixed costs over more meals.

Another way to increase revenues is for schools to raise the prices charged to students for full and reduced-price NSLP lunches and other foods. According to the SNDA study, in 2004-05, most SFAs charged \$1.50 for a full-price NSLP meal and \$0.40 for a reduced-price meal. The full price charged to students was significantly lower than the average full cost to produce that meal of \$2.91. The gap between prices for paid lunches and full costs helps explain why SFAs with lower rates of free and reduced-price meal participation are vulnerable to deficits.

SFAs historically have been reluctant to raise prices because their main goal as nonprofits is to serve affordable meals. In practical terms, SFAs face the need to balance the increased revenues from a price increase against potential losses from the reduction in meals purchased as a result of the higher price. Little is known of the tradeoffs between higher prices and demand for lunches for most schools.

When schools have needed the significant capital investment to completely overhaul their lunch programs, they have largely turned to their communities for funding. This may be an area where the Federal Government could assist further, as it has in the past when funds were needed to equip school cafeterias.

A clear way to increase revenues relative to costs is to get more students to join the lunch line. Following the lead of successful schools, an important change is to offer freshly made, healthful meals that students help to choose and that they have time to enjoy. Whether this is accomplished by completely revamping the program, by making it more efficient, or by raising prices charged to paying students, schools have shown that providing quality, nutritional meals can be done, and it can lead to higher participation rather than lower. **W**



Ken Hammond, USDA

#### This article is drawn from . . .

*The National School Lunch Program: Background, Issues, and Trends*, by Katherine Ralston, Constance Newman, Annette Clauson, Joanne Guthrie, and Jean Buzby, ERR-61, USDA, Economic Research Service, July 2008, available at: [www.ers.usda.gov/publications/err61](http://www.ers.usda.gov/publications/err61)

*School Lunch and Breakfast Cost Study – II*, Nutrition Assistance Program Report Series, USDA, Food and Nutrition Service, April 2008, available at: [www.fns.usda.gov/oane/MENU/Published/CNP/FILES/MealCostStudy.pdf](http://www.fns.usda.gov/oane/MENU/Published/CNP/FILES/MealCostStudy.pdf)

#### You may also be interested in . . .

*Could Behavioral Economics Help Improve Diet Quality for Nutrition Assistance Program Participants?* by David R. Just, Lisa Mancino, and Brian Wansink, ERR-43, USDA, Economic Research Service, June 2007, available at: [www.ers.usda.gov/publications/err43/](http://www.ers.usda.gov/publications/err43/)