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 Programs (CNPs). Special thanks to every school nutrition professional who supported this research. For further information on FNS studies, please contact the Office of Policy Support (OPS) at FNSstudies@usda.gov. Links to published studies and reports as well as descriptions of ongoing studies conducted by OPS are available from the FNS website at http://www.fns.usda.gov/ops/research-and-analysis.

RECENTLY COMPLETED RESEARCH

USDA COMMUNITY ELIGIBILITY PROVISION CHARACTERISTICS STUDY, SY 2016-17

This Community Eligibility Provision (CEP) Characteristics study is the first comprehensive study since CEP became available nationwide in School Year (SY) 2014-15. The study was designed to provide FNS with information about the impact of CEP. The study included both implementation and impact components. The implementation study component described the characteristics of eligible, participating, and non-participating Local Education Agencies (LEAs) and collected information from State Agencies (SAs) and LEAs on challenges and barriers to CEP participation. The impact study component assessed the impact of CEP on student participation in and Federal reimbursements for the National School Lunch Program (NSLP) and School Breakfast Program (SBP) in SY 2016-17. (Published 3/17/2022)

Key findings:

- CEP participation increased both student school meal participation and level of federal reimbursements.
- Seventy-six percent of LEAs participating in CEP elected to participate LEA-wide.
- The LEA-wide Identified Student Percentage (ISP) was the most important perceived factor in CEP election.
- Eligible, non-participating LEAs indicated that CEP would be more appealing if the multiplier (1.6) used to determine meal reimbursement levels were increased.
- Financial concerns were the largest barrier to CEP participation for LEAs with lower ISPs.

USDA Direct Certification With Medicaid for Free and Reduced-Price Meals Demonstration, SY 2019-20

The demonstration of Direct Certification with Medicaid for Free and Reduced-Price Meals (DCM-F/RP) enhances benefit coordination by allowing authorized states and school districts to use information from Medicaid data files to identify students eligible to receive meals for free or at a reduced price, such that eligible students can be certified for meals without the need for household applications. Fifteen states participated in the DCM-F/RP demonstration. The current report is the third in a series of evaluations of the DCM-F/RP demonstrations, and it examines outcomes related to certification, participation, federal reimbursement, and state administrative costs in SY 2019-20 and over the course of the demonstration. (Published 3/16/2022)

Key findings:

- In SY 2019-20, more than 1.2 million students were directly certified for free meals based on Medicaid data in the 13 States for which this outcome was measured.
- In SY 2019-20, 240,000 students were directly certified for reduced-price meals based on Medicaid data in the 13 demonstration states for which this outcome was measured.
- State administrative costs decreased over the course of the demonstration, and only three states reported administrative costs for DCM-F/RP above $5,000 in SY 2019–20.

RESULTS OF FNS-Administered School Food Authority Survey on Supply Chain Disruption

The School Food Authority (SFA) Survey on Supply Chain Disruptions was administered by FNS from November 8 to December 13, 2021 through a 20-minute online questionnaire. The survey was sent to all SFAs operating CNPs to gather information on the scope of the supply chain disruptions and school meal operations during SY 2021-22. The response rate for the survey was 60 percent with SFAs from all States and territories responding. The results were weighted to be nationally representative. (Published 3/4/2022)

Key findings:

- The vast majority (90 percent) of SFAs are using the Seamless Summer Option (SSO) waiver to serve meals in SY 2021-22, which allows schools to offer all students free meals at the higher Summer Food Service Program (SFSP) reimbursement rates. Public and larger SFAs were more likely to use the waiver than smaller or private SFAs.
- About 92 percent of SFAs reported experiencing challenges due to supply chain disruptions. The most frequently cited challenges include limited product availability,

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orders arriving with missing or substituted items, and labor shortages. SFAs expect these and other issues to last into SY 2022-23. Public, larger, and rural SFAs were more likely to report challenges.

