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# School Meals in Transition

Katherine Ralston and Constance Newman





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## Abstract

School foodservice programs face ongoing tradeoffs between meal cost, student participation, and nutrition quality. Changes mandated by the Healthy, Hunger-Free Kids Act of 2010 strengthened nutritional standards for meals and competitive foods and set minimum levels for paid meal revenues, while new options allow more schools to offer free meals to all students at reduced administrative burden. A review of recent research results and new data on school lunch participation rates suggest that while many school districts have adjusted to new standards, maintaining paid meal participation remains most challenging for smaller, more rural, and more affluent districts.

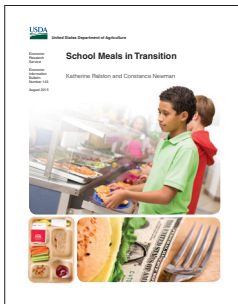
**Keywords:** National School Lunch Program, school meal participation rate, Healthy Hunger Free Kids Act

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# School Meals in Transition

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## What Is the Issue?

School foodservice programs face ongoing tradeoffs between meal cost, student participation, and nutrition quality. Changes mandated by the Healthy, Hunger-Free Kids Act of 2010 strengthened nutritional standards for meals and competitive foods and set minimum levels for paid meal revenues, while new options allow more schools to offer free meals to all students at reduced administrative burden. Understanding how the changes have affected school food service programs will help policymakers develop and target assistance to food service programs facing greater challenges adjusting to the changes.

## What Did the Study Find?

Recent studies show that many school districts have adjusted to new standards for school lunches; however, maintaining paid meal participation remains challenging for some districts, particularly smaller, more rural, and wealthier districts.

- In a national study of elementary school principals and foodservice managers, the majority of respondents agreed (63 percent) or strongly agreed (7 percent) that “Students generally seem to like the new school lunch,” a finding supported by several smaller studies.
- Still the participation rate for paid school lunches declined from FY 2008 through FY 2014, with steeper declines during FY 2012-2014. While the decline over FY 2012-2014 appears to be timed with the implementation of new requirements for foods and nutrients in school meals, price increases for paid meals that began in 2011 in response to new rules for paid lunch revenues as well as the slow recovery from the Great Recession could also have contributed.
- Smaller, more rural, and wealthier districts were more likely to report challenges in adjusting to the new meal standards. Smaller and more rural districts (but not wealthier districts) also reported higher meal price increases after implementation of new rules for paid lunch revenues, which could discourage paid meal participation for some families in those areas.

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While not fully understood, the overall decline in paid meal participation rates since 2008 highlights the challenge of serving healthier meals across a diverse landscape of school meal programs.

### **How Was the Study Conducted?**

The study draws on a review of recent national and smaller studies of how changes in school lunch standards affected meal participation and plate waste. We examined national and State trends in participation rates for free, reduced-price, and paid lunches using USDA's National Data Bank for meal counts and State reports for total student enrollment and certifications for free and reduced-price meals. We used data from the Special Nutrition Program Operation Study Year 1 (SNOPS-I) to estimate the percent changes in lunch prices after the first year of the Paid Lunch Equity provision.

# School Meals in Transition

## Introduction

The National School Lunch Program (NSLP) and the School Breakfast Program (SBP) play an important role in the diets of children in low-income households by providing free and reduced-price meals. Yet the programs provide meals to millions of children at all income levels and encourage broad participation by providing a smaller subsidy to schools for meals served to children who don't qualify for free or reduced-price meals. Broad participation in the programs exposes all children to examples of healthy meal patterns and helps prevent the stigma that could occur if children perceive school meals as serving only low-income children.

In response to rising levels of child obesity and many challenges facing the programs, the NSLP and SBP underwent major updates under the 2010 Healthy, Hunger-Free Kids Act (HHFKA). Changes included new meal patterns based on the most recent Dietary Guidelines for Americans, new revenue requirements for paid meals and a la carte items, and new standards for the nutritional content of foods sold outside of reimbursable school meals, often referred to as “competitive foods.” At the same time, a new option called the Community Eligibility Provision enabled more schools in high-poverty areas to offer free meals to all students in the school.

The changes were meant to address concerns about the nutritional quality of children's diets, school meals, and competitive foods (a la carte/vending) available in school, as well as the financial and administrative challenges of school meal operations (Ralston et al., 2008). All children, not just school meal participants, consume too few fruits and vegetables and too many foods high in saturated fats, added sugar, and salt (Cole and Fox, 2008; Gordon et al., 2007). Research on dietary impacts of school meals found that while NSLP participants had higher intakes of underconsumed foods such as milk, vegetables, and fruit/fruit juice, they were more likely to exceed the target for sodium intake, and French fries were found to account for much of the higher vegetable consumption (Gordon et al., 2007). A compilation of studies also concluded that wide availability of competitive foods in schools contributed to children's higher intake of total fat and saturated fat, and lower intake of fruits, vegetables, and milk (Story et al., 2009).

Several studies suggested that changes in the foods served in school cafeterias—such as increasing fruit and vegetable offerings—could improve the dietary choices of students. Using the School Nutrition Dietary Assessment (SNDA) III survey data from 2005, Newman (2013) found that in schools that offered more fruits and vegetables, students generally consumed more of these foods. Ishdorj and her colleagues (2013), also using SNDA III, found that a no-dessert policy was associated with increased vegetable consumption in school and that restrictions on sales of competitive foods were associated with higher fruit consumption in school. Cohen and her colleagues (2012) examined schools implementing a pilot program that hired a chef to train cafeteria staff to prepare healthier, more palatable school meals, finding more frequent selection of whole grains and higher consumption of vegetables at the pilot schools compared to control schools.

