

FNS RESEARCH CORNER SUMMARY OF RESEARCH

Holly L. Figueroa, MSW; Chanchalat Chanhatsilpa, Ph.D.

The FNS Research Corner provides a continuing series to summarize recently completed and current research conducted by the U.S. Department of Agriculture's Food and Nutrition Service (FNS) in the area of child nutrition. For further information, contact the Office of Policy Support (OPS) at (703) 305-2117. Links to published studies and reports as well as descriptions of ongoing studies conducted by OPS are available from the FNS web site at <http://www.fns.usda.gov/ops/research-and-analysis>.

RECENTLY COMPLETED RESEARCH

School Nutrition and Meal Cost Study (SNMCS)

The School Nutrition and Meal Cost Study (SNMCS) explored both the nutrition and cost domains of school meals in an integrated study design. It collected a broad range of data from a nationally representative sample of about 500 school food authorities (SFAs), 1,200 schools, 2,100 students and parents, and a large sample of school meals (over 6,000 lunches and 3,000 breakfasts) during School Year (SY) 2014-2015. The data collection included the administration of several different types of instruments and modes, including self-administered web-based SFA director and school principal surveys, a foodservice manager survey, an electronic menu survey, competitive foods checklists, cafeteria environment observation, plate waste observation, Automated Multiple Pass Method 24-hour dietary recalls, measurement of students' height and weight, student/parent surveys, meal cost interviews, and collection of administrative cost data.

These data provide needed information about how federally-sponsored school meal programs are operating after implementation of the updated nutrition standards and other changes in regulations. Comparisons of results of this study with previous School Nutrition and Dietary Assessment (SNDA) and School Lunch and Breakfast Cost (SLBC) studies provided information that was used to assess the effects of the updated nutrition standards on foodservice operations, the nutrient content of school meals, meal costs and revenues, and student participation and dietary intake. Study findings, published in April 2019, are presented in four report volumes (school meal program operations and school nutrition environments; nutritional characteristics of school meals; school meal costs and revenues; and student participation, satisfaction, and dietary intakes), plus a summary report that highlights key findings across the volumes. In addition, the methodology report describes the study design, sampling and data collection.

Key findings include:

Participation in School Meals

- Overall, the rate of student participation in the School Breakfast Program (SBP) (30 percent) was approximately half that of the National School Lunch Program (NSLP) (61 percent). Participation was highest in elementary schools and lowest in high schools. Participation rates were also higher among students approved for free and reduced priced meals than among students purchasing full price meals.

- Paid lunch participation rates tended to decrease as meal prices increased. A 10-cent increase in the price of a paid lunch was associated with a decline of 0.7 percentage points in the paid meal participation rate.
- There were higher rates of participation in schools with lunches of higher nutritional value.

Nutritional Quality of School Meals

- Based on mean total scores on the Healthy Eating Index (HEI)-2010, the nutritional quality of both NSLP lunches and SBP breakfasts increased significantly between SY 2009-2010 and SY 2014-2015, suggesting that the updated nutrition standards have significantly improved the nutritional quality of school meals. HEI scores for breakfast and lunch were 49.6 and 57.9, respectively, in SY 2009-2010 compared to 71.3 and 81.5, respectively, in SY 2014-2015.
- Over 80 percent of daily lunch menus met daily NSLP meal pattern quantity requirements, while 41 percent of weekly lunch menus fell within the specified calorie range.
- While the majority of SFA directors rated the new nutrition standards as helpful in meeting the underlying nutrition goals for children, many reported challenges in implementing or maintaining compliance with the new nutrition standards, with the cost of foods rated as the most challenging issue.

Dietary Intakes of NSLP Participants and Nonparticipants

- Lunches consumed by NSLP participants achieved a higher mean total score on the HEI-2010 than lunches consumed by a matched comparison group of nonparticipants (80.1 versus 65.1 out of a possible 100). This difference persisted over 24 hours, although the magnitude of the difference was smaller (65.2 versus 60.6).
- Mean scores for HEI-2010 components showed that lunches consumed by NSLP participants had higher concentrations of vegetables, whole grains, and dairy and lower concentrations of refined grains and empty calories than lunches consumed by matched nonparticipants. These differences persisted over 24 hours for whole grains, dairy, and refined grains but not for total vegetables and empty calories.