- SFAs reported experiencing the most challenges procuring meal service supplies, meat/meat alternates (such as chicken products), and whole grain items (including bakery items, breads, and rolls). Many SFAs reported that these challenges are getting worse compared to the beginning of SY 2021-22.
- SFAs reported increased staff stress or workload, higher program costs and difficulty maintaining compliance with the meal patterns as a result of supply chain disruptions. To offset these impacts, SFAs reported substituting products and using the waivers.
- SFAs using the SSO waiver were less likely to report a deficit in the school food service account balance as of October 2021 than SFAs operating the traditional NSLP. About 71 percent of SFAs were at least breaking even financially as of October 2021, which is comparable to what SFAs reported in a typical year pre-pandemic (73 percent). Smaller SFAs were more likely to report a deficit as of October 2021 than larger SFAs.
- During SY 2021-22, nearly three-quarters of SFAs (73 percent) reported experiencing staffing challenges. Smaller and private SFAs were less likely than larger and public SFAs to report staffing challenges. Cooks/food prep staff, drivers, and maintenance staff were the most commonly cited staffing shortages.

**Evaluation of the Independent Review of Applications in USDA Child Nutrition Programs**

Under the Richard B. Russell National School Lunch Act, LEAs that demonstrate high levels of, or a high risk for, administrative error associated with certification, verification, and other school meal program administrative processes are required to conduct a second review of the eligibility determinations. The requirement, which was first implemented in SY 2014-15, is intended to reduce administrative certification error in LEA processing of household applications. The Evaluation of the Independent Review Process study examined the processes, procedures, and effectiveness of a second, independent review of applications (IRA) for certain LEAs.

Study data were collected from (1) a survey of all SAs in Fall 2019 (49 of 51 SAs participated); (2) in-depth interviews in Fall 2019 with a selected sample of 30 LEAs; and (3) the collection of household applications from 15 LEAs interviewed for SYs 2016-17 and 2018-19. The study applied both a process and an outcomes assessment. (Published 12/1/2021)

**Key findings:**

- A certification/benefit issuance error rate of 10 percent or more was the primary method used to trigger the IRA requirement for the LEA.

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When SA discretion was used to identify LEAs for IRA, the primary risk indicator used was certification/benefit issuance error between 5 and 10 percent on Administrative Review.

IRA rarely found incorrect eligibility classification determination by the LEA (less than 5 percent of applications).

SA respondents perceived that LEAs of all sizes find it challenging to complete IRA within the 10-day timeframe.

LEAs reported that the biggest challenges to IRA are receiving incomplete/ineligible applications and lack of staff availability.

**STUDY OF NUTRITION AND ACTIVITY IN CHILD CARE SETTINGS IN USDA’S CHILD AND ADULT CARE FOOD PROGRAM (SNACS)**

Centers and family day care homes participating in USDA’s Child and Adult Care Food Program (CACFP) play an important role in supporting the health and wellness of the children they serve. The Study of Nutrition and Activity in Childcare Settings (SNACS) is the first nationally representative, comprehensive assessment of the CACFP. Data were collected in program year (PY) 2016–17 from CACFP providers and participating children on (1) the wellness policies and practices of childcare providers, (2) the nutritional quality of the meals served in CACFP, (3) CACFP meal costs and revenues, (4) the nutrient intake of infants and children in CACFP childcare settings and outside of childcare, and (5) the observed plate waste in CACFP settings. The CACFP providers in the study were both early care providers and before and after school care providers. Findings serve as an important baseline for the subsequent updates to the meal pattern and nutrition standards, which were implemented in October 2017. (Published 10/25/2021)

Key findings:

- The majority of lunches (88 percent), breakfasts (97 percent), and afternoon snacks (97 percent) served to 3–5-year-olds included all required meal components.
- CACFP lunches served to 3–5-year-olds in early care had a mean Healthy Eating Index-2015 (HEI-2015) score of 73 out of 100 and breakfasts had a mean score of 67 out of 100.
- Compared to days when they were not in childcare, children’s dietary intakes were significantly more aligned with the 2015-20 Dietary Guidelines for Americans (DGAs) on days when they were in childcare.

