Program Error in the National School Lunch Program and School Breakfast Program: Findings from the Second Access, Participation, Eligibility and Certification Study (APEC II)

Volume 1: Findings

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Authors:

Mathematica

Quinn Moore   Alicia Leonard
Judith Cannon   Nora Paxton
Dallas Dotter   Michael Ponza
Esa Eslami   Emily Weaver
John Hall   Eric Zeidman
Joanne Lee

Westat

Mustafa Karakus
Roline Milfort

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EXECUTIVE SUMMARY

The Food and Nutrition Service (FNS), U.S. Department of Agriculture (USDA), funded the the second Access, Participation, Eligibility, and Certification study (APEC-II) to obtain estimates of the prevalence of various types of program error in the NSLP and SBP for school year (SY) 2012–2013 and update information obtained in the first APEC study, conducted in SY 2005–2006.

Background

Millions of U.S. children participate in the NSLP and SBP each school day, receiving school meals that contribute to their overall nutrition and health. In fiscal year 2013, USDA provided cash and commodity support for more than 7.3 billion lunches and breakfasts to children across the country at a cost of approximately $15.7 billion. About three-quarters of these meals were served to children from low-income households who are certified to receive free or reduced-price meals.

FNS has long been committed to ensuring that the meals provided in schools are healthful and make important contributions toward children's dietary requirements. FNS has similarly been concerned about the integrity of the programs and has over the years developed policies and initiatives designed to ensure that meal benefits reach eligible students as intended and that districts receive correct reimbursements. However, a variety of program errors can undermine this goal and in many cases result in payment errors.

Program errors can be classified as certification or non-certification error. Certification errors occur when school districts claim reimbursement at the free or reduced-price rate for meals served to students who are not eligible for these benefits or when they fail to claim reimbursement at the free or reduced-price rate for children who have applied but were mistakenly denied benefits for which they were eligible. Non-certification errors occur when a school or school district makes errors in assessing whether meals are eligible for reimbursement or reporting the number and type of meals served when preparing or submitting its claim for reimbursement to the State agency that administers the school meal programs.

The APEC-I study, conducted by Mathematica Policy Research for FNS, provided the first reliable national estimates of certification and non-certification error and the improper payments that result from such errors. APEC-I found that for both the NSLP and SBP, approximately 9 percent of total reimbursements in SY 2005–2006 were improper because of certification errors. APEC-I found that overcertification—certification for a higher benefit than allowed under program rules—was more prevalent than undercertification—certification for a lower benefit than allowed under program rules, or a denial of an allowable benefit. Misreporting information on eligibility by households was substantially more prevalent than district administrative error as the underlying source for improper payments due to certification error. APEC-I found that meal claiming error (incorrectly claiming of meals that do not include the items required by program regulation or incorrectly failing to claim meals that do) was the most prevalent source of non-certification error. Improper payments due to meal claiming error accounted for 3.1 percent of total cash reimbursements and commodities in the NSLP and 9.8 percent of total SBP reimbursements. APEC-I found smaller amounts of improper payments due to aggregation errors (incorrectly

recording school meal transactions and reporting school-level meal counts). APEC-I found improper payments due to point-of-sale aggregation error accounted for less than one percent of NSLP reimbursements, improper payments due to error in school reports to the SFA accounted for about 1 percent of reimbursements, and improper payments due to error in SFA reports of meal counts to the State agency also accounted for about 1 percent of reimbursements. For the SBP, improper payments related to error in school reports to the SFA were somewhat higher than for the NSLP, but other rates of improper payment due to aggregation error were similar.

Study design and methods

The APEC-II study used a multistage-clustered sample design. Researchers selected representative samples of school districts, schools, and free or reduced-price meal applicants and directly certified students participating in the NSLP/SBP in the contiguous United States during SY 2012–2013. The study included a supplemental sample of schools participating in the Community Eligibility Provision (CEP), a provision available in seven States for SY 2012–2013 that allows schools to eliminate applications and receive reimbursements based on the percentage of students directly certified for free meals (or certified for free meals though other means that does not require verification). We collected data on these samples from several sources—surveys of households and School Food Authority (SFA) Directors; administrative data from schools, districts, and States; and observational data collected during visits to sampled schools. The data sources provided information that enabled us to measure certification and non-certification error. Each of the errors is calculated independently and then summed, taking into account interactions among the errors to estimate total net improper payments for both the NSLP and SBP.

Key findings

- During SY 2012–2013, gross improper payments due to certification error for all schools participating in the NSLP equaled $1.16 billion, or 9.8 percent of the roughly $11.80 billion in total cash and commodity reimbursements provided to school districts in the 48 contiguous States and the District of Columbia (Figure E.1). Gross improper payments due to certification error in the SBP equaled $366 million, corresponding to 11.0 percent of the roughly $3.34 billion in total SBP reimbursements. For both NSLP and SBP, about seven-tenths of gross improper payments were overpayments and about three-tenths were underpayments. The differences in gross improper payment rates between SYs 2005–2006 and 2012–2013 were not statistically significant. During SY 2005–2006, gross improper payments represented about 9 percent of both national NSLP and SBP reimbursements based on APEC-I estimates.

- During SY 2012–2013, one in five students who received or applied for meal benefits was certified inaccurately in schools not using the CEP (which was available in seven selected States at the time of this study). About two-thirds of students with certification error were certified for a higher level of benefits than that for which they were eligible, and about one-third were certified for a lower level of benefits than that for which they were eligible. The estimated certification error rate of 20 percent for SY 2012–2013 is 2 percentage points lower than the rate for SY 2005–2006 estimated in APEC-I, although this difference is not statistically significant.

Figure E.1. National estimates of improper payments due to certification error in the NSLP and SBP for all schools, SY 2012–2013
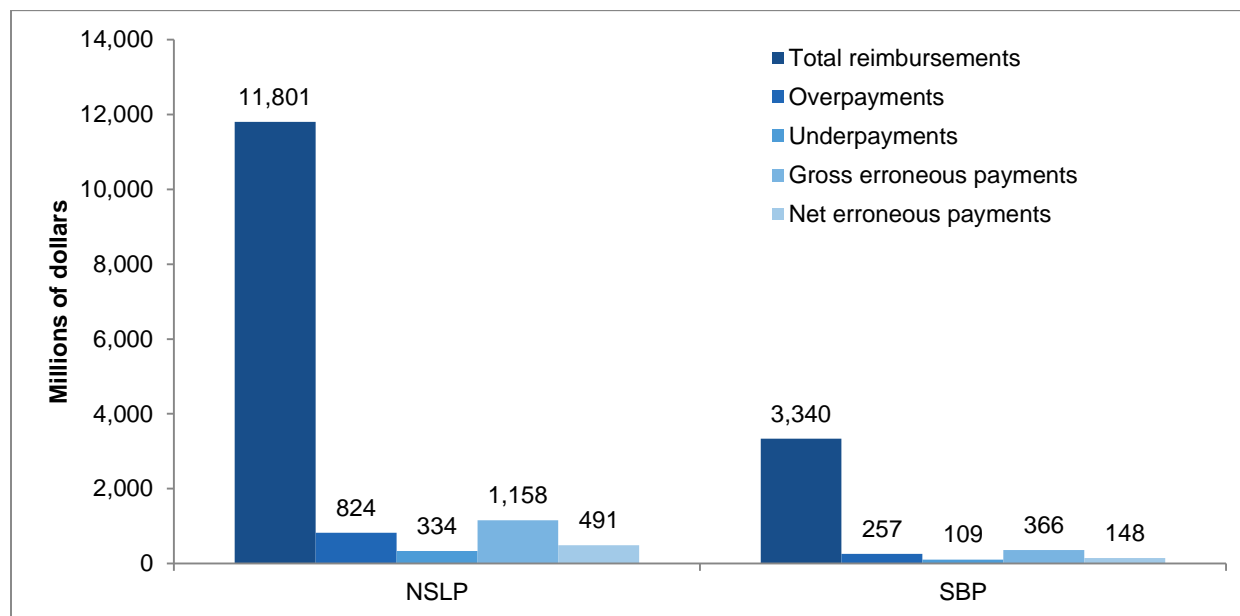
Source: APEC-II study, weighted data.
NSLP = National School Lunch Program; SBP = School Breakfast Program; SY = school year.

- Improper payment rates for students who were directly certified for free school meals or certified by application based on categorical eligibility were substantially lower than those for students who were certified by application based on income or who were denied applicants. As a result, about 80 percent of national improper payments due to certification error are related to applications either certified or denied based on household income.

- In schools not using the CEP during SY 2012–2013, household reporting error caused more than two-thirds of certification errors among certified students and denied applicants. The remainder was caused by administrative errors in processing the applications.

- Schools using the CEP had low rates of improper payments due to certification error. For CEP schools, which accounted for an estimated 2 percent of total NSLP reimbursements nationally for SY 2012–2013 and 4 percent of total SBP reimbursements, the gross improper payment rate due to certification error was less than 2 percent for both the NSLP and SBP. For non-CEP schools, this rate was 10 percent for the NSLP and 11 percent for the SBP. Notably, the majority of certification error for CEP schools was due to underpayments; for non-CEP schools, most was due to overpayments. Given that the CEP became available nationwide starting in SY 2014–2015, these findings are promising. However, in interpreting these findings, it is important to keep in mind that this analysis is based only on States that had implemented the CEP in SY 2012–2013. Districts within these States that elected to use the CEP could differ from typical districts nationally.

- The process by which schools assess and record whether a meal is reimbursable was another substantial source of improper payments, particularly in the SBP. Meal claiming error accounted for 5 percent of total NSLP reimbursements and 11 percent of total SBP

reimbursements. These meal claiming error rates are higher than those found by APEC-I for SY 2005–2006, although the difference for SBP is not statistically significant.

- Aggregation error is no longer an important source of improper payments. Gross error rates for the three types of aggregation error examined in the study were all less than 1 percent for NSLP and SBP, and several of these rates were very close to zero. Estimated rates of improper payments due to aggregation error during SY 2012–2013 are generally smaller than estimates for SY 2005–2006, when APEC-I was conducted.

- Estimates that account for interactions between certification and non-certification error indicate that total net improper payments across all error types in the NSLP equaled $968 million; this figure represents 8 percent of total NSLP reimbursements. Net total improper payments in the SBP due to certification error, meal claiming error, and aggregation error equaled $439 million, or 13 percent of total reimbursements in the SBP. Improper payment rates are higher in the SBP in part because of the higher incidence of meal claiming error in the SBP.

SUMMARY OF FINDINGS

The Food and Nutrition Service (FNS), U.S. Department of Agriculture (USDA), funded the the second Access, Participation, Eligibility, and Certification study (APEC-II) to obtain updated national estimates of the amounts and rates of improper payments in the NSLP and SBP for school year 2012–2013 and to assess trends in improper payment rates since SY 2005–2006, when the first APEC study was conducted.

A variety of program errors can result in payment errors. These errors can be classified as either certification or non-certification error. Certification errors occur when school districts claim reimbursement at the free or reduced-price rate for meals served to students who are not eligible for these benefits or when school districts fail to claim reimbursement at the free or reduced-price rate for students who have applied but were mistakenly denied benefits for which they were eligible. Non-certification errors occur when a school or school district makes errors in reporting the number and type of meals served when preparing or submitting its claim for reimbursement to the State agency that administers the school meal programs. Each of these kinds of program errors can result in improper payments.

The information provided in this report is intended to assist FNS in finding potential strategies to reduce and prevent program errors that contribute to improper payments, as well as meeting its reporting requirements to the Office of Management and Budget and Congress under the Improper Payments Elimination and Recovery Act of 2010.

Background

Millions of U.S. children participate in the NSLP and SBP each school day, receiving school meals that contribute to their overall nutrition and health. In fiscal year 2013, USDA provided cash and commodity support for more than 7.3 billion lunches and breakfasts to children across the country at a cost of approximately $15.7 billion. About three-quarters of these meals were served to children from low-income households who are certified to receive free or reduced-price meals; school districts received an extra subsidy for these meals.

All children enrolled in NSLP/SBP participating schools are eligible to receive reimbursable meals under the programs. Children from families with incomes at or below 130 percent of the Federal poverty level are eligible for free meals. Those with incomes above 130 percent and at or below 185 percent of the poverty level are eligible for reduced-price meals, for which students can be charged no more than 40 cents for lunch and 30 cents for breakfast. School Food Authorities (SFAs) establish the prices for meals served to children from families with incomes of more than 185 percent of the poverty level; however, some degree of Federal subsidy is still paid for each of these meals.

Students must be certified as eligible to receive free and reduced-price meals, and most students certified during the school year remain certified throughout the school year. Most students become certified to receive free or reduced-price meals based on applications submitted by their households to the school district. The district uses information provided on the application about household size, income, and participation in certain means-tested public assistance programs—the Supplemental Nutrition Assistance Program (SNAP), Temporary

Assistance to Needy Families (TANF), Food Distribution Program on Indian Reservations (FDPIR), or (in some States) Medicaid programs—to determine whether the students in the household qualify for free or reduced-price meal benefits. Students may also become certified for free meals through direct certification, which allows districts to use information provided by SNAP-, TANF-, and FDPIR-administering agencies to establish that a student is a member of a household participating in one of these programs and is thus automatically eligible to receive free meals. Certain children may also qualify for direct certification based on migrant, runaway, and homeless status or attestation of the principal.

In some schools, all students can receive free meals without applying or being directly certified in a current school year. These schools operate under Provisions 2 or 3 or under the recently authorized Community Eligibility Provision (CEP). Provisions 2 and 3 use information from a base year—during which the school uses standard certification and meal counting procedures—to determine reimbursements in subsequent years. The Healthy, Hunger-Free Kids Act of 2010 (HHFKA) added the CEP as an alternative to household applications for free and reduced-price meals in high-poverty districts and schools. Under this provision, participating schools offer free program meals to all students and do not have to use standard procedures to establish certification status. Program meals meeting regulatory standards are reimbursed at either the free or paid rate, with the free claiming percentage (FCP) equal to the percentage of enrolled students who are identified students (those directly certified or approved for free meals based on participation in programs serving homeless, migrant, and runaway children, identified in April of the previous school year) times a multiplier (currently 1.6). CEP schools can use their claiming percentages for up to four years, updating them sooner if the proportion of identified students increases. The provision is being phased in over a period of several years. During SY 2012–2013, it operated in six States and the District of Columbia. It is available nationwide during SY 2014–2015.

Law and regulation prohibit schools from requiring documentation of household income or benefit receipt in applying for free or reduced-price meals. Instead, school districts use a verification process to assess the accuracy of their certification decisions each year. Its intent is to detect and deter misreporting by applicants (and to reduce administrative error) that results in miscertification of students' benefit status and improper payments. In the verification process, school districts are required to select a small sample of applications that have already been approved and to obtain documentation of the households' income or SNAP, TANF, or FDPIR participation in order to verify their eligibility for free or reduced-price meals.[1]

Evidence of program error in the NSLP and SBP

Over the years, concern has grown that some of the children certified as eligible for free or reduced-price meal benefits are in fact ineligible for the benefits they receive. By 2006, several studies had found that many children from ineligible households were being certified for free or reduced-price meals (Burghardt et al. 2004). Research also indicated that the number of children approved for free meals nationally exceeded the estimated number in families with annual incomes of less than 130 percent of the Federal poverty level (Tordella 2001, 2003; Neuberger and Greenstein

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[1] For most districts, the verification sample must include the lesser of 3,000 approved applications or 3 percent of approved applications.

2003). This finding, coupled with evidence from other oversight activity, revealed that a substantial number of households misreport eligibility information and qualify for free or reduced-price meals. Although none of these studies used national samples of districts or students, and most suffered from methodological limitations, the combination of findings fueled an effort to reduce certification errors.

The APEC-I study, conducted by Mathematica Policy Research for FNS and released in November 2007, provided the first reliable national estimates of improper payments due to certification error made to *school* districts for the NSLP and SBP, covering SY 2005–2006 (Ponza et al. 2007). It was also the first national study to examine the amounts and rates of improper payments arising from the process of counting meals and obtaining reimbursements through State agencies after students were certified. APEC-I found that for both the NSLP and SBP, approximately 9 percent of total reimbursements were improper because of certification errors. This represented a significant level of improper payments as defined by the Improper Payments Information Act of 2002. APEC-I found that overcertification was more prevalent than undercertification, and misreporting information on eligibility by households was substantially more prevalent than district administrative error as the underlying source for improper payments due to certification error. Meal claiming error (incorrect recording of reimbursable meals by schools) was found to be a significant source of non-certification error, accounting for 3.1 percent of total cash reimbursements and commodities in the NSLP and 9.8 percent of total SBP reimbursements. APEC-I found improper payments due to aggregation errors (incorrectly recording school meal transactions and reporting school-level meal counts) to be smaller. APEC-I found improper payments due to point-of-sale aggregation error accounted for less than one percent of NSLP reimbursements, improper payments due to error in school reports to the SFA accounted for about accounted for about 1 percent of reimbursements, and improper payments due to error in SFA reports of meal counts to the State agency also accounted for about 1 percent of reimbursements. For the SBP, improper payments related to error in school reports to the SFA were somewhat higher than for the NSLP, but other rates of improper payment due to aggregation error were similar.

Legislative response to program error in the NSLP and SBP

The Child Nutrition and WIC Reauthorization Act (the Act) of 2004 (P.L. 108-265) changed the program's existing procedures for determining students' eligibility for free and reduced-price meal benefits. The Act strengthened rules governing certification and verification of eligibility and established new procedures to upgrade administration of meal programs and new technical assistance and training initiatives. At the same time, it placed limits on the proportion of applications for which income can be verified.

In addition, the Act and the more recent HHFKA added and revised regulations to improve the accuracy of the certification process. They also required other actions to help FNS reduce improper payments. Some examples include the following:

- Mandating performance targets for direct certification for free meals using SNAP data

- Providing performance awards for States making the greatest improvement in directly certifying SNAP children

- Requiring increased efforts to obtain household response to application verification requests or allowing direct verification by local education agencies (LEAs)

- Reinforcing requirements for monitoring SFAs to ensure accuracy of household applications, application processing, meal count tabulation, and the identification of a reimbursable meal

- Mandating a percentage of additional administrative reviews for districts with higher error rates

- Offering alternatives to the paper application systems, such as CEP, in low-income areas

- Establishing criteria and procedures for LEAs that demonstrate high levels of administrative error

- Establishing professional standards for school food service personnel, requiring professional education and training standards for certification of local school food service directors and staff, and developing criteria and standards for the selection of State Directors

- Developing additional methods for enforcing program compliance, such as fines for gross mismanagement or violation of program requirements

- Strengthening program compliance by prohibiting any school, institution, or individual that is terminated from one of the Child Nutrition programs and on a list of disqualified institutions and individuals from participating in or administering any of the Child Nutrition programs

Goals of the APEC-II study

The APEC-II study provides information to USDA to enable the department to assess program error in the NSLP and SBP. It provides updated estimates of improper payments made to school districts nationally for the NSLP and SBP for SY 2012–2013. The study replicates APEC-I but expands on that study by (1) accounting for a recently introduced provision, the CEP, in the SY 2012–2013 national estimate of improper payments and (2) generating estimates of total improper payments that combine certification and non-certification errors, taking into account interactions among those errors. Similar to APEC-I, the APEC-II study provides estimation models to enable FNS staff to update national estimates of improper payments for the NSLP and SBP annually using more easily obtainable district-level data. The APEC-II project is also examining alternatives for producing State-level estimates of improper payments. A separate forthcoming report will address these latter two research objectives.

Study design and methods

APEC-II study objectives were addressed using a multistage-clustered sample design, which includes representative samples of school districts, schools (public and private), and free and reduced-price meal applicants and directly certified students participating in the NSLP and SBP in the contiguous United States. The study includes samples of school districts and schools that operate under the CEP and those that do not. These samples include the following:

1. For the non-CEP sample: 130 SFAs that administer the meal programs, 392 schools (387 public and 5 private), and 3,761 free and reduced-price certified students (including directly certified students) and 611 denied applicants

2. For the CEP sample: 45 SFAs, 135 CEP schools, and 3,240 students (from each school, 24 students were sampled—10 students from the list of identified students, 8 students from the list of students certified by application, and 6 students from the list of students not certified for school meal benefits)

APEC-II collected data on these samples from several sources, as summarized in Table SF.1. These data sources included surveys of households and SFA directors; administrative data from schools, districts, and States; and observational data collected during visits to sampled schools. The data sources provided information that enabled us to measure both certification error and improper payments among individual students and non-certification error in the processes schools and districts use to claim reimbursements from State agencies. Certification error and non-certification error are first calculated independently and discussed separately for non-CEP and CEP schools. They are then summed to obtain an overall amount or rate of improper payments for each meal program, taking into account interactions among the two types of errors.

APEC-II generated national estimates of the following key outcomes (summarized in Figure SF.1):

• **Sources of certification error, non-CEP schools.** Certification error in non-CEP schools occurs when students are certified to receive a level of free or reduced-price meal benefits for which they are not eligible or are erroneously denied benefits for which they are eligible. It can arise in two main ways. Errors can occur when households report incorrect information on their applications for free or reduced-price meal benefits; this is called household reporting error. Districts can make mistakes in processing the applications, determining eligibility, and recording certification status information on the master benefit list; this is called administrative error. We estimate the prevalence of reporting and administrative error in non-CEP schools and the sources of error under each of these types. The error rates are calculated in terms of the percentage of students who applied for meal benefits.

• **Certification error rate, non-CEP schools.** The total certification error rate is defined as the percentage of students who were certified for free or reduced-price meals but are not eligible for the level of benefits they are receiving or benefit applicants who were eligible for but erroneously denied benefits. Students with certification error can be either overcertified—certified for a higher level of benefits than that for which they are eligible— or undercertified—certified for a lower level of benefits than that for which they are eligible or erroneously denied benefits.

• **Rate of improper payments due to certification error, non-CEP schools.** The rate of improper payments for non-CEP schools is defined as the percentage of SBP or NSLP reimbursements provided to districts for school meals that are incorrect because of certification error. This rate is equal to the ratio of the gross dollar amount of payments in error to the total amount of reimbursements for all meals.

- **Rate of improper payments due to certification error, CEP schools.** For schools using CEP, reimbursements are based on the claiming percentages for free and paid meals (all students receive free meals regardless of the claiming percentages). As a result, certification error occurs if a CEP group's claiming percentage for free or paid meals is incorrect. Undercertification error occurs if the school claimed a smaller reimbursement amount than it would have if its claiming percentages were correct. Overcertification error occurs if a larger reimbursement amount was claimed than the correct claiming percentages would suggest. The study's approach to estimating certification error in CEP schools has two steps: (1) assessing the accuracy of the claiming percentages and (2) comparing observed reimbursements (based on the claiming percentages used by the CEP school) with corrected reimbursements (based on the estimated actual claiming percentages calculated by the analysis team).

Table SF.1. Overview of APEC-II data collection

Data	Mode	Respondent	Analytical sample size[a]	Key data elements
School Food Authority survey data				
SFA director questionnaire	Self-administered hard-copy survey	SFA director	158 SFAs	Institutional characteristics, meal program participation for the SFA and for sampled schools, and certification procedures
Household survey data				
Applicants certified for free and reduced-price meals	In person	Parent/ guardian	3,575 students 3,085 certified for free meals 490 certified for reduced-price meals	Certification status, NSLP and SBP participation, household income, family size and composition, participation in SNAP and TANF, and demographic characteristics
Denied applicants	In person	Parent/ guardian	577 students	Household income, family size, NSLP and SBP participation, reasons for not reapplying, retrospective questions on changes in income or household composition, participation in SNAP and TANF, and demographic characteristics
Application/direct certification records data abstraction				
Applicants approved for free and reduced-price meals	Record abstraction	n.a.	3,761 students 3,257 eligible for free meals 504 eligible for reduced-price meals	Meal program application and direct certification information
Denied applicants	Record abstraction	n.a.	611 students	Meal program application and direct certification information
Changes in certification status and enrollment				
Applicants certified for free and reduced-price meals and denied applicants	Request electronic or hard-copy form	SFA director	119 SFAs	Meal program application and direct certification information, and enrollment changes
NSLP/SBP individual student-level participation data				
Applicants certified for free and reduced-price meals and denied applicants	Request electronic or paper data files	SFA director	106 SFAs	Number of reimbursable school breakfasts and lunches received each month during the school year

Table SF.1 (*continued*)

Data	Mode	Respondent	Analytical sample size[a]	Key data elements
CEP student matching data				
Student record data	Request electronic data files	SFA director	45 SFAs	Direct certification or meal program application status, other benefit program participation, student- and parent-identifying information, and siblings in household
Meal count and claiming data				
Cashier transactions	Interviewer observation	n.a.	25,041 lunch transactions from 436 schools 23,156 breakfast transactions from 421 schools	Food items on each tray, meal type, whether cashier records meal as reimbursable or not, and type of individual receiving meal (student or adult)
School meal count data	Interviewer abstraction	Administrative records	385 schools for lunch 375 schools for breakfast	Daily and weekly totals from all individual cash registers by meal type, weekly and monthly totals by meal type, and validated counts
School meal count data reported to SFA	Interviewer abstraction	Administrative records	411 schools for lunch 400 schools for breakfast	Monthly totals reported to districts for sampled schools
Consolidated meal counts and claims	Interviewer abstraction	Administrative records	384 schools for lunch 378 schools for breakfast	Monthly consolidated totals claimed by districts for sampled schools
Extant data				
District meal program data	Request electronic data files or hard-copy records	State education agency director	42 State agencies	Total district meal counts by reimbursement type
Program participation data supporting CEP analysis	Request electronic data files	State and local agencies	5 States	List of participants in the following programs (depending on availability): SNAP, TANF, foster care, homeless and runaway, migrant education, and Head Start
Form FNS-742 data	n.a.	FNS central office staff	n.a.	Verification results and eligibility determinations
FNS National Data Bank	n.a.	FNS central office staff	n.a.	Total reimbursements and commodity payments
Public-use administrative and survey data	n.a.	Common Core of Data U.S. Census data Other administrative data	n.a.	Other district-level data: locale, enrollment, percentage certified for free and reduced-price lunch, grade span of district, Title I status of schools, poverty rates, income levels, and NSLP and SBP certification and participation rates

[a] Some respondents provided incomplete data and could not be included in the analysis or were dropped because of ineligibility determined during data cleaning. We report the number of cases with data that are able to be analyzed.

APEC = Access, Participation, Eligibility, and Certification; CEP = Community Eligibility Provision; FNS = Food and Nutrition Service; NSLP = National School Lunch Program; SBP = School Breakfast Program; SFA = School Food Authority; SNAP = Supplemental Nutrition Assistance Program; TANF = Temporary Assistance for Needy Families.

n.a. = not applicable.

- **Non-certification error sources.** Non-certification error occurs in the stages between certifying students' eligibility status (in non-CEP schools), establishing the identified student percentage (ISP) and free and paid claiming rates (in CEP schools), and reporting meal counts to the State agency for reimbursement. The study examines meal claiming error and three types of aggregation error:

  - **Meal claiming error** occurs when cafeteria staff members make errors in assessing and recording whether a specific meal selection meets the criteria for a reimbursable meal under the NSLP or SBP. This includes meals claimed which do not include the food components required by the program, either because students did not select a complete reimburseable meal, or because the school did not provide a meal that met program standards.

  - **Aggregation error** is the general term for three kinds of possible errors made by schools and SFAs in the process of counting the number of meals served and reporting these to State agencies for reimbursement. *Point-of-sale aggregation error* occurs when the daily meal count totals from the points of sale are summed incorrectly. *School-to-SFA aggregation error* occurs when school totals are improperly recorded by the SFA. *SFA-to-State-agency aggregation error* occurs when school totals are improperly communicated from the SFA to the State agency.

- **Rates of improper payments due to non-certification errors.** Similar to the improper payment rate for certification errors, the rate of improper payments due to non-certification error is defined as the percentage of SBP or NSLP reimbursements for all meals that are incorrectly claimed. This rate is equal to the ratio of the gross amount of payments in error to the total amount of reimbursements for all meals (in the case of the NSLP, this also includes the value of commodities). For non-certification errors, the total reimbursement for a meal in error contributes to improper payments, consistent with program rules.

- **Total amounts and rates of improper payments.** Total combined improper payments from certification and non-certification errors are not equal to the sum of improper payments for certification and non-certification error because non-certification error can offset or augment improper payments resulting from a certification error. We derived estimates of net improper payments across all error types that take into account interactions among certification and non-certification errors.

The primary estimates of certification error rates and rates of improper payments due to certification error in non-CEP schools are based on all students who apply for meal benefits or are directly certified for them. These estimates therefore include denied applicants, including cases in which the household circumstances of a denied applicant indicate that he or she should have been certified for free or reduced-price meal benefits.

Figure SF.1. Key outcomes in the APEC-II study
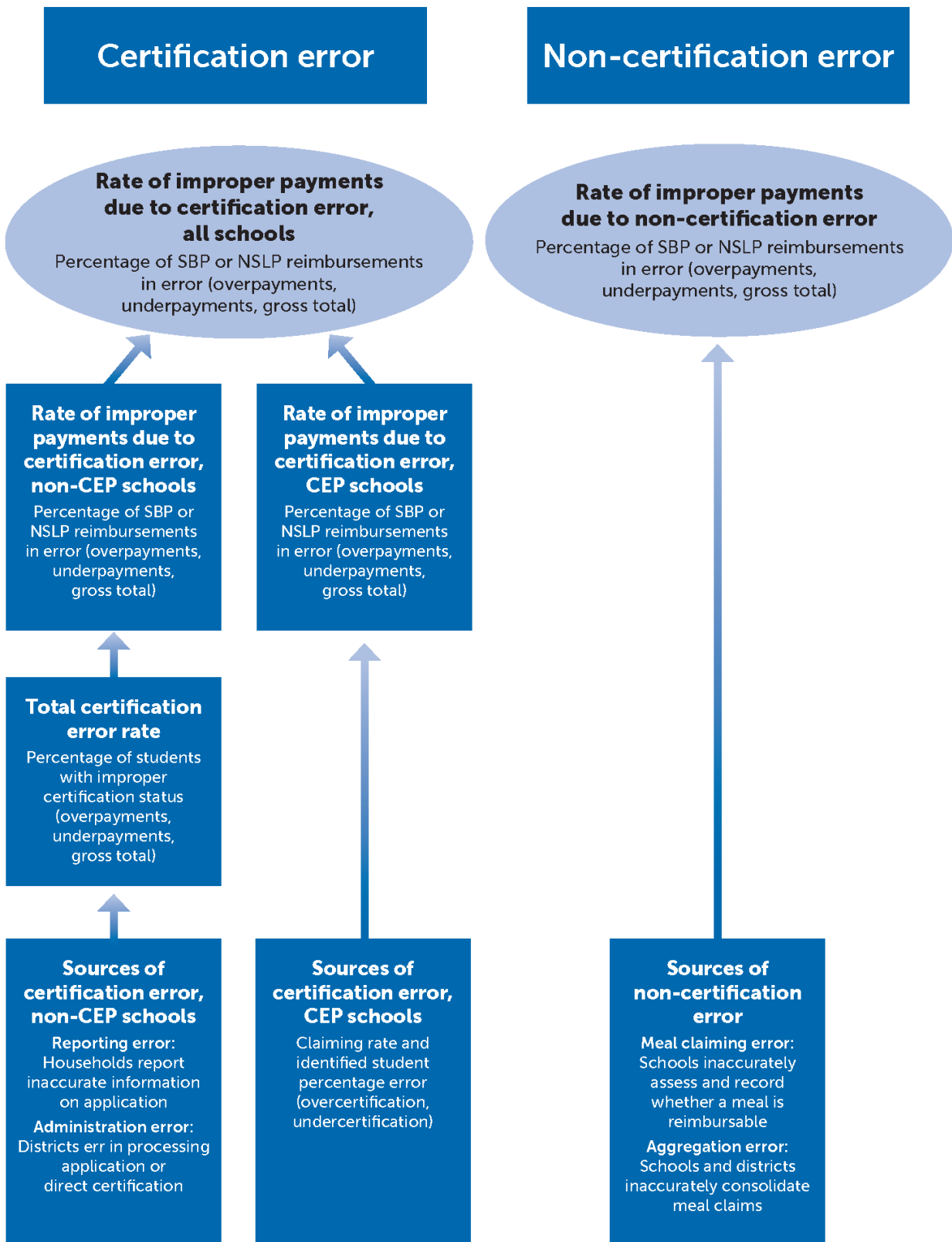
Certification error was determined by comparing sampled students' certification status as recorded by the district with their actual free or reduced-price meal eligibility status. We determined students' certification statuses using data from school districts' master benefit lists. We determined students' eligibility statuses based on school documentation of direct certification status and information collected during the in-person household survey.[2] The household survey collected information on students' household income, household size, and receipt of other benefits, such as SNAP or TANF. This information reflected students' household circumstances at about the time the households submitted applications for free or reduced-price meals.

We measured reporting error by comparing our assessment of students' eligibility based on the information in students' applications with our assessment of their eligibility based on responses to our household survey. We measured administrative error by comparing our assessment of students' eligibility based on direct certification documentation and the information in students' applications with their certification status on the district's master benefit list.

To calculate the improper payments rate due to certification error for the NSLP in non-CEP schools, we first calculated the sum of overpayments and underpayments nationally for students who applied for meal benefits and then divided this sum by the total reimbursement paid to districts for all meals served (inclusive of the value of commodities). We calculated the overpayment and underpayment amounts based on the number of meals consumed by overcertified or undercertified students and the dollar amount of the error associated with each meal consumed. We then used similar procedures to calculate the rate of improper payments for the SBP.

For CEP schools, the key determinant of reimbursements is the ISP defined earlier. Therefore, the key determinant of improper payments in CEP groups is the difference between the ISP used by the group (the observed ISP) and the ISP if all students had been given the proper identification status (the estimated actual ISP). The estimated actual ISP is based on estimates of the number of students in each CEP group who were correctly identified and the number of students who should have been identified but were not. We estimated this based on three samples of students drawn from each CEP school for their reference year: (1) identified students, (2) students who were not identified but who were certified for school meal benefits based on an application, and (3) students who were not identified or certified for school meal benefits. After calculating the estimated actual ISP, we derived the estimated actual free and paid claiming percentages and used them and information on the number of reimbursable meals to derive improper payments for the NSLP and SBP for each CEP school.

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[2] This documentation also includes other categories of students certified for free meals without having to submit an application, such as homeless or runaway children, children of migrant workers, and students receiving extended eligibility.

Key findings

Certification error rates, non-CEP schools

Among students who were certified for meal benefits or denied applicants, one in five was not certified accurately. In non-CEP schools, among all students who applied for meal benefits, about 80 percent had been certified accurately and 20 percent had been either overcertified or undercertified (Figure SF.2).

Overcertification was more common than undercertification. The percentage of students in non-CEP schools who applied for meal benefits and were certified for a higher level of benefits than that for which they were eligible (the overcertification rate) was 13 percent (Figure SF.2). The percentage of applicants certified for a lower level of benefits than that for which they were eligible or erroneously denied benefits for which they were eligible (the undercertification rate) was about 8 percent. In other words, nearly two-thirds of certification errors in non-CEP schools resulted in students being overcertified.

Figure SF.2. Percentage of certified students and denied applicants with certification error, non-CEP schools, SY 2012–2013
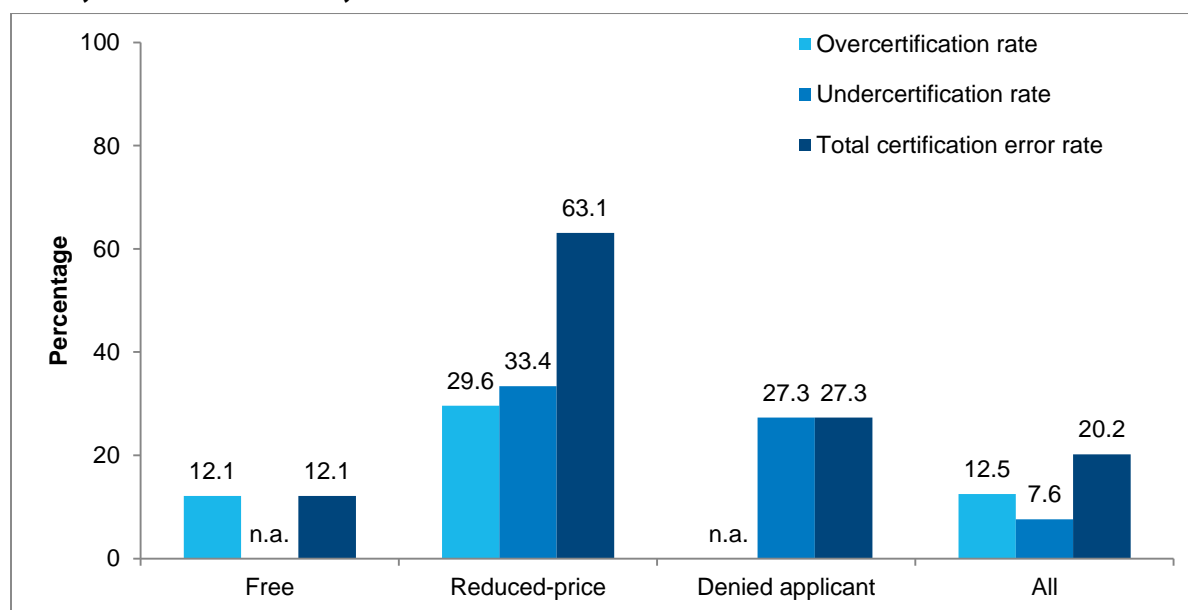
Source: APEC-II study, weighted data.
APEC = Access, Participation, Eligibility, and Certification; CEP = Community Eligibility Provision; n.a. = not applicable; SY = school year.

The certification process was most accurate among students certified for free meals; however, a plurality of students certified in error were certified for free meals. Most students receiving free meals in non-CEP schools were certified accurately, with 88 percent of this group in households whose circumstances at the time of certification based on the household survey or direct certification documentation indicate that the students were eligible for free meals (Figure SF.2). The remaining 12 percent of students receiving free meals were overcertified. Certification errors were much more common among students certified for reduced-price meals, with about one-third undercertified—receiving reduced-price meals but eligible for free meals—

and slightly fewer than one-third overcertified—receiving reduced-price meals but not eligible for either free or reduced-price meals. Among students in the denied applicant group, nearly three-fourths were not eligible for either free or reduced-price benefits, indicating that their applications were denied correctly. The household circumstances of the remaining 27 percent of students denied benefits suggested that they should have been certified, with about 18 percent eligible for free meals and 9 percent eligible for reduced-price meals.

Although certification error rates for students certified for free meals were substantially lower than certification error rates for students certified for reduced-price meals and denied applicants, students certified for free meals were much more numerous than the other two groups and make up the plurality of students with incorrect certification statuses. About 45 percent of students with incorrect certification statuses were certified for free meals.

The certification statuses of students directly certified for free meals were less likely to be found in error than those of students certified for free meals by application. Among students certified for free meals by direct certification, 96 percent were correctly certified, fewer than 1 percent were eligible for reduced-price meals, and about 3 percent were not eligible for free or reduced-price meals (Figure SF.3). This assessment of error among directly certified students accounts for whether the analysis team was able to document direct certification status and whether the students are receiving free meals, but it does not reflect the extent to which the direct certification process accurately identifies students receiving program benefits that confer categorical eligibility for free school meals, such as SNAP, TANF or foster care, that is whether the directly certified students appeared on program benefit recipient lists. Among students certified for free meals by application, about 79 percent were correctly certified, about 13 percent were eligible for reduced-price meals, and 9 percent were not eligible for free or reduced-price meals. The total certification error rate for students certified for free meals by application is more than five times higher than the total certification error rate for students certified for free meals by direct certification (21 versus 4 percent). Much of this difference is related to the larger proportion of students eligible for reduced-price meals among free-certified students certified by application compared with those certified based on direct certification.

Because the certification error rates of directly certified students are low, they make up a small proportion of students with incorrect certification status relative to their overall numbers. Students certified for free meals based on direct certification represent 40 percent of all certified students and denied applicants, but only 7 percent of all students with incorrect certification statuses. Thus 93 percent of students with incorrect certification statuses were certified by application or were denied benefits. Moreover, because the certification error rate for students certified by application based on categorical eligibility is also relatively low, 90 percent of students with incorrect certification statuses were either incorrectly certified by application based on income or denied benefits. These findings indicate that relatively little certification error is related to the large number of students who are directly certified or categorically eligible for free school meals and that a large majority of certification error is related to applications based on income.

Figure SF.3. Eligibility versus certification status among free-certified students in non-CEP schools, by direct certification status, SY 2012–2013
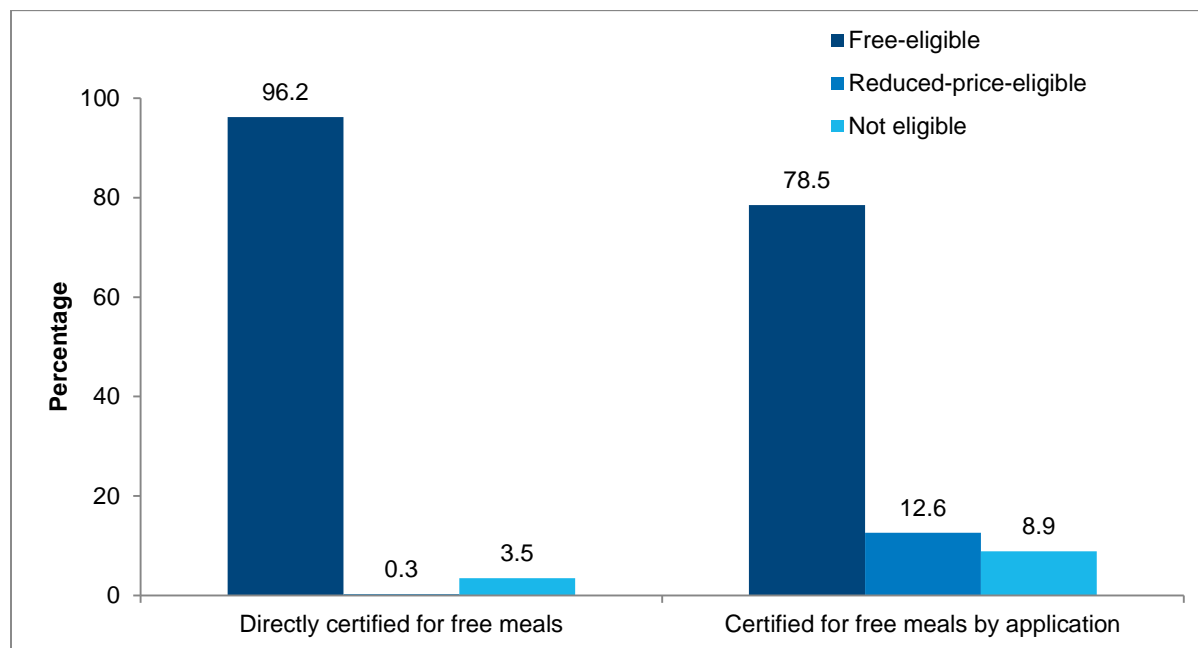
Source: APEC-II study, weighted data.

APEC = Access, Participation, Eligibility, and Certification; CEP = Community Eligibility Provision; SY = school year.

Between SYs 2005–2006 and 2012–2013, the total certification error rate changed from 22.5 to 20.2 percent. Overcertification decreased by 2.5 percentage points between the APEC-I and APEC-II studies. Undercertification error rates for all certified students and denied applicants increased modestly (less than 0.1 percentage point). The estimated total certification error rate declined by 2.4 percentage points overall. Notably, none of these changes were statistically significant.

Sources of certification error, non-CEP schools

Reporting error was substantially more prevalent than administrative error as a cause of certification error. Among all students in non-CEP schools who either were certified for free or reduced-price meals or applied for meal benefits but had their applications denied, 14 percent had their eligibility misclassified because of household reporting error (including the 1 percent of students in households with reinforcing administrative and reporting errors). Another 7 percent of these students were misclassified because of administrative error (including the 1 percent of students in households with reinforcing administrative and reporting errors). Thus, more than two-thirds of certification error among certified students and denied applicants was due to household reporting error (Figure SF.4).

Figure SF.4. Percentage of certified students and denied applicants with reporting or administrative error, non-CEP schools, SY 2012–2013
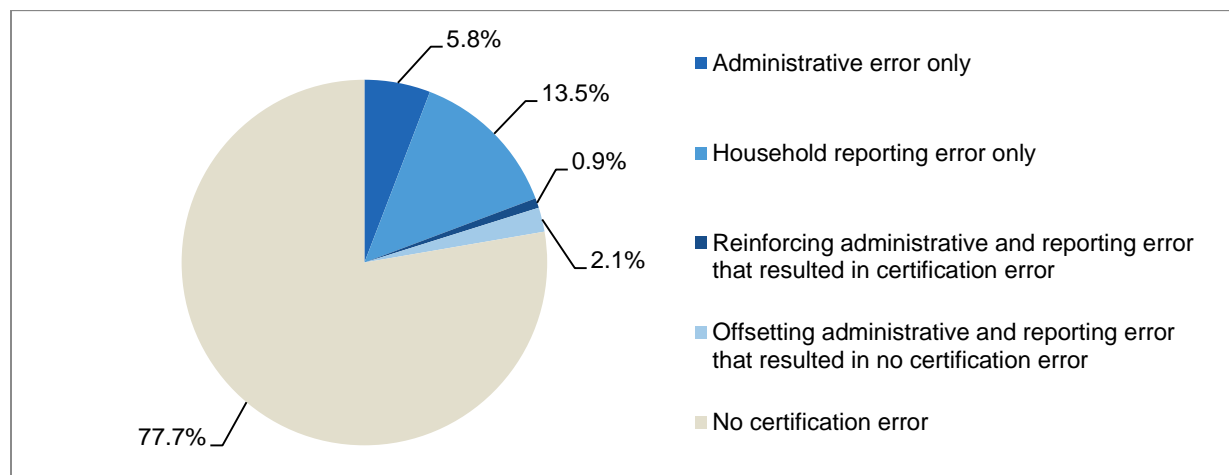
Source: APEC-II study, weighted data.

Note: Estimates in this figure are for all schools participating in the NSLP and/or SBP, excluding those using CEP and Provision 2 non-base year schools. Base year Provision 2 schools are included.

APEC = Access, Participation, Eligibility, and Certification; CEP = Community Eligibility Provision; NSLP = National School Lunch Program; SBP = School Breakfast Program; SY = school year.

Administrative and reporting error both resulted in overcertification more often than undercertification. Administrative error resulted in overcertification more than twice as often as undercertification in non-CEP schools (Figure SF.5). Overcertification due to administrative error occurred for 6 percent of all certified students and denied applicants; undercertification due to administrative error occurred for 3 percent of these students. Reporting error resulted in overcertification for 9 percent of all certified students and denied applicants; undercertification occurred for 7 percent of these students.

Reporting error rates were highest among students certified for reduced-price meal benefits; however a plurality students with reporting error were certified for free meal benefits. Reporting error rates were more than five times larger for students certified for reduced-price meal benefits than for students certified for free meal benefits in non-CEP schools (45 versus 8 percent) and more than twice as large for students certified for reduced-price meal benefits than for denied applicants (45 versus 21 percent).

Although reporting error rates for students certified for reduced-price meals were substantially higher than certification error rates for students certified for free meals and denied applicants, students certified for free meals were much more numerous than the other two groups and make up the plurality of students with reporting error. About 46 percent of students with incorrect certification statuses due to reporting error were certified for free meals.

Figure SF.5. Percentage of certified students and denied applicants with administrative or reporting error (assuming no offsetting errors), non-CEP schools, SY 2012–2013

Source: APEC-II study, weighted data.

APEC = Access, Participation, Eligibility, and Certification; CEP = Community Eligibility Provision; SY = school year.

The most frequent type of household reporting error was a discrepancy in the total amount of income reported on the application. Nearly 16 percent of students who applied for meal benefits misreported income on their applications, accounting for 94 percent of applicants with any reporting error. The vast majority did not accurately report the number of household members with income, the number of types of income, or both. Discrepancies in reported household size were the next most common type of reporting error. Reporting error related to household size accounted for a total of 7 percent of all reporting error for all free or reduced-price certified students and denied applicants, although almost all of the students with discrepancies in household size also had discrepancies in household income. Most of the remaining reporting error is related to discrepancies in categorical eligibility information.

The two most frequent types of administrative errors among certified students and denied applications were missing applications or direct certification documentation and application status transmittal errors. Among free or reduced-price certified students and denied applicants, 3 percent had an administrative error due to missing applications or direct certification documentation. Another 2 percent had an application error due to application status transmittal errors. Among all administrative errors, one-third were due to missing application or direct certification documentation and about one-quarter were due to applications status transmittal errors (Figure SF.6).

Figure SF.6. Percentage of certified students and denied applicants with administrative error by source of administrative error, non-CEP schools, SY 2012–2013

Source: APEC-II study, weighted data.

Note: Estimates in this figure are for all schools participating in the NSLP and/or SBP, excluding those using CEP and Provision 2 non-base year schools. Base year Provision 2 schools are included.

APEC = Access, Participation, Eligibility, and Certification; CEP = Community Eligibility Provision; NSLP = National School Lunch Program; SBP = School Breakfast Program; SY = school year.

Improper payments due to certification error, non-CEP schools

The findings in this section provide national estimates of improper payments for schools not using the CEP.

For the NSLP, 10.0 percent of reimbursements for lunches provided in non-CEP schools were improper. During SY 2012–2013, there were an estimated $1.15 billion in total improper NSLP reimbursements due to certification error in non-CEP schools (Figure SF.7). This figure represented 10.0 percent of the roughly $11.51 billion in total cash and commodity reimbursements provided to non-CEP schools (Figure SF.8). The $1.15 billion in improper payments in the NSLP is a gross measure; in addition to overpayments for lunches provided to students certified for a higher level of benefits than that for which they were eligible, it includes the dollar amount of payments that were never actually made to districts but should have been, based on the eligibility status of certified students and denied applicants receiving the school lunches (underpayments). When considering only the difference between overpayments and underpayments, net improper payments for NSLP were $495 million, or about 4 percent of all NSLP reimbursements.

For the SBP, 11.3 percent of reimbursements for breakfasts provided in non-CEP schools were improper. Gross improper SBP reimbursements totaled $364 million, or 11.3 percent of the $3.22 billion in cash reimbursements paid for all SBP breakfasts served in non-CEP schools (Figures SF.7 and SF.8). The net improper payments rate for SBP was about six percentage points lower, at 5 percent.

Figure SF.7. Total reimbursements and improper payments due to certification error in the NSLP and SBP, non-CEP schools, SY 2012–2013
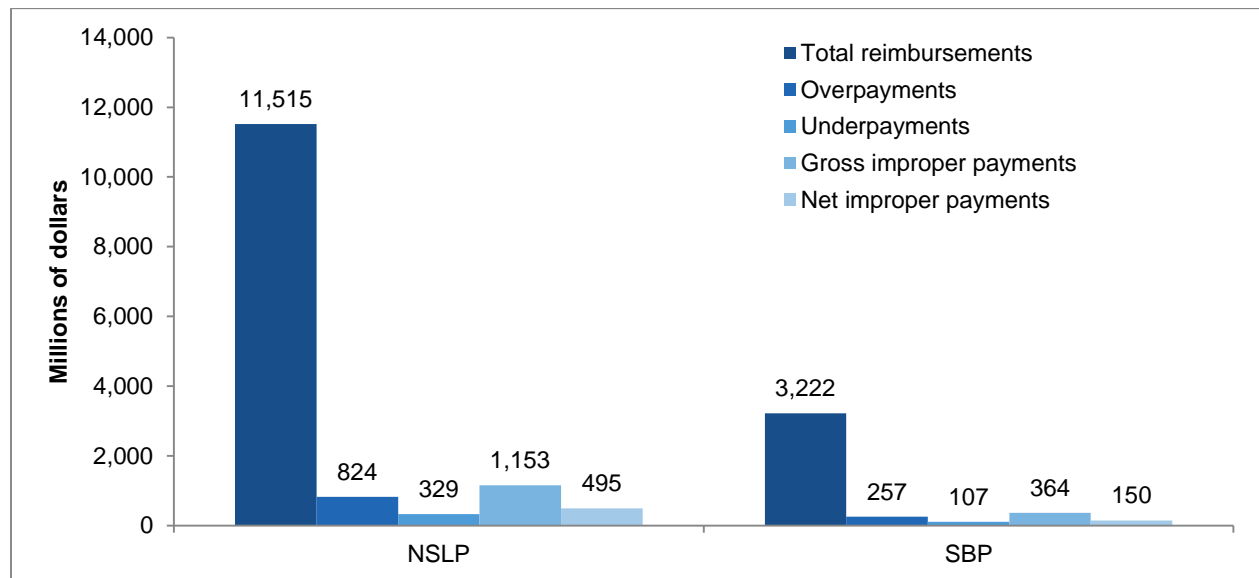
Source: APEC-II study, weighted data.

APEC = Access, Participation, Eligibility, and Certification; CEP = Community Eligibility Provision; NSLP = National School Lunch Program; SBP = School Breakfast Program; SY = school year.

Figure SF.8. National estimates of improper payment rates due to certification error in the NSLP and SBP, non-CEP schools, SY 2012–2013
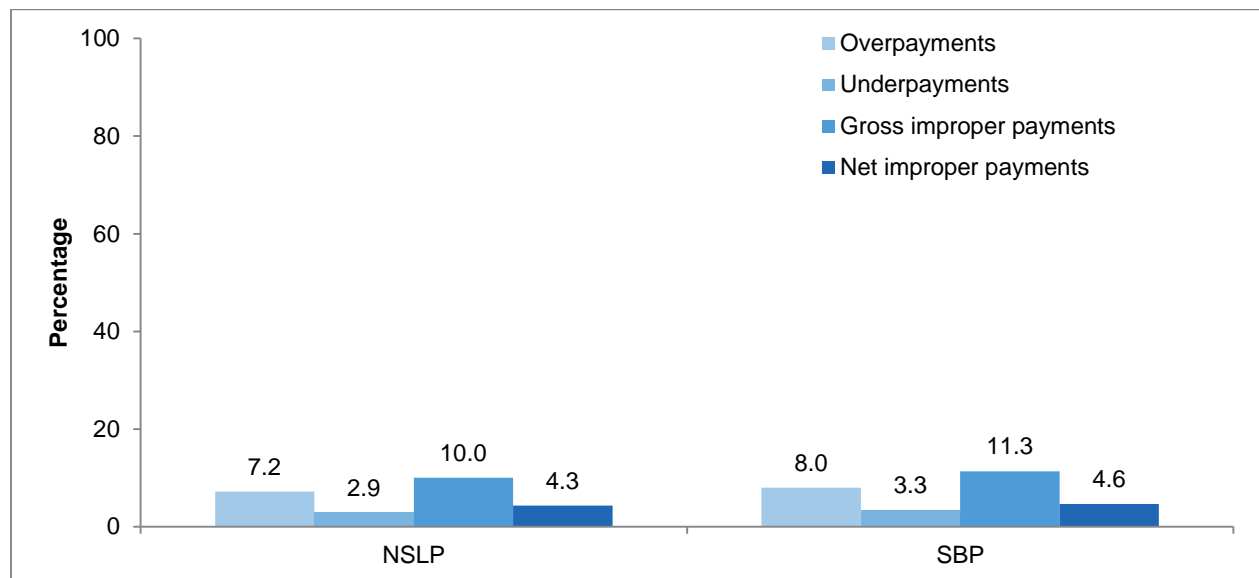
Source: APEC-II study, weighted data.

APEC = Access, Participation, Eligibility, and Certification; CEP = Community Eligibility Provision; NSLP = National School Lunch Program; SBP = School Breakfast Program.

Overpayments due to certification error in non-CEP schools were much more common than were underpayments for both the NSLP and SBP. Overpayments were considerably larger than underpayments in both programs: about 70 percent of improper payments in both the NSLP and SBP were overpayments (Figure SF.7). An estimated $824 million in NSLP reimbursements and $257 million in SBP reimbursements were paid out to districts beyond what should have gone to them because of overcertification errors. Conversely, the amount of payments that should have gone to school districts but did not because of undercertification error was $329 million in the case of the NSLP and $107 million in the case of the SBP. The estimated overpayment rate for NSLP was 7 percent, and the underpayment rate was 3 percent; the overpayment and underpayment rates for the SBP were 8 and 3 percent, respectively.

Improper payment rates were considerably smaller for students certified for free meals through direct certification or categorical eligibility than for other students. The NSLP gross improper payment rate was 4 percent for students directly certified for free lunch and 3 percent for students certified for free lunch by application based on categorical eligibility. Both of these rates were substantially less than rates for students certified for free meals by application based on income (9 percent), students certified for reduced-price meals (25 percent), and students not certified for free or reduced-price meals (31 percent). The pattern is similar for the SBP. Consistent with the low improper payment rates for categorically eligible students certified either directly or by application, these students contribute disproportionately little to national improper payments relative to their contribution to national reimbursements. Reimbursements to categorically eligible students certified directly or by application make up more than half of total reimbursements for both NSLP and SBP. However, only about one-fifth of improper payments in both NSLP and SBP are due to categorically eligible students. Thus, about 80 percent of improper payments due to certification error are related to applications based on income.

More than half of all improper payments due to certification error in the NSLP resulted from households misreporting information on applications for free or reduced-price meals. Improper payments due to household reporting error in the NSLP resulted in a total of $673 million in improper payments (Figure SF.9). This figure represented 58 percent of the $1,153 million total NSLP reimbursements in error. Administrative error accounted for $365 million in improper payments in the NSLP, or 32 percent of improper reimbursements. Another $83 million in improper payments in the NSLP (7 percent of total NSLP improper payments) involved students with both reporting and administrative errors. For the SBP, improper payments due to certification error were also more likely to be caused by household reporting.

Improper payment rates in the NSLP and SBP among schools not using CEP in SY 2012–2013 were not significantly different from improper payment rates in SY 2005–2006. For NSLP, the national gross improper payment rate due to certification error was 9.4 percent in SY 2005–2006, whereas the gross improper payment rate due to certification error among schools not using CEP in SY 2012–2013 was 10.0 percent (Figure SF.10). For SBP, the gross improper payment rate was 9.2 percent in SY 2005–2006, whereas the gross improper payment rate among schools not using CEP in SY 2012–2013 was 11.3 percent. Neither of these estimated differences is statistically significant.