School Meal Costs and Revenues

- In SY 2014-2015, reported costs of producing a reimbursable meal in most SFAs exceeded the Federal subsidies for free meals.
- USDA subsidies, including cash reimbursements and USDA Foods, represented the largest single source of SFA revenues, accounting for an average of 63 percent of total revenues. Student payments for reimbursable meals represented about 20 percent of total SFA revenues. A la carte and other non-reimbursable foods sales accounted for 11 percent.
- For the average SFA, total revenues covered 97 percent of total reported costs, indicating that the average SFA operated at a small deficit.

Relationships between the Nutritional Quality of NSLP Lunches and Other Key Outcomes in SY 2014-2015

- There was a positive and statistically significant association between student participation in the NSLP and the nutritional quality of NSLP lunches, as measured by the HEI-2010.
- There was no significant association between the nutritional quality of NSLP lunches and the nutritional quality of the overall diets of students who consumed the lunches.
- There was no significant association between reported cost per NSLP lunch and the nutritional quality of the meals, as measured by HEI-2010 score. Mean reported costs per NSLP lunch in schools that prepared more nutritious meals were not significantly different from reported costs in schools that produced the least nutritious meals.

Plate Waste in NSLP Lunches

- Overall, plate waste in NSLP lunches was highest for vegetables (31 percent), followed by milk (29 percent), fruits and 100% fruit juice (26 percent), and separate or side grains/breads (23 percent). Mean levels of waste were lower for desserts and other menu items (20 percent), and lowest for entrees and meats/meat alternates (16 and 14 percent, respectively).
- For each type of food, the mean proportion wasted was higher in elementary schools than in middle or high schools and was higher in middle schools than in high schools (though not all differences between middle and high schools were statistically significant).
- The offer-versus-serve (OVS) option, which is mandatory for high schools but optional for elementary and middle schools, allows students to decline some components of a reimbursable meal as a way of providing choice and reducing waste. Approximately 81 percent of all elementary and middle schools used OVS at lunch. Multivariate analyses found that use of OVS among elementary schools was associated with significantly lower levels of plate waste.

Evaluation of Demonstration Projects to End Childhood Hunger: Final Evaluation Reports

This study—authorized by the 2010 Child Nutrition Act—tested innovative strategies to end childhood hunger and food insecurity. The final evaluation reports provide findings from four demonstration projects located within Chickasaw Nation, Kentucky, Nevada, and Virginia. A fifth demonstration project was implemented in Navajo Nation but not evaluated due to changes in program design. The demonstrations, which occurred during 2015-2018 and operated for 12 to 24 months, included:

- ***Chickasaw Nation***

Provided monthly home-delivered food boxes containing shelf-stable, nutritious foods and a \$15 voucher for fresh fruits and vegetables to children eligible for free school meals or attending a school where all children receive free school meals. School districts located in 12 rural counties in the Chickasaw Nation service area in Oklahoma participated.

Key findings:

- The project did not reduce the prevalence of food insecurity among children.
- The project reduced the prevalence of adult and household food insecurity at the first follow-up but not at the second.
- The project led to modest but statistically significant increases in children's consumption of fruits and vegetables and whole grains.
- The project developed a new and complex infrastructure for ordering and scheduling home delivery of food boxes, a major operational achievement.
- The project led to a modest decline of \$22 in households' monthly out-of-pocket food expenditures.

- ***Kentucky***

Provided a \$45 to \$55 average increase in monthly household Supplemental Nutrition Assistance Program (SNAP) benefits, calculated as a fixed-income deduction based on the county's average distance to the grocery store plus an additional 10 percent earned-income deduction to SNAP households residing at least 4-10 miles from grocery stores, with children under age 18 and positive net income. The demonstration operated in 17 rural counties in eastern Kentucky.

Key findings:

- The project did not reduce the prevalence of food insecurity among children or households.
- Treatment households on average received \$22 in extra SNAP benefits per month, which increased total food spending by \$20.
- The project did not affect households' shopping behavior at follow-up.