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**USDA Summer Meals Study**

The USDA Summer Meals Study provides a comprehensive, nationally representative assessment of the two summer meal programs operated by USDA: the SFSP and the NSLP SSO. It is the first national study to simultaneously examine the facilitators and barriers to program participation among participating and nonparticipating families, sponsors, and sites. This study examined the characteristics of participating and nonparticipating children, including sociodemographic characteristics, household food security status, reasons for participation or nonparticipation, and satisfaction with the meals served to children in the summer of 2018. (Published 10/20/2021)

Key findings:

- In 2018, the summer meal programs had a broad geographic reach. Nearly 80 percent of children in low-income households lived within 1 mile of an urban site or within 10 miles of a rural site.
- Overall, 45 percent of households with children living near a summer meal site were food insecure, which is higher than the 14 percent of households with children who were food insecure nationally in 2018.
- Lack of awareness of the summer meal programs was the most frequent reason for nonparticipation.
- Most summer meal sites were open to all children who wanted to attend, were located in urban areas, and were operated in school settings.
- In 2018, nine out of ten sites served fresh fruits and/or vegetables twice a week or more.

**Study of School Food Authority Procurement Practices**

The Study of School Food Authority Procurement Practices is the first study from FNS to comprehensively describe and assess the decision-making process regarding school food procurement practices during SY 2017–18 at the SFA level.

The sample was a subset of the 1,679 SFAs that participated in the Child Nutrition Program Operations Study II (CN-OPS-II), which included a module on SFA procurement practices in SY 2016–17. Findings are based on the perceptions and experiences of the SFA and they may not reflect actual regulations and policies; this study was not an audit. (Published 9/21/2021)

Key findings:

- In SY 2017-18, most SFAs (84.6 percent) procured goods or services for two or more CNPs together.

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• The top factor that influenced SFA decisions on procurement methods and contract type was estimated cost (31.4 percent).
• To ensure compliance with the Buy American provision, 48.9 percent of SFAs included the Buy American clause in bid solicitations.
• More than half of SFAs (57.1 percent) that use food service management companies reported doing so to help maintain procurement compliance.

THIRD ACCESS, PARTICIPATION, ELIGIBILITY, AND CERTIFICATION STUDY (APEC-III), SCHOOL YEAR 2017-18

The Payment Integrity Information Act of 2019 (PIIA) requires that FNS identify and reduce improper payments in their programs. FNS relies upon the Access, Participation, Eligibility and Certification (APEC) study series to provide reliable, statistically valid estimates of improper payments made to school districts operating the NSLP and SBP. In addition, the APEC studies help identify sources of program error for integrity-focused policy and technical assistance.

FNS conducted previous iterations of the study in SY 2005-06 (APEC-I) and 2012-13 (APEC-II). APEC-III is a nationally-representative study of SAs, SFAs, and households with children participating in NSLP and/or SBP in SY 2017-18. (Published 9/3/2021)

Key findings:

• Estimated improper payments in SY 2017-18 were 8.02 percent of total reimbursements in NSLP and 8.40 percent in SBP. This is within the 10-percent threshold required to comply with PIIA.
• An estimated 20.0 percent of certifications in schools that did not elect the CEP were in error.
• The overall certification error rate for CEP schools was very low at 2.7 percent.
• Students that were directly certified based on household participation in one or more means-tested Federal assistance program had a much lower error rate than those certified by application.


**Study of Nonresponse to the School Meals Application Verification Process**

Students receiving free or reduced price (F/RP) meal benefits through the NSLP and SBP are certified either by application or direct certification. To detect and deter errors in the certification process, school districts must verify (1) a small sample of approved applications and (2) all questionable applications (called “verification for cause”).

This in-depth case study used data from a non-random sample of 20 large school districts in 8 metropolitan areas to examine (1) the accuracy of the current verification process, (2) district practices when verifying applications for cause, and (3) the ultimate results of the verification process, including the reasons why households do not respond to verification requests and how many households reapply. Data were collected from November 2018–May 2019. (Published 7/20/2021)

Key findings:

- On average, approximately 44 percent of households in the districts’ verification samples had their benefits terminated because they did not respond to the verification request.
- Most responders (71 percent) to the verification request maintained some level of F/RP benefits.
- The majority (63 percent) of verification nonresponders were determined to be eligible for F/RP meals based on the household survey.