Foodservice directors face ongoing tradeoffs between nutritional quality, student acceptance, and cost (Ralston et al., 2008), and the updated nutrition standards are seen by some school food directors as complicating a situation that was already challenging (School Nutrition Association, 2013, U.S. Government Accountability Office, 2013). School Food Authorities are required to operate

on a nonprofit basis, but even covering costs can be difficult in some cases. The recent Special Nutrition Program Operation Study 2011-2012 (SNOPS-I) found that while the average district was operating on a break-even basis, 20 percent of districts had revenues below 85 percent of costs (May et al., 2014), even before the new meal-pattern requirements took effect.

These results are consistent with findings from earlier national cost studies (Bartlett et al., 2008; Glantz et al., 1994). Bartlett and colleagues found that School Food Authorities broke even, on average, in school year 2005-06 when measuring the costs reported by School Food Authorities. But if all "non-reported" administrative costs were included – those covered by the school district and not charged to the school meal programs— revenues from school meals did not cover total costs, on average.

Research on factors associated with cost differences among school districts found higher costs of producing meals in rural and suburban areas (Ollinger et al., 2011). These higher costs are due in part to lower meal volume and lesser economies of scale than in urban districts. Differences in wage rates and food costs also influenced cost variation among school meal programs.



## The School Day Gets Healthier

As a result of the HHFKA requirements, USDA developed new school meal patterns drawing on recommendations from the Institute of Medicine (2009) in response to concerns about children’s diet quality. USDA promulgated rules requiring lunches to include minimum servings per week of specific categories of vegetables, including dark green vegetables such as broccoli and red or orange vegetables such as tomatoes and carrots (table 1). A standard for whole grain-rich foods was phased in: for school year (SY) 2012-13, half of grain products were required to be whole grain rich (meaning at least half of grain content must be whole grain), and in SY 2014-15, all grain products were required to be whole grain rich. States can grant an exemption from the requirement through SY 2015-16 for school districts that demonstrate difficulty obtaining acceptable products that meet the requirement; these districts must still meet the requirement that at least half of grain offerings be whole grain rich (USDA FNS, 2015b).

For the first time, the new standards set a ceiling on total calories per average meal (on top of existing minimum-calorie requirements). Total sodium was also limited for the first time, with final targets scheduled for July 1, 2022. Based on subsequent congressional action, USDA must assess the benefits of reducing sodium intake by children before requiring school compliance with the second (SY 2017-18) and final sodium targets.

New standards were also established for competitive foods starting in SY 2014-15, including a la carte items offered by the food service program as well as vending machine sales and items sold at other venues controlled by the school foodservice program or another entity. Previous regulation prohibited only “foods of minimal nutritional value” (FMNV), defined as foods that contribute less than 5 percent of the Daily Minimum Value of certain nutrients. The FMNV restriction prohibited such foods as carbonated beverages, water ices, and hard candies. Baked goods, chips, and other common snacks were not included in that restriction. Under the new “Smart Snacks” regulations, foods must meet limits on calories, total and saturated fat, trans fat, sugar, and sodium, and contribute to servings of healthy food groups (table 2).

USDA recognized that the changes would be challenging for some school districts. In addition to the phase-ins of some requirements, the new rules allowed exemptions to accommodate the transition. In addition to allowing waivers from the requirement that all grain foods be whole grain rich, USDA permanently eliminated upper limits for weekly servings of grains and meat/meat alternates; allowed frozen fruit with added sugar; allowed crediting of milk, yogurt, fruit, and vegetables in smoothies prepared in house; and allowed reimbursable meals under Offer Versus Serve to contain only ½ cup of fruit and/or vegetables (U.S. Government Accountability Office, 2014; USDA FNS, 2014b).

USDA has also sought to clarify potential misinterpretations that would make the rules more difficult to follow. For example, whole grain-rich products must list whole grain as the first ingredient and provide 8 grams of whole grain per serving, but need not be 100 percent whole-grain products, as initially interpreted by some schools. Similarly, USDA has clarified that the upper limit for calories applies to weekly daily averages of meals offered, not individual meals or students (USDA FNS, 2015e).

Table 1

**New meal pattern requirements<sup>1</sup>**

	Lunch	Breakfast
Milk	Must be 1-percent fat or fat free; flavored must be fat free	Must be 1-percent fat or fat free; flavored must be fat free
Fruits	Increased servings: Must be served daily, no more than half of servings can be juice	In school year 2014-15, begin offering increased (minimum 1 cup) servings that must be served daily, with no more than half of servings from juice
Vegetables	More variety, with weekly minimum requirements for dark green, red/orange vegetables; beans/peas (legumes); starchy and other vegetables to meet weekly amount required	May be offered in place of fruit
Grains	At least one-half of all grains must be whole-grain rich <sup>2</sup> ; in school year 2014-15, all grains offered must be whole-grain rich. Schools may apply for a waiver for 2014-15 and 2015-16	At least one-half of all grains must be whole-grain rich; in school year 2014-15, all grains offered must be whole-grain rich
Meat or Meat Alternate	Minimum servings required <sup>3</sup>	May be served in place of grains once daily grain minimum is met
Calories	Maximums as well as minimums established for weekly average meal served	Maximums as well as minimums established for weekly average meal served
Fat	Limit on total fat removed Saturated fat < 10% of calories (no change) Trans fat 0g per serving	Limit on total fat removed Saturated fat < 10% of calories (no change) Trans fat 0g per serving
Sodium	New limits phasing in with final targets to be met by 2022 <sup>4</sup>	New limits phasing in with final targets to be met by 2022 <sup>4</sup>
Offer Versus Serve	Still required for high school, optional for other grade levels Reimbursable meal must include at least 3 food components, including ½ cup of fruit or vegetable	Still optional at all grade levels Reimbursable meal must include at least 3 food components, including ½ cup of fruit or vegetable At least 4 food items must be offered

Source: Guthrie and Newman, 2013; USDA FNS, 2014a; USDA FNS, 2014b.