▪ ***Nevada***

Provided an additional \$40 per month in SNAP benefits per eligible child (treatment group 1) or same additional SNAP benefits plus case management and nutrition education (treatment group 2) to households participating in SNAP with incomes below 75 percent of the Federal poverty level with at least one child under age 5.

Key findings:

- The project did not reduce the prevalence of food insecurity among children or households overall; however, it led to a 6.6 percentage point reduction in food insecurity among children in households with at least two children five years or older.
- The average treatment household received \$44 in additional SNAP benefits but increased food spending by just \$23.
- While the project successfully delivered extra SNAP benefits to treatment households, there was little change in shopping patterns or nutrition-related behavior.
- The project did not have an impact on participation in other nutrition assistance programs.

▪ ***Virginia***

Provided three meals during the school day and food packages for weekends and school breaks, \$60 monthly Electronic Benefit Transfer (EBT) benefits per eligible child during summer months, and nutrition education for parents and guardians. In the participating schools in the rural southwest part of the State and urban districts in Richmond, all children were offered school meals and food packages; those eligible for free or reduced-price school meals are also offered summer EBT benefits.

Key findings:

- The project reduced very low food insecurity among children by 18 percent.
- The project negatively impacted adult and household food insecurity; food insecurity among adults and households was four to five percentage points higher among treatment households compared to control households.
- The project accomplished its goal of providing children with access to three meals a day during the school year but was less successful in providing nutrition education to parents.
- The project did not have a large impact on household food expenditures.
- Control schools delivered many of the same programs and services as treatment schools, which may have affected the project's ability to have a measurable impact on food insecurity among children.

The final reports were published in April 2019.

CACFP Sponsor Tiering Determination Aging Study

The Improper Payments Elimination and Recovery Improvement Act (IPERIA) of 2012 (Public Law 112-248) requires all Federal agencies to calculate the amount of erroneous payments in Federal programs and to periodically conduct detailed assessments of vulnerable program components. To meet IPERIA requirements, the U.S. Department of Agriculture's Food and Nutrition Service conducts studies that attempt to measure error in the Child and Adult Care Food Program (CACFP).

This report describes the feasibility of a modeling approach to forecast tiering error rates based on data from prior CACFP tiering assessments, in lieu of annual assessments of misclassified family day care homes (FDCHs). The report was published in February 2019.

Key Findings:

- Due to several limitations of the modeling approach used, reliable estimates of tiering error cannot be generated and used for IPERA reporting. The limitations of the model include:
 - The low number of Tier II errors in the CACFP tiering assessment data made Tier II estimation or prediction difficult.
 - Missing or limited assessment data resulted in a large variance of outcome estimates.
 - The assessment data across years only contained data at the State-level rather than the finer geographic levels (e.g., census block). The model was limited to estimating the same tiering error value for all FDCHs in a given State for a given year.
 - The data reflect different samples of States and FDCHs for each year. Thus, it was not possible to use FDCH-specific characteristics (such as number of meals) that can further explain the variation in error rates.

USDA Food Trends Analysis

This analysis used USDA Foods data collected via the Web-Based Supply Chain Management (WBSCM) System and the Fresh Fruit and Vegetable Order Receipt System (FFAVORS) to examine food purchases and spending at the national and State levels for three school years. This research is an extension of the analyses conducted as part of the Evaluation of the USDA Pilot Project for the Procurement of Unprocessed Fruits and Vegetables. Infographics summarizing the findings for SY 2016-2017 were published in February 2019 and are available at <https://www.fns.usda.gov/usda-foods/usda-foods-toolkit-child-nutrition-programs>.

Child and Adult Care Food Program (CACFP) Provider Characteristics Study

This study described the Child and Adult Care Food Program and provided valuable information on the characteristics of 1) sponsors; 2) homes and centers; and 3) children served. Survey data were collected from a nationally representative sample of CACFP sponsors and providers, including those participating in the CACFP At-Risk Afterschool Program, in 2015 with a brief follow-up in 2017. Survey topics included program administration and operations, staffing, training, monitoring, program size and attendance, funding sources, and participant characteristics. The final report was published in August 2018. Key findings include:

- Family day care homes enrolled the fewest participants of the provider types studied with an average of 11 children. Independent centers averaged 78 children while sponsored centers and Head Start centers averaged 86 and 105 children, respectively.
- On average, providers participated in CACFP for 10.3 years while sponsors participated for 14.7 years.