**Child Nutrition Program Operations Study II (CN-OPS II), SY 2016-17 Report**

CN-OPS II is a multiyear study designed to provide FNS with information on current SA and SFA policies, practices, and needs related to school nutrition service operations, financial management, meal counting, eligibility, nutrition standards, and personnel. Results inform CN program management and policy development.

The second year of CN-OPS II relied on data collected from October 2017 – January 2018 through web-based surveys of state CN directors and a nationally representative stratified sample of SFA directors from public school districts with at least one school participating in the NSLP or SBP. While survey questions primarily asked about SY 2016-17, the questionnaire asked for financial data from SY 2015-16. (Published 6/24/2021)

Key findings:

- SFA participation in the CACFP At-Risk Afterschool Meals component more than doubled from SY 2015-16 to SY 2016-17.

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More than 70 percent of SFAs broke even or experienced a financial surplus in SY 2015-16.

One-third of SFAs reported using electronic applications to determine eligibility for F/RP school meals.

SFA directors hired after the Professional Standards went into effect had higher levels of education than those hired before the standards went into effect.

**DIRECT CERTIFICATION IN THE NATIONAL SCHOOL LUNCH PROGRAM: STATE IMPLEMENTATION PROGRESS REPORT TO CONGRESS, SY 2017-18 AND SY 2018-19**

This report responds to the requirement of P.L. 110-246 (also known as the 2008 Farm Bill) to assess the effectiveness of state and local efforts to directly certify children for free school meals. Direct certification is a process conducted by the states and by LEAs to certify eligible children for free meals without the need for household applications. The 2004 Child Nutrition and WIC Reauthorization Act (P.L. 108-265) required LEAs to establish systems to directly certify children from households that receive Supplemental Nutrition Assistance Program (SNAP) benefits by SY 2008-09. This report presents information on the outcomes of direct certification for SY 2017-18 and SY 2018-19. (Published 6/22/2021)

**Key findings:**

- The calculated national percentage of SNAP-participant children directly certified for free school meals was 98 percent in both SY 2017-18 and SY 2018-19 based on State reports.
- This is a 6 percentage point improvement from the performance rate in SY 2016-17, which was 92 percent, and an 11-percentage point increase since SY 2013-14.
- Forty States met or exceeded the required 95 percent direct certification rate benchmark for SY 2018-19.

**EVALUATION OF THE FY 2016 TEAM NUTRITION TRAINING GRANTS**

The FNS Team Nutrition Training Grant (TNTG) program began in 1995 to assist students participating in the NSLP and SBP in making healthy food choices and to improve the nutritional content of meals and snacks served by programs receiving CACFP funding. The grant funding provided to SAs in support of these programs is intended to be used for training, technical

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assistance, and nutrition education to assist schools, child care settings, summer meal sites, parents or caregivers, and children to align with the DGAs.

In September 2016, FNS awarded Team Nutrition Training Grants to 14 SAs that administer the USDA’s NSLP, SBP, and CACFP. Ultimately, 13 states participated. Eight states received grants focused on school meals programs, and five states focused on providing training to providers participating in CACFP in child care centers and family day care homes.

FNS conducted an evaluation of the Fiscal Year (FY) 2016 grantee interventions. The report includes broad findings from the grants, lessons learned from the experience, and recommendations for accommodating future evaluations in the grant program. It also contains a comprehensive appendix that summarizes all evaluated interventions and the findings of those evaluations by state agency. (Published 6/15/2021)

Key findings:

- Eleven interventions that focused on nutrition education of students – either by training school staff to conduct nutrition education activities with students or training students directly – were evaluated and showed mixed results.
- Nine interventions to improve the overall healthfulness of the school environment were evaluated, and the most rigorously evaluated of these showed significant positive results.
- School administration support, in-person training and technical assistance, and regular reminders to intervention participants help sustain participation in the intervention activities.
- Grantees found it difficult to transition from a role providing resources and services to also being evaluators of those services.
- Multiple simultaneous or “bundled” interventions with the same participants were harder to implement with fidelity.
- Not all activities funded by the FY 2016 Team Nutrition Training Grants were rigorously evaluated or appropriate for a rigorous evaluation.
- USDA should allow grantees to narrow their focus to a smaller number of objectives in order to encourage more intensive interventions that are more conducive to rigorous evaluation.