<sup>1</sup>Unless otherwise noted, lunch changes were required by school year 2012-13 and breakfast changes were required by school year 2013-14.

<sup>2</sup>Whole grain-rich foods must have whole grain as the first ingredient listed, and contain at least 8 grams of whole grain per serving.

<sup>3</sup>Proposed maximum servings for grains and meat/meat alternates eliminated in final rule.

<sup>4</sup>USDA must evaluate the benefits of reducing sodium intake by children before requiring school compliance with the second and final sodium targets

Table 2

**“Smart Snack” rules for all foods sold in school, effective school year 2014-15**

Allowed	Restricted
<p><b>Healthy Food Groups</b></p> <p>Whole grain-rich grain product  <i>or</i> First ingredient is fruits, vegetables, dairy,  <i>or</i> protein food (meat, beans, poultry, seafood,  eggs, nuts, seeds)  <i>or</i> Contains one-quarter cup fruit or vegetable</p>	<p><b>Sodium</b></p> <p>No more than 230 mg sodium per side item,  480 for entrees  (As of July 1, 2016, no more than 200 mg  sodium per side item)</p>
<p><b>Healthy Nutrients</b></p> <p>Until June 30, 2016, if snack does not meet  “healthy food group” criterion, allowed if it  contains 10 percent of daily value of calcium,  potassium, vitamin D, or dietary fiber (beginning  July 1, 2016 this option eliminated)</p>	<p><b>Fat</b></p> <p>No more than 35 percent of calories from fat  (except reduced-fat cheese; seafood with no  added fat; nuts, seeds, and their butters; dried  fruit/nut/seed mixes)</p>
<p><b>Leftovers</b></p> <p>Any entrees sold as part of reimbursable meal  can be sold a la carte the same day or next day</p>	<p><b>Saturated Fat</b></p> <p>No more than 10 percent of calories from  saturated fat per item (except reduced-fat  cheese; nuts, seeds, and their butters; and dried  fruit/nut/seed mixes)</p> <p><b>Trans Fat</b> – zero grams per serving</p>
<p><b>Healthy Beverages</b></p> <p>Plain water</p> <p>Low-fat milk and nonfat milk (plain or flavored)  100 percent fruit and vegetable juices</p> <p>Size limits: beverages except water limited to  8 oz for elementary school, 12 oz for middle and  high schools.</p>	<p><b>Sugar</b></p> <p>No more than 35 percent of weight per item  as sugar (except dried fruits/vegetables with  no added sweeteners and dried fruits with  nutritive sweeteners required for processing  and/or palatability)</p>
<p><b>High School Only</b></p> <p>(outside of meal service time and area)</p> <p>Calorie-free and low-calorie, including flavored  waters (&lt; 10 calories per 20 oz), size limit 20 oz</p> <p>Moderate calorie (60 calories per 12 oz), size  limit 12 oz</p> <p>Carbonated water</p> <p>Caffeinated beverages</p>	<p><b>Calories</b></p> <p>No more than 200 calories for snacks and sides;  350 calories for entrées</p>

Source: Guthrie and Newman (2013); USDA FNS (2015a); USDA FNS (2013b).

## New Provisions to Help Pay the Bills

As part of the 2010 Healthy Hunger-Free Kids Act, the reimbursement rates for school lunches were increased by 6 cents per lunch starting October 1, 2012, with a requirement that districts meet the new lunch standards in order to obtain the additional funding. The extra 6 cents amounted to 2 percent of the reimbursement for free meals in school year 2014-15, but 21 percent of the reimbursement for paid meals. This was the first increase in the base reimbursement level, other than annual adjustments for inflation, since the program's inception.

The additional per-lunch reimbursements may or may not cover the higher costs of meeting the nutritional standards in all districts. In its report on recommendations for changes to school meal standards, the Institute of Medicine (IOM) estimated that a typical menu that met the standards would cost roughly 10 cents more per lunch than lunches previously offered. A pilot study conducted in California prior to implementation of new State standards provided an additional subsidy of 10 cents per meal from the State, yet some districts found that other cost-cutting measures were required to balance the budget (Woodward-Lopez et al., 2010). Based on economic analysis of a nationally representative sample of school districts in 2006, Newman (2012) found that districts with menus that included higher levels of fruits and vegetables had higher costs. From a baseline of \$1.04 in food costs per meal, the estimated food costs that met the standard for vegetable groups averaged 9.5 cents more per meal.

The 6-cent increase in reimbursement was not intended to fully offset cost increases, but to complement other provisions in the HHFKA—including the Paid Lunch Equity Provision, the Smart Snacks rules, and the Community Eligibility Provision—that help mitigate the potential for higher costs of meeting new standards (table 3). The Paid Lunch Equity provision requires districts to bring in enough revenue for paid meals to equal the difference between the reimbursement rates for free and paid meals. This provision was implemented to prevent Federal free and reduced-price subsidies from being used to offset the paid lunch costs. For example, in school year 2014-15, the reimbursement rates for free and paid meals (including the additional 6 cents for compliance with the new standards) were \$3.04 and \$0.34, for a difference of \$2.70, which would represent the “equity” price. A district charging \$2.00 for a paid lunch would be required to obtain an additional \$0.70 per meal, on average, by gradually raising prices or adding non-Federal funds to make up the difference over time. Districts are required to meet an annual target by raising their average weighted paid meal prices by 2 percent plus the rate of inflation each year until the gap is closed, with a maximum increase of no more than 10 cents in a given year.