Figure SF.9. Improper payments due to certification error in the NSLP and SBP, non-CEP schools, SY 2012–2013, by type of certification error
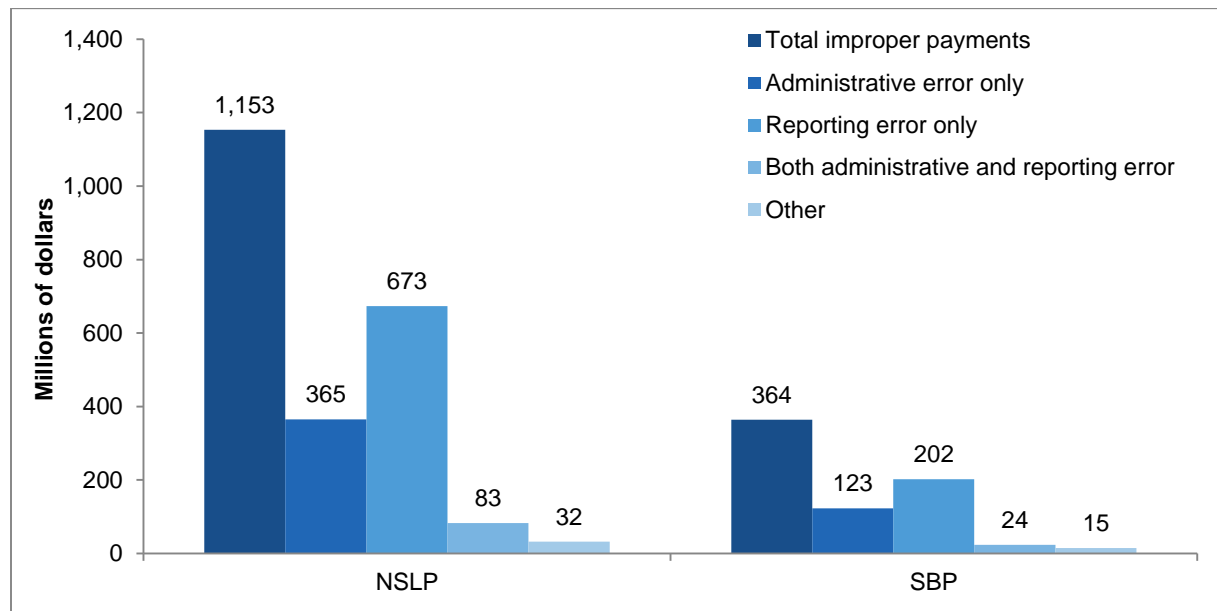
Source: APEC-II study, weighted data.

Note: The "other" category includes students with no initial error who had changes in eligibility or certification during the year.

APEC = Access, Participation, Eligibility, and Certification; CEP = Community Eligibility Provision; NSLP = National School Lunch Program; SBP = School Breakfast Program; SY = school year.

Figure SF.10. National estimates of improper payment rates due to certification error in the NSLP and SBP nationally in SY 2005–2006 and among non-CEP schools in SY 2012–2013
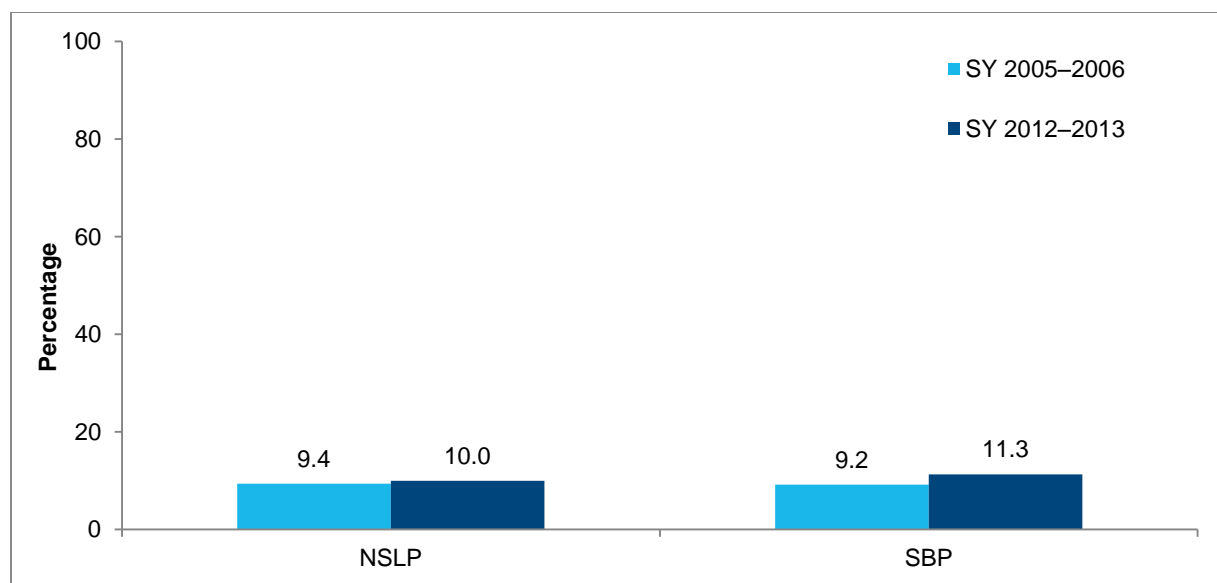
Source: APEC-I and APEC-II studies, weighted data.

APEC = Access, Participation, Eligibility, and Certification; CEP = Community Eligibility Provision; NSLP = National School Lunch Program; SBP = School Breakfast Program; SY = school year.

Improper payments due to certification error, CEP schools

Schools currently using CEP have low rates of improper payments. In addition, most error for CEP schools was due to underpayments. For NSLP, the gross error equaled $5 million, corresponding to less than 2 percent of total CEP reimbursements (Figure SF.11). Of this amount, less than $100,000 was overpayment and the remainder was underpayment. For SBP, we found gross error of $2 million, corresponding to 2 percent of total CEP reimbursements. Of this amount, less than $50,000 was overpayment and the remainder was underpayment.

Given that CEP became available to eligible districts nationwide starting in SY 2014–2015, these findings are promising. However, in interpreting these findings, one should keep in mind that this analysis is based only on the seven States selected to implement CEP in SY 2012–2013. Districts within these States that elected to use CEP might differ from typical districts nationally.

Figure SF.11. National estimates of improper payment rates due to certification error in the NSLP and SBP for schools using CEP, SY 2012–2013
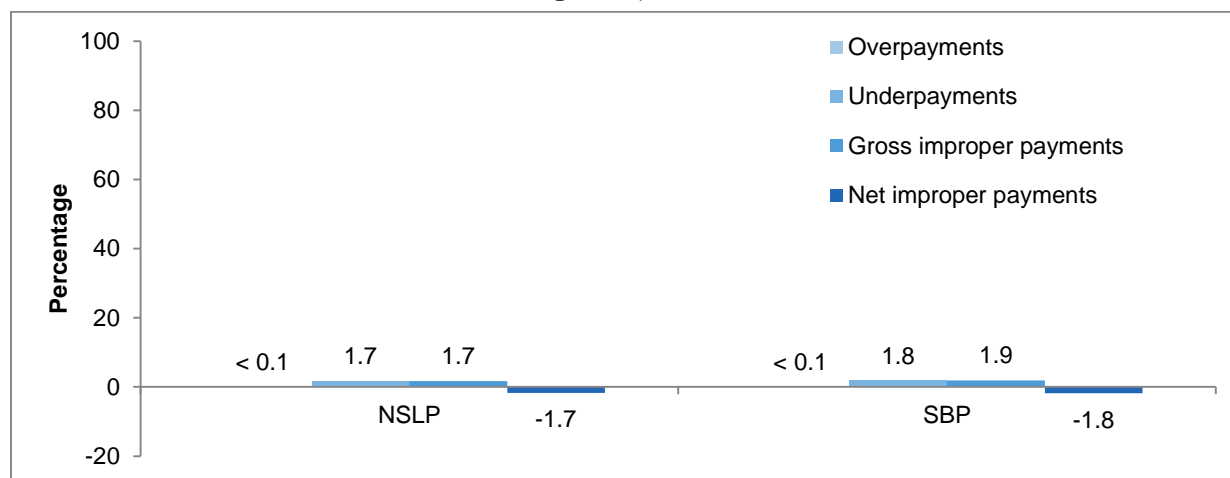
Source: APEC-II study, weighted data.

APEC = Access, Participation, Eligibility, and Certification; CEP = Community Eligibility Provision; NSLP = National School Lunch Program; SBP = School Breakfast Program; SY = school year.

On average, CEP schools are claiming fewer meals as free than they are entitled to under program rules. Under CEP, participating schools must offer both breakfast and lunch and provide meals to students at no charge. Meals are reimbursed at either the free or paid rate, with the FCP equal to the ISP times a multiplier (currently 1.6). (Identified students are those directly certified or approved for free meals with a method that does not require verification.) Schools can calculate their own ISP or do so as part of a group with some or all of the other schools in their district. We calculated the estimated actual ISP and compared it with the observed ISP. On average, the observed ISP is less than the estimated actual ISP (62 versus 68 percent; Table ES.2). As a result, CEP groups' observed FCPs are typically less than estimated actual FCPs. In other words, the typical CEP school claims fewer meals as free than it is entitled under CEP rules. Although underclaiming meals is not a violation of program rules, it leads to schools receiving lower program reimbursements than they are entitled.

Table SF.2. Average identified student percentages and free meal claiming percentages for sampled schools using CEP, SY 2012–2013

	Observed	Estimated actual	Difference
Identified student percentage	61.76 (1.78)	68.23 (2.13)	-6.46 (1.18)
Free meal claiming percentage	94.11 (2.16)	96.29 (1.93)	-2.19 (1.00)
Paid meal claiming percentage	5.89 (2.16)	3.71 (1.93)	2.19 (1.00)
Sample size (schools)			**135**

Source: APEC-II study, weighted data.

Note: Values in tables represent the mean of school-level variables. Standard errors in parentheses.

APEC = Access, Participation, Eligibility, and Certification; CEP = Community Eligibility Provision.

National estimates of improper payments due to certification error, all schools

The findings in this section combine the national estimates for schools not using the CEP and the national estimates for schools using the CEP.

During SY 2012–2013, gross improper NSLP reimbursements due to certification error in the NSLP equaled \$1.16 billion, or 9.8 percent of the roughly \$11.80 billion in total cash and commodity reimbursements provided to school districts for all NSLP lunches served in the 48 contiguous States and the District of Columbia (Figures SF.12 and SF.13). Of this amount, \$824 million were overpayments (7 percent of total NSLP reimbursements) and \$334 million were underpayments (3 percent of total NSLP reimbursements).

Figure SF.12. National estimates of improper payments due to certification error in the NSLP and SBP for all schools, SY 2012–2013
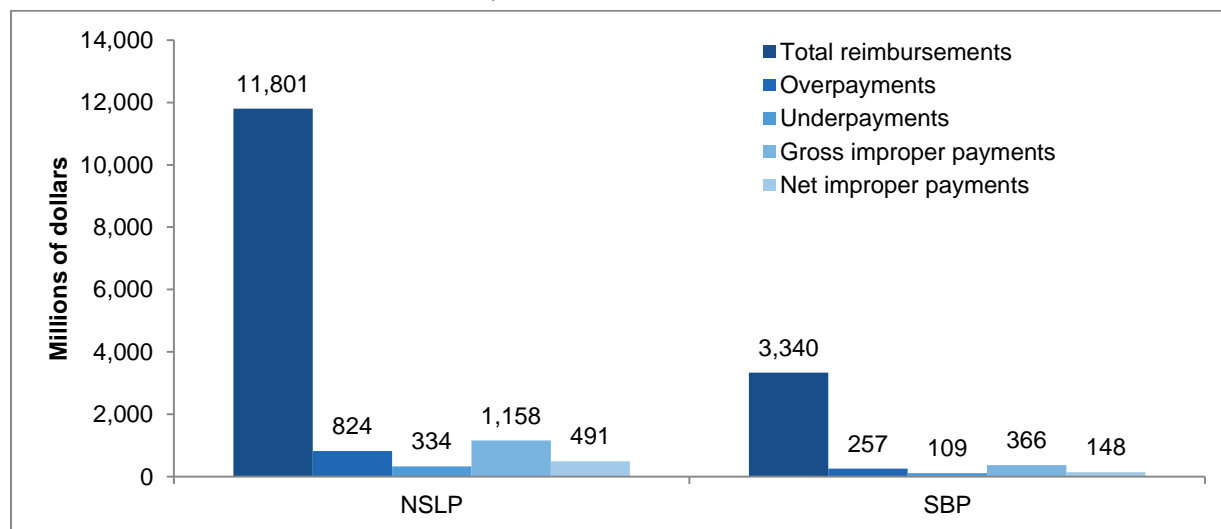
Source: APEC-II study, weighted data.

APEC = Access, Participation, Eligibility, and Certification; NSLP = National School Lunch Program; SBP = School Breakfast Program; SY = school year.

Figure SF.13. National estimates of improper payment rates due to certification error in the NSLP and SBP, all schools, SY 2012–2013
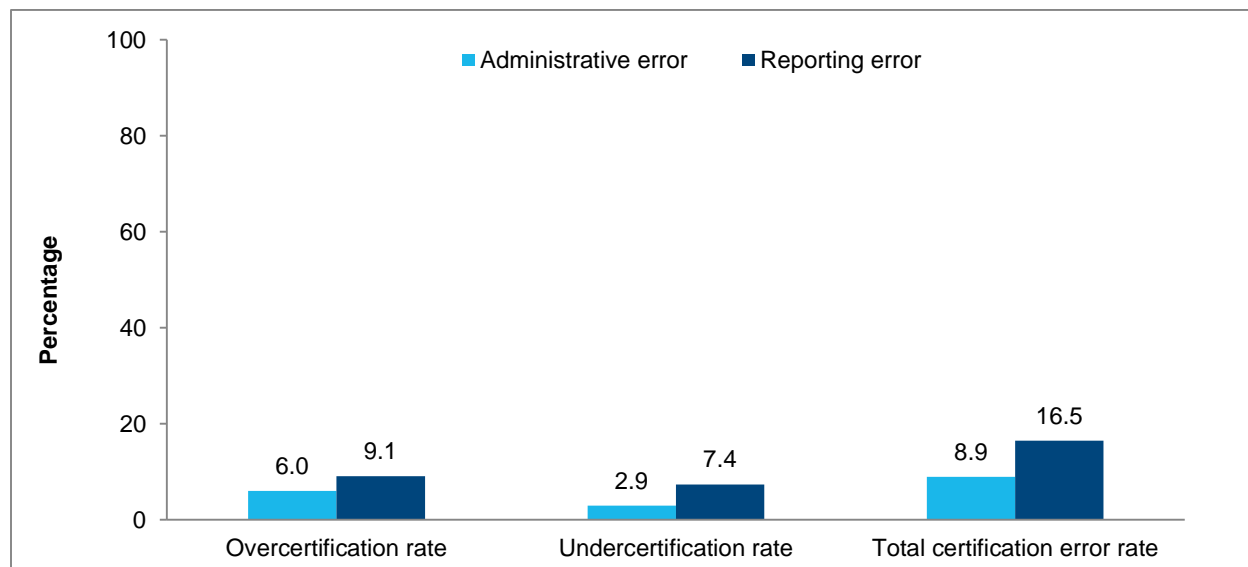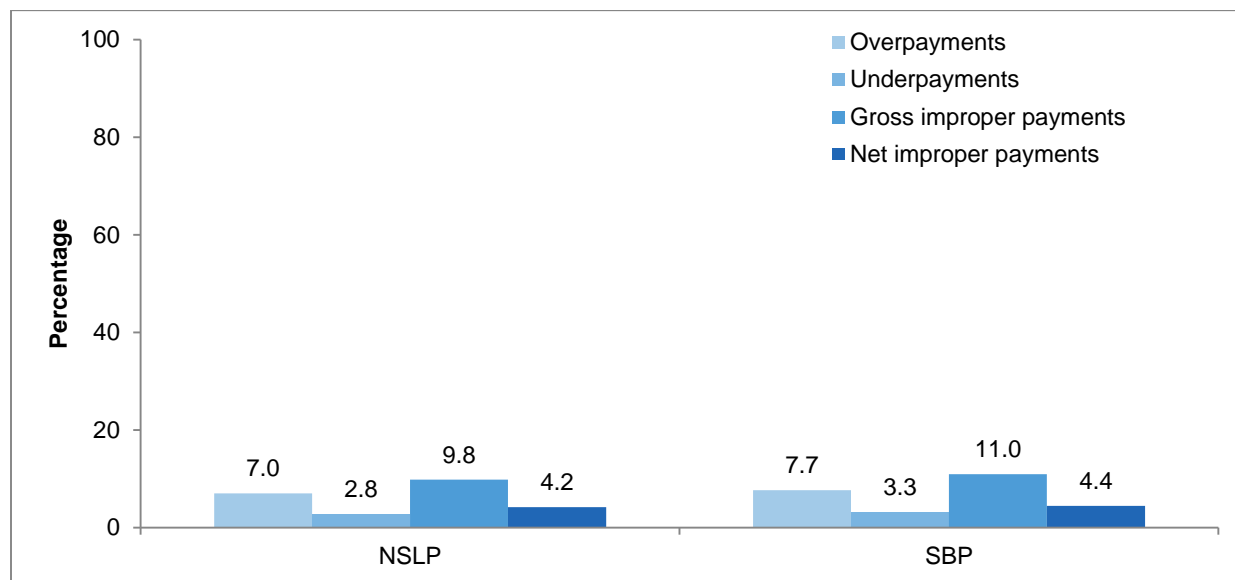

Source: APEC-II study, weighted data.

APEC = Access, Participation, Eligibility, and Certification; NSLP = National School Lunch Program; SBP = School Breakfast Program; SY = school year.

During SY 2012–2013, gross improper payments in the SBP due to certification error equaled $366 million, corresponding to 11.0 percent of total SBP reimbursements (Figures SF.12 and SF.13). Of this amount, $257 million were overpayments (8 percent of total SBP reimbursements) and $109 million were underpayments (3 percent of total SBP reimbursements).

National improper payment rates due to certification error in the NSLP and SBP for SY 2012–2013 were not significantly different from national improper payment rates for SY 2005–2006. For NSLP, the national gross improper payment rate due to certification error among all schools increased from 9.4 percent in SY 2005–2006 to 9.8 percent in SY 2012–2013. For SBP, the gross improper payment rate increased from 9.2 percent in SY 2005–2006 to 11.0 percent in SY 2012–2013. Neither of these differences is statistically significant.

Improper payment amounts and rates due to non-certification error, all schools

Non-certification error occurs in the stages between certification of students' eligibility status and reporting of meal claims to the State agency for reimbursement in non-CEP schools and in the stages between determining claiming rates and reporting of meal claims to the State agency for reimbursement in CEP schools. We examined four sources of non-certification error, calculating rates of improper payments for each source and for the sources combined, separately for the SBP and NSLP. Next, we summarize the key findings of the analysis of improper payments due to non-certification error.

Meal claiming error

The process by which schools assess and record at the point of sale whether a meal is reimbursable was a substantial source of improper payments, particularly in the SBP. Meal claiming error occurs when cafeteria staff make mistakes assessing and recording whether the meal a student received meets the criteria for a reimbursable meal under the NSLP or SBP. Gross improper payments due to meal claiming error were $606 million in the NSLP and represented 5 percent of total NSLP reimbursements (Figure SF.14). Gross improper payments due to meal claiming error in the SBP equaled $365 million, or 11 percent of total SBP reimbursements.

Most meal claiming error was due to schools incorrectly recording trays as being reimbursable, leading to overpayments. Overpayments accounted for more than 86 and 97 percent of gross improper payments in the NSLP and SBP, respectively.

Figure SF.14. National estimates of improper payment rates due to meal claiming error, SY 2012–2013
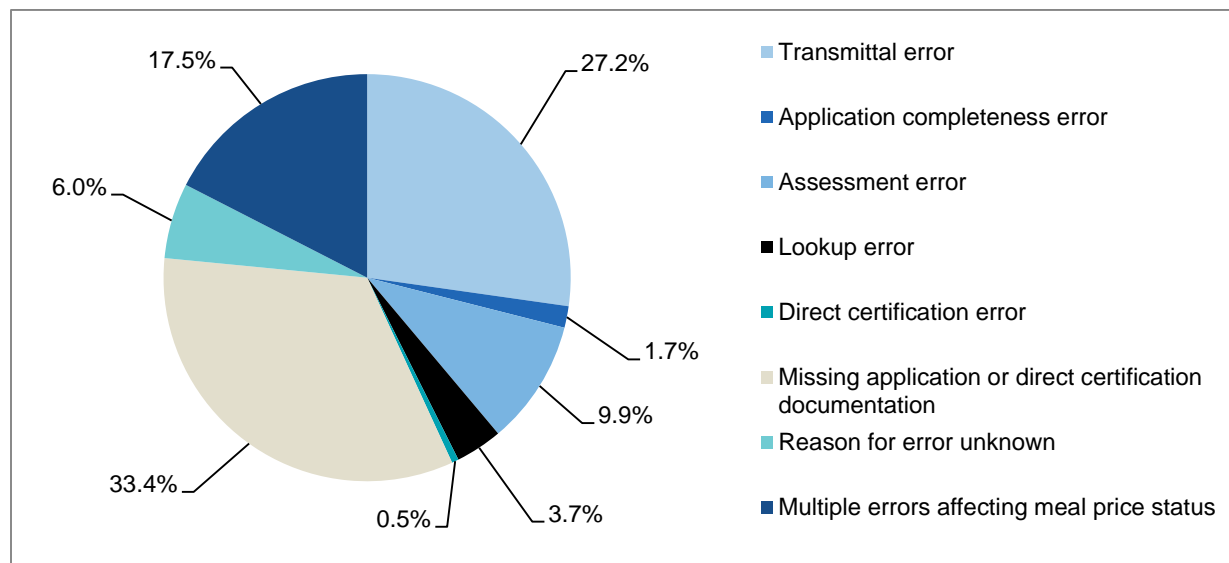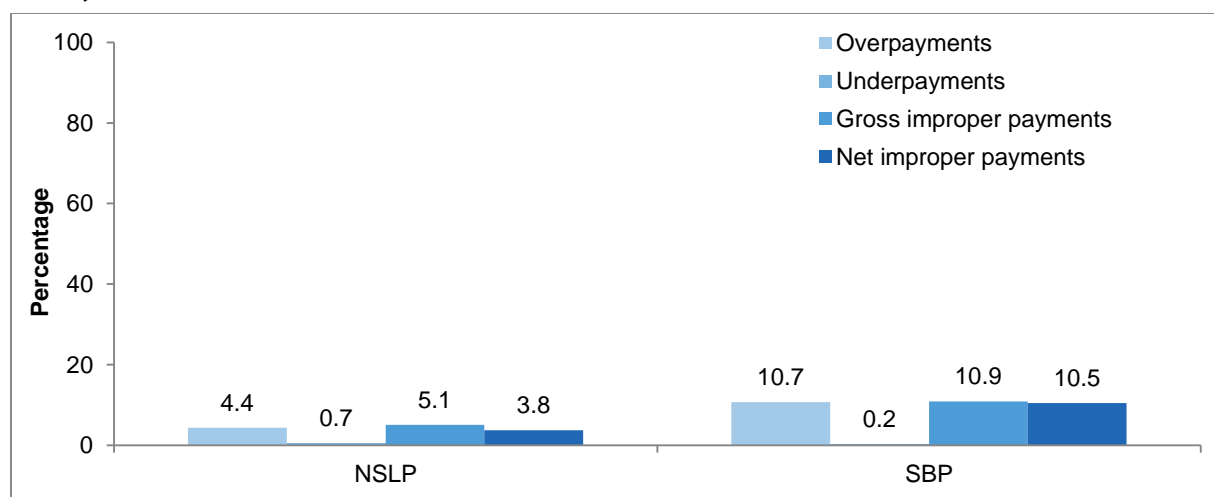

Source: APEC-II study, weighted data.

APEC = Access, Participation, Eligibility, and Certification; NSLP = National School Lunch Program; SBP = School Breakfast Program; SY = school year.

Meal claiming error was concentrated in a minority of schools rather than distributed evenly across schools. The median amount of improper payments due to meal claiming error in the APEC-II sample was about 2 percent in both the NSLP and SBP. The national improper payment rates are much higher than the median, in part because 10 percent of the schools in the APEC-II sample have improper payment rates above 15 percent in the NSLP and 38 percent in the SBP.

Schools with high meal claiming error rates at breakfast were about 10 percentage points less likely to be small schools compared with schools with zero meal claiming error rates at breakfast (30 versus 40 percent). High-error schools were less likely to use offer versus serve (OVS) than were schools with zero error at both breakfast and lunch, but this estimation is based on small numbers of schools that do not use OVS. Finally, all schools with high meal claiming error rates at breakfast used food-based menu planning, compared to 81 percent of schools in our sample with zero meal claiming error at breakfast.

The improper payment rates due to meal claiming error have increased for the NSLP and SBP since SY 2005–2006, when APEC-I was conducted. In SY 2005–2006, the national gross improper payment rates due to meal claiming error were 3 percent for the NSLP and 10 for the SBP. In APEC-II, the improper payment rates were 5 percent in the NSLP and 11 percent in the SBP. We tested whether the differences between national estimates of gross and net improper payment rates from APEC-I and APEC-II were statistically significant. We found that only the differences for the NSLP were statistically significant; the differences for the SBP were not statistically significant.

Aggregation error

Almost all schools accurately summed daily meal count totals from the school cafeteria cashiers (point-of-sale aggregation error). Errors when combining daily meal counts from individual points of sale into a total daily count within a school are denoted point-of-sale error. The estimates of aggregation error due to point-of-sale error during SY 2012–2013 are generally very small relative to types of error not related to the aggregation of meal counts. Total improper payments due to point-of-sale errors for the NSLP were roughly $3 million, representing less than 0.1 percent of total reimbursements under the NSLP (Figure SF.15). Total improper SBP payments due to point-of-sale error were larger, amounting to roughly $14 million or 0.4 percent of total SBP reimbursements for SY 2012–2013. The findings for point-of-sale aggregation error indicate that the processing and aggregating of meal counts from individual points of sale are not a significant source of non-certification error.

Figure SF.15. National estimates of improper payment rates due to aggregation error: point-of-sale error, SY 2012–2013
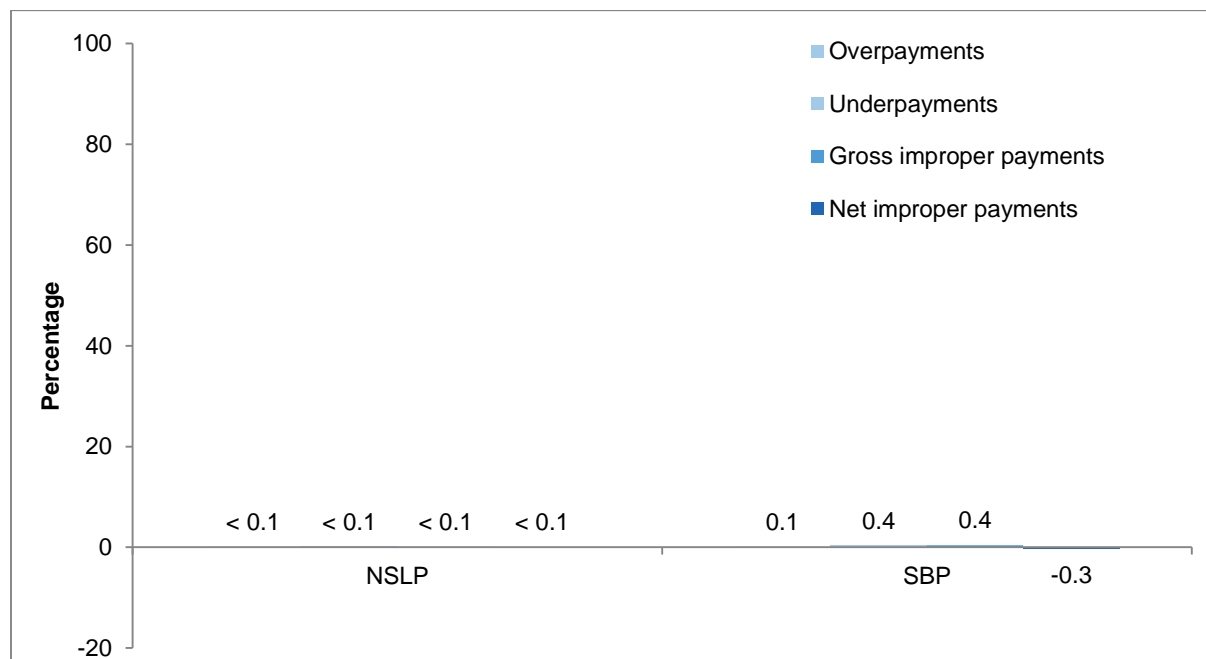
Source: APEC-II study, weighted data.

APEC = Access, Participation, Eligibility, and Certification; NSLP = National School Lunch Program; SBP = School Breakfast Program; SY = school year.

Improper payments due to SFA errors in recording meal counts reported to them by schools (school reports to the SFA) are a relatively small source of non-certification error. School reports to the SFA aggregation error occurs when school totals are not properly communicated between the school and the district administrative office (SFA). Total improper payments due to school reports to the SFA errors in the NSLP were roughly $94 million, representing 1 percent of total NSLP meal reimbursements (Figure SF.16). Reimbursement amounts reported to the SFA were less than those reflected by school meal total records only slightly more often than they were in excess. Thus, the corresponding net improper payment amount for this type of error was much smaller, amounting to net underpayments of roughly $2 million—less than 0.1 percent of NSLP reimbursements for SY 2012–2013. Total improper payments for the SBP due to school reports to the SFA error were smaller, amounting to roughly $9 million or 0.3 percent of total SBP reimbursements for SY 2012–2013. A large portion of SBP improper payments due to school reports to the SFA error were overpayments, resulting in a net overpayment of about $6 million—0.2 percent of all SBP reimbursements.

Figure SF.16. National estimates of improper payments due to aggregation error: school reports of meal counts to the SFA, SY 2012–2013
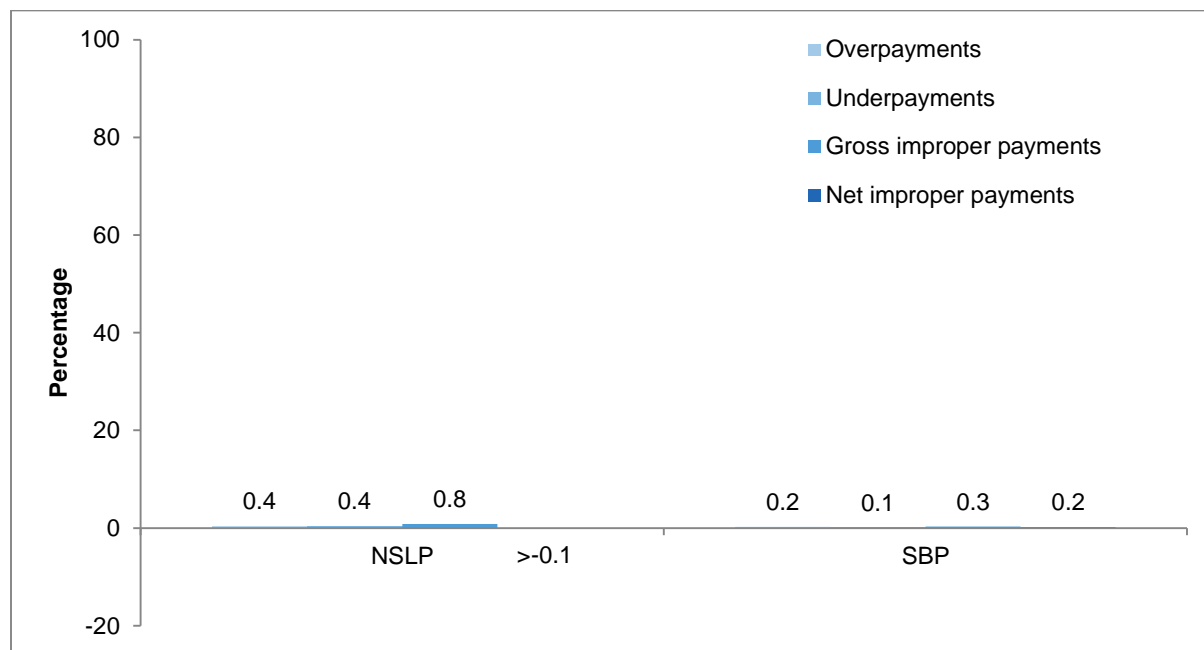
Source: APEC-II study, weighted data.

APEC = Access, Participation, Eligibility, and Certification; NSLP = National School Lunch Program; SBP = School Breakfast Program; SY = school year.

SFA reports to State agency aggregation error indicates that the transmissions of meal reimbursement claims from SFA to the State agency are a small source of non-certification error. Total improper payments due to SFA reports to State agency error in the NSLP were roughly $0.3 million, representing less than 0.01 percent of total reimbursements under the NSLP for SY 2012–2013 (Figure SF.17). The net improper payment amount for this type of error amounted to net overpayments of roughly $0.2 million. Total improper payments for the SBP due to school reports to the SFA error were larger, amounting to roughly $16 million or 0.5 percent of total SBP reimbursements for SY 2012–2013. Unlike the NSLP, the vast majority of

SBP improper payments due to school reports to the SFA error were underpayments, resulting in a net underpayment of about $16 million—0.5 percent of all SBP reimbursements. Few schools had any SFA reports to State agency error. Roughly 99 and 98 percent of schools had zero error under the NSLP and SBP, respectively.

Figure SF.17. National estimates of improper payment rates due to aggregation error: SFA reports of meal counts to the State agency, SY 2012–2013
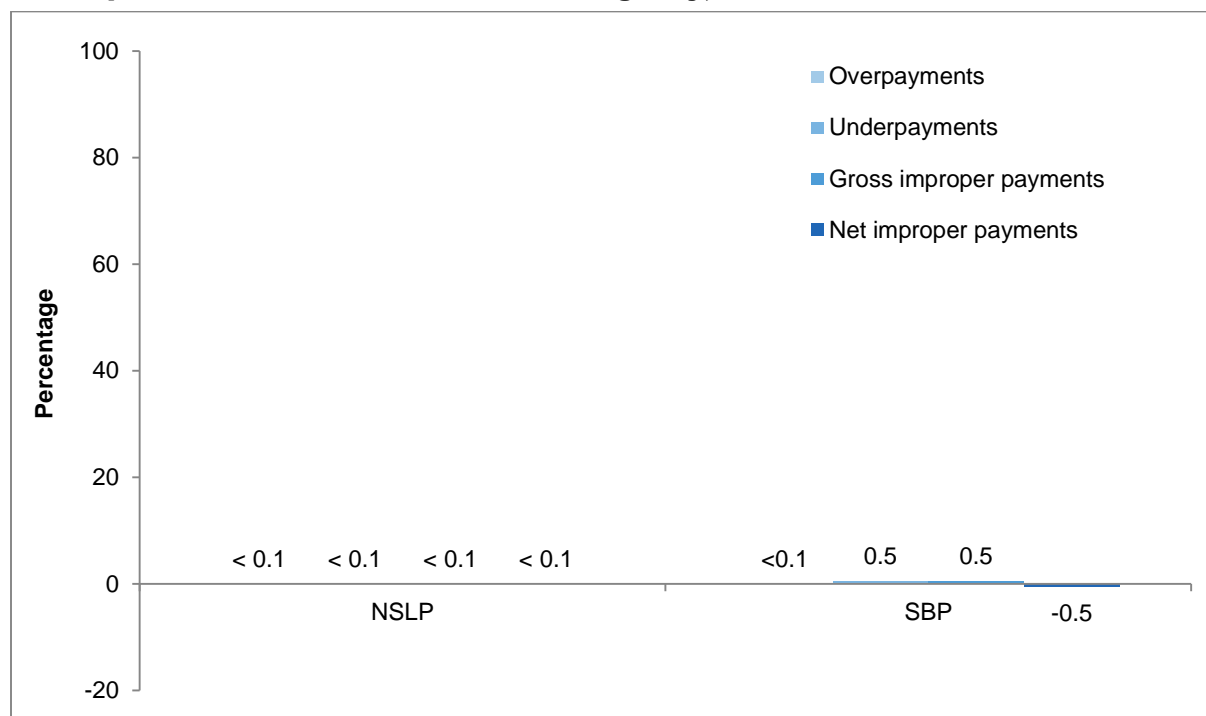
Source: APEC-II study, weighted data.

APEC = Access, Participation, Eligibility, and Certification; NSLP = National School Lunch Program; SBP = School Breakfast Program; SY = school year.

Estimated rates of improper payments due to aggregation error during SY 2012–2013 are generally much smaller than estimates for SY 2005–2006, when APEC-I was conducted. The recent estimates of point-of-sale improper payment rates for the NSLP are significantly different from those for SY 2005–2006, dropping from 0.3 to less than 0.1 percent (Figure SF.18). The point-of-sale improper payment rates for SBP are not significantly different in SY 2012–2013 compared with SY 2005–2006. The most dramatic reductions in improper payment rates due to aggregation error relative to SY 2005–2006 were among school reports to the SFA and SFA reports to State agency errors. SY 2012–2013 estimates of the gross percentage of NSLP total reimbursements corresponding to school reports to the SFA aggregation error are less than half those from SY 2005–2006, though not statistically different, and SBP estimates are less than one-tenth those from SY 2005–2006. Estimates of improper payment rates corresponding to SFA reports to State agency error for both NSLP and SBP are somewhat more than one percentage point less for SY 2012–2013 than for SY 2005–2006, although this difference is statistically significant only for the NSLP. One possible explanation for the trend of reduced aggregation error is that it is at least partially the result of an increase in

the use of electronic methods for recording school meal transactions and reporting school-level meal counts.

Figure SF.18. National estimates of gross improper payment rates due to aggregation error, SYs 2005–2006 and 2012–2013
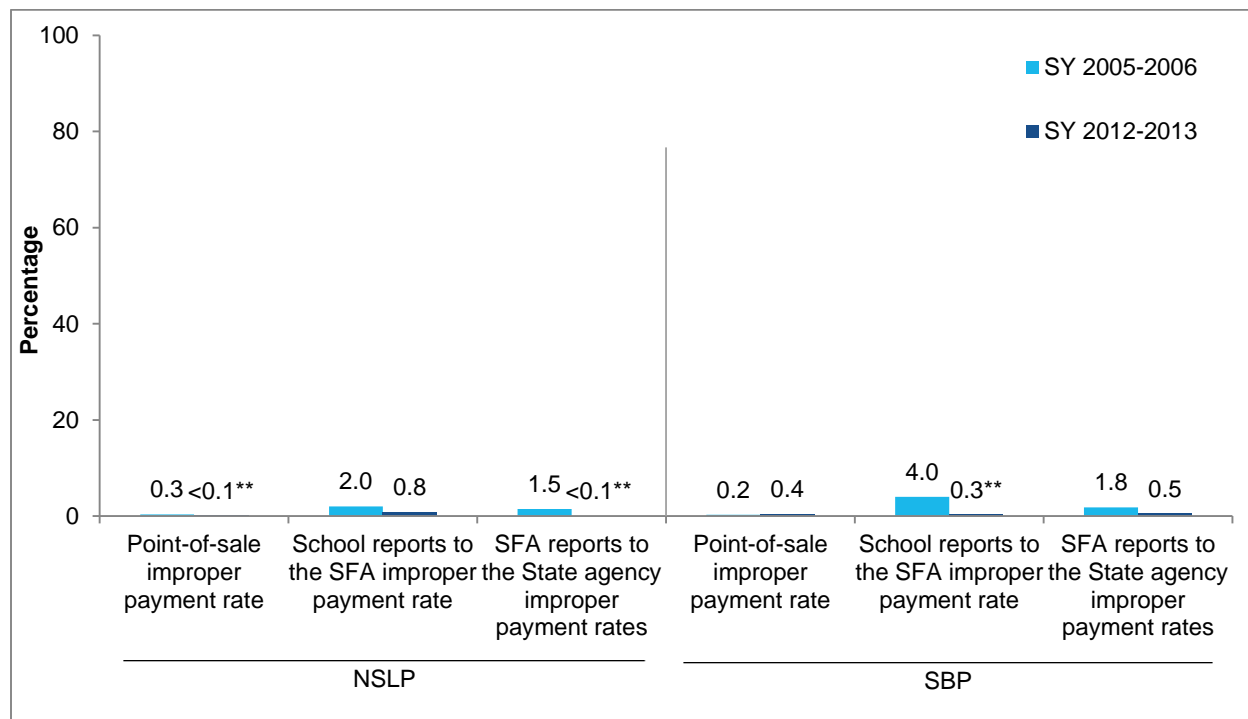
Source: APEC-II study, weighted data.

Note: ***, **, and * denote statistical significance at the 0.01, 0.05, and 0.10 levels, respectively.

APEC = Access, Participation, Eligibility, and Certification; NSLP = National School Lunch Program; SBP = School Breakfast Program; SFA = School Food Authority; SY = school year.

Total net improper payments from certification and non-certification error

Total combined improper payments from certification and non-certification errors are not equal to the sum of improper payments for certification and non-certification error because improper payments from a non-certification error can offset or augment improper payments resulting from a certification error. The following findings on net improper payments take into account interactions among certification and non-certification errors. We estimated net improper payments due to combinations of error separately for (1) schools that were not CEP, Provision 2, or Provision 3 non-base year schools and (2) schools that operated CEP, Provision 2, or Provision 3 in a non-base year; we then combined the findings across all schools.

Net total improper payments in the NSLP equaled $968 million; this figure represented 8 percent of total NSLP reimbursements (Table SF.3). Total improper payments in the SBP due to certification error, meal claiming error, and aggregation error equaled $439 million, or 13 percent of total reimbursements in the SBP. Improper payment rates are higher in the SBP in part because of the higher incidence of meal claiming error. The rate of improper payments due to meal claiming error alone was more than twice as high in the SBP (9 percent) as in the NSLP (3 percent).

Table SF.3. National estimates of total net improper payments from certification and non-certification error, all schools, SY 2012–2013

	NSLP	SBP
Total reimbursements (millions of dollars)		
Total reimbursements	11,801	3,340
Improper payment amounts (millions of dollars)		
Net improper payments	968	439
Due to meals with only certification error	547	103
Due to meals with only meal claiming error	350	284
Due to meals with only aggregation error	14	9
Due to meals with more than one type of error	56	43
Improper payment rates (percentages)		
Net improper payments	8.20	13.15
Due to meals with only certification error	4.64	3.10
Due to meals with only meal claiming error	2.97	8.50
Due to meals with only aggregation error	0.12	0.27
Due to meals with more than one type of error	0.48	1.29

Source: APEC-II study, weighted data.

APEC = Access, Participation, Eligibility, and Certification; NSLP = National School Lunch Program; SBP = School Breakfast Program; SY = school year.

Implications of study findings for ways to reduce improper payments

The APEC-II study found that in schools not using the CEP, one in five applicants was erroneously certified or incorrectly denied benefits. Household reporting error was substantially more prevalent than was administrative error, occurring twice as often; however, administrative error was not small (equaling 9 percent). For the NSLP, approximately 10 percent of total reimbursements were improper because of certification errors; for the SBP, this figure was about 12 percent. For both programs, slightly more than 70 percent of improper payments were overpayments. Improper payment rates among students who were directly certified for free school meals or certified by application based on categorical eligibility were substantially lower than those among students who were certified by application based on income or who were denied applicants. As a result, about 80 percent of national improper payments due to certification error are related to applications either certified or denied based on household income.

For schools participating in the CEP, APEC-II findings show that it is fairly common for CEP groups (either an individual school, set of schools, or all schools within an SFA) to claim fewer meals as free than they are entitled to under program rules. On average, we found that the group's observed ISP, used to determine the FCP, is less than its estimated actual ISP. However, it is not common for schools to claim more meals as free than allowed. Overall, the improper payment rate for schools using the CEP was slightly below 2 percent for both NSLP and SBP, which is substantially lower than schools not using the CEP (10 to 12 percent). Furthermore, in marked contrast to improper payments among schools not using the CEP, less than 10 percent of NSLP and SBP improper payments for schools using the CEP were overpayments.

In examining sources of improper payments other than certification error, we found very few errors in the processes that occur between the time the meal reimbursement status is recorded at the point of sale and when the district claims reimbursement for its meals from the State agency. However, we found substantial error in the process by which schools assessed and recorded whether a meal was reimbursable, particularly in the SBP.

The study's findings on error sources suggest program approaches that FNS might explore for reducing certification and non-certification error and improper payments.[3] Some of the most important of these include the following:

- **Encourage adoption of CEP for schools with very high percentages of identifiable students.** As noted earlier, improper payment rates—and particularly overpayment rates—are markedly lower for schools using CEP than for schools not using CEP. Schools using CEP in this study may not be representative of the broader set of schools eligible for CEP nationally because they were "early adopters" who were most likely to benefit from CEP policies. Therefore, the difference in improper payment rates by CEP status estimated in this study may not be representative of the change in improper payment rates that would accompany the national expansion of CEP. However, these CEP results are encouraging and suggest that improper payments may be reduced substantially with the adoption of CEP by schools similar to the early adopters in the APEC-II sample, such as those with particularly high percentages of categorically eligible (and thus identifiable under CEP rules) students.

- **Encourage and facilitate accurate household reporting of all income sources and amounts for all household members.** As noted earlier, applications either certified or denied based on household income account for a large majority of national improper payments. Based on information from the household survey, 93 percent of students with any reporting error on their applications had misreported income information. Although application forms and/or the accompanying instructions currently ask households to report all income sources, not all applicant households have complied fully. Additional strategies and instrumentation for obtaining complete data on all income sources from all household members should be tested.

- **Improve the accuracy of other administrative functions certifying students and transmitting the student's status to the district's benefit issuance instrument.** Missing applications or direct certification documentation was the most frequent administrative error, although district staff make other types of errors, such as assessment, lookup, and transmittal errors. Each of these types of error contributes to overall administrative error. Strengthening procedures for processing applications, applying decision making rules, and transmitting certification decisions more accurately would reduce administrative error rates.

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[3] In addition to the main findings presented in this report, FNS has examined findings from a wide range of analysis of certification error by student, school, and district characteristics. Although these exploratory analyses are beyond the scope of this report because of the limitations in the data, FNS may use them to inform approaches to reducing improper payments.

- **Identify and address sources of the high rates of meal claiming error at selected schools.** The continued high rates of meal claiming error in the school meal programs arose from a few large schools having very high levels of this type of non-certification error. A first step toward reducing meal claiming error involves identifying its source. One possibility is that individual cashiers are confused about the requirements for reimbursable meals. Additional guidance to these cashiers about these criteria, or system changes that make it easier to recognize meals that do not meet these criteria, may help reduce meal claiming error. Another possibility is that the source of error is not cashiers but the higher-level staff that plans meals and/or provides guidance to food service staff. For example, certain selected foods that are key components of breakfast or lunch menus might not meet the meal requirements that a cafeteria manager or SFA director believes they meet, and the resulting instructions to servers or cashiers about which items should count as reimbursable are incorrect. In this instance, the most effective response may be providing cafeteria managers and SFA directors with guidance and technical assistance concerning the meal pattern requirements.

I. STUDY BACKGROUND

The school meal programs administered by the Food and Nutrition Service (FNS) of the U.S. Department of Agriculture (USDA) are a cornerstone of the nation's nutrition safety net for low-income children. On an average school day in fiscal year (FY) 2013, the National School Lunch Program (NSLP) served lunches to 30.7 million children.[4] More than two-thirds (70.5 percent) of these NSLP lunches were served free or at a reduced price to children from low-income households. The School Breakfast Program (SBP) began as a pilot program in 1966 and was made permanent in 1975. On an average school day in FY 2013, the SBP served breakfasts to 13.2 million students. In FY 2013, 85 percent of SBP meals were claimed for the free or reduced-price reimbursement rate. FNS has long been committed to ensuring that the meals provided in schools are healthful and make important contributions toward children's dietary requirements.

Aware that the integrity of the programs must be preserved, FNS has, over the years, developed policies and initiatives designed to ensure that meal benefits reach eligible students as intended and that districts receive correct reimbursements. To provide the meals according to guidelines without discouraging schools or students from participating in the program, FNS has worked closely with the Office of Management and Budget (OMB), Congress, States, school districts, and advocacy partners to achieve a better understanding of the amount and nature of improper payments and to develop and implement initiatives to address them. Minimizing, and ultimately eliminating, improper payments and other program shortcomings is important because improper payments divert scarce resources from districts and students who need them most. It also is critical to the sustainability of the program because public support requires that the school meal programs determine eligibility and count and claim reimbursable meals through processes that keep improper payments to a minimum.

By 2006, several studies conducted over two decades had found that many children from ineligible households were being certified for free or reduced-price meals (Burghardt et al. 2004). Research also indicated that the number of children approved for free meals nationally exceeded the estimated number in families with annual incomes of less than 130 percent of the Federal poverty level (Tordella 2001, 2003; Neuberger and Greenstein 2003). This finding, coupled with evidence from other oversight activity, revealed that a substantial number of households misreport eligibility information to qualify for meals. Although none of the studies used national samples of districts or students, and most suffered from methodological limitations, the combination of findings fueled an effort to reduce certification errors.

The first Access, Participation, Eligibility, and Certification (APEC-I) study, conducted by Mathematica Policy Research for FNS and released in November 2007, provided the first reliable national estimates of improper payments due to certification error made to school districts for the NSLP and SBP, covering school year (SY) 2005–2006. It was also the first national study to examine the amounts and rates of improper payments arising from the process of counting meals and obtaining reimbursements through State agencies after students are certified. APEC-I found that improper payments in the school meal programs were significant, as defined by the Improper Payments Information Act of 2002. As Table I.1 shows, total improper payments (the gross sum of overpayments and underpayments) due to certification error during SY 2005–2006 were

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[4] All FY 2013 statistics reported for the NSLP and SBP were obtained from national-level annual summary tables generated by FNS's Program Reports, Analysis and Monitoring Branch. These tables are available at [http://www.fns.usda.gov/pd/cnpmain.htm]. Accessed March 18, 2014.

estimated to be $759 million in the NSLP and $177 million in the SBP; these amounts represented 9.4 percent and 9.1 percent of each program's total reimbursements, respectively (Ponza et al. 2007a). The study found that overcertification was more prevalent than undercertification, and misreporting information on eligibility by households was substantially more prevalent than district administrative error as the underlying source for improper payments due to certification error.

Table I.1. Improper payment amounts and rates for NSLP and SBP, SY 2007–2012

Year reported	2007[a]	2008[b]	2009[b]	2010[b]	2011[b]	2012[b]
School year	2005–2006	2006–2007	2007–2008	2008–2009	2009–2010	2010–2011
NSLP						
Reimbursements (millions)	$8,060	$8,756	$9,436	$8,925	$10,739	$10,024
Certification error	$759 (9.4%)	$847 (9.7%)	$902 (9.6%)	$839 (9.4%)	$977 (9.1%)	$867 (8.7%)
Non-certification error	$555 (6.9%)	$602 (6.9%)	$649 (6.9%)	$614 (6.9%)	$739 (6.9%)	$690 (6.9%)
SBP						
Reimbursements (millions)	$1,938	$2,150	$2,273	$2,534	$2,824	$2,987
Certification error	$177 (9.1%)	$198 (9.2%)	$201 (8.8%)	$230 (9.1%)	$259 (9.2%)	$280 (9.4%)
Non-certification error	$306 (15.8%)	$339 (15.8%)	$359 (15.8%)	$400 (15.8%)	$446 (15.8%)	$472 (15.8%)

Note: Dollar amounts represent millions. Entries in parentheses are rates of improper payments.

[a] Entries from Ponza et al. (2007a), pages 98 and 131.

[b] Entries based on projections in the Performance and Accountability Reports for 2007–2011 and the Agency Financial Report for 2012, available at [http://www.ocfo.usda.gov/usdarpt/usdarpt.htm].

NSLP = National School Lunch Program; SBP = School Breakfast Program.

APEC-I also found that total improper payments due to non-certification error (comprising meal claiming error and three types of counting and claiming aggregation error) equaled $555 million in the NSLP (or 7 percent of total NSLP reimbursements) and $306 million in the SBP (or 16 percent of SBP reimbursements). Meal claiming error (incorrect recording of reimbursable meals by schools) was found to be a significant source of non-certification error, accounting for one-third of NSLP non-certification improper payments and nearly two-thirds of SBP non-certification improper payments.

In response to the APEC-I study's findings, FNS initiated several new measures to improve Federal and State oversight and technical assistance to identify, recover, and reduce improper payments in the school meal programs. These steps included requiring annual training for school staff on certification and accountability issues, providing technical assistance and training materials to State and local agencies, annually releasing a solicitation for funding to State agencies for Administrative Reviews and Training (ART) grants, and issuing a revised manual on determining eligibility for free and reduced-price meals.[5]

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[5] This funding is made available to perform administrative reviews and training of selected local education agencies (LEAs) identified by the States as having demonstrated a high level of, or high risk for, administrative error in the NSLP.

The Child Nutrition and WIC Reauthorization Act (the Act) of 2004 (P.L. 108-265) changed the program's existing procedures for determining students' eligibility for free and reduced-price meal benefits. The Act strengthened rules governing certification and verification of eligibility and established new procedures to upgrade administration of meal programs and new technical assistance and training initiatives. At the same time, it placed limits on the proportion of applications for which income can be verified.

In addition, the Act and the more recent HHFKA added and revised regulations to improve the accuracy of the certification process. They also required other actions to help FNS reduce improper payments. Some examples include the following:

- Mandating performance targets for direct certification for free meals using SNAP data

- Providing performance awards for States making the greatest improvement in directly certifying SNAP children

- Requiring increased efforts to obtain household response to application verification requests or allowing direct verification by local education agencies (LEAs)[6]

- Reinforcing requirements for monitoring SFAs to ensure accuracy of household applications, application processing, meal count tabulation, and the identification of a reimbursable meal[7]

- Mandating a percentage of additional administrative reviews for districts with higher error rates

- Offering alternatives to the paper application systems, such as the Community Eligibility Provision (CEP), in low-income areas

- Establishing criteria and procedures for LEAs that demonstrate high levels of administrative error

- Establishing professional standards for school food service personnel, requiring professional education and training standards for certification of local school food service directors and staff, and developing criteria and standards for the selection of State Directors

- Developing additional methods, such as fines for gross mismanagement or violation of program requirements, for enforcing program compliance

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[6] The Richard B. Russell National School Lunch Act (NSLA) uses two different terms to refer to the local entities that enter into agreements with State agencies to operate the school meal programs. The Child Nutrition and WIC Reauthorization Act of 2004 (P.L. 108-265) amended NSLA by using the term local education agency, defined for public schools in the Elementary and Secondary Education Act of 1965 (ESEA), when referring to the application, certification, and verification functions of the school meal programs. Sections of NSLA that deal with other aspects of the programs, such as meal pattern requirements and meal-counting and claiming reimbursements, use the term School Food Authority (SFA), which current NSLP regulations define as the governing body that has the legal authority to operate the NSLP/SBP in one or more schools. The commonly used term for the entities described as LEAs in ESEA is school districts. However, although this definition applies only to public entities, State agencies also enter into agreements with private nonprofit schools to operate NSLP; many of these agreements cover only a single school.

[7] These requirements include the development of a unified monitoring system to review NSLP and SBP, increasing the frequency of the administrative review cycle from five to three years, as well as posting final review results and making those results available to the public.

- Strengthening program compliance by prohibiting any school, institution, or individual that is terminated from one of the Child Nutrition programs and on a list of disqualified institutions and individuals from participating in or administering any of the Child Nutrition programs

Because it is not feasible to collect primary data to conduct a study like APEC-I every year, Mathematica developed an econometric model designed to forecast national improper payments (due to certification error) annually using district-level data available from the School Food Authority Verification Summary Report (Form FNS-742).[8] FNS has used this model to meet its annual requirements for reporting dollar amounts and rates of improper payments to OMB and efforts to reduce them. In Table I.1, columns 2008–2012 show improper payment projections made by FNS based on the national model for school years since the APEC-I study. The figures suggest that the rates have not changed much since SY 2005–2006. Several factors could contribute to the nationally stable error rate: LEAs may need more resources to reduce error rates substantially, LEAs and schools may need time to learn and implement best practices from FNS's policies, the policies may have improved error rates locally but not enough to perceptibly change national error rates, or improvements in certain types of error rates were offset by district staff layoffs or increased household misreporting due to economic conditions. Another possibility is that the model failed to capture some changes in improper payment amounts and rates. Note also that the national model as developed focused on projecting certification error and did not include non-certification error. FNS's annual estimates therefore assume no change in improper payments due to non-certification error.

Given the increased attention to budget deficits and improper payments in recent years, as well as concerns that the model may not be accurately reflecting changes in improper payment rates in "out" years, FNS contracted with Mathematica and its subcontractors, Westat and Decision Information Resources (DIR), to conduct APEC-II, a replication of the first APEC-I study for SY 2012–2013. The study includes several objectives addressed in APEC-I but expands on that study via (1) an examination of alternatives for producing State-level estimates of improper payments and (2) the inclusion of a recently introduced provision, the CEP, in the SY 2012–2013 national estimate of improper payments.

As a context for the discussion of the study's findings, the remainder of this chapter describes the school meal programs and relevant policies and defines improper payments in school meal programs. It also describes research objectives and provides a summary of the study design.

A. Overview of the school meal programs

The NSLP and SBP provide meals to children during the school year. Schools participating in the NSLP may also provide snacks to children participating in eligible afterschool care programs. The overarching goal of both programs, known collectively as the school meal programs, is to ensure that children do not go hungry and have access to nutritious meals and snacks that support normal growth and development.

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[8] The Verification Summary Report (Form FNS-742) was revised for the 2013–2014 school year and is now referred to as the Verification Collection Report. This revision was implemented after the APEC-II data collection.

All public and private nonprofit schools are eligible to participate in the school meal programs. Any child in a participating school or afterschool care program is eligible to obtain school meals or afterschool snacks, and students from low-income households may become certified to receive meals and snacks free or at a reduced price.

The NSLP is the second largest of 15 nutrition assistance programs administered by FNS. Established in 1946, the NSLP operates in virtually all public schools and 94 percent of all schools (public and private combined) in the United States (Ralston et al. 2008). On an average school day in FY 2013, the program served lunches to 30.7 million children.[9] More than two-thirds (70.5 percent) of these lunches were served free or at a reduced price to children from low-income households. Since 1998, schools participating in the NSLP have had the option to provide snacks to children in eligible afterschool programs. In FY 2013, approximately 220 million afterschool snacks were served through the NSLP during the school year.

The SBP began as a pilot program in 1966 and was made permanent in 1975. Over the years, it has steadily expanded. The SBP is available in approximately 90 percent of all public schools that operate the NSLP. On an average school day in FY 2013, the SBP served breakfasts to 13.2 million students. The program serves a greater proportion of children from low-income households; in FY 2013, 85 percent of SBP meals were served free or at a reduced price.

FNS administers the school meal programs at the Federal level, providing substantial policy guidance and structure for operating the programs in accordance with Federal law. The school meal programs are administered at the local level by State Child Nutrition (CN) agencies and SFAs, which usually are individual school districts or small groups of districts. Key responsibilities of State CN agencies include conveying Federal requirements to SFAs, serving as conduits for funding, and monitoring SFAs for compliance with established regulations. School districts with an approved agreement with the State agency have the legal authority to operate the school meal programs. The districts perform the day-to-day functions required to operate the NSLP and SBP: providing nutritious meals to students, counting meals, and submitting claims for meal reimbursements. Districts also have responsibility for certification and verification of student eligibility for meal benefits. State agencies set statewide policies, provide technical assistance to school districts, and monitor key aspects of their performance. The seven regional FNS offices work directly with State agencies to provide technical assistance, interpret regulations, and monitor State agency operations. School districts vary considerably in the procedures used to certify households for meal benefits, issue benefits, serve meals to students, and count meals and claim meal reimbursements. In addition, even within a school district, the relevant systems may vary from school to school.

