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NSLP/SBP Access, Participation, Eligibility, and Certification Study

Erroneous Payments in the NSLP and SBP

Volume I: Study Findings

United States Department of Agriculture
Food and Nutrition Service

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Erroneous Payments in the NSLP and SBP

Volume I: Study Findings

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We also gratefully acknowledge the efforts of staff in the U.S. Department of Agriculture (USDA) Food and Nutrition Service (FNS) regional offices and of state agencies in the states in which participating SFAs and schools were located—their assistance and support was critical to our efforts to successfully recruit study participants.

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EXECUTIVE SUMMARY

The Food and Nutrition Service (FNS), U.S. Department of Agriculture (USDA), funded the Access, Participation, Eligibility, and Certification (APEC) study to obtain national estimates of the amounts and rates of erroneous payments in the National School Lunch Program (NSLP) and School Breakfast Program (SBP). Erroneous payments may arise because school districts claim reimbursement at the free or reduced-price rate for meals served to students who are not eligible for these benefits, or because they fail to claim reimbursement at the free or reduced-price rate for children who have applied for and are eligible for these benefits (certification errors). Erroneous payments may also arise because 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 which administers the school meal programs (non-certification errors).

Under the Improper Payments Information Act of 2002 (IPIA), federal agencies are required to report annually on the extent of the erroneous payments in programs that may be susceptible to significant erroneous payments. The APEC study is providing information to USDA on the NSLP and SBP to enable it to comply with the IPIA. The information provided in this report will assist FNS in meeting its reporting requirements to the Office of Management and Budget (OMB) and Congress under the IPIA.

Background

Millions of U.S. children participate in the NSLP and SBP each day, receiving school meals that contribute to their overall nutrition and health. In fiscal year 2006, USDA provided nearly 7 billion lunches and breakfasts to children across the country at a cost of approximately $10.2 billion. School districts receive an extra subsidy for more than one-half of these meals because they are served to low-income children who are certified to receive free or reduced-price meals. Most students become certified based on applications submitted by their households to local school districts. The districts use information in the applications to determine whether the students in the households qualify for free or reduced-price meal benefits.

Over the years, concern has mounted that many of the children certified eligible for free or reduced-price meal benefits may in fact be ineligible for the benefits they receive. Several studies have suggested that the number of children erroneously certified for free or reduced-price meals—that is, who are in households with incomes too high to qualify for the benefits they receive—is large and may be growing. There are also children in households with incomes that qualify them for a higher level of benefits than they are actually receiving, including students who apply but have their applications denied even though they are eligible.

Study Design and Methods

The APEC 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 school year (SY) 2005-2006. We collected data on these samples from several sources—surveys of households and school food authority directors, administrative data from schools and districts, and observational data collected during visits to sampled schools. The data sources provided

information that allowed us to measure certification error and erroneous payments among individual students and non-certification error in the processes schools and districts use to claim reimbursements from state agencies. Each of the errors is calculated independently. They cannot be summed to obtain an overall amount or error rate for each program because of interaction between the two types of errors.

Key Findings

Slightly more than one in five certified or denied applicant students was certified inaccurately or erroneously denied meal benefits. Among all certified students and denied applicants, 77.5 percent were certified accurately or correctly denied meal benefits, whereas 22.5 percent were certified in error or erroneously denied benefits. Overcertification was more common than undercertification. The percentage of students certified for a higher level of benefits than that for which they were eligible (the overcertification rate) was 15 percent; the percentage of students certified for a lower level of benefits than that for which they were eligible or erroneously denied benefits (the undercertification rate) was 7.5 percent. Thus, about two-thirds of certification errors resulted in students being overcertified.

Household reporting error was substantially more prevalent than administrative error. Among students with reporting error, administrative error, or both, 70 percent had reporting error alone and 11 percent had administrative error alone. In the remaining cases, both types of error were present: 5 percent of these students had both reporting and administrative errors that combined to result in certification error, and 14 percent had reporting and administrative errors that offset each other, resulting in no overall certification error. The most common household reporting error was a discrepancy in the total amount of income reported on the application; these cases represented more than 80 percent of all students with reporting errors. The most common administrative error was certification of students whose applications were incomplete (26 percent of students with any administrative error); this most frequently occurred because the application lacked a signature or Social Security number.

For both the NSLP and SBP, approximately 9 percent of total reimbursements were erroneous due to certification errors. During SY 2005–2006, there were an estimated $759 million in erroneous NSLP reimbursements due to certification error, or 9.4 percent of the roughly $8.06 billion in cash reimbursements and commodities provided to school districts for all NSLP lunches served in the contiguous United States. Erroneous SBP reimbursements totaled $177 million, or 9.2 percent of the $1.95 billion cash reimbursements paid for all SBP breakfasts served. Overpayments were much more common than underpayments. For both the NSLP and SBP, the estimated overpayment rate was 7 percent and the underpayment rate was slightly more than 2 percent.

The amounts and rates of erroneous payments due to most types of non-certification errors were relatively small; an exception was cashier error, especially for the SBP. We estimated amounts and rates of erroneous payments resulting from non-certification error—cashier error and three types of aggregation error. Overall gross erroneous payments due to all sources of non-certification error account for 6.9 percent of the total dollar value of cash and commodity reimbursements in the NSLP and 15.8 percent of total cash reimbursements in the SBP. Cashier error was relatively large, especially for the SBP. Cashier error occurs when cashiers count a meal as reimbursable even though it fails to meet USDA requirements for reimbursable meals. Total gross erroneous payments from cashier error were 3.1 percent of total cash reimbursements and commodities in the NSLP and 9.8 percent of total SBP reimbursements. Erroneous payments from cashier error resulted primarily from very high levels of this error in a few schools; most schools had fairly low levels of cashier error.

SUMMARY OF FINDINGS

The Food and Nutrition Service (FNS), U.S. Department of Agriculture (USDA), funded the Access, Participation, Eligibility, and Certification (APEC) study to obtain national estimates of the amounts and rates of erroneous payments in the National School Lunch Program (NSLP) and School Breakfast Program (SBP). Erroneous payments may arise because school districts claim reimbursement at the free or reduced-price rate for meals served to students who are not eligible for these benefits, or because they fail to claim reimbursement at the free or reduced-price rate for children who have applied for and are eligible for these benefits (certification errors). Erroneous payments may also arise because 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 which administers the school meal programs (non-certification errors). The information provided in this report will assist FNS in meeting its reporting requirements to the Office of Management and Budget (OMB) and Congress under the Improper Payments Information Act (IPIA) of 2002.

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 2006, USDA provided nearly 7 billion lunches and breakfasts to children across the country at a cost of approximately $10.2 billion. More than one-half of these meals are served to low-income children who are certified to receive free or reduced-price meals; school districts receive an extra subsidy for these meals.

Most students become certified based on applications submitted by their households to local school districts. The districts use information from the applications about household size, income, and participation in certain means-tested public assistance programs—the Food Stamp Program (FSP), Temporary Assistance to Needy Families (TANF), and Food Distribution Program on Indian Reservations (FDPIR)—to determine whether the students in the households qualify for free or reduced-price meal benefits. Students whose applications report household income of no more than 130 percent of the federal poverty level or participation in one of the means-tested programs are eligible to receive free meals. Those whose applications report household incomes above 130 percent but no more than 185 percent of the federal poverty level are eligible for reduced-price meals. No documentation of household income or benefit receipt is required at the time of application. In the verification process, school districts are required to select a small legislatively prescribed sample of applications that have already been approved and to obtain documentation of the households' income or FSP, TANF, or FDPIR participation in order to verify their eligibility for free or reduced-price meals.

Students may also become certified for free meals through "direct certification," which allows districts to use information provided by FSP-, FDPIR-, and TANF-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 migrant, runaway, and homeless

children may also qualify in this way. The eligibility of directly certified students is not subject to the verification process.

There are some schools in which all students receive free meals without applying or being directly certified in a current school year. These schools operate under special application and meal counting provisions, Provision 2 or Provision 3. Under Provision 2, schools operate a "base year," in which they serve all meals at no charge but use standard program procedures to establish individual students' free or reduced-price meal eligibility and count meals by eligibility category. They then may continue to serve all meals at no charge and take only a daily aggregate count of meals served for up to three additional years, during which they claim reimbursement based on the percentage of free, reduced-price, and paid meals served during the base year. Provision 3 schools serve all meals free for up to four years, and reimbursement is based on the total dollar reimbursement the school received during the "base year," which is the most recent year in which applications were taken and meals were counted and claimed by category. The reimbursement is adjusted each year for inflation and enrollment. Both provisions 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. Provision 2 was established in 1980, and Provision 3 in 1995; these provisions are designed to reduce application burden and to simplify meal counting and claiming procedures. Schools are most likely to find it in their financial interest to use Provision 2 or Provision 3 if they serve high-poverty populations and typically serve a large proportion of their meals free of charge.

Over the years, concern has mounted that many of the children certified as eligible for free or reduced-price meal benefits may in fact be ineligible for the benefits they receive. Several studies have suggested that the number of children erroneously certified for free or reduced-price meals—that is, who are in households with incomes too high to qualify for the benefits they receive—is large and may be growing. There are also certified children eligible for a higher level of benefits than they are receiving or children who apply and are eligible but are erroneously denied benefits. The Child Nutrition and WIC Reauthorization Act (the Act), of 2004 (P.L. 108-265), passed in June 2004, made changes to the programs' 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.

In addition to the specific measures aimed at improving NSLP and SBP integrity contained in the Act, under the IPIA (P.L. 107-300), USDA is required to report annually on the extent of erroneous payments in programs, including the NSLP and SBP, that may be susceptible to significant erroneous payments (exceeding $10 million and 2.5 percent of benefits paid out) and report annually on the actions they are taking to reduce them.

The APEC study is providing information to USDA to enable the department to comply with the IPIA. The study provides the baseline estimates of erroneous payments made to school districts nationally for the NSLP and SBP for school year (SY) 2005–2006. It is also providing estimation models to allow FNS staff to update estimates of erroneous payments for the NSLP

and SBP annually, using more easily obtainable district-level data. The research on the estimation model is being addressed in a separate report.

Study Design and Methods

The APEC 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 and SBP in the contiguous United States during SY 2005-2006. School districts that participate in the NSLP and/or SBP were selected first. Within each of the selected school districts, we selected a sample of public and private schools, and then selected students at the sampled schools who either were certified for free or reduced-price meals or had applied for but were denied these benefits. Data were collected at all these levels. The main study samples include the following:

1. 87 school food authorities (SFAs) that administer the meal programs, of which 78 are public and 9 are private
2. 266 schools, of which 256 are public and 10 are private
3. 6,776 students certified for free and reduced-priced meals, and 1,038 students who applied for and were denied benefits (information about this sample of students was collected from their applications for free or reduced-price meal benefits)
4. A subsample of 2,950 students certified for free and reduced-price meals and 453 denied applicants for whom we also conducted an in-person household survey

We collected data on these samples from several sources, as summarized in Table 1. These data sources included surveys of households and SFA directors, administrative data from schools and districts, and observational data collected during visits to sampled schools. The data sources provided information that allowed us to measure both certification error and erroneous 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 calculated independently. They cannot be summed to obtain an overall amount or rate of erroneous payments because of interaction between the two types of errors.

The study generates national estimates of the following key outcomes (summarized in Figure 1):

- ***Sources of Certification Error.*** Certification error 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. Error 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 eligibility list;

TABLE 1

APEC STUDY DATA SOURCES FOR ESTIMATING ERRONEOUS PAYMENTS

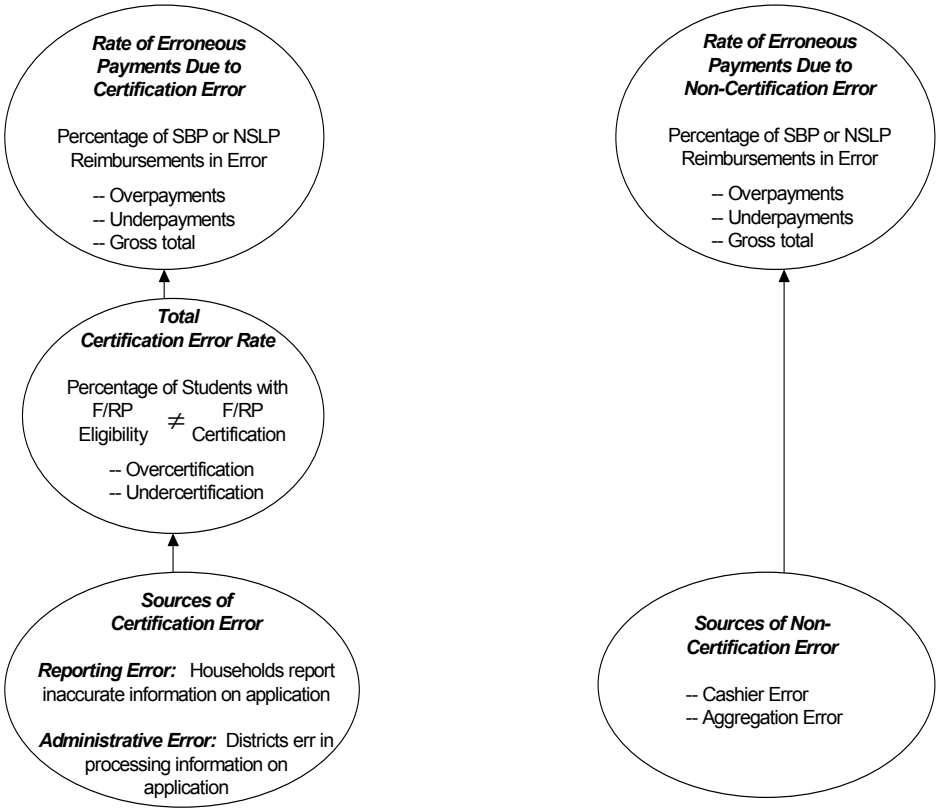
Data Source	Main Use of Data
SFA fax-back form and follow-up telephone survey	Data used to examine erroneous payments outcomes by subgroups defined by district and school characteristics
In-person household survey of free and reduced-price certified applicants and denied applicants	Data used to estimate the student's eligibility for free or reduced-price meal benefits, certification error, and amounts and rates of erroneous payments due to certification error
Panel second interview telephone survey with free and reduced-price certified applicants	Data used to estimate the student's eligibility for free or reduced-price meal benefits and certification error later in school year
Application and direct certification document abstraction	Data used to estimate sources of certification error (administrative versus household reporting error and types within these sources)
Changes in student certification and enrollment fax-back form	Data used to estimate amounts and rates of erroneous payments due to certification error
SBP/NSLP individual student-level participation records data	Data used to estimate amounts and rates of erroneous payments due to certification error
Interviewer observation of cashier transactions	Data used to estimate school cashier transaction error
School cashier meal counts record abstraction	Data used to estimate school point-of-sale aggregation error
School meal counts reported to SFA record abstraction	Data used to estimate school-to-SFA report of meal counts aggregation error
School meal claims reported by SFA to state agency record abstraction	Data used to estimate aggregation error in SFA's claims to state for meal reimbursements

this is called administrative error. We estimate the prevalence of reporting error and administrative error and the sources of error under each of these types. The error rates are calculated in terms of the percentage of certified and denied applicant students that they affect.

- ***Total Certification Error Rate.*** Defined as the percentage of certified and denied applicant students who were not eligible for the level of benefits they are receiving or who were 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. We also define a broad certification error rate, which equals the percentage of students who are certified for some level of benefits when they are not eligible for either free or reduced-price benefits or not certified when they are eligible for at least reduced-price benefits.

Figure 1

Key Outcomes in the APEC Study



- ***Rate of Erroneous Payments Due to Certification Error.*** The rate of erroneous payments is defined as the percentage of SBP or NSLP reimbursements provided to districts for school meals that are incorrect due to 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. Payments in error may either be overpayments—those that are too large given the true eligibility status of the student receiving the meal—or underpayments—those that are too small given the true eligibility status of the student receiving the meal.

  - For the NSLP, the *amount* of erroneous payments is calculated in terms of the additional subsidy for free and reduced-price meals. We derived the erroneous payments *rate* as the amount of erroneous payments relative to total cash reimbursements for all lunches provided (total cash reimbursements and the dollar value of commodities—called entitlement foods—valued on a per-meal basis).
  - In the SBP, the amount of erroneous payments is calculated in terms of the additional subsidy above the paid rate for SBP breakfasts. Because the SBP does not receive commodities, the SBP erroneous payments rate equals the amount of erroneous payments relative to total cash reimbursements for all breakfasts provided.

- ***Sources of Non-Certification Error.*** Non-certification error is error that occurs in the stages between certifying students' eligibility status and reporting meal counts to the state agency for reimbursement. The study examines cashier error and three types of aggregation error:

  - ***Cashier error*** occurs when cafeteria staff members make errors in assessing and recording whether a specific meal meets the criteria for a reimbursable meal under the NSLP or SBP.

  - ***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 school cafeteria cashiers are not summed correctly. *School-to-SFA aggregation error* occurs when school totals are improperly reported to or 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 Erroneous Payments Due to Non-Certification Errors.*** Similar to the erroneous payment rate for certification errors, the rate of erroneous 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 erroneous payments. We calculated erroneous payments rates for each source of non-certification error and for all non-certification error sources combined.

The primary estimates of certification error rates and rates of erroneous payments due to certification error are based on all certified students (including directly certified students) and denied applicants. Certification error was determined by comparing sampled students' certification status as determined by the district with their actual free or reduced-price meal eligibility status. We determined students' certification status using data from the master eligibility lists provided by districts (free, reduced-price, paid). Students' free or reduced-price meal eligibility status was measured based on information collected during the in-person household survey on students' household income, household size, and receipt of FSP, TANF, or FDPIR benefits. This information reflected students' household circumstances at about the time the households submitted their applications for free or reduced-price meal benefits.

We identified sources of certification error by comparing students' certification status and eligibility based on information from the household survey and students' meal benefit applications. Reporting error occurred when households did not accurately report information on their applications for meal benefits. 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 the information in students' applications with their certification status on the district's master eligibility list.

To calculate the erroneous payments rate for the NSLP, we first calculated the sum of overpayments and underpayments nationally for certified students and denied applicants and then divided this sum by the total reimbursement paid to districts for all meals served (inclusive of the value of commodities). The overpayment and underpayment amounts were calculated based on the number of meals received by overcertified or undercertified students and the dollar amount of the error associated with each meal received. Similar procedures were used to calculate the rate of erroneous payments for the SBP.

Key Findings

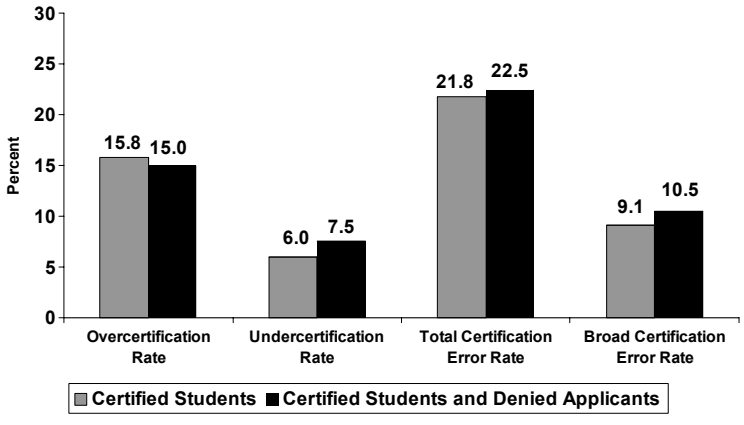
Certification Error Rates

Slightly more than one in five certified or denied applicant students was not certified accurately or erroneously denied benefits. Among all certified students and denied applicants, 77.5 percent were certified accurately or correctly denied meal benefits, whereas 22.5 percent were certified in error or erroneously denied benefits (Figure 2). When only students certified for free or reduced-price meals (excluding denied applicants) were considered, the certification error rate was 21.8 percent.

Overcertification was more common than undercertification. The percentage of students certified for a higher level of benefits than that for which they were eligible (the overcertification rate) was 15 percent; the percentage of students either 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 7.5 percent (Figure 2). In other words, about two-thirds of certification errors resulted in students being overcertified. Considering only certified students, the overcertification rate was 15.8 percent and the undercertification rate was 6 percent. Overcertification was more prevalent among certified students alone than for certified students plus denied applicants. Nearly three-fourths of certification errors of certified students resulted in overcertification.

Figure 2

Certification Error Rate Estimates for Certified Students and Denied Applicants, SY 2005-06

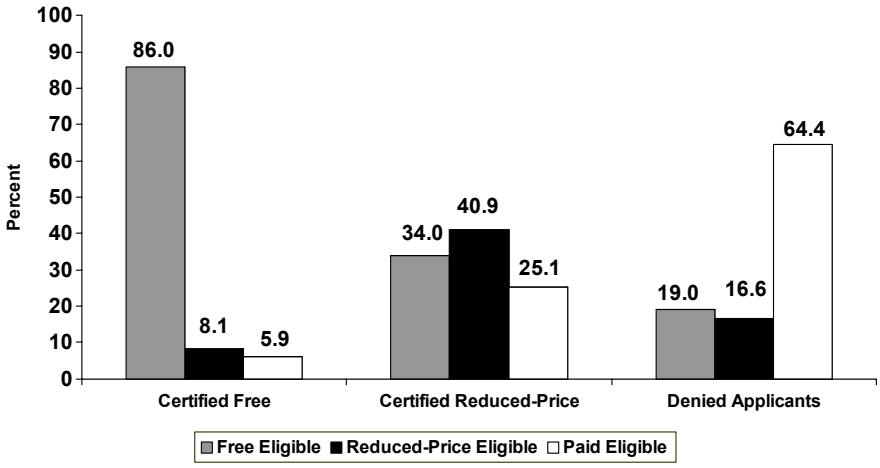


The certification process was most accurate among students certified for free meals. Most students receiving free meals had been certified accurately, with 86 percent of this group in households whose circumstances at time of certification indicate that the students were eligible for free meals (Figure 3). The remaining 14 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 one-fourth overcertified—receiving reduced-price meals but not eligible for either free or reduced-price meals.