The SNOPS-I study found that in 2010-11, before the Paid Lunch Equity provision took effect, the average gap between paid meal revenues (prices plus paid meal reimbursements) and free meal reimbursements for lunches was over 50 cents in elementary schools and 32 cents in middle and high schools. Breakfast prices were better aligned, with a 7-cent gap in elementary schools and no gap in middle or high schools. Based on reported meal prices, the SNOPS-I study estimated that 90 percent of elementary schools and 80 percent of middle and high schools had paid meal prices below the equity price. Not all of these will necessarily be required to raise their prices, as long as the weighted average paid lunch price for the district meets the annual target. However, the estimates indicate the extent of potential price increases over time.

Table 3

**Other changes affecting school foodservice revenues**

<b>Paid Lunch Equity Provision</b>	<p>Average revenue per paid lunch must be no less than the difference in reimbursement rates for free and paid meals; the gap must gradually be filled by non-Federal revenue or by charging higher prices (price increases are capped at 10 cents per lunch per year).</p> <p>Through SY 2016-17, State agencies should exempt a school food authority (SFA) from the requirements if the SFA requesting the exemption has been certified as meeting the meal pattern requirements and can demonstrate that the required increase to paid lunch prices or revenue contributions would cause the SFA to exceed the 3-month operating balance limit.</p>
<b>Requirements for Revenue From Non-Program Food</b>	<p>Revenue generated from the sale of non-program foods—foods purchased from the school foodservice account and sold outside of reimbursable meals—must be no less than the cost of these foods. To be compliant, ratio of revenues of non-program food out of all food sales must be no less than the ratio of costs of non-program food out of total food costs.</p>
<b>Community Eligibility Provision</b>	<p>Local Education Authority (LEA) must have at least one school with an Identified Student Percentage (ISP) — the percentage of students approved for free meals based on information from other programs—of 40 percent or more.</p> <p>Individual schools, groups of schools, or the whole LEA may participate if the ISP is 40 percent or more at the level of the school, the group of schools, or the LEA.</p> <p>School, group, or LEA must serve free meals to all students, and must offer the School Breakfast Program. They may not collect school meal applications and thus no verification is performed.</p> <p>Reimbursement formula: Percent of meals reimbursed at free rate is equal to Identified Student Percentage times 1.6. Remaining meals are reimbursed at the paid rate.</p> <p>Identified Student Percentage determined from administrative data for direct certification through participation in other programs.</p>
<b>Direct Certification Expansion</b>	<p>Multi-State demonstration project for direct certification with data from State Medicaid systems.</p> <p>Performance awards for States with successful or improved direct certification systems.</p> <p>Requirement for State improvement plans if SNAP direct certification rates fall below 80 percent in SY 2011-2012, 90 percent in SY 2012-2013, or 95 percent in subsequent years.</p>

SNAP = Supplemental Nutrition Assistance Program.

Sources: Paid Lunch Equity Provision and Revenue from Non-Program Food: USDA, FNS (2011a, 2011b). Paid Lunch Equity Provision exemption: USDA, FNS (2015c). Community Eligibility Provision: USDA, FNS (2015d). Direct Certification Expansion: USDA, FNS (2013).

The effects of the Paid Lunch Equity provision may be complex. While higher paid meal revenues should help school meal programs cover costs, higher prices could also reduce participation. Fox and colleagues (2012), using data on meal prices and participation rates from the School Nutrition Dietary Assessment IV (SNDA IV), found that a 10-percent increase in meal price was associated with a decline of 1.5 percentage points in the participation rate of paid meals, after controlling for other characteristics of the meal and the school foodservice operation.

New rules for snacks could also improve school foodservice finances. All competitive foods sold in schools must meet stricter nutritional standards (table 2) and be sold at prices that cover their costs (table 3). The nutritional requirements were meant to improve the overall school nutrition environment and support healthy food choices across the school. Additionally, the price requirement was developed in response to results from the School Lunch and Breakfast Cost Study (SLBCS) II showing that prices charged for competitive foods often did not cover their full costs (Bartlett et al., 2008). These low prices not only increased the incentive to choose such foods, but resulted in meal reimbursements subsidizing competitive foods and potentially weakening school foodservice finances. The combination of higher prices and stronger nutrition standards may reduce the incentive to substitute à la carte foods or foods from vending machines for the school meal and improve dietary choices when those foods are chosen.

While the impacts of the new competitive foods standards and price requirements have not been measured yet, national data from SY 2004-05 show that schools with no competitive foods had higher school meal participation rates than schools that offered competitive foods (Gordon et al., 2007). This suggests that if stricter nutritional standards and/or more accurate pricing reduced the appeal of competitive foods, students might choose the reimbursable school meal instead. Smaller pilot studies showed that holding competitive foods to higher nutritional standards did increase school meal participation, although not necessarily by enough to compensate for the increased costs of meeting the standards (Woodward-Lopez et al., 2010; Cullen and Watson, 2009).

The Community Eligibility Provision (CEP) is a new option that allows schools in low-income areas to offer school meals at no charge to all students. This greatly reduces a school's administrative burden by eliminating the need to process student applications for free or reduced-price meals (table 3). Under the CEP, a district may offer all meals at no charge in any school where 40 percent or more of students are certified for free meals without an application (known as "identified students" through "direct certification"). Such students may be certified through participation in the Supplemental Nutrition Assistance Program (SNAP), Temporary Assistance for Needy Families (TANF), and the Food Distribution Program on Indian Reservations (FDPIR), or they may qualify as runaway, homeless, migrant, or foster youth. The CEP may be used for the whole district or for a smaller group of schools or even a single school within a district if that school or group meets the 40-percent requirement.