RESEARCH IN PROGRESS

SCHOOL MEAL PROGRAMS RESEARCH

Expected in 2022

SCHOOL-BASED STRATEGIES TO IMPROVE ACCEPTANCE OF HEALTHIER FOODS AND DIETARY PATTERNS: A RAPID REVIEW

The USDA Nutrition Evidence Systematic Review (NESR) team conducted a rapid review to summarize evidence on school-based interventions for improving eating habits in children and adolescents. The objective of this rapid review was to answer the following question: What is the effect of school-based strategies that aim to improve acceptance of healthier foods and dietary
patterns in children and adolescents on dietary intake and dietary intake-related behaviors? A report is expected to be published in 2022.

**CHILD NUTRITION PROGRAM OPERATIONS STUDY II (CN-OPS II), SY 2017-18**
As described previously, CN-OPS-II provides FNS with information on SA and SFA policies, practices, and needs. The study also includes 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. A report for SY 2017-18 is expected to be published in 2022.

*Expected in 2024*

**FARM TO SCHOOL CENSUS**
The Farm to School Census is conducted periodically and provides the only nationally-representative data available on farm to school participation and activities in the United States. The next Census will take place in Fall 2023 and collect information for school year 2022-23. Data collection will focus on understanding the characteristics of SFAs participating in farm to school and the scope and details of the activities they engage in (i.e., local food procurement, gardening, and food/agriculture education). A full report is expected to publish in 2024.

**EVALUATION OF THE TEAM NUTRITION E-STAR TRAINING PROGRAM**
This evaluation will examine the implementation and effectiveness of the Team Nutrition Enhanced Strategies, Training, Action Plans, and Resources (E-STAR) Training Grant program. E-STAR, a school food service curriculum developed by the Institute of Child Nutrition, has been implemented starting in SY 2021-22 by Michigan Department of Education, the SA that received the FY 2019 Team Nutrition E-STAR Training Grant. Data collection is currently underway, and a full report is expected to publish in 2024.

*Expected in 2026*

**FOURTH ACCESS, PARTICIPATION, ELIGIBILITY AND CERTIFICATION STUDY (APEC-IV)**
PIIA requires Federal agencies to report annually on the extent of improper payments in their programs, including both overpayments and underpayments. In addition, studying sources of error allows FNS to provide technical assistance to ensure all eligible households receive benefits for which they qualify. Data collection was originally scheduled for SY 2022-23 but has been rescheduled to take place in SY 2023-2024 due to the COVID-19 pandemic. A full report of findings is expected to publish in 2026.

*Timing To Be Determined*

**SCHOOL NUTRITION AND MEAL COST STUDY II**
The School Nutrition and Meal Cost Study II (SNMCS-II) is the second nationally representative, comprehensive assessment of the school meal programs since the updated nutrition standards for school meals were phased in beginning SY 2012-13. The study will
contain information on the following: (1) foodservice operations, (2) the nutrient content of school meals as offered and served, (3) meal costs and revenues, and (4) student participation, dietary intake and plate waste. This study also includes the outlying areas cost study, which will estimate the costs of producing reimbursable school meals in Alaska, Guam, Hawaii, Puerto Rico, and the United States Virgin Islands. SNMCS-II will update the information from SNMCS-I, as well as examine the costs of producing school meals in certain States and Territories that were not part of SNMCS-I. Data collection was initiated in SY 2019-20 but suspended in March 2020 due to the COVID-19 pandemic.