Among students in the denied applicant group, nearly two-thirds (64.4 percent) were not eligible for either free or reduced-price benefits, indicating that their application was denied correctly. The household circumstances of the remaining one-third of students denied benefits suggested that they should have been certified, with 16.6 percent of denied applicant students eligible for reduced-price meals and 19 percent eligible for free meals.

Figure 3

Eligibility Status of Certified Students and Denied Applicants, SY 2005-06



More than one-half of certification errors among certified students were misclassifications between free and reduced-price status. While the overall certification error rate was 22.5 percent for all certified students and denied applicants, this error rate would decline to 10.5 percent (which we call the broad certification error rate) if misclassifications between free and reduced-price status were ignored (Figure 2). For certified students only, the broad certification error rate was 9.1 percent. Misclassifications between free or reduced-price status 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 and the rate for a non-certified student (up to $2.10 for lunch and $1.28 for breakfast).

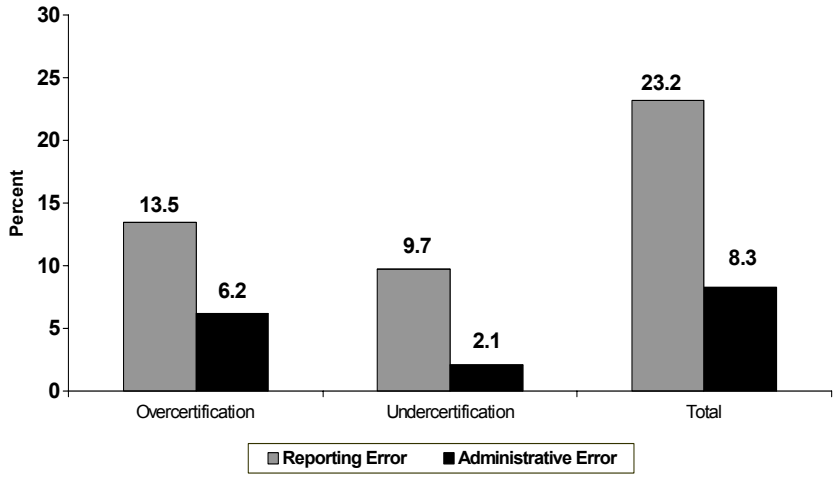
Sources of Certification Error

Household reporting error was substantially more prevalent than administrative error. For all certified students and denied applicants, reporting error was nearly three times more likely to occur as administrative error; 23.2 percent of this group of students had a household reporting error on their applications and 8.3 percent had administrative error in processing their applications (Figure 4). The sum of these percentages is greater than the total certification error (22.5 percent) because it includes students who had both reporting and administrative errors; these errors could either have been reinforcing (resulting in certification error) or offsetting (resulting in no certification error).[1] Excluding students with offsetting reporting and administrative errors resulted in certification error due to household misreporting equal to 19.6 percent and administrative error equal to 4.2 percent.

Administrative error much more frequently led to overcertification than undercertification. While administrative error was relatively less common than reporting error, when it occurred it usually led to overcertification. Administrative error led to overcertification for 6.2 percent of certified students and denied applicants and undercertification for 2.1 percent of these students. Reporting error also more often led to overcertification than undercertification, but the difference was not as pronounced (13.5 percent of certified students and denied applicants overcertified versus 9.7 percent undercertified).

Figure 4

Reporting and Administrative Error Rates for All Certified Students and Denied Applicants, SY 2005-06



[1]The estimates also include errors associated with incomplete applications, which are considered to be administrative error but are not considered certification error if the household survey indicates that the student is eligible for the benefits for which the student was certified.

The most frequent type of household reporting error was a discrepancy in the total amount of income reported on the application. Nearly 20 percent of certified students and denied applicants (80 percent of students with any reporting error) had income misreported on their applications. Approximately one-half of these errors were due to differences in income amounts for a specific person from a specific source. Reporting error due to differences in the number of household members listed on the application occurred for 8 percent of certified students and denied applicants.

Certification of students whose applications were incomplete was the most frequent administrative error made by school districts, occurring for 2.2 percent of certified students and denied applicants (26 percent of students with any administrative error). The majority of these applications were incomplete because they lacked a signature or Social Security number. Other types of administrative errors were missing applications (1.5 percent of certified students and denied applicants), assessment errors (1.4 percent), transmittal errors (1.4 percent), and lookup error (0.2 percent).

Erroneous Payments Due to Certification Error

For both the NSLP and SBP, approximately 9 percent of total reimbursements were erroneous due to certification errors. During SY 2005–2006, there were an estimated $759 million in erroneous NSLP reimbursements due to certification error, or 9.4 percent of the roughly $8.06 billion in cash reimbursements and commodities provided to school districts for all NSLP lunches served in the contiguous United States (Figures 5 and 6).[2] Erroneous SBP reimbursements totaled $177 million, or 9.1 percent of the $1.94 billion in cash reimbursements paid for all SBP breakfasts served.[3]

Within total payments due to certification error, overpayments were much more common than underpayments. More than three-quarters of erroneous payments due to certification error in both the NSLP and SBP were overpayments. The estimated overpayment rate was 7.1 percent and the underpayment rate was 2.3 percent for the NSLP (Figure 6). Similarly, the estimated overpayment rate was 7.1 percent for the NSLP and the underpayment rate was 2.1 percent for the SBP.

[2]The $8.06 billion refers to total cash reimbursements (Section 4 and Section 11 payments under the NSLA) and value of commodities for all reimbursable NSLP lunches provided to students attending schools in the contiguous United States during FY 2006 (including Provision 2 or 3 schools in non-base years). It excludes Alaska, Hawaii, the U.S. territories, and schools operated by the Department of Defense as well as Residential Child Care Institutions (RCCIs).

[3]The $1.94 billion refers to total cash reimbursements (Section 4 payments under the CNA) for all reimbursable SBP breakfasts provided to students attending schools in the contiguous United States during FY 2006 (including Provision 2 or 3 schools in non-base years). It excludes Alaska, Hawaii, the U.S. territories, and schools operated by the Department of Defense as well as RCCIs.

Figure 5

Total Reimbursements and Erroneous Payments Due to Certification Error—NSLP and SBP, SY 2005-06

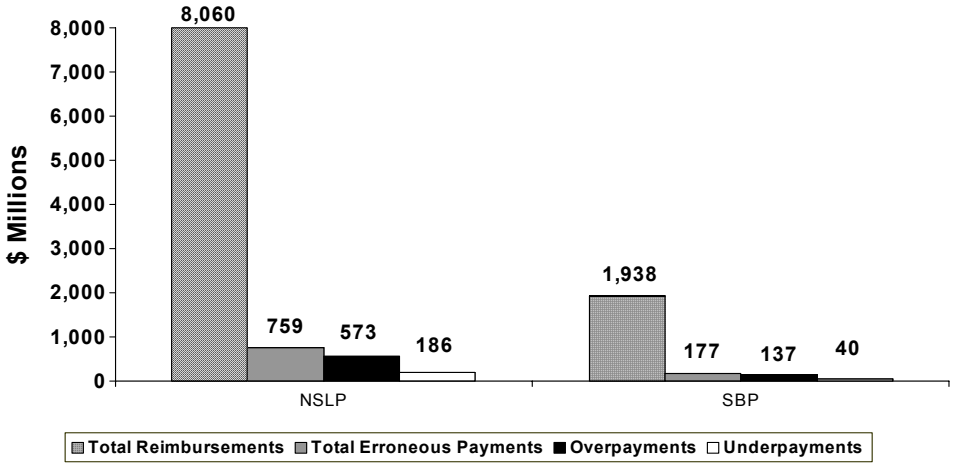
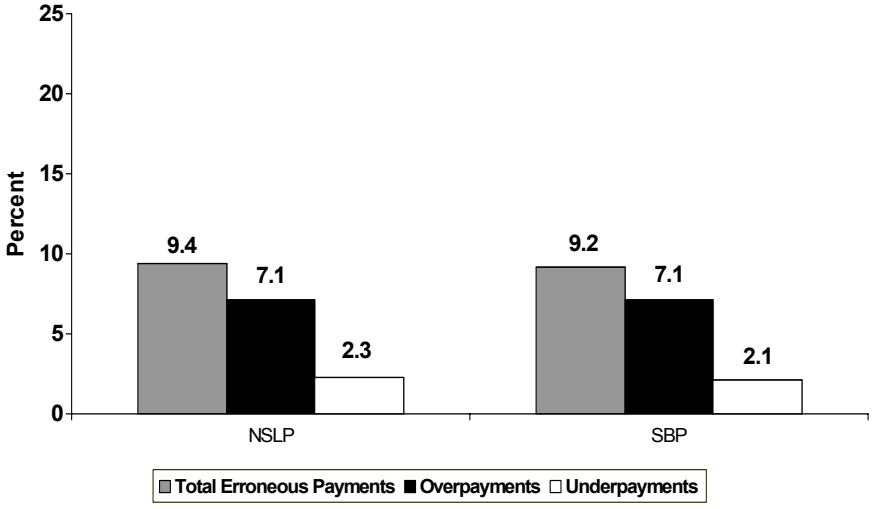


Figure 6

Rates of Erroneous Payments Due to Certification Error—NSLP and SBP SY 2005-06



Erroneous payments are more common in Provision 2 or 3 (P23) base-year schools than in schools not using these provisions. APEC data indicate that the total erroneous payments rates for the NSLP and SBP at P23 base-year schools were substantially larger than the rates at non-Provision 2 or 3 schools (for example, approximately 1.75 times larger for the NSLP). Because a large proportion of students certified for free meals in the base year of P23 schools were overcertified (eligible for a lower level of benefits), the free meal claiming percentage at these schools is overstated in future (non-base) years, and USDA is reimbursing these schools too large an amount for meals consumed by students. (Our estimate of overall erroneous payments accounts for these "future" erroneous payments, however, by including estimated erroneous payments at P23 non-base year schools.) The significance of this finding is that because the claiming percentages in these schools are fixed for at least three years (students are not certified annually at P23 schools during non-base years), USDA has no mechanism for correcting the erroneous claiming percentages unless the schools reestablish them in a new base year.

Erroneous Payments Due to Non-Certification Error

Overall gross erroneous payments due to non-certification error in the NSLP equaled $555 million and accounted for 6.9 percent of total reimbursements; gross erroneous payments in the SBP equaled $306 million and 15.8 percent of SBP reimbursements (figures 7 and 8). Because we cannot adjust for errors across types of non-certification errors which might offset each other, these overall gross rates should be considered the maximum erroneous payments due to non-certification errors. That is, it is possible for more than one type of non-certification error to occur during the meal counting and claiming process. As was the case with certification error, when multiple errors occur they may cancel each other out, resulting in no actual payment error. However, the method we have used to calculate non-certification errors does not allow us to specifically identify and eliminate offsetting errors from the overall erroneous payment calculation for this type of error. The "true" gross non-certification error rate estimate lies somewhere between the sum of the net erroneous payment rates and the sum of the gross erroneous payment rates for the four types of errors. This is because under or overpayments in one type of error can "cancel out" over or underpayments in another type of error, in the same way that over and underpayments within a specific error type cancel each other out to yield the net error rate. The total net erroneous payment rates for the NSLP and SBP equaled 3.6 percent and 13.1 percent, respectively. Therefore the overall gross non-certification erroneous payment rate accounting for offsetting errors lies within a range of 3.6 percent and 6.9 percent of total reimbursements for the NSLP, and 13.1 percent and 15.8 percent of total reimbursements for the SBP.

The process by which cashiers assess and record whether a meal is reimbursable was a substantial source of erroneous payments, particularly in the SBP. Cashier error occurs when cafeteria staff made mistakes assessing and recording whether the meal a student received meets the criteria for a reimbursable meal under the NSLP or SBP. Total gross erroneous payments from cashier error equaled $248 million and represented 3.1 percent of total cash and commodity reimbursements in the NSLP (Figure 7). For the SBP, cashier error equaled $189 million or 9.8 percent of total SBP reimbursements (Figure 8). However, most schools had fairly low levels of

Figure 7

Gross and Net NSLP Erroneous Payment Rates Due to Noncertification Error
SY 2005-06

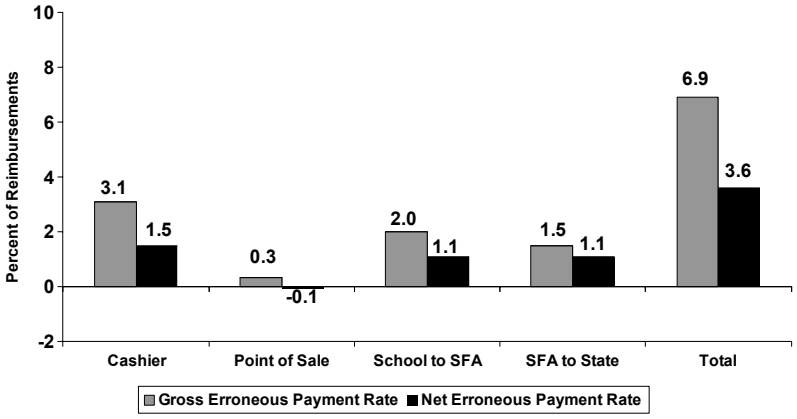
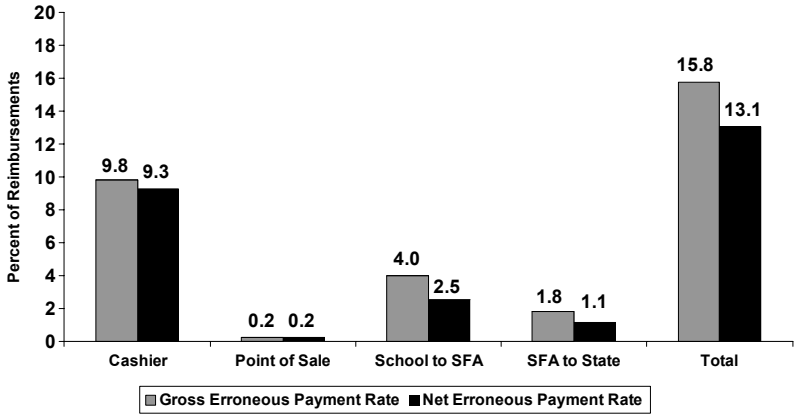


Figure 8

Gross and Net SBP Erroneous Payment Rates Due to Noncertification Error
SY 2005-06



cashier error. The high aggregate levels of cashier error arose from a few large schools having very high levels of this type of non-certification error. Among schools offering the NSLP, 10 percent had an erroneous payment rate due to cashier error of more than 10 percent; about 20 percent of schools offering the SBP had an erroneous payment rate of more than 10 percent.

Schools accurately summed daily meal count totals from the school cafeteria cashiers. Estimates of cashier point-of-sale aggregation error were extremely small ($26 million in the NSLP and $5 million in the SBP). In both the NSLP and SBP, total erroneous payments from point-of-sale aggregation error represented about one-third of one percent of the total subsidies paid for all meals.

Erroneous payments due to SFA errors in recording meal counts reported to them by schools equaled $163 million (about 2 percent of NSLP reimbursements) and $77 million (4 percent of SBP reimbursements). A large majority (about 80 percent) of erroneous payments from this source were overpayments. Thus, when there were discrepancies between school and SFA reports, it was typically the case that the SFA-recorded counts were larger than school reports. As is the case for cashier error, erroneous payments from school to SFA aggregation error were concentrated in a small number of schools that had relatively large error rates.

Erroneous payments due to aggregation error when SFAs submit reimbursement claims to state agencies equaled $118 million and represent 1.5 percent of NSLP reimbursements; and equaled $35 million and represent nearly 2 percent of SBP reimbursements. Again, most (about 90 percent) of these erroneous payments came in the form of overpayments. Errors occurring in SFAs' claims to state agencies were more likely when the SFA reported individual school totals directly to the state as opposed to consolidating school totals and reporting a single SFA-wide number to the state.

Comparisons with the Food Stamp Program

To put the findings on erroneous payments in the school meal programs into perspective, we compared them with those of the Food Stamp Program (FSP), USDA's largest means-tested food assistance program. The FSP provides monthly benefits to eligible low-income families to allow them to purchase food. With annual outlays of $33 billion in FY 2006, the FSP served more than 27 million participants a month. Eligibility for the FSP is based on financial and non-financial factors. The application process includes completing and filing an application form, being interviewed, and verifying facts crucial to determining eligibility. With certain exceptions, a household that meets the eligibility requirements is qualified to receive benefits. The national erroneous payments rate in the FSP is slightly less than 6 percent: 4.5 percent overpayments and 1.3 percent underpayments (GAO January 2007).

As recently as a decade ago, the FSP payment error rate was considerably higher. For example, in 1998 the FSP payment error rate exceeded 9 percent, comparable to our estimates of payment error rates due to certification error in the NSLP and SBP. Since then, the FSP has taken several actions that have led to systematic and continuous reductions in erroneous payments over the past several years. The lower payment error rates in the FSP relative to the school meal programs are likely attributable to differences in three key program attributes: (1)

comprehensive verification of eligibility at time of application, (2) rigorous quality control systems in place to identify and prevent errors, and (3) financial incentives for continuous improvement.

The FSP verifies information provided on the application by the applicant. Applicants must provide documentation of the information they report when they submit their application. Moreover, the FSP certification process involves direct contact, usually in person, between administrative staff and applicants. In contrast, the school meal programs do not require documentation of household income or benefits receipt at the time of application. In the verification process, school districts select a small sample of applications that have already been certified and collect income or benefit documentation from the households in order to verify the students' eligibility for free or reduced-price meals. However, districts typically do not verify more than 3 percent of approved applications. The fact that relatively few applications are subject to verification suggests that this process is not likely to prevent or identify misreporting by households on their applications or identify administrative errors made during the initial certification process.

The FSP has a rigorous and extensive quality control system to continuously evaluate and improve program performance. States conduct reviews on a sample of cases from all participants as well as for those denied participation or terminated from the program. States report the findings of the reviews to FNS, which then conducts validation reviews on a subsample of the selected cases to establish the accuracy of the state-reported information. This provides a strong feedback loop to program operators, enabling them to understand the sources of errors and take steps to reduce them. In the school meal programs, state agency staff evaluates eligibility certification, food items planned and served, and the accuracy of counting and claiming procedures through the Coordinated Review Effort (CRE) process and the staff provides training and technical support to school districts and schools to help improve the accountability of local programs. However, districts are generally reviewed only once every five years; follow-up reviews may be required if serious program integrity issues are identified during a CRE, and a district's operations may be reviewed more often at the state agency's discretion.

Finally, there appear to be stronger incentives to reduce erroneous payments in the FSP than in the school meal programs. The FSP uses the official payment error rates to assess penalties against states with high payment error rates. It also provides financial awards to states with low payment error rates. These features provide strong incentives to minimize erroneous payments. In the school meal programs, districts exceeding error thresholds for key performance standards must take steps to correct those errors. Overclaims can be recovered by USDA and may be extended back to the beginning of the school year or to that point in time when the infraction first occurred. State agencies and FNS may also withhold funds if corrective action is not taken on problems identified in the CRE reviews. There are no reward incentives for having low rates of erroneous payments and states are not required to repay districts for underclaims identified as a result of CREs. (In the most recent reporting year, about 25 percent of underclaims identified during CRE administrative reviews were repaid to SFAs.)

Key differences between the school meal programs and the FSP would create challenges in trying to adopt the features used by the FSP to combat erroneous payments in the NSLP and SBP. While the key function of the offices that administer the FSP is ensuring that benefits go to

eligible households in the appropriate amounts, the district administrating agency's key function is educating children. The district administrating agencies are not typically set up to effectively assess and monitor the household financial circumstances of their students. In addition, there is not an obvious point of contact between a household applying for free or reduced-price meals and district staff; while the household must complete the application, it is often submitted to the school either by mail or delivered in person by a child. Most FSP applicants, by contrast, must appear in person in food stamp offices. Finally, data on rates of free or reduced-price eligibility within a school or district are used for a wide range of purposes beyond determining the free or reduced-price meal benefit status of students. Statistics about the percentage of students in the district certified for free or reduced-price meals are often used as indicators of the level of poverty in the district and sometimes used to determine eligibility (or levels of funding) for other programs, such as Title I. This may create incentives for schools to ensure that their certification rate is as high as possible, and would undermine efforts to implement more rigorous application requirements on households seeking certification for free or reduced-price meals.

In addition, adopting features of the FSP accountability system would significantly increase the burden on schools, district central offices, and state agencies, and therefore increase their administrative costs. Given the limited staff resources available to districts and schools, there is concern that such new burdens could undermine their educational mission. Finally, there are differences in the benefits versus costs of accuracy in the two programs. The typical monthly benefit in the FSP is approximately $200. For a family with two children who receive meals free and participate in the school meal program about three-fourths of the time, the typical monthly benefit is approximately $75. Errors in establishing eligibility are therefore much more costly in the FSP than in school meal programs.

One feature of the FSP that the school meal programs have tested in an attempt to reduce erroneous payments is requiring income documentation at the time of application for free and reduced-price meals. As part of the NSLP Application/Verification Pilot Projects, FNS tested an "up-front documentation" requirement in nine self-selected districts. Burghardt et al. (2004a) estimated the impact of this pilot program and found that up-front documentation did not lead to statistically significant reductions in the districts' certification error rates for free and reduced-price meals. Further, the pilot intervention had the unintended consequence of reducing participation in the program among low-income children who were eligible for free or reduced-price meals.

USDA has taken several steps to reduce erroneous payments. FNS requires school districts to report verification results and pursue corrective action for certification errors they uncover. Moreover, FNS analyzes verification summary data and prepares reports that summarize verification outcomes annually with the goal of providing information to districts and schools that can be use to drive improvements in the accuracy of the certification process. Similarly, FNS has been conducting annual reviews of a probability sample of certified and denied applications to examine the accuracy of school districts' certification decisions and any changes in administrative error rates over time. The information gained from these assessments is being used to provide technical assistance to districts and schools to help them reduce certification error caused by administrative errors.