- Almost three-quarters of sponsors (74.2%) reported conducting in-service training for their providers, with topics most commonly covering meal requirements (91.7%), record-keeping (88.5%), and claims and reimbursements (37.9%).
- Almost all of the centers that offered the CACFP At-Risk component were nonprofit organizations (48.5%) or public agencies, schools, or school districts (42.9%). The same was true of CACFP At-Risk sponsors: 58.4 percent were nonprofits while 34.3 percent were public agencies, schools or school districts.
- The majority of CACFP At-Risk providers reported that the component: 1) allows the center to provide food to hungry children; 2) supports afterschool enrichment programming; and 3) helps children develop healthy eating habits.
- Most CACFP At-Risk sponsors reported also participating in other FNS programs such as the NSLP or SBP; more than half (56.5%) reported participating in the Summer Food Service Program (SFSP).

Direct Certification in the National School Lunch Program: Report to Congress

This project generated the required annual report to Congress on the effectiveness of State and local efforts to certify SNAP participant children for free school meals without the need for household applications. This report, published in November 2018, responded to a legislative requirement of the Food, Conservation, and Energy Act of 2008 (FCEA) (Public Law [P.L.] 110-234, also known as the 2008 Farm Bill) to assess the effectiveness of State and local efforts to directly certify children for free school meals under the NSLP. The 2008 Farm Bill requires annual Reports to Congress. This was the ninth report in the series, covering SY 2015–2016. FNS will use results from this report in identifying those States that must develop and implement direct certification continuous improvement plans (CIPs), as required by Section 101 of the Healthy, Hunger-Free Kids Act (HHFKA) of 2010 (P.L. 111-296). It calculated State-specific performance metrics from data reported by State agencies and school food authorities and highlighted direct certification operations in a handful of States for insight into successful strategies and promising practices.

Key Findings:

- The calculated national percentage of SNAP-participant children directly certified for free school meals was 92 percent in both SY 2015-2016 and SY 2016-2017. This is an increase of 1 percentage point from the direct certification performance rate in SY 2014-2015 percent and a 5 percentage point increase since SY 2013-2014.
- Twenty-eight States met or exceeded the 95 percent benchmark requirement for SY 2016-2017. The 24 States that did not achieve a 95 percent direct certification rate in SY 2016-2017 are required to develop and implement a direct certification continuous improvement plan (CIP) detailing how the State will improve its direct certification procedures.
- SY 2016-2017 marked the first time that the majority of States met the direct certification performance target. Three additional States met the requirement over SY 2015-2016, when 25 States met the 95 percent benchmark.

RESEARCH IN PROGRESS

Research in the Field

The following section provides a brief description of the research studies that are currently in the field:

Study of School Food Authority (SFA) Procurement Practices

This study is a nationally representative, descriptive examination of current procurement practices used by SFAs, including the scope and nature of food service management company contracts, cooperative buying arrangements, recordkeeping used to track rebates, discounts, credits, local purchasing preferences, and food purchasing specifications. The final report is expected in 2020.

Study of Non-response to School Meals Income Verification

The objectives of the study are to evaluate the accuracy of the school meals benefit determination process, compare the results to findings from a similar FNS study conducted in 2004, and discuss policy implications of the findings. As part of the evaluation, the study will also examine the current methodologies and processes used by local education agencies (LEAs) to conduct the school meals verification process. Data collection is currently underway. The final report is expected in late 2020.

Evaluation of the Independent Review Process

The Healthy Hunger-Free Kids Act (HHFKA) included several provisions to help increase effectiveness and integrity in Child Nutrition programs. As part of an effort to decrease certification error during the eligibility determination process, Section 304 of the HHFKA requires certain local educational authorities to conduct a second, independent review of applications for free and reduced price meal benefits before eligibility determinations are made. FNS published a final rule establishing the requirements related to the provision, which became effective in SY 2014-2015. This evaluation will assess the process and effectiveness of this requirement, and help to determine if changes in the process are necessary. Data collection is currently underway. The final report is expected in the spring of 2021.