Under the CEP, a share of meals served (equal to the identified student percentage multiplied by 1.6) is reimbursed at the free rate and remaining meals are reimbursed at the paid rate. A share of meals served, equal to the identified student percentage multiplied by 1.6, is reimbursed at the free rate and remaining meals are reimbursed at the paid rate. There is no reduced-price category under CEP. Any costs for serving these meals in excess of the Federal reimbursement must be paid from non-Federal sources. The NSLP already allows schools to serve free meals to all students for 4 years under Provisions 2 and 3 of the National School Lunch Act, with reimbursements based on eligibility information collected in the base (1st) year through paper applications as well as direct certification. These provisions are most beneficial for schools with very high percentages of free and

## National Data on School Meals

Several studies and administrative data sources provide information on recent developments in the National School Lunch Program. Sources discussed in this report are summarized briefly below.

***Special Nutrition Program Operations Study, Year 1*** (SNOPS-I): Nationally representative stratified sample of 1,768 School Food Authorities (SFAs), collected in School Year (SY) 2011-12 (May et al., 2014). Detailed questions on foodservice staffing, facilities, procedures, meal prices, expenditures, and revenues.

***School Lunch and Breakfast Cost Study II*** (SLBCS II): Nationally representative sample of 120 SFAs, collected in SY 2005-06 (Bartlett et al., 2008). Detailed questions on meal costs and revenues.

***School Nutrition and Dietary Assessment III*** (SNDA III): Nationally representative sample of 129 SFAs and 2,314 students, collected in 2004-05 (Gordon et al., 2007). Detailed questions on school menus, the school meal environment, meal participation, and student dietary intake.

***School Nutrition and Dietary Assessment IV*** (SNDA IV): Nationally representative sample of 578 SFAs, collected in 2009-10 (Fox et al., 2007). Detailed questions on school menus, the school meal environment, and meal participation.

***The National Data Bank***: Data compiled by USDA's Food and Nutrition Service (FNS) on school meal participation—counts of lunches and breakfasts served as well as numbers of students participating, annually and nationally, by eligibility category (free, reduced-price, and full price), by State, and by month.

***FNS-10***: Reports from State agencies to FNS on total student enrollment in school districts participating in the National School Lunch Program, as well as numbers of students certified for free meals and reduced-price meals. Data are reported as of October 1 each fiscal year.

reduced-price eligible students. The CEP further reduces administrative burden by allowing eligible schools to use updated direct certification data instead of collecting applications every 4 years.

The CEP was first offered to three States in SY 2011-12, four more States each in SY 2012-13 and SY 2013-14, and became available to all school districts nationwide in SY 2014-15. Analysis of the participation and revenue impacts in seven States where the CEP was first introduced found that the program significantly increased student participation in NSLP and SBP relative to comparable schools that did not participate (Logan et al., 2014). Total Federal revenue (per student) received by schools increased by 13.5 percent, and non-Federal revenue did not decrease significantly as a result of the provision. The increase in overall participation associated with CEP may result from reduction in stigma as well as faster service with the elimination of payments.

The HHFKA also included measures intended to further expand direct certification (table 3). The rate at which categorically eligible children (eligible through participation in SNAP or other means-tested programs) are directly certified for free school meals rose from 77 percent in FY 2010 to 89 percent in FY 2012 (Moore et al., 2013). This potentially increases the number of students receiving free meals and reduces the number of applications that districts must process (which reduces opportunities for error), and increases the number of districts that may find the CEP financially attractive.

## Many Districts Adjusting, Some Still Face Challenges

Many districts appear to have adjusted successfully to the new menu requirements. In a nationally representative sample of principals and foodservice managers at 557 elementary schools, the majority of respondents agreed (63 percent) or strongly agreed (7 percent) that “Students generally seem to like the new school lunch” (Turner and Chaloupka, 2014). More than two-thirds said that participation was about the same (65 percent) or more (13 percent) than the previous year and that the percentage of the meal consumed was about the same (59 percent) or more (11 percent) than the previous year. Yet, more than one in four respondents disagreed or strongly disagreed that students seem to like the new lunch. About one in six felt that the number of students purchasing lunch was either slightly fewer or a lot fewer, while more than one in five felt that students were consuming slightly less or a lot less of lunches purchased.

Smaller studies from Massachusetts (Cohen et al., 2014), Connecticut (Schwartz et al., 2015), and Houston, Texas (Alcaraz and Cullen, 2014) also suggested that students can adjust to the standards to some degree. Cohen and her colleagues (2014) found that after the new NSLP standards were implemented in four urban, low-income schools in Massachusetts, the share of students selecting fruit increased by 23 percent, while waste did not change significantly. The portion of vegetables consumed by students in the sample (as opposed to wasted) increased by 16.2 percent. In Houston, 70 percent of elementary school cafeteria staff reported that students liked the vegetables served with the meal after the new standards were implemented, compared to 40 percent of middle school cafeteria staff reporting the same, highlighting the difficulty of appealing to older children.

However, after the new policies were implemented in 12 urban, low-income Connecticut middle schools, Schwartz and colleagues (2015) found that the share of students who selected fruit increased by 12 percent, while the share of fruit consumed, once selected (74 percent) did not change significantly. Changes in vegetable consumption were less encouraging. The share of students selecting vegetables decreased from 68 to 52 percent, while those who selected vegetables ate 20 percent more of their vegetables.

The new standards appear to be popular with parents. In an August 2014 poll commissioned by The Pew Charitable Trusts, the Robert Wood Johnson Foundation, and the American Heart Association, 72 percent of registered voters who were parents of school-age children approved of the new meal and snack standards and 91 percent approved of the requirement to include a fruit or vegetable with every meal (Hart Research Associates and Ferguson Research, 2014).