The Child Nutrition and WIC Reauthorization Act of 2004 includes a range of program changes whose objective is to ensure access while addressing program integrity issues, including:

- Requiring direct certification for all children in FSP households to improve certification accuracy over paper applications.
- Requiring households to submit a single application covering all children attending school. This is intended to reduce certification burden, therefore reducing one factor that can lead to administrative error.
- Providing for year-long certifications.
- Requiring verification samples to be drawn earlier in the school year, requiring SFAs with high rates of non-response to verification to expand their sample and focus on error-prone applications, and allowing districts to directly verify certification status using information from agencies administering public assistance programs.

Implications of Study Findings for Ways to Reduce Erroneous Payments

The APEC study found that slightly more than one in five certified and denied applicant students were erroneously certified or incorrectly denied benefits. Household reporting error was substantially more prevalent than administrative error, occurring three times as often; however, administrative error was not trivial. Districts and schools generally issued meal benefits, counted meals, and submitted claims for reimbursement fairly accurately. An exception at a few schools was the process by which cashiers assessed and recorded whether a meal was reimbursable; this was a substantial source of erroneous payments, particularly in the SBP.

The study's findings on error sources suggest approaches that FNS might explore for reducing certification and non-certification error and the erroneous payments resulting from them. Some of the most important of these include the following:

- ***Emphasize to households the need to report all income sources and amounts for all household members.*** Based on information from the household survey, 80 percent of students with any reporting error on their applications had misreported income information. One-half of these errors were differences in gross income amounts for a specific person from a specific source, often secondary income sources from non-primary household members. 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.
- ***Follow up on incomplete applications before making a certification decision.*** More than one-fourth of administrative error is due to school district staff certifying students whose applications are incomplete. Most of these incomplete applications either lack a signature of a household member, or the Social Security number of the

adult who signed the application or an indication that the signer does not have a Social Security number. Districts can significantly reduce administrative error by following up with households to obtain this missing information before making final certification decisions.

- ***Improve the accuracy of other administrative functions certifying students and transmitting the student's status to the district's benefit issuance instrument.*** While certifying applications that are incomplete is the most frequent administrative error, district staff makes other types of error, such as assessment, lookup, and transmittal errors. Although each of these types of error is relatively small, they contribute 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 cashier error at selected schools.*** For the NSLP, the rate of erroneous payments due to cashier error equaled 3 percent, and for the SBP nearly 10 percent. These high rates arose from a few large schools having very high levels of this type of non-certification error. A first step toward reducing cashier error involves identifying its source. One possibility is that individual cashiers are confused about the particular requirements for reimbursable meals under different menu-planning methods. Additional guidance to these cashiers about these requirements may help reduce cashier 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 the cashiers. 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 cashiers about which items should count as reimbursable are incorrect. In this instance, the most effective response may be guidance and technical assistance to cafeteria managers and SFA directors concerning the meal pattern requirements.

I. STUDY BACKGROUND

The National School Lunch Program (NSLP) and School Breakfast Program (SBP) play a critical role in America's strategy to ensure that all of the nation's children have access to adequate and nutritious food. These programs provide federal financial assistance and commodities to schools to enable them to serve nutritious lunches and breakfasts to school-children. In fiscal year (FY) 2006, the NSLP provided lunches to 28 million students each school day; overall, the program provided subsidies for more than 5 billion lunches served to school children nationally at a cost of $8.2 billion (U.S. Department of Agriculture 2007). Slightly more than 9 million students received a school breakfast each school day; the SBP subsidized nearly 1.7 billion breakfasts at a cost of approximately $2 billion in FY 2006. All NSLP and SBP meals receive a basic subsidy. More than half receive an additional subsidy because they are served to low-income children who are certified as eligible for free or reduced-price meal benefits.

Most students become certified on the basis of an application for free or reduced-price meal benefits submitted to their local school district.[1] The district uses information reported by the

[1]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 the NSLA by using the term Local Education Agency (LEA), 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 the 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 the ESEA is school districts. However, while this definition applies only to public entities, state agencies also enter into agreements with private nonprofit schools to operate the NSLP; many of these agreements cover only a single school. FNS is developing new regulatory language implementing P.L. 108-265. These regulations will define the use of the term LEA as it refers to private non-profit entities that 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 use 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.

applicant on income and household size or participation in the Food Stamp Program (FSP), Temporary Assistance for Needy Families (TANF), or Food Distribution Program on Indian Reservations (FDPIR), to determine whether the students in the household qualifies for these benefits. Students whose applications report household income of no more than 130 percent of the federal poverty level or participation in one of the means-tested programs are eligible to receive free meals. Students whose applications report household incomes above 130 percent but no more than 185 percent of the federal poverty level are eligible for reduced-price meals. In addition, certain Head Start students, children enrolled in the Migrant Education Program, and certain homeless and runaway children may be determined eligible for free meals based on their status in one of these programs. Students may also become certified for free meals through "direct certification," which allows school districts to use information provided by state or local administrative agencies to establish that a student is a member of a household that is eligible for one of the means-tested programs and is thus automatically eligible to receive free meals.

More than two-thirds of all free and reduced-price certified children are approved for meal benefits based on applications. The accuracy of the information that families provide on applications for free and reduced-price meal benefits, and the accuracy and effectiveness of procedures that school districts use to approve and verify applications, are therefore key components of program integrity. However, the integrity of the NSLP and SBP has come under increased scrutiny in recent years. In part, this scrutiny has resulted from concerns among some legislators that the number of ineligible children getting free or reduced-price meal benefits is large and may be growing.

The Child Nutrition and WIC Reauthorization Act of 2004 (P.L. 108-265) (the Act), passed in June 2004, made changes to 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.

In addition to implementing specific measures aimed at improving NSLP/SBP program integrity contained in the Act, under the Improper Payments Information Act (IPIA) of 2002 (P.L. 107-300), the U.S. Department of Agriculture (USDA) is required to report annually on the extent of the erroneous payments in its programs, including the NSLP and SBP, that may be susceptible to significant erroneous payments (that is, erroneous payments exceeding $10 million and 2.5 percent of benefits paid out) and report the actions they are taking to reduce them. Erroneous payments under the NSLP and SBP can result from misclassification of the school meal eligibility status of participating students due to administrative errors or misreporting by households at the time of initial application or verification.[2] Payment errors can also result when schools and school districts submit improper meal counts and claim reimbursement for meals that do not meet program requirements.

To comply with the IPIA, USDA needs a reliable baseline national estimate of erroneous payments in the NSLP and SBP. In addition, because it is not feasible to field a national study each year, USDA also needs reliable estimation models for updating erroneous payment estimates annually, using readily obtainable, extant data sources.

The Food and Nutrition Service (FNS) contracted with Mathematica Policy Research, Inc. (MPR) to conduct the Access, Participation, Eligibility, and Certification (APEC) Study of the

[2]Before the passage of the Child Nutrition and WIC Reauthorization Act of 2004, erroneous payments could also occur when properly classified households failed to declare subsequent changes in income, household size, or other factors that would have changed the school meal eligibility status of students in the household. Under the new law, the eligibility determinations for free or reduced-price meal benefits are now valid for the entire school year, whether or not household income or other circumstances change in ways that affect eligibility. Therefore, receipt of school meals by households that are properly certified but that later experience a change in circumstances that affect eligibility is no longer considered to be a certification error and is not included in the study's estimate of erroneous payments.

NSLP and SBP. The APEC study collected a broad range of data from nationally representative samples of SFAs, schools, and student households to address two research objectives:

- Objective 1: Produce National Estimates of Erroneous Payments Due to Certification Errors and Non-certification Errors
- Objective 2: Develop, Test, and Validate Estimation Models of Annual Erroneous Payments

This report presents findings on the first objective. 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 erroneous payments in school meal programs. Chapter II describes research objectives and provides a summary of the study design. Chapter III presents the study estimates of certification error rates among certified students and denied applicants and Chapter IV presents the estimates of the sources of certification error (administrative error versus household-reporting error). Chapter V presents estimates of the dollar amounts and rates of erroneous payments due to certification error. Chapter VI summarizes findings on the amounts and sources of erroneous payments due to all sources of error other than certification error (denoted non-certification error). These sources include cashier error and three types of meal-counting and meal-reporting aggregation errors. Chapter VII discusses implications of study findings for ways to reduce erroneous payments. Located at the end of the report is a glossary providing definitions of key terms and measures relevant to the study. Several appendices document the study's methodology for the selection of study samples, construction of analytic weights, methods for imputing missing income source/amount and participation data, and findings of analyses of additional topics (see Volume II, "Sampling and Data Analysis Appendices).

A. OVERVIEW OF THE NSLP AND SBP

When the NSLP became law in 1946, the enabling legislation charged it to "safeguard the health and well-being of the nation's children and to encourage the domestic consumption of nutritious agricultural commodities and other foods" (P. L. 396, 79th Congress, June 4, 1946, 60 Stat. 231). In 1975, Congress expanded the federal role in providing students access to nutritious food by authorizing the creation of a permanent SBP. The NSLP and SBP provide federal financial assistance and commodities to schools to facilitate serving meals that meet required nutritional standards. FNS administers the program at the federal level, providing substantial policy guidance and structure for operating the school meal programs in accordance with federal law. At the state level, the NSLP and SBP usually are administered by state education agencies, which operate the program through agreements with local school districts. School districts 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. There is considerable variation across school districts in the procedures used to certify households for meal benefits, to issue benefits, to serve meals to students, and to 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 schools participating in the school meal programs are eligible to receive meals under the program. While USDA subsidizes all program meals, the subsidies are much larger for meals provided to children certified for free or reduced-price meals. Children from households with incomes at or below 130 percent of the federal poverty level or that receive benefits from the Food Stamp Program, Temporary Assistance to Needy Families, or Food Distribution Program on Indian Reservations are eligible for free meals.[3] Children from households with incomes between 130 and 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 districts establish the price for meals served to children from families with incomes more than 185 percent of poverty.

Students must be certified for free or reduced-price meal benefits for school districts to receive the higher level of reimbursement for the meals the students are served. Students may become certified for free or reduced-price meals in one of two ways:

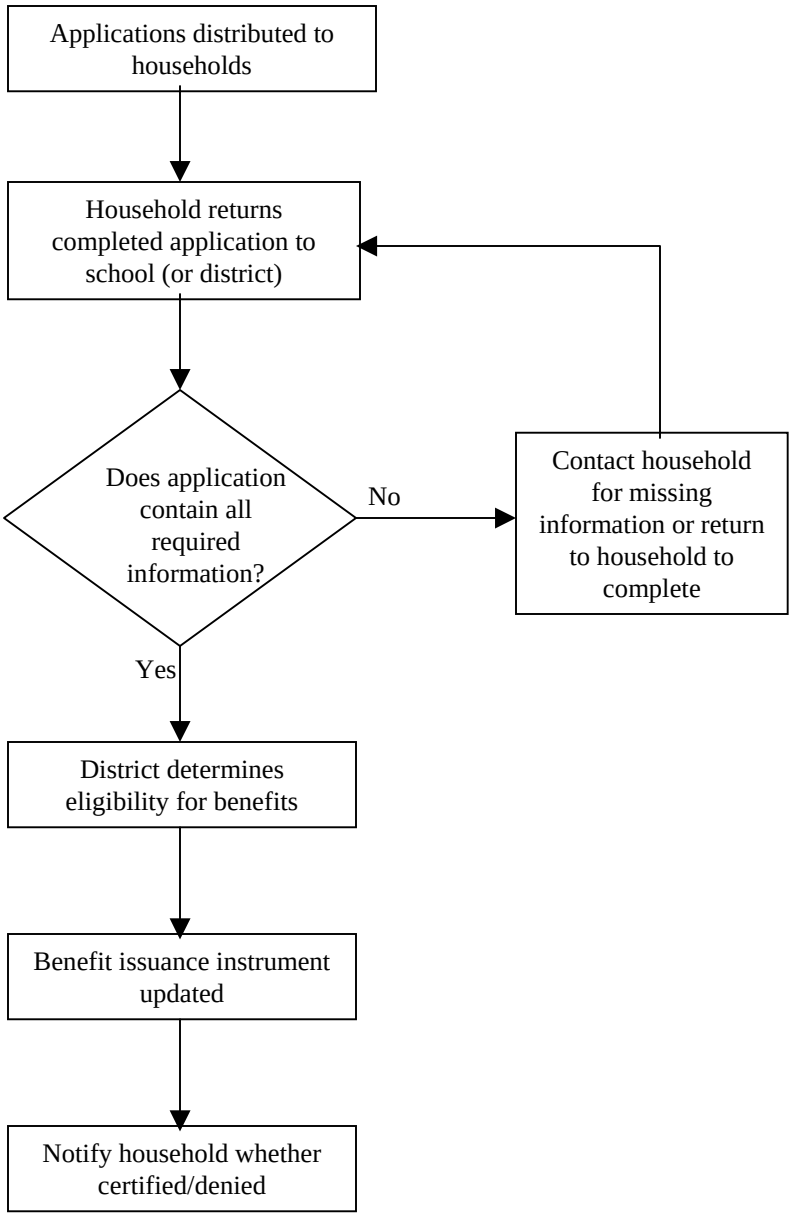
a. Certification Based on Submitted Applications

Most students who are certified to receive free or reduced-price meals are certified each school year on the basis of information reported by their households on an application submitted to the school district. (See Figure I.1.) Households must report either (1) information on household size and gross monthly income (where income information must be provided for each household member and by source, such as employment, unemployment compensation, alimony, and public assistance), or (2) for categorical eligibility, a case number indicating participation in

[3]Hereafter, we will refer to these three forms of benefits (for direct certification or categorical eligibility) as FSP/TANF/FDPIR benefits

FIGURE I.1

CERTIFICATION BY APPLICATION



FSP, TANF, or FDPIR. 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 district must notify the household of its approval for benefits. Notification of approval does not have to be in writing. However, the district must notify the household in writing when its application is denied and must inform the household of its right to appeal the school district's determination.

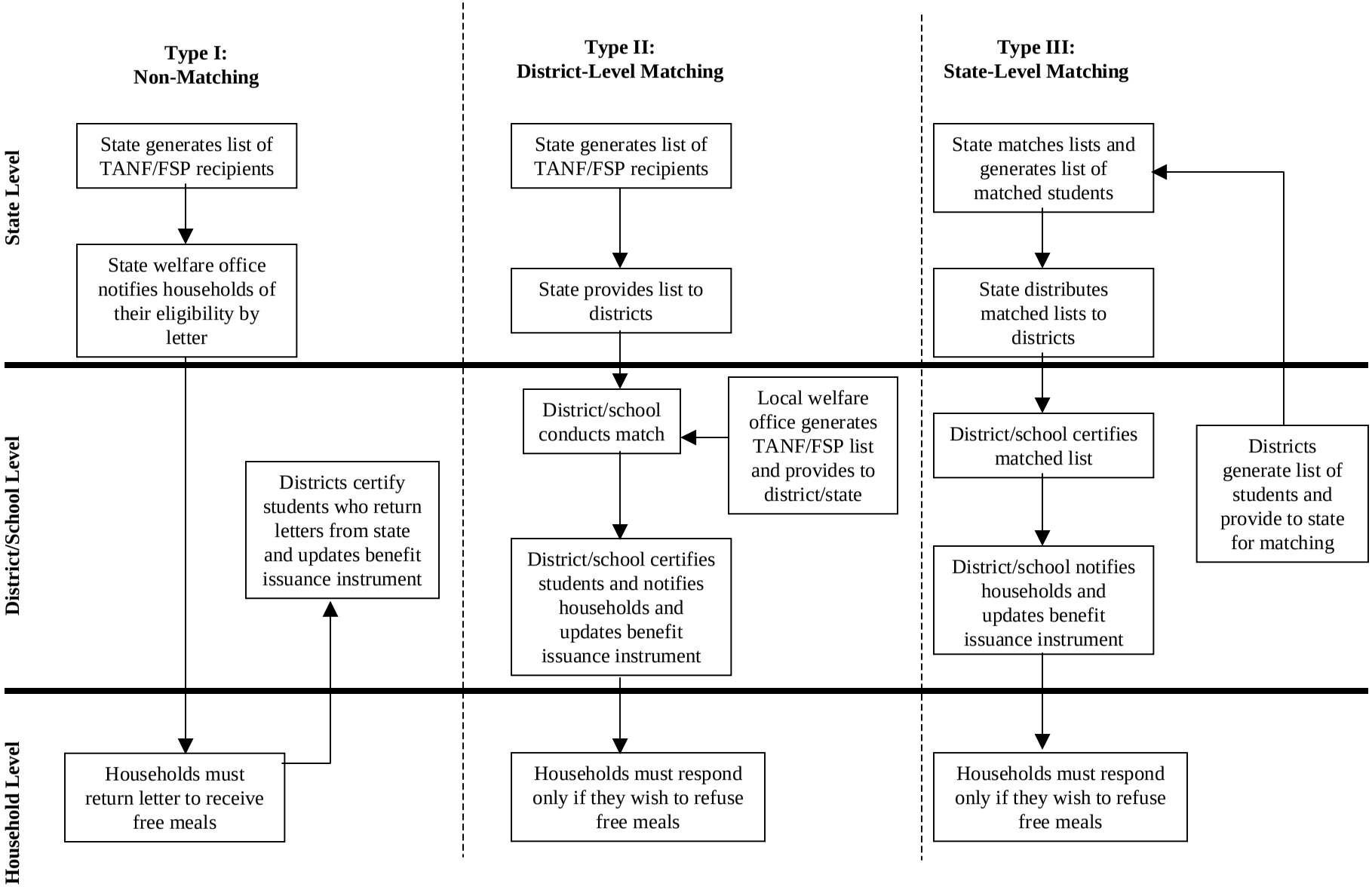
b. Direct Certification

Students from households that receive FSP/TANF/FDPIR benefits can be certified directly for free meals through processes by which state FSP/TANF/FDPIR agencies, state child nutrition agencies, and school districts share eligibility information (see Figure I.2).[4] These children are considered categorically eligible and can be certified to receive free meal benefits without the household having to submit an application. In addition to direct certification, students may become certified for free meals without submitting an application for other reasons, such as if they are homeless; children of migrant workers; runaways; and, during the year of the study, displaced by hurricanes, such as Hurricane Katrina. These students are certified for free meal benefits based on documentation submitted to the district by an appropriate state or local agency.

[4]Direct certification is not limited to students who are receiving benefits at the start of the school year. It is an ongoing process throughout the year.

FIGURE I.2

DOMINANT DIRECT CERTIFICATION PATTERNS



c. Other Bases for Establishing Claims for Free and Reduced Price Reimbursement

Schools are required to "carry over" eligibility determinations from the previous year for free and reduced-price certified students for up to 30 operating days into the current school year or until a new eligibility determination has been made, whichever comes first. Program guidance recommends that applications be processed and an eligibility determination made within 10 working days after the application is received. A new eligibility determination in the current year supersedes the carryover eligibility.[5]

There are some schools in which all students can receive free meals without applying or being directly certified in a current school year. These schools operate under Provision 2 or Provision 3:

- ***Provision 2.*** Schools operate 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. The schools then continue to serve all meals at no charge and take only a daily aggregate count of meals served for up to three additional years, during which the schools claim reimbursement based on the percentage of free, reduced-price, and paid meals served during the base year. 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 a "base year" in which they may or may not serve all meals at no charge but, 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 free for up to four subsequent years, during which they do not make eligibility determinations or take meal counts. Reimbursement during these years is based on the total dollar reimbursement that a school received during the base year, adjusted to reflect inflation and changes in enrollment. The provision may be renewed for successive four-year periods if a district can establish that economic

[5]For example, if a student was eligible for free meals in the previous school year and is approved for reduced-price meals on the tenth operating day of the current school year, he or she receives free meals for the first nine operating days, then begins reduced-price meals once the school district has recorded the new information in its system, which could be as earlier as the next operating day.

conditions in the school's attendance area have not changed significantly from economic conditions in the base year.

Provision 2 has been available since 1980 and Provision 3 has been available since 1995. These provisions are designed to reduce application burden and to simplify meal-counting and meal-claiming procedures. Schools are most likely to find it in their financial interest to use Provision 2 or 3 if they serve high-poverty populations and typically serve a large proportion of their meals free of charge.

d. Recent Changes in the Certification Process

The Child and WIC Reauthorization Act of 2004 (P.L. 108-265) made several changes to the certification process. First, it made the LEA, as defined in the Elementary and Secondary Education Act of 1965, responsible for certification (and verification) of eligibility for free and reduced-price school meals, establishing this as a distinct function from the School Food Authority (SFA) day-to-day operation of the programs. Second, the Act established a phased-in requirement for state agencies to establish procedures under which a child who is a member of a Food Stamp household shall be certified for free meals under the NSLP and SBP without further application (mandatory direct certification.) Before the enactment of this legislation, the use of direct certification had been voluntary. The requirement is effective for districts with 25,000 or more students as of school year (SY) 2006–2007, districts with 10,000–24,999 students as of SY 2007–2008, and for all districts as of SY 2008–2009. It also continued existing permissive authority to use direct certification for children in TANF households and added certain other categories of children (such as homeless children, children served by programs under the Runaway and Homeless Youth Act, and migrant children) who would have automatic eligibility for free meals. Third, the Act mandated that eligibility for free or reduced-price school meals, once established, would remain valid for the entire school year. That is, once a student is

certified during the school year, he or she remains certified throughout the school year (unless benefits change as a part of the verification process or, if the household reapplies and is certified eligible for a higher level of benefits). Previously households whose students were certified for free or reduced-price meals were required to report changes in income of greater than $50 per month, and their new income could lead to a change in the level of benefits for which the students were certified. Fourth, the law requires school districts to have households submit a single application covering all children in the household, rather than requiring a separate application for each child.

2. Verification

Verification is the process that school districts follow to assess the accuracy of their certification decisions. Its intent is to detect and deter misreporting by applicants that results in erroneous certification of their benefit status and hence 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 district is otherwise exempt from the verification requirement.[6] (Students who are directly certified or certified on the basis of membership in certain other categories—runaway, homeless, or migrant—are not subject to verification.)