Evaluation of CN Special Grants: Administrative Reviews and Training (ART) Grants

This study will provide FNS with formative research for the Administrative Review and Training (ART) Grant to examine the implementation of interventions and the process that followed to meet intended grant outcomes. This study will help FNS understand any effects of the ART grant interventions on administrative processes, examine long-term sustainability of grant-funded activities, and describe challenges to ART grant implementation and sustainability. Data collection is currently underway. The final report is expected in April of 2020.

2018 Summer Electronic Benefit Transfer (EBT) Evaluation

The Summer EBT for Children demonstrations were authorized and funded by Congress in 2010 as a complement to traditional summer meal programs. A rigorous evaluation showed that Summer EBT substantially reduced food insecurity among children and increased the consumption of healthy foods. This study will continue to examine benefit use (participation and redemption). As new grantees were added in 2018, the study will also provide an examination of the start-up challenges and costs experienced by these new grantees, as well as those that have expanded to additional areas. Data collection began in April 2019 and the final report is expected in early 2020.

Ongoing Research

The following section provides a brief description of ongoing FNS research and the current status of these studies:

School Meal Programs Research

Child Nutrition Reducing Burden Study

This project will generate the report to Congress required by the passage of the Final FY 2017 Omnibus appropriations provided funding for FNS to contract for an independent study to identify the best means of efficiently consolidating Child Nutrition Program reporting requirements for school food authorities and state agencies (House Report 114-531). This study examined the policies and regulations, processes for reporting, and the resulting burden felt by State agencies and school food authorities. Data collection was completed in May 2018. The report is expected to be published in May 2019.

Successful Approaches to Reduce Sodium in School Meals

FNS conducted a study on the market availability of foods served in school meals that meet the current and future sodium requirements. The study also identified best practices in schools that were successfully meeting sodium targets that could be used to provide technical assistance to school food authorities developing lower sodium menus. The final report is expected to be published in May 2019.

School Nutrition and Meal Cost Study-II (SNMCS-II)

Given FNS's commitment to periodically review the school meal programs and provide critical information to policymakers and other stakeholders, SNMCS-II will build on the results of SNMCS-I. It will provide a comprehensive picture of the school meal programs in SY 2019-2010 and will provide critical information about the nutritional quality, cost, and acceptability of school meals. The integrated structure of SNMCS-II will further the precedent set by SNMCS-I and support analysis of the relationships among key domains including the relationship between the nutritional quality and cost of school meals. This study will also assess the need for meal reimbursement adjustments for five outlying areas (Alaska, Guam, Hawaii, Puerto Rico, and the U.S. Virgin Islands). Estimates of the costs to produce school lunches and breakfasts in these outlying areas will be compared to those costs in the contiguous 48 States.

Review of Child Nutrition Data and Analysis for Program Management

The current routine data collection requirements for the child nutrition programs have their roots in the paper and early computer eras and reflect concerns with paperwork and reporting burden. In many cases, data collected at the service delivery point (e.g., school or child care provider) are aggregated at one or more level before reporting to FNS as State data, resulting in a significant loss of potentially valuable information along the way. Some States/school districts have developed more sophisticated systems; however, there is no comprehensive approach to utilizing program data timely and effectively for program oversight and management improvement at the Federal, State and local levels. This project will provide a comprehensive assessment of the FNS child nutrition management information needs and make recommendations for information system improvements, as well as identify the reporting and recordkeeping requirements and costs needed to support such improvements. The final report will be published in the fall of 2019.

Summer Food Service Program (SFSP) Characteristics Study

The SFSP Characteristics Study was the first comprehensive evaluation of the program since 2003. The study was designed to describe SFSP operations and characteristics at the State, sponsor, and site levels. Data on SFSP operations and the characteristics of sponsors and sites are incorporated into a four-page infographic, to be released in the spring of 2019.