1. Certifying students to receive school meal benefits

All children enrolled in NSLP/SBP participating schools are eligible to receive reimbursable meals under the program. Children from families with incomes at or below 130 percent of the Federal poverty level are eligible for free meals. Those with incomes above 130 percent and at or below 185 percent of the poverty level are eligible for reduced-price meals, for which students

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[9] All FY 2013 statistics reported for the NSLP and SBP were obtained from national-level annual summary tables generated by FNS's Program Reports. These tables are available at [http://www.fns.usda.gov/pd/cnpmain.htm]. Accessed March 18, 2014.

can be charged no more than 40 cents for lunch and 30 cents for breakfast. Within the requirements for paid lunch equity (7 CFR 210.14 (e)), SFAs establish the prices for meals served to children from families with incomes of more than 185 percent of poverty; however, there is still some degree of Federal subsidy paid for these meals.[10] FNS provides substantial policy guidance and structure for operating the school meal programs. Nonetheless, there is considerable variation among LEAs in the procedures used.

In all cases, students must be certified to receive free and reduced-price meals, and students certified during the school year remain certified throughout the school year with some exceptions.[11] Eligibility for free and reduced-price meal benefits can be established through an application process, usually at the beginning of the school year, or through direct certification, which establishes categorical eligibility based on households' participation in other means-tested Federal programs, such as the Supplemental Nutrition Assistance Program (SNAP) and the Temporary Assistance to Needy Families (TANF). Students who are homeless, runaways, or children of migrants under the programs specified in the National School Lunch Act (NSLA) may be certified outside the traditional application process based on procedures in which the LEA documents students' eligibility with the appropriate agencies.[12]

Certification based on submitted applications. Many students who are approved to receive free or reduced-price meals are approved each school year on the basis of self-reported information on an application that their household submits to the school or LEA. Households must self-report (1) information on household size and income or (2) for categorical eligibility, a case number indicating participation in SNAP, TANF, or Food Distribution Program on Indian Reservations (FDPIR); or they must check a box on the application indicating the student's status as a migrant, homeless, runaway, or foster child. Households are not required to submit documentation of the income they report on the application. If an application is missing information, the school district will either contact the household to obtain the information or return the application to the household to be completed. The district assesses the information on the application to determine whether the household meets the eligibility requirements for free or reduced-price meal benefits and either certifies the students listed on the application or denies certification on the basis of this assessment. The LEA must notify the household of its approval for benefits. Notification of approval does not have to be in writing. However, the LEA must notify the household in writing when its application is denied and must inform the household of its right to appeal the LEA's determination.

Direct certification and other non-application certification methods. Students from households that receive benefits from SNAP or other programs that confer categorical eligibility

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[10] Before passage of the Healthy, Hunger-Free Kids Act of 2010 (HHFKA), Federal regulations did not include restrictions on what SFAs could charge for paid lunches and breakfasts. HHFKA now requires SFAs participating in the NSLP to ensure sufficient funds are provided to the nonprofit school food service account for lunches served to students not certified eligible for free or reduced-price meals. Under the new rule, SFAs have two ways to meet this requirement: (1) by gradually raising the prices charged for paid lunches or (2) by providing an equivalent amount of funds from non-Federal sources to the nonprofit school food service account. If SFAs raise the prices of paid lunches, they are not permitted to raise prices annually more than $0.10.

[11] Benefits may change as part of the verification process described below or if the household reapplies and is certified eligible for a higher level of benefits.

[12] For a history of the NSLA, please see [http://www.fns.usda.gov/nslp/history_5].

can be directly certified for free meals through processes by which State agencies that oversee administrative data from relevant programs, State Child Nutrition agencies, and school districts share eligibility information.[13] All States are required to directly certify students based on SNAP participation; however, States also directly certify students based on information related to TANF, FDPIR, foster care, and other programs that confer categorical eligibility.[14] These students are not required to submit an application in order to establish eligibility for free school meals.

Special provisions. In some schools, all students can receive free meals without applying or being directly certified in a current school year. These schools operate under Provisions 1, 2, and 3 and the CEP.

To reduce paperwork at the local level, Congress incorporated into Section 11(a)(1) of the National School Lunch Act four alternative provisions to the normal requirements for annual determinations of eligibility for free and reduced-price school meals and daily meal counts by type (free, reduced-price, and paid meals) at the point of service (Provisions 1, 2, and 3 and CEP):

- **Provision 1.** Schools with 80 percent or more of enrollment eligible for free or reduced-price meals can use approved free applications for two consecutive years. In the second year, households that do not have an approved free application on file from the prior school year, including those with children receiving reduced-price meals, must be given a meal application and allowed to apply for meal benefits. There is no requirement to serve meals at no charge to all students. Schools must continue to record the number of free, reduced-price, and paid meals served daily as the basis for calculating reimbursement claims.

- **Provision 2.** Schools operate in a "base year" in which they serve all meals at no charge but use standard program procedures to certify free and reduced-price eligible students and count meals by eligibility category. For up to three subsequent years, the schools then continue to serve all meals at no charge but do not have to certify students for free and reduced-price meals and take only a daily aggregate count of meals served. During this time, the schools claim reimbursements based on the percentage of free, reduced-price, and paid meals served during the base year. The schools may be able to use their base year claiming percentages for additional four-year periods if they can establish that economic conditions in the school's attendance area have not changed significantly from economic conditions in the base year. Otherwise, if they wish to continue operating under Provision 2, they must conduct a new full or streamlined base year.

- **Provision 3.** Schools operate in a "base year" in which they may or may not serve all meals at no charge. However, as in Provision 2, they use standard program procedures to certify free and reduced-price eligible students and count meals by category. Schools then serve all meals at no charge for up to four subsequent years, during which they do not make eligibility determinations or take meal counts. Reimbursements during these years are based on the total dollar reimbursements that a school received during the base year, adjusted to

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[13] The Healthy, Hunger-Free Kids Act also requests a demonstration to use Medicaid data to directly certify students for school meal benefits.

[14] For a comprehensive description of direct certification policy and practice, please see Moore et al. (2014).

reflect inflation and changes in enrollment. The provision may be renewed for successive four-year periods if a district can establish that economic conditions in the school's attendance area have not changed significantly from economic conditions in the base year.

- **CEP.** The Healthy, Hunger-Free Kids Act of 2010 (HHFKA) added the CEP as an alternative to household applications for free and reduced-price meals in high-poverty districts and schools. Under this provision, participating schools offer free program meals to all students and do not have to use standard procedures to establish certification status for all students. Program meals meeting regulatory standards are reimbursed at either the free or paid rate, with the free claiming percentage equal to the percentage of enrolled students who are "identified students" (those not subject to verification, which are those who are directly certified or approved for free meals without an application based on participation in means-tested programs or programs serving homeless, migrant, and runaway children, reflective of April 1 of the previous school year) times a multiplier (currently 1.6). CEP schools can use their claiming percentages for up to four years, updating them sooner if the proportion of identified students increases. The provision was phased in over a period of three years, beginning with the three-State CEP pilot in SY 2011–2012. During SY 2012–2013, the year in which APEC-II data were collected, CEP operated in six States, plus the District of Columbia. CEP became available nationwide during SY 2014–2015.

Verification. Verification is the process by which LEAs assess the accuracy of their certification decisions for approved applications. Its intent is to detect and deter misreporting by applicants (as well as reduce administrative error) that results in miscertification of their benefit status and improper payments. Before November 15 of each school year, districts must select and verify a sample of the applications approved for free or reduced-price meal benefits, unless the State NSLP administering agency assumes responsibility for verification or the LEA is otherwise exempt from the verification requirement. Directly certified students are not subject to verification because their eligibility was established through contact with appropriate program officials. Verification does not include denied applicants. LEAs must request documentation that verifies the eligibility status of the households whose applications are selected for verification. They have authority to attempt to verify eligibility based on certain public records; the most common use of this authority is to request the SNAP/TANF/FDPIR administering agency (or agencies) to verify case numbers reported on an application.

If public records verify current eligibility status of the household, no further action is necessary. If verification from public records is attempted but not obtained, or if the district elects not to attempt verification through public records, it sends the selected households a letter requesting that they document the information on their applications. Households can provide documentation that verifies their participation in SNAP/TANF/FDPIR (such as a copy of a letter of eligibility or a program identification card), or households can provide proof of income, such as wage and earning statements. If the documentation supports the current eligibility determination, no further action is necessary. If the documentation supports a different eligibility status (for example, if it supports free certification for children originally certified for reduced-price benefits), the LEA changes the level of benefits for which the children on the application are certified. If the documentation does not support the household's eligibility for either free or reduced-price benefits, the LEA must change the children's eligibility status to paid. If an LEA cannot verify eligibility through public records, and the household does not respond to the

request for documentation, the LEA must terminate the free or reduced-price benefits of all children certified on the basis of that application.

Each LEA verification pool is based on the number of approved applications on file as of October 1. The standard verification sample method used by most LEAs requires that the lesser of 3 percent or 3,000 of approved applications be verified, focusing on error-prone applications. Error-prone applications are those reporting income within $100 of the monthly limit or $1,200 of the annual limit for free or reduced-price eligibility for the applicable household size. Two alternative sample sizes are also available to LEAs that qualify on the basis of lowered or improved nonresponse rates from previous years' verification results. Districts must report the results of their verification activity to their State agency by February 1. By March 15, State agencies must submit to FNS an electronic file containing the School Food Authority Verification Summary Report (Form FNS-742) data for all of their school districts.[15]

2. Reimbursable school meals

For a meal to be counted as reimbursable, it must meet USDA's meal pattern requirements (see below) *and* be served to an eligible student. Second meals served to students, meals served to adults, meals not meeting meal pattern requirements, and à la carte food items are not eligible for reimbursements. If the program meal is not provided free, it must be priced as a single unit.

SFAs that participate in the NSLP and SBP receive two types of Federal assistance: (1) cash reimbursements and (2) donated USDA Foods (formerly known as commodity foods). SFAs receive cash reimbursements for each reimbursable program meal and snack served, with substantially higher rates paid for meals served free or at a reduced price to income eligible students. SFAs and schools that serve high proportions of low-income children are eligible to receive higher levels of reimbursements; SFAs in which at least 60 percent of lunches were served as free or reduced-price during the second preceding school year receive an additional 2 cents per reimbursable lunch, and schools in which at least 40 percent of breakfasts were served as free or reduced-price during the second preceding school year receive an additional 30 cents per reimbursable free or reduced-price breakfast. Table I.2 shows reimbursement rates in effect during SY 2012–2013. Under HHFKA, SFAs certified compliant with the new meal pattern and nutrition requirements receive an additional $0.06 for reimbursable lunches (not shown in table).

The value of each SFA's entitlement to donated USDA Foods is based on an established per-meal flat rate (22.75 cents for SY 2012–2013) that is applied to the number of reimbursable lunches served the preceding school year. Subject to availability, SFAs may also be offered bonus USDA Foods in amounts that can be used without waste. The types and amounts of bonus USDA Foods available vary from year to year based on agricultural surpluses and purchasing decisions made by USDA.

Nutrition standards for school meals. To be eligible for Federal reimbursements, meals served in the NSLP and SBP must meet defined nutrition standards. Before SY 2012–2013, the nutrition standards in place were the School Meal Initiative (SMI) standards. The SMI standards were based on the 1995 *Dietary Guidelines* and required that meals provide no more than 30

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[15] Through SY 2012–2013, verification results were collected with the Verification Summary Report (Form FNS-742). For SY 2013–2014, FNS revised this form, now referred to as the Verification Collection report, along with some of the verification requirements.

percent of calories from fat and less than 10 percent of calories from saturated fat. The SMI standards also established the requirement that breakfasts provide 25 percent of the 1989 recommended dietary allowances (RDAs) for energy (calories), protein, vitamins A and C, calcium, and iron (before the SMI, there were no quantitative nutrition standards for the SBP). The standards retained a requirement that lunches provide 33 percent of the RDAs. Finally, they encouraged SFAs to reduce levels of sodium and cholesterol in school meals and to increase the availability of fiber. However, they did not establish quantitative targets.

Table I.2. Reimbursements per meal in contiguous United States, SY 2012–2013

	Meal category		
	Free	Reduced-price	Paid
NSLP			
Total reimbursements[a]	$3.0875	$2.6875	$0.4975
Section 4 rate	$0.27	$0.27	$0.27
Section 11 rate	$2.59	$2.19	-
USDA Foods value	$0.2275	$0.2275	$0.2275
SBP			
Total reimbursements (Section 4)[b]	$1.55	$1.25	$0.27

Source: *Federal Register,* vol. 77, no. 142, p. 43232.

[a] Excludes additional reimbursements for districts that claimed at least 60 percent of lunches at the free and reduced-price rates during SY 2010–2011. Also excludes additional $0.06 reimbursements for compliance with the school meal pattern.

[b] Excludes additional reimbursements for schools that claimed more than 40 percent of lunches at the free and reduced-price rates during the second preceding year.

NSLP = National School Lunch Program; SBP = School Breakfast Program; SY = school year.

Nutrition standards for school meals were recently revised to reflect the most current nutrition guidance provided by the *Dietary Guidelines* (U.S. Department of Health and Human Services [HHS] and USDA 2010) as well as updated information about nutrient requirements included in the dietary reference intakes (DRIs) that replaced the 1989 RDAs (Institute of Medicine [IOM] 2005). The revised standards are based on recommendations included in the 2010 IOM report "School Meals: Building Blocks for Healthy Children." The IOM recommendations, which were designed to increase alignment of school meals with the dietary guidelines, called for increasing fruits, vegetables, and whole grains in school meals; limiting milk to fat-free or low-fat varieties; substantially reducing the sodium content of school meals over time; controlling saturated fat and calorie levels; and eliminating *trans* fat while satisfying children's nutrient requirements (IOM 2010). In January 2011, USDA issued a proposed rule for new nutrition standards for school meals, based on the IOM recommendations.[16] After a period of public comment, the updated and final rule was issued in January 2012 (see Table I.3).[17] The final rule required that schools begin implementing the new requirements in SY 2012–2013, beginning with the changes to the lunch program. With the exception of the new milk requirement, changes to the breakfast program were phased in beginning July 1, 2013 (SY 2013–2014). However, schools with the ability to implement any or all of the phased-in SBP meal

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[16] *Federal Register*, vol. 76, no. 9, Thursday, January 13, 2011, Proposed Rules.

[17] *Federal Register*, vol. 77, no. 17, Thursday, January 26, 2012, Rules and Regulations.

requirements in SY 2012–2013 could have done so with the approval of the State agency. States had to identify their own processes for determining whether early adoption of breakfast requirements at an individual SFA was appropriate.

Table I.3. Final rule: meal pattern and nutrient requirements for NSLP and SBP

Meal pattern	Breakfast meal pattern			Lunch meal pattern		
	Grades K–5[a]	Grades 6–8[a]	Grades 9–12[a]	Grades K–5	Grades 6–8	Grades 9–12
Amount of food[b] per week (minimum per day)						
Fruits (cups)[c,d]	5 (1)[e]	5 (1)[e]	5 (1)[e]	2.5 (0.5)	2.5 (0.5)	5 (1)
Vegetables (cups)[c,d]	0	0	0	3.75 (0.75)	3.75 (0.75)	5 (1)
Dark green[f]	0	0	0	0.5[d]	0.5[d]	0.5[d]
Red/orange[f]	0	0	0	0.75[d]	0.75[d]	1.25[d]
Beans/peas (legumes)[f]	0	0	0	0.5[d]	0.5[d]	0.5[d]
Starchy[f]	0	0	0	0.5[e]	0.5[e]	0.5[e]
Other[f,g]	0	0	0	0.5[d]	0.5[d]	0.75[d]
Additional vegetable to reach total[h]	0	0	0	1.0	1.0	1.5
Grains[i] (oz. eq.)	7–10 (1)[j]	8–10 (1)[j]	9–10 (1)[j]	8–9 (1)	8–10 (1)	10–12 (2)
Meats/meat alternates (oz. eq.)	0[k]	0[k]	0[k]	8–10 (1)	9–10 (1)	10–12 (2)
Fluid milk[l] (cups)	5 (1)	5 (1)	5 (1)	5 (1)	5 (1)	5 (1)
Other specifications: daily amount based on the average for a five-day week						
Range (min–max) calories (kcal)[m,n,o]	350–500	400–550	450–600	550–650	600–700	750–850
Saturated fat (% of total calories)[n,o]	< 10	< 10	< 10	< 10	< 10	< 10
Sodium (mg)[n,p]	≤ 430	≤ 470	≤ 500	≤ 640	≤ 710	≤ 740
Trans fat[n,o]	Nutrition label or manufacturer specifications must indicate zero grams of *trans* fat per serving.					

[a] In the SBP, the above age-grade groups were required beginning July 1, 2013 (SY 2013–2014). In SY 2012–2013 only, schools could continue to use the meal pattern for grades K–12 (see § 220.23).

[b] Food items included in each group and subgroup and amount equivalents. Minimum serving is 1/8 cup.

[c] One-quarter cup of dried fruit counts as 1/2 cup of fruit; one cup of leafy greens counts as 1/2 cup of vegetables. No more than half of the fruit or vegetable offerings may be in the form of juice. All juice must be 100 percent full strength.

[d] For breakfast, vegetables may be substituted for fruits, but the first two cups per week of any such substitution must be from the dark green, red/orange, beans and peas (legumes), or "other vegetables" subgroups, as defined in § 210.10(c)(2)(iii).

[e] The fruit quantity requirement for the SBP (five cups/week and a minimum of one cup/day) became effective July 1, 2014 (SY 2014–2015).

[f] Larger amounts of these vegetables may be served.

[g] This category consists of "other vegetables" as defined in § 210.10(c)(2)(iii)(E). For the purposes of the NSLP, the "other vegetables" requirement may be met with any additional amounts from the dark green, red/orange, and beans/peas (legumes) vegetable subgroups, as defined in § 210.10(c)(2)(iii).

[h] Any vegetable subgroup may be offered to meet the total weekly vegetable requirement.

[i] At least half of the grains offered must be whole grain–rich in the NSLP as of July 1, 2012 (SY 2012–2013), and in the SBP as of July 1, 2013 (SY 2013–2014). All grains must be whole grain–rich in both the NSLP and SBP as of July 1, 2014 (SY 2014–2015).

[j] In the SBP, the grain ranges must be offered as of July 1, 2013 (SY 2013–2014).

[k] There is no separate meat/meat alternate component in the SBP. As of July 1, 2013 (SY 2013–2014), schools may substitute 1 oz. equivalent of meat/meat alternate for 1 oz. equivalent of grains after the minimum daily grains requirement is met.

[l] Fluid milk must be low-fat (1 percent milk fat or less, unflavored) or fat-free (unflavored or flavored).

[m] The average daily amount for a five-day school week must be within the range (is not to be less than the minimum nor more than the maximum values).

[n] Discretionary sources of calories (solid fats and added sugars) may be added to the meal pattern if within the specifications for calories, saturated fat, *trans* fat, and sodium. Foods of minimal nutritional value and fluid milk with fat content greater than 1 percent milk fat are not allowed.

Table I.3 (*continued*)

ᵒ In the SBP, calories and *trans* fat specifications took effect beginning July 1, 2013 (SY 2013–2014).

ᵖ Final sodium specifications are to be reached by SY 2022–2023, or July 1, 2022. Intermediate sodium specifications have been established for SY 2014–2015 and SY 2017–2018. See required intermediate specifications in § 210.10(f)(3) for lunches and § 220.8(f)(3) for breakfasts.

Before the new nutrition standards, SFAs participating in the NSLP and SBP had five options for planning menus to meet the SMI nutrition standards:

1.   Traditional food-based menu planning

2.   Enhanced food-based menu planning

3.   Nutrient standard menu planning

4.   Assisted nutrient standard menu planning

5.   Other reasonable approaches

Under the new rules that took effect in SY 2012–2013, all SFAs must use a single food-based menu planning approach.[18] The food-based menu planning system identifies food groups (or meal components) that the meal must include, as well as minimum acceptable serving sizes for children according to their grade levels. For example, as Table I.3 shows, school lunches offered to high school students must include a minimum of one cup of fruit per day (five cups per week), one cup of vegetables per day (five cups per week), specific levels of minimum amounts of different types of vegetables per week, 2 ounce equivalents of grains per day (from 10 to 12 ounce equivalents per week), 2 ounce equivalents of meats/meat alternates per day (from 10 to 12 ounce equivalents per week), and one cup of fluid milk per day (five cups per week). Under the new regulations, there are also new offer versus serve (OVS) rules. The new OVS provisions require that students select at least one ½ cup serving of fruit or vegetable at both breakfast and lunch for the meals to be reimbursable. State agencies will monitor SFAs on a three-year cycle. States will conduct a thorough review of a representative weekly menu to assess compliance with the standard for *trans* fat and all food-based requirements. They will also conduct a nutrient analysis to assess compliance with standards for calories, saturated fat, and sodium.

3.   Issuing benefits, counting meals, and claiming meal reimbursements

To obtain meal reimbursements, school personnel must accurately count, record, and claim the number of reimbursable program meals actually served to students by category—free, reduced-price, and paid (exceptions are for schools using Provision 2 or 3 in a non-base year and districts and schools electing the CEP). To achieve this measure, SFAs must put in place a system that issues benefits, records meal counts at the school's point of service, and reports them to the central district office. The SFA must receive reports of meal counts from the schools, consolidate them, and submit claims for reimbursements to its State agency. The specific procedures chosen may vary across districts and across schools within a single district. SFAs vary in the kinds of forms that they develop and use; the personnel responsible for counting meals, consolidating the counts, and submitting the claims; and how they collect and present the information.

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[18] *Federal Register,* vol. 77, no. 17, Thursday, January 26, 2012, Rules and Regulations.

Benefit issuance. Schools use a benefit issuance instrument at the school's point of meal service to determine the meal benefit status of the student receiving the meal (free, reduced-price, or paid) and therefore the category under which the meal will be claimed for reimbursement. The benefit issuance instrument reflects the status of each enrolled student, based on whether the student has been certified to receive free or reduced-price meal benefits or must pay full price for meals.

Schools vary in the type of benefit issuance documentation used and its location. These types of documentation include the following:

- **Hard-copy rosters or lists.** These rosters or lists are maintained either at the cash register, at a location where meal tickets or tokens are being distributed (such as classrooms), or at a combination of both.

- **Point-of-sale computerized files.** Increasingly more common, under these systems, students' reimbursement status is essentially an electronic file embedded in point-of-sale equipment.

Schools establish procedures for obtaining payment from students for meals they receive and for collecting the medium of exchange (that is, cash or any kind of ticket, token, ID, number, name, or electronic swipe card) that the students use to obtain a program meal. Schools must ensure that whatever method they use does not overtly identify the student's status as eligible for free or reduced-price meals. Each system usually has a number of variations and modifications. However, there are several common systems:

- Roster systems including coded or uncoded rosters, number lists, and class lists

- Coded ticket/token systems with various ticket procedures

- Automated tab tickets

- Barcoded and magnetic strip cards

- Coded ID cards

- Verbal identifiers

Obtaining meal reimbursements. Each day, schools must count the numbers of reimbursable free, reduced-price, and paid meals served to eligible students and then report them to the central district office. School reports may be referred to as "daily record of operations," "daily/weekly food service reports," "daily report of participation," and so on. Regardless of the name, the report must show a detailed record of the day's meal service so that the required information can be transferred to the district office. Schools must perform daily and monthly edit checks based on the number of approved students for free and reduced-price meal benefits, average attendance, and number of serving days during the reporting period. The SFA consolidates the meal counts across schools in its district and submits meal counts (usually monthly) to its State agency to obtain reimbursements from USDA.[19] Increasingly, SFAs are submitting claims electronically (online) for reimbursement to their State agency. The State agency reports to FNS a consolidated meal count

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[19] Some States may still require SFAs to submit meal counts by school as opposed to aggregating counts across the district.

for all districts in the State and receives reimbursements based on the number of meals reported by category; the State agency is then responsible for paying the Federal reimbursements to each SFA based on the number of meals claimed by category by the district during the claiming period.

Meal-counting and meal-claiming procedures at Provision 2 schools. Procedures for counting and claiming meals at Provision 2 schools in their base year are exactly the same as those in non-Provision schools. All meals in Provision 2 base year schools must be served to students at no charge, but the school must record each meal for reimbursement in the eligibility category of the student receiving the meal (free, reduced-price, or paid). A school may choose to implement Provision 2 for both the NSLP and the SBP or only one of the two meal programs. Meal counts are consolidated and reported to the district in the same manner as schools that use standard certification and claiming procedures.

Provision 2 schools in a non-base year count the total number of reimbursable meals served each day for each program operating under Provision 2 (breakfast and/or lunch), then apply the base year claiming percentages for each meal type to the total count for that type of meal to obtain the numbers of meals that can be claimed as free, reduced-price, and paid. These schools have the option of either (1) applying a monthly claiming percentage (for instance, using the October base year claiming percentage when claiming reimbursements in October of a non-base year) or (2) using an annual claiming percentage (that is, using the annual claiming percentage for the base year for each day's total or monthly total).

Meal-counting and meal-claiming procedures at Provision 3 schools. Base year and non-base year procedures for Provision 3 schools are slightly different from those for Provision 2. A Provision 3 base year is not technically part of the Provision 3 cycle; rather, it is simply the last year in which a school established student eligibility and claimed meals by category, whether or not all meals were served at no cost to all students during that year. A school can implement Provision 3 for both the NSLP and the SBP or only for one of the two meal programs. Once a school implements Provision 3, it establishes its monthly claims based on the dollar amount of reimbursement that it received in its last "standard procedures" year for each meal type implemented, adjusting the dollar amount for changes in enrollment and inflation. Provision 3 schools count the total reimbursable meals served at each meal separately, but these counts are not used to develop the amount of reimbursements claimed. Districts must develop a method to convert the reimbursements claimed by Provision 3 schools into free, reduced-price, and paid meal equivalents to report to the State agency to be claimed for reimbursement.

Meal-counting and meal-claiming procedures at CEP schools. The CEP is a four-year reimbursement option for eligible high-poverty districts and schools. The claiming percentages established for a school (or group of schools) in the first year of its participation are based on the percentage of enrolled students who are classified as identified students (that is, directly certified or receiving free meal benefits without an application). They are guaranteed for four school years and may be increased if direct certification percentages rise in that school. For schools to be eligible, a minimum of 40 percent of its enrolled students must be directly certified or receiving free meals benefits without an application (denoted "identified students"), measured as of April 1 before the first year of participation. The schools must offer both breakfast and lunch to students, and all students receive the meals at no charge. The school applies two claiming percentages to total reimbursable meals (separately for lunch and breakfast) provided to students: a free category (set at

1.6 times the percentage of identified enrolled students, capped at 100 percent) and a paid category (equal to the residual percentage).

B. Definition of improper payments in the NSLP and SBP

Under the Improper Payments Elimination and Recovery Act (IPERA) of 2010, an improper payment is any payment that should not have been made or that was made in an incorrect amount based on a statutory, contractual, administrative, or other legally applicable requirement. Incorrect amounts can be overpayments or underpayments (including underpayments due to inappropriate denials of payment or service). An improper payment includes any payment that was made to an ineligible recipient or for an ineligible service. In addition, when an agency is unable, as a result of insufficient or missing documentation, to discern whether a payment was proper, the payment is also considered improper.

This study distinguishes two major sources of improper payments: (1) those that result from misclassification of school meal eligibility status of participating students (certification errors) and (2) those that occur after eligibility is determined up through when school districts submit claims for reimbursements (non-certification errors). The study obtains separate estimates of improper payments from these two sources and derives separate estimates for the NSLP and SBP. Unlike APEC-I, this study also estimates the combined improper payments from certification and non-certification error after identifying the ways that certification and non-certification errors can interact.

1. Improper payments due to misclassification of school meal eligibility status (certification error)

The level of reimbursements that an SFA is entitled to receive for an NSLP or SBP meal depends on the eligibility status of the child who receives the meal. A certification error will result in an overpayment or underpayment when a student receives a reimbursable NSLP or SBP meal that is claimed for reimbursement at a rate that does not correctly reflect the student's eligibility status. For example, if a student is certified for free meals, but that student's actual eligibility is reduced-price, then FNS is overpaying the SFA each time the student receives an NSLP or SBP meal. Alternatively, if a student applied for meal benefits but was denied and that student is actually eligible for free meal benefits, then FNS is underpaying the SFA each time the student receives an NSLP or SBP meal at the paid rate.

Certification error occurs for two reasons: (1) misreporting by households of their total income; household size; or qualifying program participation (SNAP, TANF, or FDPIR) on the application form or at the time of verification and (2) administrative errors that LEA staff make during the approval of applications, the processing of direct certification information, the verification process, or the recording or updating of a student's certification status.

The definition of improper payments used in the analysis of certification error for this study is comprehensive, focusing on all incorrect payments made for meals received by certified students and denied applicants. When appropriate, we include reimbursements for meals received by students who are eligible for free or reduced-price meals and who applied for but were mistakenly

denied free or reduced-price meal benefits.[20] We base our estimates of improper payments on a comparison between the reimbursements paid to SFAs for meals served to certified and denied applicant students (based on their actual free or reduced-price certification status or paid status); the reimbursements for which the SFAs are entitled to receive based on the household's true circumstances (that is, for which they are income eligible); and the number of program meals received during the school year, using either the information about the individual student or imputed participation. Consistent with program rules, students certified for meal benefits without an application on file or without the student appearing on a directly certified list (even if their actual meal benefit status is consistent with their true eligibility) are considered to be erroneously certified and contribute to the estimate of improper payments.[21]

Improper payments are calculated for students over the entire school year for each meal program. There are six types of certification errors that contribute to improper payments:

1. Certified free when student should be paid

2. Certified free when student should be reduced-price

3. Certified reduced-price when student should be paid

4. Certified reduced-price when student should be free

5. Denied applicant that should be free

6. Denied applicant that should be reduced-price

A dollar value per meal is associated with each error type. The first three types of error represent overpayments, and the next three represent underpayments. Total improper payments for each program are the sum of all overpayments and underpayments for the school year across the six types of errors. It is the gross (not net) total of overpayments and underpayments.

The dollar value of improper payments due to certification error is calculated based on only the portion of payments attributable to the extra Federal subsidy that is paid for meals served to free and reduced-price certified students. All NSLP and SBP reimbursable meals served to enrolled students at participating schools are eligible for reimbursements at least at the "paid eligible" rate (that is, the reimbursement rate that applies to meals served to students who are not certified as eligible for free or reduced-price meals). Meals served to students certified for free or reduced-price meal benefits receive additional reimbursements. The amount of the additional reimbursements is determined differently for the NSLP and the SBP:

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[20] For students that applied for but were erroneously denied benefits, APEC-I calculated the improper payments using their actual program participation as non-certified students. Thus, the APEC-I improper payments estimate in this case was a lower bound on improper payments because erroneously denied students probably would have received more school meals during the school year if they had received them for free or at a reduced price rather than at the higher paid meal price. For APEC-II, we developed a model that projects what these students' participation levels would have been at the true eligibility status and examine the sensitivity of the national improper payments estimates to these differing approaches. Please see Appendix F for findings from this analysis.

[21] For the purposes of this analysis, the small number of students certified for free meals based on the letter method are included with those who were directly certified. Certification based on the letter method may not be counted as direct certification based on FNS regulations.

- In the NSLP, the "paid" rate is established in Section 4 of the National School Lunch Act (NSLA). Section 11 of the NSLA ("special assistance payment") establishes reimbursement above the Section 4 paid rate for meals served to students certified eligible for free and reduced-price meals. The Section 11 payment is in addition to the Section 4 payment for those meals served to children certified eligible for free or reduced-price meals. For the NSLP, FNS is interested in determining improper payments under Section 11 of the NSLP.

- In the SBP, payment rates for paid, reduced-price, and free meals are established in Section 4 of the Child Nutrition Act of 1966. For the SBP, FNS is interested in determining the improper payments related to the difference between the reimbursement rate for paid meals and the reimbursement rates for reduced-price and free meals (including the additional payments for "severe need" free and reduced-price meals, as appropriate).

Certification error in schools using the CEP. APEC-II also examines certification error in schools electing the CEP, a provision that was offered for the first time in SY 2011–2012. The CEP can be elected by an individual school, by a set of schools within an LEA, or by the entire LEA. The characteristics (number of enrolled students, number of directly certified students, and number of students who are certified eligible for free meals without having to submit an application) of the schools that elect CEP determine their reimbursement rates. For example, a school that elects CEP individually will claim reimbursements based on the percentage of its enrolled students who are directly certified based on participation in SNAP/TANF/FDPIR or are certified eligible for free meals without submitting an application, including students who are homeless, children of migrant workers, foster children, or runaways. A set of schools within an LEA that elects the CEP jointly will claim reimbursements based on the percentage of enrolled students from all schools in this group who are "identified students"—that is, all students in the group who are directly certified or deemed eligible for free meals without having to submit an application. An LEA fully participating in the CEP will claim reimbursements based on all schools in its jurisdiction—the percentage of the entire district's enrolled students who are directly certified or eligible for free meals without submitting an application. Hereafter, we refer to an individual school/set of schools/LEA that elected CEP as a "CEP group."

The standard framework for assessing certification error for non-CEP schools (described in the previous section) does not apply to CEP groups because CEP groups do not certify individual students during the four-year CEP cycle.[22] Instead, CEP groups claim reimbursements using claiming percentages derived from the proportion of identified students in the groups' reference years. The claiming percentages are applied to the total reimbursable meals, resulting in a portion of the meals being reimbursed as free and the remainder as paid.[23] The CEP framework implies that certification error occurs at the level of CEP groups, not students, because the claiming percentage is based on the CEP group as a whole. As a result, certification error occurs if a CEP group's claiming percentage for free or paid meals is incorrect. Undercertification error occurs if the CEP group claimed a smaller reimbursement than it would have if its claiming percentages were correct. Overcertification error occurs if a larger reimbursement was claimed than the correct

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[22]Schools and districts certify individual students in the year before they elect the CEP. In subsequent years, they do not accept applications but may continue recording the number of directly certified students and students who are eligible for free meals without having to submit an application.

[23] If the proportion of identified students is sufficiently high (at least 62.5%), all meals are reimbursed at the free amount.

claiming percentages imply. The study's approach to estimating certification error in CEP schools has two steps: (1) assessing the accuracy of the claiming percentages and (2) comparing claiming percentages used by the CEP school with claiming percentages calculated by the APEC-II analysis team.

2.   Improper payments due to counting and meal claiming errors (non-certification error)

The other source of error that the study considers, non-certification error, occurs at various points in school and district operations after students' eligibility is determined. The study distinguishes meal claiming error and three types of aggregation error. As individuals take meals through the school cafeteria lines, schools must determine whether the meal contains the required number and type of meal items and components and, if so, whether the person receiving the meal is an eligible student and his or her benefit status (free, reduced-price, or paid). Errors may arise in these assessments (meal claiming error). The meal counts must be totaled and recorded (either manually or by computer) at the end of the day to obtain the total meals recorded in each reimbursement category. Counts then must be forwarded to the district office at some set interval (such as weekly or monthly). The district must consolidate the meal counts for all of its schools, prepare the claim, and forward it to the State agency. Errors may arise when performing any or all of these three counting, consolidation, and claiming functions.

3.   Total certification and non-certification error

We examine findings that combine errors due to certification and non-certification error. The overall error is not simply the sum of the types of error because the errors may interact (either offset or increase error). We account for the interactions by identifying all the combinations of certification, meal claiming, and aggregation error. For example, consider a student who is eligible for reduced-price meals but is erroneously certified for free meals (overcertification error). This certification error considered in isolation would result in an overpayment equal to the free-meal reimbursement rate minus the reduced-price rate for each reimbursable meal claimed for this student. However, if one of this student's reimbursable meals is erroneously not counted due to meal claiming error, then the overpayment due to certification error is more than offset by an underpayment due to non-certification error. The school should have been reimbursed for a reduced-price meal (if the student had been correctly certified) but was not reimbursed for a meal at all. Therefore, the combination of these errors results in an underpayment that is equal to the reduced-price rate ($2.6875). This example demonstrates that certification and non-certification errors may have complicated interactions on improper payments that must be carefully considered when generating estimates of total certification and non-certification errors.

We identify the per-meal error amount under each combination of certification, meal claiming, and aggregation error and estimate the number of meals in each combination category. We then multiply the number of meals by the per-meal error rate and sum across the categories to generate national estimates of total improper payments that appropriately adjust for these interactions.

II. STUDY OBJECTIVES AND DESIGN

A. Research objectives

APEC-II has several research objectives, including two that are new to this study: (1) an examination of alternatives for producing State-level estimates of improper payments and (2) estimates of improper payments in the CEP and their inclusion in the SY 2012–2013 national estimates of improper payments. Specifically, APEC-II addresses the following five objectives and supporting research questions:

1. **Generate national estimates of the extent of overpayments, underpayments, and overall improper payments in the National School Lunch Program and School Breakfast Program, separately, as a result of the misclassification of school meal eligibility status of students that participate in these programs (certification error).**

    - What are the national estimates of certification error rates for students certified for free or reduced-price meals and denied applicants?

    - What is the annual national estimated dollar amount of overpayments, underpayments, and overall improper payments (gross total) made under the NSLP and SBP due to certification error?

    - What proportion of overpayment, underpayment, and overall improper payment errors attributable to certification error are due to administrative errors made by the school district at various points in time of the administrative process?

    - What proportion of overpayment, underpayment, and overall improper payment errors attributable to certification error are due to household misreporting of income; household size; or SNAP, TANF, or FDPIR status at the time of application, verification, or reapplication?

    - What is the certification-related error rate associated with direct certification? To what extent does it vary by method of implementation?

2. **Generate national estimates of the extent of overpayments, underpayments, and overall improper payments as a result of non-certification errors separately for the NSLP and SBP.**

    - What is the incidence and annual national estimated amount of overpayments, underpayments, and overall improper payments resulting when cafeteria staff members make errors in assessing and recording whether a specific meal selection (the tray) meets the criteria for a reimbursable meal under the NSLP and SBP?

    - What is the incidence and annual national estimated amount of overpayments, underpayments, overall improper payments resulting from three types of aggregation error in the NSLP and SBP, in total and separately?

        a. Improper payments associated with combining daily meal counts from individual school points of sale (point-of-sale error)

        b. Improper payments associated with communication between the school and the school district office (school-to-district office error)

     c. Improper payments associated with reporting totals to the State agency, either directly or through consolidation (district office-to-State agency error)

- What is the total annual national estimated amount of overpayments, underpayments, and overall improper payments associated with meal claiming and aggregation error?

3. **Produce separate estimates of overpayments, underpayments, and total improper payments for school districts participating in the CEP.**

- What is the annual national estimated dollar amount of overpayments, underpayments, and overall improper payments (gross total) made under the NSLP and SBP for schools participating in the CEP?

4. **Refine existing estimation models for updating annual estimates of overpayments, underpayments, and total improper payments based on extant data (in future years when a national study is not conducted).**

- What modeling strategy will maximize accuracy in predicting errors?

- How do the overpayment, underpayment, and overall improper payment estimates for the NSLP and SBP that were generated by the current estimation models compare with estimates based on the on-site data collected in SY 2012–2013?

- What are the standard errors and confidence intervals associated with these improper payment estimates?

- How reliable will the estimation model-generated annual estimates be in future years?

- What additional data could help improve the estimates generated by the estimation models?

5. **Estimate and validate models of State-level estimates of improper payments.**

- What estimates of State-level underpayments, overpayments, and total improper payments are produced by econometric models based on existing administrative data?

- How do those estimated improper payment rates vary across States?

- How accurate are the estimated State-level improper payments?

- What can we infer about the accuracy of the models' estimates by comparing district-level model-based estimates with their respective survey-based estimates?

- What is the degree of precision with which we can test the accuracy of those model-based State-level estimates?

    This report presents findings for the first three research objectives. Findings from the national and State-level improper payments modeling work will be presented subsequently.

B. Research design summary

We addressed APEC-II study objectives using a multistage-clustered sample design, which includes representative samples of school districts, schools (public and private), and free and reduced-price meal applicants and directly certified students participating in the NSLP and SBP in the contiguous United States. We collected data for each of these samples from several sources (household surveys, abstraction from applications and direct certification records, cashier transactions and school and SFA meal counts and claiming data, and administrative data). We collected similar data from SFAs and schools participating in the CEP, with a greater reliance on administrative data. We used these data to generate national estimates of improper payment amounts and rates. These data will be used to support national-level modeling development and refinement work as well as to develop and validate models of State- and district-level estimates. Table II.1 summarizes the overall research design used to address the study's research objectives.

Although the focus of APEC-II is to estimate the amount and rates of improper payments in the NSLP and SBP for SY 2012–2013 in the most accurate and reliable manner possible, the study also includes comparisons of improper payments between SY 2012–2013 (APEC-II) and SY 2005–2006 (APEC-I) to enable FNS to assess trends in improper payments since the first national estimates were generated. We followed the same methodology implemented in APEC-I to produce the SY 2012–2013 estimates but with some minor enhancements (described below). As a result, differences in improper payments between APEC-II and APEC-I should be largely attributable to changes in determinants of certification and non-certification error. This includes FNS's efforts to provide training and technical assistance to States and school districts and increase oversight and monitoring of State and local agencies, specifically to improve the accuracy of payments in the NSLP and SBP. Changes in program size and participation since SY 2005–2006, accompanied by shifting external conditions such as economic circumstances, student demographics, and computing capacity, are also factors that could influence improper certification and non-certification error rates and amounts. The use of direct certification by States and SFAs is more prevalent since SY 2005–2006, which with all else remaining constant should result in more accurate certification and lower improper payments. Finally, non-certification error may increase if cashiers must learn and apply new rules for determining reimbursable meals.

As mentioned, the APEC-II study approach contains some enhancements to the sampling, data collection, and analytic approaches used in APEC-I that might have affected the improper payments estimates. For example, APEC-II includes a more detailed sequence of questions in the household survey designed to unambiguously define the household economic unit. Unlike APEC-I, APEC-II did not oversample Provision 2 or 3 districts and schools because separate estimates were not requested by FNS; however, APEC-II oversampled districts and schools participating in the CEP because FNS desired separate national estimates of improper payments arising from this new program. APEC-II combines types of error and reports total improper payments that adjust for the interaction of different errors.

Table II.1. Overview of APEC-II study objectives and data

Research questions/key outcomes	Samples	Data collection
Objective 1: Generate national estimates of improper payments due to certification error		
Estimate improper payments from certification error – amount of overpayments and underpayments, sum of gross overpayments and underpayments – improper-payment rate	Nationally representative cross-sectional sample of certified students (n = 3,761) and denied applicants (n = 611) drawn from 130 SFAs and 392 schools	In-person household surveys Record abstractions – application data – participation data – change in certification and enrollment data
Estimate certification error by source of error – total certification error rate – administrative error rate – household reporting error rate	Nationally representative cross-sectional sample of certified students (n = 3,761) and denied applicants (n = 611) drawn from 130 SFAs and 392 schools	In-person household surveys Record abstractions (see above)
Estimate certification error rate for directly certified students and how it relates to implementation method	Nationally representative sample of directly certified students (subsample of students certified for free meals)	In-person household surveys Record abstractions (see above)
Objective 2: Generate national estimates of improper payments due to non-certification error		
Estimate improper payments from non-certification error – dollar amounts and improper payment rates – gross and net error – separately for meal claiming error and three types of aggregations error; total error	Nationally representative sample of school districts (n = 145) and schools (n = 436)	Observe cashier transactions Verify point-of-sale meal counts Review of meal count records Review of reimbursement claims
Objective 3: Produce separate estimates of improper payments for districts participating in the CEP		
Estimate improper payments due to certification and non-certification error	45 SFAs; 135 schools; 3,240 students (directly certified, certified by application, paid students from reference year)[a]	State/local SNAP participation lists Additional program participation data Student record data Collect non-certification error data
Objective 4: Refine existing estimation models for updating annual estimates of improper payments based on extant data		
Annual estimates of improper payments and improper payment rates for NSLP and SBP (certification and non-certification error) – amount of overpayments – amount of underpayments – gross total sum of overpayments and underpayments – improper payment rates	Nationally representative sample of students certified for free and reduced-price meals and denied applicants from study districts District-level data on all districts in United States	Data collected from school districts and households in SY 2012–2013 Extant data on districts (from Form FNS-742 and other sources)

Table II.1 (*continued*)

Research questions/key outcomes	Samples	Data collection
Objective 5: Estimate and validate models of State-level estimates of improper payments		
Annual estimates of improper payments and improper payment rates for NSLP and SBP (certification and non-certification error) – amount of overpayments – amount of underpayments – gross total sum of overpayments and underpayments – improper payment rates	Nationally representative sample of students certified for free and reduced-price meals and denied applicants from study districts District-level data on all districts in United States	Data collected from school districts and households in SY 2012–2013 Extant data on districts (from Form FNS-742 and other sources)

[a] Certification error data were collected from the full CEP sample to obtain the desired level of precision in our estimates of improper payments in CEP schools. Meal counting and claiming data were collected from 46 schools in 15 of these SFAs.

APEC = Access, Participation, Eligibility, and Certification; CEP = Community Eligibility Provision; FNS = Food and Nutrition Service; NSLP = National School Lunch Program; SBP = School Breakfast Program; SFA = School Food Authority; SNAP = Supplemental Nutrition Assistance Program; SY = school year.

In the remainder of this section, we describe the sample design, data sources and collection procedures, as well as weighting and estimation. A final section discusses design strengths and potential limitations.

1. Sample design

Two samples were selected for the APEC-II study: (1) the base sample used to generate national estimates of improper reimbursements exclusive of CEP districts and schools and (2) a separate sample used to estimate improper reimbursements in SFAs and schools participating in the CEP. Schools participating in the CEP were excluded from the base sample (although non-CEP schools in the same district are part of the base sample). The final national estimate of improper reimbursements is the sum of the estimates from the two samples.[24]

The target populations are as follows:

- **SFAs.** The study population refers to public and private SFAs that operate the NSLP and/or SBP. SFAs that serve only institutional populations were excluded. SFAs in which all schools participate in CEP were eligible for the CEP sample but not for the base sample.

  o **Sampling SFAs for the base sample.** SFAs for the base sample were selected from a list of all SFAs in the contiguous United States based on data from Form FNS-742 (Verification Summary Report) file. A stratified design and probability proportional to size (PPS) selection was then used to select an initial sample of SFAs large enough to recruit 130 SFAs. This sample was stratified by State; then within each State, strata were formed based on prevalence of schools participating in the school meals program, proportion of schools using Provision 2 or 3, and the proportion of eligible students that are directly certified. Within the State, we defined certainty selections (the largest SFAs based on enrollment of free and reduced-price certified students), if any, and in sampling

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[24] See Appendix A for a full description of the sample design and procedures for selecting the study samples.

SFAs not selected with certainty, we implicitly stratified the sample frame rather than using explicit stratification. For the study, 130 sampled SFAs provided data.[25]

- o **Sampling SFAs participating in the CEP.** The CEP sample was selected in five States in which the CEP was implemented in SY 2012–2013. The frame for sampling SFAs for the CEP study consisted of SFAs in the six States that included at least one school participating in the CEP, plus the District of Columbia.[26] SFA selection used PPS. For the study, 45 sampled SFAs provided data.[27]

- **Schools.** The target population consists of public and private elementary and secondary schools (kindergarten through 12th grade) that participate in the NSLP and/or SBP. Schools participating in the CEP were not eligible for the base sample.

  - o **Sampling schools for the base sample.** We selected a sample of schools within each sampled SFA in the base sample that was found to be eligible and agreed to participate. This sampling frame was compiled through the list of public schools in the most recent Common Core of Data (CCD). On average, three schools were selected per SFA. This number varied because larger SFAs selected with certainty received additional allocation, whereas other SFAs were individual schools themselves. Schools in all SFAs were stratified on level (elementary, middle, and high school). In SFAs that use Provision 2, we also stratified on that characteristic. Explicit stratification was used on level, whereas implicit stratification was used for other characteristics. For the study, 387 public schools and 5 private schools provided data.

  - o **Sampling schools for the CEP study.** We selected a sample of CEP schools within each sampled SFA in the CEP sample that was found to be eligible and agreed to participate,.[28] This sampling was done similarly to the selection of schools for the base sample. In SFAs with only some schools participating in CEP, only participating schools were eligible for selection. For the study, 135 CEP schools provided data.

- **Students.** We sampled students in all selected schools in the study. However, we used different methodologies in the base and CEP samples.

  - o **Sampling students for the base sample.** After schools were selected, students were sampled on site by Mathematica field staff from district-provided lists. This sample comprised students falling within two frames: (1) those certified for free or reduced-price meals by application or direct certification and (2) those whose applications were denied. Students were selected randomly from each frame within each school using

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[25] One SFA participating in Provision 3 and another with a unique universal feeding program were initially selected; we determined that these programs were not compatible with the study's methodology for estimating errors, and these SFAs were replaced in the final sample.

[26] Information on which SFAs and schools were participating in CEP was provided by FNS and confirmed with selected school districts. The eligibility for selection of certain SFAs was restricted by their inclusion in another study of CEP. Appendix A includes details.

[27] Four SFAs that included separate schools participating and not participating in CEP were selected in both the base and CEP samples.

[28] Information on which SFAs and schools were participating in CEP was provided by FNS and confirmed with selected school districts.

Microsoft Excel, and contact information was collected for pursuit of the household survey.

o   Participation in Provision 2 varied across schools in the base sample. Some schools participated in Provision 2 for one meal and not the other. Similarly, the base year for Provision 2 participation in these schools may have varied across SBP and NSLP. If the Provision 2 status and base year was not the same for each meal in a school, two samples of students were selected—one for each meal. Students selected for a meal participating in Provision 2 in a non-base year were not eligible for the household survey.

o   Beginning in December 2012 and continuing throughout the year on a rolling basis, another student sample was selected for each school for meals that were either not participating in Provision 2 or were participating in Provision 2 and in their base year. This sample consisted of students who had been newly certified for free or reduced-price meals in the prior two months. This sampling was conducted using the same procedures and programs used in the fall. These students were also eligible for the household survey sample. In total, 3,761 free and reduced-price students and 611 denied applicants were included in the analysis sample.

o   **Sampling students for the CEP sample.** After schools were selected, SFAs were contacted and asked to provide student lists from the reference year on which their claiming rates were based. The reference year varied in CEP schools, with some using the prior year and others dating back two years. Students records were separated into three frames: (1) students who had been directly certified or "identified" under the rules of CEP, (2) students who had been certified by application, and (3) "paid" students who were nonapplicants or denied applicants. Designations were based on student status as of April 1 of the reference year.

From each school, 24 students were sampled: 10 students from the list of identified students, 8 students from the list of students certified by application, and 6 students from the list of students not certified for school meal benefits. In total, 3,240 students were sampled across all schools in the CEP sample. For each sampled student, detailed information was requested to be used for matching to program records, including demographic and contact information and SNAP and TANF case ID numbers.

2.   Data sources

Mathematica completed data collection in coordination with Westat and Decision Information Resources (DIR) from August 2012 through April 2014. Table II.2 summarizes the data collected and the final sample size for each data source. The data sources include the following:

•   **SFA Director questionnaire.** The SFA Director questionnaire was a self-administered survey that collected information on the characteristics of each sampled SFA as well as on specific characteristics on the sampled schools for all schools in the base and CEP samples. The requested information included institutional characteristics such as grade span and enrollment as well as information on participation in the meal programs, certification outcomes, and direct certification implementation. For CEP SFAs and schools, information

such as the number of identified students and paid meal claiming percentages was also collected.

- **Household survey data.** Field interviewers using computer-assisted personal interviewing (CAPI) completed household surveys with the parent or guardian of children selected in our samples of certified free and reduced-price and denied applicant households.[29] The household survey included a common set of questions collecting information on household composition, income sources with supporting documentation, the sampled students' participation in SBP and NSLP, perceptions of meal program quality, and demographic information.

- **Application/direct certification records data abstraction.** Data appearing on meal program applications and direct certification documents were collected for all students in the base sample. Some of the key data items abstracted included identification information such as the student name, application date, number of people in the household, foster child status, income information such as SNAP/TANF/FDPIR participation, and the LEA's eligibility determination.

- **Changes in certification status and enrollment.** SFAs were contacted prior to the end of the school year for information on changes in each sampled student's certification status throughout the school year, as well any changes in their enrollment status in the sampled school.[30]

- **NSLP/SBP individual student-level participation data.** We requested from each SFA data on student-level meal program participation for sampled students.[31] Wherever possible, we requested daily or monthly participation information for the entire year.

- **CEP student matching data.** In schools and districts participating in the CEP, we determined the accuracy of the identified student percentage by comparing the sampled students with SNAP/TANF program participation lists collected from State or local agencies. We also requested lists for students in foster care, on a homeless liaison list, income eligible for Head Start, runaways, or migrant youth from appropriate agencies or the LEA directly.[32]

- **Meal count and claiming data.** During their visit in each SFA, staff collected information on cashier transactions through on-site observations in each sampled school and data on aggregation—counting, consolidating, and claiming meal reimbursements.[33]

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[29] Students selected in schools participating in CEP or in Provision 2 in a non-base year were not eligible for the household survey.

[30] This information was not required in schools participating in CEP or in Provision 2 in a non-base year.

[31] We did not request this information for students selected in schools participating in CEP or in Provision 2 in a non-base year. Aggregate SFA meal count data were used to impute equivalent data for the analysis.

[32] If the LEA did not have this information, and the State or local agencies refused to share the lists with us for confidentiality reasons, we provided them with lists of our sampled students so they could indicate who participated in their programs.

[33] A subsample of 15 SFAs in the CEP sample were selected for inclusion in the meal count and claiming data collection.

- o **Cashier transaction observations.** Field staff recorded the following information for randomly selected individuals on the cafeteria line[34]: (1) items on each tray and the amounts of each item; (2) whether the transaction involved a student, nonstudent, or other adult; and (3) whether the cashier recorded the tray as a reimbursable meal.

- o **Aggregation data.** Field staff collected data sources of aggregation error, specifically the counting, consolidating, and claiming of meal reimbursements for each sampled school and SFA. These data were collected for a recent target week and month.

  - – **Daily counts for target week.** Data were collected and validated on the target week meal counts separately from all cashiers, as well as the total daily count recorded for the daily report that the school compiles each day.

  - – **Monthly counts.** Data were requested in the same report format for the previous full calendar month.

  - – **District reimbursement claims for sampled school.** Data were collected from the district covering the same target week and month to determine whether the SFA accurately claimed meals for reimbursements for the sampled school when it submitted the claim to its State agency.

  - – **District consolidation and claims across all schools**. Data were requested from the district on (1) the separate meal counts by type that each school submitted to the district and (2) the total meal counts reported (claimed) by the district to the State agency for meal reimbursement to determine aggregation error from this source.

- • **Extant data.** APEC-II compiled various extant data sources for sampling and weighting purposes, as well as in support of forthcoming modeling. These sources included the SFA Verification Summary Reports (Form FNS-742) and the FNS National Data Bank provided by FNS, public use data from the CCD and Private Sector Survey from the National Center of Education Statistics' website, census data, and total yearly meal counts for sampled SFAs requested from State education agencies.

Table II.2. Overview of APEC-II data collection

Data	Mode	Respondent	Analytical sample size[a]	Key data elements
School Food Authority (SFA) survey data				
SFA Director questionnaire	Self-administered hard-copy survey	SFA Director	158 SFAs	Institutional characteristics, meal program participation for the SFA and for sampled schools, and certification procedures
Household survey data				
Applicants certified for free and reduced-price meals	In person	Parent/guardian	3,575 students 3,085 free 490 reduced-price	Certification status, NSLP and SBP participation, household income, family size and composition, participation in SNAP and TANF, and demographic characteristics

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[34] The sampling process consisted of randomly selecting meal periods, selecting specific checkout registers or points-of-sale, and using an interval to select individuals for observation.

Table II.2 (*continued*)

Data	Mode	Respondent	Analytical sample size[a]	Key data elements
Denied applicants	In person	Parent/guardian	577 students	Household income, family size, NSLP and SBP participation, reasons for not reapplying, retrospective questions on changes in income or household composition, participation in SNAP and TANF, and demographic characteristics
Application/direct certification records data abstraction				
Applicants approved for free and reduced-price meals	Record abstraction	n.a.	3,761 students 3,257 free 504 reduced-price	Meal program application and direct certification information
Denied applicants	Record abstraction	n.a.	611 students	Meal program application and direct certification information
Changes in certification status and enrollment				
Applicants certified for free and reduced-price meals and denied applicants	Request electronic or hard-copy form	SFA Director	119 SFAs	Meal program application and direct certification information and enrollment changes
NSLP/SBP individual student-level participation data				
Applicants certified for free and reduced-price meals and denied applicants	Request electronic or paper data files	SFA Director	106 SFAs	Number of reimbursable school breakfasts and lunches received each month during the school year
CEP student matching data				
Student record data	Request electronic data files	SFA Director	45 SFAs	Direct certification or meal program application status, benefit program participation, student and parent identifying information, and siblings in household
Meal count and claiming data				
Cashier transactions	Interviewer observation	n.a.	25,041 lunch transactions from 436 schools 23,156 breakfast transactions from 421 schools	Food items on each tray, meal type, whether cashier records meal as reimbursable or not, and type of individual receiving meal (student or adult)
School meal count data	Interviewer abstraction	Administrative records	385 schools for lunch 375 schools for breakfast	Daily and weekly totals from all individual cash registers by meal type, weekly and monthly totals by meal type, and validated counts
School meal count data reported to SFA	Interviewer abstraction	Administrative records	411 schools for lunch 400 schools for breakfast	Monthly totals reported to districts for sampled schools
Consolidated meal counts and claims	Interviewer abstraction	Administrative records	384 schools for lunch 378 schools for breakfast	Monthly consolidated totals claimed by districts for sampled schools
Extant data				
District meal program data	Request electronic data files or hard-copy records	State education agency director	42 State agencies	Total district meal counts by reimbursement type
Program participation data supporting CEP analysis	Request electronic data files	State and local agencies	Five States	List of participants in the following programs (depending on availability): SNAP, TANF, foster care, homeless and runaway, migrant education, and Head Start
Form FNS-742 data	n.a.	FNS central office staff	n.a.	Verification results and eligibility determinations
FNS National Data Bank	n.a.	FNS central office staff	n.a.	Total reimbursements and commodity payments

Table II.2 (*continued*)

Data	Mode	Respondent	Analytical sample size[a]	Key data elements
Public-use administrative and survey data	n.a.	Common Core of Data Census data Other administrative data	n.a.	Other district-level data: locale, enrollment, percentage certified for free and reduced-price lunch, grade span of district, Title I status of schools, poverty rates, income levels, and NSLP and SBP certification and participation rates

[a] Some respondents provided incomplete data and could not be included in the analysis or were dropped due to ineligibility determined during data cleaning. We report the number of cases with data that are able to be analyzed.

APEC = Access, Participation, Eligibility, and Certification; CEP = Community Eligibility Provision; FNS = Food and Nutrition Service; NSLP = National School Lunch Program; SBP = School Breakfast Program; SFA = School Food Authority; SNAP = Supplemental Nutrition Assistance Program; TANF = Temporary Assistance for Needy Families.

n.a. = not applicable.