School districts 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 FSP/TANF/FDPIR administering agency (or agencies) to verify case numbers

[6]For example, verification is not required when school districts operate the program only in residential child care institutions (RCCI).

reported on an application.[7] If the 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 them to document the information on their applications. Households can provide documentation that verifies their participation in FSP/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, the district changes the level of benefits for which the children on the application are certified; if it does not support the household's eligibility for either free or reduced-price benefits, the district must change the children's eligibility status to paid. If a school district cannot verify eligibility through public records and the household does not respond to the request for documentation, the district must terminate the free or reduced-price benefits of all children certified on the basis of that application.

The procedures that school districts may use to select their verification sample are determined by the percentage of applications selected for verification that could be verified based on public records or household response during the preceding school year. If 20 percent or more of households selected for verification were terminated based on non-response in the preceding school year, the district must verify 3 percent of all applications on file as of October 1, selected from applications reporting income within $100 of the monthly limit or $1,200 of the annual limit for free or reduced-price eligibility.[8] If fewer than 20 percent of households were

[7]Districts can also attempt to verify income and household size information from records for certain means-tested programs, such as Medicaid.

[8]Applications within these income limits are defined as "error-prone."

terminated for non-response in the preceding year, the district can choose one of two alternate selection methods:

1. Verify three percent of all applications on file, selected at random
2. Verify one percent of all applications reporting income and household size, selected from error-prone applications, plus one-half of one percent of all applications certified based on a reported FSP/TANF/FDPIR case number.[9]

Districts must report the results of their verification activity to their state agency by March 1. State agencies must submit the School Food Authority Verification Summary Report (FNS-742) data for all of their school districts in electronic file format to FNS by April 15.

3. Reimbursable School Meals

USDA subsidizes all school lunches and breakfasts that meet program requirements and that are served to children enrolled in NSLP/SBP participating schools. For SY 2005–2006, the year of the study, the usual reimbursement rates in the contiguous United States were $2.32 for each free lunch, $1.92 for each reduced-price lunch, and $0.22 for each paid lunch (see Table I.1).[10] For the SBP, the reimbursement rates for breakfasts in districts not designated as "severe need" were $1.27 for each free breakfast, $0.97 for each reduced-price breakfast, and $0.23 for each paid breakfast.[11] "Severe need" schools received an additional $0.24 for each free and reduced-price breakfast claimed. In addition, USDA's Child Nutrition Commodity Programs provide

[9]School districts with 25,000 or more students certified on the basis of applications may also choose one of the alternate methods if their non-response rate in the preceding school year is 10 percent below the non-response rate in the second prior school year, even if the preceding year rate was 20 percent or higher.

[10]These reimbursement rates apply to school districts that claim less than 60 percent of total lunches at the free and reduced-price rate during the preceding school year. School districts that claim 60 percent or more of total lunches at the free and reduced-price rate receive an additional two cents for each lunch claimed.

[11]Schools are defined as "severe need" if they claimed more than 40 percent of their lunches at the free and reduced-price rate in the preceding school year.

school districts with USDA-purchased food, called "entitlement" food, at a value of $0.1927 for each reimbursable lunch served in SY 2005–2006 (not included in Table I.1).[12]

TABLE I.1

PER MEAL CASH REIMBURSEMENT RATES IN CONTIGUOUS U.S.: SY 2005–2006
(in Dollars)

	NSLP		SBP	
Meal Category	Less than 60 Percent[a]	60 Percent or More[a]	Non-Severe Needs	Severe Needs
Free	2.32	2.34	1.27	1.51
Reduced-Price	1.92	1.94	0.97	1.21
Paid	0.22	0.24	0.23	0.23

[a]Percent of lunches claimed free and reduced-price during the preceding school year.

In order for a meal to be reimbursable, it must meet USDA's minimum nutritional requirements *and* be served to an eligible student. Second meals served to students, meals served to adults, meals not meeting minimum nutrition requirements, and à la carte food items are not eligible for reimbursement. If the program meal is not provided free, it must be priced as a single unit.

There are four menu-planning options for school meals: traditional food-based menu planning, enhanced food-based menu planning, nutrient-standard menu planning, and assisted nutrient-standard menu planning. In addition, districts may use any other reasonable approach to plan menus that meets nutritional requirements, if their approach is approved by the state agency. The menu-planning method implemented, combined with whether the school uses the "offer-versus-serve" option, determines the minimum number of food components or menu items that must be served to students in a reimbursable meal.

[12]USDA does not provide commodity foods through the SBP.

4. 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 (except for schools using Provision 2 or 3 in non-base years; see discussion below). To do this, school districts 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 district must receive reports of meal counts from the schools, consolidate them, and submit claims for reimbursement to its state agency (see Figure I.3).

a. Benefit Issuance

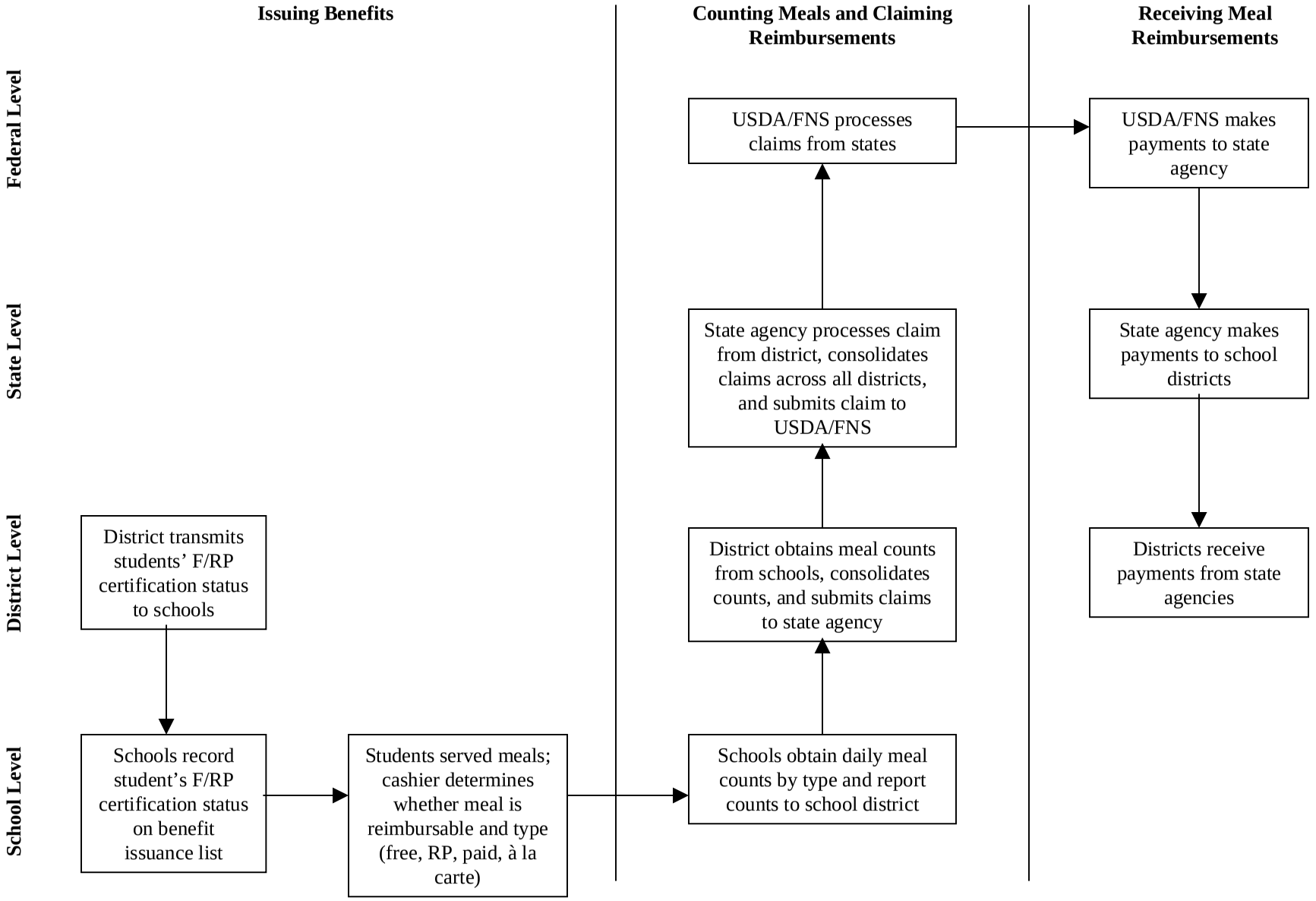
Schools use a benefit issuance instrument at the school's point-of-meal service to determine the meal-benefit status of the student receiving the meal (free, reduced-price, or paid) and therefore under which category the meal will be claimed for reimbursement. The benefit issuance instrument reflects the eligibility status of each enrolled student, based on whether or not the student has been certified to receive free or reduced-price meal benefits. 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 locations.
- ***Point-of-Sale Computerized Files.*** Increasingly more common, under these systems students' reimbursement status is maintained in 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

FIGURE I.3

OBTAINING MEAL REIMBURSEMENTS



assure 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 or token systems with various ticket procedures
- Automated tab tickets
- Bar-coded and magnetic strip cards
- Coded ID cards
- Verbal identifiers

b. 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. 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 numbers of students approved for free and reduced-price meal benefits, average attendance, and number of serving days during the reporting period. The district consolidates the meal counts across schools in its district and submits meal counts (usually monthly) to its state agency to obtain reimbursement from USDA.[13] Increasingly, districts are submitting claims for reimbursement to their state agency electronically (online). The state agency reports a consolidated meal count for all districts in the state to FNS and receives reimbursement based on the number of meals reported by category; the state agency is then responsible for paying the

[13]Some states may require districts to submit meal counts by school as opposed to aggregating counts across the district.

federal reimbursement to each district 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 free, 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 for one of the two meals.[14] Meals counts are consolidated and reported to the district in the same manner as for 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 to obtain the number of meals that can be claimed 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 are slightly different than 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

[14]In many schools, a much higher percentage of meals are served free or reduced-price at breakfast than at lunch; therefore, a district may determine that it is financially beneficial to implement Provision 2 for breakfast but not for lunch. It would be uncommon to find a school that serves both meals that had implemented Provision 2 for lunch but not for breakfast.

which a school established student eligibility and claimed meals by category, whether or not all meals were served free during that year. A school can implement Provision 3 for both the NSLP and the SBP, or for only one of the two meals. Once a school implements Provision 3, it establishes its monthly claims based on the dollar amount of reimbursement which it received in its last "standard procedures" year for each meal type implemented, adjusting the dollar amount for inflation and changes in enrollment. Provision 3 schools count the total reimbursable meals served at each meal separately, but these counts are not used to develop the amount of reimbursement claimed. Districts must develop a method to convert the reimbursement claimed by Provision 3 schools into free, reduced-price, and paid meal equivalents to report to the state agency to be claimed for reimbursement.

B. DEFINITION OF ERRONEOUS PAYMENTS IN THE NSLP AND SBP

Under the IPIA, an erroneous 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 and underpayments (including underpayments due to inappropriate denials of payment or service). An erroneous 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 must also be considered erroneous.

The APEC study generates national estimates of erroneous payments in the school meal programs for SY 2005–2006. It distinguishes two major sources of erroneous payments: (1) those that result from misclassification of school meal eligibility status of participating students (certification error), and (2) those that result from errors in meal-counting and meal-claiming

procedures (non-certification error). The study produces separate estimates of erroneous payments from these two sources for the NSLP and SBP.

1. Erroneous Payments Due to Misclassification of School Meal Eligibility Status (Certification Error)

The level of reimbursement that a school district 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 an 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 district each time the student receives an NSLP or SBP meal. Alternatively, if a student applied for meal benefits but was denied and that student's actual eligibility is for free meal benefits, then FNS is underpaying the district each time the student receives an NSLP or SBP meal at the paid rate.

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

The definition of erroneous 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. As is appropriate, reimbursements for paid meals consumed 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, are included.[15] We base our estimates of erroneous payments on a comparison between the benefits paid for meals served to certified and denied applicant students (based on their actual free or reduced-price certification status), the benefits for which they are eligible based on their household circumstances (that is, for which they are income eligible), and the number of program meals received, using either the information about the individual student if available or imputed participation. Students certified for meal benefits without an application on file or without the student appearing on the directly certified list are considered to be erroneously certified and contribute to the estimate of erroneous payments.

Erroneous payments are calculated for students over the entire school year for each program. There are six types of these erroneous payments:

1. certified free—should be reduced-price,
2. certified free—should be paid,
3. certified reduced-price—should be paid
4. certified reduced-price—should be free
5. denied applicants—should be free, and
6. denied applicants—should be reduced-price

There is a dollar value per meal associated with each error type. The first three types of error represent overpayments and the fourth through sixth types of error represent underpayments. Total erroneous payments for each program are the sum of all overpayments and underpayments

[15]The IPIA states that improper payments should include "inappropriate denials of payments or services." Our estimate of erroneous payments includes students who applied for but were erroneously denied benefits. For these students, erroneous payments are calculated using their actual program participation as non-certified students. Thus, our erroneous payments estimate is a lower bound on erroneous 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 than at the higher paid meal price.

for the school year across these six types of errors. It is the gross total, not the net total, of overpayments and underpayments.

The dollar value of erroneous payments due to certification error is calculated based only on 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 reimbursement 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 reimbursement. Therefore the relevant dollar value when valuating payments in error is the additional subsidy above the paid rate.

2. Erroneous Payments Due to 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 eligibility is determined. The study distinguishes cashier error and three types of aggregation error. As children take meals through the school cafeteria lines, there must be a way to determine whether the meal contains the required number and type of meal items and components, and if so, whether the child taking the meal is eligible for a free, reduced-price, or paid meal. Errors may arise in both of these assessments by cashiers (cashier 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 eligibility 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. Total erroneous payments due to non-certification error equals the sum of erroneous payments across cashier error and three types of aggregation errors.

The study provides separate estimates of both gross and net error due to non-certification error for the NSLP and SBP.

As discussed in more detail in Chapter II, determining how the interaction between certification error and non-certification error may affect the overall level of erroneous payments in the NSLP and SBP presents difficult technical and methodological issues. Therefore, for this study, FNS requested separate national estimates for NSLP and SBP of the erroneous payments associated with certification and non-certification error.

II. STUDY DESIGN

This chapter provides an overview of the study design for the first research objective of the APEC study, to provide national estimates of erroneous payments made under NSLP and SBP for SY 2005-2006.[1] Section A provides a detailed description of the objectives and Section B summarizes the research design implemented to achieve them. Details on the methods used to select the study samples and construct analytic weights are contained in Appendixes A and B (see Volume II, Sampling and Data Analysis Appendices).

A. RESEARCH OBJECTIVES

The APEC study provides the baseline measures of erroneous payments made to school districts for NSLP and SBP meals claimed for reimbursement in SY 2005–2006. It distinguishes two sources of erroneous payments: (1) those that result because students were certified to receive a level of free or reduced-price meal benefits for which they were not eligible or were erroneously denied benefits for which they are eligible (certification error), and (2) those that occur after eligibility is determined (non-certification error).

1. Derive National Estimates of Erroneous Payments Due to Certification Error

Our analyses of erroneous payments due to certification error are intended to accomplish the following research objectives:

[1]The second objective of the APEC study, to provide estimation models for FNS staff to use to annually update estimates of erroneous payments for the NSLP and SBP using readily obtainable, extant data sources, will be addressed in a subsequent report.

a. Derive National Estimates of Certification Error Rates

- *Certification Error Rate for Students Certified for Free or Reduced-Price Meals.* The percentage of students certified for free or reduced-price meals who are not eligible for the level of benefits they are receiving.
- *Certification Error Rate for Students Certified for Free or Reduced-Price Meals and Denied Applicants.* The percentage of directly certified students and students who applied for meal benefits who were certified incorrectly or who applied but were denied meal benefits even though their household circumstances suggest that they should have been approved for benefits.

b. Derive National Estimates of Erroneous Payments in the NSLP and SBP Due to Certification Error

- *NSLP Overpayments.* Payments made to districts for free or reduced-price NSLP meals beyond the level of payments that would have been made if no students had been certified for a higher level of meal benefits than they were eligible for on the basis of documented household income or FSP/TANF/FDPIR eligibility.
- *NSLP Underpayments.* Amount by which payments made for reduced-price NSLP meals were below those that would have been made if none of the students certified for reduced-price meal benefits had been eligible for free meals on the basis of documented household income or receipt of FSP/TANF/FDPIR eligibility plus the amount by which payments made for paid NSLP meals were below those that would have been made if none of the students who applied for and were denied benefits had been eligible for either free or reduced-price meal benefits on the basis of documented household income or FSP/TANF/FDPIR eligibility.
- *Total NSLP Erroneous Payments.* The sum of NSLP overpayments and NSLP underpayments.
- *SBP Overpayments.* Payments made to districts for free or reduced-price SBP meals served beyond the level of payments that would have been made if no students had been certified for a higher level of meal benefits than they were eligible for on the basis of documented household income or FSP/TANF/FDPIR eligibility.
- *SBP Underpayments.* Amount by which payments made for reduced-price SBP meals were below those that would have been made if none of the students certified for reduced-price meal benefits had been eligible for free meals on the basis of documented household income or receipt of FSP/TANF/FDPIR eligibility plus the amount by which payments made for paid SBP meals were below those that would have been made if none of the students who applied for and were denied benefits had been eligible for either free or reduced price meal benefits on the basis of documented household income or receipt of FSP/TANF/FDPIR eligibility.

- *Total SBP Erroneous Payments.* Sum of SBP overpayments and SBP underpayments.

c. Determine the Proportion of the Certification Error Rate Due to Each Type of Certification Error

- *Administrative Errors.* Determine the percentage of certified students and denied applicants misclassified because of administrative errors related to certification made by the school district.
- *Household Misreporting Errors.* Determine the percentage of certified students and denied applicants misclassified due to household misreporting of income, household size, or FSP/TANF/FDPIR status at the time of application.

d. Determine the Proportion of Students Certified for Free or Reduced-Price Meals Whose Households Experience Changes in Income or Program Participation That Would Have Affected Income Eligibility Status Under Previous Program Regulations

- Determine how erroneous payment estimates would change if meal program rules had not changed to allow year-long eligibility[2]

e. Summarize Districts' Verification Results

- Calculate the proportion of certified applications selected for verification in which:
  - the district did not change meal benefits
  - the household responded; the district changed meal benefits from reduced-price to free
  - the household responded; the district changed meal benefits from free to reduced-price
  - the household responded; the district changed meal benefits from free or reduced-price to paid
  - the household did not respond; the district changed meal benefits from free or reduced-price to paid

[2]Under the Child Nutrition and WIC Reauthorization Act of 2004, eligibility determinations are now valid for the entire school year, whether or not household income or other circumstances change in ways that would make the household ineligible or eligible for a lower benefit. Although households that experience income changes that affect their eligibility are no longer sources of erroneous payments, FNS is interested in understanding the dynamics of households' circumstances during the school year.

2. Derive National Estimates of Erroneous Payments Due to Non-Certification Error

The APEC study also provides national estimates of non-certification errors separately for the NSLP and SBP. Our analyses of non-certification errors are intended to accomplish the following research objectives:

a. Determine National Estimates of Erroneous Payments Due to Cashier Error in the NSLP and SBP

- Overpayments, underpayments, gross error, and net error 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 or SBP

b. Determine National Estimates of Erroneous Payments Due to Aggregation Error in the NSLP and SBP

- Estimate overpayments, underpayments, gross error, and net error resulting from three types of aggregation error in the NSLP and SBP:
  (1) erroneous payments associated with combining daily meal counts from individual school points of sale (point-of-sale error)
  (2) erroneous payments associated with communication between the school and the district office (school-to-district-office error)
  (3) erroneous payments associated with reporting totals to the state agency, either directly or through consolidation (district-office-to-state-agency error)

c. Determine National Estimates of Total Erroneous Payments Due to Non-Certification Errors in the NSLP and SBP

- Total overpayments, underpayments, gross error, and net error associated with cashier and aggregation error

B. RESEARCH DESIGN SUMMARY

Table II.1 summarizes the overall research design used to address the study's research objectives. In the remainder of this section we provide an overview of the sample design, data sources and collection procedures, and weighting and estimation. A final section discusses design strengths and potential limitations.