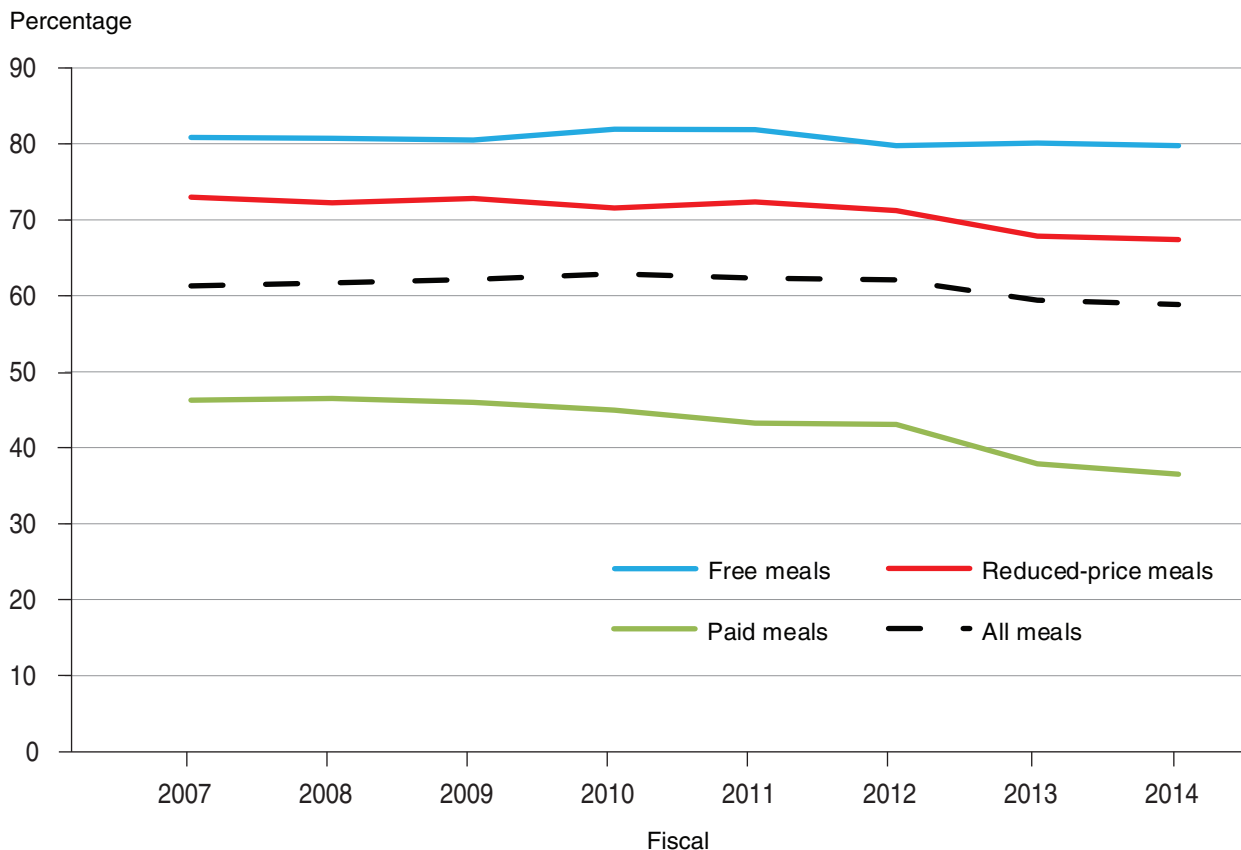
Difficulties for some districts are reflected in declines in overall participation and participation rates, especially for paid meals. The U.S. Government Accountability Office (GAO) noted that total participation in the School Lunch Program declined by 1 million students between school years 2010-11 and 2012-13 (U.S. GAO, 2014), though the decline may be unrelated to the new provisions. Average daily participation in paid meals has been declining steadily since school year 2007-08, due in part to more children qualifying for free or reduced-price meals during and after the 2008 recession. Further, the Community Eligibility Provision, with some States starting in school year 2011-12, may have decreased the share of meals reimbursed as paid meals in participating schools.

To account for changes in the number of eligible students due to economic conditions as well as the Community Eligibility Provision and higher rates for direct certification, we looked at the participation rate—the annual average number of students taking the NSLP lunch among the number of students in each eligibility category (fig. 1).