Community Eligibility Provision Characteristics Study

With the expansion of the Community Eligibility Provision (CEP) nationwide in SY 2014-2015, FNS is in need of updated information on the characteristics of participating and eligible non-participating CEP schools and school districts. This study will examine operational issues and perceived incentives and barriers for adopting CEP as well as the impacts on lunch and breakfast participation and per meal revenues. Using data collected in School Year 2016-2017, the study will update the information obtained in the implementation component of the earlier Community Eligibility Provision Evaluation of the early implementers of CEP (<https://www.fns.usda.gov/community-eligibility-provision-evaluation>). The final report is expected in the summer of 2019.

School Breakfast Program Literature Review

The purpose of this literature review is to summarize and synthesize the literature from 2005 to the present on 1) the association of eating breakfast on school performance, weight and health; 2) trends in the percent of school children who skip breakfast; 3) trends in SBP participation; and 4) best practices in SBP delivery. The results of this review will inform FNS communication and research activities related to the SBP.

Assessment of Alternatives to the State Administrative Expense (SAE) Formula

The Child Nutrition programs have changed substantially since the SAE formula was last revised in the 1990s. This project will assess the effectiveness of the current formula used for State administrative expense fund allocations and develop and test a range of possible alternative algorithms to improve the formula. Data collection was completed in the summer of 2018. The final report is expected in the summer of 2019.

Evaluation of the Direct Certification with Medicaid (DC-M) Demonstrations for Free and Reduced Price Meals

Under the Healthy, Hunger-Free Kids Act of 2010, Congress mandated that FNS conduct a demonstration that directly certifies students for free school meals based on income eligibility identified through Medicaid data. Under the administrative pilot authority in Section 18(c) of the Richard B. Russell National School Lunch Act (NSLA), FNS began conducting new demonstrations in SY 2016-17 to directly certify students for both free and reduced price meals using Medicaid data in the NSLP and SBP. FNS awarded demonstrations to a second cohort of eight states for SY 2017-2018. The evaluation study for this cohort is underway and examines the impact of the demonstration on certification and participation in NSLP and SBP as well as the costs and savings to the federal government, States, and local agencies in federal reimbursements and administrative costs. It also examines challenges to implementation and how each state conducted their data matches. The final results from the first cohort of states will be published in the fall of 2019, while the results from the second cohort of states will be published in early 2020. A third year of data collection is anticipated to begin later in 2019.

Evaluation of the School Meal Data Collection Process

This study describes and evaluates the methodologies and processes used by schools, school food authorities (SFAs) and State agencies to collect and report data on three FNS forms used for the Federal school meal programs: the Report of School Program Operations (FNS-10), the SFA Verification Collection Report (FNS-742), and the State Agency Direct Certification Rate Data Element Report (FNS-834). In addition to describing the processes, the study identifies potential sources of error when completing the three forms, and provides useful practices and recommendations for improving data collection processes. This process study collected data through in-person qualitative interviews with respondents across four States: Alabama, New York, Oklahoma, and Wyoming. Respondents in each State included State directors and staff from the

NSLP State agency and the SNAP State agency, 10 SFA directors, and 30 school food managers. Data collection has been completed and the final report is expected in summer 2019.

Assessment of the Administrative Review Process

FNS has recently launched a new Administrative Review process for the school meals programs. This study will assess the extent to which these reviews effectively identify risk areas and noncompliance with program requirements. Findings will help to ensure that State agencies are able to provide meaningful technical assistance and require appropriate corrective action for noncompliance. The study will also examine the management of review and oversight resources. Where weaknesses in process or outcomes are found, the project will seek to identify more effective methods already in use in Government and/or industry for application in school meals. Data collection has been completed and final report is expected in late 2019.

Child Nutrition Program Operations Study-II

This multi-year, cross-sectional study collects and analyzes data on select operational aspects of the Child Nutrition programs. This includes a range of descriptive information from the State and school district levels, as well as data on special topics of current interest, such as the level of State and local subsidies beyond Federal reimbursements, nutrition education and promotion in schools, policies regarding unpaid meal balances, professional standards and training requirements, and practices related to local food purchasing. The data cover the four school years starting with SY 2015-2016. Results from the first three years of data collection will be published in 2019 and 2020 and will be used to inform Child Nutrition program management and policy development.