TABLE II.1

OVERVIEW OF STUDY DESIGN

Research Questions/Key Outcomes	Samples	Data Collection	Analysis Methods
Objective 1: Generate National Estimates of Erroneous Payments due to Certification and Non-Certification Error			
(1) Estimate Erroneous Payments Due to Certification Error -- Amount of overpayments -- Amount of underpayments -- Sum of gross overpayments and underpayments -- Erroneous payment rate	Nationally representative cross-sectional sample of certified students (n = 2,950) and denied applicants (n = 453)	In-person household survey Record abstraction -- Application data -- Participation data -- Change in certification and enrollment data	Descriptive tabular analysis Separate estimates for NSLP and SBP 90% confidence interval of plus or minus 2.5% around the estimate of the percentage of erroneous payments
(2) 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 = 2,950) and denied applicants (n = 453) Nationally representative cross-sectional sample of certified students and denied applicants (n = 7,846 students)	Record abstraction -- Application and certification data -- Participation data -- Change in certification and enrollment data	Descriptive tabular analysis Estimate the source of error based on the full cross-sectional sample Separate estimates for NSLP and SBP
(3) Estimate the Proportion of Certified Households Experiencing Changes in Circumstances Over the School Year	Nationally representative panel sample of certified students (n = 799)	Telephone household survey	Descriptive tabular analysis Separate estimates for NSLP and SBP
(4) Summarize School Districts' Verification Outcomes	All public and private SFAs reporting to FNS (17,232 SFAs)	FNS-742 Verification Summary Data	Descriptive tabular analysis
(5) Estimate Noncertification Errors (Cashier Error and Aggregation Error) -- Dollar amounts and error rates -- Decomposition by source of error	Nationally representative sample of school districts (n = 87) and schools (n = 266)	Data collection in SY 2005–2006 from school districts and schools -- Observation at point of sale -- Review of meal-count records -- Review of reimbursement claims	Descriptive tabular analysis Separate estimates for NSLP and SBP
Objective 2: Develop Estimation Models for Updating Annual Estimates of Erroneous Payments Based on Extant Data			
Annual Estimates of Erroneous Payments -- Amount of overpayments -- Amount of underpayments -- Gross total sum of overpayments and underpayments	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 2005–2006 Extant data on districts -- Common Core of Data -- Census data -- Administrative data from FNS agencies (for example., FNS-742)	Regression modeling and estimation Separate estimates for NSLP and SBP

1. Sample Design

The APEC study used a multistage sample design, first sampling school districts, then schools within the districts, and then children who attend the sampled schools.[3] Figure II.1 summarizes the study's core sample design. Below are the main samples and how they were selected:

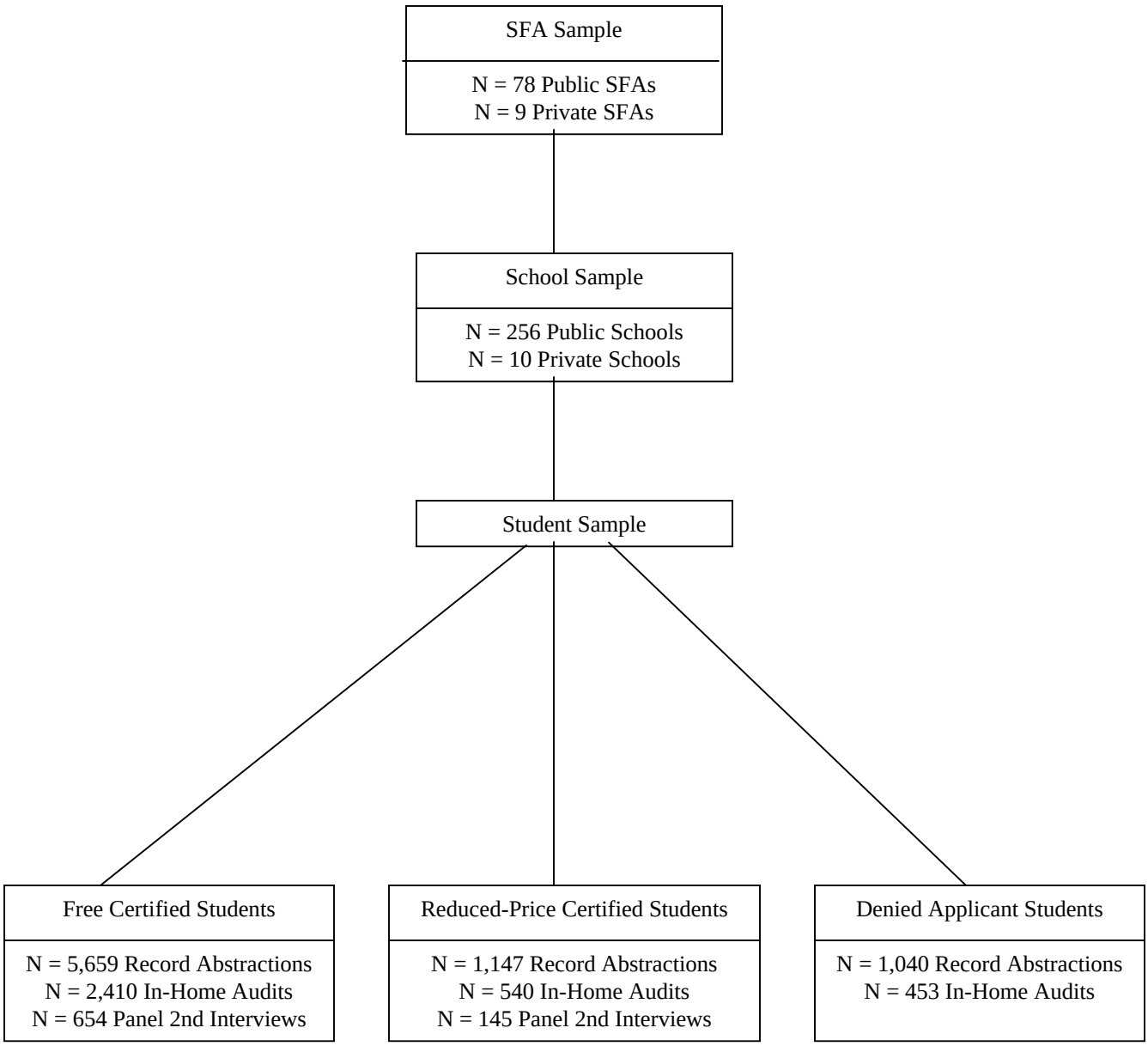
- **School District Sample.** Districts that operate the NSLP and/or SBP, the primary sampling unit (PSU) in the multistage design, were sampled and surveyed as part of the study. They also served as sampling units from which samples of schools and of students who were certified for free or reduced-price meal benefits or whose application for meal benefits had been denied were drawn. In selecting the school districts, we explicitly stratified the sample by whether the districts were large enough to be selected with certainty. The noncertainty stratum was then stratified on whether or not the districts were expected to have schools using Provision 2 or 3; in addition, we implicitly stratified on region, poverty, and SBP participation. The original design called for a final sample of 100 PSU equivalents. Because of resource limitations, the final sample target was reduced to 80 PSU equivalents. After the initial sample was selected and divided into main and replacement selections, we selected a subsample so that the main public school district sample comprised 87 school districts with the expectation that with refusals, the participating sample would comprise 80 public school district-equivalents. The final sample consists of 80 public school districts-equivalents (78 unique public SFAs) and 9 private SFAs.

- **School Sample.** Within each school district that was sampled and agreed to participate in the study, we selected a sample of schools. The number of schools selected from each district depended on whether the district represented more than one PSU equivalent and whether any schools in the district participated in Provision 2 or 3 (P23). In study districts not using P23, we sampled six schools (three main selections and three replacements). We selected larger samples from P23 districts in order to obtain large enough samples of base year and non-base year P23 schools. Schools were divided into school-level strata (elementary schools versus middle and high schools). The school sample includes both public and private schools. The sampling frames used for public schools were either the U.S. Department of Education's Common Core of Data (CCD) frame of public schools or lists provided by the districts themselves. The frame for private schools was a commercial list obtained from Quality Education Data (QED). Private schools were sampled from among those located within the boundaries of a sampled public school district, based on the ZIP code of the private school's location. We oversampled elementary schools

[3]See Appendix A for a fuller description of the study's sample design and procedures for selecting the study samples.

FIGURE II.1

SUMMARY OF STUDY SAMPLES



because they comprise a greater share of free and reduced-price reimbursements. In addition, P23 schools were oversampled to support comparative analysis of P23 and non-P23 schools.

- **Student Sample**. We selected samples of certified free and reduced-price students and students who applied but were denied meal benefits for the application record abstraction and household survey data collection. Students were sampled from lists provided by school districts (or sometimes from schools) participating in the study. We used two sets of records for sampling students: (1) lists of students certified for free or reduced-price meals, and (2) lists of denied applicants (if no list was available, we sampled from the denied applications themselves). The household interview sample was a subsample of the record abstraction sample, resulting in a large sample of certified students and students denied meal benefits that have application records and household survey data. We selected the samples of students certified for free or reduced-price meals throughout the year, selecting a majority early in the school year when most students apply and are certified. In contrast, we selected denied applicants only during the initial months of the school year. We also selected a sample of students whose parent or guardian was interviewed a second time as part of a panel survey. The panel sample consisted of students that were certified for free or reduced-price meal benefits at any time during the school year and whose parent or guardian completed the initial household survey.

2. Data Sources

MPR conducted primary data collection from September 2005 through June 2006. Table II.2 summarizes the data collected for the study and the final samples sizes for each data source.[4] These sources and data include the following:

- ***School Food Authority Director Survey.*** We obtained a completed fax-back form and conducted a follow-up telephone interview with 87 SFA directors to obtain information on district characteristics, verification procedures and outcomes, number of students enrolled, meals served, and other relevant information. The SFA survey also collected data on meal program participation and characteristics of the 266 study schools sampled from within these school districts.

[4]In addition, we collected administrative data on district characteristics, meal program characteristics, and verification results at the district level from state agencies, FNS central office, and public-use data files for developing and testing models of estimating erroneous payments. More detailed descriptions of each data source and the procedures and instruments that were used to collect the data can be found in two prior reports: "The Final Study Design Plan" (Ponza et al., May 2006) and "The Supporting Statement for OMB Clearance and Instruments" (Mathematica Policy Research, Inc., August 2005).

TABLE II.2

OVERVIEW OF DATA COLLECTION

Data	Mode	Respondent	Number of Completes	Key Data Elements
SFA Survey Data	Fax-back form and follow-up telephone survey	SFA director	87 SFAs 266 schools	*District characteristics:* institutional characteristics, meal program participation, certification procedures, verification procedures and outcomes *School characteristics:* For each of the three sampled schools per district, data on meal program participation characteristics and outcomes
Household Survey Data				
Free and reduced-price certified applicants	In person	Parent/guardian	2,950 students 2,410 free 540 RP	Certification status, NSLP and SBP participation, household income, family size and composition, perceptions of meal program quality, knowledge and perceptions of application and verification processes, SFSP participation and reasons for nonparticipation, demographic characteristics
Denied applicants	In person	Parent/guardian	453 students	Household income, family size, NSLP and SBP participation, knowledge and perceptions of application process, perceptions of meal programs, reasons not reapplied, retrospective questions on changes in income or household composition, demographic characteristics
Free and reduced-price certified applicants (panel—2nd interview)	Telephone	Parent/guardian	799 students 654 free 145 RP	Certification status, NSLP and SBP participation, household income, family size and composition
Application/Direct Certification Records Data Abstraction				
Approved free/reduced-price	Record abstraction	n.a.	6,806 students 5,659 free 1,147 RP	Meal program application and direct certification information
Denied applicants	Record abstraction	n.a.	1,040 students	Meal program application and direct certification information

TABLE II.2 (*continued*)

Data	Mode	Respondent	Number of Completes	Key Data Elements
Changes in Certification Status and Enrollment				
Free and reduced-price certified and denied applicants[a]	Fax-back form	SFA director	3,403 students	Changes in certification status and dates, changes in enrollment and dates
SBP/NSLP Individual Student-Level Participation Data				
Free and reduced-price certified and denied applicants[b]	Request electronic or paper data files by telephone	SFA director	2,528 students	Number of reimbursable school breakfasts and lunches received each month during the school year
Meal Count and Claiming Data				
Cashier transactions[c]	Interviewer observation	n.a.	23,217 lunch transactions from 240 schools 11,168 breakfast transactions from 218 schools	Food items on each tray, whether cashier records meal as reimbursable or not, type of individual purchasing meal (student or adult)
School meal count data	Interviewer abstraction	Administrative records	L: 181 schools B: 171 schools	Day and week totals from all individual cash registers by meal type, week and month totals by meal type and validated counts
School meal count data reported to SFA	Interviewer abstraction	Administrative records	L: 208 schools B: 206 schools	Monthly totals reported to districts for sampled schools
Consolidated meal counts and claims	Interviewer abstraction	Administrative records	L: 129 schools B: 135 schools	Monthly consolidated totals claimed by districts for sampled schools

[a]We collected change-in-status data on all 2,950 students certified for free and reduced-price meals and 453 denied applicant students in the research sample from the 87 public school districts and private SFAs.

[b]Seventy-four public school districts and private school SFAs of our sample of 87 SFAs collect and maintain data on student participation at the individual level. We obtained NSLP and SBP participation records data for 2,528 students for free or reduced-price meals and denied applicant students from these 74 SFAs.

[c]All 266 study schools operate the NSLP, 252 of the 266 study schools also operate the SBP.

n.a. = not applicable
RP = reduced-price
SFA = school food authority
L = NSLP program
B = SBP program

- ***Household Surveys.*** Field interviewers completed in-person interviews with the parent or guardian of 2,950 students certified for free or reduced-price meal benefits and 453 students who applied for but were denied meal benefits. The survey collected information on household composition and size as well as detailed information on the sources of income of family members. It also collected data on participation of sampled children in the school food programs for a target week. Parents were asked to show interviewers pay stubs or other documentation to verify the sources of income and income amounts reported in the interview. These data were used along with data abstracted from the household's free or reduced-price meal certification application or from direct certification documents to determine the household's true eligibility status. We completed a follow-up (panel) survey with 799 certified free or reduced-price meal benefit households that completed the initial household survey to obtain data on school meal program participation and household income, size, and FSP/TANF/FDPIR participation later in the school year.

- ***Application/Direct Certification Record Abstraction.*** Field staff acquired copies of or abstracted data from application forms and direct certification documents for a sample of 6,806 students certified for free and reduced-price meal benefits and 1,040 students who applied for but were denied meal benefits, including the sample of students selected for the household survey. We collected data on the student's identifying information, household composition and income, qualifying program participation, and the districts' certification decision. These data were used to determine sources of certification error.

- ***Other Administrative Records Data Abstraction for Sampled Students.*** We collected other administrative records data from SFA directors on the samples of certified students and students who applied for but denied benefits that were used to estimate erroneous payments due to certification error. These data included (1) students' enrollment start and stop dates and any changes in certification status (and dates of these changes) during the school year for 2,950 certified students and 453 denied applicants in the research sample, and (2) students' monthly meal program participation during the school year for those students attending schools that record and retain meal program participation at the individual student level (for a total of 2,500 of the 3,403 certified students and denied applicants in the research sample).

- ***Cashier Transaction Observation.*** We collected data on random samples of cashier transactions to estimate the degree to which cashiers accurately classified meals as reimbursable or not. Field staff observed approximately 100 lunch transactions at each of the 245 schools participating in the NSLP and 50 breakfast transactions at each of the 218 schools participating in the SBP.

- ***Meal-Count and Meal-Claiming Data Abstraction.*** We collected information on the accuracy with which school breakfasts and lunches were counted and claims made to states for payments for reimbursable meals served from the 266 study schools and 87 SFAs.

3. Response Rates

Recruiting districts to participate in the APEC study was challenging for several reasons. School districts face many requests for information and requirements to complete forms related to participation in the school meal programs and to the receipt of various sources of funding. They must fit in these requests among their day-to-day responsibilities for certifying students, providing nutritious meals, and claiming and distributing meal reimbursements. Participation in APEC was demanding, especially for SFA directors and staff, because it required multiple visits by field staff to select students, obtain certification documentation, and collect data on non-certification processes. SFA directors also had to handle multiple requests from MPR central office staff throughout the school year to (1) provide information on district and school processes, (2) plan for and accommodate field visits from the study team, (3) provide data at the end of the year to capture changes in sampled students' enrollment and certification status, and (4) provide administrative records data on student participation in the meal programs for the full school year. In addition, some school districts had concerns about maintaining confidentiality of students' records. When recruiting, it was critical to explain how the data would be used and confidentiality assured. Further complicating matters, the APEC study began recruiting school districts at the same time that the third School Nutrition Dietary Assessment Study (SNDA-III), a large national study funded by FNS, was under way. Because larger districts had a greater probability of selection under both study designs, there was some overlap in school districts selected for the two studies. While most districts selected for both studies participated in both, some did not due to the high burden on staff.

To recruit school districts, MPR sent letters to the superintendent and SFA director of sampled districts informing them of their selection into the study and the importance of participating. MPR research staff then followed up by telephone with the SFA director. Those

initial calls discussed the background and purpose of the study, the requirements of participating, and asked about specific approvals and/or conditions (such as active consent) MPR needed to conduct the study in the district. MPR then drafted a letter of agreement for the district to review describing study requirements; identifying study schools selected; describing how the research results would be used and presented; and specifying assurance of confidentiality of participating districts, schools, students, and households. If an SFA director did not initially agree to participate, additional contacts were made by the MPR project director, the FNS project officer, or regional or state officials, as appropriate, to emphasize the importance of the study and the district's participation.

These recruiting efforts resulted in a 77 percent participation rate among public school districts (78 of 103 public SFAs agreed to participate; see Table II.3). This rate is based on all SFAs ever released for recruitment efforts, including replacements for those that refused. All non-response at the district level was due to refusals to participate in the study. All districts agreeing to participate in APEC completed the SFA survey, and 266 of 280 schools within participating districts participated in the study (96 percent). However, not all schools provided data for field staff to complete every school-level data collection form for measuring non-certification error.

Field staff requested applications or direct certification documentation from SFA directors for the selected samples of certified students and students who applied for but were denied benefits. We then selected subsamples of these students and conducted in-home interviews with their parents or guardians. Field staff obtained the applications (or completed abstraction forms) for 99 percent of students sampled. Field staff completed computer-assisted personal interviews (CAPI) with 83 percent of the parent or guardian of sampled students certified for free or reduced-price meal benefits and 85 percent of the denied applicants. Cumulative response rates

TABLE II.3

APEC STUDY RESPONSE RATES

	Number Released	Number Participated	Number Eligible	Number Ineligible	Number Unknown	Response Rate (Percent)	Cumulative Response Rate
SFAs (Public)	103	78	103	0	0	76.70	76.70
SFA survey—district data	79	78	78	0	0	100.00	76.70
Schools	282	266	280	0	0	95.71	73.41
SFA survey—school data	266	266	266	0	0	100.00	73.41
Students							
Application record abstraction							
F/RP certified	6,848	6,776	6,848	0	0	98.95	72.64
Denied	1,040	1,038	1,040	0	0	99.81	73.27
Household survey							
F/RP certified	3,548	2,950	3,026	3	519	83.20	61.08
Denied	564	453	453	1	110	80.50	59.09
Panel 2nd interview F/RP certified	895	799	895	0	0	89.61	54.73

Source: APEC Study.

F/RP = free/reduced-price

SFA = school food authority

(which take into account SFA and school nonparticipation) for the applicant and household survey samples are in the range of mid-seventy percent and low-sixty percent, respectively.

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 non-response at each stage of data collection. In addition, all weights used to estimate the dollar amounts and rates of erroneous 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 erroneous 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 Office of Management and Budget (OMB) requirements for statistical precision when calculating a national estimate of erroneous payments: a 90 percent confidence interval of ± 2.5 percent around the estimate of the rate of erroneous payments (Office of Management and Budget 2003). For the study, we interpreted the error rate as the ratio of two "dollar-denominated" sums: total annual erroneous payments divided by total annual reimbursements. For example, the NSLP erroneous payment rate equals the total dollar amount of additional subsidy for free and reduced-price meals which were in error or which were 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 commodities). 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.

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 a first-order Taylor series approximation. SAS-compatible software programs from the SUDAAN statistical software package (SUDANN Release 9; Research Triangle Institute 2004), which implement the Taylor series method, were used to derive the estimates of standard errors for the various totals, ratios, means, and proportions. Standard errors were computed for key estimates. The chances are 90 out of 100 that the true population estimate lay within the study estimate plus or minus 1.65 times the standard error. This range is referred to as the 90 percent confidence interval.

5. Design Strengths and Potential Limitations

a. Design Strengths

- **APEC is the first study to derive national estimates of dollar amounts and rates of erroneous payments resulting from both certification and non-certification error.** Despite recent attention given to these issues, no studies have empirically estimated national rates of certification error since the 1986–1987 school year (USDA 1990). Several studies sponsored by USDA during this time period have reported rates of certification error; however, these studies are either out of date, not nationally representative, or suffer from important data or methodological limitations. (USDA 1990; USDA 1999; Tordella 2001, 2003; Burghardt et al. 2004a; and Burghardt et al. 2004b).

- **The APEC study improves upon the design and methodology used in previous studies.**

  - APEC is the first study to estimate rates of certification error for the full school year; previous studies measured rates of certification error at only a single point in time. By obtaining data on certification changes and meal-program participation on sampled students for the full school year, and by including students who become certified for meal benefits later in the school year in the study sample, the study is able to derive measures of certification error, and hence erroneous payments, that apply to the entire school year.
  - APEC implemented several features to ensure the highest degree of reporting accuracy in the household survey for assessing income eligibility for free or reduced-price meal benefits. The APEC study asked the respondent about household composition and income for the month covered by the household's

application for meal benefits. This was possible because the design allowed field staff to interview most households within one to two months of the reference period (the month covered by the application). In previous studies, the reference period covered by the survey was the most recent completed month prior to administering the survey, which was several months after the application was submitted. Thus, if respondents report accurately, the APEC 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.

- Similar to past studies, APEC asked households to produce records during the interview, when possible, documenting sources and amounts of income received by members of the household. 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 about 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 if 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 see if key sources or amounts were missing or in error. This process was repeated until the respondent agreed to a final total income.

b. Potential Study Limitations

There are four limitations in the design that could affect the accuracy of our estimates. These limitations and the steps we have taken to minimize them are discussed below.

1. **Districts and Schools May Behave in Ways to Reduce Erroneous Payments.** A common concern in research studies (known as the Hawthorne effect) is that the subjects being studied behave differently than they would have if they were not part of the study. In the APEC study, the concern is that as a result of participating in the study, districts and schools may behave in ways to reduce erroneous payments. This could be because the study raised their 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 behavior. 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 erroneous payments. Finally, field staff members documented cases in which they observed districts or schools changing errors or suspected such behavior. We have evidence that some district and school staff behaved in ways to reduce erroneous payments.during the study.[5] Based on debriefings of field staff, however, these actions appeared to be infrequent.

2. **Respondents May Misreport on the Household Survey.** Whether intentionally or not, respondents may inaccurately report family size and income on the household survey. When household reports are inaccurate, it will affect the study's ability to measure their true eligibility status and determine certification error and erroneous 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) field staff executed confidentiality agreements with respondents to ensure they knew that their responses would be kept strictly confidential and would not affect the benefits they receive; (3) the reference period for the survey was the month covered by the application; (4) most households were interviewed within one to two months of the reference period; and (5) an iterative CAPI procedure was used that streamlined income reporting, reconciled differences between reported and documented amounts, and enabled the respondent to go back and identify income sources and/or amounts either missing or inaccurately reported initially. Clearly, some household misreporting occurred, but the extent is unknown.