Figure 1

**National School Lunch Program participation rates by eligibility category, FY 2007-2014**



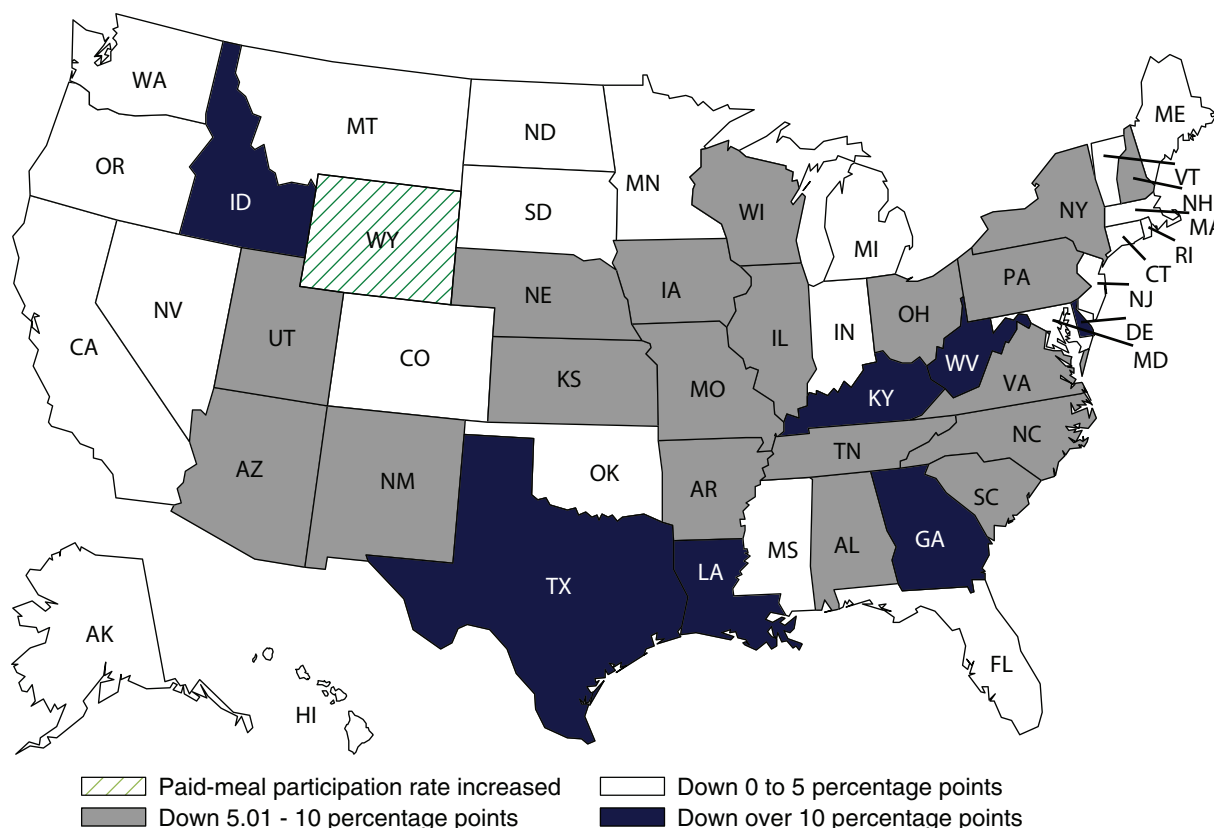
Source: ERS calculations using data from USDA's Food and Nutrition Service (USDA, FNS). Participation rates for the United States are calculated as average daily participation divided by the number of students certified as eligible in each category. Data on average daily participation are from the National Data Bank and furnished by USDA FNS. The counts of students certified for free and reduced-price meals, as well as total enrollment, are also furnished by USDA FNS, using certification reports on form FNS-10, which reports counts taken in October of each fiscal year (so the count for FY 2014 is taken in October 2013). Participation rate for paid meals is the average daily participation for paid meals divided by the number of students not approved for free and reduced-price meals. The number of students not approved for free and reduced-price meals is calculated as total enrollment minus the sum of students certified for free meals and those certified for reduced-price meals.

From fiscal year (FY) 2008 through 2014, the participation rate for students eligible for free meals was fairly constant. The participation rate for paid meals, purchased by students not certified for free or reduced-price meals, declined 3.4 percentage points from a peak in FY 2008 to FY 2012, and an additional 6.6 percentage points by FY 2014. Many States had steeper declines during FY 2012-FY 2014 (fig. 2), with participation rates in seven States plus Washington, DC, dropping over 10 percentage points in FY 2014 compared to FY 2012; participation rates for paid meals dropped by over 20 percentage points in Georgia during that period.

The decline in paid meal participation since 2008 could reflect both responses to the new meal standards and price increases under the Paid Lunch Equity provision beginning in 2011. While the decline over FY 2012-2014 appears to be timed with the implementation of new meal standards, price increases that began in 2011 could also have contributed, especially in districts that implemented back-to-back price increases.

SNOPS-I found that lunch prices rose 4.2 percent in elementary schools and 3.3 percent in middle and high schools, on average, between school years 2010-11 and 2011-12. Applying the effects of meal prices estimated by Fox et al. (2012), these price increases would be expected to lead to

Figure 2  
**Declines in paid-meal participation rates, FY 2014 over FY 2012**



Source: ERS calculations using data from USDA's Food and Nutrition Service (USDA, FNS). Participation rates by State are calculated as average daily participation divided by the number of students certified as eligible in each category. Data on average daily participation are from the National Data Bank and furnished by USDA FNS. The State-level counts of students certified for free and reduced-price meals, as well as total enrollment, are also furnished by USDA FNS, using certification reports on form FNS-10, which reports counts taken in October of each fiscal year (so the count for FY 2013-14 is taken in October 2013).

declines in participation rates of 0.6 percentage point for elementary school, and 0.5 percentage point for middle and high school students. These estimates suggest that price increases related to Paid Lunch Equity could have contributed modestly to the decline in participation rate for paid meals. Further, the decline during FY 2008-2012 may reflect the impact of the recession on the ability of many families to pay for lunch.

While the observed decline in the paid-meal participation rate is consistent with Turner and Chaloupka's findings that some schools reported participation declines, as well as Fox's findings that higher prices are associated with lower participation, other factors could also be involved that have not been adequately studied. In addition to the possible role of income stagnation since the 2008 recession, negative perceptions of meal quality by students and parents have been cited as a reason for non-participation in paid meals in years predating changes in meal standards. (Gordon et al., 2007). Improvements in nutritional quality with the new meals standards could change these perceptions.

Monthly data for October 2014-January 2015 (not shown) show higher paid-meal participation rates than in the corresponding months in the previous fiscal year, suggesting paid-meal participation rates may be starting to rebound, but a complete comparison will not be available until after fiscal year 2015.