3. Response rates

Recruiting efforts resulted in a 96 percent participation rate among SFAs in the base sample and a 100 percent participation rate in the CEP sample (see Table II.3). SFAs selected for the base sample in which all schools were participating in CEP were treated as ineligible. SFAs selected for the CEP sample but who were determined not to be participating in CEP were treated as ineligible.[35]

Table II.3. APEC-II response rates

Data	Number released	Number eligible	Number participated	Number ineligible	Number unknown	Response rate (percentage)	Cumulative response rate (percentage)
SFAs							
SFA recruitment (base sample)	146	135	130	11	0	96.30	96.30
SFA recruitment (CEP)	52	45	45	7	0	100.00	100.00
SFA survey—district data (base sample)	130	130	123	0	0	94.62	91.11
SFA survey—district data (CEP)	45	45	39	0	0	86.67	86.67
Schools							
School recruitment (base sample)	425	398	392	27	0	98.49	94.85
School recruitment (CEP)	140	135	135	5	0	100.00	100.00
SFA survey—school data (base sample)	392	392	356	0	0	90.82	86.13
SFA survey—school data (CEP)	135	135	116	0	0	85.93	85.93
Students							
Application record abstraction	5530	4522	4372	117	891	81.11	76.92
Free/reduced-price certified	4720	3889	3761	104	727	81.81	77.60
Denied	810	633	611	13	164	76.98	73.01
Household survey	5188	4180	4152	117	891	82.27	78.03
Free/reduced-price certified	4434	3603	3575	104	727	82.95	78.68
Denied	754	577	577	13	164	78.25	74.22

Source: APEC-II study, unweighted data.

Notes: Response rates are calculated for analytical samples. Students in Provision 2 non-base year schools are sample participants only if application record abstraction and household survey data were both complete. Students that did not attend the school at which they were sampled are ineligible.

APEC = Access, Participation, Eligibility, and Certification; CEP = Community Eligibility Provision; SFA = School Food Authority.

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[35] Four SFAs participated in both the base and CEP samples, with each SFA contributing a separate set of eligible schools to each sample.

More than 90 percent of SFAs agreeing to participate in APEC-II completed the SFA survey. A small number of completing SFAs did not answer school-level questions on the SFA survey, resulting in a lower response rate for school-level data on that instrument. Response to the SFA survey did not affect overall participation in the study, and all recruited SFAs and their schools were visited for in-person data collection and had students sampled for the study. However, not all individual school- and student-level data requests resulted in usable data for inclusion in the analysis.

The household survey was available in English and Spanish. Interviews were conducted in households, unless otherwise requested, and all respondents were assured of confidentiality. Respondents were offered a $25 gift card for completion of the interview. Field staff completed interviews with 83 percent of the parents or guardians of sampled students certified for free or reduced-price meal benefits and 78 percent of the denied applicants. Field staff obtained the meal applications (or completed abstraction forms) for all students for which household interviews were completed, as well as for students sampled in Provision 2 non-base year schools that were not part of the household survey sample. If either the household survey or application abstraction data were not completed for a student, they were not included in the study.

4. Weighting and estimation

All samples analyzed in this report were weighted so that the findings are nationally representative. The final weights at each level of analysis adjust both for unequal probability of selection at each stage of sampling and for nonresponse at each stage of data collection. In addition, all weights used to estimate the dollar amounts and rates of improper payments were post-stratified to sum to total dollar amounts of all meal reimbursements for all schools in the contiguous United States (excluding residential child care institutions). Separate weights were created for analyses of improper payments for the NSLP and for the SBP. Separate weights were also prepared for each data collection instrument for estimating amounts and rates for each non-certification error source.

Samples were selected to achieve OMB requirements for statistical precision when calculating a national estimate of improper payments: a 90 percent confidence interval of ±2.5 percent around the estimate of the rate of improper payments (OMB 2003). For the study, we interpreted the error rate as the ratio of two "dollar-denominated" sums: total annual improper payments divided by total annual reimbursements. For example, the NSLP improper payment rate equals the total dollar amount of additional subsidy for free and reduced-price meals that were in error or not paid out because students had been erroneously certified for or denied free or reduced-price meal benefits, divided by total cash reimbursements for all meals provided (including the value of USDA Foods). The study also assessed the prevalence of "case error" rate, the percentage of certified and denied applicant students who were erroneously certified or erroneously denied benefits. Statistics reported were prepared especially for this study and may not agree with other published statistics.

The samples of SFAs, schools, students, and applications are all cluster sample designs. Standard error formulas that assume simple random sampling are therefore not appropriate. To compute standard errors, we used Stata survey commands to account for the complex nested survey design.

5.   Design strengths and potential limitations

a.   Design strengths

APEC-II replicated the sampling, data collection, and analytic methodologies successfully implemented under APEC-I. Similar to APEC-I, APEC-II implemented several features to ensure the highest degree of reporting accuracy in the household survey for assessing income eligibility for free and reduced-price benefits. APEC-II asked the respondent about household composition and income for the month covered by the household's application for meal benefits. This query was possible because the design allowed field staff to interview most households within three months of their certification or application date. Thus, if respondents report accurately, the APEC-II methodology ensures that certification errors reflect differences between the households' income eligibility and certification status at the time of application, not differences between the period when certification was determined and eligibility was assessed.

APEC-II asked households to produce available records during the interview, documenting sources and amounts of income received by members of the household in the same manner as APEC-I. The collection of information on income was integrated into an iterative CAPI process in which respondents were first asked to report about income sources received for each person in the household, then asked to report on amounts for each member reportedly receiving a particular source. The amount on the document was also entered into the CAPI survey and, through an automated process, compared with the reported amounts. When differences occurred, the field interviewer worked with the respondent to resolve the difference. Importantly, amounts from both sources (respondent report and document) were stored and could be further adjudicated by analysis staff. The CAPI system calculated a total income for the month covered by the application. Once a total was calculated, the interviewer asked the respondent whether that amount was correct for the reference period. If the respondent said no, the interviewer reviewed the income sources and amounts with the respondent to determine whether key sources or amounts were missing or in error. This process was repeated until the respondent agreed to a final total income.

APEC-II implemented several enhancements to the sampling, data collection, and analytic approaches used in APEC-I. The APEC-II design identified and included the following improvements to yield results additional or superior to those available in the previous study**:**

- APEC-II included a more detailed sequence of questions in the household survey designed to unambiguously define the household economic unit.[36]

- APEC-II oversampled districts and schools participating in the CEP to generate a precise, nationally representative estimate of improper payments in the CEP.

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[36] Questions on the APEC-I household survey detailing the relationship of financial support between adults and of the sampled student in the household did not cover all possible household composition combinations. The questions were programmed in the APEC-II household survey to more systematically cycle through each household member and allow for a more precise definition of the household economic unit based on the responses.

- APEC-II calculated a combined, total estimate of improper payments due to certification and non-certification error for each meal program that accounts for interaction among certification and non-certification errors.

b. Potential study limitations

There are four limitations in the design that could affect the accuracy of the study's estimates of improper payments. Below we discuss these limitations and the steps we have taken to minimize them.

1. **Districts and schools participating in the study may behave in ways to reduce improper payments.** A common concern in research studies (known as the Hawthorne effect) is that subjects being studied behave differently than they would if they were not part of a study. In the APEC-II study, the concern is that as a result of participating in the study, districts and schools may behave in ways to reduce improper payments. This possibility may exist because the study raised participants' awareness of the accuracy of certification or non-certification processes or because they know their procedures are prone to error and they want to hide errors during data collection and observation. We took the following steps to minimize this effect. First, we explained to SFA Directors the importance of having staff maintain regular procedures during the study. Second, during recruitment and development of letters of agreement with districts, we emphasized that the data we collected from districts, schools, and students would be strictly confidential and used only for the purposes of calculating a national estimate of improper payments.

2. **Respondents may misreport on the household survey.** Information from the study's household survey is the basis for determining the student's "true" eligibility for school meal benefits. Whether intentionally or not, respondents may inaccurately report family size and income on the household survey. Inaccurate household reports affect the study's ability to measure true eligibility status and determine certification error and improper payments. We took the following steps to ensure the most accurate reporting: (1) households were sent a letter from USDA establishing the legitimacy and importance of the study; (2) study correspondence stipulated to respondents that their responses would be kept strictly confidential and would not affect the benefits they receive, and field staff were trained to reiterate these points; (3) the reference period for the survey was the month covered by the application; (4) most households were interviewed within three months of their certification or application date; and (5) an iterative CAPI procedure streamlined income reporting, reconciled differences between reported and documented amounts, and enabled the respondent to review and identify missing or inaccurate income sources and/or amounts. Clearly, some household misreporting occurred; however, the extent is unknown.

3. **The number of meals students received during the school year was imputed for some students.** Improper payments for a given student equals the difference between the benefits paid for meals served to the student (based on his or her actual free or reduced-price certification status), the benefits for which the student is eligible based on household circumstances (that is, for which the student is income eligible), and the number of program meals received by the student (lunches and breakfasts, separately) during the full school year. Therefore, to determine overall improper payments during the school year, the study needs to know the number of school meals each sample member received during each month of the school year. For a portion of the sample in a given month, we have high-

quality administrative data on the number of meals received by the individual in the month. For other sample members, however, we were unable to obtain administrative data because the district does not track or did not provide participation at the individual student level (either electronically or manually).[37] We received complete participation information for 55 percent of students, information on at least half of the school year for 16 percent of students, and no participation information for 25 percent of students. For these students, we have only survey data on their participation. Therefore we needed to impute the actual number of meals received by these students in each month for which we had no administrative data. The number of meals received was imputed using a multivariate regression framework (described in Appendix E), with the household survey-reported school meal participation a key predictor of a student's actual monthly participation. The extent to which the model underestimates or overestimates participation will affect the accuracy of the study's estimate of improper payments.

4. **Income sources and amounts were imputed for some sample members.** Despite the comprehensive approach to surveying households about income sources and amounts and requiring documentation, there was a modest amount of missing data about the income sources of household members. The missing item responses were replaced with imputed values, whereas all complete, consistent answers provided for these sample members were left unchanged. The extent to which this imputation approach underestimates or overestimates eligibility will affect the accuracy of the study's estimate of improper payments.

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[37] Comprehensive student-level participation data were received from 106 base sample SFAs (out of 130).

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III. NATIONAL ESTIMATES OF CERTIFICATION ERROR, EXCLUDING SCHOOLS USING COMMUNITY ELIGIBILITY PROVISION

Certification error occurs when students are certified for a level of benefits for which they are not eligible. It also occurs when applicants are mistakenly denied meal benefits for which they are eligible. In this chapter, we present findings on the prevalence of certification error in schools not using the Community Eligibility Provision. For a discussion of the sources of certification error in schools not using the CEP, please see Chapter IV. For a discussion of how certification error among students translates into national estimates of improper payments in schools not using the CEP, please see Chapter V.

A. Methods used to calculate certification error, excluding schools using Community Eligibility Provision

The estimates of certification error that we present in this chapter are methodologically consistent with analogous certification error rates estimated for SY 2005–2006 under APEC-I. Certification error is determined by comparing a student's certification status, as recorded by his or her School Food Authority, and the student's free or reduced-price meal eligibility status, as determined by his or her household circumstances.[38]

1. Definitions of certification error rates

Total certification error is defined as the percentage of all students certified for free or reduced-price meals or who applied for benefits but had their applications denied who are either not certified for the level of benefits for which they are eligible or who have been erroneously denied benefits. The broad certification error rate represents the percentage of students who are either certified for some level of benefits when they are not eligible for either free or reduced-price benefits or who are not certified when they are eligible for at least reduced-price benefits.

Table III.1 summarizes the possible combinations of certification and eligibility statuses among students who have been approved for free or reduced-price meals. In the table, columns indicate students' certification status, and each row indicates the level of benefits for which the students are eligible. Cells in this table have been color-coded to indicate correct certification (blue), overcertification (red), or undercertification (green). For example, the students in Cell B are certified for reduced-price meals but eligible for free meals and are therefore undercertified.

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[38] According to FNS rules, if a district does not have an application or direct certification document on file for a certified student, then the student should not have been certified even if the student was correctly certified (certification status matches eligibility status). The study treats this error as a certification error. Also consistent with program rules, if an application is found that does not include the required signature or last four digits of the adult household member's Social Security Number (not required for categorically eligible applications), then the application is considered an administrative error. However, if the certification status is correct, based on the household circumstances reported on the application (or household survey), then it is not considered a certification error.

Table III.1. Combinations of students' certification and eligibility status

Eligibility status	Certification status		
	Free	**Reduced-price**	**Denied**
Free	**A**	**B**	**C**
Reduced-price	**D**	**E**	**F**
Paid	**G**	**H**	**I**

Note: Cells in this table have been color-coded to indicate correct certification (blue), overcertification (red), or undercertification (green).

Using the classifications in Table III.1, we calculate the certification error rates as follows:

Overcertification rate	=	(D+G+H) / (A+B+C+D+E+F+G+H+I)
Undercertification rate	=	(B+C+F) / (A+B+C+D+E+F+G+H+I)
Total certification error rate	=	(B+C+D+F+G+H) / (A+B+C+D+E+F+G+H+I)
Broad certification error rate	=	(C+F+G+H) / (A+B+C+D+E+F+G+H+I)

2.   Estimating certification error rates

As in APEC-I, we measured students' certification status using data from the master benefit lists maintained by the school districts. We based our estimates on a sample that is representative of all students nationally who became certified during SY 2012–2013. We determined students' free or reduced-price eligibility status based on information that we collected during the in-person household survey.

The sample of certified students is representative of all students in the contiguous United States (excluding children in residential child care institutions) who were certified at any time during SY 2012–2013; estimates in this chapter are not representative of students in Alaska, Hawaii, the U.S. territories, schools operated by the Department of Defense (DOD), and residential child care institutions. The sample of denied applicants includes students who applied but were denied benefits during the same school year.

We determined students' certification status using data from school districts' master benefit lists. As shown in Figure III.1, we determined students' eligibility status primarily based on school documentation of direct certification status and information collected during the in-person household survey. The household survey collected information on students' household income; household size; and receipt of other benefits, such as SNAP or TANF. This information reflected students' household circumstances at about the time the households submitted applications for free or reduced-price meals. For students who became certified without submitting an application (directly certified students), the information collected on the household survey reflected household circumstances at the beginning of the school year. Students for whom the school had documentation of direct certification were classified as eligible for free meals regardless of the information in the household survey. Students were classified as eligible for free meals at the time their application was certified (or the beginning of the school year if they became certified without an application) if they met any of the following conditions:

Figure III.1. Process for determining eligibility for school meal benefits
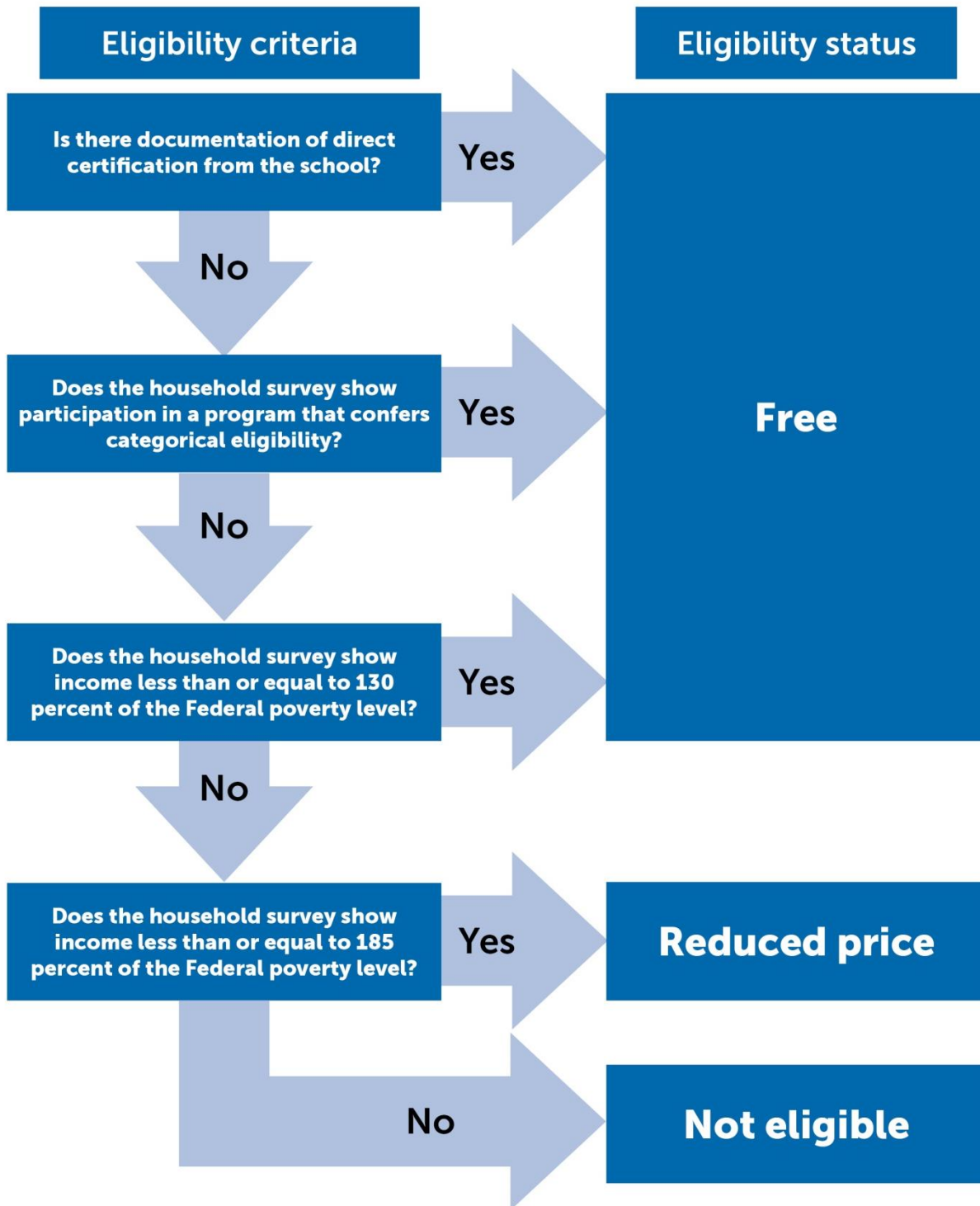
- The school provided documentation of direct certification for free meals.[39]

- The household survey indicated participation in SNAP, TANF, FDPIR, or other programs that confer categorical eligibility.

- The household survey indicated household income less than or equal to 130 percent of the Federal poverty level.

Students were classified as eligible for reduced-price meals if they were not eligible for free meals but the household survey indicated household income less than or equal to 185 percent of the Federal poverty level. An additional eligibility requirement for either free or reduced-price meals was that for students certified by application, the district could locate the application in their files. If the district did not have an application on file, the student was classified as not eligible for free or reduced-price meals, as specified in FNS rules.[40] Incomplete applications did not affect the eligibility determination.

The determination of students' eligibility status accounted for carryover cases when applicable. Carryover cases occur when a student certified for free or reduced-price meals during the previous school year (and not directly certified prior to the beginning of the new school year) continues to receive meals at the previous benefit level regardless of their household circumstances until their new status is established or for a period of up to 30 days. When the carryover period ends, the student's certification status from the previous school year ends.

B. Findings on rates of certification error

A large majority of students receiving free school meals in SY 2012–2013 were certified accurately. Eighty-eight percent of students receiving free school meals were certified accurately, meaning these students were members of households whose circumstances at the time of certification indicate that they were eligible for free meals (Table III.2 and Figure III.2). About 6 percent of students certified for free meals were eligible for reduced-price meals, and another 6 percent were ineligible for either free or reduced-price meals.

Certification error was much more common among students receiving reduced-price meals in SY 2012–2013. Only 37 percent of students receiving reduced-price meals were certified accurately. About one-third of reduced-price students (33 percent) were undercertified—meaning they were eligible for free meals but received reduced-price meals—whereas 30 percent were overcertified—meaning they were not eligible for either free or reduced-price meals.

Among denied applicants, 73 percent were not eligible for free or reduced-price meals in SY 2012–2013. About 27 percent of denied applicants were incorrectly denied eligibility; 18 percent were eligible for free meals and 9 percent were eligible for reduced-price meals.

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[39] In addition to directly certified students, this group also includes other categories of students certified for free meals without having to submit an application, such as homeless or runaway children; children of migrant workers; and students extended free eligibility based on the participation of a household member in SNAP, TANF, or FDPIR.

[40] Please see Appendix F for an alternative specification of certification error that does not require a nonmissing application for students certified by application.

Table III.2. Eligibility versus certification status among certified students and denied applicants, SY 2012–2013

Eligibility status[b]	Certification status[a]			All[c]
	Free	Reduced-price	Denied applicants	
Free[d]	87.87 (1.32)	33.45 (2.26)	18.12 (2.56)	71.96 (1.39)
Reduced-price	6.08 (0.50)	36.94 (2.92)	9.20 (1.32)	10.11 (0.66)
Paid	6.05 (1.20)	29.61 (3.03)	72.68 (2.79)	17.93 (1.28)
Total	100.00	100.00	100.00	100.00
Sample size (students)	3,085	490	577	4,152

Source: APEC-II study, weighted data.

Note: Standard errors in parentheses. Cells in this table have been color-coded to indicate correct certification (blue), overcertification (red), or undercertification (green). Estimates in this table include improper payments at all schools participating in the NSLP and/or SBP, excluding those using the CEP and Provision 2 non-base year schools. Base year Provision 2 schools are included.

[a] Certification status recorded on district's master benefit list at time student was sampled.

[b] Estimated eligibility based on information from the household survey.

[c] Refers to certified students and denied applicants.

[d] Students eligible for free meals include those determined eligible based on documented direct certification or household survey information that indicates categorical or income eligibility for free school meals.

APEC = Access, Participation, Eligibility, and Certification; CEP = Community Eligibility Provision; NSLP = National School Lunch Program; SBP = School Breakfast Program.

Figure III.2. Eligibility by certification status, SY 2012–2013 (percentages)

Source: APEC-II study, weighted data.

APEC = Access, Participation, Eligibility, and Certification; SY = school year.

The information on certification accuracy can be synthesized in various ways to yield measures of overcertification and undercertification as well as total and broad certification error rates for all students, as follows:

- **Overcertification rate.** About 13 percent of students received higher benefits than those for which they were eligible (Table III.3). In other words, these students were certified for a level of benefits higher than they should have received, based on their household circumstances at the time of application.

Table III.3. Certification error rates among certified students and denied applicants, SY 2012–2013

	Certification status[a]			
	Free	**Reduced-price**	**Denied applicants**	**All**[b]
Overcertification rate	**12.13** **(1.32)**	**29.61** **(3.03)**	**0.00** **(0.00)**	**12.50** **(1.12)**
Undercertification rate	**0.00** **(0.00)**	**33.45** **(2.26)**	**27.32** **(2.79)**	**7.65** **(0.59)**
Total certification error rate[c]	12.13 (1.32)	63.06 (2.92)	27.32 (2.79)	20.15 (1.21)
Broad certification error rate[d]	6.05 (1.20)	29.61 (3.03)	27.32 (2.79)	11.71 (1.01)
Sample size (students)	**3,085**	**490**	**577**	**4,152**

Source: APEC-II study, weighted data.

Note: Standard errors in parentheses. Cells in this table have been color-coded to indicate overcertification (red) or undercertification (green). Estimates in this table include improper payments at all schools participating in the NSLP and/or SBP, excluding those using the CEP and Provision 2 non-base year schools. Base year Provision 2 schools are included.

[a] Certification status recorded on district's master benefit list at time student was sampled.

[b] Refers to certified students and denied applicants.

[c] The total certification error rate is the percentage of certified students and denied applicants who are either not certified for the level of benefits for which they are eligible or who are erroneously denied benefits.

[d] The broad certification error rate is the percentage of all certified students and denied applicants who are either certified for some level of benefits when they are not eligible for either free or reduced-price benefits or who are not certified when they are eligible for at least reduced-price benefits.

APEC = Access, Participation, Eligibility, and Certification; CEP = Community Eligibility Provision; NSLP = National School Lunch Program; SBP = School Breakfast Program.

- **Undercertification rate.** Conversely, about 8 percent of students were approved for a lower level of benefits than those for which they were eligible. Undercertified students all were either certified for reduced-price meals but eligible for free meals or incorrectly denied benefits when they were eligible for either free or reduced-priced meals.

- **Total certification error rate.** The total certification error rate is the sum of the overcertification and undercertification rates. The total certification error rate estimate for all students in SY 2012–2013 is 20 percent, which means that about one in five students was not eligible for the level of benefits for which he or she was certified.

- **Broad certification error rate.** About half of certification errors for students are misclassifications between free and reduced-price status. These errors are less costly than errors involving certifying a student who was not eligible for any level of benefits because the difference between the free and reduced-price per-meal reimbursement rates (typically $0.40 for lunch and $0.30 for breakfast) is much smaller than the difference between the

per-meal rate for a certified student versus a non-certified student. The broad certification error rate does not distinguish between free and reduced-price meals, counting as an error only those certified students who were not eligible for any level of benefits or those who were incorrectly denied some level of benefits. The broad certification error rate among students nationally in SY 2012–2013 was 12 percent. About 8 percent of all students received some level of benefits when they should have been denied, and therefore the remaining 4 percent of students were incorrectly denied benefits when they were eligible for either free or reduced-price meals.

1.   Composition of students with incorrect certification statuses

As noted previously, about one-fifth of students who were certified for school meal benefits or denied benefits had incorrect certification statuses (Table III.3). The composition of these students is determined by both the certification error rate for students with different certification statuses and the number of students with different certification statuses. Although certification error rates for students certified for free meals were substantially lower than certification error rates for students certified for reduced-price meals and denied applicants (Table III.3), students certified for free meals were much more numerous than the other two groups and make up the plurality of students with incorrect certification statuses (Figure III.3). About 45 percent of students with incorrect certification statuses were certified for free meals. Slightly more than one-third of students with incorrect certification statuses were certified for reduced-price meals. Finally, slightly less than one-fifth of students with incorrect certification statuses were denied applicants.

Figure III.3. Eligibility and certification status among incorrectly certified students, SY 2012–2013
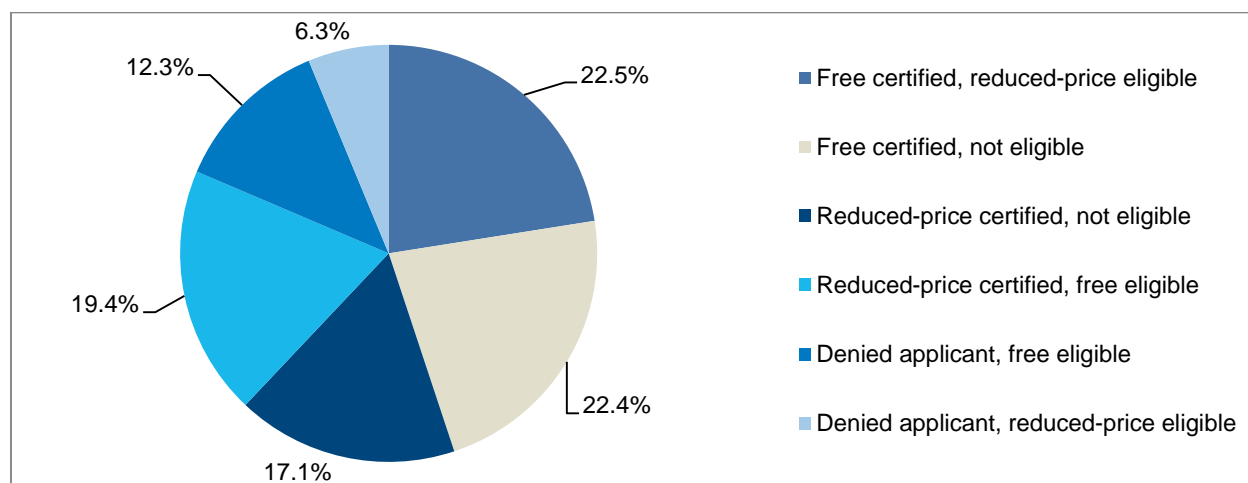
Source: APEC-II study, weighted data.

Note: Estimates in this figure are for all schools participating in the NSLP and/or SBP, excluding those using CEP and Provision 2 non-base year schools. Base year Provision 2 schools are included. Students with correct certification statuses—who represent about 80 percent of all certified students and denied applicants—are not included in this figure.

APEC = Access, Participation, Eligibility, and Certification; CEP = Community Eligibility Provision; NSLP = National School Lunch Program; SBP = School Breakfast Program; SY = school year.

2.   Certification error rates by direct certification status

Direct certification reduces the potential sources of certification error by eliminating the need for families to submit applications and for districts to process them. Therefore, it is of interest to examine certification error among free-certified students by direct certification status. For this analysis, we classify students using the direct certification status provided by the district at the time of sampling. Directly certified students are considered to have certification error if there was no documentation of correct direct certification and the household survey indicated that the student was not eligible for free meals.

Among students certified for free meals by direct certification, 96 percent were eligible for free meals, fewer than 1 percent were eligible for reduced-price meals, and about 3 percent were not eligible for free or reduced-price meals (Table III.4). Among students certified for free meals by application, 79 percent were correctly certified, 13 percent were eligible for reduced-price meals, and about 9 percent were not eligible for free or reduced-price meals.

Table III.4. Eligibility versus certification status among free-certified students, by direct certification status, SY 2012–2013

Eligibility status[b]	Certification method[a]	
	Free by direct certification	Free by application
Free[c]	96.22	78.51
	(1.75)	(1.45)
Reduced-price	0.29	12.57
	(0.17)	(0.93)
Paid	3.49	8.92
	(1.75)	(1.12)
Total	100.00	100.00
Sample size (students)	**1,566**	**1,519**

Source: APEC-II study, weighted data.

Note: Standard errors in parentheses. Cells in this table have been color-coded to indicate correct certification (blue) or overcertification (red). Estimates in this table include improper payments at all schools participating in the NSLP and/or SBP, excluding those using the CEP and Provision 2 non-base year schools. Base year Provision 2 schools are included.

[a] Certification method recorded based on district data at the time the student was sampled.

[b] Estimated eligibility based on information from the household survey.

[c] Students eligible for free meals include those determined eligible based on documented direct certification or household survey information that indicates categorical or income eligibility for free school meals.

APEC = Access, Participation, Eligibility, and Certification; CEP = Community Eligibility Provision; NSLP = National School Lunch Program; SBP = School Breakfast Program.

The total certification error rate for students certified for free meals by application is more than five times higher than the total certification error rate for students certified for free meals by direct certification (21 versus 4 percent; Table III.5). Much of this difference is related to the larger proportion of students eligible for reduced-price meals among free-certified students certified by application compared with those certified based on direct certification. The broad certification error rate—which does not distinguish between students eligible for free and reduced-price meals—is about three times higher for students certified for free meals by application than for students certified for free meals by direct certification (9 versus 3 percent).

Table III.5. Certification error rates among free-certified students, by direct certification status, SY 2012–2013

	Free by direct certification	Free by application
Overcertification rate	**3.78** **(1.75)**	**21.49** **(1.45)**
Total certification error rate[a]	3.78 (1.75)	21.49 (1.45)
Broad certification error rate[b]	3.49 (1.75)	8.92 (1.12)
Sample size (students)	**1,566**	**1,519**

Source: APEC-II study, weighted data.

Note: Standard errors in parentheses. Cells in this table have been color-coded to indicate overcertification (red). Estimates in this table include improper payments at all schools participating in the NSLP and/or SBP, excluding those using the CEP and Provision 2 non-base year schools. Base year Provision 2 schools are included.

[a] The total certification error rate in this table represents the percentage of free-certified students who were erroneously certified for free meals when they were not eligible for free benefits.

[b] The broad certification error rate in this table represents the percentage of free-certified students who were erroneously certified for free meals when they were not eligible for either free or reduced-price benefits.

APEC = Access, Participation, Eligibility, and Certification; CEP = Community Eligibility Provision; NSLP = National School Lunch Program; SBP = School Breakfast Program.

Because the certification error rates of directly certified students are low, they make up a small proportion of students with incorrect certification status relative to their overall numbers. Students certified for free meals based on direct certification represent 40 percent of all certified students and denied applicants, but only 7 percent of all students with incorrect certification statuses (Figures III.4 and III.5). Thus 93 percent of students with incorrect certification statuses were certified by application or denied applicants. Moreover, because the certification error rate for students certified by application based on categorical eligibility is also relatively low, 90 percent of students with incorrect certification statuses were either incorrectly certified by application based on income or denied applicants. These findings indicate that relatively little certification error is related to the large number of students who are directly certified or categorically eligible for free school meals and that a large majority of certification error is related to applications based on income.

Figure III.4. Eligibility and certification status among all students, SY 2012–2013
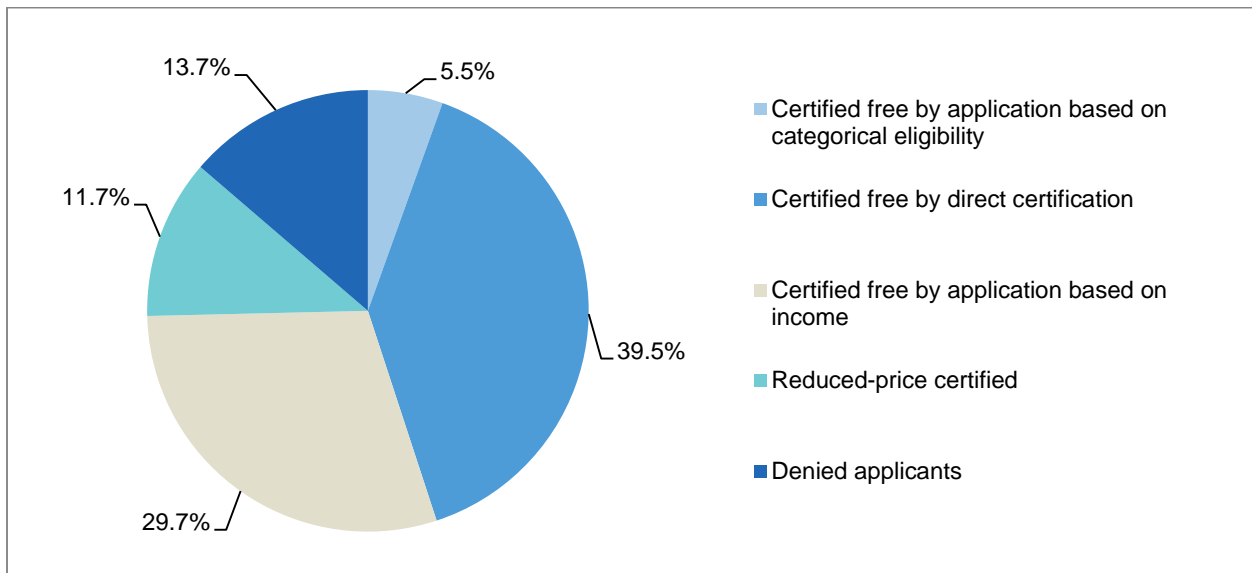
Source: APEC-II study, weighted data.

Note: Estimates in this figure are for all schools participating in the NSLP and/or SBP, excluding those using CEP and Provision 2 non-base year schools. Base year Provision 2 schools are included.

APEC = Access, Participation, Eligibility, and Certification; CEP = Community Eligibility Provision; NSLP = National School Lunch Program; SBP = School Breakfast Program; SY = school year.

Figure III.5. Eligibility and certification status among incorrectly certified students only, SY 2012–2013
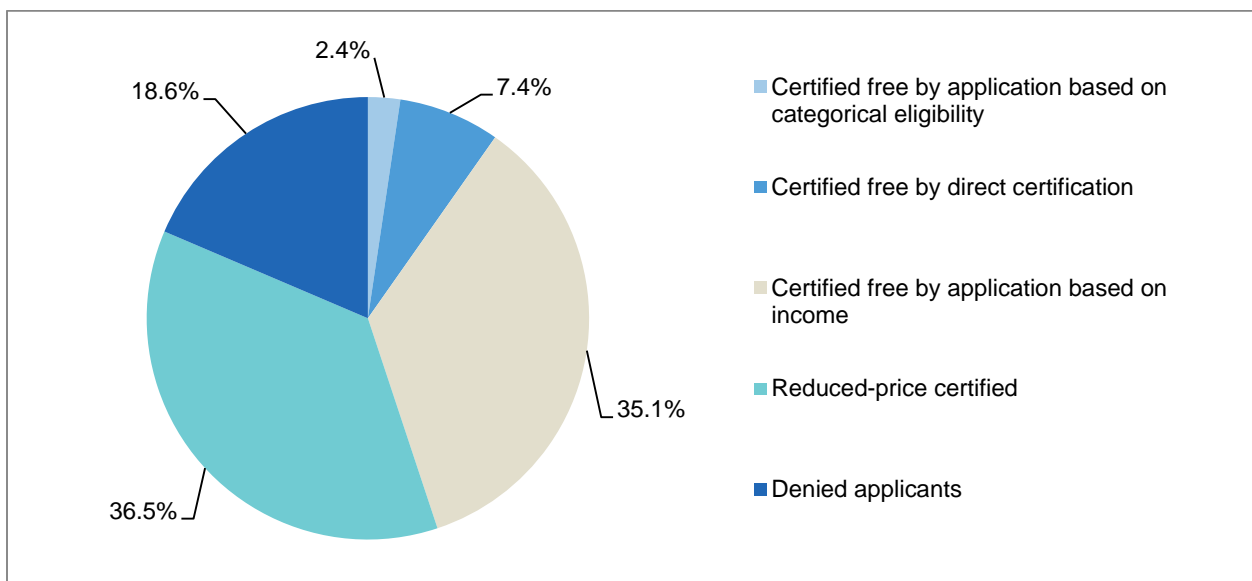
Source: APEC-II study, weighted data.

Note: Estimates in this figure are for all schools participating in the NSLP and/or SBP, excluding those using CEP and Provision 2 non-base year schools. Base year Provision 2 schools are included. Students with correct certification statuses—who represent about 80 percent of all certified students and denied applicants—are not included in this figure.

APEC = Access, Participation, Eligibility, and Certification; CEP = Community Eligibility Provision; NSLP = National School Lunch Program; SBP = School Breakfast Program; SY = school year.

C. Comparison with APEC-I

Because of the similarities in methodology, we can compare specific results between APEC-I and APEC-II to assess changes in certification error from SY 2005–2006 to SY 2012–2013. During this period, both the estimated overcertification rate and the estimated total certification error rate decreased for all certified students and denied applicants (Table III.6). Overcertification showed the largest change, decreasing 2.4 percentage points between the two studies. Undercertification and broad certification error rates for all certified students and denied applicants increased from SY 2005–2006 to SY 2012–2013. The undercertification rate for all students and denied applicants increased marginally by 0.1 percentage point, whereas the broad certification error rate increased by 1.2 percentage points. Notably, none of these changes were statistically significant.

Table III.6. Change in certification error rates among all certified students and denied applicants from APEC-I to APEC-II (percentages)

	All certified students and denied applicants		
	2005–2006	2012–2013	Difference
Certification error rates (percentages)			
Overcertification rate	14.95	12.50	-2.45
	(1.10)	(1.12)	(1.57)
Undercertification rate	7.55	7.65	0.10
	(0.67)	(0.59)	(0.90)
Total certification error rate	22.50	20.15	-2.35
	(1.29)	(1.21)	(1.77)
Broad certification error rate	10.47	11.71	1.24
	(0.85)	(1.01)	(1.32)

Source: APEC-I and APEC-II studies, weighted data.

Note: Standard errors in parentheses.

APEC = Access, Participation, Eligibility, and Certification.

D. Comparisons with previous studies

In addition to APEC-I, two previous large-scale studies have generated certification error rate estimates for certified students that are somewhat comparable to those derived in the APEC-II study. We describe those studies, present their findings, and discuss the implications for the current study.

1.   Background

The Study of Income Verification (SIV) in the National School Lunch Program (USDA 1990) was the last nationally representative study to estimate certification error rates before APEC-I. The SIV study was based on a nationally representative sample of students in public schools as of SY 1986–1987. The households of a sample of certified students were interviewed in spring 1987 to determine household circumstances and students' eligibility for benefits.

The Evaluation of the National School Lunch Program Application/Verification Pilot Projects (the Pilot Evaluation) studied the effects of a demonstration program implemented in 12 U.S. school districts during SY 2002–2003 (Burghardt et al. 2004). Nine districts in the

evaluation implemented "up-front documentation" procedures that required all applicants for free or reduced-price meals to provide with their applications documentation of either their income or receipt of public assistance. Three districts implemented "graduated verification" procedures, under which additional follow-up verifications of certified applicants enhanced the standard verification process. The evaluation design involved selection of 12 comparison districts in which to assess impacts on certification accuracy and other outcomes. A set of certification error rate estimates for certified students can be derived based on data from these comparison districts. These comparison districts were neither nationally representative nor typical of the range of school districts across the United States. They tended to be small- or medium-sized districts with low to moderate poverty rates located in suburban or rural areas; none was a large, urban district, and none had substantial poverty. Nevertheless, they are of interest because the evaluation used a methodology for estimating rates of certification error similar to the methodology used in the APEC-I and APEC-II studies.

2. Findings

Estimated certification error rates for certified students across the two studies and APEC-I and APEC-II were similar. For example, the overcertification rate was estimated to be 17 percent in the SIV, 20 percent in the Pilot Evaluation, 16 percent in APEC-I, and 14 percent for APEC-II (Table III.7). Similarly, the estimated undercertification rate ranged from 5 to 8 percent across the four studies. The SIV and the Pilot Evaluation each concluded that approximately one in four certified students was not certified for the level of benefits for which he or she was eligible, whereas APEC-I and APEC-II found estimates of total certification error to affect closer to one in five certified students. The estimates of the broad certification error rate varied somewhat, with the SIV concluding that 7 percent of certified students were not eligible for either free or reduced-price meals, compared with 9 percent for APEC-I, 9 percent for APEC-II, and 12 percent for the Pilot Evaluation.

Table III.7. Certification error rates estimates across four large-scale studies among certified students only (percentages)

	Study of Income Verification in the National School Lunch Program (SY 1986–1987)	Evaluation of the NSLP Application/ Verification Pilot Program (SY 2002–2003)	APEC-I (SY 2005–2006)	APEC-II (SY 2012–2013)
Overcertification rate	17	20	16	14
Undercertification rate	8	7	6	5
Total certification error rate	25	27	22	19
Broad certification error rate	7	12	9	9

Source: APEC-II study, weighted data.

Note: Error rates shown are calculated for certified students only. Denied applicants are excluded from these calculations.

APEC = Access, Participation, Eligibility, and Certification; NSLP = National School Lunch Program; SY = school year.

3.   Implications

The methodology used to estimate error rates was consistent in APEC-I and APEC-II but differed in important ways across the other two studies. Notably, the Pilot Evaluation was not nationally representative, and the timing of the household survey in the SIV differed from that used for APEC-I and APEC-II. In APEC-I and APEC-II, the households were interviewed within a few months of the time they became certified, in most cases. Typically, a student in the sample became certified for free or reduced-price meals at the beginning of the school year (in August or September, for example); the household survey was administered in October or November; and the survey requested information about the household's circumstances at about the time the student became certified. In the SIV, the household survey was administered in the spring of the school year, and the information about the household's circumstances was requested at the time of the survey, not when the student was certified. Therefore, the timing of information on income, household size, and public assistance receipt collected in the household survey was more closely aligned with the timing of information students reported on their applications in the case of APEC-I and APEC-II than in the SIV. Finally, both APEC-I and APEC-II included directly certified students, whereas neither the SIV nor the Pilot Evaluation included directly certified students.

Because of the methodological differences among the APEC studies and the two previous studies, we cannot use results from the earlier studies to draw specific conclusions about changes in certification error rates for certified students over the period covered by all four studies. However, when comparing the certification error rate estimates from all four studies, we can see that all four resulted in a similar pattern of findings for certified students (Table III.7). Even if we cannot track a specific trend of certification error rates using these studies, the similarity of their findings suggests that there have not been dramatic changes over this period in the overall level of certification error among certified students or in the pattern of their certification error rates.

IV. SOURCES OF CERTIFICATION ERROR, EXCLUDING SCHOOLS USING CEP

Certification error can arise in two ways. First, a household can report incorrect information on its application for meal benefits, resulting in a certification status for which it may not be eligible. This type of error is called household reporting error, or simply reporting error. Second, school districts can make mistakes processing applications or direct certification documents, determining eligibility, recording certification status information on the application, or transmitting status from the application or direct certification documents onto the master benefit list. This second type of error is called administrative error. In this chapter, we first explain the methods we used to determine the two sources of certification error, and then we summarize findings on the prevalence of reporting error and administrative error and the sources of these errors. We also compare the APEC-II study's findings on sources of certification error with findings from the first APEC study and other studies.

A. Methods used to calculate sources of certification error, excluding schools using the Community Eligibility Provision

This section describes the data sources and methodology used to estimate the prevalence of certification error due to household reporting error and administrative error. First, we describe the data sources used for these analyses. Second, we discuss how these data were used to construct measures of certification status and eligibility. These measures were compared to identify sources of certification error.

1. Data sources

We used three sources of data to estimate certification errors:

- **Master benefit lists.** At the time of sampling, we recorded the certification status of each sampled student from the master benefit list that the school districts maintain. The master benefit list is the official document that records which students are certified for free or reduced-priced meals. It may also include denied applicant students (as having "paid" status). If the master benefit list did not include denied applicant students, we sampled these students directly from the denied applications.

- **Applications and direct certification documentation.** For each sampled student certified on the basis of an application for free or reduced-priced meals, Westat field staff obtained and photocopied the household's application. They made photocopies of hard-copy applications or printed screen shots of school districts' web-based applications. Field staff abstracted detailed information from the applications, including household members' names and incomes, SNAP and TANF case numbers, and other key elements of a complete application. Additionally, field staff also recorded information on the district's assessment of household size and income and the certification status assigned by the district. For sampled students certified for free meals without submitting an application (that is, directly certified students or students certified without submitting applications through extended eligibility or the letter method), field staff requested and photocopied relevant documentation.[41] When

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[41] The type of documentation varied and included list of SNAP and/or TANF recipients from State or county agencies; letters from State or county agencies or districts notifying households that their children were eligible for free meals; or lists maintained by the district or school indicating directly certified students. The study does not seek

photocopying was not feasible, field staff recorded the source and presented information from the source documentation.[42] Once the direct certification status was confirmed using documentation provided by the district, the information was recorded on the abstraction form.

- **Household survey.** Mathematica field staff administered an in-person household survey to the parent/guardian of each sampled student. The survey collected detailed information on household circumstances at the time of application—including household composition, income sources and amounts and receipt of SNAP, TANF, and FDPIR benefits. The household surveys were conducted primarily during the first few months of the school year to coincide with when most applications are received and certification activities take place. We also sampled and surveyed newly certified students throughout the school year.

2. Measures of eligibility status and sources of certification error

We used the three data sources to construct three measures of eligibility status for each sampled student. We based the student's actual approved eligibility (certification) status on the certification status recorded on the school district's master benefit list. We then constructed two other measures of eligibility status: one based on the information reported on the household survey and another based on the information households reported on applications for free or reduced-price meal benefits or from direct certification documentation. For the measures of eligibility based on the household survey data and application/direct certification documentation, we applied FNS eligibility guidelines to assess independently the level of benefits for which the student was eligible (free, reduced-price, or paid).

We derived each measure of certification error—total certification error and its components, reporting error and administrative error—by comparing measures of eligibility status. Figure IV.1 shows the relationships among the three eligibility status measures and the three types of possible errors. We define these errors as follows:

- *Total certification error* is measured by comparing the student's certification status on the district's master benefit list with our independent assessment of the student's eligibility status based on documentation of direct certification status and information provided on the household survey.[43] Certification error occurs when these two measures of status differ. Certification error can be due to reporting error, administrative error, or a combination of both.

- *Reporting error* is measured by comparing our assessments of eligibility status based on the information the household submitted on its application and provided in response to our household survey. Reporting error occurs when the student's eligibility status, determined

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to verify participation in a program that confers categorical eligibility directly with State SNAP agencies or other relevant agencies.

[42] In some cases, the documentation was available only through an electronic database from which screen shots could not be printed. In rare instances, verbal confirmation of direct certification status from district staff was used as verification.

[43] As noted earlier, when conducting the household survey, interviewers requested that households provide proof of income, such as wage and earning statements.

through information on his or her application, differs from the eligibility status determined using the household survey.

Figure IV.1. Measuring sources of certification error
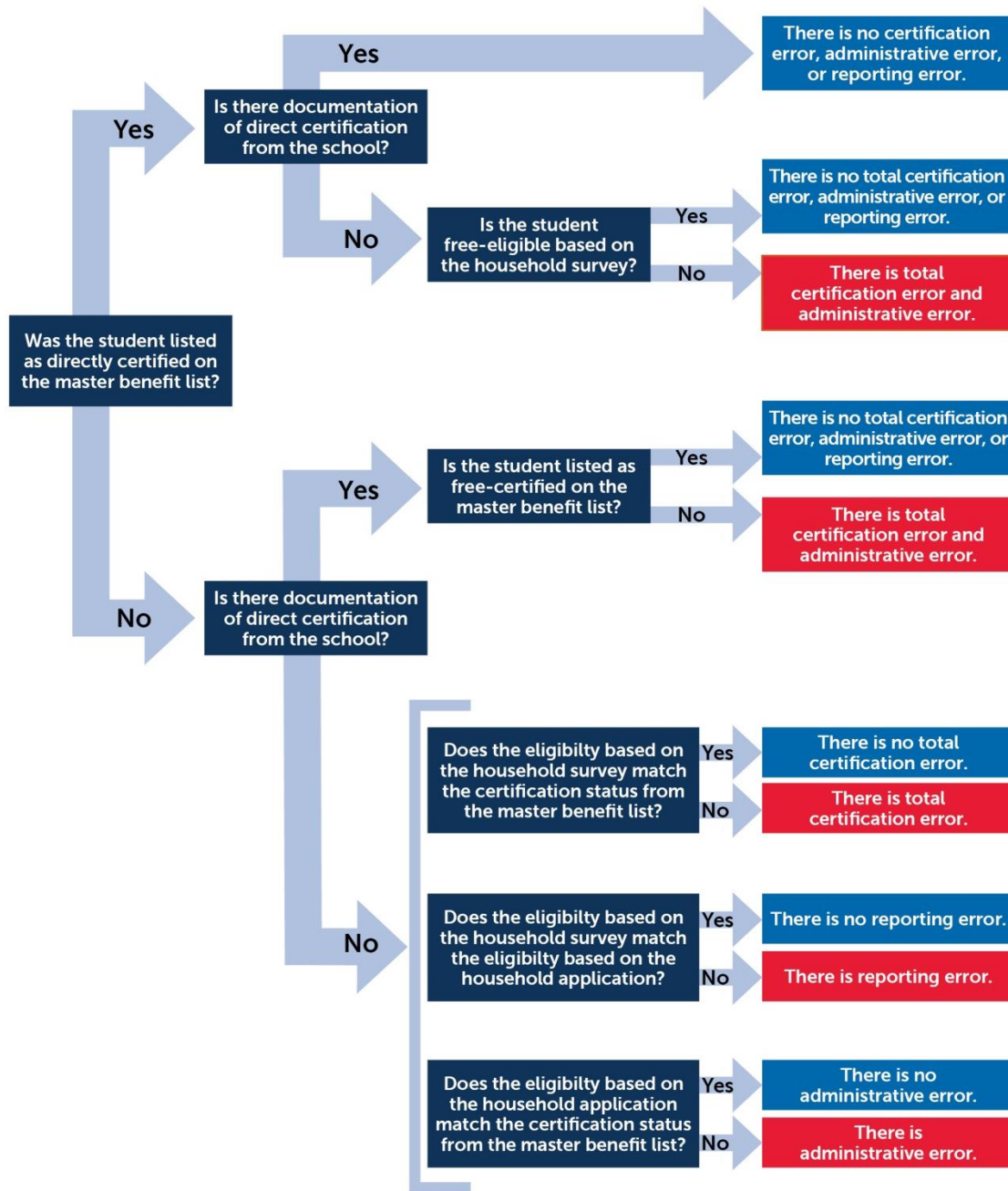
- *Administrative error* is measured by comparing the student's certification status on the district's master benefit list to our assessment of the student's eligibility status based on

direct certification documentation and the information on the application. Administrative error occurs when these two measures of eligibility status differ.[44]

It is possible for both reporting and administrative errors to occur for the same student. These errors can either reinforce each other, resulting in total certification error, or offset each other, resulting in no certification error. The latter may occur, for example, in the case of a student listed as certified for reduced-price meals on the master benefit list and determined to be eligible for reduced-price meals based on the household survey, but whose application indicated that he or she was eligible for free meals. In this case, there is no total certification error because the eligibility status based on the household survey was consistent with the certification status on the master benefit list. However, there would be a reporting error, given the discrepancy between the survey and the application, and an administrative error, given the discrepancy between the application and the master benefit list.

Discrepancies between information on the household survey, application, and master benefit list are defined as errors only if they lead to a student's eligibility status differing from what it would be if the error had not occurred. For example, there might be discrepancies between information on the household survey and application—regarding the income amounts or sources—that do not lead to differences in eligibility status. These discrepancies are not defined as errors for the purpose of calculating improper payments.

B. Findings on sources of certification error

This section presents the findings on sources of certification error. First, we separate the total certification error rate into reporting error and administrative error. Then we describe the sources of reporting error and the prevalence of each source, followed by a discussion of the sources of administrative error and their prevalence. Our main estimates include all students who either were certified for free or reduced-price meals or who applied for meal benefits but had their applications denied.

1.   Prevalence of reporting and administrative error

Reporting error was substantially more prevalent than administrative error. Among all students who were either certified for free or reduced-price meals or who applied for meal benefits but had their applications denied, 14 percent had their eligibility misclassified because of household reporting error, and 7 percent of these students were misclassified because of administrative error; both of these percentages include the 1 percent of students in households with reinforcing administrative and reporting errors (Table IV.1, under "all" column; Figure IV.2). Thus, more than two-thirds of certification error among certified students and denied applicants was due to household reporting error. Another 2 percent of all students had both reporting and administrative errors that offset each other so that there was no certification error.[45]

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[44] As shown in Figure IV.1, students with documentation of direct certification are determined to have administrative error if the district's master benefit list does not indicate certification for free school meals. In addition, students identified as directly certified for free meals on the master benefit list are determined to have administrative error if there is no documentation of direct certification and the household survey does not indicate eligibility for free school meals. These errors are referred to as direct certification transmittal administrative errors.

[45] As an example of an offsetting error, consider a student who is eligible based on information from the household survey. If that student's application indicates eligibility for free meals (reporting error leading to overcertification) but was processed incorrectly such that the student was certified for reduced-price meals (administrative error

Including these offsetting cases increases reporting error among all certified students and denied applicants to about 16 percent and administrative error to 9 percent. Thus, total administrative error for all students (8.8 percent) is equal to the sum of the 5.8 percent of all students with administrative error only; the 0.9 percent of all students with both administrative and reporting error that reinforce each other and result in error; and the 2.1 percent of all students with both administrative and reporting error that offset each other and result in no error. Total reporting error can be broken down in a similar manner.

Reporting error rates were highest among students certified for reduced-price meal benefits. Reporting error rates were more than five times larger for students certified for reduced-price meal benefits than for students certified for free meal benefits (45 versus 8 percent), and more than twice as large for students certified for reduced-price meal benefits than for denied applicants (45 versus 21 percent; Table IV.1).

Administrative and reporting error both resulted in overcertification more often than undercertification. Assuming no offsetting error, administrative error resulted in overcertification more than twice as often as undercertification (Figure IV.3). Overcertification due to administrative error occurred for 6 percent of all certified students and denied applicants, and undercertification due to administrative error occurred for 3 percent of these students. Assuming no offsetting error, reporting error resulted in overcertification for 9 percent of all certified students and denied applicants and undercertification for 7 percent of these students (Figure IV.3).

2.   Sources of household reporting error

Household reporting error occurs when there are discrepancies in the information a household reports on an application for meal benefits that affect the accuracy of the student's certification status. This information could include household size; household income; or SNAP, TANF, or FDPIR participation. Reporting errors may be caused by deliberate misreporting by households seeking certification at a higher level of benefits than those to which they are entitled. They may also be the result of applicants not understanding instructions on the application or of unintentional mistakes, such as forgetting about a secondary source of income or income from someone in the household who is not a primary earner. Incomplete applications are also considered a type of reporting error. In addition to the information necessary to assess eligibility—either a list of all household members and their incomes or a SNAP, TANF, or FDPIR case ID number—complete applications must include an adult's signature, and, in the case of income-based applications, the last four digits of the Social Security Number (SSN) of the adult signing the application (or an indication that the adult does not have an SSN).

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leading to undercertification), the student's eligibility based on the household survey matches the certification status on the master benefit list. In this way, administrative and reporting errors offset one another such that the certification status is correct.

Table IV.1. Certification error rates by error type, SY 2012–2013 (percentage of all certified students and denied applicants)

	Certification status[a]			
	Free	**Reduced-price**	**Denied applicants**	**All[b]**
Total certification error rate	12.13	63.06	27.32	20.15
	(1.32)	(2.92)	(2.79)	(1.21)
Reasons for certification error[c]				
Administrative error only	3.76	18.41	6.43	5.84
	(1.01)	(3.22)	(1.44)	(0.90)
Household reporting error only	7.87	42.46	19.17	13.45
	(0.65)	(3.52)	(2.52)	(0.89)
Reinforcing administrative and reporting error	0.50	2.18	1.72	0.86
	(0.15)	(0.72)	(0.67)	(0.19)
Total error including reinforcing errors[d]				
Total administrative error	4.26	20.60	8.15	6.70
	(1.03)	(3.47)	(1.56)	(0.95)
Total reporting error	8.37	44.64	20.89	14.32
	(0.68)	(3.45)	(2.61)	(0.90)
Offsetting administrative and reporting error	1.49	5.25	3.03	2.14
	(0.25)	(1.04)	(1.44)	(0.31)
Total error including offsetting errors[e]				
Total administrative error	5.75	25.85	11.18	8.84
	(1.10)	(3.60)	(2.18)	(1.01)
Total reporting error	9.86	49.89	23.92	16.46
	(0.77)	(3.41)	(2.93)	(0.99)
Sample size	**3,085**	**490**	**577**	**4,152**

Source: APEC-II study, weighted data.

Note: Standard errors in parentheses. Estimates in this table are for all schools participating in the NSLP and/or SBP, excluding those using CEP and Provision 2 non-base year schools. Base year Provision 2 schools are included.

[a] Certification status recorded on district's master benefit list at time student was sampled.

[b] Refers to certified students and denied applicants.

[c] Error here does not include students with both administrative and reporting error that offset each other so that there was no certification error. Students included as having both administrative and reporting error are those who were certified incorrectly.

[d] Total error here includes students with both administrative and reporting error that resulted in the student being certified incorrectly. For example, total administrative error for all students equals 6.70 percent and is the sum of 5.84 percent of all students with administrative error only and 0.86 percent of all students with both administrative and reporting error.

[e] Error here includes students with both administrative and reporting error that offset each other so that there was no certification error. For example, total administrative error for all students equals 8.84 percent and is the sum of 5.84 percent of all students with administrative error only; the 0.86 percent of all students with both administrative and reporting error, which is a reinforcing error; and the 2.14 percent of all students with both administrative and reporting error that offset each other for no overall error.