3. **The Study's Separate Estimates of Erroneous Payments Due to Certification and Non-Certification Error Cannot Be Added Together.** Erroneous payments in the NSLP and SBP can occur from two sources: (1) misclassification of the school meal eligibility status of participating students (certification error), and (2) improper meal counting and meal claiming by schools and school districts (non-certification error). Furthermore, there are different types of errors that can occur within each of these two categories of error. The APEC study derived separate estimates of erroneous payments from each source of error for the NSLP and the SBP. The estimate of erroneous payments for each source is the error that would result if the other source were free of error. However, interaction between sources of error can affect the actual erroneous payment that results from any single transaction in the two programs. Ideally, we would prefer an estimate of erroneous payments for each program that accounts for the overall effect of all sources of error. However, simply adding the estimates of erroneous payments into an overall estimate is not appropriate without additional adjustments to account for the interaction between the different sources of certification and non-certification error.

[5]Field staff did note a few instances in which SFA directors corrected erroneous certifications. For example, one SFA director changed the certification status of some students when she noticed that the wrong eligibility guidelines were applied to determine eligibility. There were a few cases where meal counts were changed (lower number of free or reduced-priced meals claimed for reimbursement).

Considering the entire process by which students' meal reimbursements are made is helpful in understanding the points at which errors can occur, the interaction between certification and non-certification errors, and the complexities which would be involved in adjusting error amounts appropriately. For example, consider the sequence of events that results in reimbursement to a school district for a single meal provided to a student certified for free meal benefits who is in fact not eligible for either free or reduced-price meal benefits:

- Step 1: Student is certified for free meals
- Step 2: Student's eligibility is recorded in the benefit-issuance system
- Step 3: Student receives a school meal; cashier determines whether the meal contains the food items or components that are required for the meal to be reimbursable
- Step 4: Cashier records meal for reimbursement
- Step 5: Meal is claimed for reimbursement by the district.

In this example, a certification error occurs in Step 1. Additional certification errors (Step 2) and non-certification errors (Step 3 through 5) can occur; if these errors occur, they can either:

- Cancel out (offset) the erroneous payment which would have resulted from the original certification error
- Result in a larger or smaller erroneous payment than would have resulted from the original certification error
- Have no effect on the erroneous payment that would have resulted from the original certification error.

The following are examples of each of these types of errors:

- ***Error that cancels out (offsets) the original error.*** Although the student has been certified for free meals, the cashier's list incorrectly shows the student as not certified (paid status). If a meal received by the student is recorded for reimbursement at the paid rate, and no further errors occur in the counting and claiming process, the student's meal would be reimbursed at the paid rate; the two errors would cancel each other out, and there would be no erroneous payment attributable to this meal.
- ***Errors that result in a smaller or larger erroneous payment than would have resulted from the original error.*** Because all NSLP/SBP meals are eligible for the paid level of reimbursement, the erroneous payment from the original certification error would be the amount of reimbursement above the paid rate. However, other

counting and claiming errors could result in an actual erroneous payment that is either larger or smaller than that which would have resulted from the certification error alone. Some examples of these errors are:

- *The meal is reimbursable but the cashier records that it is not reimbursable.* The district makes no reimbursement claim for the meal. The actual erroneous payment for the meal would then be an underpayment equal to the paid meal reimbursement (the amount that should have been paid for the reimbursable meal if no certification error had been made).
- *The meal is not reimbursable but the cashier determines that it is reimbursable*. It is recorded at the school and claimed for reimbursement by the district at the free eligible rate. The actual erroneous payment for the meal would be an overpayment equal to the free eligible extra subsidy plus the paid eligible and commodity reimbursement, because no reimbursement at all is payable for a nonreimbursable meal.

- ***Errors that have no effect on the erroneous payment that would have resulted from the original error.*** The student is certified for free meal benefits, but listed in the benefit issuance system as eligible for paid meal benefits; the cashier records the reimbursable meal which the student received as a paid meal, but numbers are transposed during the consolidation at the district level, and the meal is claimed for reimbursement at the free rate. The erroneous payment is the same as would have resulted if the only error had been the original certification error.

  A number of scenarios could result from different combinations of certification and non-certification errors. The adjustments that would be required to account for the effect of the interaction of the errors in each of these scenarios present difficult technical and methodological issues whose solution would require resources beyond those available to the project.

4. **Estimates of Some SFA and School Characteristics Are Subject to Relatively Large Sampling Errors.** APEC collected information on the administrative and operational structure of SFAs and schools sampled for the study that, when weighted, can be tabulated to provide descriptive summaries that are representative of SFAs and schools participating in the school meal programs nationally. Because the primary objective of the APEC study was to generate precise national estimates of the dollar amounts and rates of erroneous payments due to certification error in the NSLP and SBP, some caution should be taken when using the data to examine SFA and school characteristics. In particular, the samples of SFAs and schools are smaller than what would be considered ideal for that purpose, meaning the estimates of characteristics are subject to greater sampling variability. In Appendix C we include tables providing descriptive summary statistics on SFA, school, and student characteristics based on data from the APEC study. The analyses are weighted. Readers wanting more reliable information on SFA and school characteristics nationally are urged to obtain other recent sources, such as "Descriptive Analysis

Memorandum and Tables from the School Food Authority Characteristics Survey" (Logan and Kling 2005) and "The School Nutrition Dietary Assessment Study (SNDA-III), Volume I, School Food Service, School Food Environment, and Meals Offered and Served (Gordon et al. 2007)." Summaries of FNS-742 verification summary data, prepared by FNS staff and available at the USDA website, provide national data on some SFA characteristics as well as characteristics and outcomes of the verification process.

III. NATIONAL ESTIMATES OF CERTIFICATION ERROR

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. Section A describes the methods we used to estimate certification error and Section B presents findings. Section C compares findings from the APEC study with previous studies.

A. METHODS USED TO CALCULATE CERTIFICATION ERROR RATES

Certification error is determined by a comparison of students' certification status, as determined by their district, and students' actual free or reduced-price meal eligibility status, as determined by their household circumstances.[1]

1. Definitions of Certification Error Rates

Table III.1 summarizes the possible combinations of eligibility and certification status among students who have applied for meal benefits or have been directly certified. In the table, the columns indicate students' certification status (free, reduced-price, or denied) and the rows indicate the level of benefits for which the students are eligible (free, reduced-price, or paid). For example, the students in cell B are certified for reduced-price meals but are eligible for free meals.

[1]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). This is treated as a certification error in the study. Also consistent with program rules, if an application is found that does not include the required signature or Social Security Number (SSN not required for categorically eligible applications), then the application is considered an administrative error; but 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

POSSIBLE COMBINATIONS OF STUDENT'S CERTIFICATION AND ELIGIBILITY STATUS

	Certification Status		
Eligibility Status	Free	Reduced-Price	Denied
Free	A	B	C
Reduced-Price	D	E	F
Paid	G	H	I

We define two sets of certification error rates, one for certified students only, and one for certified students and denied applicants.

a. Certification Error Rates for Certified Students Only

For certified students, the total certification error rate is defined as the percentage of certified students receiving a level of benefits for which they are not eligible. It is a gross error rate measure, in that overcertification errors and undercertification errors are added together, rather than netted out. For this group, the broad certification error rate represents the error rate that would result if there was no distinction between free and reduced-price meals. In other words, it represents the percentage of certified students who are not eligible for either free or reduced-price meals.

Using the classifications defined in Table III.1, the certification error rates for certified students only are calculated as follows:

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

b. Certification Error Rates for Certified Students and Denied Applicants

APEC's main estimates include all certified students plus denied applicants. For this group, total certification error is defined as the percentage of all students who are certified for free or reduced-price meals or who applied for benefits but had their applications denied who are either (1) certified for a level of benefits for which they are not eligible or (2) erroneously denied benefits for which they are eligible. The inclusion of denied applicants introduces another type of undercertification error— benefits denied to students who should have been certified for either free or reduced-price benefits. As with the measure based on certified students only, the measure including denied applicants also is a gross error rate measure which adds overcertification and undercertification errors, rather than taking the netting them out. For this group, 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.

Using the classifications defined in Table III.1, the certifications error rates for certified students and denied applicants are calculated 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

We determined students' certification status using data from the master eligibility lists maintained by the school districts. The sample of certified students is representative of all students in the contiguous United States (excluding children in RCCIs) who were certified at any time during SY 2005–2006. In other words, the sample includes students who became certified

throughout the entire school year. The sample of denied applicants includes only students who applied but were denied benefits early in the school year.

We determined students' free or reduced-price eligibility status based primarily on information collected during the in-person household survey on students' household income, household size, and receipt of FSP/TANF/FDPIR benefits. 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 (for example, directly certified students), the information collected on the household survey reflected household circumstances at the beginning of the school year. We classified these students as certified accurately regardless of the information in the household survey as long as the required documentation for the type of certification (that is, documentation from the FSP/TANF/FDPIR administering agency) was available from the district. Students were classified by MPR 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:

- Their household income was less than or equal to 130 percent of the federal poverty level
- They were receiving FSP, TANF, or FDPIR benefits
- They had been directly certified correctly or otherwise certified correctly for free meals without an application[2]

[2]In addition to directly certified students, this also includes other categories of students certified for free meals without having to submit an application, such as homeless children, runaway children, children of migrant workers, and students displaced by Hurricane Katrina (or other natural disasters).

MPR classified students as eligible for reduced-price meals if they were not eligible for free meals but their income was 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.

B. FINDINGS ON RATES OF CERTIFICATION ERROR

Among students who applied for school meal benefits or were directly certified in SY 2005-06, 78 percent were certified for free meals, 17 percent were certified for reduced-price meals, and 5 percent were denied meal benefits.[3] Among certified students, 82 percent were certified for free meals and 18 percent were certified for reduced-price meals. Our primary estimates of certification error and erroneous payments are based on the sample of all certified and denied applicant students. In order to facilitate understanding of certification error (and because previous studies have focused on certified students), we discuss the findings for certified students first, and then discuss findings for all students who either were certified for free or reduced-price meals or who applied for benefits but had their applications denied.

1. Certification Error Rates Among Certified Students

Most students receiving free school meals have been certified accurately; 86 percent of these students were members of households whose circumstances at time of certification indicate that

[3]The APEC study only sampled denied applicants early in the school year. Although most applications are submitted at that time, some are submitted throughout the school year. Our sample weights adjusted for this. However, it is possible that these figures overestimate the percentage of certified students and underestimate the percentage of denied applicants somewhat.

the students were eligible for free meals (see Table III.2). Approximately 8.2 percent of students certified for free meals were eligible for reduced-price meals; 5.9 percent of all students certified for free meals were ineligible for either free or reduced-price meals. Thus, among all students erroneously certified for free meals, nearly 60 percent were eligible for reduced-price meals.[4] Certification errors were much more common among students certified for reduced-price meals, with less than half of this group (40.8 percent) certified accurately. About one-third of reduced-price students (34.1 percent) were undercertified—eligible for free meals but getting reduced-price meals—while one-fourth were overcertified—not eligible for either free or reduced-price meals (Table III.2).

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

- **Overcertification Rate.** Overall, the percentage of certified students who received higher benefits than those for which they were eligible (the overcertification rate) is 15.8 percent (see Table III.3 and Figure III.1). In other words, about one in six certified students was certified for a level of benefits higher than he or she should have received, based on his or her household circumstances at the time of application.
- **Undercertification Rate.** The percentage of certified students approved for a lower level of benefits than those for which they were eligible (the undercertification rate) is 6 percent. These undercertified students all were certified for reduced-price meals but eligible for free meals. (Non-certified students who were eligible for free or reduced price benefits are not included here.)
- **Total Certification Error Rate.** The total certification error rate among certified students is the sum of the overcertification and undercertification rates. Our estimate of the total certification error rate is 21.8 percent, which suggests that just over one

[4]Of students certified for free meals, 14.1 percent were estimated to not be eligible for free meal benefits, with 8.2 percent eligible for reduced-price meals and 5.9 ineligible for meal benefits. Thus, 8.2 / 14.1 or 58 percent of students certified for free meals in error were eligible for reduced-price meal benefits.

TABLE III.2

ELIGIBILITY VERSUS CERTIFICATION STATUS AMONG CERTIFIED STUDENTS AND DENIED APPLICANTS

	Certification Status[a]				
	Free	Reduced-Price	All Certified Students	Denied Applicants	All[b]
Eligibility Status[c] (percentage of students)					
Free	85.96	34.07	76.77	19.06	73.69
	(1.20)	(3.35)	(1.48)	(2.65)	(1.47)
Reduced-price	8.16	40.80	13.94	16.58	14.08
	(0.79)	(3.24)	(1.04)	(3.04)	(1.05)
Paid	5.89	25.12	9.30	64.36	12.23
	(0.66)	(2.38)	(0.82)	(3.72)	(0.91)
Total	100.0	100.0	100.0	100.0	100.0
Sample Sizes (students)	**2,408**	**539**	**2,947**	**453**	**3,400**

Source: APEC study, weighted data.

Note: Standard errors in parentheses.

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

[b]Refers to certified students and denied applicants. Certified students include directly certified students.

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

TABLE III.3

CERTIFICATION ERROR RATES AMONG CERTIFIED STUDENTS AND DENIED APPLICANTS

	Certification Status[a]				
	Free	Reduced-Price	All Certified Students	Denied Applicants	All[b]
Error Rate (percentage of students)					
Overcertification rate	13.86	24.76	15.79	0.00	14.95
	(1.22)	(2.38)	(1.18)	(0.00)	(1.10)
Undercertification rate	0.00	33.88	6.00	35.11	7.55
	(0.00)	(3.34)	(0.66)	(3.71)	(0.67)
Total certification error rate[c]	13.86	58.64	21.79	35.11	22.50
	(1.22)	(3.21)	(1.32)	(3.71)	(1.29)
Broad certification error rate[d]	5.71	24.76	9.08	35.11	10.47
	(0.68)	(2.38)	(0.85)	(3.71)	(0.85)
Sample Sizes (students)	**2,408**	**539**	**2,947**	**453**	**3,400**

Source: APEC study, weighted data.

Note: Standard errors in parentheses.

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

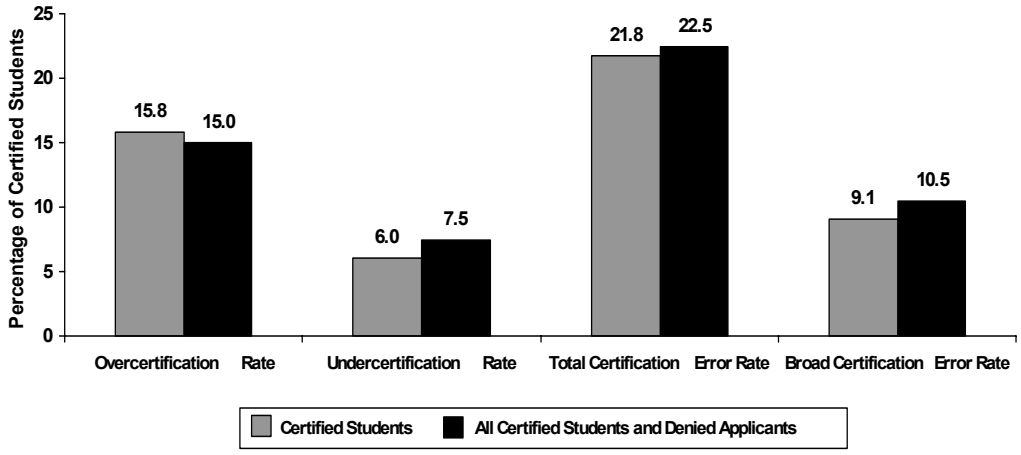
[b]Refers to certified students and denied applicants. Certified students include directly certified students.

[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.

Figure III.1

Certification Error Rate Estimates, SY 2005-2006



in five certified students was not eligible for the level of benefits for which he or she was certified.

- **Broad Certification Error Rate.** More than half of certification errors for certified 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. Thus, we calculated another version of the certification error rate—the broad certification error rate—that 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. Our estimate of the broad certification error rate among certified students nationally is 9.1 percent (Figure III.1; Table III.3). In other words, slightly fewer than one in ten certified students was not eligible for either free or reduced-price meal benefits based on his or her household circumstances at the time of application (or at the beginning of the school year, if certified without an application.)

Sensitivity of Certification Error Estimates to Changes in Eligibility Thresholds. We examined the degree to which the income parameters for the program affect certification error among certified students. Some certification errors appear to be caused by relatively small

differences between reported income and income thresholds for free or reduced-price meals. For example, the estimates indicate that 14 percent of students certified for free meals were not eligible to receive them (see III.2); that is, they were in households with incomes above 130 percent of the federal poverty level and were not receiving FSP, TANF, or FDPIR benefits. However, if the income eligibility threshold were 135 percent of poverty rather than 130 percent, the error rate among those certified for free meals would fall to 12.6 percent (a reduction of 10 percent). Loosening the threshold to 140 percent of poverty would lower the error rate to 11.2 percent (a reduction of nearly 20 percent).[5] If both the free and reduced-price income thresholds were raised by 5 percentage points—to 135 percent for free meals and 190 percent for reduced-price meals—the total certification error rate would decrease from 21.8 percent to 20.4 percent (a reduction of 6.5 percent). If each of the thresholds were increased by 10 percentage points, the total certification error rate would decrease to 18.5 percent (a reduction of 15 percent).

2. Certification Error Rates Among Certified Students and Denied Applicants

The study's main estimates of certification error and erroneous payments include denied applicants. Among students in the denied applicant group, nearly two-thirds (64.4 percent) were not eligible for either free or reduced-price benefits, indicating that the application was denied correctly (see Table III.2, under denied applicants). The household circumstances of the remaining one-third of denied applicant students suggest that they should have been certified, with 16.6 percent of denied applicant students eligible for reduced-price meals and 19.1 percent eligible for free meals.

[5]These statistics are not shown in a table but are available upon request.

The inclusion of denied applicants introduces another type of undercertification error—benefits denied to students who should have been certified for either free or reduced-price meal benefits. However, because denied applicants were relatively few in number (5 percent of all certified students and denied applicants), estimates of certification error rates based on certified students and denied applicants were similar to those for certified students alone. For all students who either were certified for meal benefits or who applied but were denied benefits (Table III.3):

- The overcertification rate is 15.0 percent
- The undercertification rate is 7.5 percent
- The total certification error rate is 22.5 percent
- The broad certification error rate is 10.5 percent

C. COMPARISONS WITH PREVIOUS STUDIES

Two previous large-scale studies have generated certification error rate estimates for certified students that are somewhat comparable to those derived in the APEC 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, although data collection took place more than two decades ago. This 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 the spring of 1987 to determine household circumstances and students' eligibility for benefits. For comparison purposes, we have used the

findings of the 1987 study to compute error rates that are defined as comparably as possible to those in the current study.[6]

The Evaluation of the National School Lunch Program Application/Verification Pilot Projects [the Pilot Evaluation] (Burghardt et al. 2004a) studied the effects of a demonstration program implemented in 12 U.S. school districts during SY 2002–2003. Nine districts in the evaluation implemented "up-front documentation" procedures, which required all applicants for free or reduced-price meals to provide documentation of either their income or receipt of public assistance with the application. 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 estimates can be compared with the APEC estimates. 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 (Burghardt et al. 2004a). Nevertheless, they are of interest because the evaluation used a methodology for estimating rates of certification error similar to the methodology we used in the APEC study.

[6]The study included a sample of students certified for free or reduced-price meals but not selected for verification. That sample was representative of nearly all certified students nationally during SY 1986-87.

2. Findings

Estimated certification error rates for certified students across the three studies were similar. For example, the overcertification rate was estimated to be 16 percent in APEC, 17 percent in the SIV, and 20 percent in the Pilot Evaluation (Table III.4). Similarly, the estimated undercertification rate ranged from 6 - 8 percent across the three studies. Each study concluded that approximately one in four certified students was not certified for the level of benefits for which he or she was eligible (though the specific estimate ranged from 22 percent for APEC to 27 percent for the Pilot Evaluation). 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 and 12 percent for the Pilot Evaluation.

3. Implications

The methodology used to estimate error rates differed in important ways across the three studies. As noted above, unlike the other two studies, the Pilot Evaluation was not nationally representative. A key difference between the SIV and APEC involved the timing of the household survey. In APEC, 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

TABLE III.4

CERTIFICATION ERROR RATE ESTIMATES:
COMPARISONS ACROSS THREE LARGE-SCALE STUDIES
(Percentages)

	Access, Participation, Eligibility, and Certification Study (APEC)	Study of Income Verification in the National School Lunch Program	Evaluation of the NSLP Application/ Verification Pilot Projects
Overcertification Rate	16	17	20
Undercertification Rate	6	8	7
Total Certification Error Rate	22	25	27
Broad Certification Error Rate	9	7	12

Note: The error rates shown in the table are calculated for certified students (excludes denied applicants).

when the student was certified.[7] 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 the APEC study than in the SIV.[8] Finally, APEC includes directly certified students, whereas neither the SIV nor the Pilot Evaluation included directly certified students.

Because of these methodological differences among the three studies, we cannot use their results to draw specific conclusions about changes in certification error rates for certified students over the period covered by the studies. Instead, we present the certification error rate estimates from these other studies to put the APEC findings into perspective. The fact that three different studies using the same basic approach to study certification error (albeit with some variation in the specific methods used) resulted in a similar pattern of findings for certified students is a reassuring signal of the reliability of this approach. In addition, even if we cannot track a specific time 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.

[7]The timing of the household survey in the Pilot Evaluation was fairly similar to that used in APEC, although the survey was administered a month or two later in the typical case. However, the Pilot Evaluation household survey requested information about household circumstances in the previous month, rather than specifically asking about its circumstances at the time the application was submitted.

[8]Another key difference between APEC and the SIV is that when the latter study was conducted, the administrative features of the school meal programs were somewhat different than they were during SY 2005–2006 when APEC data were collected. In particular, while the certification error rate estimates in both studies exclude students attending schools that use Provision 2 or 3 and are not in their base year, this arrangement was much less common in 1986–1987 than in 2005–2006.

IV. SOURCES OF CERTIFICATION ERROR

Certification error occurs when school districts certify students for a level of meal benefits for which they are not eligible or fail to certify students who have applied for benefits the level of benefits for which they are eligible. It can arise in two main ways. First, a household can report incorrect information on its application for meal benefits. This type of error is called household reporting error, or simply reporting error. Second, school districts can make mistakes in 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 eligibility list. This second type of error is called administrative error. In this chapter, we first explain the methods we use to determine the two sources of certification error (Section A), and then we summarize findings on the prevalence of reporting error and administrative error and on the sources of these errors (Section B). In a final section (Section C), we compare the APEC study's findings on sources of certification error with findings from previous studies.