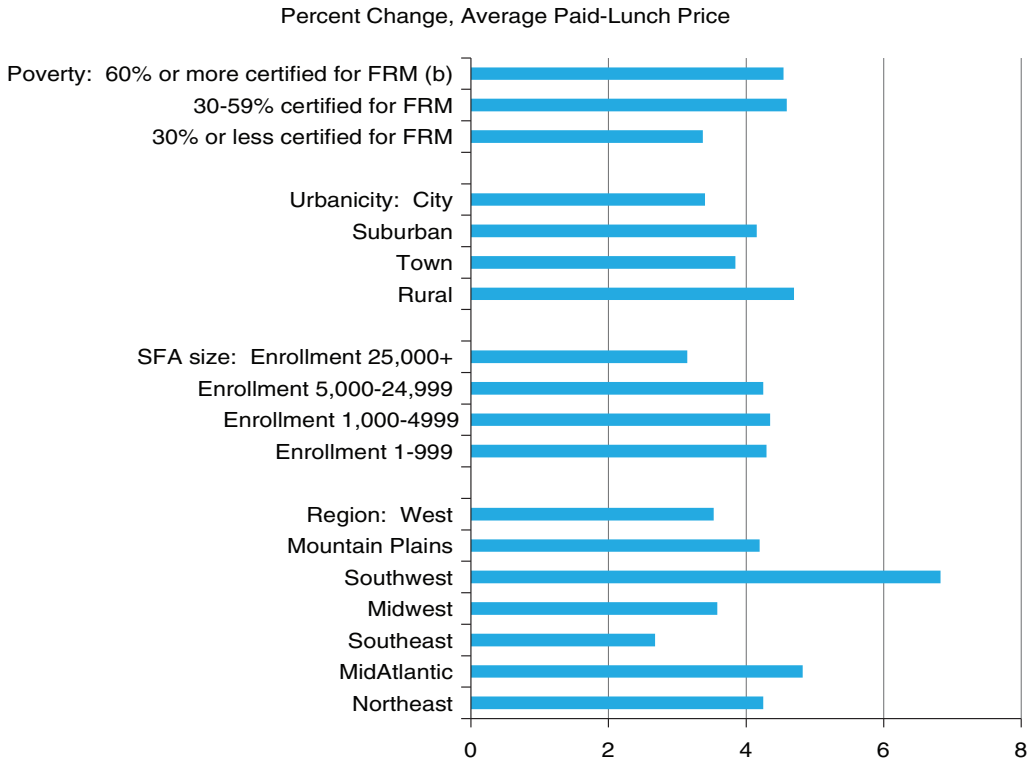
## Rural Districts, Wealthier Districts Face Greater Challenges

Changes to school meal programs are likely to affect school districts differently depending on their characteristics. Rural districts appear to be facing greater challenges from a combination of decreases in meal participation, larger price increases, and higher costs due to lower meal volume and hence lower economies of scale. In the study by Turner and Chaloupka, rural school foodservice directors were significantly more likely than suburban and urban directors to report decreases in paid meal participation and higher plate waste after new meal standards were implemented. Rural districts also reported larger price increases than urban districts (in percentage terms), and smaller districts reported larger price increases than larger districts, according to ERS calculations using the SNOPI data (fig. 3). While the effect of these price increases on participation cannot be measured with these data, Fox et al. (2012) showed lower participation associated with higher prices. This suggests that areas with higher relative price increases such as rural areas could experience greater reductions in participation from the Paid Lunch Equity provision. Any decline in participation in rural districts could exacerbate the problem of lesser economies of scale and higher meal production costs in rural and suburban districts (Ollinger et al., 2011).

Wealthier school districts may also be vulnerable to pressures resulting from the new rules. Schools with lower rates of eligibility for free and reduced-price meals were also more likely than those with higher rates to report decreases in school meal purchases and higher plate waste due to new meal standards (Turner and Chaloupka, 2014). Wealthier districts reported lower relative price increases in the SNOPI study, however (fig.3).

Figure 3

**Paid-lunch price increases under Paid-Lunch Equity (a),  
SY 2011-12 over SY 2010-11, by School Food Authority characteristics**



Notes: (a) Districts are also allowed to contribute non-Federal sources in lieu of raising prices to comply with required revenue increases under Paid-Lunch Equity regulations. SY = School Year.

(b) FRM = Free or reduced-price meals

Source: ERS calculations using results from Year 1 of the Special Nutrition Operation Study (SNOPS-I) collected in 2013 with meal prices reported by respondents retrospectively for SY 2010-11 and SY 2011-12. (May et al., 2014) Average price changes were calculated as change in prices averaged over elementary schools, middle schools, and high schools reported in SNOPS-I, weighted by enrollment at each level, also reported in SNOPS-I.

## Conclusion

Recent studies, though limited in number, suggest that school meal programs can adjust to the new meal-pattern requirements. Accommodations in implementing the regulations and further training, such as USDA's Team Up for School Nutrition Success Initiative (USDA, 2015), may help districts still experiencing challenges, without sacrificing the benefits of improved nutritional standards, and students may continue to adapt to changes. While not fully understood, the overall decline in paid-meal participation rates since 2008 highlights the challenge of serving healthier meals across a diverse landscape of school meal programs facing different costs and different abilities to generate revenue through participation, given the level of reimbursement.

While the NSLP and SBP ensure access to healthy meals for low-income children, participation by all students reduces the risk of stigma for students receiving free meals. Further, research has found that school meals provide food groups that are underconsumed by most children, including fruits, vegetables, and calcium-rich dairy beverages and foods, thus providing all children access—as well as exposure—to healthy meal options. The Community Eligibility Provision will likely help more eligible schools in high-poverty areas provide free meals to all students, though for many districts, encouraging participation in paid meals will be an important component in the success of their school meal programs.

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