APEC = Access, Participation, Eligibility, and Certification CEP = Community Eligibility Provision; NSLP = National School Lunch Program; SBP = School Breakfast Program.

Figure IV.2. Prevalence of reporting and administrative error among all certified students and denied applicants, SY 2012–2013
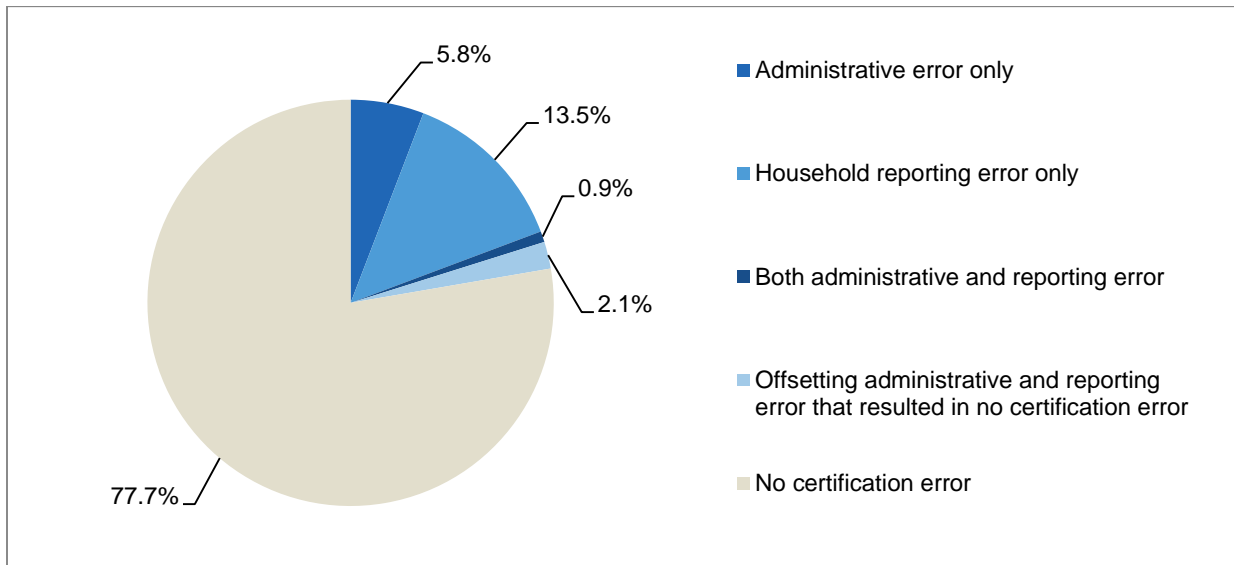
Source: APEC-II study, weighted data.

Note: Estimates in this figure are for all schools participating in the NSLP and/or SBP, excluding those using CEP and Provision 2 non-base year schools. Base year Provision 2 schools are included.

APEC = Access, Participation, Eligibility, and Certification; CEP = Community Eligibility Provision; NSLP = National School Lunch Program; SBP = School Breakfast Program.

Figure IV.3. Administrative and reporting error rates among all certified students and denied applicants (assuming no offsetting errors), SY 2012–2013
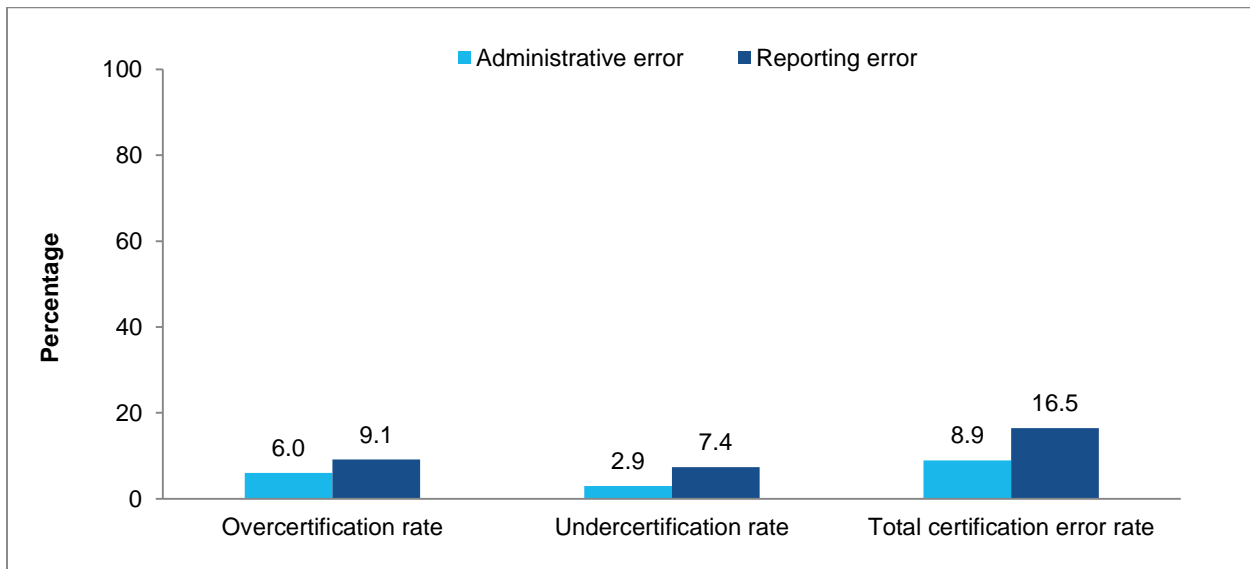
Source: APEC-II study, weighted data.

Note: Estimates in this figure are for all schools participating in the NSLP and/or SBP, excluding those using CEP and Provision 2 non-base year schools. Base year Provision 2 schools are included.

APEC = Access, Participation, Eligibility, and Certification CEP = Community Eligibility Provision; NSLP = National School Lunch Program; SBP = School Breakfast Program; SY = school year.

For an application to be considered accurate, and therefore not result in reporting error, several conditions must be satisfied. First, the application must be complete. If an applicant reports SNAP, TANF, or FDPIR eligibility, that eligibility must be accurate. If an applicant does not report SNAP, TANF, or FDPIR eligibility, the income and household size reported on the application must be accurate. All persons in the household's economic unit must be listed, and the income of all those household members who have income must be recorded. Furthermore, all reported income amounts must be accurate for each member. Reporting error will result if any of the above conditions do not hold and the eligibility status based on the household survey does not match the eligibility status based on information contained in the application. The top panel of Table IV.2 shows the eligibility status based on the household survey compared with eligibility status based on the information provided on the application, overall and for certified and denied applicants. This information is used to decompose reporting error into overcertification and undercertification error and sources.

Overall, reporting error resulted in overcertification more often than undercertification. Overcertification due to reporting error occurred for 9 percent of all certified students and denied applicants, and undercertification due to reporting error occurred for 7 percent of these same students (Table IV.2). However, students certified for reduced-price meals were undercertified due to reporting error more often than they were overcertified, with 35 percent of students undercertified due to reporting error and 23 percent overcertified due to reporting error.

Most reporting error involved a discrepancy in the total amount of household income reported on the application (Table IV.2). Among free or reduced-price certified students and denied applicants, about 15 percent had a reporting error related to income misreporting (8 percent had only an income reporting error and another 7 percent had both income and household size reporting errors). These cases made up the vast majority of all types of reporting error, representing 94 percent of all students with reporting errors.

Discrepancies in reported household size were the next most common type of reporting error. Reporting error related to household size accounted for a total of 7 percent of all reporting error for all free or reduced-price certified students and denied (Table IV.2). This figure represented 44 percent of all students with any reporting error, but almost all of the students with discrepancies in household size also had discrepancies in household income.

Discrepancies in categorical eligibility information made up almost all of the remaining types of reporting error. Reporting error due to categorical eligibility occurred for just under 1 percent of all free or reduced-price certified students and denied applicants, which represented less than 6 percent of all cases of reporting error (Table IV.2). Discrepancies in categorical eligibility resulted when the application submitted for a student indicated that the student (or someone else in the household) received public assistance, but the respondent did not report receipt of public assistance in the household survey. Alternatively, the applicant may have failed to report that the student (or someone else in the household) received public assistance when the respondent reported in the household survey that public assistance was received.

Table IV.2. Household reporting error, SY 2012–2013 (percentage of certified students and denied applicants)

	Eligibility status based on information reported on household's application			
	Free	Reduced-price	Denied applicants	All[a]
Eligibility status based on household survey[b]				
Free	90.75	35.33	12.71	71.96
	(0.76)	(2.83)	(2.30)	(1.39)
Reduced-price	5.60	41.38	9.57	10.11
	(0.49)	(3.16)	(1.29)	(0.66)
Paid	3.65	23.30	77.72	17.93
	(0.51)	(3.28)	(2.75)	(1.28)
Reporting error rate				
Overcertification rate	9.06	23.30	0.00	9.11
	(0.77)	(3.28)	(0.00)	(0.76)
Undercertification rate	0.00	34.98	21.81	7.35
	(0.00)	(2.82)	(2.71)	(0.55)
Total reporting error rate	9.06	58.27	21.81	16.46
	(0.77)	(3.17)	(2.71)	(0.99)
No reporting error	90.94	41.73	78.19	83.54
	(0.77)	(3.17)	(2.71)	(0.99)
Type of reporting error (information on application does not match household survey report)				
Total household income only	4.27	34.14	8.92	8.26
	(0.45)	(2.82)	(1.38)	(0.62)
One data source indicates zero income	0.00	0.29	1.50	0.28
	(0.00)	(0.28)	(0.35)	(0.08)
Number of household members with income	0.78	4.23	0.99	1.18
	(0.18)	(1.12)	(0.26)	(0.18)
Number of types of income	0.40	13.66	2.51	2.18
	(0.12)	(1.95)	(0.71)	(0.27)
Number of household members with income and number of types of income	2.05	7.41	1.98	2.61
	(0.36)	(1.56)	(0.60)	(0.35)
Individual income amounts	1.05	8.54	1.94	2.00
	(0.25)	(2.01)	(0.55)	(0.35)
Total household size only	0.00	0.01	0.20	0.03
	(0.00)	(0.01)	(0.18)	(0.03)
Both household size and income	3.84	24.13	10.98	7.20
	(0.47)	(3.44)	(2.08)	(0.62)
Application incomplete[c]	0.00	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)
Categorical eligibility[d]	0.94	0.00	1.39	0.92
	(0.24)	(0.00)	(0.57)	(0.19)
Other reporting error	0.00	0.00	0.32	0.05
	(0.00)	(0.00)	(0.14)	(0.02)
Sample size	**3,041**	**484**	**627**	**4,152**

Source: APEC-II study, weighted data.

Note: Reporting error rates due to misreporting are based on the sample of students certified for free and reduced-price meals and denied applicants for whom we have a completed household survey with parent or guardian. Estimates in this table are for all schools participating in the NSLP and/or SBP, excluding those using CEP and Provision 2 non-base year schools. Base year Provision 2 schools are included. Standard errors in parentheses.

[a] Refers to certified students and denied applicants.

[b] Frequency distribution of all cases, for reference.

[c] A very small number of free or reduced-price certified students and denied applicants (about 0.53 percent) were found to have both reporting error due to incomplete applications and due to another type of reporting error listed in this table. In order to present mutually exclusive types of reporting error, we established a priority for flagging reporting error types, with incomplete applications listed as the lowest priority. This resulted in no reporting error due to incomplete applications because those same free or reduced-price certified students and denied applicants were found to already have another type of error and were counted in that total in this table.

[d] A categorical eligibility reporting error means the application indicated that the student or someone else in the household received public assistance (SNAP/TANF/FDPIR) when according to the household survey, it did not, or vice versa.

APEC = Access, Participation, Eligibility, and Certification; CEP = Community Eligibility Provision; FDPIR = Food Distribution Program on Indian Reservations; NSLP = National School Lunch Program; SBP = School Breakfast Program; SNAP = Supplemental Nutrition Assistance Program; TANF = Temporary Assistance for Needy Families.

Of the 8 percent of free or reduced-price certified students and denied applicants with only an income reporting error, the vast majority did not accurately report the number of household members with income, the number of types of income, or both (Figure IV.4). These types of errors accounted for almost three-fourths of all household reporting error due only to income.

3.   Sources of administrative error

Administrative error encompasses several types of errors that occur when processing applications and direct certification documents and determining eligibility. The eight error categories are outlined in the chart below:

Error category	Description
Application status transmittal error	This error occurs when a different [incorrect] certification status is reported on the master benefit list than what is [correctly] recorded on the application.
Application completeness error	This error occurs when there is an error in judging the completeness of an application. For example, staff may certify a student when an application is missing an adult's signature, or in the case of income-based applications, missing the SSN of the adult who signed the application.
Application assessment error	This error occurs when there is an incorrect assessment of household information such as household size, income, or categorical eligibility.
Application lookup error	This error occurs when staff make a mistake applying the FNS guidelines. For example, the assessment of household size and income by staff may be correct; however, the wrong eligibility status from the corresponding FNS guidelines was selected.
Direct certification status transmittal error	Similar to an application status transmittal error, this error occurs when there is a discrepancy between the direct certification documentation and the eligibility status reported on the master benefit list.
Missing application or direct certification documentation error	This error occurs when the district does not have an application or direct certification documentation on file for a certified student.
Unknown error	This category captures instances where an error was identified but the exact source could not be determined.
Multiple errors	This category captures instances where more than one source of error was found.

Administrative error will result if any of the above errors occur and certification status on the master benefit list does not match the eligibility status based on information contained in the application. The top panel of Table IV.3 shows the eligibility status based on the information provided on the application compared with the certification status on the master certification list, overall and for certified and denied applicants. This information is used to decompose administrative error into overcertification and undercertification error and sources.

Administrative error resulted in overcertification more than twice as often as undercertification. Overcertification due to administrative error occurred for 6 percent of all certified students and denied applicants, whereas undercertification due to administrative error occurred for just under 3 percent of these same students. Notably, students certified for reduced-price meals were overcertified due to administrative error more often than they were undercertified (14 versus 12 percent); the reverse was found to be true for reporting error in Table IV.2.

The two most frequent types of administrative errors among certified and denied applications were those due to missing application or direct certification documentation (3 percent) and application status transmittal errors (2 percent). The percentages of administrative

errors due to missing application and missing documentation were similar (1.4 and 1.6 percent respectively). Among all administrative errors, one-third were due to missing application or direct certification documentation and about one-quarter were due to applications status transmittal errors (Figure IV.5).

Figure IV.4. Types of income misreporting for students with only an income reporting error, SY 2012–2013
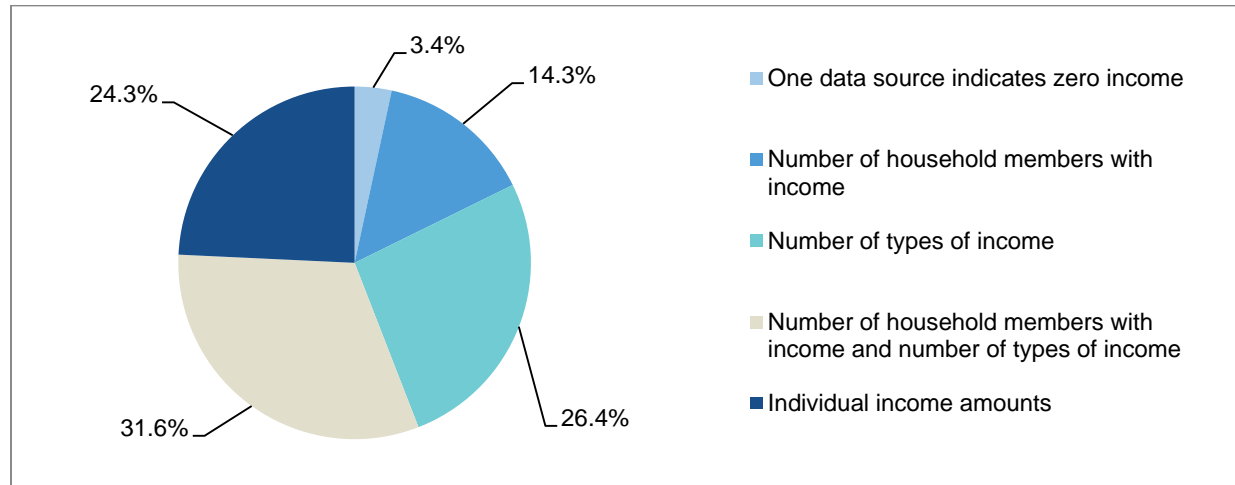
Source: APEC-II study, weighted data.

Note: Estimates in this figure are for all schools participating in the NSLP and/or SBP, excluding those using CEP and Provision 2 non-base year schools. Base year Provision 2 schools are included.

APEC = Access, Participation, Eligibility, and Certification; CEP = Community Eligibility Provision; NSLP = National School Lunch Program; SBP = School Breakfast Program.

The two least frequent types of administrative errors among certified and denied applications were due to direct certification status transmittal error (0.05 percent) and application completeness error (0.15 percent). The application completeness errors were due to certification of applications missing income, household size, or case number (0.08 percent) and missing signature or SSN (0.07 percent).

Key findings for other sources of administrative error include the following:

- **Application assessment error**. Incorrect assessment of household circumstances by district staff occurred for 1 percent of certified and denied applications. This figure represents 10 percent of students with any administrative error. Errors in determining household income represented the most common assessment error, occurring in 96 percent of students with application assessment errors.

- **Application lookup error**. Lookup errors were rare and occurred for about 0.3 percent of students certified or denied. This figure represents 4 percent of students with any administrative error.

- **Multiple errors**. For about 2 percent of certified or denied students, or 18 percent of students with any administrative error, two or more types of error combined to cause a certification error.

Table IV.3. Administrative error (percentage of certified students and denied applicants)

	Certification status[a]			All[b]
	Free	Reduced-price	Denied applicants	
Eligibility status based on information provided on application[c]				
Free	94.30	11.84	7.67	72.80
	(1.07)	(2.25)	(1.75)	(1.44)
Reduced-price	2.20	74.15	3.52	10.78
	(0.38)	(3.60)	(1.29)	(0.85)
Paid	3.50	14.01	88.82	16.42
	(0.98)	(2.73)	(2.18)	(1.22)
Administrative error rate				
Overcertification rate	5.88	14.01	0.00	6.03
	(1.11)	(2.73)	(0.00)	(0.94)
Undercertification rate	0.00	11.84	11.18	2.91
	(0.00)	(2.25)	(2.18)	(0.43)
Total administrative error rate[d]	5.88	25.85	11.18	8.94
	(1.11)	(3.60)	(2.18)	(1.02)
Administrative determination of meal price status is correct				
No administrative errors	93.69	71.89	87.83	90.34
	(1.11)	(3.71)	(2.26)	(1.02)
Offsetting administrative errors	0.43	2.26	0.99	0.72
	(0.04)	(0.76)	(0.24)	(0.10)
Total	94.12	74.15	88.82	91.06
	(1.11)	(3.60)	(2.18)	(1.02)
Sources of administrative error				
Application status transmittal error	1.05	7.23	5.91	2.44
	(0.24)	(1.80)	(1.74)	(0.38)
Application completeness error	0.15	0.38	0.00	0.15
	(0.09)	(0.03)	(0.00)	(0.06)
Missing income, household size, or case number	0.10	0.01	0.00	0.08
	(0.08)	(0.01)	(0.00)	(0.06)
Missing signature, last four digits of SSN, or detail	0.04	0.37	0.00	0.07
	(0.03)	(0.03)	(0.00)	(0.02)
Application assessment error	0.59	2.25	1.35	0.89
	(0.22)	(0.69)	(0.55)	(0.20)
Error in determining categorical eligibility	0.00	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)
Error in determining household size	0.01	0.21	0.01	0.03
	(0.01)	(0.21)	(0.00)	(0.03)
Error in determining household income	0.58	2.04	1.34	0.85
	(0.22)	(0.66)	(0.55)	(0.20)
Application lookup error	0.24	0.89	0.39	0.33
	(0.12)	(0.30)	(0.22)	(0.11)
Direct certification status transmittal error	0.00	0.33	0.07	0.05
	(0.00)	(0.33)	(0.07)	(0.04)
Missing application or direct certification documentation	2.93	6.83	0.00	2.99
	(0.99)	(2.10)	(0.00)	(0.81)
Missing application	0.80	6.83	0.00	1.40
	(0.18)	(2.10)	(0.00)	(0.34)
Missing direct certification documentation	2.13	0.00	0.00	1.59
	(0.93)	(0.00)	(0.00)	(0.70)
Reason for error unknown	0.52	0.79	0.43	0.54
	(0.17)	(0.54)	(0.23)	(0.14)
Multiple errors affecting meal price status[e]	0.42	7.14	3.03	1.56
	(0.14)	(1.93)	(1.02)	(0.35)

Source: APEC-II study, weighted data.

Table IV.3 (*continued*)

Note: Administrative error rates are based on the sample of students certified for free and reduced-price meals and denied applicant students for whom we have a completed household survey from a parent or guardian. Estimates in this table are for all schools participating in the NSLP and/or SBP, excluding those using CEP and Provision 2 non-base year schools. Base year Provision 2 schools are included. Standard errors in parentheses.

[a] Certification status recorded on district's master benefit list at time student was sampled.

[b] Refers to certified students and denied applicants.

[c] Frequency distribution of all cases, for reference.

[d] The total administrative error rate in this table does not match the rate of certification error due to administrative error presented in Table IV.1 because errors in determining completeness are considered to be administrative error (and thus are included in this table) but are not considered overall certification error if the household survey indicates that the household is eligible for the certified level of benefits.

[e] Sources of administrative error reported in this table are mutually exclusive. Cases with multiple errors are not shown as having other sources of error.

APEC = Access, Participation, Eligibility, and Certification; CEP = Community Eligibility Provision; NSLP = National School Lunch Program; SBP = School Breakfast Program; SSN = Social Security Number.

Figure IV.5. Sources of administrative error for certified students and denied applicants with administrative error
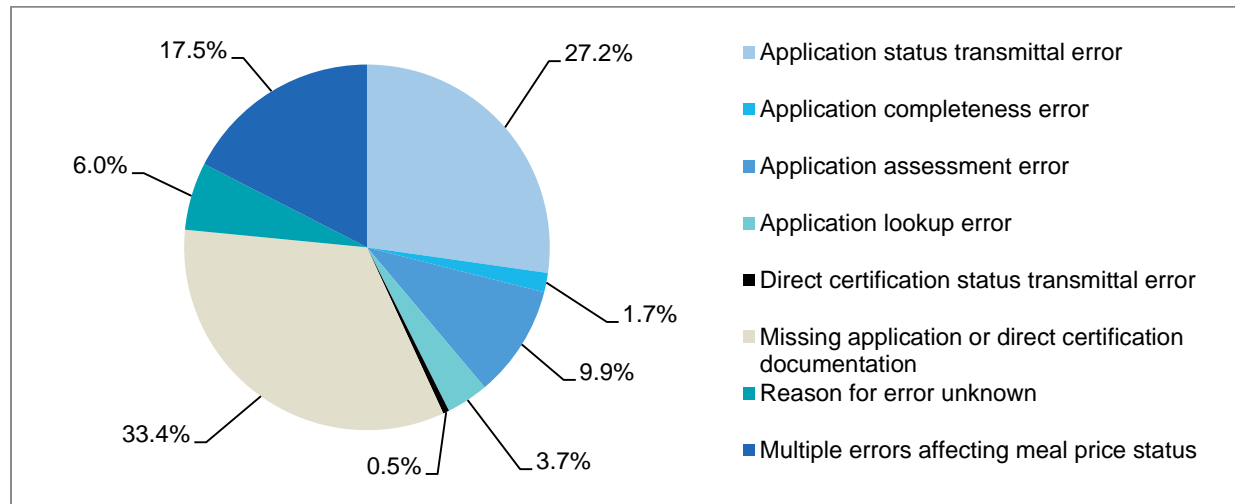
Source: APEC-II study, weighted data.

Note: Estimates in this figure are for all schools participating in the NSLP and/or SBP, excluding those using CEP and Provision 2 non-base year schools. Base year Provision 2 schools are included.

APEC = Access, Participation, Eligibility, and Certification; CEP = Community Eligibility Provision; NSLP = National School Lunch Program; SBP = School Breakfast Program.

C. Comparisons with previous studies

1. Findings on administrative and reporting error from APEC-I

APEC-II used essentially the same methods as APEC-I to calculate household reporting and administrative error. Below, we discuss changes in household reporting and administrative error since SY 2005–2006, when APEC-I was conducted.

Household reporting error. Total reporting error rate decreased by almost 7 percentage points from SY 2005–2006 to SY 2012–2013 (23 and 16 percent, respectively; Table IV.4). Overcertification due to reporting error decreased during this period by a little more than 4 percentage points, with about 14 percent of all certified students and denied applicants overcertified due to reporting error in SY 2005–2006 and 9 percent in SY 2012–2013.

Undercertification due to reporting error also decreased from 10 percent in SY 2005–2006 to 7 percent in SY 2012–2013. All of the changes in reporting error rates were statistically significant.

Administrative error. Total administrative error rate increased by about 0.6 percentage points from SY 2005–2006 to SY 2012–2013 (8.3 and 8.9 percent, respectively; Table IV.4). Overcertification due to administrative error decreased slightly between the two studies, with 6.2 percent of all certified students and denied applicants overcertified due to administrative error in SY 2005–2006 and 6.0 percent in SY 2012–2013. Undercertification due to administrative error increased slightly from 2.1 percent in SY 2005–2006 to 2.9 percent in SY 2012–2013. None of these changes in administrative error rates was statistically significant.

Table IV.4. Change in estimates of certification error rates from APEC-I and APEC-II, by type (percentages)

	All certified students and denied applicants		
	2005–2006	2012–2013	Difference
Certification error rates, by type (percentages)			
Total certification error rate	22.50	20.15	-2.35
	(1.29)	(1.21)	(1.77)
Total administrative error[a]	8.26	8.94	0.68
	(0.91)	(1.02)	(1.36)
Overcertification due to administrative error	6.21	6.03	-0.18
	(0.84)	(0.94)	(1.26)
Undercertification due to administrative error	2.06	2.91	0.85
	(0.41)	(0.43)	(0.59)
Total reporting error[b]	23.23	16.46	-6.77***
	(1.36)	(0.99)	(1.68)
Overcertification due to reporting error	13.57	9.11	-4.46***
	(0.93)	(0.76)	(1.20)
Undercertification due to reporting error	9.66	7.35	-2.31**
	(0.96)	(0.55)	(1.11)

Source: APEC-II and APEC-I studies, weighted data.

Note: ***, **, and * denote statistical significance at the 0.01, 0.05 and 0.10 levels, respectively. Standard errors in parentheses.

[a] Total administrative error estimates presented in this table include errors in determining completeness.

[b] Total reporting error estimates presented in this table include students with both administrative and reporting error that offset each other so that there was no certification error.

APEC = Access, Participation, Eligibility, and Certification.

2. Findings on reporting and administrative error from the RORA studies

Since 2004, FNS has collected data through the Regional Office Review of Applications (RORA) to track annual rates of administrative errors. Both APEC-II and RORA studies sampled certified students and denied applicants, abstracted information from applications, and independently assessed each student's eligibility based on the information that the household provided on the application. Unlike APEC-II, the RORA studies did not include directly certified students in the sampling frame. The critical differences between the two studies included the differences in sampling and weighting and the methodology to measure errors rates. Although APEC assessed the information on the application to the certification status on the district's master benefit list at the time of sampling, RORA studies compared the independent assessment results with the determination of eligibility that the district recorded on the application. If no

determination was indicated on the application, the point of comparison was the status within the district's computer system at the time of certification. Thus, it is possible that, unlike the RORA measure, the APEC measure of overall administrative error may have included some cases of transmittal error.

In APEC-II, administrative error occurred for 8.9 percent of certified students and denied applicants in SY 2012–2013. In the RORA study for the same school year, the percentage of students applying for meal benefits that were incorrectly certified due to administrative error was 3.6 percent. Previous annual RORA reports indicate administrative error rates varied from 2.0 to 3.9 percent from 2004 to 2013. Although the rates of administrative error measured in APEC-II and RORA have not changed dramatically from estiamtes in earlier iterations of each study, FNS has been focusing on reducing administrative error. For example, in recent years, FNS has started issuing guidance to LEAs through the "Eligibility Manual for School Meals: Determining and Verifying Eligibility."[46] In addition to the manual, FNS has been awarding Administrative Reviews and Training grants to State agencies to support oversight and training efforts to reduce administrative errors.[47] Some uses of these ART grants include training of LEA administrative personnel in application, certification, and verification procedures as well as technology improvements to address administrative errors. Although such efforts would be expected to reduce the administrative errors for both APEC and RORA, the overall error rates did not change significantly. This may in part be due to the economic downturn that changed the characteristics of the pool of applicants. In addition, more and more LEAs are moving toward a computerized application management system, and although some systems may have been completely automated, some may require both electronic and manual data entry. There is a potential for error that may occur during the transfer of data from hard-copy applications to online systems. The increase in such errors may have contributed to keeping the overall error rate at the same level despite the potential reducing effect of FNS efforts on administrative errors. Meanwhile, as in the earlier report, we observe that the APEC-II estimates exceed the RORA estimates. The reasons for the difference in the administrative error rates include the differences in sampling methodology and weighting, the differences in access to applications, transmittal errors, and the differences in proportion of students certified income eligible by application in each study.

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[46] http://www.fns.usda.gov/sites/default/files/EliMan.pdf

[47] http://www.fns.usda.gov/school-meals/grants

V. NATIONAL ESTIMATES OF IMPROPER PAYMENTS DUE TO CERTIFICATION ERROR, EXCLUDING SCHOOLS USING CEP

Improper payments due to certification error arise when districts claim reimbursements for NSLP or SBP meals provided to students who are incorrectly certified for free or reduced-price meal benefits or denied meal benefits for which they are eligible. These certification errors result in districts being reimbursed an incorrect amount. Based on the information we collected on certification errors among sample members (discussed in Chapter III), we estimated the total dollar amount of improper payments and the rate of improper payments due to certification error—the ratio of the dollar amount of improper payments to the dollar amount of total reimbursements provided to districts for all meals served. In this chapter, we present estimates of improper payments due to certification error in schools not using the Community Eligibility Provision; Chapter VI presents improper payments due to certification error in CEP schools. Section A describes methods used to calculate improper payments, and Section B presents findings. Section C compares our findings with improper payments due to certification error findings from APEC-I.

A. Methods

For the school meal programs, the total dollar amount of improper payments due to certification error is the amount of the additional subsidy for free or reduced-price meals that is paid in error or that is not paid because of misclassification of the school meal eligibility status of certified and denied applicant students. An overpayment or underpayment of the additional subsidy will result when a certified or denied applicant student receives a reimbursable NSLP and/or SBP meal that is claimed for reimbursement at a rate that does not correctly reflect the student's income eligibility status. The total dollar amount of improper payments is a gross measure, calculated as the sum of overpayments and underpayments. The second measure, the rate of improper payments, equals the ratio of two sums: the total dollar amount of improper payments and the total amount of reimbursements paid out to districts for all meals they provide to all participating students (those who are certified for free or reduced-price meal benefits as well as those paying full price). In the case of the NSLP, reimbursements include commodities valued on a per-meal basis.

We estimated separate improper payment amounts and rates for the NSLP and SBP. These estimates are for NSLP/SBP schools in the 48 contiguous States and the District of Columbia during SY 2012–2013; the estimates exclude Alaska, Hawaii, the U.S. territories, schools operated by the Department of Defense, and Residential Child Care Institutions. We used a three-step procedure to derive national estimates of improper payments: (1) we estimated improper payments attributable to non-Provision 2 or 3 (NP 2/3) schools and to Provision 2 or 3 (P 2/3) base year schools (that is, excluding P 2/3 schools in non-base years); (2) we imputed estimates of improper payments for P 2/3 schools in non-base years; and (3) we combined the two into an overall estimate of improper payments covering all schools in the 48 contiguous States (and the District of Columbia) for SY 2012–2013. In the case of NP 2/3 schools and P 2/3 base year schools, improper payments were determined by the certification and eligibility status of each student in the study who was certified for free or reduced-price meal benefits or who applied for and was denied benefits during the study school year—that is, whether the student was certified in error or erroneously denied benefits and the number of meals he or she received while incorrectly certified.

The following tables show how these per-meal improper payments are determined for a given student for the NSLP (Table V.1) and SBP (Table V.2).

Improper payments for NP 2/3 schools and P 2/3 base year schools were determined by the certification and eligibility status of each student in the study who was certified for free or reduced-price meal benefits or applied for and was denied benefits during the study school year. For each sampled student, we determined the amount of improper payments in the NSLP and SBP by performing the following steps:

1. We determined the overpayment or underpayment for each school meal received by the student in a given month according to Table V.1 or Table V.2.

2. We multiplied this estimate of per-meal improper payments by the number of school lunches or breakfasts received in a given month to determine the total NSLP and SBP improper payments for that student in the month.

3. We summed these totals across all months of the school year to determine the total improper payments for the student throughout the school year for lunches received through the NSLP and breakfasts received through SBP.

Table V.1. Total underpayments and overpayments per meal for certification error in the NSLP, SY 2012–2013

Student's certification status	Student's eligibility status	Total payments	Underpayments	Overpayments
Fewer than 60 percent of lunches are free or reduced-price				
Free	Free	3.0875	0.00	0.00
Free	Reduced-price	3.0875	0.00	0.40
Free	Paid	3.0875	0.00	2.59
Reduced-price	Free	2.6875	0.40	0.00
Reduced-price	Reduced-price	2.6875	0.00	0.00
Reduced-price	Paid	2.6875	0.00	2.19
Denied	Free	0.4975	2.59	0.00
Denied	Reduced-price	0.4975	2.19	0.00
Denied	Paid	0.4975	0.00	0.00
60 percent or more of lunches are free or reduced-price				
Free	Free	3.1075	0.00	0.00
Free	Reduced-price	3.1075	0.00	0.40
Free	Paid	3.1075	0.00	2.59
Reduced-price	Free	2.7075	0.40	0.00
Reduced-price	Reduced-price	2.7075	0.00	0.00
Reduced-price	Paid	2.7075	0.00	2.19
Denied	Free	0.5175	2.59	0.00
Denied	Reduced-price	0.5175	2.19	0.00
Denied	Paid	0.5175	0.00	0.00

Source: FNS program data.

Note: Schools in School Food Authorities that served 60 percent or more free and reduced-price lunches in SY 2010–2011 received an additional $0.02 per lunch.

FNS = Food and Nutrition Service; NSLP = National School Lunch Program; SY = school year.

Table V.2. Total underpayments and overpayments per meal for certification error in the SBP, SY 2012–2013

Student's certification status	Student's eligibility status	Total payments	Underpayments	Overpayments
SBP, non-severe need schools				
Free	Free	1.55	0.00	0.00
Free	Reduced-price	1.55	0.00	0.30
Free	Paid	1.55	0.00	1.28
Reduced-price	Free	1.25	0.30	0.00
Reduced-price	Reduced-price	1.25	0.00	0.00
Reduced-price	Paid	1.25	0.00	0.98
Denied	Free	0.27	1.28	0.00
Denied	Reduced-price	0.27	0.98	0.00
Denied	Paid	0.27	0.00	0.00
SBP, severe need schools				
Free	Free	1.85	0.00	0.00
Free	Reduced-price	1.85	0.00	0.30
Free	Paid	1.85	0.00	1.58
Reduced-price	Free	1.55	0.30	0.00
Reduced-price	Reduced-price	1.55	0.00	0.00
Reduced-price	Paid	1.55	0.00	1.28
Denied	Free	0.27	1.58	0.00
Denied	Reduced-price	0.27	1.28	0.00
Denied	Paid	0.27	0.00	0.00

Sources: FNS program data.

Note: Schools are considered to be in severe need for SY 2012–2013 if they served 40 percent or more free and reduced-price lunches in SY 2010–2011. Severe need schools receive an additional $0.30 per free and reduced-price breakfast.

FNS = Food and Nutrition Service; SBP = School Breakfast Program; SY = school year.

Across all students in the sample, we calculated the weighted sum of annual NSLP and SBP improper payments to determine total improper payments. We derived an estimate of total reimbursements for all NSLP lunches and SBP breakfasts provided to students in the 48 contiguous States and the District of Columbia and then divided total improper payments by total reimbursements to determine the rate of improper payments in the NSLP and SBP.[48] We used an analogous methodology to determine the separate rates of overpayments and underpayments.

There is no certification process during the school year for P 2/3 schools not in their base year. For these schools, reimbursements are determined largely by the results of the certification process conducted during the base year. Thus, for P 2/3 schools not in their base year, improper payments due to certification error are caused by errors made during the base year certification process. To determine a national measure of improper payments that would include the non-base year P 2/3 schools, we imputed the rates of improper payments in P 2/3 non-base year schools. The imputation was based on rates of improper payments in P 2/3 base year schools; the imputation methodology is the same as that used in APEC-I and is described in Appendix E.

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[48] Estimates for the SBP take into account whether a student attended a severe need school to account for the different SBP subsidies for free and reduced-priced breakfasts in severe need schools.

Districts' eligibility determinations for free and reduced-price meal benefits are valid for the entire school year, whether or not household income or other circumstances change in ways that affect a student's eligibility. Thus, we assumed that a student's eligibility status at the time he or she became certified persisted throughout the school year. However, we also accounted for three situations in which eligibility could change during the school year. Below, we describe briefly these situations and our methods for handling them:

- *End of a carryover period.* In some districts, certification decisions are not made immediately at the beginning of the school year. During this start-up period, students who were certified for free or reduced-price meals during the previous school year and who were not directly certified prior to the beginning of the new school year continue to receive meals at the previous benefit level regardless of their household circumstances until their new status is established or for a period of up to 30 days. When the carryover period ends, the student's certification status from the previous school year ends. When we sampled students during this carryover period, we assumed that their eligibility status during the carryover period matched their certification status. Once the carryover period ended, however, their eligibility status was determined by their household circumstances as reported in the household survey.

- *Verification.* For students who are selected for verification, districts must obtain documentation of household income or categorical eligibility (which may be accomplished through direct verification based on documentation of participation in SNAP, TANF, FDPIR, or other programs that confer categorical eligibility) in any month between the month before the household submitted its application and the time it responds to the request for verification. If a household fails to provide documentation, then the student is considered to be ineligible for benefits regardless of his or her true household circumstances. Thus, a student's eligibility status could change as a result of verification. Because we did not collect information on verification results for individual sample members, we could not identify certified students whose households failed to respond to the eligibility request or who submitted documentation supporting a different eligibility status than that for which the students were certified. We could identify students in the sample who we observed having a change in certification status from free or reduced-price meals to paid meals in November or December 2012 (just after verification typically is completed). Based on estimates of the results of verification reported in Gleason et al. (2003), we assumed that two-thirds of these students' households failed to provide income documentation in the verification process; this approach was also used in the APEC-I study. Thus, these students were assumed to be ineligible for free or reduced-price meals.

- *Reapplication or direct certification.* Students certified for a given level of benefits who have a change in household circumstances that makes them eligible for a higher level of benefits may contact the LEA to report a change. Their LEA makes a new determination of their eligibility for free or reduced-price meals, potentially leading to a change in their status. Students might also have their certification status changed from reduced-price or not certified to free based on direct certification if their household begins receiving benefits that confer categorical eligibility.

  To identify these households, we used information on students who became certified for a higher level of benefits. Although we had no new information on their eligibility for benefits because most of these students did not complete a new household survey, we used a

bounding procedure to determine the sensitivity of our error rate estimates to different assumptions about the eligibility of these students. In particular, our primary estimates assumed that the eligibility status of these students was the same as was reported in the original household survey and did not actually change. This approach provided an upper bound on the error rate estimate. We also generated a lower bound estimate—discussed in more detail in Appendix F—by assuming that their new certification status after their reapplication was correct; that is, their eligibility matched their certification status.

We faced two additional challenges because of measurement issues. The following descriptions focus on challenges and the approaches we took to address them:

- *Measuring NSLP/SBP participation over the full school year.* Accurately measuring improper payments over the school year requires some measure of the number of school meals consumed during each month by sample members (that is, SBP and NSLP participation throughout the school year). For about three-fourths of the students in the sample, we were able to collect detailed administrative participation data. For the remaining one-fourth of students, we imputed monthly participation levels using information reported in the household survey, including the number of days during the previous week that the student consumed a school breakfast and school lunch. Appendix E describes the imputation process for SBP and NSLP participation.[49]

- *Accounting for mid-month certification or eligibility changes.* The procedures described above are based on improper payments in a given month for a given student that are calculated as the per-meal amount of overpayments or underpayments multiplied by the number of meals consumed during the month. The per-meal amounts are based on the information provided in Table V.1 and Table V.2, but these tables assume that students retain the same certification and eligibility status throughout the month. For students whose status changed during the month, the per-meal improper payments during that month cannot be so clearly summarized. To address this situation, we calculated the percentage of a given month that a student was in a particular certification or eligibility status and used these percentages as weights in calculating the per-meal overpayments or underpayments during the month. For example, if a student certified for free lunches spent half of the month eligible for free meals and half of the month eligible for reduced-price meals, the per-meal overpayment amount would be calculated as 0.5*0.40 + 0.5*0.0 = $0.20. That amount then would be multiplied by the number of meals the student consumed in that month to determine the student's total monthly overpayments.

B. Findings on rates of improper payments due to certification error

During SY 2012–2013, there were an estimated $1.15 billion in total improper NSLP reimbursements due to certification error (Table V.3). This figure represented 10.0 percent of the roughly $11.52 billion in total cash and commodity reimbursements provided to school districts for all NSLP lunches served in the 48 contiguous States and the District of Columbia. The $1.15 billion in improper payments in the NSLP is a gross measure; in addition to overpayments for lunches provided to students certified for a higher level of benefits than that for which they were eligible, it includes the dollar amount of payments that were never actually made to districts but

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[49] See Appendix F for improper payment estimates derived using an alternative definition of imputed participation for erroneously denied applicants.

should have been, based on the eligibility status of certified students and denied applicants receiving the school lunches (underpayments). When considering only the difference between overpayments and underpayments, net improper payments for NSLP were $495 million, or about 4 percent of all NSLP reimbursements.

Table V.3. National estimates of improper payments due to certification error in the NSLP and SBP, SY 2012–2013

	NSLP	SBP
Total reimbursements (millions of dollars)		
Total reimbursements	11,515	3,222
Improper payment amounts (millions of dollars)		
Overpayments	824	257
	(121)	(46)
Underpayments	329	107
	(59)	(26)
Gross improper payments	1,153	364
	(140)	(57)
Net improper payments	495	150
	(130)	(48)
Improper payment rates (percentages)		
Overpayments	7.16	7.97
	(1.04)	(1.40)
Underpayments	2.86	3.32
	(0.52)	(0.78)
Gross improper payments	10.01	11.30
	(1.21)	(1.74)
Net improper payments	4.30	4.65
	(1.12)	(1.45)

Source: APEC-II study, weighted data.

Note: Analysis weights are calibrated based on total national reimbursements reported in the FNS national data file. The estimates in this table include improper payments at all schools participating in the NSLP and/or SBP, excluding those using CEP. Provision 2 schools are included. They are based on all students who applied for free or reduced-price meals (including denied applicants) and directly certified students. Standard errors are in parentheses.

APEC = Access, Participation, Eligibility, and Certification; CEP = Community Eligibility Provision; FNS = Food and Nutrition Service; NSLP = National School Lunch Program; SBP = School Breakfast Program; SY = school year.

Gross improper SBP reimbursements totaled $364 million, or 11.3 percent of the $3.22 billion in cash reimbursements paid for all SBP breakfasts served. The net improper payments rate for SBP was about six percentage points lower, at 5 percent (Figure V.1).

Patterns of improper payments in the NSLP and SBP were similar. Overpayments were considerably larger than were underpayments in both programs: more than seven-tenths of improper payments in both the NSLP and SBP were overpayments. An estimated $824 million in NSLP reimbursements and $257 million in SBP reimbursements were paid out to districts beyond what should have gone to them because of overcertification errors. Conversely, the amount of payments that should have gone to school districts but did not because of undercertification error was $329 million in the NSLP and $107 million in the SBP. The estimated overpayment rate for NSLP was 7 percent, and the underpayment rate was 3 percent; the overpayment and underpayment rates for the SBP were 8 and 3 percent, respectively.

Figure V.1. National estimates of improper payment rates due to certification error in the NSLP and SBP, SY 2012–2013

Source: APEC-II study, weighted data.

Note: The estimates in this figure include improper payments at all schools participating in the NSLP and/or SBP, excluding those using CEP. Provision 2 schools are included. They are based on all students who applied for free or reduced-price meals (including denied applicants) and directly certified students.

APEC = Access, Participation, Eligibility, and Certification; CEP = Community Eligibility Provision; NSLP = National School Lunch Program; SBP = School Breakfast Program; SY = school year.

1.   Improper payments by certification status

Consistent with the pattern of student certification error discussed in Chapter III, improper payment rates were substantially lower for students certified for free meals than for other students. In the NSLP, 6 percent of total reimbursements for students certified for free meals resulted in gross improper payments, whereas this rate was 25 percent for students certified for reduced-price meals, and 31 percent for students not certified for free or reduced-price meals (Figure V.2). In the SBP, the gross improper payment rate was 6 percent for students certified for free meals, 26 percent for students certified for reduced-price meals, and 71 percent for students not certified for free or reduced-price meals (Figure V.2).

In considering the implications of the pattern in improper payment rates by certification status, it is important to keep in mind that reimbursements made for students certified for free meals are substantially greater than those made for other students. Among national NSLP reimbursements, 83 percent were made for students certified for free meals, 10 percent for students certified for reduced-price meals, and about 7 percent for students not certified for free or reduced-price meals; the composition of reimbursements is similar for SBP (Figures V.3 and V.4). As a result, students certified for free meals contribute the majority of both NSLP and SBP national improper payments even though improper payment rates for these students were substantially lower than certification error rates for other students (Figure V.2).[50]

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[50] All improper payments for free meals are overpayments, all improper payments for paid meals are underpayments, and improper payments for reduced-price meals can be either overpayments or underpayments.

Figure V.2. Gross improper payment rates by certification status, SY 2012–2013

Source: APEC-II study, weighted data.

Note: The estimates in this figure include improper payments at all schools participating in the NSLP and/or SBP, except for Provision 2 non-base year schools and those using CEP. Base year Provision 2 schools are included. They are based on all students who applied for free or reduced-price meals (including denied applicants) and directly certified students.

APEC = Access, Participation, Eligibility, and Certification; CEP = Community Eligibility Provision; NSLP = National School Lunch Program; SBP = School Breakfast Program; SY = school year.

Figure V.3. Total NSLP reimbursements by certification status, SY 2012–2013

Source: APEC-II study, weighted data.

Note: The estimates in this figure include improper payments at all schools participating in the NSLP except for Provision 2 non-base year schools and those using CEP. Base year Provision 2 schools are included. They are based on all students who applied for free or reduced-price meals (including denied applicants) and directly certified students.

APEC = Access, Participation, Eligibility, and Certification; CEP = Community Eligibility Provision; NSLP = National School Lunch Program; SY = school year.

Figure V.4. Total SBP reimbursements by certification status, SY 2012–2013
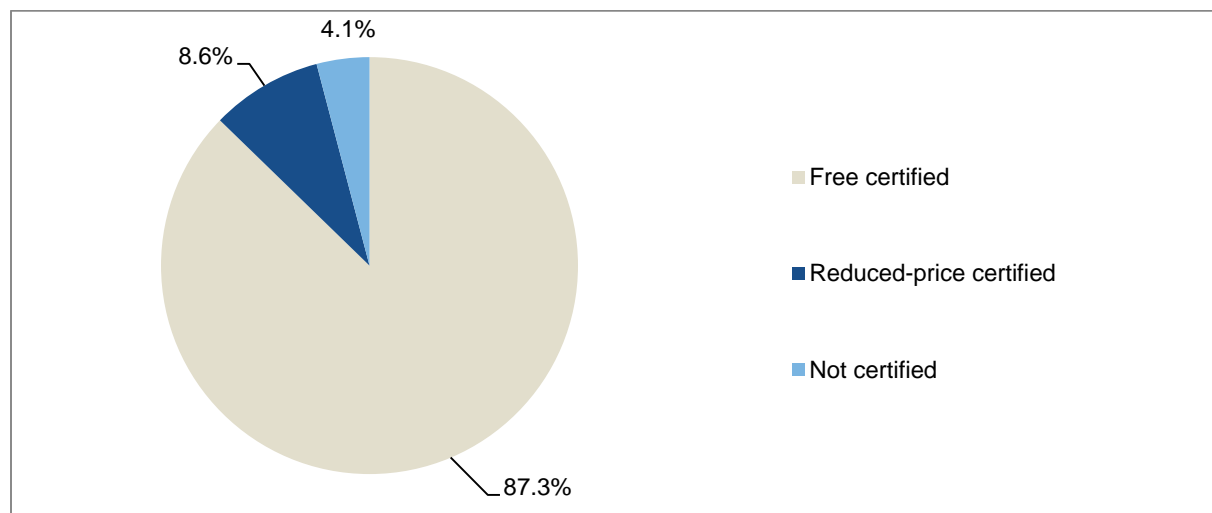
Source: APEC-II study, weighted data.

Note: The estimates in this figure include improper payments at all schools participating in the SBP except for Provision 2 non-base year schools and those using CEP. Base year Provision 2 schools are included. They are based on all students who applied for free or reduced-price meals (including denied applicants) and directly certified students.

APEC = Access, Participation, Eligibility, and Certification; CEP = Community Eligibility Provision; SBP = School Breakfast Program; SY = school year.

2.   Improper payments by application and direct certification status

We examined improper payments separately for students based on their application and direct certification status. We found that improper payments were considerably smaller for students certified for free meals through direct certification or categorical eligibility than for other students (Table V.4 and Table V.5). The gross improper payment rate was 4 percent for students directly certified for free lunch and 3 percent for students certified for free lunch by application based on categorical eligibility. Both of these rates were substantially less than rates for students certified for free meals by application based on income (9 percent; Table V.4), students certified for reduced-price meals (25 percent), and students not certified for free or reduced-price meals (31 percent).[51] For SBP, the gross improper payment rate was 4 percent for directly certified students and 2 percent for students certified for free breakfast by application based on categorical eligibility. The gross improper payment rates were considerably higher for students certified for free meals by application based on income (10 percent; Table V.5), students certified for reduced-price meals (26 percent), and students not certified for free or reduced-price meals (71 percent).

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[51] The improper payment rates for students not certified for free or reduced price meals accounts for reimbursements made for denied applicants and students who did not apply for school meal benefits and were not directly certified. Improper payments for these students are only associated with denied applicants.

Table V.4. National estimates of improper payments due to certification error in the NSLP by direct certification and application certification status, SY 2012–2013

	Certification status				
	Free by direct certification	**Free by application based on categorical eligibility**	**Free by application based on income**	**Reduced-price certified**	**Not certified**
Total reimbursements (millions of dollars)					
Total reimbursements	4,898	669	3,564	1,083	829
Improper payment amounts (millions of dollars)					
Overpayments[a]	170 (92)	20 (8)	330 (41)	219 (35)	25 (5)
Underpayments[a]	11 (2)	0 (0)	5 (2)	51 (6)	229 (56)
Gross improper payments	180 (92)	20 (8)	335 (41)	270 (37)	254 (55)
Net improper payments	159 (92)	19 (8)	325 (41)	167 (34)	-204 (58)
Improper payment rates (percentages)					
Overpayments	3.46 (1.87)	2.95 (1.20)	9.26 (1.16)	20.20 (3.24)	3.05 (0.57)
Underpayments	0.21 (0.04)	0.05 (0.05)	0.15 (0.05)	4.74 (0.56)	27.60 (6.76)
Gross improper payments	3.68 (1.87)	2.99 (1.20)	9.40 (1.16)	24.95 (3.42)	30.65 (6.63)
Net improper payments	3.25 (1.87)	2.90 (1.20)	9.11 (1.16)	15.46 (3.15)	-24.56 (6.94)

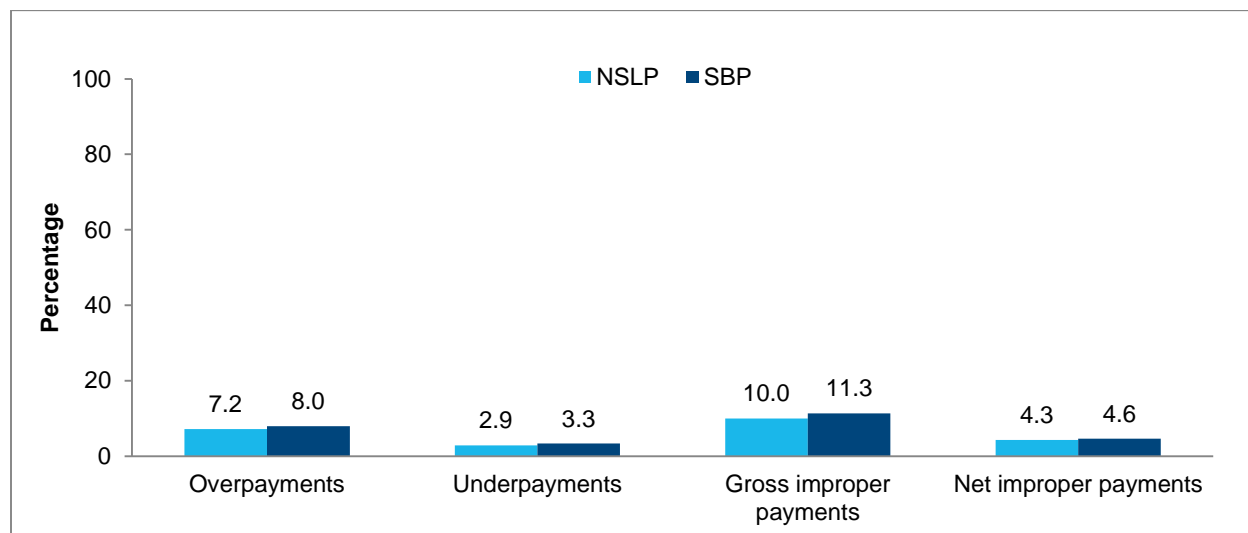Source: APEC-II study, weighted data.

Note: Analysis weights are calibrated based on total national reimbursements reported in the FNS national data file. The estimates in this table include improper payments at all schools participating in the NSLP, except for Provision 2 non-base year schools and those using CEP. Base year Provision 2 schools are included. Therefore, the total reimbursements for NSLP do not match the totals presented in Table V.3. Standard errors are in parentheses.

[a] Because the certification statuses listed in this table represent students' certification statuses at the beginning of SY 2012–2013, underpayments for free-certified students can occur when a student who is certified for free meals and eligible for free meals has a mid-year change in certification status to either reduced-price certified or denied. Similarly, overpayments for denied applicants can occur when a denied applicant who is ineligible for benefits has a mid-year change in certification status to either free or reduced-price certified.

APEC = Access, Participation, Eligibility, and Certification; CEP = Community Eligibility Provision; FNS = Food and Nutrition Service; NSLP = National School Lunch Program; SY = school year.

Consistent with the low improper payment rates for categorically eligible students certified either directly or by application, these students contribute disproportionately little to national improper payments relative to their contribution to national reimbursements. As shown in Figures V.5 and V.6, reimbursements to categorically eligible students certified directly or by application make up more than half of total reimbursements for both NSLP and SBP. However, only about one-fifth of improper payments in both NSLP and SBP are due to categorically eligible students (Figures V.7 and V.8). Thus, about 80 percent of improper payments are related to applications based on income.

Table V.5. National estimates of improper payments due to certification error in the SBP by direct certification and application certification status, SY 2012–2013

	Certification status				
	Free by direct certification	**Free by application based on categorical eligibility**	**Free by application based on income**	**Reduced-price certified**	**Not certified**
Total reimbursements (millions of dollars)					
Total reimbursements	1,383	150	919	243	115
Improper payment amounts (millions of dollars)					
Overpayments[a]	60	3	81	50	8
	(35)	(2)	(14)	(13)	(1)
Underpayments[a]	1	<1	7	14	74
	(<1)	(<1)	(1)	(2)	(24)
Gross improper payments	61	3	87	64	81
	(35)	(2)	(14)	(14)	(24)
Net improper payments	59	3	74	36	-66
	(35)	(2)	(14)	(13)	(25)
Improper payment rates (percentages)					
Overpayments	4.33	2.19	8.77	20.71	6.87
	(2.55)	(1.29)	(1.54)	(5.36)	(1.22)
Underpayments	0.07	0.00	0.74	5.72	64.01
	(0.04)	(0.00)	(0.14)	(0.91)	(21.13)
Gross improper payments	4.40	2.19	9.51	26.43	70.88
	(2.55)	(1.29)	(1.56)	(5.57)	(21.01)
Net improper payments	4.27	2.19	8.04	14.99	-57.14
	(2.56)	(1.29)	(1.54)	(5.30)	(21.32)

Source: APEC-II study, weighted data.

Note: Analysis weights are calibrated based on total national reimbursements reported in the FNS national data file. The estimates in this table include improper payments at all schools participating in the SBP, except for Provision 2 non-base year schools and those using CEP. Base year Provision 2 schools are included. Therefore, the total reimbursements for SBP do not match the totals presented in Table V.3. Standard errors are in parentheses.

[a] Because the certification statuses listed in this table represent students' certification statuses at the beginning of SY 2012–2013, underpayments for free-certified students can occur when a student who is certified for free meals and eligible for free meals has a mid-year change in certification status to either reduced-price certified or denied. Similarly, overpayments for denied applicants can occur when a denied applicant who is ineligible for benefits has a mid-year change in certification status to either free or reduced-price certified.

APEC = Access, Participation, Eligibility, and Certification; CEP = Community Eligibility Provision; FNS = Food and Nutrition Service; SBP = School Breakfast Program; SY = school year.
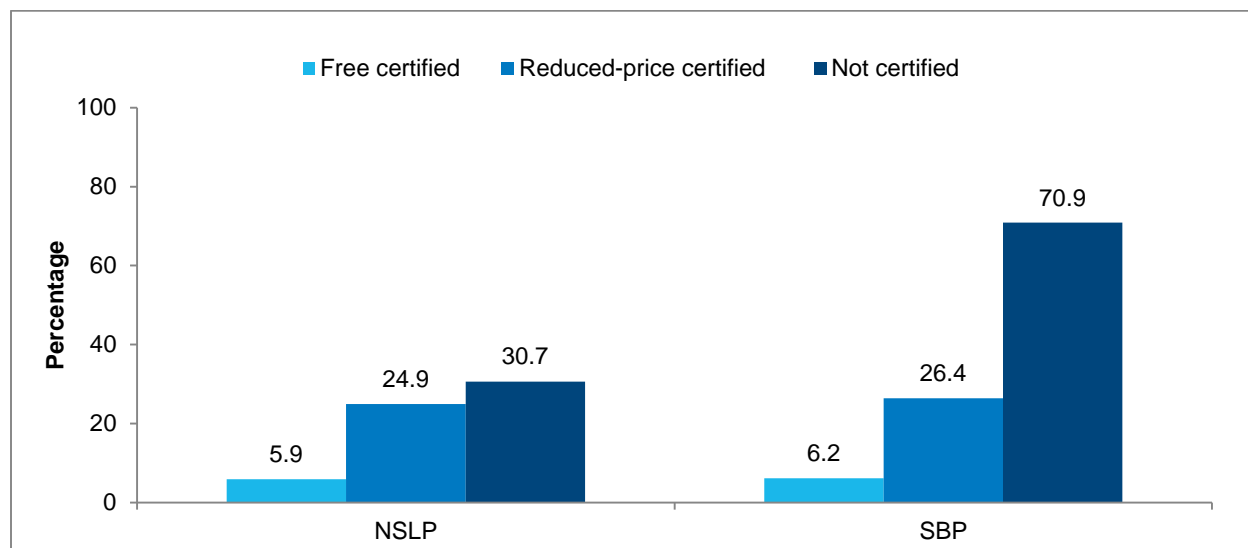
Figure V.5. Distribution of NSLP reimbursements by direct certification and application certification status, SY 2012–2013

Source: APEC-II study, weighted data.