A. METHODS

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 status that were compared to identify sources of certification error.

1. Data Sources

The analysis of the types of certification error relies on data from three different sources:

- ***Master Eligibility Lists.*** At the time of sampling, we recorded each sampled student's certification status from the master eligibility lists maintained by the school districts. The master eligibility list is the official document that records which students are certified for free or reduced-price meals. The master eligibility list may also record denied applicant students; if it did not, we sampled these students directly from the denied applications.

- ***Applications and Direct Certification Documents.*** For each sampled student certified on the basis of an application or denied applicant student, field staff photocopied the household's application, from which we abstracted detailed information, including lists of household members and their incomes, FSP and TANF case numbers, and other key elements of a complete application. We also recorded information from the application on the district's determination of household size, total gross income, and the certification status that the district assigned to the student. For sampled students certified for free meals without submitting an application (that is, certified by direct certification), field staff photocopied relevant documentation when possible or, when that was not possible, recorded information from documents that they were shown confirming the free meal status of the student on the abstraction form.[1]

- ***Household Survey.*** Through an in-person survey of the parent or guardian of each sampled student, we collected detailed information on household circumstances at the time of application—including household composition, income sources and amounts, and receipt of TANF, FSP, or FDPIR benefits.

2. Measures of Eligibility Status and Sources of Certification Error

These data sources allowed us to construct three measures of eligibility status for each sampled student. We used the student's certification status as recorded on the district's master eligibility list to represent the certification decision made by the school district. 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

[1]These documents varied and included lists of FSP and TANF recipients from state or county agencies; lists from other agencies (homeless, runaway, migrant workers, and so on); letters from state or county agencies or districts notifying households that their children were certified eligible for free meals; or lists maintained by the district or school indicating directly certified students.

for free or reduced-price meal benefits or direct certification documentation. To construct each of these measures of eligibility, we applied FNS guidelines to assess independently the level of benefits for which the student was eligible (free, reduced-price, or paid), based on the information provided in the household survey or application or direct certification documentation.[2]

Each measure of certification error—total certification error and its components, reporting error and administrative error—is derived by comparing two of these three measures of eligibility status. Figure IV.1 shows the relationships among the three eligibility status measures and the three types of error. Each status measure is shown as a point of the triangle, and each type of error is represented by a line between a pair of points, where the error is measured by comparing the two indicators of eligibility status joined by the line. These errors are defined as follows:

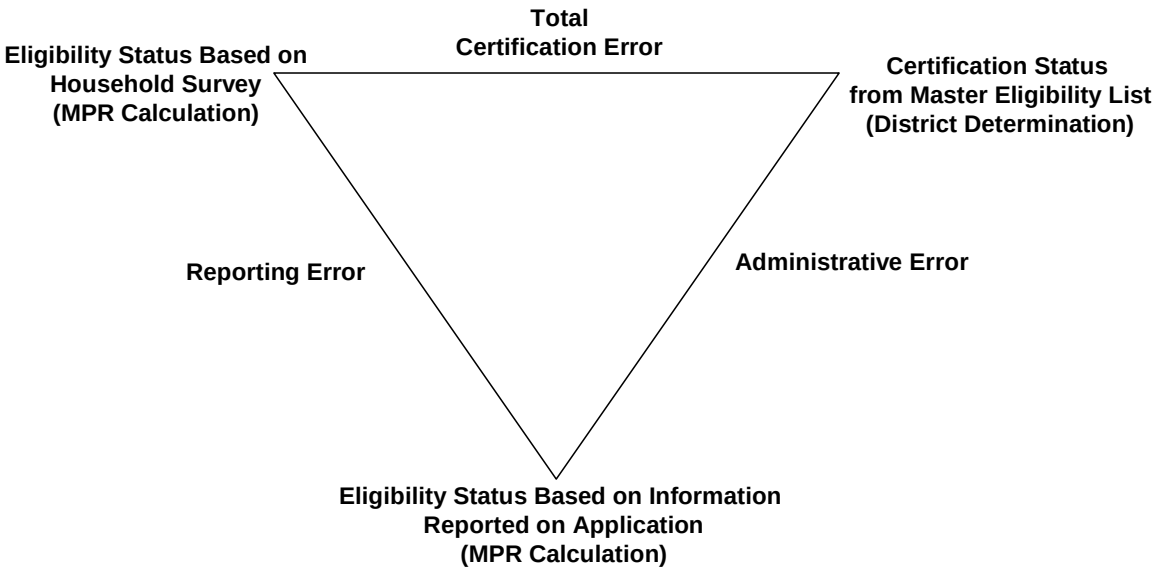
- ***Total certification error*** is measured by comparing the student's certification status on the district's master eligibility list to our independent assessment of the student's eligibility status based on information provided on the household survey. Certification error occurs when these two measures of status differ.[3] An example of certification error would be if our assessment, based on information in the household survey, was that the student should have been certified for reduced-price benefits, but the student was recorded as certified for free meals on the master eligibility list. Certification error can come from reporting error, administrative error, or a

[2]See Section III.A. In addition, Appendix G provides additional detail about how eligibility was defined in certain unusual cases (including those for which no application was found for the student in the district's file, those for which an application was found but was incomplete, and those for which the student appeared to have reapplied for free or reduced-price meals later in the year). The appendix describes sensitivity tests performed to gauge the influence of these definitions on key estimates of certification error and erroneous payments.

[3] If a district does not have an application or direct certification document on file for a certified student, then according to FNS rules, the student should not have been certified, even if the student was correctly certified (certification status matches eligibility status). We treat this as a certification error. However, if an application is found that does not include the required signature or Social Security Number (SSN not required for categorically eligible applications), then the application is considered an administrative error; but if the certification status is correct based on the household circumstances reported on the household survey, then it is not considered a certification error.

Figure IV.1

Methodology for Computing Error



combination of both types of error.[4] Key findings on total certification error were presented in Chapter III.

- ***Reporting error*** is measured by comparing our assessments of eligibility status based on the information the household submitted on its application and based on the information provided in response to our household survey. Reporting error occurs when the student's eligibility status determined by MPR using the information on the application differs from the eligibility status determined using the information from the household survey.[5] An example of reporting error would be if the household reported information on its application indicating that students in the household should be eligible for reduced-price meals, whereas information from the household survey indicated that the students in the household were not eligible for either free nor reduced-price meals.

- ***Administrative error*** is measured by comparing our assessment of the student's eligibility status based on the information on the application and the eligibility determination made by the school district, as recorded on the master eligibility list.

[4]When a student is certified incorrectly (that is, when there is certification error), there must be either a reporting error or an administrative error.

[5]Students can have reporting error only if their household submitted an application. Directly certified students never had to report their household income, so they cannot have reporting error.

> Administrative error occurs when these two measures of eligibility status differ. An example of administrative error would be if the district recorded a student as certified for free meals on the master eligibility list but the information on the application indicated that he or she was eligible for reduced-price meals.

In some cases, both reporting and administrative errors occur. 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 eligibility 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 eligibility 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 eligibility list.

Discrepancies between information on the household survey, application, and master eligibility list are defined as errors only if they lead to differences in a student's eligibility status 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.

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 either were certified for free or reduced-price meals or who applied for meal benefits but had their applications denied, 19.6 percent had their eligibility misclassified because of household reporting error; and 4.2 percent of these students were misclassified because of administrative error (Table IV.1, under "all" column).[6] (These percentages include 1.3 percent of students in households with both reporting and administrative errors that resulted in the student being certified incorrectly, denoted "reinforcing" administrative and reporting error). Thus, more than four-fifths of certification error among certified students and denied applicants was due to household reporting error.[7] Another 3.6 percent of these students had both reporting and administrative errors that offset each other so that there was no certification error. Including these offsetting cases increases reporting error among all certified students and denied applicants to 23.2 percent and administrative error to nearly 7.8 percent.

Figure IV.2 expresses the various types and combinations of error as a percentage of certified students and denied applicants who had administrative error, household reporting error, or both (whether offsetting or not). It shows that only 10.9 percent of these students had

[6]As noted previously, students certified to receive free or reduced-price meals on the basis of incomplete applications were considered to be cases of administrative error. However, such cases were not considered to be certification errors if the household survey data confirmed that the student was eligible for the level of benefits for which he or she was certified. These cases are not included in the administrative error rates presented in Table IV.1; but are included in Table IV.3 which presents findings on administrative error sources.

[7]When denied applicants are excluded, the household reporting error rate was 19.2 percent for certified students (down from 19.6 percent for all certified students and denied applicants); and the administrative error rate for certified students was 3.8 percent (down from 4.2 percent for all certified students and denied applicants).

TABLE IV.1

CERTIFICATION ERROR RATES, BY TYPE
(Percentage of All Certified Students and Denied Applicants)

	Certification Status[a]				
	Free	Reduced-Price	All Certified Students	Denied Applicants	All[b]
Total Certification Error Rate	13.86	58.64	21.79	35.11	22.50
	(1.22)	(3.21)	(1.32)	(3.71)	(1.29)
Reason for Certification Error					
Administrative error only	1.89	5.96	2.61	7.36	2.86
	(0.50)	(1.47)	(0.54)	(2.15)	(0.51)
Household reporting error only	11.26	49.59	18.05	23.41	18.33
	(1.03)	(3.52)	(1.28)	(4.06)	(1.28)
Both administrative and reporting error	0.72	3.09	1.14	4.34	1.31
	(0.20)	(1.70)	(0.33)	(1.48)	(0.32)
Total Error Including Reinforcing Errors					
Total administrative error[c]	2.60	9.05	3.75	11.70	4.17
	(0.52)	(2.16)	(0.58)	(2.70)	(0.55)
Total reporting error[c]	11.97	52.67	19.18	27.75	19.64
	(1.03)	(3.44)	(1.18)	(4.06)	(1.17)
Offsetting administrative and reporting error	3.32	4.69	3.56	4.06	3.59
	(0.65)	(1.01)	(0.56)	(1.36)	(0.53)
Total Error Including Offsetting Errors					
Total administrative error[d]	5.92	13.74	7.31	15.76	7.76
	(0.79)	(2.56)	(0.87)	(2.86)	(0.85)
Total reporting error[d]	15.29	57.37	22.74	31.81	23.23
	(1.19)	(3.17)	(1.43)	(4.12)	(1.36)
Sample Size	**2,410**	**540**	**2,950**	**453**	**3,403**

Source: APEC Study, weighted data.

Note: Standard errors in parentheses.

[a]Certification status recorded on district's master eligibility roster at the time student was sampled.

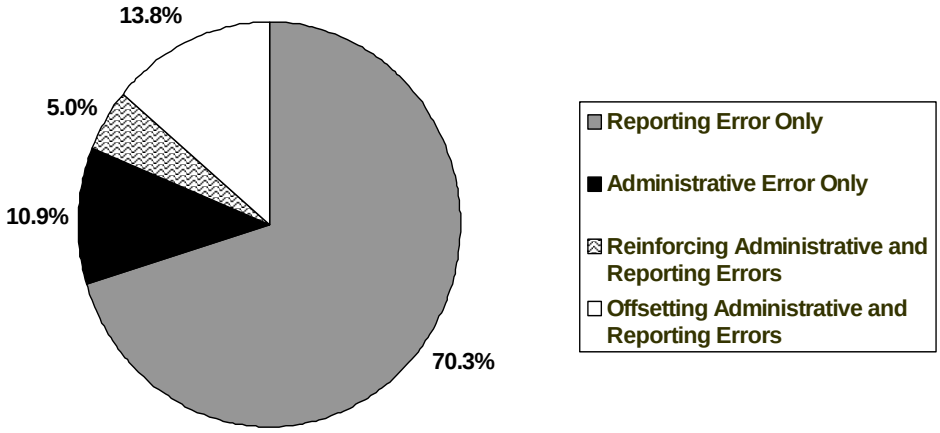
[b]Refers to certified students and denied applicants. Certified students include directly certified students.

[c]Total error here includes certified students with both administrative and reporting error that resulted in the student being certified incorrectly. For example, total administrative error for certified students equals 3.75 percent and is the sum of 2.61 percent of certified students with administrative error only and 1.14 percent of certified students with both administrative and reporting error.

[d]Total error here includes certified students with both administrative and reporting error that offset each other so that there was no certification error. For example, total administrative error for certified students equals 7.31 percent and is the sum of 2.61 percent of certified students with administrative error only, the 1.14 percent of certified students with both administrative and reporting error, which is a reinforcing error, and the 3.56 percent of certified students with both administrative and reporting error that offset each other for no overall error.

Figure IV.2

Prevalence of Reporting and Administrative Error Among Students with Any Error



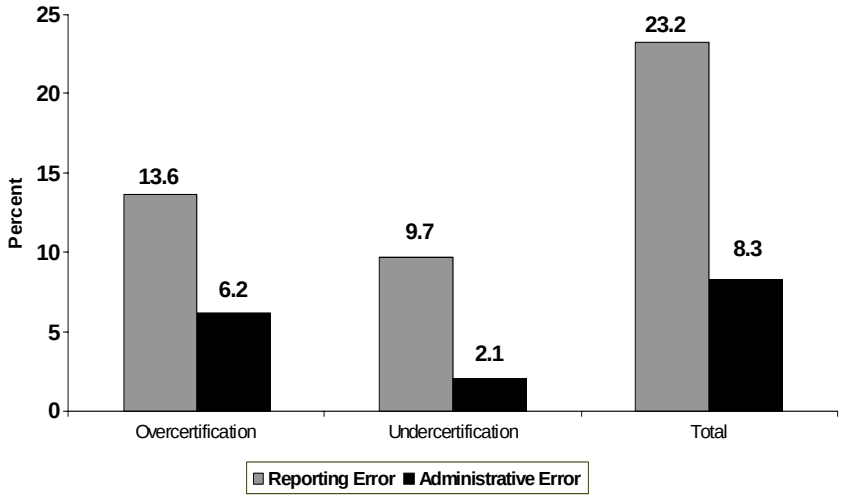
administrative error alone, whereas 70.3 percent had reporting error alone. Both types of error were present in the remaining cases—5.0 percent of these students had both reporting and administrative errors that combined to result in certification error, whereas 13.8 percent had reporting and administrative errors that offset each other to result in no overall certification error.

Reporting and Administrative Error More Often Resulted in Overcertification than Undercertification. Reporting error would have resulted in overcertification (assuming there was no offsetting administrative error) for 13.6 percent of certified or denied applicant students and undercertification for 9.7 percent of these students (see Figure IV.3). Administrative error was even more heavily skewed toward overcertification. Overcertification would have resulted from administrative error for 6.2 percent of these students (assuming there was no offsetting reporting error), compared to undercertification for just 2.1 percent.[8]

[8]For certified students only, reporting error would have resulted in overcertification for 14 percent of certified students and undercertification in 8.7 percent of certified students, and administrative error would have resulted in overcertification for 6.6 percent of students certified for free or reduced-price meals and undercertification for just 1.3 percent of certified students.

Figure IV.3

Reporting and Administrative Error Rates Among Certified Students and Denied Applicants (Assumes No Offsetting Errors)



Reporting Error Rates Were Highest Among Students Certified for Reduced-Price Meal Benefits. Reporting error rates were more than four times larger for students certified for reduced-price meal benefits than for students certified for free meal benefits (52.7 percent versus 11.9 percent), and nearly twice as large for students certified for reduced-price meal benefits than for denied applicants (52.7 percent versus 27.8 percent, Table IV.1).[9]

Both Administrative Error and Reporting Error Were More Prevalent Among Denied Applicants than Certified Students. Of students denied benefits, 11.7 percent were denied those benefits erroneously because of administrative error. Denied applicant students were three times more likely than certified students to have their eligibility misclassified because of administrative error (11.7 percent versus 3.7 percent). Of students denied benefits, 27.7 percent were erroneously denied meal benefits due to misreporting by the household. By comparison,

[9]These percentages include students with both reporting and administrative error that are reinforcing but exclude those that cancel each other out (that is, are offsetting).

household reporting error led to 19.2 percent of incorrect certifications among certified students.[10]

2. Sources of Household Reporting Error

Reporting error arises from discrepancies in the information households report on the application for meal benefits about any of the items considered in determining eligibility (such as household size, household income, or FSP/TANF/FDPIR eligibility) which affect the accuracy of the student's certification status. Such errors may be caused by deliberate misreporting by households seeking certification at a higher level of benefits than that to which they are entitled. Such errors also may be caused by unintentional mistakes, such as forgetting about a secondary source of income or income from someone in the household who is not a primary earner. Another type of reporting error occurs when a household submits an incomplete application. In addition to the information necessary to assess eligibility—either a list of all household members and their incomes, or an FSP/TANF/FDPIR case number—complete applications must include an adult's signature, and, in the case of income-based applications, the Social Security Number (SSN) of the adult signing the application (or indication that the adult does not have an SSN).

For household reporting on the application to be considered accurate, the following six conditions must hold:

1. The application must be complete.
2. If FSP/TANF/FDPIR eligibility is reported, it must be accurate.

(Note: the remaining conditions assume that the household does not report FSP/TANF/FDPIR participation.)

3. The number of household members must be reported accurately.

[10]The percentages for denied applicants include 4.34 percent of students in denied applicant households with both reporting and administrative errors resulting in certification error.

4. The application cannot fail to report the income of a household member who actually has income.
5. The application cannot fail to report income from a particular source of a household member who has income from that source.
6. If positive income amounts are reported from any source for any household member, the reported income amount must be accurate.

Reporting error will result if any of the above conditions (or any combination of these 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. Table IV.2 presents findings on the decomposition of certification error attributable to each of the different types of household misreporting errors for all certified students and denied applicants. Figure IV.4 shows the prevalence of reporting error as a percentage of students with any reporting error, for reporting errors broadly categorized (that is, errors due to misreporting categorical eligibility, household size only, household income only, or both household size and income, and errors due to incomplete applications).

Most Reporting Error Involved a Discrepancy in the Total Amount of Household Income Reported on the Application (that is, Violation of Conditions 4, 5, or 6). Of certified students and denied applicants, 19.4 percent had a reporting error related to income misreporting (11.72 percent with only an income-reporting error and 7.66 percent with both income- and household-size-reporting errors, see Table IV.2). These cases represented 83.4 percent of all students with reporting errors (Figure IV.4).[11]

[11]This figure was derived as follows: 19.38 percent of certified students and denied applicants had reporting error due to income misreporting, where 11.72 percent was income-reporting error only and 7.66 percent had both income- and household-size-reporting errors; 23.23 of these students had household reporting error. Therefore, 11.72 / 23.23 = 50.5; 7.66 / 23.23 = 33.0; and 19.38 / 23.23 = 83.4 percent.

TABLE IV.2

HOUSEHOLD REPORTING ERROR
(Percentage of Certified Students and Denied Applicants)

	Eligibility Status Based on Information Provided on Application			
	Free	Reduced-Price	Paid	All[a]
Eligibility Status Based on Household Survey[b]				
Free	87.15	35.69	31.24	73.69
	(1.05)	(3.39)	(4.59)	(1.47)
Reduced-price	8.24	40.22	14.81	14.08
	(0.81)	(3.38)	(2.87)	(1.05)
Paid	4.60	24.09	53.95	12.23
	(0.50)	(2.30)	(4.16)	(0.91)
Reporting Error Rate (percent of students)				
Overcertification rate	12.89	24.09	NA	13.57
	(1.06)	(2.30)		(0.93)
Undercertification rate	NA	35.69	42.36	9.66
		(3.39)	(4.57)	(0.96)
Total reporting error rate	12.89	59.78	42.36	23.23
	(1.06)	(3.38)	(4.57)	(1.36)
Meal Price Status Based on Survey Agrees with Status Based on Application Data (No Reporting Errors)	87.11	40.22	57.64	76.77
	(1.06)	(3.38)	(4.57)	(1.36)
Type of Reporting Error (Condition Violated)				
Application Incomplete (Condition 1)	0.00	0.00	23.92	2.15
	(0.00)	(0.00)	(5.14)	(0.59)
Categorical Eligibility[b] (Condition 2)	1.30	3.66	0.79	1.64
	(0.31)	(0.95)	(0.39)	(0.29)
Total Household Size Only (Condition 3)	0.05	0.00	0.12	0.05
	(0.04)	(0.00)	(0.09)	(0.03)
Total Household Income Only (Conditions 4 through 6)	6.14	37.39	11.20	11.72
	(0.72)	(2.83)	(2.45)	(0.83)
One data source indicates 0 income (Condition 4)	0.07	0.52	0.33	0.17
	(0.07)	(0.38)	(0.33)	(0.08)
Number of household members with income (Condition 4)	1.55	6.38	2.78	2.45
	(0.39)	(1.50)	(1.17)	(0.37)
Number of types of income (Condition 5)	0.47	4.72	0.82	1.20
	(0.14)	(1.27)	(0.32)	(0.23)
Number of household members with income and number of types of income (Conditions 4 and 5)	1.19	5.94	0.83	1.94
	(0.26)	(1.11)	(0.39)	(0.27)
Individual income amounts (Condition 6)	2.87	19.83	6.42	5.97
	(0.40)	(2.72)	(1.99)	(0.65)
Both Household Size and Income (Conditions 3 through 6)	5.39	18.73	6.29	7.66
	(0.70)	(2.21)	(1.60)	(0.76)
Sample Size	**2,320**	**535**	**545**	**3,400**

Table IV.2 *(continued)*

Source: APEC Study, weighted data.

Note: Reporting error rates due to misreporting are based on the sample of free and reduced-price certified students and denied applicants for whom we have a completed household survey with parent or guardian. Standard errors in parentheses.