Evaluation of CN Special Grants: Team Nutrition Training Grants

This study examines the Team Nutrition Training Grant (TNTG) program in order to describe the activities of grantees, their implementation strategies, and the characteristics of sites and participants. The Team Nutrition Training Grants provide states with support for nutrition education, training, and technical assistance activities to support implementation of USDA nutrition standards for meals and snacks offered through the Child Nutrition Programs (NSLP, SBP, and CACFP). Technical assistance is currently being provided to the FY 2016 cohort of TNTG grantees to support grantee evaluation activities. The study results are expected in the spring of 2020 and will inform guidance for strengthening evaluation practices among future grantees.

The Access, Participation, Eligibility and Certification (APEC) series

The Improper Payments Elimination and Recovery Act (IPERA) requires Federal agencies to report annually on the extent of erroneous payments in their programs, including *overpayments* (payments that were made improperly or exceeded the proper level) and *underpayments* (payments that were denied improperly or were lower than the proper level). This series is conducted at approximately five-year intervals to provide a baseline of calculated error in the School Meals programs.

The objective of the third study in this series is to calculate updated, nationally-representative estimates of annual erroneous payments in the school meals programs by replicating the "APEC methodology," (which was implemented in APEC-I and APEC-II) using data collected in SY 2017-18. The estimates will measure error in the certification, meal claiming and aggregation processes. In addition, the study includes: (1) robust, statistically reliable national estimates of the annual amount of erroneous payments in NSLP and SBP among sub-groups, such as student, school, and SFA type; (2) a sub-study on the differences in error rates among SFAs using different program integrity implementation strategies; (3) qualitative analyses examining the reasons for erroneous payments; and (4) model-based State-level point estimates for the 48 continental States and the District of Columbia. Data collection was recently completed. The report on APEC-III findings will be published in the fall of 2020.

Farm to School Census and Comprehensive Review

This study will review and describe the multiple facets of farm to school, including the USDA Farm to School Grant Program and general growth of farm to school efforts across the country. The final report will comprehensively examine farm to school and its progress since the passage of the Healthy, Hunger-Free Kids Act of 2010. Study activities include a literature review and gap analysis of available farm to school data sources, related research, and stakeholder perspectives; the Farm to School Census, which will be conducted via web survey in the fall of 2019; a survey of school food distributors; and an evaluation of USDA Farm to School grantee activities. The results of this study will improve the methods and tools used by FNS to describe the impact and benefits of formal and informal farm to school activities administered by grantees, schools, SFAs, and other stakeholders. The final report is expected in early 2021.

Child and Adult Care Food Program Research

CACFP Meal Claims Feasibility

The aim of this IPERA compliance reporting feasibility study is to develop a reliable method of assessment of erroneous meal claims in CACFP-Family Day Care Homes, test the method on a sample of FDCHs for the purpose of estimating the rate of improper payments and provide annual estimates of erroneous payments. Specifically, the study focuses on accurately estimating meals that are claimed but not served. Previous efforts to develop a reliable method for validating meal reimbursement vs. meals served to children at FDCHs produced unreliable results. However, a study in 2010 held more promise, when parents' report of child attendance was matched with observed meals served at the center. Consequently, an approach that included attendance-time-derived meals (ATDMs) with parent report of child drop off and pick up times combined with data on meals served, presented the most meaningful option for identifying a method for estimating meals claimed errors in these settings. The study objectives include: 1) design a method to accurately estimate the rate of erroneous payments; 2) test the method on a sample of FDCHs; and 3) provide feasibility analyses and a report of the reliability of the method. If the method is deemed unreliable, an alternative approach will be proposed. Data collection has been completed and the final report is expected in summer 2019.

Erroneous Payments in Childcare Centers (EPICCS)

Building upon the methods developed for schools in the Access, Participation, Eligibility, and Certification (APEC) studies, this study has three important goals: (1) provide FNS with a reliable measure to estimate erroneous payments in the child care center component of the CACFP, (2) develop reliable estimation models that FNS can use to update erroneous payment estimates annually, and (3) prepare a white paper on methodologies to compute state-level estimates of erroneous payments. Data collection was recently completed and the final report will be published in early 2020.