Note: The estimates in this figure include improper payments at all schools participating in the SBP, except for Provision 2 non-base year schools and those using CEP. Base year Provision 2 schools are included.

APEC = Access, Participation, Eligibility, and Certification; CEP = Community Eligibility Provision; SBP = School Breakfast Program; SY = school year.

Figure V.6. Distribution of SBP reimbursements by direct certification and application certification status, SY 2012–2013
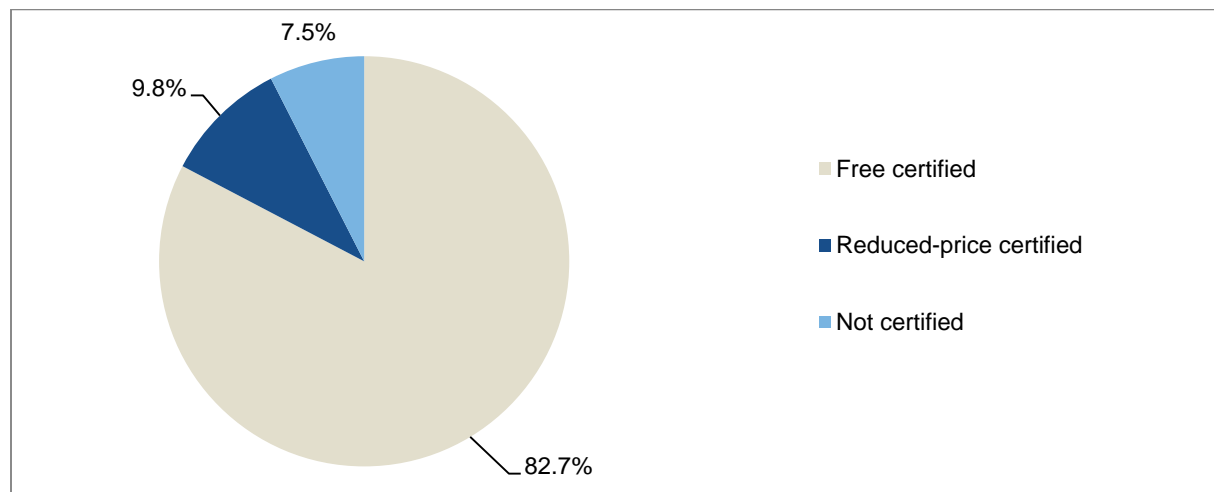

Source: APEC-II study, weighted data.

Note: The estimates in this figure include improper payments at all schools participating in the SBP, except for Provision 2 non-base year schools and those using CEP. Base year Provision 2 schools are included.

APEC = Access, Participation, Eligibility, and Certification; CEP = Community Eligibility Provision; SBP = School Breakfast Program; SY = school year.

Figure V.7. Distribution of improper payments due to certification error in the NSLP by direct certification and application certification status, SY 2012–2013

Source: APEC-II study, weighted data.

Note: The estimates in this figure include improper payments at all schools participating in the SBP, except for Provision 2 non-base year schools and those using CEP. Base year Provision 2 schools are included.

APEC = Access, Participation, Eligibility, and Certification; CEP = Community Eligibility Provision; SBP = School Breakfast Program; SY = school year.

Figure V.8. Distribution of improper payments due to certification error in the SBP by direct certification and application certification status, SY 2012–2013

Source: APEC-II study, weighted data.

Note: The estimates in this figure include improper payments at all schools participating in the SBP, except for Provision 2 non-base year schools and those using CEP. Base year Provision 2 schools are included.

APEC = Access, Participation, Eligibility, and Certification; CEP = Community Eligibility Provision; SBP = School Breakfast Program; SY = school year.

3. Improper payments by certification and eligibility status

In Chapter III, we determined certification error by comparing each student's certification and eligibility statuses; certification error occurs when the certification and eligibility statuses do not match. It is useful to examine how different improper combinations of certification and eligibility statuses translated into the composition of national improper payments. Tables V.6 and V.7 show the amounts and percentages of improper payments for different combinations of student certification status and eligibility status. These tables reflect that some types of error are much more costly per meal than others. For example, meals served to students certified for free meals but not eligible for free or reduced-price meals have a substantially higher per-meal improper payment amount than meals served to students certified for free meals but eligible for reduced-price meals (see Tables V.1 and V.2). This difference in per-meal cost contributes toward the finding that improper payments for students certified for free meals but not eligible for free or reduced-price meals are much greater than those for students certified for free meals but eligible for reduced-price meals (Tables V.6 and V.7) even though these two groups are of similar size (see Table III.2 in Chapter III). Thus, most improper payments made to students certified for free meals were made to those not eligible for free or reduced-price meals rather than those eligible for reduced-price meals (Figures V.9 and V.10). Most improper payments made to students certified for reduced-price meals were to those not eligible for free or reduced-price meals rather than those eligible for free meals. Most improper payments made to denied applicants were to those eligible for free meals rather than those eligible for reduced-price meals.

Table V.6. National estimates of improper payments due to certification error in the NSLP, SY 2012–2013

	Certification status			
Eligibility status[a]	**Free**	**Reduced-price**	**Denied applicants**	**All**[b]
Improper payment amounts (millions of dollars)				
Free	0	51	195	246
Reduced-price	70	0	50	120
Not eligible	485	209	0	694
Total	554	260	245	1,060
Percent of improper payments (percentages)				
Free	0.00	19.59	79.52	23.22
Reduced-price	12.60	0.00	20.48	11.33
Not eligible	87.40	80.41	0.00	65.45
Total	100.00	100.00	100.00	100.00

Source: APEC-II study, weighted data.

Note: Cells in this table have been color-coded to indicate correct certification (blue), overcertification (red), or undercertification (green). Estimates in this table include improper payments at all schools participating in the NSLP and/or SBP, excluding those using the CEP and Provision 2 non-base year schools. Base year Provision 2 schools are included.

[a] Estimated eligibility based on information from the household survey.
[b] Refers to certified students, denied applicants, and nonapplicants.

APEC = Access, Participation, Eligibility, and Certification; CEP = Community Eligibility Provision; NSLP = National School Lunch Program; SY = school year.

Table V.7. National estimates of improper payments due to certification error in the SBP, SY 2012–2013

Eligibility status[a]	Certification status			All[b]
	Free	Reduced-price	Denied applicants	
Improper payment amounts (millions of dollars)				
Free	0	16	63	79
Reduced-price	24	0	16	40
Not eligible	130	48	0	178
Total	154	64	79	297
Percent of improper payments (percentages)				
Free	0.00	24.86	79.33	26.51
Reduced-price	15.60	0.00	20.67	13.57
Not eligible	84.40	75.14	0.00	59.92
Total	100.00	100.00	100.00	100.00

Source: APEC-II study, weighted data.

Note: Cells in this table have been color-coded to indicate correct certification (blue), overcertification (red), or undercertification (green). Estimates in this table include improper payments at all schools participating in the NSLP and/or SBP, excluding those using the CEP and Provision 2 non-base year schools. Base year Provision 2 schools are included.

[a] Estimated eligibility based on information from the household survey.

[b] Refers to certified students, denied applicants, and nonapplicants.

APEC = Access, Participation, Eligibility, and Certification; CEP = Community Eligibility Provision; SBP = School Breakfast Program; SY = school year.

Figure V.9. Distribution of improper payments due to certification error in the NSLP by type of error, SY 2012–2013
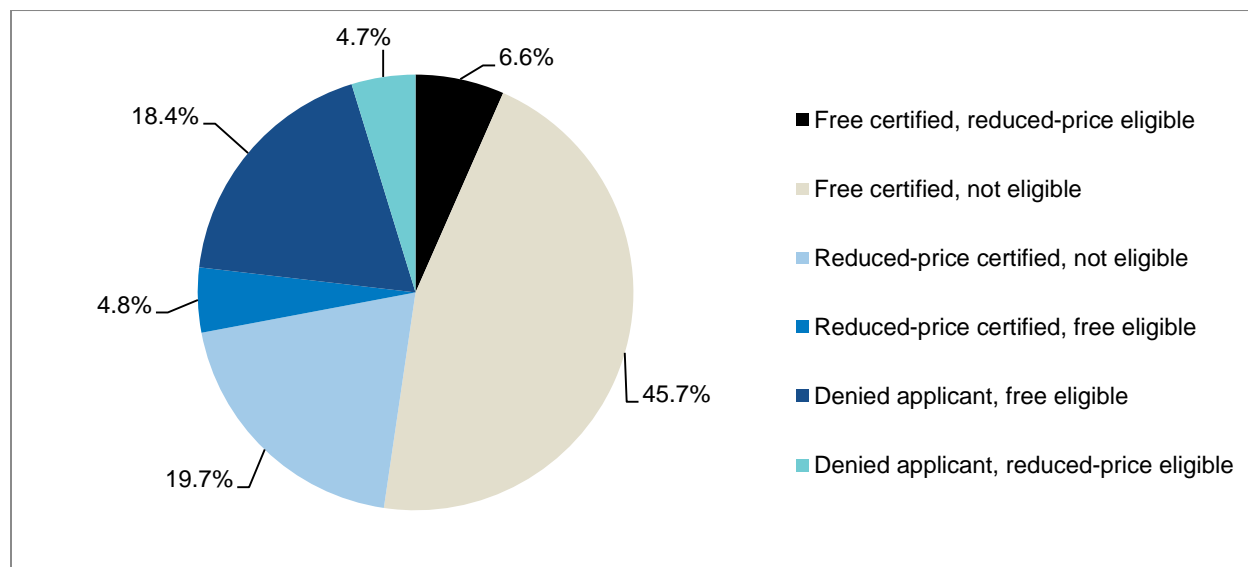
Source: APEC-II study, weighted data.

Note: Estimates in this figure include improper payments at all schools participating in the NSLP, excluding those using the CEP and Provision 2 non-base year schools. Base year Provision 2 schools are included.

APEC = Access, Participation, Eligibility, and Certification; CEP = Community Eligibility Provision; NSLP = National School Lunch Program; SY = school year.

Figure V.10. Distribution of improper payments due to certification error in the SBP by type of error, SY 2012–2013
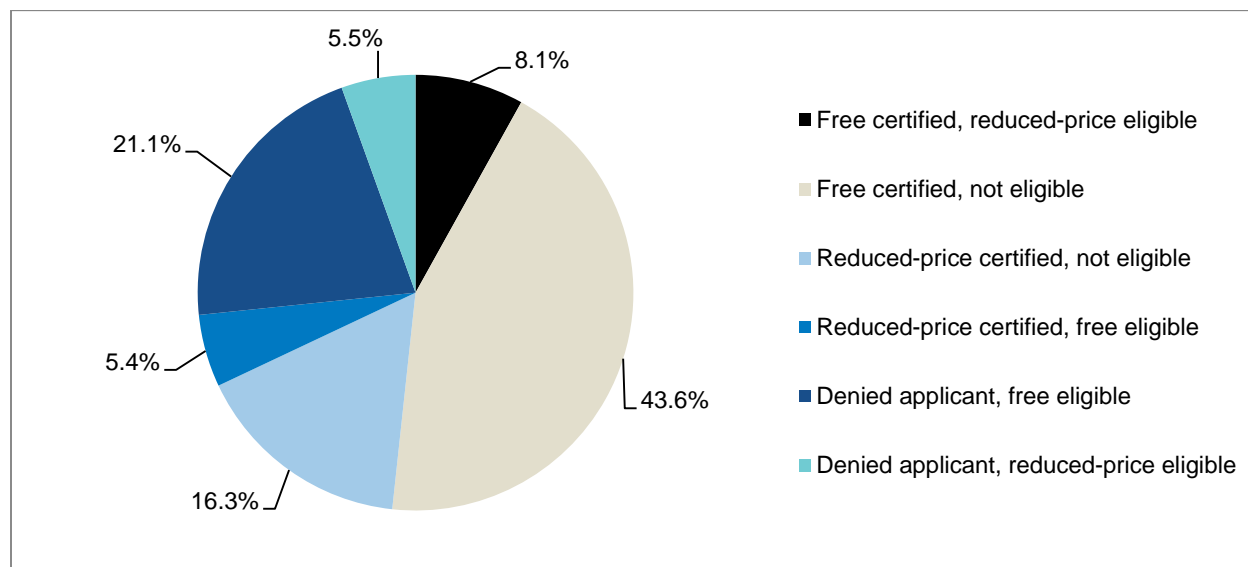
Source: APEC-II study, weighted data.

Note: Estimates in this figure include improper payments at all schools participating in the SBP, excluding those using the CEP and Provision 2 non-base year schools. Base year Provision 2 schools are included.

APEC = Access, Participation, Eligibility, and Certification CEP = Community Eligibility Provision; SBP = School Breakfast Program; SY = school year.

4.   Improper payments by source of error

This section examines the extent to which overpayments and underpayments are the result of administrative or household reporting errors, as well as the specific types of administrative and household reporting errors that led to improper payments.

More than half of all improper payments due to certification error in the NSLP resulted from households misreporting information on applications for free or reduced-price meals (Table V.8). Improper payments due to household reporting error in the NSLP resulted in a total of $673 million in improper payments. This figure represented 58 percent of the $1.15 billion total NSLP reimbursements in error. Administrative error accounted for $365 million in improper payments in the NSLP, or 32 percent of improper reimbursements. Another $83 million of improper payments in the NSLP (7 percent of total NSLP improper payments) involved students with both reporting and administrative errors. For the SBP, improper payments due to certification error were also more likely to be caused by household reporting error than administrative error. Improper SBP reimbursements due to reporting error totaled $202 million, or 56 percent of the $364 million reimbursements in the SBP that were in error. Administrative error accounted for $123 million of the improper payments in the SBP (34 percent of total SBP improper payments), and $24 million of improper payments in the SBP (7 percent) were from students with both reporting and administrative errors.

Table V.8. Improper payments due to certification error in the NSLP and SBP, SY 2012–2013, by type of certification error

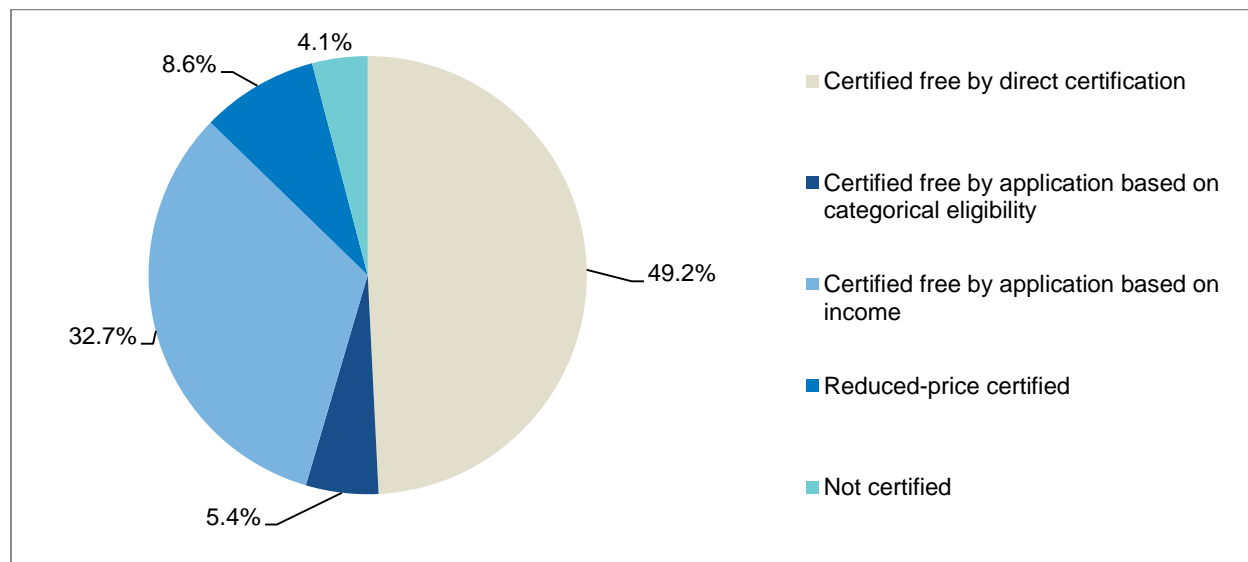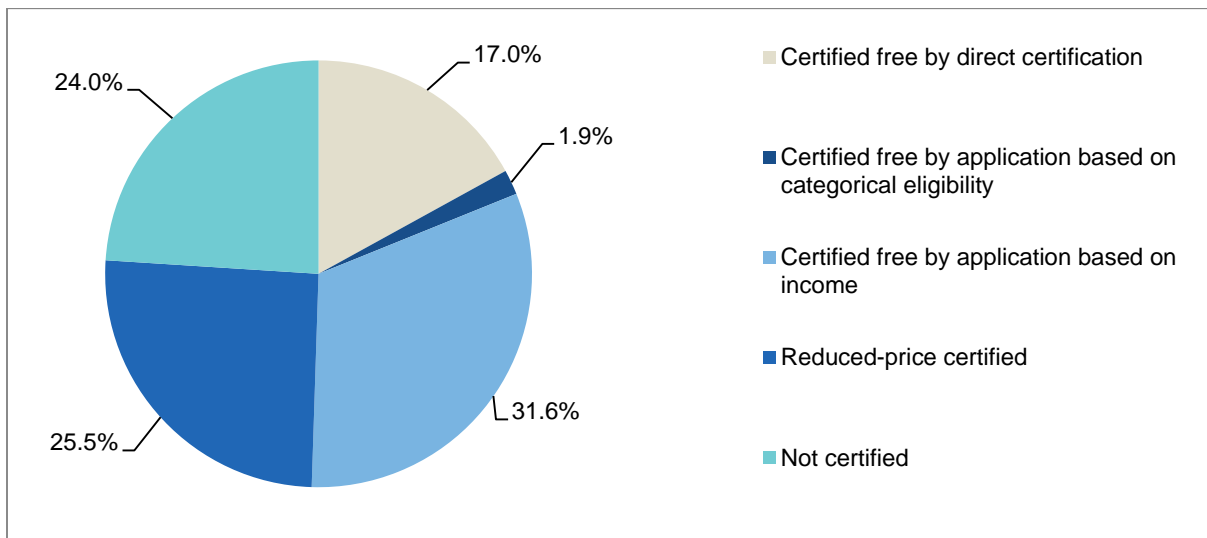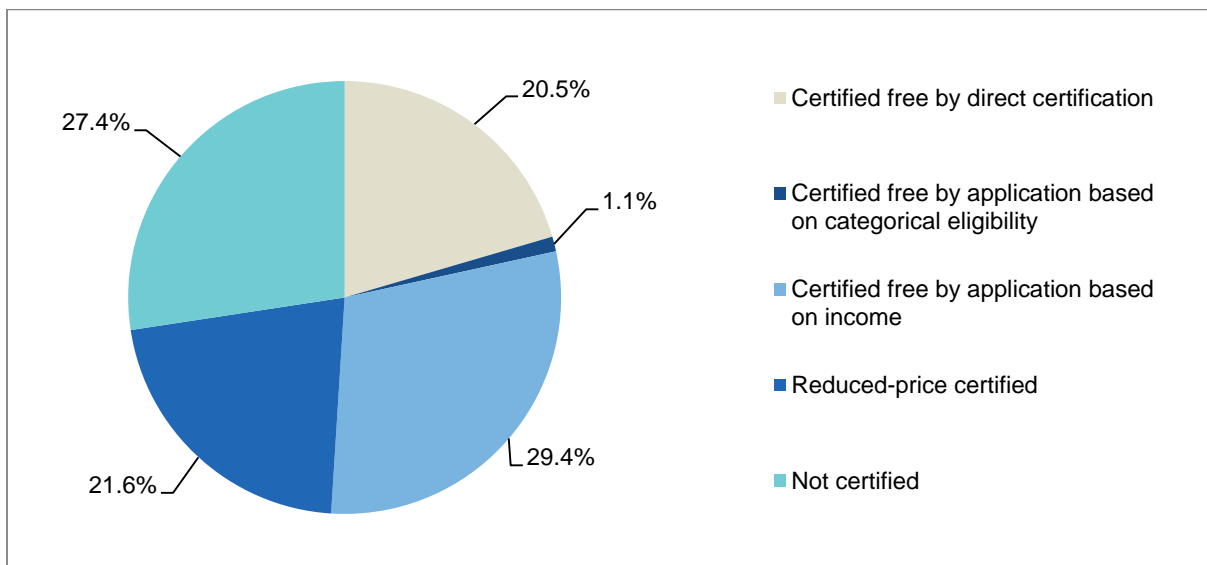|	NSLP		SBP	
	Dollars (millions)	Percentage of improper payments	Dollars (millions)	Percentage of improper payments
Overpayments				
Administrative error only	319	38.69	111	43.11
Reporting error only	424	51.47	122	47.63
Both administrative and reporting error	57	6.91	15	5.78
Other[a]	24	2.92	9	3.48
Total overpayments	824	100.00	257	100.00
Underpayments				
Administrative error only	46	14.13	12	11.44
Reporting error only	249	75.57	80	74.39
Both administrative and reporting error	26	8.00	9	8.22
Other[a]	8	2.30	6	5.95
Total underpayments	329	100.00	107	100.00
Total improper payments				
Administrative error only	365	31.69	123	33.79
Reporting error only	673	58.35	202	55.50
Both administrative and reporting error	83	7.22	24	6.50
Other[a]	32	2.74	15	4.21
Total improper payments	1,153	100.00	364	100.00

Source: APEC-II study, weighted data.

Note: The estimates in this table include improper payments at all schools participating in the NSLP and/or SBP, excluding those using CEP. Provision 2 schools are included. The estimates are based on all students who applied for free or reduced-price meals (including denied applicants) and directly certified students.

[a] Includes students with no initial error who had changes in eligibility or certification during the year.

APEC = Access, Participation, Eligibility, and Certification; CEP = Community Eligibility Provision; NSLP = National School Lunch Program; SBP = School Breakfast Program; SY = school year.

For both the NSLP and SBP, a greater percentage of improper payments due to administrative error resulted in overpayments compared to improper payments due to reporting error. Administrative error resulted in $319 million in overpayments compared with just $46 million in underpayments for the NSLP (when there was just a single source of error). Thus, administrative error resulted in overpayments almost seven times as often as it did in underpayments. However, reporting error resulted in overpayments rather than underpayments a comparably smaller amount of the time, with overpayments accounting for $424 million of all NSLP improper payments due to reporting error and underpayments accounting for the remaining $249 million in improper payments. Similar patterns held true for the SBP.

In addition to examining improper payments due to administrative and household reporting errors more broadly, we examined improper payments due to specific types of errors. A large majority of improper payments due to administrative error were the result of missing application or direct certification documentation (Table V.9).[52] A total of $261 million in improper payments

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[52] Students are considered to be eligible for benefits based on the information on household circumstances provided in the household survey, even if the applicant did not properly complete necessary NSLP/SBP paperwork—specifically, if the applicant either (1) submitted an incomplete application or (2) failed to respond if selected for verification. For estimates of improper payments under the alternative assumption that an incomplete application automatically results in ineligibility, please see Appendix F.

in the NSLP resulted from missing application or direct certification documentation, representing 25 percent of the $1.06 billion total NSLP improper payments for schools not operating under special provisions, and 78 percent of the $336 million NSLP improper payments due to administrative error only.[53] Similarly in the SBP, $88 million in improper payments resulted from missing application or direct certification documentation, representing 30 percent of the $297 million total SBP improper payments and 85 percent of the $103 million SBP improper payments due to administrative error only. Combined, all other types of administrative error make up less than 7 percent of NSLP and SBP improper payments.

Table V.9. Improper payments due to certification error in the NSLP and SBP, SY 2012–2013, by certification error source

	NSLP		SBP	
	Dollars (millions)	Percentage of improper payments	Dollars (millions)	Percentage of improper payments
Total improper payments	1,060	100.00	297	100.00
Administrative error only	336	31.69	103	34.65
Application status transmittal error	22	2.04	8	2.57
Missing application or direct certification documentation	261	24.61	88	29.55
Missing application	81	7.62	27	9.08
Missing direct certification documentation	180	16.99	61	20.47
Multiple administrative errors affecting meal price status[a]	36	3.41	1	0.45
Other administrative error	17	1.62	6	2.08
Reporting error only	631	59.53	166	55.74
Total household income only	257	24.23	63	21.35
One data source indicates zero income	35	3.29	12	4.14
Number of household members with income	31	2.95	9	2.98
Number of types of income	68	6.42	19	6.40
Number of household members with income and number of types of income	61	5.78	12	4.01
Individual income amounts	61	5.80	11	3.81
Both household size and income	350	33.01	98	32.87
Categorical eligibility[b]	22	2.03	3	1.13
Other reporting error	3	0.25	1	0.39
Both administrative and reporting error	66	6.25	16	5.43
Other[c]	27	2.53	12	4.17

Source: APEC-II study, weighted data.

Note: The estimates in this table include improper payments at all schools participating in the NSLP and/or SBP, except for Provision 2 non-base year schools and those using CEP. Provision 2 schools are included. The estimates are based on all students who applied for free or reduced-price meals (including denied applicants) and directly certified students.

[a] Sources of administrative error reported in this table are mutually exclusive. Cases with multiple errors are not shown as having other sources of error.

[b] A categorical eligibility reporting error means the application indicated that the student or someone else in the household received public assistance (SNAP/TANF/FDPIR) when according to the household survey, it did not, or vice versa.

[c] Includes students with no initial error who had changes in eligibility or certification during the year.

APEC = Access, Participation, Eligibility, and Certification; CEP = Community Eligibility Provision; NSLP = National School Lunch Program; SBP = School Breakfast Program; SY = school year.

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[53] Schools operating under Provisions 2 or 3 are excluded from the analysis of certification error sources.

Almost all of the improper payments due to reporting error were the result of errors in reporting household income. A total of $257 million in improper payments in the NSLP resulted from household income misreporting only and another $350 million in improper payments resulted from both household income and size misreporting in the NSLP. Together, this represented 57 percent of the $1.06 billion total NSLP improper payments for schools not operating under special provisions and 96 percent of the $631 million NSLP improper payments due to reporting error. Similarly in the SBP, $63 million in improper payments in the SBP resulted from household income misreporting only and another $98 million in improper payments resulted from both household income and size misreporting in the SBP. Together these totals represented 54 percent of the $297 million total SBP reimbursements made in error and 97 percent of the $166 million SBP improper payments due to reporting error.

C. Comparison to findings on improper payments due to certification error from APEC-I

Figures V.11 and V.12 show improper payment rate estimates for APEC-I and APEC-II. For the NSLP, the gross improper payment rate increased by less than a percentage point from 9.4 percent in SY 2005–2006 to 10.0 percent in SY 2012–2013 (Figure V.11). NSLP overpayments increased just slightly by about 0.1 percentage points from 7.1 percent to 7.2 percent, whereas underpayments increased by about 0.6 percentage points from 2.3 percent to 2.9 percent. None of these changes were statistically significant. For the SBP, the gross improper payment rate increased by about 2.1 percentage points from 9.2 percent in SY 2005–2006 to 11.3 percent in SY 2012–2013 (Figure V.12). The overpayment rate for the SBP increased by less than a percentage point from 7.1 percent to 8.0 percent, and the underpayment rate increased by about 1.2 percentage points from 2.1 percent to 3.3 percent. Although all three SBP rate increases were larger than those in the NSLP, none of the changes were statistically significant.

Figure V.11. Improper overpayments and underpayments due to certification error in the NSLP for SY 2005–2006 and SY 2012–2013
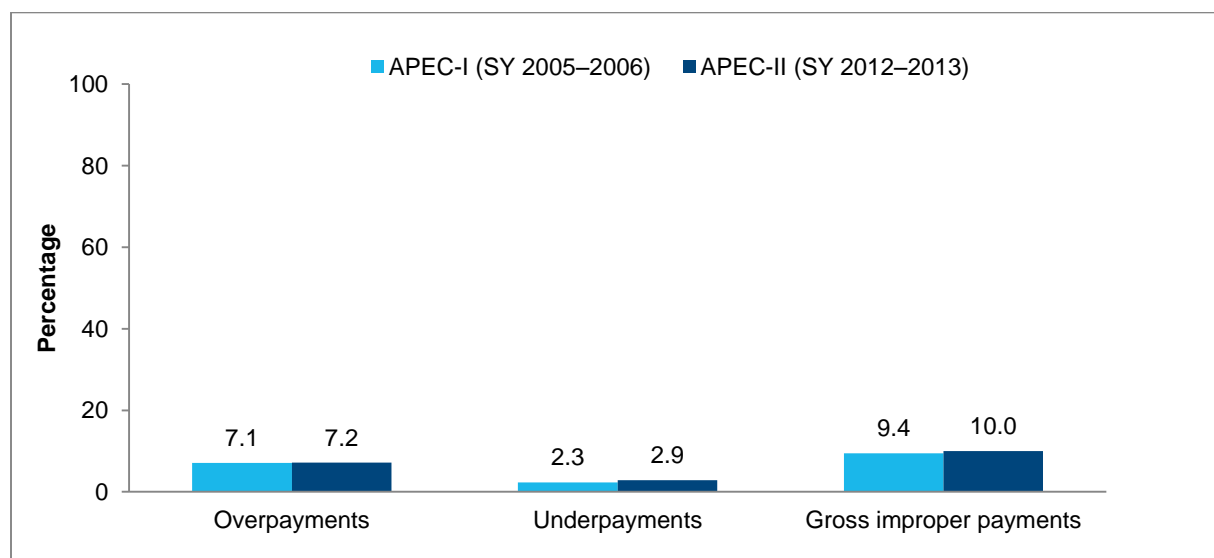
Source: APEC-I and APEC-II studies, weighted data.

APEC = Access, Participation, Eligibility, and Certification; NSLP = National School Lunch Program; SY = school year.

Figure V.12. Improper overpayments and underpayments due to certification error in the SBP for SY 2005–2006 and SY 2012–2013
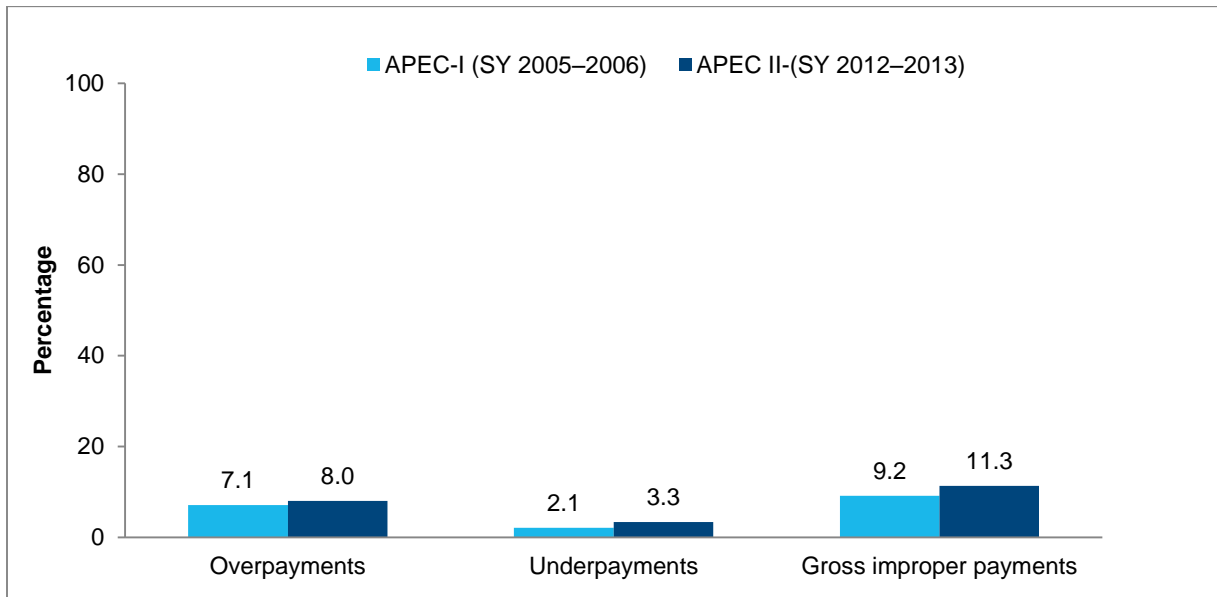
Source: APEC-I and APEC-II studies, weighted data.

APEC = Access, Participation, Eligibility, and Certification; SBP = School Breakfast Program; SY = school year.

VI. NATIONAL ESTIMATES OF IMPROPER PAYMENTS DUE TO CERTIFICATION ERROR IN SCHOOLS USING COMMUNITY ELIGIBILITY PROVISION

The Community Eligibility Provision was added through the Healthy, Hunger-Free Kids Act of 2010 as an alternative to household applications for free and reduced-price meals in high-poverty School Food Authorities and schools. Schools participating in CEP are reimbursed based on the number of meals served to all students and the percentage of students in their CEP group identified as having been approved for free meals with a method that does not require verification during a reference year, typically the year before the first year of participation. For schools to be eligible, a minimum of 40 percent of their enrolled students must be directly certified or receiving free meal benefits without an application (measured reflective of April 1 before the first year of participation). The CEP can be elected by an individual school, by a set of schools within an SFA, or by the entire SFA. The schools within an SFA that elect CEP are referred to as a CEP group, and the characteristics of this group (number of enrolled students, number of directly certified students, and number of students who are certified eligible for free meals without having to submit an application) determine the meal reimbursement rates.

Under CEP, participating schools must offer both breakfast and lunch and provide students meals at no charge. Program meals meeting regulatory standards are reimbursed at either the free or paid rate, with the free claiming percentage equal to the percentage of enrolled students who are "identified students" (those directly certified or approved for free meals with a method that does not require verification) times a multiplier (currently 1.6). CEP schools do not accept applications but continue recording the number of identified students. CEP schools can use their claiming percentages for up to four years, but they may choose to update them sooner if the proportion of identified students increases. The provision was first available in SY 2011–2012 and is being phased in over four years. In SY 2012–2013, CEP was available in seven States (the District of Columbia, Illinois, Kentucky, Michigan, New York, Ohio, and West Virginia), five of which are included in this analysis. Across the seven States, 419 SFAs chose to participate in CEP (Logan et al. 2014). The provision is available to all States in SY 2014–2015.

This chapter presents estimates of improper payments for the CEP groups within SFAs participating in CEP. We begin by providing more details about how reimbursements are calculated under CEP rules. We then describe our methods for estimating improper payments and the data source used in implementing these methods. Finally, we present findings from the analysis and discuss the interpretation of the findings.

A. Reimbursements under CEP

As noted earlier, the key determinants of reimbursements for schools participating in CEP are the number of meals served to all students and the percentage of students in their CEP group identified as having been approved for free meals with a method that does not require verification during a reference year. A large majority of these identified students were directly certified based on receipt of SNAP or TANF benefits. Other students can be identified because they fall into one of the following categories:

- Foster children certified through means other than application

- On a homeless liaison list

- Participants in Head Start

- Participants in pre-K Even Start

- Migrant youth

- Runaways

- Nonapplicants approved by local officials

- Directly certified through FDPIR

- Directly certified through Medicaid (in some States and school districts)

- Certified for free meals based on a letter provided by the household from the SNAP agency (but not categorically eligible based on a case number reported on an application)

Districts are required to identify students based on SNAP participation, but identifying students from the remaining programs is optional.[54]

CEP groups do not claim reimbursements based on the certification of individual students. Instead, CEP groups claim reimbursements during the four-year CEP cycle using two claiming percentages that are applied to total reimbursable meals separately for the NSLP and the SBP: (1) a free claiming percentage and (2) a paid claiming percentage. The FCP and PCP are calculated from the percentage of enrolled students in the CEP group who were identified reflective of April in an earlier reference year. This rate of direct certification is called the identified student percentage. The FCP is equal to 1.6 times the ISP, and the PCP is equal to the residual percentage. The FCP cannot exceed 100 percent.

The key factors in calculating reimbursements for CEP schools include the following values:

- **Identified student percentage (ISP).** The number of identified students divided by the number of students enrolled with access to the NSLP and SBP, with both numbers determined as of April 1 of the reference school year, expressed as a percentage.

- **Free claiming percentage (FCP).** This value is equal to 1.6 times ISP, with a maximum of 100 percent. Thus, all meals are claimed as free if the ISP is at least 62.5 percent.

- **Paid claiming percentage (PCP).** This value is equal to 100 - FCP.

- **Total lunches served (Meals$_{NSLP}$).** The total number of reimbursable lunches served to all students during the school year.

- **Total breakfasts served (Meals$_{SBP}$).** The total number of reimbursable breakfasts served to all students during the school year.

- **Reimbursement amount for free meals (Amt_Fr).** In the contiguous States, this amount ranges from $2.86 to $3.09 per lunch and $1.55 to $1.85 per breakfast in SY 2012–2013,

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[54] For more details, see Memo SP 12-2012, issued to Regional and State Directors by the Food and Nutrition Service on February 9, 2012.

depending on the amount of need in the community and certification of compliance with the new meal patterns.

- **Reimbursement amount for paid meals (Amt_Pd).** In the contiguous States, this amount ranges from \$0.27 to \$0.41 per lunch and \$0.27 to \$1.55 per breakfast in SY 2012–2013, depending on the amount of need in the community and certification of compliance with the new meal patterns.

The NSLP and SBP reimbursement calculations can be represented as

(1) $NSLPReim = \text{Meals}_{NSLP} * \left(\text{Amt\_Fr}_{NSLP} * \frac{FCP}{100} + \text{Amt\_Pd}_{NSLP} * \frac{PCP}{100}\right)$

(2) $SBPReim = \text{Meals}_{SBP} * \left(\text{Amt}_{Fr_{SBP}} * \frac{FCP}{100} + \text{Amt}_{Pd_{SBP}} * \frac{PCP}{100}\right).$

B. Methods for estimating improper payments for schools using CEP

The large differences between CEP and non-CEP schools in how reimbursements are calculated mean that improper payments must be conceptualized differently for CEP schools. The improper payment analysis for schools not using CEP was driven by the accuracy of the certification status of individual students. However, for schools using CEP, reimbursements are based on the claiming percentages of the CEP group as a whole (and all students receive free meals regardless of the claiming percentages). Therefore, improper payments occur only if a CEP group's claiming percentage for free or paid meals (FCP or PCP) is incorrect.

Our approach to estimating certification error in CEP schools has two steps: (1) assessing the accuracy of the ISP and the resulting FCP and PCP and (2) comparing observed reimbursements (based on the ISP used by the CEP school) with corrected reimbursements (based on the estimated actual ISP calculated by the analysis team). We describe the mechanics of calculating the estimated actual ISP in the next section.

In assessing the accuracy of the ISP, our primary focus was on the degree to which the ISP is correct, not the process that the school used to generate its ISP. Therefore, we do not consider it an error if the total number of students identified in the reference year is correct, regardless of whether individual students are correctly identified. For example, a CEP group may incorrectly identify one student and fail to identify another student. The two errors in this scenario cancel out because the CEP group's ISP is correct, as is the dollar amount of reimbursements (all students receive school meals at no cost regardless of the ISP). Similarly, we do not consider it an error if a student is correctly identified but for the incorrect reason. For example, we did not count an error if (1) the student was on a homeless liaison list, (2) the student was not on a SNAP list, and (3) the student was identified by the district based on SNAP participation. However, in our primary estimates, we considered whether students should have been identified based on any eligible source, regardless of which sources the school used to generate the ISP.

1. Calculating the estimated actual ISP

The key determinant of CEP reimbursements is the ISP in the reference year. Therefore, the key determinant of improper payments in CEP groups is the difference between the ISP used by the group (the observed ISP) and the ISP if all students had been given the proper identification status (the estimated actual ISP). We calculate the estimated actual ISP based on estimates of the

number of students in each CEP group who were correctly identified in the reference year and the number of students who should have been identified in the reference year but were not. This calculation, in its simplest form, can be represented as the following:

(3) $ISP_{est} = \left(\frac{ID_{cor} + NotID_{incor}}{Students}\right) * 100,$

where ISP_{est} represents the estimated actual ISP, ID_{cor} represents identified students whose identification status is correct, $NotID_{incor}$ represents students who were not identified and whose identification status is not correct (that is, who should have been identified), and *Students* represents all students with access to the school meals program.

Recognizing that students who were not identified (correctly or incorrectly) in the reference year include both students who were certified for school meal benefits by application and students who were not certified for free meals, Equation (3) can be rewritten:

(4) $ISP_{est} = \left(\frac{ID_{cor} + App_{incor} + Noncert_{incor}}{Students}\right) * 100$

$= \left(\frac{ID_{cor}}{Students} + \frac{App_{incor}}{Students} + \frac{Noncert_{incor}}{Students}\right) * 100$

$= \left(\frac{ID_{cor}}{ID_{all}}\frac{ID_{all}}{Students} + \frac{App_{incor}}{App_{all}}\frac{App_{all}}{Students} + \frac{Noncert_{incor}}{NonCert_{all}}\frac{Noncert_{all}}{Students}\right) * 100.$

The key terms to be estimated in Equation (4) are the proportions of students who should have been identified within each of the three types of students, which are represented by

$$\frac{ID_{cor}}{ID_{all}}, \frac{App_{incor}}{App_{all}}, \text{ and } \frac{Noncert_{incor}}{NonCert_{all}}.$$

We estimate these terms based on three samples of students drawn from each CEP school for their reference year: (1) identified students, (2) students who were not identified but who were certified for school meal benefits based on an application, and (3) students who were not identified or certified for school meal benefits. This sampling strategy was based on our expectation that the percentage of students that should have been identified in the reference year will differ across these three groups. In particular, most students who were identified were likely identified correctly. We also expected that more students who were certified by application should have been certified than students who were not certified because students certified by application include those who were categorically eligible for free meals.

For each of these samples, we use available sources of program data to verify which students should have been identified (we detail this process below). We then use the proportion of students in each sample who were matched to a valid program data source (that is, who should have been identified) to calculate the estimated actual ISP. Specifically, we calculate

(5) $ISP_{est} = \left(Match^{ID}\frac{ID_{all}}{Students} + Match^{App}\frac{App_{all}}{Students} + Match^{Noncert}\frac{Noncert_{all}}{Students}\right) * 100,$

where $Match^{ID}$ corresponds to the proportion of students from the identified sample who were matched, $Match^{App}$ corresponds to the proportion of sampled students certified by application

who were matched, and $Match^{Noncert}$ corresponds to the proportion of students not certified for school meal benefits who were matched.

The first term in Equation (5) captures overidentification, that is, whether students who were identified were identified correctly. If there is no overidentification, all identified students will be matched, and $Match^{ID}$ will be equal to one.

The second and third terms in Equation (5) capture underidentification, that is, whether the students who were not identified should have been. If there is no underidentification, none of these students will be matched, and the match rates will be equal to zero.

It is important to note that under CEP, overidentification and underidentification can perfectly offset one another. In other words, as mentioned earlier, this calculation will not lead to an error if the number of students identified is correct, regardless of whether individual students are correctly identified. As a result, a CEP group can have no error, it can have overpayments, or it can have underpayments, but it cannot have both overpayments and underpayments.

Because ISPs are calculated for CEP groups, the most appropriate unit for the calculations described above would be the CEP group. However, schools were the sampling unit for the APEC-II study, not CEP groups. Therefore, in some cases, the study sample does not include all schools in a CEP group. When the study sample includes multiple schools from the same CEP group, we pool student samples across the relevant schools to calculate the three match rates that are inputs to the estimated actual ISP. Because of the incomplete representation of schools in some CEP groups, this analysis makes the implicit assumption that the match rates ($Match^{ID}$, $Match^{App}$, and $Match^{Noncert}$) for student types in sampled schools within a CEP group are representative of match rates for student types at all schools in the CEP group. Importantly, this assumption does not require that the proportion of identified students is the same in all schools in the group (it is almost certainly not). Rather, the analysis assumes that the degree to which the identification rate is correct for the three types of sample students is the same for the sampled school as for other schools in the CEP group. This assumption is likely to be valid because most students are identified through direct certification, which is conducted on the State and district levels; therefore, each of the match rates is likely to apply to all district students of a certain type. For example, although there are likely differences across district schools in the proportion of students identified, it seems unlikely that the State or district direct certification process would lead to systematic school-level differences in the proportion of students identified *correctly*. Similar arguments can be made for the other two match rates.

Incomplete representation of schools in some CEP groups is also relevant to the proportions of CEP group students in each of the three groups ($\frac{ID_{all}}{Students}$, $\frac{App_{all}}{Students}$, and $\frac{Noncert_{all}}{Students}$). After investigating several potential sources for these proportions, we determined that the most consistent estimates would be the following:

(6) $\quad \frac{ID_{all}}{Students} = ISP_{rep}$

(7) $\quad \frac{App_{all}}{Students} = \left(1 - ISP_{rep}\right) * \frac{App_{sf}}{App_{sf} + Noncert_{sf}}$

(8) $\quad \frac{Noncert_{all}}{Students} = \left(1 - ISP_{rep}\right) * \frac{Noncert_{sf}}{App_{sf} + Noncert_{sf}}$,

where ISP_{rep} is the ISP used by the CEP group for reimbursement, App_{sf} is the number of students certified by application in the sampled schools from the CEP group, and $Noncert_{sf}$ is the number of students not certified for school meal benefits in the sampled schools from the CEP group. Although ISP_{rep} and $(1 - ISP_{rep})$ pertain to the full set of schools in the CEP group, the other terms apply to only the sampled schools within the CEP group. Thus, this measure implicitly assumes that the sampled schools have the same proportion of students certified by application and not certified for school meal benefits as the schools in the CEP group as a whole. Although this assumption is likely to be true on average because of random sampling of schools, in some cases, the proportions from the sampled schools differ somewhat from the CEP group as a whole.

The final estimated actual ISP calculated for each CEP group within each SFA can be represented as

(9) $\quad ISP_{\text{est}} \quad = \quad (Match^{ID} * ISP_{rep}$

$$+ \, Match^{App}\left(1 - ISP_{rep}\right) * \frac{App_{sf}}{App_{sf} + Noncert_{sf}}$$

$$+ Match^{Noncert}\left(1 - ISP_{rep}\right) * \frac{Noncert_{sf}}{App_{sf} + Noncert_{sf}}) * 100.$$

2. Calculating improper payments

After calculating the estimated actual ISP, we calculated an estimated actual FCP and PCP:

(10) $FCP_{est} = \min(1.6 * ISP_{est}, 100)$

(11) $PCP_{est} = 100 - FCP_{est}$.

Finally, we calculated improper payments for the NSLP and SBP for each CEP school:

(12) $NetNSLPErr\$ = \text{Meals}_{\text{NSLP}} * \left(\text{Amt\_Fr}_{\text{NSLP}} * \frac{\text{FCP}_{obs} - \text{FCP}_{est}}{100} + \text{Amt\_Pd}_{\text{NSLP}} * \frac{\text{PCP}_{obs} - \text{PCP}_{est}}{100}\right)$

(13) $NetSBPErr\$ = \text{Meals}_{\text{SBP}} * \left(\text{Amt\_Fr}_{\text{SBP}} * \frac{\text{FCP}_{obs} - \text{FCP}_{est}}{100} + \text{Amt\_Pd}_{\text{SBP}} * \frac{\text{PCP}_{obs} - \text{PCP}_{est}}{100}\right)$,

where *NetNSLPErr$* is the dollar amount of net NSLP error in CEP schools, *NetSBPErr$* is the dollar amount of net SBP error in CEP schools, and FCP_{obs} and PCP_{obs} are the free and paid claiming percentages that CEP schools use in claiming their reimbursements. Gross error for each CEP school is the absolute value of net error, although the concept of gross error is slightly different under CEP than under standard reimbursements. Unlike underpayments with standard reimbursements, underpayments with CEP are not associated with denied benefits for students because all students in CEP schools receive meals at no charge. Rather, underpayments in CEP are associated with forgone reimbursements for the CEP school.

In calculating reimbursement error, it is important to be aware that the formula for the free claiming percentage has implications for the amount of underpayments possible in CEP schools. The reimbursement formula is such that if the ISP is at least 62.5 percent, the free claiming percentage is 100 percent. Therefore,

- If the ISP used by the school is at least 62.5 percent, there can be no undercertification error because the school is already claiming all meals for free reimbursement. Even if the CEP group understates its true ISP, there is no effect on reimbursements. For example, if the observed ISP is 62.5 percent and the estimated actual ISP is 75.0 percent, there is no undercertification error because both ISPs result in an FCP equal to 100 percent.

- If the ISP used by the school is less than 62.5 percent, the maximum undercertification error is equal to the difference between actual reimbursements and reimbursements if the school had claimed all meals for free reimbursement. For example, if a school used an ISP of 60.0 percent, undercertification error would be the same for any estimated actual ISP of at least 62.5 percent.

3. Matching process

We used an iterative process to generate match rates used in calculating estimated actual ISPs, starting with a probabilistic match of sampled students to State SNAP and TANF lists and then proceeding to additional data sources as available and necessary. The probabilistic matching algorithm we used is likely more sophisticated than the matching algorithms used in some sample States and districts; therefore, it might be more successful than those algorithms in identifying matches. Each step of the matching process was blind to student sample status. Thus, the matching process was not influenced by whether the district identified a student.

Because direct certification based on participation in SNAP or TANF is the most common way of identifying students, the iterative process began with a match of sampled students to State SNAP and TANF lists, as follows:

- **Deterministic match with State list of children receiving SNAP or TANF.** Students with exact matches on first name, middle initial, last name, date of birth, zip code, gender (in States where available), and parent last name (in States where available) were determined to be matches.

- **Probabilistic match with State list of children receiving SNAP or TANF.** The analysis team used LinkageWiz to identify further matches of sampled students to State SNAP/TANF lists. This software calculates a score indicating the likelihood of a match given the information available. The calculated score accounts for incomplete information and data fields that are close matches because of misspellings, inverted dates, and other data errors. The probabilistic matching process used a broader set of data fields than the deterministic matching process (for example, address, telephone number, and parent first name), although the exact data fields used varied by State based on availability. Scores above an upper threshold were designated as matches. Scores between a lower threshold and the upper threshold were designated as matches (or nonmatches) based on a case-by-case manual review. Scores below a lower threshold were designated as nonmatches. The upper and lower thresholds were determined based on a preliminary manual review of all potential matches sorted by match score and were selected to ensure a detailed manual review of any

questionable cases. Thus, the upper threshold was selected to be sufficiently high so that we had a very high degree of confidence that all scores above the threshold are true matches. Similarly, the lower threshold was selected to be sufficiently low so that we had a high degree of confidence that all scores below the threshold are not matches.

After matching sampled students to State SNAP/TANF lists, we calculated a preliminary estimated actual ISP for each CEP school, as described previously. The preliminary estimated actual ISP determined whether further matching efforts were necessary for sampled students who were not matched initially. If additional students were identified in subsequent rounds of matching (with data sources other than State SNAP/TANF lists), the estimated actual ISP would increase; the estimated actual ISP cannot decrease with additional matching. Therefore, if the preliminary ISP estimate was at least 62.5, no further matching was necessary. With an estimated actual ISP of at least 62.5, the adjusted all meals are claimed as free, and estimated actual reimbursements could be calculated as described in the previous section.

The sources used in subsequent rounds of matching varied somewhat by State and district according to the availability of data sources. After conducting matching with each data source, we recalculated a preliminary estimated actual ISP and determined whether further matching is necessary, as described in the previous paragraph.

We provide more details on the matching procedures in Appendix C.

C. Data sources

To carry out the analytic approach specified above, we collected student-level data pertaining to the CEP reference year for randomly selected CEP schools in the five States included in the analysis. We also collected program data from State agencies and districts. We describe both types of data in detail below.

1. Sampled student data

From January to December 2013, Mathematica collected student records data for all students enrolled in sampled CEP schools as of the April 1 of the CEP reference year. The student records request included student name, demographics, school, meal certification status, program participation, and student and parent/guardian contact information. We sampled 24 students per school: 10 students (approximately 42 percent) from the list of identified students, 8 students (33 percent) from the list of students certified by application, and 6 students (25 percent) from the list of students not identified or certified for school meal benefits.

Although the analysis ultimately included only sampled students, we did include in the matching process other children within the sampled student's household. Program rules specify that all children in a household with at least one child or household member who receives benefits from SNAP, TANF, or FDPIR are categorically eligible for free meals. We identified sibling sets from the student enrollment lists of sampled schools (when possible) or asked the district for sibling information. We considered a sampled student directly certified if that student or another child in the household matched to program data.

2. Program data

As noted earlier, CEP rules allow identification of students based on participation in a variety of programs, including SNAP, TANF, FDPIR, and Head Start, as well as specific at-risk populations including foster, homeless, migrant, and runaway youth. Although only identification through SNAP is required, we collected data from as many sources as possible to most accurately capture the number of identified students within a CEP group. We list the data sources and requested variables below:

- **Statewide SNAP and TANF matching data.** Staff worked with State agencies to secure lists of all SNAP and TANF participants receiving benefits during the reference time frame, either July 2010 to April 2011 and/or July 2011 to April 2012.[55] The records request included name, demographics, program identifiers, and contact information. After conducting the matching process, we followed up with relevant State agencies on "partial matches" to obtain additional information that could confirm a match, such as contact information on file with the agency that was not included in the data request.

- **Statewide foster child matching data.** We requested statewide lists of all foster students from the reference period. If confidentiality reasons prevented an agency from sharing the lists, we provided the agency with lists of our unmatched sampled students so it could indicate who participates in the program.

- **Matching data for other State- and county-level data sources.** We requested program participant lists from State and local agencies serving migrant, homeless, and Head Start youth.[56]

3. Additional information from SFAs

School and district staff confirmed the sources used to identify students for CEP with the SFAs. When necessary, we requested from SFAs information that they may have used to identify students. To maintain independence in our matching, we required that this information come from outside of the SFA meal systems and direct certification identification process. Most often, the information was a list of Head Start or homeless youth. We also requested additional information on "partial matches" to strengthen weak but likely matches. Some SFAs were able to provide us with additional contact information and SNAP or TANF case IDs that were not included in the initial data file.[57]

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[55] None of the States in our sample used FDPIR for direct certification.

[56] Medicaid files were not used in the matching process for this analysis; however, the NSLP Direct Certification with Medicaid Evaluation attempted to exclude districts in which any schools participated in CEP. One district included in the APEC-II CEP sample also used Medicaid data for direct certification for some schools in the DC-M demonstration. We do not believe that the exclusion of Medicaid data for this district has a substantively important effect on this study's findings.

[57] We also conducted the analysis without matches gained through follow-up with SNAP and TANF or additional data sources. We found exclusion of these matches did not substantively affect the results of the analysis (see Table C.6 in Appendix C).

D. Findings on certification error in schools using CEP

Among sampled students who were identified by CEP schools, we matched 96 percent to a program data source (Figure VI.1). Thus, 4 percent of these students were overidentified and could contribute to overpayments (if the overidentification was not offset by underidentification in the CEP group). The match rate was 34 percent for students who were not identified but certified by application and 21 percent for students who were not certified. These matched students represent those who could have been identified but were not and thus could have contributed to underpayments (if the CEP group was not already claiming all meals as free and the underidentification was not offset by overidentification in the CEP group).

Figure VI.1. Sampled students in schools using CEP who should have been identified based on administrative program participation records, SY 2012–2013 (percentages)
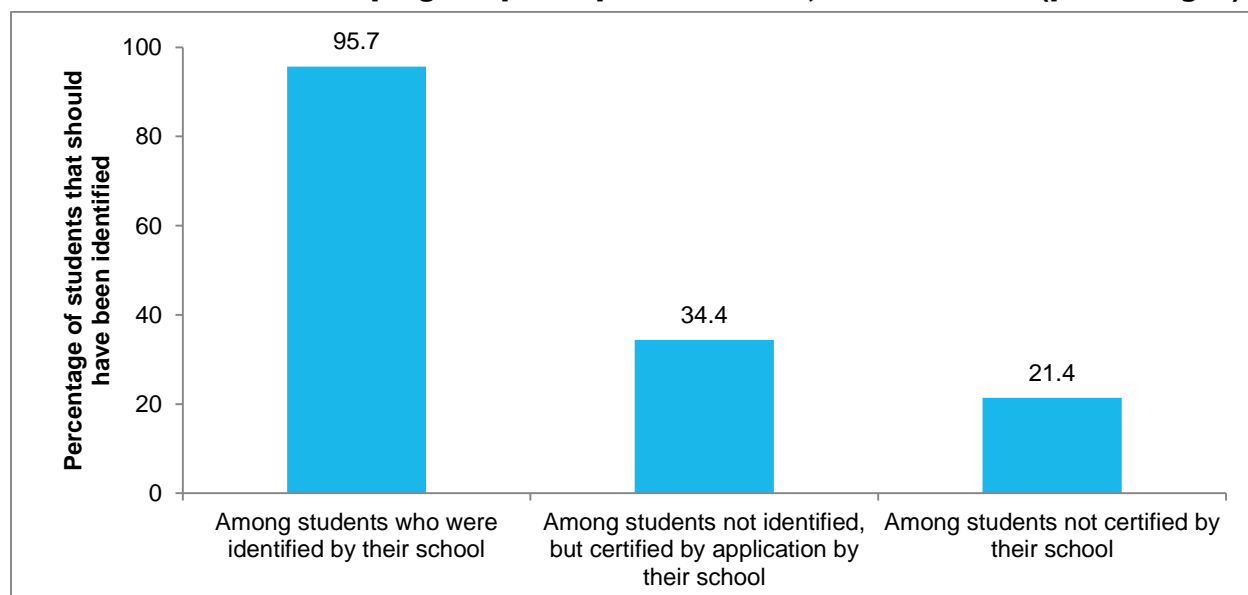
Source: APEC-II study, weighted data.

Note: Values in figure represent the mean of school-level variables.

APEC = Access, Participation, Eligibility, and Certification; CEP = Community Eligibility Provision; SY = school year.

Using these matching rates, along with estimates of the proportion of students of each type in each CEP group, we calculated the estimated actual ISP and compared it with the observed ISP. On average, the observed ISP is less than the estimated actual ISP (62 versus 68 percent; Table VI.1). As a result, CEP groups' observed FCPs are typically less than estimated actual FCPs.[58] Thus, on average, CEP groups are claiming fewer meals as free than they are entitled to under program rules. Although underclaiming meals is not a violation of program rules, it leads to schools receiving lower program reimbursements than they are entitled.