**Ongoing Studies**

**School Meals Operations Study**
FNS conducts the School Meals Operations Study annually to collect and analyze data on select operational aspects of the CNPs. This includes a wide range of descriptive information from the State and school district levels, as well as data on special topics of current interest. Results are used to inform CNP management and policy development. Data collection is currently underway for SY 2021-22.

**Special Nutrition Quick Response Surveys (QRS)**
FNS has in place an expedited process to field quick response surveys (QRS) on topics of immediate interest from State and local program operators, such as SFAs and CACFP sponsors. These surveys generally do not exceed twenty minutes or twenty questions in length, and a QRS may only be fielded to each group of program operators once a year in order to ensure operators are not unduly burdened.

**Child and Adult Care Food Program (CACFP) Research**

**Expected in 2023**

**CACFP Meal Claims Feasibility Study, 2022**
To comply with PIIA, this study will test alternative methods for calculating meal claiming error in CACFP family day care homes (FDCHs). The pilot study will test the methodology on a sample of states and if validated, that methodology will support the development and implementation of a national scale error rate study. Data collection for this study is planned for 2022, and the final report is expected to publish in 2023.

**Expected in 2024**

**Family Day Care Home (FDCH) Participation Study**
The FDCH Participation Study will identify the challenges and barriers faced by FDCH providers participating in CACFP and gather and summarize recommendations to address these issues. Specifically, this study will expand on previous FNS studies by surveying a nationally representative sample of FDCH providers who discontinued their participation in CACFP or stopped operating altogether, and current CACFP participants. The study will also examine differences by program Tier status (I/II), urbanicity, and program size within the former and current participants. A final reported is expected to publish in 2024.
Expected in 2025

SECOND STUDY OF NUTRITION AND WELLNESS QUALITY IN CHILD CARE SETTINGS (SNACS--II)
The second Study of Nutrition and Wellness Quality in Child Care Settings (SNACS-II) will assess the same issues examined in the first study (SNACS), described above. It will also serve as the first evaluation of CACFP following implementation of the updated meal pattern guidelines, which took effect in October 2017. Data collection is expected to occur in school year 2022-23, and results should be published in 2025.

SUMMER MEAL PROGRAMS RESEARCH

Expected in 2022

USDA-FUNDED SUMMER FEEDING PROGRAMS AND KEY CHILD OUTCOMES OF PUBLIC HEALTH IMPORTANCE: A RAPID REVIEW
The USDA NESR team conducted a rapid review to summarize evidence on USDA-funded summer feeding programs to inform FNS communication, research, and program guidance. The objective of this rapid review was to answer the following questions: What is the relationship between participation in a USDA-funded summer feeding program and food security, food sufficiency, diet quality, food acceptance, and weight-related outcomes; and what best practices exist in summer feeding programs? A report is expected to be published in 2022.

SUMMER FOOD SERVICE PROGRAM (SFSP) INTEGRITY STUDY
The SFSP Integrity study will examine how SAs successfully administer and provide effective Program oversight. The study will interview States Agencies, sponsors and sites to: 1) examine and describe how States administer and provide SFSP oversight and why they believe it is effective; 2) identify SFSP integrity challenges common across States and types of sites in the administration and oversight of SFSP; and 3) identify existing or State-recommended resources, training, or technical assistance that would better support SAs in their effective administration and monitoring of the SFSP. Data for this study were collected in 2021, and the final report is expected to be released in 2022.

Expected in 2023

SUMMER ELECTRONIC BENEFIT TRANSFER (EBT) EVALUATION, 2019-2022
The Summer EBT for Children demonstrations were authorized and funded by Congress in 2010 as a complement to traditional summer meal programs. Through a competitive solicitation, USDA selected and funded four multi-year Summer EBT projects. Of those selected, two had experience implementing Summer EBT and two were new to the demonstration project. This study will build off previous iterations of the Summer EBT Evaluation to examine the impact of the 2019 grantee projects on food insecurity and consumption of healthy food. A final report is expected to publish in 2023.