Study of Nutrition and Wellness Quality in Child Care Settings (SNAQCS)

The Study on Nutrition and Wellness Quality in Child Care Settings (SNAQCS) is a congressionally mandated study that will 1) assess nutrition and wellness policies/practices and meal quality for infants and children in CACFP child care settings; 2) describe food and nutrient intakes of infants and children in CACFP child care centers and outside of child care; 3) determine the meal costs and revenues in CACFP child care centers; and, 4) describe and assess plate waste in CACFP child care centers. Data collection is complete and the final report is expected in 2020.

Summer Meal Programs Research

Summer Meal Program Participant Characteristics and Meal Analysis of Quality (Summer Meals Study)

The Summer Meals Study will provide a comprehensive, up-to-date understanding of sponsor, site, and child-level participation in the Summer Food Service Program (SFSP) and Seamless Summer Option (SSO). This is the first national study to simultaneously examine program characteristics in relation to participation and satisfaction with the programs among households. Specifically, the study will examine children's and their caregivers' satisfaction with the program, ways in which FNS could better accommodate their needs, and why families living in eligible areas are not participating in the Summer Meal Programs. The study will also describe sponsors' and sites' meal service characteristics, the nutritional quality of the meals offered and the activities the sites provide in an effort to determine how these factors influence children's participation and satisfaction with the program. In addition, the study will investigate the barriers and facilitators to preparing and serving summer meals, and identify reasons former sponsors are no longer participating in the Summer Meal Programs. Data collection was completed in the fall of 2018. The final report is expected in the fall of 2019.

Summer Food Service Program (SFSP) Integrity Study

The Summer Food Service Program (SFSP) provides payments for nutritious meals served to children at approved sites that meet eligibility requirements during extended periods of school closures. State agencies are a critical link in achieving Program Integrity by ensuring compliance with Program regulations, providing training, and conducting oversight reviews of sponsors and sites. This national study will examine how various State Agencies successfully administer and provide effective Program oversight. The study will consider Program characteristics, location – such as differences in rural and urban areas, and best practices and challenges associated with each model. It will also focus on identifying potential barriers to ensuring the integrity and effective management of Program operations. The survey will provide additional insight into nationwide integrity challenges existing in the SFSP. The study results will help FNS identify what resources, training, or technical assistance may be necessary to provide State Agencies in their effective administration and monitoring of the SFSP. Data collection will begin in March 2020 and the final report is expected in late 2021.

Research Conducted through Grant Activities

Rural Child Poverty Nutrition Center

The purpose of this grant is to establish the Rural Child Poverty Nutrition Center (RCPNC) at the University of Kentucky. The objective of the Center is to reduce child food insecurity by improving program coordination among USDA-FNS Child Nutrition Programs and other nutrition assistance programs. RCPNC has formed strategic partnerships to ensure successful program implementation, relying on guidance in terms of content area expertise, technology, training, and outreach. The University of Kentucky manages sub-grantees who have proposed creative strategies to increase participation in these programs among families with children in persistently poor rural counties in 15 states. Sub-grantees' programs are evaluated using qualitative and quantitative methodologies; evaluation findings and implementation strategies will be widely disseminated. The final report of project activities will be submitted to FNS in the summer of 2019.

School Wellness Policy Cooperative Agreement

The purpose of this cooperative agreement is to conduct State law and district wellness policy surveillance to examine implementation of wellness and related laws and policies on schools and students nationwide from a quantitative and qualitative perspective. As part of the quantitative evaluation, the University of Illinois at Chicago collected wellness policy information from the sample of school districts participating in the School Nutrition and Meal Cost Study in order to

examine the multi-level associations between State laws, district wellness policies, school practices, and student outcomes. Results from these analyses are expected to be published in late 2019 or 2020. Other key activities of the study include quantitatively examining the impact of state laws on school and classroom practices using CDC's School Health Policies and Practices Study (SHPPS), conducting focus groups with key stakeholders (including district officials, school administrators, food service managers, parents/PTA, students, community members, and athletics/booster groups) to understand barriers and facilitators to wellness and related policy implementation, and developing a wide range of tailored end products for dissemination across stakeholder groups, policy researchers, and the scientific community. Products of the research conducted under this cooperative agreement are available at <https://www.ihrp.uic.edu/content/research-products-national-wellness-policy-study>.