Table VI.2 provides more information on error in FCPs. We define FCP error as the difference between the observed FCP and the estimated actual FCP, so positive values correspond to overclaiming free meals and negative values correspond to underclaiming free

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[58] Because the FCP cannot exceed 100 percent, the average FCP shown in Table VI.1 is not equal to the average ISP multiplied by 1.6.

meals. Nearly 53 percent of schools have no claiming rate error. However, it is fairly common for schools to underclaim free meals; approximately 15 percent of schools have underclaiming of at least 5 percent (Table VI.2). Overclaiming is not common; only 6 percent of schools have any overclaiming error, and no school has overclaiming error of 5 percent or more.

Table VI.1. Average identified student percentages and free meal claiming percentages for sampled schools using CEP, SY 2012–2013

	Observed	Estimated actual	Difference
Identified student percentage	61.76 (1.78)	68.23 (2.13)	-6.46 (1.18)
Free meal claiming percentage	94.11 (2.16)	96.29 (1.93)	-2.19 (1.00)
Paid meal claiming percentage	5.89 (2.16)	3.71 (1.93)	2.19 (1.00)
Sample size (schools)			**135**

Source: APEC-II study, weighted data.

Note: Values in tables represent the mean of school-level variables. Standard errors in parentheses.

APEC = Access, Participation, Eligibility, and Certification; CEP = Community Eligibility Provision; SY = school year.

Table VI.2. Distribution of school-level free claiming percentage error for sampled schools using CEP, SY 2012–2013

Type of free claiming percentage error (percentage of schools)	
No claiming rate error	52.72
Overcertification error (observed FCP greater than estimated actual FCP)	5.50
Error greater than 0, less than 1 percentage point	5.12
Error at least 1 percent, less than 5 percentage points	0.38
Error at least 5 percentage points	< 0.01
Undercertification error (observed FCP less than estimated actual FCP)	41.79
Error greater than 0, less than 1 percentage point	11.97
Error at least 1 percent, less than 5 percentage points	15.00
Error at least 5 percentage points	14.81
Sample size (schools)	**135**

Source: APEC-II study, weighted data.

Note: Values in tables are based on school-level variables.

APEC = Access, Participation, Eligibility, and Certification; CEP = Community Eligibility Provision; FCP = free claiming percentage; SY = school year.

We translate claiming error into estimates of improper payments by comparing observed reimbursements (based on the FCP used by the CEP school) with the correct reimbursements (based on the estimated actual FCP). For NSLP, we found gross error of $5 million, corresponding to 1.7 percent of total CEP reimbursements (Table VI.3). Of this amount, virtually all of the error was due to underpayment. For SBP, we found gross error of $2 million,

corresponding to 1.9 percent of total CEP reimbursements. Of this amount, nearly all of the error represented underpayment.

Table VI.3. National estimates of improper payments in the NSLP and SBP for schools using CEP, SY 2012–2013

	NSLP	SBP
Total reimbursements (millions of dollars)		
Total reimbursements	286	118
Improper payment amounts (millions of dollars)		
Overpayments	< 1 (< 1)	< 1 (< 1)
Underpayments	5 (3)	2 (1)
Gross improper payments	5 (3)	2 (1)
Net improper payments	-5 (2)	-2 (1)
Improper payment rates (percentages)		
Overpayments	0.03 (0.02)	0.04 (0.03)
Underpayments	1.71 (0.98)	1.84 (1.02)
Gross improper payments	1.73 (0.98)	1.88 (1.03)
Net improper payments	-1.68 (0.98)	-1.80 (1.02)
Sample size (schools)	**135**	**135**

Source: APEC-II study, weighted data.

Note: Analysis weights are calibrated based on total national reimbursements reported in the FNS national data file. Standard errors in parentheses.

APEC = Access Participation, Eligibility, and Certification; CEP = Community Eligibility Provision; FNS = Food and Nutrition Service; NSLP = National School Lunch Program; SBP = School Breakfast Program; SY = school year.

E. Interpretation of findings on certification error in schools using CEP

Findings from this analysis suggest that schools currently using CEP have substantially lower improper payment rates than schools not using CEP. For NSLP, the gross improper payment rate was 2 percent for CEP schools and 10 percent for non-CEP schools. For SBP, these rates were 2 percent for CEP schools and 11 percent for non-CEP schools. In addition, the majority of error for CEP schools was due to underpayments and for non-CEP schools was due to overpayments.

Given that CEP will be available nationwide starting SY 2014–2015, these findings are promising. However, in interpreting these findings, it is important to keep in mind that this analysis is based only on States that had implemented CEP in SY 2012–2013. Districts within these States that elected to use CEP may differ from typical districts nationally. In particular, the districts using CEP in SY 2012–2013 are likely to be those for whom CEP is most advantageous. Thus, these early adopter districts are likely to have higher than average percentages of identifiable students and are probably more likely to be able to claim all meals as free under CEP rules. This finding is important because overpayments are not possible for CEP groups that can

claim all meals as free; therefore, overpayments may be more common in a population with a lower percentage of identifiable students. Because of these likely differences, the improper payment estimates found here may differ in important ways from the improper payments that will occur when CEP expands to a broader set of States nationally. In addition, improper payment rates may fluctuate as districts become more familiar with CEP rules and adjust their procedures accordingly.

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VII. NATIONAL ESTIMATES OF IMPROPER PAYMENTS DUE TO CERTIFICATION ERROR IN ALL SCHOOLS

This chapter presents national estimates of overpayments, underpayments, and gross improper payments due to certification error in all schools. The findings here combine the national estimates for schools not using the Community Eligibility Provision and the national estimates for schools using CEP, as presented in earlier chapters. The findings we present in this chapter reflect total national improper payments for the NSLP and SBP, and thus have implications for reporting according to the Improper Payments Elimination and Recovery Act of 2010.

A. Findings on national estimates of overpayments, underpayments and total improper payments due to certification error for all schools

We generate estimates for all schools in SY 2012–2013 simply by summing the weighted national estimates for schools that did not use CEP in SY 2012–2013 (presented in Chapter V) with national estimates for schools that did use CEP (presented in Chapter VI). Because reimbursements to CEP schools represent a very small share of meal reimbursements nationally, these combined estimates of improper payments due to certification error are very similar to the national estimates for schools not using CEP (presented in Chapter V).

During SY 2012–2013, an estimated $1.16 billion in gross improper NSLP reimbursements was due to certification error (Table VII.1). This figure represents 9.8 percent of the roughly $11.80 billion in total cash and commodity reimbursements provided to school districts for all NSLP lunches served in the 48 contiguous States and the District of Columbia. Of this amount, $824 million were overpayments (7 percent of total NSLP reimbursements) and $334 million were underpayments (3 percent of total NSLP reimbursements). For SBP, we found gross improper payments of $366 million, corresponding to 11.0 percent of total SBP reimbursements. Of this amount, $257 million were overpayments (8 percent of total SBP reimbursements) and $109 million were underpayments (3 percent of total SBP reimbursements).

B. Implications for IPERA reporting

In 2010, Congress enacted IPERA to amend the Improper Payments Information Act of 2002. The implementing guidance of this legislation and the OMB requires Federal agencies to review annually all programs and activities to identify those susceptible to significant improper payments. The guidance defines significant improper payments as those in any program that exceed both 2.5 percent of program payments and $10 million annually, or $100 million in improper payments regardless of the improper payment percentage. Using these standards, the APEC-II study finds that improper payments made in the NSLP and SBP during SY 2012–2013 continue to be significant. As a result, FNS will need to annually report to the president and Congress the amount of estimated improper payments, along with steps taken and actions planned to reduce them.

Table VII.1. National estimates of improper payments in the NSLP and SBP for all schools, SY 2012–2013

	NSLP	SBP
Total reimbursements (millions of dollars)		
Total reimbursements	11,801	3,340
Improper payment amounts (millions of dollars)		
Overpayments	824 (121)	257 (46)
Underpayments	334 (59)	109 (26)
Gross improper payments	1,158 (140)	366 (57)
Net improper payments	491 (130)	148 (48)
Improper payment rates (percentages)		
Overpayments	6.98 (1.01)	7.69 (1.35)
Underpayments	2.83 (0.51)	3.27 (0.75)
Gross improper payments	9.81 (1.18)	10.97 (1.68)
Net improper payments	4.16 (1.09)	4.42 (1.40)

Source: APEC-II study, weighted data.

Note: Analysis weights are calibrated based on total national reimbursements reported in the FNS national data file. Standard errors in parentheses.

APEC = Access Participation, Eligibility, and Certification; FNS = Food and Nutrition Service; NSLP = National School Lunch Program; SBP = School Breakfast Program; SY = school year.

VIII. NATIONAL ESTIMATES OF IMPROPER PAYMENTS DUE TO NON-
CERTIFICATION ERROR

Once a student's certification status has been determined, error can still occur in how the student's meals are determined to be reimbursable and claimed for reimbursement. These errors can arise at various points in school and district operations, and they are referred to collectively as non-certification error. In this chapter, we discuss four types of non-certification error: meal claiming error and three forms of aggregation error (point-of-sale error, school-to-SFA error, and SFA-to-State agency error). For each type of non-certification error, we describe the methodology used to estimate improper payments, present the key findings, describe characteristics of schools with high error rates, and then compare our estimates with those from APEC-I. The data collection processes for meal claiming error and aggregation error were the same as in APEC-I.

The APEC-I report also presented total non-certification error based on summing gross and net improper payments from meal claiming error and aggregation error. The APEC-II study expands on that process by estimating improper payments due to combinations of certification error, meal claiming error, and aggregation error. We discuss these combinations of error in Chapter IX.

A. Meal claiming error

Meal claiming error occurs when cafeteria staff make errors when assessing and recording whether a meal selection (the tray) is a reimbursable meal under the NSLP or SBP. Schools are expected to identify reimbursable meals based on the contents of the tray and whether the tray belongs to a student. This type of error includes the following:

- Counting meals that do not meet the meal pattern requirements and meals served to ineligible people (such as teachers or adult visitors) as reimbursable

- Failing to count meals that meet meal pattern requirements and are provided to eligible students as reimbursable

Because schools determine whether individual trays are reimbursable, this type of error and the resulting improper payment occur at the tray level. This section describes our methodology for identifying meal claiming error in SY 2012–2013 and then discusses our findings. We conclude with a comparison of meal claiming error estimates from SY 2012–2013 with those from the first APEC study covering SY 2005–2006.

1. Methodology

The methodology used to estimate meal claiming error was the same as in APEC-I and consisted of three stages. First, Westat field staff collected data on random samples of more than 48,000 breakfast and lunch transactions from a nationally representative sample of more than 400 schools. Second, Mathematica staff analyzed the collected data, using the final rule entitled "Nutrition Standards in the National School Lunch and School Breakfast Programs" (2012), the accompanying "Questions and Answers for Program Operators" (2013), and the USDA's "A Menu Planner for Healthy School Meals" (USDA 2008) to determine whether each tray was reimbursable. Third, Mathematica used the aforementioned determination as the true

reimbursable status of the tray and compared this with the reimbursable meal status recorded by the school. Trays were counted as having a meal claiming error whenever the school's determination differed from Mathematica's independent assessment. These comparisons were then used to estimate national rates and amounts of improper payments due to meal claiming error.

Field staff observing school meal trays collected the following key data items: (1) whether the individual with the tray was a student, non-student, or adult; (2) names of food items on trays; and (3) names of food items available at the eating occasion. Field staff recorded whether each sampled tray belonged to a student, non-student, or adult because only trays served to students are eligible for reimbursement. The other guidelines set by FNS for reimbursable meals depend on the specific food items on trays and, if the school uses offer versus serve, the full set of food items that were available to the student.[59] Lastly, the rules for breakfast also depend on whether the school used a nutrient-based or food-based menu planning approach.[60] Mathematica collected data on schools' OVS status for both breakfast and lunch and menu planning approaches for breakfast.

Two main steps were involved in determining whether a tray was reimbursable:

1. **Classifying the components of the observed food items.** A food item is a specific food offered within the food components. Mathematica staff identified the food components that would contain adequate servings in a typical instance of the food items. For all lunches and for breakfasts that used a food-based menu planning approach, items were coded as having one or more of the following food components: (1) meat or a meat alternate, (2) fruit, (3) vegetables, (4) grains, (5) fluid milk, or (6) nonnutritive item. For breakfasts that used nutrient-based planning, items were coded as (1) an entrée, (2) a side dish, (3) fluid milk, or (4) a nonnutritive item. Our identification of meal claiming error uses names of food items, such as "chicken sandwich," rather than a more detailed description of serving sizes and nutrient content. Access to actual serving sizes of each food would enable our determinations of reimbursable trays to be more precise, but providing this information would have been costly and burdensome for schools.

2. **Applying meal pattern requirements to the trays.** We identified the applicable meal pattern requirements for trays at each school based on OVS status and menu planning approach. Then we evaluated the food components against those requirements. A school must always offer all food components in at least the minimum required amounts. In schools

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[59] OVS must be available for students at high schools; OVS is optional at middle and elementary schools. Under OVS for the NSLP, all students at any grade level must select at least three of five food components, and one of the choices selected must be at least a ½-cup serving of the fruit or vegetable component. If a school provides breakfast under OVS, at least four food items from the food components must be offered, and all students at any grade level must select at least three food items in the applicable minimum required serving size. Because students in school year 2012–2013 were not yet required to take fruit for breakfast under OVS, a reimbursable meal may contain only grains and milk.

[60] In APEC-I, which collected data from SY 2005–2006, three menu planning approaches were available at breakfast and lunch: (1) nutrient-based menu planning, (2) traditional food-based menu planning, and (3) enhanced food-based menu planning. In the 2012–2013 school year, schools were required to use a new food-based menu planning approach for lunch but could use a new food-based menu planning approach or a nutrient-based menu planning approach for breakfast.

that did not use OVS for lunch or breakfast, reimbursement eligibility was determined based only on the contents of the tray. In schools that used OVS for lunch or breakfast, we needed to examine the full array of food item components that were available to students. Under OVS, students may decline food components. For example, in a school participating in OVS for lunch, a student may decline as many as two components. If schools did not provide the food items within all the food groups, then no trays at that meal could be reimbursable, regardless of the tray's contents.

Once we determined whether each tray at a school was reimbursable and identified meal claiming error, we calculated two error rates corresponding to overcounting and undercounting of reimbursable meals: (1) the fraction of meals that schools recorded as reimbursable but were determined by Mathematica to be nonreimbursable, and (2) the fraction of meals that schools recorded as being nonreimbursable but were determined by Mathematica to be reimbursable. The improper overpayment for meals that were incorrectly recorded as reimbursable is the full subsidy that the school received for the meal, not just the additional subsidy for free and reduced-price meals, as was the case in certification error. This error occurs because the meal was not reimbursable and should not have been claimed. Similarly, the improper underpayment for reimbursable meals that were not recorded as reimbursable is the full subsidy amount that the school would have received if there were no meal claiming error. Ideally, we would have been able to calculate the improper payment for a tray based on the certification status of the student, but student confidentiality issues prevented us from following this approach. To estimate improper payments at the school, we instead assumed that meal claiming error affected the reimbursements for each meal type proportionately. We multiplied the error rates by the total reimbursements for each meal type at the school and summed these dollar amounts of error. We used this process to calculate overpayments, underpayments, and gross and net estimates of dollar error at the school.

Our final step in calculating national estimates of improper payments was to take the weighted sum of the dollar amounts of errors over all schools. We calculated the improper payment rate by dividing the national estimate of improper payments (in dollars) by national total reimbursements. We repeated this process for the NSLP and SBP separately.

2. Findings

Meal claiming error in the school meal programs was substantial, especially in the SBP (Table VIII.1). Gross improper payments due to meal claiming error were $606 million in the NSLP and represented 5 percent of total NSLP reimbursements. Gross improper payments due to meal claiming error in the SBP equaled $365 million, or 11 percent of total SBP reimbursements.

One important contextual factor was the implementation of a new meal pattern that changed the requirements for reimbursable meals beginning in SY 2012–2013. The new meal pattern was released in the *Federal Register* in January 2012 and described requirements to be phased in over three years, beginning in fall 2012 (see Chapter I, Table I.3). The meal pattern did not change requirements for reimbursable breakfasts in SY 2012–2013, to provide program operators more time to prepare. However, for lunch, schools were required to meet new standards for daily and

weekly amounts of food components as well as dietary specifications for calories and fats.[61] The lunch standards were set for three grade ranges (K–5, 6–8, 9–12), and schools were required to use food-based menu planning at lunch. A United States Government Accountability Office (GAO) report on the implementation of the new meal pattern found that some SFAs struggled to plan lunch menus that met the new requirements and that the workload in some cafeterias had to be reorganized to prepare different types of food (GAO 2014). If schools were slow to transition from previous requirements for reimbursable trays, this may have contributed to higher rates of meal claiming error during SY 2012-2013. However, the GAO report suggests that the challenges faced by SFAs and schools are temporary. Meal claiming error resulting from these challenges is expected to decrease as schools adjust to the new requirements.

Table VIII.1. National estimates of improper payments due to meal claiming error, SY 2012–2013

	NSLP	SBP
Total reimbursements (millions of dollars)		
Total reimbursements	11,801	3,340
Improper payment amounts (millions of dollars)		
Overpayments	525 (82)	358 (40)
Underpayments	81 (24)	8 (3)
Gross improper payments	606 (86)	365 (40)
Net improper payments	444 (84)	350 (39)
Improper payment rates (percentages)		
Overpayments	4.45 (0.58)	10.71 (1.13)
Underpayments	0.69 (0.20)	0.23 (0.08)
Gross improper payments	5.14 (0.60)	10.94 (1.13)
Net improper payments	3.76 (0.63)	10.49 (1.14)
Sample size (schools)	**436**	**421**

Source: APEC-II study, weighted data.

Note: Analysis weights are calibrated based on total national reimbursements reported in the FNS national data file. Standard errors in parentheses. The sum of overpayment and underpayment rates does not equal the gross improper payment rate because of rounding.

APEC = Access, Participation, Eligibility, and Certification; FNS = Food and Nutrition Service; NSLP = National School Lunch Program; SBP = School Breakfast Program; SY = school year.

Most meal claiming error was due to schools incorrectly recording trays as being reimbursable when they were actually not reimbursable, leading to overpayments. Overpayments accounted for more than 86 and 97 percent of gross improper payments in the NSLP and SBP, respectively. The large proportion of improper payments that were overpayments is directly

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[61] The meal claiming error analysis uses only the daily requirements. The data collection for each school was conducted in one day, and no information was gathered about weekly menus.

attributable to a large majority of trays being recorded by schools as reimbursable. Thus, any such record in error must necessarily result in an overpayment. Indeed, schools recorded more than 97 percent of the trays in the SBP sample as reimbursable and fewer than one-quarter of schools recorded at least one tray as not reimbursable.[62]

Meal claiming error was concentrated in a minority of schools rather than distributed evenly across schools (Table VIII.2). More than 40 percent of schools in the NSLP and SBP did not have any meal claiming error, and nearly half of the remaining schools in the NSLP and SBP had net improper payment rates from 1 to 5 percent. Relatively few schools had any underpayments; approximately 10 percent of schools had any underpayments in the NSLP and only 3 percent of schools had any underpayments in the SBP.

Table VIII.2. School-level percentage of reimbursements in error due to meal claiming error, SY 2012–2013

	NSLP	SBP
Mean percentage of reimbursements in error	4.88	10.17
Percentage of schools with different overall error rates		
No error	43.95	43.46
At most 1% error	0.27	0.09
Greater than 1% and at most 5% error	29.77	22.53
Greater than 5% error	26.01	33.93
Percentage of schools with different overpayment rates		
No overpayment	54.43	46.36
At most 1% overpayment	0.27	0.09
Greater than 1% and at most 5% overpayment	24.94	19.92
Greater than 5% overpayment	20.36	33.63
Percentage of schools with different underpayment rates		
No underpayment	89.52	97.09
At most 1% underpayment	<0.01	<0.01
Greater than 1% and at most 5% underpayment	4.83	2.61
Greater than 5% underpayment	5.65	0.30
Sample size (schools)	**436**	**421**

Source: APEC-II study, weighted data at the school level.

APEC = Access, Participation, Eligibility, and Certification; NSLP = National School Lunch Program; SBP = School Breakfast Program; SY = school year.

We explored several dimensions of school characteristics to determine whether meal claiming error occurred more frequently in certain types of schools. We identified these characteristics based on discussions with FNS and patterns observed in APEC-I. We compared error rates in schools that are different sizes, have varying grade ranges, use or do not use OVS, and use food-based or nutrient-based menu planning for breakfast. These characteristics are

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[62] In the first APEC study, underpayments from meal claiming error represented more than 20 percent of total reimbursements in 20 schools in the NSLP analysis and 11 schools in the SBP analysis. In SY 2012–2013, underpayments represented more than 20 percent of total reimbursements in only two sampled schools in the NSLP analysis and no sampled schools in the SBP analysis.

likely to be correlated with other factors that influence meal claiming error rates; therefore, differences in the meal claiming error rates of schools do not necessarily indicate the causal impact of these characteristics on meal claiming error.

School size. Smaller schools might have fewer trays to assess in a meal period, decreasing time pressures and lowering the meal claiming error rate. On the other hand, smaller schools might have fewer resources to train food service staff on meal reimbursement requirements.

We estimated meal claiming error rates among schools that had fewer than 500 students (small), 500 to 999 students (medium), and 1,000 or more students (large). Approximately 40 percent of schools in APEC-II were classified as small, 37 percent were medium, and 24 percent were large. In both the NSLP and the SBP, large schools had higher improper payment rates on average than did small and medium schools. In the NSLP, small schools had an improper payment rate of 5 percent, compared with improper payment rates of slightly less than 5 percent in medium schools and 6 percent in large schools. In the SBP, the improper payment rates for small, medium, and large schools were 9, 12, and 13 percent, respectively.

Grade range. The APEC-II sample included 330 elementary schools, 257 middle schools, and 271 high schools. The type of school is also related to school size. In the APEC-II sample, high schools have an average of 1,441 students compared with averages of 529 students at elementary schools and 761 students at middle schools.

In both the NSLP and SBP, elementary schools had lower rates of improper payments than did middle or high schools. In the NSLP, elementary schools had an improper payment rate of 4 percent, compared with improper payments of 6 and 8 percent in middle and high schools, respectively. In the SBP, elementary schools had an improper payment rate of 10 percent, compared with improper payments of 11 and 16 percent in middle and high schools, respectively.

Offer versus serve status. OVS is intended to reduce waste and to permit students to choose the foods they want to eat by allowing them to decline food components. Schools that use OVS might find it easier to correctly identify reimbursable meals than schools that do not use OVS because they have to count fewer components in a reimbursable meal. For instance, a school that did not use OVS at lunch in SY 2012–2013 must have ensured that a student's tray contained adequate servings of at least four of the five food components—fruit, grain, fluid milk, vegetables, and/or meat—to claim reimbursement for the tray.[63] A school that used OVS at lunch was required to offer adequate servings of the five food components but had to ensure only that a student's tray contained at least three of the five food components. Reimbursable trays at schools with OVS were also required to have at least one item classified as a fruit or a vegetable. Nearly all (97 percent) of schools used OVS at lunch, and 93 percent of schools used OVS at breakfast.

In both the NSLP and SBP, schools that used OVS had lower rates of improper payments than did schools that did not use OVS. At lunch, schools that used OVS had an improper payment rate of 5 percent, compared with a 17 percent improper payment rate among schools that did not use OVS.

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[63] Schools may count legume items toward the vegetable or meat component at lunch.

At breakfast, improper payment rates were 10 percent among schools that used OVS and 22 percent among schools that did not use OVS.[64]

Menu planning approach at breakfast. The vast majority (90 percent) of schools in the APEC-II sample used food-based menu planning at breakfast rather than nutrient-based menu planning. The food-based menu planning approach, which classifies the food components of a tray, is more complicated than the nutrient-based menu planning approach, which classifies food items into entrées and side dishes. Consequently, we expected improper payment rates to be lower in schools that used nutrient-based menu planning rather than food-based menu planning. The data confirmed our expectation; we found that the improper payment rate in schools that used food-based menu planning at breakfast was 12 percent, compared with 1 percent among schools that used nutrient-based menu planning.

3.   Characteristics of schools with high levels of meal claiming error

Because most schools have relatively low meal claiming error rates, policies that target high-error schools and reduce their error rates could significantly lower national improper payments. We focused on these high-error schools by comparing their characteristics with schools that had zero meal claiming error. We considered schools to have a high meal claiming error rate if the improper payment rate due to meal claiming error was greater than 20 percent. Thirty schools in the APEC-II sample had high error in the NSLP, and 169 schools had no meal claiming error in the NSLP. In the SBP, a similar number of schools had zero error (168 schools), but more than twice as many schools compared to the NSLP were high-error schools (77 schools). Only 10 schools had high meal claiming error in both the NSLP and SBP.

The patterns we identified in improper payment rates for the full set of schools (school size, OVS, breakfast menu planning) generally persisted when we explicitly compared high-error schools with no-error schools. Schools with high meal claiming error rates at breakfast were about 10 percentage points less likely to be small schools compared with schools with zero meal claiming error rates at breakfast (30 percent in high-error schools; 41 percent in no-error schools). However, schools with high meal claiming error rates and zero meal claiming error rates at lunch were equally likely to be small schools (about 40 percent). High-error schools were less likely to use OVS than schools with zero errors at both breakfast and lunch, but this estimation is based on small numbers of schools that do not use OVS. Lastly, all schools with high meal claiming error rates at breakfast used food-based menu planning, compared with 81 percent of schools in our sample with zero meal claiming error at breakfast.

Two sample schools had 100 percent meal claiming error rates at breakfast. Schools of this type account for 0.2 percent of national reimbursements at breakfast. Table VIII.3 presents the food items that were available to students and the reason none of the trays were reimbursable. School 1 used

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[64] As in APEC-I, we checked the sensitivity of the improper payment estimates to the OVS statuses that were recorded for schools. We achieved this objective by assessing how our estimates of improper payments would change if we assumed all study schools used OVS. Reimbursable meals in OVS schools can have fewer items or components than reimbursable meals in non-OVS schools. If schools that used OVS were recorded as not using OVS, then we could have incorrectly determined some meals are not reimbursable. We found that the improper payment rates were slightly lower in the NSLP and SBP when we assumed that all schools used OVS, but the differences were small. Because we believe our determination of OVS status for schools is more accurate, our primary estimates use the varying OVS status of schools.

OVS at breakfast, which requires that the school offers a fruit or vegetable, milk, and a grain or meat. Students must then have the option to decline a food item. Because School 1 did not offer milk to the students, none of the trays are reimbursable. School 2 did not use OVS at breakfast and it was possible to construct a reimbursable tray from the available food items. However, students' trays did not contain all of the required components, so none of the trays were reimbursable. This is consistent with APEC-I findings, in which some schools did not offer all items needed to construct a reimbursable tray, particularly for breakfast. No schools had 100 percent meal claiming error at lunch.

Table VIII.3. Food items offered at the two schools exhibiting 100 percent meal claiming error rates at breakfast, SY 2012–2013

School	Used offer versus serve	Grade levels served	Food items	Notes
1	Yes	Elementary	Applesauce, orange juice, whole wheat bagel with peanut butter, yogurt	Schools that use OVS must offer milk. Because this school does not offer milk, no trays at this school are reimbursable.
2	No	High	Cold cereals, fruit, juice, milk, yogurt	It is possible to construct a reimbursable tray, but no tray contained all required components. Most trays did not have a fruit.

4.   Comparison with findings on improper payments due to meal claiming error from APEC-I

The improper payment rates due to meal claiming error have increased for the NSLP and SBP since SY 2005–2006, when APEC-I was conducted. In SY 2005–2006, the national gross improper payment rates due to meal claiming error were 3 percent for the NSLP and 10 for the SBP (Table VIII.4). In APEC-II, the improper payment rates were 5 percent in the NSLP and 11 percent in the SBP.

Table VIII.4. Change in estimates of national improper payment rates due to meal claiming error from APEC-I and APEC-II (percentages)

	NSLP			SBP		
	2005–2006	2012–2013	Difference	2005–2006	2012–2013	Difference
Meal claiming error improper payment rates (percentages)						
Gross	3.07 (0.50)	5.14 (0.60)	2.07*** (0.78)	9.78 (2.45)	10.94 (1.13)	1.16 (2.70)
Net	1.55 (0.42)	3.76 (0.63)	2.21*** (0.76)	9.34 (2.46)	10.49 (1.14)	1.15 (2.71)
Sample size (schools)	245	436		218	421	

Source: APEC-II and APEC-I studies, weighted data.

Note: ***, **, and * denote statistical significance at the 0.01, 0.05 and 0.10 levels, respectively. Standard errors in parentheses.

APEC = Access, Participation, Eligibility, and Certification; NSLP = National School Lunch Program; SBP = School Breakfast Program.

We tested whether the differences between national estimates of gross and net improper payment rates from APEC-I and APEC-II were statistically significant. We found that only the differences for the NSLP were statistically significant (Table VIII.4). The differences for the SBP were not statistically significant because the improper payment rates for breakfast are measured less precisely than for lunch.

Several of the key patterns we identified in APEC-II were also present in APEC-I:

- Improper payment rates due to meal claiming error in APEC-I were influenced heavily by a relatively small group of schools that had high meal claiming error rates. In APEC-I, the median improper payment rate was 1 percent in the NSLP and 2 percent in the SBP.

- Most improper payments were overpayments, particularly in the SBP. In APEC-I, more than 95 percent of improper payments at breakfast and three-quarters of improper payments at lunch came from overpayments.

- Food-based menu planning at breakfast had higher improper payment rates due to meal claiming error than nutrient-based menu planning. In APEC-I, the improper payments due to meal claiming error at breakfast were 11 percent of total reimbursements in schools that used food-based menu planning and 3 percent in schools that used nutrient-based menu planning.

The APEC-II study was not designed to identify causes of changes in the improper payment rates, including the influence of regional and national contexts, so we cannot determine why estimates of improper payment rates have increased. For instance, one policy change since SY 2005–2006 is that schools must now use food-based menu planning for lunch. We also know that in SY 2005–2006, the improper payment rate among schools that used food-based menu planning at lunch was higher (4.4 percent) than in the full sample. It would be incorrect to use this information alone to conclude that the new menu planning requirement contributed to a higher improper payment rate in SY 2012–2013 because the schools that used food-based menu planning for SBP when it was optional are unlikely to be representative of all schools in SY 2012–2013. We cannot separate the influence of policy changes from compositional changes in the school sample. Consequently, we focus on comparing the national estimates of improper payments in APEC-I and APEC-II because they reflect the influence of all other compositional and policy changes in schools on meal claiming error.

B. Aggregation error

Aggregation error occurs between the time the meal reimbursement status is recorded at the point of sale and when the district claims reimbursement for its meals from the State agency. We generated estimates of three types of aggregation error (see Table VIII.5). First, we investigated error associated with combining daily meal counts from individual points of sale into a total daily count within a school (point-of-sale error). Next, we looked at error associated with communicating meal counts between the school and the SFA (school-to-SFA error). Finally, we considered error associated with districts reporting totals to the State agency, either directly or through consolidation (SFA-to-State agency error).

1. Point-of-sale aggregation error

Point-of-sale aggregation errors occur when meal totals from individual points of sale (cash registers) are incorrectly summed to school-level totals. This type of error is observed when the sum of daily meal count totals across a school's points of sale differs from the school's total daily meal count used in reports to the SFA as part of the school's claim for reimbursement.

Table VIII.5. Types of aggregation error associated with non-certification error included in APEC-II analyses

Type of error	Comment
Point-of-sale error	
Error from daily meal count totals from individual points of sale not being summed correctly to a schoolwide total. The sum of daily meal count totals across a school's points of sale differs from the school's total daily meal count reported by the school to the SFA.	It was noted that some schools without a special provision type status served universally free breakfast and did not record meal reimbursement type at the point of sale. The method for calculating point-of-sale error rates does not distinguish between this practice and any other type of meal classification or counting error.
Error in school reports to the SFA	
Error from school meal-count totals not being properly communicated to the SFA. The SFA record of meal counts reported by a school for the target month differs from the school's recorded total meal counts.	Although any difference between these sources of meal count records contributes to estimated error rates, we note that some count discrepancies may not strictly reflect errors in schools communicating meal counts to the SFA. For instance, the SFA record may correct an obvious error in the meal totals initially reported by the school.
Error in SFA reports to the State agency	
Error from SFA records of school meal count totals not being properly transmitted to the State agency for reimbursement. The SFA record of a school's meal counts differs from the State agency's record of meal counts reported by the SFA for that school.	Although any difference between these sources of meal count records contributes to estimated error rates, we note that some count discrepancies may not strictly reflect errors in the SFA transmitting meal counts to the State agency. For instance, the State agency may correct an obvious error in the meal totals initially reported by the SFA.

APEC = Access, Participation, Eligibility, and Certification; SFA = School Food Authority.

a. Methodology

To identify aggregation error related to points of sale, we compared each sample school's recorded total meal counts for the target week with meal counts verified by Westat field staff for the same target week. Westat field staff collected data from each school on the recorded schoolwide daily meal totals. Field staff used receipts or other available documentation from point of sale devices to obtain verified daily meal totals for each individual point of sale.

Differences between school-recorded total meal counts and field staff-verified total meal counts across individual points of sale were used to derive estimates of school meal-counting error rates for each meal reimbursement type. This approach generated separate estimates for breakfast and lunch of school meal-counting error rates for free, reduced-price, and paid meals. For each of these categories, we then estimated each school's total number of meals counted in error by multiplying these error rates by the school's total number of meals recorded as served in

the respective meal type and reimbursement category for the target month.[65] Next, we multiplied each of these totals by the monetary per-meal reimbursement amount for the corresponding meal reimbursement category to generate estimates of schools' total dollar errors for each category. School-level estimates for free, reduced-price, and paid meals were then summed to obtain estimates of the total dollar error for each school. Finally, we generated national and school-level estimates of total improper payment amounts for SY 2012–2013 due to point-of-sale errors using a sample weighted method analogous to that used in generating estimates of total improper payments due to meal claiming error.

b.   Findings

The estimates of aggregation error due to point-of-sale error during SY 2012–2013 are generally very small relative to types of error not related to the aggregation of meal counts. Total improper payments due to point-of-sale errors for the NSLP were $3 million, representing 0.03 percent of total reimbursements under the NSLP (Table VIII.6). The occurrence of school meal total records overcounting NSLP meal reimbursements did not differ greatly from the occurrence of undercounting NSLP meal reimbursements. Thus, the net improper payment amount for this type of error was much smaller, amounting to overpayments of roughly $0.1 million for the NSLP—less than 0.01 percent of NSLP reimbursements for SY 2012–2013. Total improper SBP payments due to point-of-sale error were larger, amounting to roughly $14 million or 0.42 percent of total SBP reimbursements for SY 2012–2013. Unlike the NSLP, most SBP improper payments due to point-of-sale error were underpayments, resulting in net underpayments of about $9 million—0.28 percent of all SBP reimbursements.

The findings for point-of-sale aggregation error indicate that the processing and aggregating of meal counts from individual points of sale are not a significant source of non-certification error. We found that few schools had any point-of-sale error. Roughly 95 and 93 percent of schools had zero point-of-sale error under the NSLP and SBP, respectively (Table VIII.7). Moreover, only about 1 percent of schools had an estimated NSLP point-of-sale error rate greater than 1 percent, and less than 3 percent of schools had an estimated SBP point-of-sale error rate greater than 1 percent.

Schools exhibiting the highest rates of point-of-sale error tended not to be CEP or non-base year Provision 2 schools (Table VIII.8). The most egregious point-of-sale errors were within the SBP; the largest offender may have been due to a transcription error in the count of free meals (SBP section (1), Table VIII.8), and others appear to have miscategorized free and reduced-price meals (SBP sections (2) and (4) through (6), Table VIII.8). Field staff noted that the sampled schools described in rows (2) and (4) under SBP served universally free breakfast but were not CEP or Provision 2 schools. This finding may explain why one side of the meal counts reported by these schools are primarily lumped into the free meal category for these schools, although the two schools differ by whether the schoolwide record of meal totals or the individual point-of-sale records lumped the majority of breakfasts into the free category. Notably, however, both of these schools recorded meal totals that included a reasonable number of reduced-price meals in their reports to the SFA. This finding suggests the misclassification of meals served as free meals

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[65] For CEP and non-base year Provision 2 schools, meal counts are often not recorded separately by reimbursement type. For schools of these special provisioning types, we calculated each type of error rate as the error rate across all meals multiplied by the school's claiming percentage for the corresponding meal reimbursement type.

because of these schools serving universally free breakfasts was rectified prior to reimbursement claims being submitted to a State agency.

Table VIII.6. National estimates of improper payments due to aggregation error: point-of-sale error, SY 2012–2013

	NSLP	SBP
Total reimbursements (millions of dollars)		
Total reimbursements	11,801	3,340
Improper payment amounts (millions of dollars)		
Overpayments	2 (1)	2 (2)
Underpayments	1 (1)	12 (8)
Gross improper payments	3 (1)	14 (8)
Net improper payments	< 1 (1)	-9 (9)
Improper payment rates (percentages)		
Overpayments	0.01 (0.01)	0.07 (0.05)
Underpayments	0.01 (0.01)	0.35 (0.26)
Gross improper payments	0.03 (0.01)	0.42 (0.26)
Net improper payments	< 0.01 (0.01)	-0.28 (0.26)
Sample size (schools)	**385**	**375**

Source: APEC-II study, weighted data.

Note: Analysis weights are calibrated based on total national reimbursements reported in the FNS national data file. Standard errors in parentheses. The sum of overpayments and underpayments does not equal gross improper payments because of rounding. Point-of-sale aggregation error occurs when the sum of daily meal count totals from school points-of-sale differs from the total meal counts reported by a school to the school district office that prepared the claim for reimbursement.

APEC = Access, Participation, Eligibility, and Certification; FNS = Food and Nutrition Service; NSLP = National School Lunch Program; SBP = School Breakfast Program; SY = school year.

Table VIII.7. Distribution of schools by rate of improper reimbursements due to aggregation error: point-of-sale error, SY 2012–2013

	NSLP	SBP
Mean percentage of reimbursements in error	0.03	0.24
Percentage of schools with different overall error rates		
No error	94.83	93.44
At most 1% error	4.27	3.93
Greater than 1% and at most 5% error	0.90	1.95
Greater than 5% error	<0.01	0.67
Percentage of schools with different overpayment rates		
No overpayment	97.05	96.33
At most 1% overpayment	2.76	2.12
Greater than 1% and at most 5% overpayment	0.19	1.42
Greater than 5% overpayment	<0.01	0.13
Percentage of schools with different underpayment rates		
No underpayment	97.78	97.11
At most 1% underpayment	1.51	1.81
Greater than 1% and at most 5% underpayment	0.71	0.53
Greater than 5% underpayment	<0.01	0.54
Sample size (schools)	**385**	**375**

Source: APEC-II study, weighted data.

Note: Values in tables represent the percentage of schools within each mutually exclusive group of improper payment rates. Point-of-sale aggregation error occurs when the sum of daily meal count totals from school cafeteria points-of-sale differs from the total meal counts reported by a school to the school district office that prepared the claim for reimbursement. The mean school-level percentage of reimbursements in error may differ from the national percentage because of differences in the number of meals claimed for reimbursement across schools.

APEC = Access, Participation, Eligibility, and Certification; NSLP = National School Lunch Program; SBP = School Breakfast Program; SY = school year.

Table VIII.8. Schools exhibiting high point-of-sale aggregation error rates, SY 2012–2013

	Improper payment rate (%)	Improper payment amount ($)	Meal type	School meal count	Point-of-sale meal count	Count error rate	Special provision type	Grade levels served	School size (students)
NSLP									
(1)	4.40	989.24	All meals	1592	1662	-4.40	CEP	Elementary	502
(2)	2.55	408.99	Free Reduced-price Paid	928 109 223	953 109 236	-2.69 0.00 -5.83	None	Middle school	408
(3)	2.33	424.60	Free Reduced-price Paid	1,232 56 38	1,202 56 38	2.44 0.00 0.00	None	High school	368
(4)	1.31	225.13	Free Reduced-price Paid	1,041 189 599	1,058 189 599	-1.63 0.00 0.00	None	Elementary	387
(5)	1.02	93.66	Free Reduced-price Paid	456 146 733	456 155 733	0.00 -6.16 0.00	None	High school	582
(6)	0.78	35.11	Free Reduced-price Paid	252 100 295	249 100 295	1.19 0.00 0.00	None	High school	350
(7)	0.55	48.97	Free Reduced-price Paid	285 133 671	288 133 671	-1.05 0.00 0.00	None	High school	635
(8)	0.47	105.62	Free Reduced-price Paid	1,267 276 604	1,259 276 604	0.63 0.00 0.00	None	High school	976
(9)	0.46	65.41	Free Reduced-price Paid	1,642 136 82	1,642 136 64	0.00 0.00 21.95	None	Middle school	294
(10)	0.43	49.64	Free Reduced-price Paid	505 241 958	501 241 958	0.79 0.00 0.00	None	Middle school	425
SBP									
(1)	160.85	36,978.25	Free Reduced-price Paid	2,524 536 43	7,214 536 43	-185.82 0.00 0.00	None	High school	2,672

Table VIII.B (*continued*)

	Improper payment rate (%)	Improper payment amount ($)	Meal type	School meal count	Point-of-sale meal count	Count error rate	Special provision type	Grade levels served	School size (students)
(2)	22.32	1,603.60	Free	1,026	737	28.17	None	High school	712
			Reduced-price	0	57	.			
			Paid	16	248	-1,450			
(3)	21.09	1,740.03	Free	1,055	1,274	-20.76	None	Middle school	657
			Reduced-price	16	24	-50.00			
			Paid	33	31	6.06			
(4)	16.53	718.47	Free	455	574	-26.15	None	Middle school	408
			Reduced-price	35	0	100			
			Paid	84	4	95.24			
(5)	7.40	1,104.01	Free	352	322	8.52	None	High school	975
			Reduced-price	0	30	.			
			Paid	25	25	0.00			
(6)	4.04	308.13	Free	419	400	4.54	None	Elementary	566
			Reduced-price	0	19	.			
			Paid	30	30	0.00			
(7)	2.83	28.37	Free	179	183	-2.24	None	High school	635
			Reduced-price	64	68	-6.25			
			Paid	198	198	0.00			
(8)	2.54	45.94	Free	194	190	2.06	None	Middle school	425
			Reduced-price	98	93	5.10			
			Paid	162	162	0.00			
(9)	2.45	130.07	Free	601	617	-2.66	None	Elementary	387
			Reduced-price	86	86	0.00			
			Paid	69	69	0.00			
(10)	1.43	5.21	Free	76	76	0.00	None	Elementary	509
			Reduced-price	14	13	7.14			
			Paid	18	17	5.56			

Source: APEC-II study, unweighted data.

Notes: The 10 highest non-zero improper payment rate estimates are reported. Estimates reported are the percentage of the school's total meal reimbursements during SY 2012–2013 that were made in error. Improper payment amounts reported are the school's dollar amount of meal reimbursements made in error during SY 2012–2013. Meal count error rates are reported as percentages of meals recorded by the school. A meal count error rate of "." denotes an incalculable error rate when a school reported zero meals for the corresponding meal reimbursement type. Meal count numbers reported are school-level meal counts sampled during the target week. Only total meal counts are reported for CEP and Provision 2 schools.

APEC = Access, Participation, Eligibility, and Certification; CEP = Community Eligibility Provision; NSLP = National School Lunch Program; SBP = School Breakfast Program; SY = school year.

2. Error related to school reports of meal counts to SFA offices

School-to-SFA aggregation error occurs when school totals are not properly communicated between the school and the district administrative office (SFA). This type of error is observed when the SFA record of meal counts reported by a school differs from the school's recorded total meal counts.

a. Methodology

To identify aggregation error related to school reports of meal counts to SFA offices, we compared each sample school's recorded total meal counts for the target month with data collected from the respective SFA on reimbursement meal counts it had recorded for the school. The differences between the school-recorded total meal counts and the SFA records of total meal counts for each meal reimbursement type were used to derive estimates of school-to-SFA error rates.[66] This approach generated separate estimates for breakfast and lunch of school-to-SFA error rates for free, reduced-price, and paid meals. For each of these categories, we then estimated each school's total number of meals counted in error by multiplying these error rates by the school's total number of meals recorded as served in the respective meal type and reimbursement category for the target month. Next, we multiplied each of these totals by the monetary per-meal reimbursement amount for the corresponding meal reimbursement category to generate estimates of schools' total dollar errors for each category. School-level estimates for free, reduced-price, and paid meals were then summed to obtain estimates of the total dollar error for each school. Finally, we generated national and school-level estimates of total improper payment amounts for SY 2012–2013 due to school-to-SFA errors using a sample weighted method analogous to that used in generating estimates of total improper payments due to meal claiming error.

b. Findings

Total improper payments due to school-to-SFA error in the NSLP were $94 million, representing slightly less than 1 percent of total NSLP meal reimbursements (Table VIII.9). Reimbursement amounts reported to the SFA were less than those reflected by school meal total records only slightly more often than they were in excess. Thus, the corresponding net improper payment amount for this type of error was much smaller, amounting to net underpayments of $2 million—less than 0.1 percent of NSLP reimbursements for SY 2012–2013. Total improper payments for the SBP due to school-to-SFA error were smaller, amounting to $9 million or 0.3 percent of total SBP reimbursements for SY 2012–2013. A large portion of SBP improper payments due to school-to-SFA error were overpayments, resulting in a net overpayment of about $6 million— 0.2 percent of all SBP reimbursements.

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[66] For CEP and non-base year Provision 2 schools, meal counts are often not recorded separately by reimbursement type. For schools of these special provisioning types, we calculated each type of error rate as the error rate across all meals multiplied by the school's claiming percentage for the corresponding meal reimbursement type.

Table VIII.9. National estimates of improper payments due to aggregation error: school reports of meal counts to the SFA, SY 2012–2013

	NSLP	SBP
Total reimbursements (millions of dollars)		
Total reimbursements	11,801	3,340
Improper payment amounts (millions of dollars)		
Overpayments	46 (26)	7 (4)
Underpayments	48 (39)	2 (1)
Gross improper payments	94 (47)	9 (5)
Net improper payments	-2 (5)	6 (5)
Improper payment rates (percentages)		
Overpayments	0.39 (0.22)	0.22 (0.13)
Underpayments	0.41 (0.33)	0.05 (0.04)
Gross improper payments	0.80 (0.40)	0.28 (0.14)
Net improper payments	-0.02 (0.40)	0.17 (0.14)
Sample size (schools)	**411**	**400**

Source: APEC-II study, weighted data.

Note: Analysis weights are calibrated based on total national reimbursements reported in the FNS national data file. Standard errors in parentheses. The sum of overpayments and underpayments does not equal gross improper payments due to rounding. School-to-SFA aggregation error occurs when the sum of monthly meal count totals from schools differs from the total meal counts recorded at the SFA office that prepared the claim for reimbursement.

APEC = Access, Participation, Eligibility, and Certification; FNS = Food and Nutrition Service; NSLP = National School Lunch Program; SBP = School Breakfast Program; SFA = School Food Authority; SY = school year.

The findings for school-to-SFA aggregation error indicate that the transmissions of meal counts from schools to their respective SFA were a relatively small source of non-certification error. Roughly 92 and 96 percent of schools had zero school-to-SFA error under the NSLP and SBP, respectively (Table VIII.10). More schools had greater than 5 percent error rates for school-to-SFA error than any other type of aggregation error, with 4 percent of schools having an estimated error rate greater than 5 percent for the NSLP and 2 percent of schools falling into the same category for the SBP.

Table VIII.11 lists the 10 schools with the highest estimated school-to-SFA error rates for breakfast and lunch. Although there appear to be no obvious patterns with high error rate schools along observable characteristics, the highest error rates for each meal program are due to large differences in meal counts that appear to be transcription issues. For example, the school with the highest rate of error for lunch counts reported 2,565 paid lunches, whereas the SFA record of the school's report contains a paid lunch count of 257.

Table VIII.10. Distribution of schools by rate of improper reimbursements due to aggregation error: school reports of meal counts to the SFA, SY 2012–2013

	NSLP	SBP
Mean percentage of reimbursements in error	0.98	0.62
Percentage of schools with different overall error rates		
No error	91.98	95.70
At most 1% error	2.89	1.91
Greater than 1% and at most 5% error	0.99	0.09
Greater than 5% error	4.14	2.30
Percentage of schools with different overpayment rates		
No overpayment	95.72	96.92
At most 1% overpayment	0.95	0.85
Greater than 1% and at most 5% overpayment	0.58	<0.01
Greater than 5% overpayment	2.75	2.23
Percentage of schools with different underpayment rates		
No underpayment	96.26	98.78
At most 1% underpayment	1.94	1.06
Greater than 1% and at most 5% underpayment	0.41	0.09
Greater than 5% underpayment	1.39	0.07
Sample size (schools)	411	400

Source: APEC-II study, weighted data.

Note: Total reimbursement estimates are calibrated to match total national reimbursements reported in the FNS national data file. Values in tables represent the percentage of schools within each mutually exclusive group of improper payment rates. School-to-SFA aggregation error occurs when the sum of monthly meal count totals from schools differs from the total meal counts recorded at the SFA office that prepared the claim for reimbursement. The mean school-level percentage of reimbursements in error may differ from the national percentage because of differences in the number of meals claimed for reimbursement across schools.

APEC = Access, Participation, Eligibility, and Certification; FNS = Food and Nutrition Service; NSLP = National School Lunch Program; SBP = School Breakfast Program; SFA = School Food Authority; SY = school year.

Table VIII.11. Schools exhibiting high error rates in school reports of meal counts to the SFA, SY 2012–2013

	Improper payment rate (%)	Improper payment amount ($)	Meal type	SFA meal count	School meal count	Count error rate (%)	Special provision type	Grade levels served	School size (students)
NSLP									
(1)	74.37	8,248.71	Free	1,733	1,742	-0.52	None	Elementary	337
			Reduced-price	544	544	0.00			
			Paid	257	2,565	-898.06			
(2)	49.46	7,102.62	Free	12,169	5,972	50.93	None	Middle school	294
			Reduced-price	795	509	35.97			
			Paid	353	252	28.61			
(3)	20.64	739.66	Free	1,848	1,466	20.67	None	Elementary	280
			Reduced-price	220	172	21.82			
			Paid	1,839	1,477	19.69			
(4)	16.47	4,612.03	Free	1,809	1,513	16.36	None	Elementary	439
			Reduced-price	49	41	16.33			
			Paid	143	103	27.97			
(5)	11.76	2,085.11	Free	3,307	3,307	0.00	None	High school	906
			Reduced-price	681	222	67.40			
			Paid	680	166	75.59			
(6)	10.96	1,267.00	Free	3,014	3,414	-13.27	None	Elementary	425
			Reduced-price	401	401	0.00			
			Paid	1557	1557	0.00			
(7)	9.55	1,982.94	All meals	5,143	5,634	-9.55	CEP	Elementary	271
(8)	8.77	2,073.00	Free	7,085	6,473	8.64	None	Elementary	579
			Reduced-price	237	210	11.39			
			Paid	428	397	7.24			
(9)	7.33	1,106.57	Free	5,766	5,766	0.00	None	Middle school	679
			Reduced-price	633	633	0.00			
			Paid	62	462	-645.16			
(10)	6.17	1,060.80	All meals	4,232	4,493	-6.17	CEP	Elementary	216
SBP									
(1)	50.53	1,067.34	Free	5,265	2,526	52.02	None	Middle school	294
			Reduced-price	337	201	40.36			
			Paid	408	251	38.48			
(2)	30.95	1,891.52	Free	2,326	3,046	-30.95	P2 NBY	High school	179
(3)	20.36	316.15	Free	1,511	1,205	20.25	None	Elementary	280
			Reduced-price	233	183	21.46			
			Paid	1,402	1,117	20.33			

Table VIII.11 (*continued*)

	Improper payment rate (%)	Improper payment amount ($)	Meal type	SFA meal count	School meal count	Count error rate (%)	Special provision type	Grade levels served	School size (students)
(4)	17.20	1,521.34	Free	4,708	3,897	17.23	None	Elementary	579
			Reduced-price	133	110	17.29			
			Paid	428	360	15.89			
(5)	9.98	1,289.92	All meals	5,432	5,974	-9.98	CEP	Elementary	271
(6)	6.27	438.97	All meals	3,348	3,558	-6.27	CEP	Elementary	216
(7)	5.47	110.14	Free	830	830	0.00	None	High school	906
			Reduced-price	79	36	54.43			
			Paid	35	11	68.57			
(8)	48.54	156.78	Free	656	690	-5.18	None	Middle school	266
			Reduced-price	19	20	-5.26			
			Paid	577	587	-1.73			
(9)	1.85	173.56	Free	4,771	4,860	-1.87	None	High school	2,948
			Reduced-price	314	314	0.00			
			Paid	202	235	-16.34			
(10)	0.85	126.67	Free	965	1,026	-6.32	None	High school	975
			Reduced-price	61	0	100			
			Paid	52	52	0.00			

Source: APEC-II study, unweighted data.

Notes: The 10 highest non-zero improper payment rate estimates are reported. Estimates reported are the percentage of the school's total meal reimbursements during SY 2012–2013 that were made in error. Improper payment amounts reported are the school's dollar amount of meal reimbursements made in error during SY 2012–2013. Meal count error rates are reported as a percentage of the SFA record of meals for the school. A meal count error rate of "." denotes an incalculable error rate when a school reported zero meals for the corresponding meal reimbursement type. Meal count numbers reported are school-level meal counts sampled during the target week. Only total meal counts are reported for CEP and Provision 2 schools.

APEC = Access, Participation, Eligibility, and Certification; CEP = Community Eligibility Provision; NSLP = National School Lunch Program; P2 NBY = Provision 2 Non-Base Year; SBP = School Breakfast Program; SFA = School Food Authority; SY = school year.

3.   Error related to SFA reports of meal reimbursement claims to State agencies

SFA-to-State agency aggregation error occurs when school meal totals claimed for reimbursements are improperly communicated from the SFA to the State agency. This type of error is observed when the SFA record of a school's meal counts differs from the State agency's record of meal counts reported by the SFA for that school.

a.   Methodology

To estimate aggregation error related to SFA reports of meal reimbursement claims to State agencies, we compared each sample school's counts of reimbursable meals reported to the SFA with the counts of reimbursable meals reported to the State agency by the SFA for that school. The differences between these counts were used to derive estimates of SFA reports to State agency error rates.[67] This approach generated separate estimates for breakfast and lunch of error rates for free, reduced-price, and paid meals. For each of these categories, we then estimated each school's total number of meals counted in error by multiplying these error rates by the school's total number of meals recorded as served in the respective meal type and reimbursement category for the target month. Next, we multiplied each of these totals by the monetary per-meal reimbursement amount for the corresponding meal reimbursement category to generate estimates of schools' total dollar errors for each category. School-level estimates for free, reduced-price, and paid meals were then summed to obtain estimates of the total dollar error for each school. Finally, we generated national and school-level estimates of total improper payment amounts for SY 2012–2013 due to SFA-to-State agency errors using a sample weighted method analogous to that used in generating estimates of total improper payments due to meal claiming error.

b.   Findings

Total improper payments due to SFA-to-State agency error in the NSLP were roughly $0.3 million, representing less than 0.01 percent of total reimbursements under the NSLP for SY 2012–2013 (Table VIII.12). The net improper payment amount for this type of error amounted to net overpayments of roughly $0.2 million. Total improper payments for the SBP due to SFA-to-State agency error were larger, amounting to roughly $16 million or 0.5 percent of total SBP reimbursements for SY 2012–2013. Unlike the NSLP, the vast majority of SBP improper payments due to SFA-to-State agency error were underpayments, resulting in a net underpayment of about $16 million—0.5 percent of all SBP reimbursements.

The findings for SFA-to-State agency aggregation error indicate that the transmissions of meal reimbursement claims from SFA to the State agency are a small source of non-certification error. Few schools had any SFA-to-State agency error: 99 and 98 percent of schools had zero error under the NSLP and SBP, respectively (Table VIII.13). Moreover, only 0.2 percent of schools had an estimated error rate greater than 1 percent for NSLP, and 1.4 percent of schools had an estimated error rate greater than 1 percent for the SBP.

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[67] For CEP and non-base year Provision 2 schools, meal counts are often not recorded separately by reimbursement type. For schools of these special provisioning types, we calculated each type of error rate as the error rate across all meals multiplied by the school's claiming percentage for the corresponding meal reimbursement type.

Table VIII.12. National estimates of improper payments due to aggregation error: SFA reports of meal counts to the State agency, SY 2012–2013

	NSLP	SBP
Total reimbursements (millions of dollars)		
Total reimbursements	11,801	3,340
Improper payment amounts (millions of dollars)		
Overpayments	< 1 (< 1)	< 1 (< 1)
Underpayments	< 1 (< 1)	16 (15)
Gross improper payments	< 1 (< 1)	16 (15)
Net improper payments	< 1 (< 1)	-16 (15)
Improper payment rates (percentages)		
Overpayments	< 0.01 (0.00)	< 0.01 (0.00)
Underpayments	< 0.01 (0.00)	0.48 (0.45)
Gross improper payments	< 0.01 (0.00)	0.49 (0.45)
Net improper payments	< 0.01 (0.00)	-0.48 (0.45)
Sample size (schools)	**384**	**378**

Source: APEC-II study, weighted data.

Note: Analysis weights are calibrated based on total national reimbursements reported in the FNS national data file. Standard errors in parentheses. The sum of overpayments and underpayments does not equal gross improper payments because of rounding. SFA-to-State-agency aggregation error occurs when the SFA's records of the number of reimbursable meals differ from the State agency's records of the number of reimbursable meals.

APEC = Access, Participation, Eligibility, and Certification; FNS = Food and Nutrition Service; NSLP = National School Lunch Program; SBP = School Breakfast Program; SFA = School Food Authority; SY = school year.

Table VIII.13. Distribution of schools by rate of improper reimbursements due to aggregation error: SFA reports of meal counts to the State agency, SY 2012–2013

	NSLP	SBP
Mean percentage of reimbursements in error	< 0.01	0.47
Percentage of schools with different overall error rates		
No error	99.23	97.79
At most 1% error	0.62	0.83
Greater than 1% and at most 5% error	0.15	0.16
Greater than 5% error	< 0.01	1.21
Percentage of schools with different overpayment rates		
No overpayment	99.81	99.81
At most 1% overpayment	0.04	0.02
Greater than 1% and at most 5% overpayment	0.15	0.16
Greater than 5% overpayment	< 0.01	<0.01
Percentage of schools with different underpayment rates		
No underpayment	99.42	97.98
At most 1% underpayment	0.58	0.81
Greater than 1% and at most 5% underpayment	< 0.01	< 0.01
Greater than 5% underpayment	< 0.01	1.21
Sample size (schools)	**384**	**378**

Source: APEC-II study, weighted data.

Note: Values in tables represent the percentage of schools within each mutually exclusive group of improper payment rates. SFA-to-State-agency aggregation error occurs when the district's records of the number of reimbursable meals differ from the State agency's records of the number of reimbursable meals. The mean school-level percentage of reimbursements in error may differ from the national percentage because of differences in the number of meals claimed for reimbursement across schools.

APEC = Access, Participation, Eligibility, and Certification; NSLP = National School Lunch Program; SBP = School Breakfast Program; SFA = School Food Authority; SY = school year.

   Table VIII.14 lists all sample schools with non-zero estimated rates of improper payments due to SFA-to-State agency error. Although one sampled school had an estimated error rate of 1.2 percent for NSLP, all others had NSLP error rates of less than 0.1 percent. The corresponding rate estimates were higher under the SBP. Three sampled schools—all within the same SFA—had error rates higher than 10 percent for the SBP. All three of these schools had SFA records consisting of only free meals, and the State agency record contained a combination of meal counts across free, reduced-price, and paid meals. Totals in each record are reasonably close, suggesting that the State agency may have broken the SFA records of total meals into separate reimbursement type categories. This possibility is consistent with field staff notes stating that one of these schools served universally free breakfasts and recorded the entire count of breakfasts served as free meals.

Table VIII.14. Schools exhibiting high error rates in SFA reports of meal counts to the State agency, SY 2012–2013

	Improper Payment rate (%)	Improper payment amount ($)	Meal type	State meal count	SFA meal count	Count error rate (%)	Special provision type	Grade levels served	School size (students)
NSLP									
(1)	1.23	268.67	Free	4,830	4,768	1.30	None	High school	752
			Reduced-price	807	795	1.51			
			Paid	3,534	3,518	0.46			
(2)	0.09	4.55	All Meals	1,135	1,136	0.01	CEP	Middle school	293
(3)	0.04	9.32	Free	5,892	5,892	0.00	None	Elementary	408
			Reduced-price	15	0	.			
			Paid	49	60	-18.33			
(4)	0.02	12.61	Free	15,640	15,635	0.03	None	High school	2,627
			Reduced-price	3,617	3,618	-0.03			
			Paid	519	525	-1.14			
(5)	0.02	3.72	All meals	6,563	6,564	-0.02	CEP	Elementary	468
(6)	0.00	3.62	Free	20,621	20,621	0.00	None	High school	3,337
			Reduced-price	3,722	3,721	0.03			
			Paid	1,184	1,184	0.00			
SBP									
(1)	50.27	1,165.88	Free	658	1,801	-63.47	None	High school	119
			Reduced-price	135	0	.			
			Paid	893	0	.			
(2)	45.54	5,083.33	Free	3,339	8,566	-61.02	None	Middle school	478
			Reduced-price	685	0	.			
			Paid	4,538	0	.			
(3)	44.77	4,303.05	Free	2,948	7,553	-60.97	None	Elementary	422
			Reduced-price	605	0	.			
			Paid	4,007	0	.			
(4)	5.96	617.93	All meals	7,653	8,138	-5.96	P2 NBY	Elementary	733

Table VIII.14 (*continued*)

	Improper Payment rate (%)	Improper payment amount ($)	Meal type	State meal count	SFA meal count	Count error rate (%)	Special provision type	Grade levels served	School size (students)
(5)	3.06	161.10	Free	2,183	2,123	2.83	None	High school	752
			Reduced-price	370	352	5.11			
			Paid	522	515	1.36			
(6)	0.45	30.11	Free	2,431	2,441	-0.41	None	Elementary	408
			Reduced-price	18	0	.			
			Paid	21	39	-46.15			
(7)	0.23	7.78	Free	761	763	-0.26	None	Middle school	378
			Reduced-price	75	75	0.00			
			Paid	81	81	0.00			
(8)	0.18	2.80	All meals	568	569	-0.18	CEP	Middle school	293
(9)	0.01	2.02	Free	8,274	8,273	0.01	None	High school	2,672
			Reduced-price	1,707	1,707	0.00			
			Paid	133	134	-0.75			

Source: APEC-II study, unweighted data.

Notes: The 10 highest non-zero improper payment rate estimates are reported. Estimates reported are the percentage of the school's total meal reimbursements during SY 2012–2013 that were made in error. Improper payment amounts reported are the school's dollar amount of meal reimbursements made in error during SY 2012–2013. Meal count error rates are reported as a percentage of the SFA record of meals for the school. A meal count error rate of "." denotes an incalculable error rate when a school reported zero meals for the corresponding meal reimbursement type. Meal count numbers reported are school-level meal counts sampled during the target week. Only total meal counts are reported for CEP and Provision 2 schools.

APEC = Access, Participation, Eligibility, and Certification; CEP = Community Eligibility Provision; NSLP = National School Lunch Program; P2 NBY = Provision 2 Non-Base Year; SBP = School Breakfast Program; SFA = School Food Authority; SY = school year.
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4. **Comparison with findings on improper payments due to aggregation error from APEC-I**

Estimated rates of improper payments due to aggregation error during SY 2012–2013 are generally much smaller than estimates from the APEC-I report of SY 2005–2006 (Table VIII.15). Notably, the recent estimates of point-of-sale improper payment rates for the NSLP are less than one-tenth the size of those from APEC-I. The large decrease in the size of NSLP point-of-sale error suggests the recent adoption of electronic methods for recording meal transactions has been effective in reducing errors in summing meals across individual points of sale. The rate of SBP overpayments is much lower than in APEC-I; however, the rate of estimated underpayments is much larger. The result is a net improper payment rate that reflects overall underpayments but is larger in magnitude than the analogous APEC-I estimate. This finding might be partially explained because some sample schools with high point-of-sale error rates for breakfast, as noted by field staff, were serving universally free breakfasts but were not schools with special meal provisioning. These schools tended to categorize SBP meal counts almost entirely as free meals on point-of-sale or school-level meal count records. The corresponding reports to the SFA, however, contained meal counts with distributions of free, reduced-price, and paid meals that were more typical of other schools without special meal provisioning. Although these discrepancies contribute to the estimated amount of improper SBP payments, they may instead indicate attempts by the school or SFA to correct the initial overcounting of free meals, thereby eliminating errors in meal counts before the reimbursements were claimed.

The most dramatic reductions in improper payment rates due to aggregation error relative to APEC-I were among school-to-SFA and SFA-to-State agency errors (Table VIII.15). As with point-of-sale error, one possibility is that these reductions in error are at least partially the result of an increase in the use of electronic methods for reporting school-level meal counts to School Food Authorities and State agencies. APEC-II estimates of the gross percentage of NSLP total reimbursements corresponding to school-to-SFA aggregation error are roughly 2.5 times smaller than those from APEC-I, though not statistically different, and SBP estimates are more than 10 times smaller. NSLP estimates of improper payment rates corresponding to SFA-to-State agency aggregation error are an extremely small fraction of the same estimates from APEC-I. The difference between gross estimates from APEC-I and APEC-II for this type of error is not as stark for the SBP, but the direction of the net payment error is different. APEC-I estimated an SBP gross improper payment rate of roughly 1.8 percent due to SFA-to-State agency error, with a net overpayment rate of about 1.1 percent. APEC-II found that most of these SBP errors were underpayments, with an estimated net underpayment rate of nearly 0.5 percent, though this estimate is not statistically different from the APEC-I rate. The three sampled schools with the highest rates of underpayments due to SFA-to-State agency error had SFA records consisting of only free breakfasts, whereas the State agency record disaggregated these meal counts into free, reduced-price, and paid meals. Some schools with this type of meal count discrepancy were noted by field staff as serving universally free breakfasts. Although this study is not designed to systematically investigate the relationship between universal free breakfast programs and improper payments, it may be that schools and School Food Authorities frequently exhibit inaccuracies in reporting meals by reimbursement type under such programs. In these cases, estimated underpayments due to SFA-to-State agency error may actually reflect corrections made at the State agency level to the reimbursement types of meals counts submitted by the SFA.

Table VIII.15. Change in estimates of national improper payment rates due to aggregation error from APEC-I and APEC-II (percentages)

	NSLP			SBP		
	2005–2006	2012–2013	Difference	2005–2006	2012–2013	Difference
Point-of-sale improper payment rates (percentages)						
Gross	0.33	0.03	-0.31*	0.24	0.42	0.18
	(0.16)	(0.01)	(0.16)	(0.14)	(0.26)	(0.29)
Net	-0.12	< 0.01	0.12	0.16	-0.28	-0.44
	(0.13)	(0.01)	(0.13)	(0.14)	(0.26)	(0.30)
Sample size (schools)	**181**	**385**		**171**	**375**	
School reports to the SFA improper payment rates (percentages)						
Gross	2.02	0.80	-1.22	3.99	0.28	-3.71**
	(0.78)	(0.40)	(0.88)	(1.80)	(0.14)	(1.81)
Net	1.12	-0.02	-1.14	2.48	0.17	-2.31
	(0.78)	(0.40)	(0.87)	(1.84)	(0.14)	(1.85)
Sample size (schools)	**208**	**411**		**206**	**400**	
SFA reports to the State agency improper payment rates (percentages)						
Gross	1.46	< 0.01	-1.46**	1.78	0.49	-1.29
	(0.69)	(0.00)	(0.69)	(1.01)	(0.45)	(1.11)
Net	1.08	< 0.01	-1.08	1.12	-0.48	-1.60
	(0.69)	(0.00)	(0.69)	(0.98)	(0.45)	(1.08)
Sample size (schools)	**135**	**384**		**129**	**378**	

Source: APEC-II and APEC-I studies, weighted data.

Note: ***, **, and * denote statistical significance at the 0.01, 0.05 and 0.10 levels, respectively. Standard errors in parentheses.

APEC = Access, Participation, Eligibility, and Certification; NSLP = National School Lunch Program; SBP = School Breakfast Program; SFA = School Food Authority.

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IX. TOTAL IMPROPER PAYMENTS FROM CERTIFICATION AND NON-CERTIFICATION ERROR

Overall total combined improper payments from certification and non-certification errors are not equal to the sum of improper payments for certification and non-certification errors because non-certification error can offset or augment improper payments resulting from a certification error. This chapter presents estimates of net improper payments that take into account interactions among certification and non-certification errors.

We calculate net improper payments instead of gross improper payments to take these interactions into account. For example, consider a student who is eligible for reduced-price meals but is erroneously certified for free meals (overcertification error). This certification error considered in isolation would result in an overpayment equal to the free meal reimbursement rate minus the reduced-price rate for each reimbursable meal claimed for this student. However, if one of this student's reimbursable meals is improperly not counted due to meal claiming error, then the overpayment due to certification error is more than offset by an underpayment due to non-certification error. The school should have been reimbursed for a reduced-price meal (if the student had been correctly certified) but was not reimbursed for a meal at all. Therefore, the combination of these errors results in an underpayment that is equal to the reduced-price rate ($2.6875). This example demonstrates that certification and non-certification errors may have complicated interactions on improper payments that must be carefully considered when generating estimates of total certification and non-certification errors.

A. Methods

We estimated net improper payments due to combinations of error separately for (1) schools that were not CEP or P 2/3 non-base year schools and for (2) schools that operated CEP or P 2/3 in a non-base year. Our estimation approach for schools that were not CEP or P 2/3 non-base year schools identified combinations of errors that affect individual meals.[68] Our approach for CEP and P 2/3 non-base year schools identified combinations of improper payment rates at the national level, because reimbursements in CEP and P 2/3 non-base year schools are based on applying claiming percentages to the total number of reimbursable meals. In these schools, certification error affects the claiming percentages rather than the reimbursement that is received for individual meals. After applying these two estimation approaches, we totaled the resulting estimates to obtain national net improper payments due to certification and non-certification error.

Among schools that were not CEP or P 2/3 non-base year schools, we performed six steps to calculate net improper payments due to combinations of error:

1. **Identified combinations of certification error, meal claiming error, and aggregation error that can affect a meal for certified students and denied applicants.** We first identified all possible combinations of the three types of aggregation error (point of sale,

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[68] For ease of discussion, this chapter refers to aggregation error as if it affects individual meals, whereas in reality, aggregation is more likely to operate in a more summative way, affecting a percentage of the total of all meals. This rhetorical choice allows for a more straightforward conceptualization of how different types of error would interact with one another when combined.

school to SFA, and SFA to State) that could lead to a net overpayment, net underpayment, or no net improper payment. We then used the percentages of meals that were affected by each type of aggregation error to calculate overall estimates of meals that had a net overpayment and meals that had a net underpayment from the combination of aggregation errors. Throughout the rest of this section, we refer to this combination of aggregation errors as "aggregation error." Next, we identified all possible combinations of certification error, meal claiming error, and aggregation error that could affect a meal for a free, reduced-price or denied applicants. We completed this step separately for free, reduced-price, and paid meals in the NSLP and SBP. We also calculated the per-meal improper payment resulting from each of these possible combinations of error. These per-meal improper payments differ from the per-meal improper payments shown in previous chapters because they take into account the offsets and augmentations of multiple types of certification and non-certification error.

2. **Calculated likelihoods of each possible combination of error for certified students and denied applicants.** We first calculated the probability of a given free, reduced-price, or paid meal being affected by certification error, meal claiming error, or aggregation error. We multiplied the relevant probabilities together to estimate the likelihood of each possible combination of error. Meal claiming error rates were assumed to be equal across all meal certification statuses (free, reduced-price, and paid).

3. **Counted meals affected by each combination of error for certified students and denied applicants.** We multiplied the probabilities from Step 2 by our national estimates of the numbers of free, reduced-price, and paid meals served in the NSLP and SBP for schools that were not CEP or P 2/3 non-base year schools. We based our national estimates of meal counts on the meal participation data used for the certification error analysis.

4. **Estimated improper payments from each combination of error for certified students and denied applicants.** We multiplied the counts of meals affected by each combination of error by the per-meal improper payment for that combination of error. These estimates represent national improper payments to certified students and denied applicants.

5. **Estimated improper payments from each combination of error for nonapplicants.** We multiplied combinations of improper payment rates for meal claiming error and aggregation error against our national estimate of reimbursements for nonapplicants. Nonapplicants do not have certification error because they did not apply for certification. We estimated reimbursements for nonapplicants by subtracting reimbursements for denied applicants from reimbursements for all paid meals.

6. **Estimated national improper payments and rates from each combination of error.** We calculated national improper payments due to each combination of error by summing the improper payments for certified students and denied applicants with improper payments for nonapplicants. Improper payment rates were calculated by dividing improper payments by national reimbursements to schools that were not CEP or P 2/3 non-base year schools separately for the NSLP and SBP.

In CEP and P 2/3 non-base year schools, we implemented the following approach to identify improper payments due to combinations of error:

- **Identified combinations of overpayments and underpayments from errors.** We identified all possible combinations of overpayments and underpayments resulting from certification error, meal claiming error, and aggregation error. We did not apply this step separately for free, reduced-price, and paid meals.

- **Estimated the national improper payment rate for each combination of errors.** We estimated the national improper payment rate for each combination of errors by multiplying the relevant overpayment and underpayment rates for certification error, meal claiming error, and aggregation error.

The approaches outlined above for combining errors assume that the occurrences of certification error, meal claiming error, and aggregation error do not influence each other—that is, they are statistically independent. This assumption would mean, for example, that an erroneously certified student is just as likely as a correctly certified student to have a tray that is affected by meal claiming error. We believe that this assumption is plausible, but the data do not allow us to test it more rigorously.

B. Findings

We first discuss findings among schools that are not CEP and are not P 2/3 non-base year. These schools represent most schools participating in the school meal programs. We then describe findings for CEP and P 2/3 non-base year schools.

1. Schools that are neither CEP nor P 2/3 non-base year

We developed counts of meals affected by each potential combination of errors as well as the per-meal net improper payment. There are nearly 60 potential combinations of error for the NSLP and SBP separately. Table IX.1a shows a portion of these combinations for SBP, and Table IX.1b shows similar combinations for NSLP. These tables include only the combinations of error involving free meals with an overpayment due to aggregation error or free meals with no aggregation error. There are nine additional combinations of error in the SBP and NSLP affecting free meals with an underpayment due to aggregation error (not shown). For this analysis, we do not take into account the severe need reimbursement in the SBP or the additional 2-cent reimbursement in the NSLP.

Most meals in the NSLP and SBP do not generate any improper payments. Among schools that are not operating under CEP and are not P 2/3 non-base year schools, 75 percent of all reimbursable meals served to certified students and denied applicants at lunch did not have any error, and the remaining 25 percent had certification error, meal claiming error, aggregation error, or some combination of error types (Table IX.2). Slightly more than 1 percent of all NSLP meals had a combination of more than one type of error, representing about 5 percent of all meals with error. In the SBP, 73 percent of all reimbursable meals served to certified students and denied applicants did not have any error, and the remaining 27 percent had some combination of certification error, meal claiming error, or aggregation error (Table IX.2). About 2 percent of all SBP meals had a combination of more than one type of error, representing about 7 percent of all meals with error. The prevalence of the most frequent combinations of error

among free meals is shown in Figures IX.1 and IX.2 for the NSLP and SBP, respectively. Accounting for combinations of certification error, meal claiming error, and aggregation error resulted in a total of $901 million in net improper payments in the NSLP, representing 8 percent of total reimbursements. Combinations of error account for $55 million, representing 0.5 percent of total NSLP reimbursements and about 6 percent of net improper payments. Combined net improper payments were $361 million in the SBP, representing 13 percent of total reimbursements. Combinations of error were relatively more common in the SBP than in the NSLP, accounting for $41 million in the SBP, or 1 percent of total SBP reimbursements and 11 percent of net improper payments.

In earlier chapters, we presented net improper payment estimates for certification error ($491 million in Table VII.1) and non-certification error ($444 million for meal claiming error in Table VIII.1; $0.13 million for point-of-sale aggregation error in Table VIII.6; -$2.05 million for school-to-SFA aggregation error in Table VIII.9; $0.24 million for SFA-to-State agency aggregation error in Table VIII.12) in the NSLP. The sum of these net improper payment estimates is $933 billion. Thus, if we had calculated total improper payments as the sum of net improper payments individually for each type of error, the combined error estimate would have been substantially higher than the estimate that accounts for the interaction of different types of error at the meal level.

Table IX.1a. Per-meal improper payment and number of meals for combinations of error affecting free meals in the SBP, SY 2012–2013

Meal type	Certification error	Meal claiming error	Aggregation error	Improper payment per meal	Number of meals	Notes
Free	n.a.	n.a.	Overpayment	1.55	9,024,748	Extra meal was claimed at the free rate.
Free	None (CF-FE)	None	None	0.00	1,061,806,464	
Free	None (CF-FE)	Overpayment	None	1.55	117,645,104	Extra meal was counted at the free rate.
Free	None (CF-FE)	Underpayment	None	-1.55	3,580,684	Meal was not counted at the free rate.
Free	Overpayment (CF-RE)	None	None	0.30	70,746,536	
Free	Overpayment (CF-RE)	Overpayment	None	1.55	7,838,513	A meal that was not reimbursable was counted as free.
Free	Overpayment (CF-RE)	Underpayment	None	-1.25	238,575	A reimbursable meal was not counted at the free rate and there was certification error.
Free	Overpayment (CF-NE)	None	None	1.28	73,675,120	Difference between free and paid breakfast.
Free	Overpayment (CF-NE)	Overpayment	None	1.55	8,162,992	A meal that was not reimbursable was counted as free.
Free	Overpayment (CF-NE)	Underpayment	None	-0.27	248,451	A reimbursable meal was not counted at the free rate and there was certification error.

CF=certified free; FE = free eligible; NE = not eligible; RE = reduced-price eligible; SBP = School Breakfast Program; SY = school year; n.a. = not applicable.

Table IX.1b. Per-meal improper payment and number of meals for combinations of error affecting free meals in the NSLP, SY 2012–2013

Meal type	Certification error	Meal claiming error	Aggregation error	Improper payment per meal	Number of meals	Notes
Free	n.a.	n.a.	Overpayment	3.0875	18,116,036	Extra meal was claimed at the free rate.
Free	None (CF-FE)	None	None	0.00	2,388,667,136	
Free	None (CF-FE)	Overpayment	None	3.0875	108,888,920	Extra meal was counted at the free rate.
Free	None (CF-FE)	Underpayment	None	-3.0875	39,145,104	Meal was not counted at the free rate.
Free	Overpayment (CF-RE)	None	None	0.40	162,133,088	
Free	Overpayment (CF-RE)	Overpayment	None	3.0875	7,390,940	A meal that was not reimbursable was counted as free.
Free	Overpayment (CF-RE)	Underpayment	None	-2.6875	2,657,012	A reimbursable meal was not counted at the free rate and there was certification error.
Free	Overpayment (CF-NE)	None	None	2.59	173,766,144	Difference between free and paid lunch.
Free	Overpayment (CF-NE)	Overpayment	None	3.0875	7,921,241	A meal that was not reimbursable was counted as free.
Free	Overpayment (CF-NE)	Underpayment	None	-0.4975	2,847,653	A reimbursable meal was not counted at the free rate and there was certification error.

CF=certified free; FE = free eligible; NE = not eligible; NSLP = National School Lunch Program; RE = reduced-price eligible; SY = school year; n.a. = not applicable.

Table IX.2. National estimates of meals affected by error in non-CEP, non-P 2/3 non-base year schools, SY 2012–2013

	NSLP	SBP
Total meals (millions)		
Total meals	3,619	1,768
Rates of meals in error (percentage)		
Meals that have no error	75.35	73.00
Meals that have any type of error	24.65	27.00
Meals that only have certification error	17.52	15.49
Meals that only have meal claiming error	4.67	8.33
Meals that only have aggregation error	1.20	1.22
Meals with combinations of error	1.26	1.96
Total reimbursements (millions of dollars)		
Total reimbursements	11,043	2,811
Improper payment amounts (millions of dollars)		
Net improper payments	901	361
Due to meals with only certification error	525	89
Due to meals with only meal claiming error	313	228
Due to meals with only aggregation error	8	3
Due to meals with more than one type of error	55	41
Improper payment rates (percentages)		
Net improper payments rate	8.16	12.85
Due to meals with only certification error	4.76	3.16
Due to meals with only meal claiming error	2.83	8.13
Due to meals with only aggregation error	0.07	0.12
Due to meals with more than one type of error	0.50	1.44

Source: APEC-II study, weighted data.

Note: Analysis weights are calibrated based on total national reimbursements reported in the FNS national data file. Meal counts are those served to certified students and denied applicants. Improper payment amounts are for meals served to all students.

APEC = Access, Participation, Eligibility, and Certification; CEP = Community Eligibility Provision; FNS = Food and Nutrition Service; NSLP = National School Lunch Program; P 2/3 = Provision 2 or 3 schools; SBP = School Breakfast Program; SY = school year.

Figure IX.1. Percentage of free meals in the NSLP with most common combinations of error, SY 2012–2013
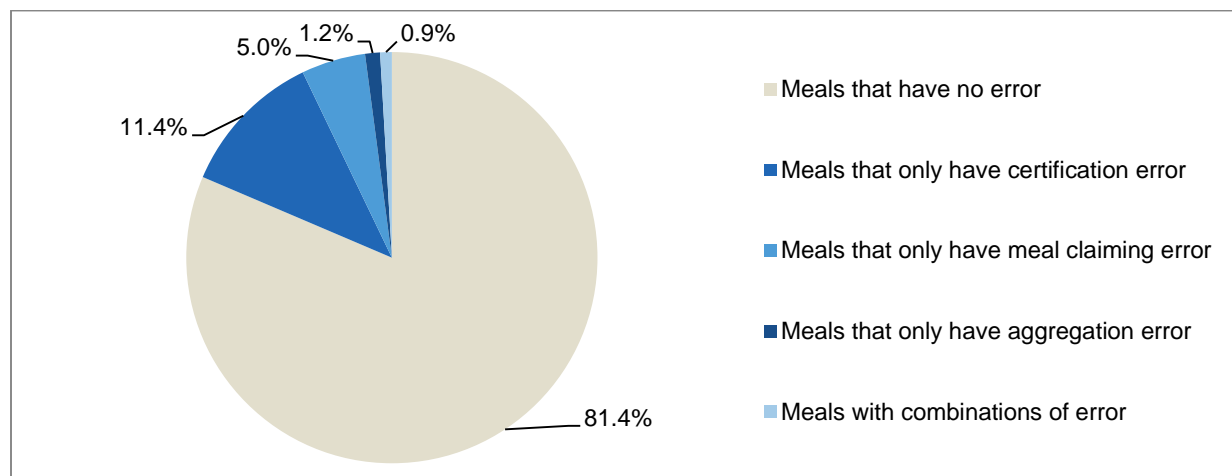
NSLP = National School Lunch Program; SY = school year.

Figure IX.2. Percentage of free meals in the SBP with most common combinations of error, SY 2012–2013
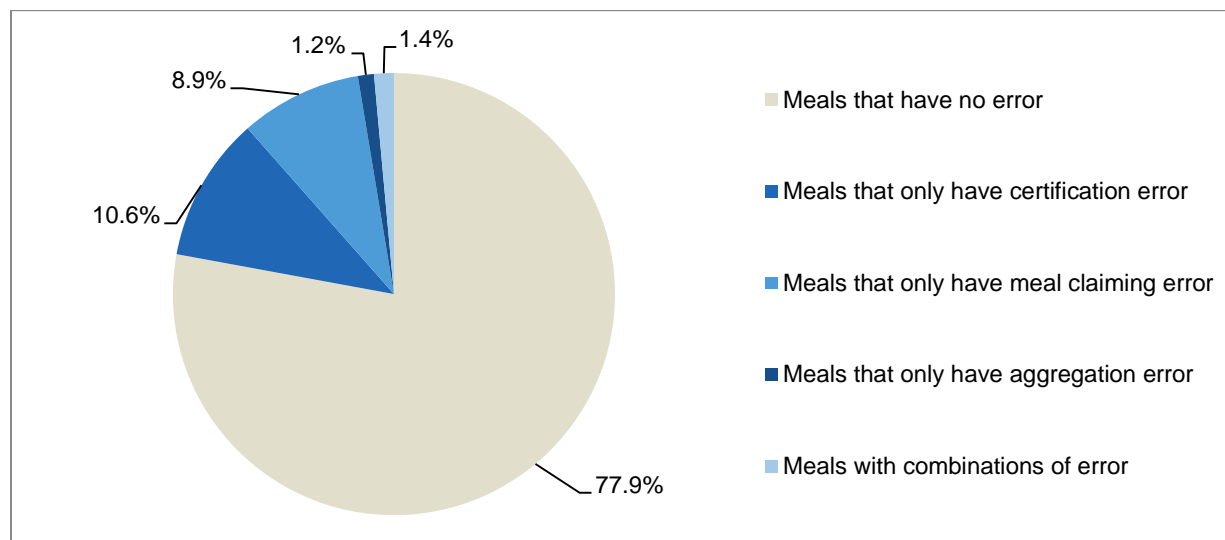
SBP = School Breakfast Program; SY = school year.

The overall percentages of meals in error because of any combination of certification error, meal claiming error, and aggregation error were similar in the NSLP and SBP, but the sources and dollar amounts of error differed (Table IX.2). In the NSLP, 18 percent of meals served to certified students and denied applicants were in error because of only certification error; that is, if these meals had been correctly certified, no improper payment would have resulted. The improper payments from these meals equaled $525 million and represented 5 percent of total reimbursements in the NSLP. Of NSLP meals, 5 percent were in error because of only meal claiming error (which equaled $313 million, or 3 percent of total NSLP reimbursements), and 1 percent of meals in the NSLP were in error because of only aggregation error ($8 million, or 0.1 percent of NSLP reimbursements). In the SBP, a lower percentage of meals than in the NSLP were in error because of only certification error (16 versus 18 percent), but a substantially greater percentage of meals were in error because of only meal claiming error (8 versus 5 percent). Few SBP meals (1 percent) were in error because of only aggregation error. In the SBP, $89 million in improper payments were due to only certification error (3 percent of SBP reimbursements) and $228 million were due to only meal claiming error (8 percent of SBP reimbursements). Just $3 million in improper payments (0.1 percent of SBP reimbursements) were due to only aggregation error.

2.   CEP and P 2/3 non-base year schools

In CEP and P 2/3 non-base year schools, total improper payments due to any certification error, meal claiming error, and aggregation error were $67 million in the NSLP and $78 million in the SBP (Table IX.3). These improper payment amounts represent 9 percent of total reimbursements in CEP and P 2/3 non-base year schools in the NSLP and 15 percent of total reimbursements in those schools in the SBP. Meal claiming error was the most prevalent source of improper payments in these schools, particularly in the SBP. Net improper payments due to meal claiming error equaled $37 million in the NSLP (5 percent of total NSLP reimbursements in CEP and P 2/3 non-base year schools) and equaled $55 million (10 percent of total reimbursements) in the SBP.

3. Total net improper payments due to certification and non-certification errors in all schools

Summing the estimates over all schools, net total improper payments in the NSLP equaled $968 million; this figure represented 8 percent of total NSLP reimbursements (Table IX.4). Total improper payments in the SBP due to certification error, meal claiming error, and aggregation error equaled $439 million, or 13 percent of total reimbursements in the SBP. Improper payment rates are higher in the SBP in part because of the higher incidence of meal claiming error. The rate of improper payments due to meal claiming error alone was more than twice as high in the SBP (9 percent) as in the NSLP (3 percent).

Table IX.3. National estimates of improper payments in CEP and P 2/3 non-base year schools, SY 2012–2013

	NSLP	SBP
Total reimbursements (millions of dollars)		
Total reimbursements	758	528
Improper payment amounts (millions of dollars)		
Net improper payments	67	78
Due to meals with only certification error	22	14
Due to meals with only meal claiming error	37	55
Due to meals with only aggregation error	6	6
Due to meals with more than one type of error	1	2
Improper payment rates (percentages)		
Net improper payments	8.81	14.71
Due to meals with only certification error	2.90	2.74
Due to meals with only meal claiming error	4.94	10.48
Due to meals with only aggregation error	0.78	1.05
Due to meals with more than one type of error	0.19	0.46

Source: APEC-II study, weighted data.

Note: Analysis weights are calibrated based on total national reimbursements reported in the FNS national data file.

APEC = Access, Participation, Eligibility, and Certification; FNS = Food and Nutrition Service; NSLP = National School Lunch Program; P 2/3 = Provision 2 or 3 schools; SBP = School Breakfast Program; SY = school year.

Table IX.4. National estimates of improper payments, SY 2012–2013

	NSLP	SBP
Total reimbursements (millions of dollars)		
Total reimbursements	11,801	3,340
Improper payment amounts (millions of dollars)		
Net improper payments	968	439
Due to meals with only certification error	547	103
Due to meals with only meal claiming error	350	284
Due to meals with only aggregation error	14	9
Due to meals with more than one type of error	56	43
Improper payment rates (percentages)		
Net improper payments	8.20	13.15
Due to meals with only certification error	4.64	3.10
Due to meals with only meal claiming error	2.97	8.50
Due to meals with only aggregation error	0.12	0.27
Due to meals with more than one type of error	0.48	1.29

Source: APEC-II study, weighted data.

Note: Analysis weights are calibrated based on total national reimbursements reported in the FNS national
             data file.

APEC = Access, Participation, Eligibility, and Certification; FNS = Food and Nutrition Service; NSLP = National
School Lunch Program; SBP = School Breakfast Program; SY = school year.

X. IMPLICATIONS OF STUDY FINDINGS

In this chapter, we synthesize findings from the study, including changes in improper payments from SY 2005–2006 to SY 2012–2013. We also summarize recent actions by the U.S. Department of Agriculture to reduce improper payments and identify approaches to reduce certification and non-certification error and the improper payments resulting from them, based on APEC-II study findings.[69]

A. Summary of findings from APEC-II

The APEC-II study examined certification error separately for schools that were using the Community Eligibility Provision and schools that were not. Among schools not using CEP, we found that one in five certified and denied applicant students were erroneously certified or incorrectly denied benefits. Household reporting error (occurring for 17 percent of certified and denied applicant students) was nearly twice as common as administrative error (9 percent). For the National School Lunch Program, approximately 10 percent of total reimbursements were improper because of certification errors. For the School Breakfast Program, this figure was about 12 percent. For both programs, slightly more than 70 percent of improper payments were overpayments. Estimates of gross improper payment rates for non-CEP schools in SY 2012–2013 are not significantly different from those found for SY 2005–2006 in APEC-I, which were about 9 percent for both NSLP and SBP.

Improper payment rates among students who were directly certified for free school meals or certified by application based on categorical eligibility were substantially lower than those among students who were certified by application or who were denied applicants. For example, about 3 percent of NSLP reimbursements for students who were directly certified or certified by application based on categorical eligibility were improper payments, compared with 10 percent for students certified for free meals by application based on income, 25 percent for students certified for reduced-price meals, and 90 percent for students not certified for free or reduced-price meals. As a result, about 80 percent of national improper payments are related to applications either certified or denied based on household income. These findings may help explain why gross improper payment rates did not decline from SY 2005–2006 to SY 2012–2013 despite the rapid rise in direct certification during this period. In particular, if the increase in direct certification came primarily from a shift of certification by application based on categorical eligibility to direct certification, then this shift would have the effect of moving students from one low error rate category to another, equally low rate category.[70] Further support for this possibility is because relatively few students not certified for free meals were found to be eligible for direct certification in the APEC-II study; only about 2 percent of students certified for reduced-price meals and denied applicants were found to be categorically eligible for free school meals based on information provided in the household survey.

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[69] In addition to the main findings presented in this report, FNS has examined findings from a wide range of analysis of certification error by student, school, and district characteristics. Although these exploratory analyses are beyond the scope of this report because of the limitations in the data, FNS may use them to inform approaches to reducing improper payments.

[70] Direct certification could also increase for other reasons, such as direct certification of eligible students who would not have applied for school meal benefits otherwise.

Schools participating in CEP provide students meals at no charge and do not collect applications for school meal benefits. Program meals meeting regulatory standards are then reimbursed at either the free or paid rate, with the free claiming percentage equal to the percentage of enrolled students who are "identified students" (those directly certified or approved for free meals with a method that does not require verification) times a multiplier (currently 1.6). Thus, improper payments for schools using CEP depend on the accuracy of their claiming percentages rather than the accuracy of the certification of individual students. Our findings show that it is fairly common for CEP groups (either an individual school, set of schools, or all schools within an SFA) to claim fewer meals as free than they are entitled to under program rules. On average, we found that the group's observed identified student percentage (ISP), used to determine the free claiming percentage, is less than its estimated actual ISP. However, it is not common for schools to claim more meals as free than allowed. Overall, the improper payment rate for schools using CEP was slightly below 2 percent for both NSLP and SBP, which is substantially lower than schools not using CEP (10 to 12 percent). Furthermore, in marked contrast to improper payments among schools not using CEP, less than 10 percent of NSLP and SBP improper payments for schools using CEP were overpayments.

Improper payments due to certification error for all schools, regardless of CEP status, represented about 10 percent of total reimbursements for NSLP and 11 percent of total reimbursements for SBP in SY 2012–2013 (Table X.1). These improper payment rates are not statistically different from those found for SY 2005–2006 by APEC-I, which were about 9 percent for both NSLP and SBP.

Table X.1. Gross improper payment rates in NSLP and SBP, for SYs 2005–2006 and 2012–2013

	2005–2006	2012–2013
Improper payment rates in the NSLP (percentage of total NSLP reimbursements)		
Certification error	9.4	9.8
Meal claiming error	3.1	5.1***
Point-of-sale aggregation error	0.3	< 0.1*
School-to-SFA aggregation error	2.0	0.8
SFA-to-State agency aggregation error	1.5	< 0.1**
Improper payment rates in the SBP (percentage of total SBP reimbursements)		
Certification error	9.2	11.0
Meal claiming error	9.8	10.9
Point-of-sale aggregation error	0.2	0.4
School-to-SFA aggregation error	4.0	0.3**
SFA-to-State agency aggregation error	1.8	0.5

Source: APEC-I study and APEC-II study, weighted data.

Note: ***, **, and * denote statistical significance between improper payment rates in SYs 2012–2013 and 2005–2006 at the 0.01, 0.05 and 0.10 levels, respectively.

APEC = Access, Participation, Eligibility, and Certification; NSLP = National School Lunch Program; SBP = School Breakfast Program; SFA = School Food Authority; SY = school year.

In examining sources of improper payments other than certification error, we found substantial error in the process by which schools assessed and recorded whether a meal was reimbursable, particularly in the SBP during SY 2012–2013. About 5 percent of NSLP reimbursements were improper payments due to meal claiming error; the figure was about 11

percent for SBP (Table X.1). The meal claiming error rates for NSLP in SY 2012–2013 are significantly different from (larger than) those for SY 2005–2006 (5 versus 3 percent), but the rates for SBP are not significantly different. We found very little error in the processes that occur between the time the meal reimbursement status is recorded at the point of sale and when the district claims reimbursement for its meals from the State agency during SY 2012–2013. We examined three improper payment rates related to these processes, all of which were less than 1 percent of total reimbursements. Several of these rates were significantly different from (lower than) the rates found for SY 2005–2006 by APEC-I.

B. Implications of study findings for reducing improper payments

The study's findings on error sources suggest program approaches that FNS might explore for reducing certification and non-certification error and improper payments. Some of the most important of these methods include the following:

- **Encourage adoption of CEP for schools with very high percentages of identifiable students.** As noted earlier, improper payment rates—and particularly overpayment rates—are markedly lower for schools using CEP than for schools not using CEP. Schools using CEP in this study may not be representative of the broader set of schools eligible for CEP nationally because they were "early adopters" who were most likely to benefit from CEP policies. Therefore, the difference in improper payment rates by CEP status estimated in this study may not be representative of the change in improper payment rates that would accompany the national expansion of CEP. However, these CEP results are encouraging and suggest that improper payments may be reduced substantially with the adoption of CEP by schools similar to the early adopters in the APEC-II sample, such as those with particularly high percentages of categorically eligible (and thus identifiable under CEP rules) students.

- **Encourage and facilitate accurate household reporting of all income sources and amounts for all household members.** As noted earlier, applications either certified or denied based on household income account for a large majority of national improper payments. Based on information from the household survey, 93 percent of students with any reporting error on their applications had misreported income information. Although application forms and/or the accompanying instructions currently ask households to report all income sources, not all applicant households have complied fully. Additional strategies and instrumentation for obtaining complete data on all income sources from all household members should be tested.

- **Improve the accuracy of other administrative functions certifying students and transmitting the student's status to the district's benefit issuance instrument.** Missing applications or direct certification documentation was the most frequent administrative error, although district staff make other types of errors, such as assessment, lookup, and transmittal errors. Each of these types of error contributes to overall administrative error. Strengthening procedures for processing applications, applying decision making rules, and transmitting certification decisions more accurately would reduce administrative error rates.

- **Identify and address sources of the high rates of meal claiming error at selected schools.** The continued high rates of meal claiming error in the school meal programs arose from a few large schools having very high levels of this type of non-certification error. A first step toward reducing meal claiming error involves identifying its source. One possibility is that individual cashiers are confused about the requirements for reimbursable meals. Additional guidance to

these cashiers about these criteria, or system changes that make it easier to recognize meals that do not meet these criteria, may help reduce meal claiming error. Another possibility is that the source of error is not cashiers but the higher-level staff that plans meals and/or provides guidance to food service staff. For example, certain selected foods that are key components of breakfast or lunch menus might not meet the meal requirements that a cafeteria manager or SFA director believes they meet, and the resulting instructions to servers or cashiers about which items should count as reimbursable are incorrect. In this instance, the most effective response may be providing cafeteria managers and SFA directors with guidance and technical assistance concerning the meal pattern requirements.

REFERENCES

Burghardt, John, Philip Gleason, Michael Sinclair, Rhoda Cohen, Lara Hulsey, and Julita Milliner-Waddell. "Evaluation of the National School Lunch Program Application/Verification Pilot Projects. Volume I: Impacts on Deterrence, Barriers, and Accuracy." Special Nutrition Program Report Series, No. CN-04-AV5. Alexandria, VA: U.S. Department of Agriculture, Food and Nutrition Service, Office of Analysis, Nutrition and Evaluation, 2004.

Gleason, Philip, Tania Tasse, Kenneth Jackson, and Patricia Nemeth. "Direct Certification in the National School Lunch Program—Impacts on Program Access and Integrity." Report No. FAN-03-009. Washington, DC: U.S. Department of Agriculture, Economic Research Service, October 2003. [http://www.fns.usda.gov/oane/MENU/Published/CNP/FILES/directcert.pdf].

Government Accountability Office (GAO). "School Lunch: Implementing Nutrition Changes Was Challenging and Clarification of Oversight Requirements Is Needed." Washington, DC: GAO, 2014. Available at [http://www.gao.gov/assets/670/660427.pdf]. Accessed June 1, 2014.

Institute of Medicine (IOM). "Dietary Reference Intakes for Energy, Carbohydrate, Fiber, Fat, Fatty Acids, Cholesterol, Protein, and Amino Acids." Washington, DC: Institute of Medicine, 2005. Available at [http://www.nal.usda.gov/fnic/DRI/DRI_Energy/energy_full_report.pdf]. Accessed May 12, 2014.

Institute of Medicine (IOM). "School Meals: Building Blocks for Healthy Children." Washington, DC: Institute of Medicine of the National Academies, 2010. Available at [http://www.fns.usda.gov/sites/default/files/SchoolMealsIOM.pdf]. Accessed May 12, 2014.

Logan, Christopher, Patty Connor, Eleanor L. Harvill, Joseph Harkness, Hiren Nisar, Amy Checkoway, Laura R. Peck, Azim Shivji, Edwin Bein, Marjorie Levin, Ayesha Enver. "Community Eligibility Provision Evaluation Final Report." Prepared by Abt Associates Inc. Alexandria, VA: U.S. Department of Agriculture, Food and Nutrition Service, 2014. Available at [http://www.fns.usda.gov/sites/default/files/CEPEvaluation.pdf]. Accessed June 10, 2014.

Moore, Quinn, Andrew Gothro, Kevin Conway, and Brandon Kyler. "The National School Lunch Program Direct Certification Improvement Study: Main Report." Princeton, NJ: Mathematica Policy Research, 2014.

Neuberger, Zoe, and Robert Greenstein. "New Analysis Shows Overcertification for Free or Reduced-Price School Meals Has Been Overstated." Washington, DC: Center on Budget and Policy Priorities, July 15, 2003.

Office of the Federal Register, National Archives and Records Administration. "Nutrition Standards in the National School Lunch and School Breakfast Programs." *Federal Register*, vol. 77, no. 17, January 26, 2012, pp. 4088–4167.

Office of Management and Budget (OMB). "Implementation Guidance for the Improper Payments Information Act of 2002, P.L. 107-300." Washington, DC: OMB, May 2003. Available at [http://www.whitehouse.gov/sites/default/files/omb/assets/omb/memoranda/m03-13-attach.pdf]. Accessed May 12, 2014.

Ponza, Michael, Philip Gleason, Lara Hulsey, and Quinn Moore. "NSLP/SBP Access, Participation, Eligibility, and Certification Study: Erroneous Payments in the NSLP and SBP, Volume I: Findings." Final report submitted to the U.S. Department of Agriculture, Food and Nutrition Service, Office of Analysis, Nutrition, and Evaluation. Princeton, NJ: Mathematica Policy Research, October 2007.

Ralston K., C. Newman, A. Clauson, J. Guthrie, and J. Buzby. "National School Lunch Program: Background, Trends, and Issues." Economic Research Service Report Number 61. Washington, DC: USDA, July 2008.

Tordella, Stephen. "CPS Analysis of National School Lunch Program Participation/Income." Memorandum to the U.S. Department of Agriculture, Food and Nutrition Service. Washington, DC: USDA, 2001.

Tordella, Stephen. "CPS Analysis of National School Lunch Program Participation/Income (Update)." Memorandum to the U.S. Department of Agriculture, Food and Nutrition Service. Washington, DC: USDA, 2003.

U.S. Department of Agriculture, Food and Nutrition Service. "A Menu Planner for Healthy School Meals." Publication No. FNS-303. Washington, DC: USDA FNS, 2008.

U.S. Department of Agriculture, Food and Nutrition Service. "Nutrition Standards in the National School Lunch and School Breakfast Programs." Washington, DC: USDA, August 7, 2013.

U.S. Department of Agriculture, Food and Nutrition Service. "Nutrition Standards in the National School Lunch and School Breakfast Programs: Questions & Answers for Program Operators." Washington, DC: USDA, August 7, 2013.

U.S. Department of Agriculture, Food and Nutrition Service. "School Meals." Washington, DC: USDA, February 19, 2014. Available at [http://www.fns.usda.gov/school-meals/grants]. Accessed June 10, 2014.

U.S. Department of Agriculture, Food and Nutrition Service. "Study of Income Verification in the National School Lunch Program, Final Report: Volume I." Washington: January 1990. [http://www.fns.usda.gov/oane/MENU/Published/CNP/cnp-archive.htm].

U.S. Department of Agriculture, Food and Nutrition Service, Child Nutrition Programs. "Eligibility Manual for School Meals: Determining and Verifying Eligibility." Washington, DC: USDA, August 2014. Available at [http://www.fns.usda.gov/sites/default/files/EliMan.pdf]. Accessed June 10, 2014.

U.S. Department of Health and Human Services and U.S. Department of Agriculture. *Dietary Guidelines for Americans 2010,* 7th ed. Washington, DC: U.S. Government Printing Office, 2010. Available at [http://www.cnpp.usda.gov/publications/dietaryguidelines/2010/ policydoc/policydoc.pdf]. Accessed May 12, 2014.

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GLOSSARY

(Terms shown in *italics* within a definition are defined separately in another entry in the glossary.)

7 CFR Part 245. The regulation governing the determination of eligibility for *free* and *reduced-price meal* benefits in the *National School Lunch* and *School Breakfast Programs* and for free milk in the Special Milk Program.

Administrative error. A *certification error* that occurs when a *school district* makes a mistake processing an application, determining eligibility, and recording *certification* status information on the application or *master benefit list* or *benefit issuance* instrument. It includes *application completeness error, assessment error, lookup error, missing application or documentation error,* and *transmittal error*.

Administrative review (AR) (or "coordinated review effort" (CRE), as applicable). The system of periodic compliance monitoring reviews of *school districts* that operate the *NSLP/SBP*. A State agency that administers these programs must conduct an administrative review of each participating *school district* on a three-year cycle for AR or five-year cycle for CRE. The reviewer examines *certification, benefit issuance*, *reimbursable meal* compliance, *meal counting and claiming*, and other aspects of the meal program.

Aggregation error. A *non-certification error* that occurs during the process of counting the number of meals served by reimbursement category and reporting these totals to the *State agency* for meal reimbursement. It includes *point-of-sale aggregation error, school-to-SFA aggregation error,* and *SFA-to-State-agency aggregation error.*

Application. A document completed by households to apply for free or reduced-price school meal benefits. Applications are used to collect information on household participation in means-tested programs that automatically qualify students in the household for free meals (*categorical eligibility*) or information on family size and income that is used to determine whether the household's income qualifies the students for free or reduced-price meals (*income eligible*).

Application completeness error. A *certification error* that occurs when a certifying official makes an error in determining whether an *application* contains all of the information required to make a decision on whether to certify the student on the *application* for free or reduced-price meal benefits.

Assessment error. A *certification error* that occurs when information on a household *application* is incorrectly understood or interpreted by *school district* staff during the *certification* process.

Benefit issuance. The process used to provide information on the eligibility category of students to the cashier or the information system used at the point of sale to determine the category in which a meal served to a student will be claimed for *reimbursement*. The most common *benefit issuance* instruments are paper rosters, coded tickets, and computerized information systems.

Broad certification error rate. The *certification error rate* that would result if there were no distinction between *free* and *reduced-price meals*. It represents the percentage of certified students who are not eligible for either *free* or *reduced-price meals*. In estimates of *certification error* that include *denied applicants*, the broad *certification error* rate represents the percentage of student applicants who are either certified for free or reduced-price benefits when they should not be getting any benefits or who are not certified for free or reduced-price meals when they should be.

Meal claiming error. A *non-certification error* that occurs during the process of recording a meal at the time it is served for the purposes of claiming *NSLP* or *SBP reimbursement*. Meal claiming error can result from improper determination as to whether the meal is a *reimbursable meal*.

Categorical eligibility. Any child who is a member of a household eligible to receive benefits from *SNAP*, *TANF*, or the *Food Distribution Program for Indian Reservations (FDPIR)* and certain other categories of children, including homeless, runaway, and migrant family children, is automatically eligible for free school meals.

Certification. The process by which students are approved to receive *free* or *reduced-price meal* benefits. A student can be certified by *direct certification* (based on information supplied by the administering agency of a qualifying means-tested program establishing that he or she is a member of a participating household) or by *application.*

Certification error. An error that occurs when a student is assigned a meal reimbursement status (free, reduced-price, or paid) that does not correctly reflect the student's real eligibility status based on his/her household income and/or participation in a qualifying means-tested program at the time of certification. It includes *administrative error* and *household reporting error.*

Certification error rate. The percentage of students certified for free or reduced-price meals that are not eligible for the level of benefits they are receiving. When *denied applicants* are also considered, this error rate includes students who applied for and were denied benefits who should have been certified for free or reduced-price meals. Students certified in error can be either overcertified—certified for a higher level of benefits than that for which they are eligible—or undercertified—certified for a lower level of benefits than that for which they are eligible.

Child Nutrition (CN) programs. The Food and Nutrition Service administers several programs that provide healthy food to children including the National School Lunch Program, the School Breakfast Program, the Child and Adult Care Food Program, the Summer Food Service Program, the Fresh Fruit and Vegetable Program, and the Special Milk Program.

Code of Federal Regulations (CFR). The Child Nutrition program regulations are in Title 7 of the Code of Federal Regulations.

Community Eligibility Provision (CEP). An alternative to household *applications* for *free* and *reduced-price meals* in high-poverty *School Food Authorities (SFAs)* and schools added through the *HHFKA*. For schools to be eligible, a minimum of 40 percent of their enrolled students must

be *directly certified* or receiving *free meal* benefits without an *application*. The CEP can be elected by an individual school, by a set of schools within an *SFA*, or by the entire *SFA*. Meal *reimbursement* rates are determined by the number of students either *directly certified* or certified eligible for *free meals* without having to submit an *application*; this group is known collectively as *identified students*.

Coordinated review effort (CRE). See administrative review (AR) above.

Denied applicant. A student in a household that submitted an *application* but was not approved for free or reduced-price meal benefits. *Applications* are denied if they are incomplete (missing some key piece of information) or if the information on the *application* does not establish *categorical* or *income eligibility* for *free* or *reduced-price meal* benefits.

Direct certification. A method of establishing *free meal* eligibility for children in *SNAP, TANF,* and *FDPIR households* without an *application* for meal benefits. The *school district* and/or *State agency* obtains documentation from the State or local SNAP/TANF/FDPIR agency or other designated appropriate agency that enables the district to determine whether the children are members of qualifying households. Certain other categories of children (including those who are homeless, runaways, or from migrant worker families) may also be certified for *free meals* without submitting an *application* for meal benefits.

Food and Nutrition Service (FNS). Office of the *U.S. Department of Agriculture* that is responsible for administering the domestic food assistance programs.

Food Distribution Program on Indian Reservations (FDPIR). A program that provides commodity foods to low-income households on Indian reservations and to Native American families residing in designated areas near reservations.

Free claiming percentage (FCP). The percentage of *reimbursable meals* that are claimed as *free meals* in the *CEP.* The value is equal to 1.6 times the *identified student percentage (ISP)*, with a maximum of 100 percent.

Free meal. A meal served under the *National School Lunch* or *School Breakfast Program* to a child from a household eligible for such benefits under *7 CFR Part 245* and for which neither the child nor any member of the household pays or is required to work in the school or in the school's food service.

Healthy Hunger-Free Kids Act (HHFKA) of 2010. Authorizes funding and sets policy for *USDA*'s core *Child Nutrition programs*, including the *NSLP* and the *SBP*.

Household reporting error. A *certification error* that occurs when households report incorrect information on their *applications* for *free* or *reduced-price meals* that causes students in the household to be certified for a level of meal benefits for which they are not eligible.

Identified student percentage (ISP). The proportion of enrolled students who are *identified*, used to calculate meal *reimbursement* rates in the *CEP.*

Identified students. A group of students that is critical to the calculation of meal *reimbursement* rates in the *CEP.* It consists of students who are *directly certified* and can also include students

who are foster children, migrants, or runaways; on a homeless liaison list; *certified* based on a letter from the SNAP agency; participants in Head Start or pre-K Even Start; and nonapplicants approved by local officials.

Improper payments rate. The percentage of the dollar value of *NSLP* and *SBP* program payments that are not made in accordance with program regulatory requirements. APEC-II calculated *improper payments rate due to certification error* and *improper payments rate due to non-certification error*. Each of the two rates is calculated independently. The *total improper payment rate* accounts for the interaction among *certification* and *non-certification errors*.

Improper payments rate due to certification error. This rate is equal to the ratio of the gross amount of payments in error due to *certification error* (overpayments plus underpayments) in each program to the total amount of *reimbursements* in each program. For *certification error*, only the portion of the *reimbursement* that reflects the extra subsidy for free or reduced-price meals contributes to improper payments. Total amount of reimbursements (the denominator in the rate) equals all *USDA* payments for that program.

Improper payments rate due to non-certification error. This rate is equal to the ratio of the gross amount of payments in error due to *non-certification error* (overpayments plus underpayments) in each program to the total amount of *reimbursements* in each program. For *non-certification errors*, the total *reimbursement* for a meal contributes to improper payments.

Income eligibility guidelines (IEGs). The household size and income levels prescribed annually by the Secretary of Agriculture for determining eligibility for *free* and *reduced-price meals* and for free milk. The free guidelines are at or below 130 percent of Federal poverty guidelines, and the reduced-price guidelines are above 130 and at or below 185 percent of poverty guidelines.

Income eligible. A child certified for *free* or *reduced-price meal* benefits based on information on household size and income reported on an *application.*

Lookup error. A *certification error* that occurs when a certifying official does not identify the correct eligibility status on the *IEGs* for the household income and size that is on an *application*.

Master benefit list. A list that contains the names of all students in a school or school district who are certified for *free* or *reduced-price meal* benefits. It may also contain the names of *denied applicants*.

Meal counting and claiming. The process of counting meals at the point of sale; determining *reimbursement* category (free, reduced-price, and paid); submitting counts to the *school district;* and submitting a claim for *reimbursement* to a *State agency*.

Missing application or documentation error. A *certification error* that occurs when a *school district* does not have an approved *application* or *direct certification* documentation on file for a student who is certified to receive *free* or *reduced-price meals*.

National School Lunch Act (NSLA). The Richard B. Russell National School Lunch Act, which establishes the statutory authority for the *NSLP*.

National School Lunch Program (NSLP). The program under which participating schools operating a nonprofit lunch service in accordance with 7 CFR Part 210 receive general and special cash assistance and donated food assistance

Non-certification error. An error that occurs in the stages between certifying and recording students' eligibility status and reporting meal counts to the *State agency* for *reimbursement*. It includes *meal claiming error* and three types of *aggregation error.*

Paid claiming percentage (PCP). The percentage of *reimbursable meals* claimed as paid meals in the *CEP.*

Point-of-sale aggregation error. A *non-certification error* that occurs when the sum of daily meal count totals from the school cafeteria cashiers differs from the total meal counts reported by a school to the *school district* office that prepares the claim for reimbursement.

Provision 2 or 3 (Special Provisions). *Meal counting and claiming* procedures that do not involve annual eligibility determinations for individual students or daily meal counts by eligibility category at the point of service. All students are served *free meals*, and meal counts and claims are based on claiming percentages or amount of *reimbursement* received during a base year in which students were certified and meals counts by category were taken using standard program procedures.

Reduced-price meal. A lunch priced at 40 cents or less or a breakfast priced at 30 cents or less, to a child from a household eligible for such benefits under *7 CFR Part 245* and for which neither the child nor any member of the household is required to work in the school or in the school's food service.

Reimbursable meal. A meal that contains the required amount and number of meal items and/or components for the type of meal-planning and serving system in use by the serving school or *school district* and that is served to an eligible student.

Reimbursement. The payment made to *school districts* participating in the *NSLP* and/or *SBP* for *reimbursable meals.* The amount of reimbursement depends on the eligibility category (free, reduced-price, or paid) of the student who receives the meal.

Residential Child Care Institution. Generally, any distinct part of a public or nonprofit private institution that (1) maintains children in residence; (2) operates principally for the care of children; and (3) if private, is licensed by the State or local government to provide residential child care services under the appropriate licensing code. Residential child care institutions are included under the regulatory definition of "school" for *CN* program purposes. Residential Child Care Institutions were not part of the APEC-II study.

School Breakfast Program (SBP). The program under which participating schools operate a nonprofit food service in accordance with 7 CFR Part 220 receive cash assistance.

School district. In the APEC-II report, it is a local entity that enters into an agreement with a State agency to operate the *NSLP/SBP*. Because the vast majority of schools in the *NSLP/SBP* are part of entities that are commonly known as *school districts*, we are using that term

throughout this report to refer to both public and private nonprofit local entities that enter into agreements with *State agencies* to operate the *NSLP* and *SBP*.

School Food Authority (SFA). The governing body that has the legal authority to operate the *NSLP/SBP* in one or more schools.

School-to-SFA aggregation error. A *non-certification error* that occurs when meal totals reported by a school are improperly recorded by the *SFA*.

Section 4 payments (SBP). Section 4 of the Child Nutrition Act establishes *reimbursement* payments that are made for *free*, *reduced-price*, and *paid meals* served under the *SBP*.

Section 4 payments; Section 11 payments (NSLP). Section 4 of the *NSLA* establishes a *reimbursement* payment that is made for all meals (free, reduced-price, and paid) served under the *NSLP*; Section 11 of the *NSLA* establishes additional *reimbursement* ("special assistance payment") for meals served to children who are certified as *free* or *reduced-price* eligible.

SFA-to-State-agency aggregation error. A *non-certification error* that occurs when the sum of meal totals reported by schools is improperly communicated from the *SFA* to the State agency.

SNAP household. Any individual or group of individuals currently certified to receive benefits under the Supplemental Nutrition Assistance Program (SNAP).

State agency. Either (1) the State education agency or (2) any other agency of the State designated by the governor or other appropriate executive or legislative authority of the State and approved by *USDA* to administer the school nutrition programs.

TANF household. Any individual or group of individuals currently certified to receive assistance under the Temporary Assistance to Needy Families (TANF) program.

Total improper payments rate. The percentage of the dollar value of *NSLP* and *SBP* program payments that are not made in accordance with program regulatory requirements accounting for the interaction among *certification* and *non-certification errors*. Total combined improper payments from *certification* and *non-certification errors* are not equal to the sum of improper payments for *certification* and *non-certification error* because *non-certification error* can offset or augment improper payments resulting from a *certification error*.

Transmittal error. A *certification error* that occurs when a student's eligibility status as recorded on the *master benefit list* is different from the eligibility status determined during the *certification* process.

U. S. Department of Agriculture (USDA). The Federal agency designated by Congress to administer the *National School Lunch Program, School Breakfast Program*, and Special Milk Program.

Verification. The process that *school districts* follow to assess the accuracy of their *certification* decisions. Before November 15 of each school year, districts must select and verify a sample of the *applications* approved for *free* or *reduced-price meal* benefits by obtaining documentation

confirming the accuracy of the program participation or household income reported on the *application* from public records, collateral sources, or from the household.

Verification Summary Report (Form FNS-742). A summary of the results of *verification* activity in a *school district* that must be reported to the district's *State agency* by February 1 of each year. The *State agency* must submit to *FNS* an electronic file with the results of *verification* activity for all *school districts* with which it has agreements by March 15 of each year. The Verification Summary Report (Form FNS-742) was revised for the 2013–2014 school year and is now referred to as the Verification Collection Report. This revision was implemented after the APEC-II data collection.

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