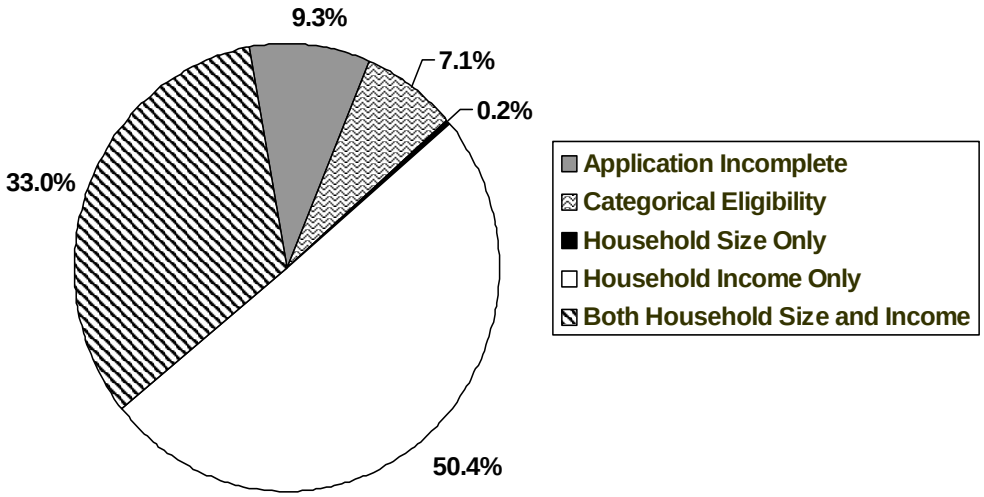
[a]Refers to certified students and denied applicants. Certified students include directly certified students.

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

[c]By "categorical eligibility differs" we mean the application indicated that the student or someone else in the household received public assistance (FSP/TANF/FDPIR) when according to the household survey it did not, or vice versa.

Figure IV.4

Types of Reporting Error
(Percentage of Students with Any Reporting Error)



We provided additional detail on the types of income misreporting for students with only an income-reporting error. In half of these cases, households violated Condition 6 by not accurately reporting the income amounts from one or more income sources for household members (the applications for 5.97 percent of certified students and denied applicants misreported individual income amounts, Table IV.2). Other students were in households that violated Condition 4 by either not accurately reporting which household members had income (the applications for 2.45 percent of certified students and denied applicants misreported the number of household members with income) or reporting no income for all household members (0.17 percent); still others violated Condition 5 by not accurately reporting from which sources household members had income (1.2 percent), or violated both Condition 4 and 5 (1.94 percent).

Discrepancies in Household Size Were the Next Most Common Type of Reporting Error (Violation of Condition 3). Reporting error due to differences in the number of household members listed on the application occurred for 7.7 percent of certified students and

denied applicants (0.05 percent for misreporting household size only and 7.66 percent for misreporting both income and household size, Table IV.2); this represents 33 percent of all students with any reporting error (Figure IV.4). Almost all of the students with discrepancies in household size also had discrepancies in household income.

Least Common Were Discrepancies in Categorical Eligibility Information (Violation of Condition 2) or Submission of Incomplete Applications (Violation of Condition 1). Of certified students and denied applicants, 1.6 percent (7.1 percent of those students with any reporting error) had an application that violated Condition 2 by indicating that the student or someone else in the household received public assistance (FSP/TANF/FDPIR) when, according to the household survey, they did not. Households submitted incomplete applications in violation of Condition 1 for 2.1 percent of certified students and denied applicants (9.3 percent of students with any reporting error).

3. Sources of Administrative Error

School districts may make several types of mistakes in processing applications and direct certification documents and determining eligibility. First, they may make errors in judging the completeness of an application (Incomplete Application Error).[12] For example, staff may certify students for meal benefits 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 (or indication that the adult did not have an SSN). Districts sometimes make incorrect assessments of the household information on an application, such as household size, income, or categorical

[12]Students certified to receive free or reduced-price meals on the basis of incomplete applications are considered to be cases of administrative error according to FNS regulations. As noted earlier, such cases are not considered to be certification error if the household survey data confirm that the student is eligible for the level of benefits for which it is certified.

eligibility (Assessment Error). Even if a correct assessment of circumstances is made, there can be a mistake in looking up the corresponding eligibility status in the FNS guidelines (Lookup Error). Another type of administrative error is introduced if the district correctly performs these steps and records the correct status on the application, but records a different certification status on the master eligibility list (Transmittal Error). Finally, an administrative error occurs if the district fails to have an application or direct certification documentation on file for a certified student (Missing Application Error).[13] In this section we present findings about administrative error for certified students and denied applicants. Table IV.3 shows the prevalence of each type of administrative error among all certified students and denied applicants, and Figure IV.5 shows each type of error as a percentage of students with any administrative error.

Certifying Students Whose Applications Were Incomplete Was the Most Frequent Administrative Error. For 2.2 percent of certified students and denied applicants, school districts erroneously certified students whose applications were incomplete (Table IV.3). Incomplete application error represents 26.3 percent of students with any administrative error (Figure IV.5). The vast majority of these students' applications were incomplete because they lacked a signature or SSN (82 percent of students with incomplete applications;[14] 1.8 percent of all certified students and denied applicants). Much less common were errors judging

[13]If a student was certified to receive free or reduced-price meals, then missing applications or direct certification documentation were also considered certification error, regardless of the eligibility status indicated in the household survey. This is consistent with USDA policy: when Coordinated Review Effort (CRE) reviewers encounter a student receiving meal benefits without an application on file or without the student on the directly certified list, the district is assessed a fiscal penalty because there is no documentation on file that indicates the household applied for those benefits. This is an administrative error as well as a certification error. It is different than other types of administrative error, which may not result in a certification error if the eligibility status from information in the household survey matches the certification status on the district's master eligibility list.

[14]Derived as follows: Of the 2.17 percent of certified students and denied applicants with application completeness error, 1.78 percent were missing a signature of SSN; 1.78 / 2.17 = 0.82, or 82 percent.

TABLE IV.3

ADMINISTRATIVE ERROR
(Percentages of Certified Students and Denied Applicants)

	Certification Status[a]			
	Free	Reduced-Price	Denied Applicants	All[b]
Eligibility Status Based on Information Provided on Application[c]				
Free	93.62 (0.87)	7.13 (2.00)	9.23 (2.20	74.62 (1.43)
Reduced-Price	2.21 (0.42)	85.60 (2.65)	6.32 (1.79)	16.41 (1.08)
Paid	4.17 (0.76)	7.28 (1.98)	84.46 (2.86)	8.97 (0.92)
Administrative Error Rate				
Overcertification Rate	6.43 (0.86)	7.14 (1.97)	NA	6.21 (0.84)
Undercertification Rate	NA	7.26 (2.00)	15.76 (2.86)	2.06 (0.41)
Total Administrative Error Rate	6.43 (0.87)	14.40 (2.65)	15.76 (2.86)	8.26[d] (0.91)
Administrative Determination of Meal Price Status Correct				
No Administrative Errors	93.09 (0.88)	84.31 (2.75)	82.94 (2.93)	91.08 (0.94)
Offsetting Administrative Errors	0.48 (0.14)	1.29 (0.50)	1.29 (0.71)	0.66 (0.15)
Total	93.57 (0.86)	85.60 (2.65)	84.23 (2.86)	91.74 (0.91)
Sources of Reporting Error				
Single Administrative Error Affecting Meal Price Status Transmittal error	0.88 (0.24)	2.72 (0.80)	4.82 (1.98)	1.40 (0.29)
Application completeness error	2.29 (0.59)	2.33 (1.76)	0.00 (0.00)	2.17 (0.67)
Missing income, household size, or case number	0.44 (0.17)	0.27 (0.26)	0.00 (0.00)	0.39 (0.14)

Table IV.3 *(continued)*

	Certification Status[a]			
	Free	Reduced-Price	Denied Applicants	All[b]
Missing signature, SSN, or detail	1.84 (0.52)	2.06 (1.75)	0.00 (0.00)	1.78 (0.62)
Assessment error	0.94 (0.24)	2.97 (0.89)	3.74 (1.62)	1.43 (0.26)
Error in determining categorical eligibility	0.01 (0.01)	0.13 (0.13)	1.64 (1.40)	0.11 (0.08)
Error in determining household size	0.14 (0.09)	0.00 (0.00)	0.12 (0.09)	0.12 (0.07)
Error in determining household income	0.79 (0.23)	2.84 (0.89)	1.98 (0.86)	1.20 (0.25)
Lookup error	0.09 (0.06)	0.66 (0.49)	1.38 (0.82)	0.25 (0.11)
Missing Application	1.40 (0.51)	2.53 (0.79)	0.23 (0.22)	1.53 (0.46)
Reason for Error Unknown	0.68 (0.39)	2.94 (1.54)	3.99 (1.62)	1.24 (0.49)
Multiple Errors Affecting Meal Price Status	0.15 (0.10)	0.26 (0.26)	1.62 (0.94)	0.24 (0.10)

Source: APEC Study, weighted data.

Note: Administrative error rates are based on the sample of free and reduced-price certified students and denied applicant students for whom we have a completed household survey with parent or guardian. Standard errors in parentheses.

NA = Not applicable.

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

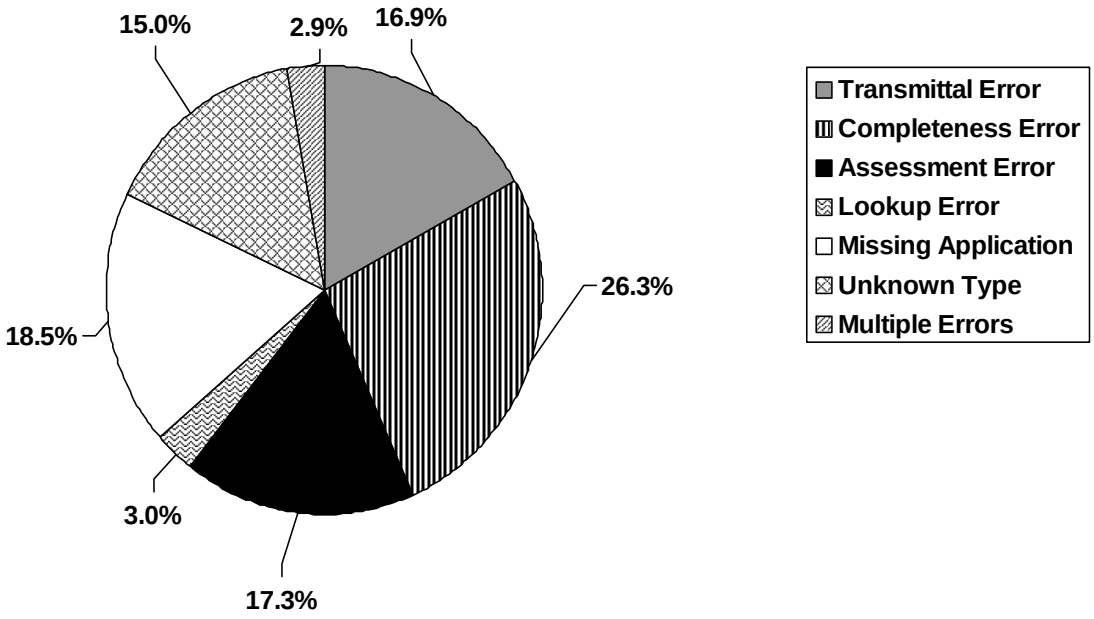
[b]Refers to certified students and denied applicants. Certified students include directly certified students.

[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 (7.76 percent) 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.

Figure IV.5

Administrative Error, by Source



completeness when an application lacked a key item for determining eligibility, such as income information or a case number (18 percent of students with incomplete applications;[15] 0.4 percent of all certified students and denied applicants).

Key findings for other sources of administrative error include:

- ***Missing Application Error.*** For 1.5 percent of certified students and denied applicants, school districts erroneously certified students when the district could not produce the application or direct certification documentation. This represents 18.5 percent of students with any administrative error.
- ***Assessment Error.*** Incorrect assessment of household circumstances by district staff occurred for 1.4 percent of certified students and denied applicants. This represents 17.3 percent of students with any administrative error. Errors determining household

[15]Derived as follows: Of the 2.17 percent of certified students and denied applicants with application completeness error, 0.39 percent were missing a signature of SSN; 0.38 / 2.17 = 0.18, or 18 percent.

income represented the most common assessment error occurring in 85 percent of students with assessment error.

- ***Transmittal Error.*** Errors transmitting the certification status from the application to the master eligibility list also occurred in about 1.4 percent of certified students and denied applicants. This represents 16.9 percent of students with any administrative error.
- ***Lookup Error.*** Lookup errors were rare and occurred in about 0.3 percent of students certified for free or reduced-price meals or who applied for but were denied meal benefits. This represents 3 percent of students with any administrative error.

Multiple Errors Were Rare. About 0.2 percent of certified students and denied applicants, or 2.9 percent of students with any administrative error, had two or more types of error that combined to cause a certification error. An additional 0.7 percent of students had offsetting administrative errors, resulting in no administrative error. We were unable to determine the cause of the administrative error in cases where there was no indication on the application of the district's assessment of household size, income, or categorical eligibility. This occurred in 1.2 percent of applications of certified students and denied applicants, representing 15 percent of students with any administrative error.

C. COMPARISONS WITH OTHER STUDIES

In Chapter III (Section C) we described how the APEC study's findings on total certification error rates were similar to those found in prior studies. Here, we compare study findings on reporting error and administrative error with those from the Evaluation of the NSLP Application/Verification Pilot Study and from two Regional Office Reviews of Applications (RORA) conducted by FNS in SYs 2004–2005 and 2005–2006.

1. Findings on Reporting and Administrative Error from the NSLP Application/ Verification Pilot Study

The NSLP Application/Verification Pilot Study (the Pilot Study) used similar methods to the APEC study to calculate reporting and administrative error. Information reported on the

household's application was compared to household survey data to determine reporting error and the information on the application was compared to the district's certification decision to determine administrative error. The Pilot Study found higher rates of both reporting and administrative error than APEC did. The administrative error rate computed in the Pilot Study was 12.3 percent, and the reporting error rate was 39.3 percent (Hulsey et al. 2004). The higher rates in the Pilot Study may be explained in part by two differences in the samples for the studies. First, the APEC sample included directly certified students, while the Pilot Study sample excluded this group. Directly certified students are less likely to be certified erroneously or experience administrative error (and for the APEC study, were assumed to be certified correctly unless the district could not produce documentation verifying that the student appears on the directly certified list). Directly certified students never had to report their household income and therefore cannot have reporting error. Second, the APEC study is a nationally representative sample, whereas the Pilot Study sample for these analyses was comprised of districts neither nationally representative nor typical of the range of school districts across the United States.

2. Findings on Administrative Error from the RORA Studies

The Regional Office Reviews of Applications (RORA) studies conducted by FNS examined administrative error in national probability samples of 2,762 applications in SY 2004–2005 and of 2,751 applications in SY 2005–2006. Similar to APEC, both RORA studies sampled certified students and denied applicants and abstracted information from applications and independently assessed each student's eligibility based on the information the household provided on the application. APEC included directly certified students, whereas the RORA studies did not. While APEC and the RORA studies were based on multi-stage, clustered probability sample

designs, there were some differences in the sample designs.[16] The methodology used to measure administrative error in the RORA studies differed in one other important way from that used in APEC. APEC compared the assessment of the information on the application to the certification status on the district's master eligibility list at the time of sampling, while RORA compared it to the determination of eligibility the district recorded on the application or, if no determination was indicated on the application, to the status within the district's computer system *at the time of certification*. Thus, the APEC measure of overall administrative error included some cases of transmittal error that may not have been present in the RORA measure.

In APEC, administrative error occurred for 8.3 percent of certified students and denied applicants in SY 2005-2006. The APEC study found that errors transmitting the certification status from the application to the master eligibility list occurred for about 1.4 percent of students. Subtracting this transmittal error from the 8.3 percent overall administrative error rate in the APEC study yielded an adjusted administrative error rate of 6.9 percent. This rate was twice as high as that found in the RORA studies. The first RORA study found an administrative error rate of 3.5 percent, and the second found administrative error in 3 percent of sampled applications. The error rate found in APEC was higher than that found in the RORA studies for each of the two types of administrative error explicitly reported by both studies—assessment error and missing applications. RORA found administrative error resulted in overcertification about five times more often than undercertification; in APEC, overcertification due to administrative error occurred three times more often than undercertification.

[16]The RORA studies used a stratified two-stage cluster sample design. For example, for the SY 2005–06 study, districts were stratified into 28 strata defined by 7 FNS regions and 4 size categories (number of students certified for free or reduced-price meals within each district). In the first stage, two school districts were selected from each stratum using probabilities proportional to size (PPS) methods with replacement. In the second stage, FNS regional staff selected applications for 50 students using systematic (randomized) sampling. Both certified students and denied applicants were sampled.

Some possible reasons why the estimates of administrative error rates found in APEC exceed those in RORA studies include:

- **MPR field staff may have had less access to applications than FNS regional office staff would have in all cases.** In the RORA studies, FNS regional office staff randomly selected samples of certified students and denied applicants from participating school districts and requested the applications for these sampled students. Although the APEC study was funded by USDA, and was endorsed by FNS central and regional offices, it is unlikely that MPR field staff had the same clout with SFA directors as did FNSRO staff regarding obtaining documentation of students' certification status. It is possible that for many of these missing applications in the APEC study, an application or direct certification document did exist at the school district, but our field staff were simply unable to gain access to retrieve it. Some evidence in support of this is that the administrative error rate due to missing applications was three times larger in the APEC study than the 2005 – 06 RORA study (1.53 percent versus 0.50 percent).[17]

- **Some error classified as "unknown" in APEC may be transmittal error and not administrative error as defined in RORA.** In APEC, 1.2 percentage points of the estimate of administrative error is classified as having "unknown" source. These are cases in which our assessment of a student's eligibility based on information contained in the application differs from the student's certification status recorded on the district's master eligibility list, but the application itself did not have any information on what determination the district made so we could not determine whether the administrative error was due to assessment error or transmittal error. Some of these cases are probably transmittal error and should be excluded when comparing the APEC and RORA estimates of administrative error.

- **APEC has a larger proportion of students certified income eligible by application than RORA.** Administrative error occurs more frequently for income-based applications than categorically eligible applications. The APEC sample appears to contain a larger proportion of income-based applications than RORA. This difference would result in higher estimates of administrative error in APEC.

- **Differences resulting from sampling and weighting.** The APEC and RORA studies are based on multistage (clustered) sample designs. The estimates from each sample are subject to sampling error, which in such designs is a function of not only sample size, but of the effects of clustering and of weighting to account for differences in selection probabilities and propensities to respond. The observed differences could thus arise from sampling error (in other words the differences may not be statistically significant) or from bias in either sample. Bias could arise if RORA data should have been weighted but was not. It could also arise if weights for either sample did not

[17]There were instances in which field staff reported to MPR field coordinators of not being able to obtain applications for some students, either because they were being processed or were not yet filed and accessible.

fully account for the impact of nonresponse on the variable in question. The APEC data 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 non-response at each stage of data collection. However, nonresponse adjustments can only account for differences on known (observed) characteristics; if nonresponse is affected by unobserved factors, sample estimates can still be biased if these unobserved factors are also correlated with the variable in question. It is not clear from the RORA reports whether the data used in the analyses were weighted to adjust for unequal probabilities of selection.

V. NATIONAL ESTIMATES OF ERRONEOUS PAYMENTS DUE TO CERTIFICATION ERROR

Erroneous payments due to certification error arise when districts claim reimbursements for NSLP lunches or SBP breakfasts provided to students who are incorrectly certified for free or reduced-price meal benefits or denied meal benefits for which they are eligible. Districts are reimbursed an incorrect amount for these meals because of these certification errors. Based on the information we collected on certification errors among sample members (discussed in Chapter III), we estimated the gross total dollar amount of erroneous payments and the rate of erroneous payments due to certification error—the ratio of the dollar amount of erroneous payments to the dollar amount of total reimbursements provided to districts for all meals served. In this chapter we present findings on the amounts and rates of erroneous payments due to certification error in the NSLP and SBP. Section A describes methods used to calculate erroneous payments and Section B presents findings. Section C describes implications of findings for reporting under the Improper Payments Information Act. Section D compares findings on erroneous payment rates in the school meal programs with those in the Food Stamp Program.

A. METHODS

The Improper Payments Information Act (IPIA) requires estimates of:

1. The total dollar amount of erroneous payments
2. The rate of erroneous payments

For the school meal programs, the first measure, the total dollar amount of erroneous 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 out 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 erroneous payments is a gross measure, calculated as the sum of overpayments and underpayments.

The second measure, the rate of erroneous payments, equals the ratio of two sums: the total dollar amount of erroneous 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.[1]

We estimated separate erroneous payments amounts and rates for the NSLP and SBP. These estimates are for NSLP/SBP participating schools in the 48 contiguous states and District of Columbia during SY 2005–2006 (the estimates exclude Alaska, Hawaii, the U.S. territories, schools operated by the Department of Defense (DOD), and RCCIs). We used a three-step procedure to derive national estimates of erroneous payments: (1) we estimated erroneous payments attributable to non-Provision 2 or 3 (NP23) and Provision 2 or 3 (P23) base-year schools (that is, excluding P23 schools in non-base years);[2] (2) we imputed estimates of erroneous payments for P23 schools in non-base years; and (3) we combined the two estimates

[1]See Appendix B for details on the procedures we used to calculate total reimbursements in the NSLP and SBP.

[2]We initially excluded non-base year P23 schools from the first step because these schools did not conduct a certification process in the data collection year and required a different estimation method. Overall, 4.5 percent of

into an overall estimate of erroneous payments covering all schools in the 48 contiguous states (and District of Columbia) for SY 2005-06.

In the case of NP23 schools and P23 base year schools, erroneous 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 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 over the course of the school year while incorrectly certified.[3] Table V.1 shows possible "per-meal" erroneous payment amounts for certification errors for students who participated in the NSLP; Table V.2 provides analogous information for the SBP. We performed the following steps to determine the amounts and rates of erroneous payments in the NSLP for NP23 and P23 base-year schools:

For Each Sampled Student

- Determine the overpayment or underpayment for each school meal received by the student in a given month according to Table V.1.
- Multiply this estimate of per-meal erroneous payments by the number of school lunches received in the month to determine the total NSLP erroneous payments for that student in the month.
- Sum these totals across all months of the school year to determine the total erroneous payments for the student throughout the school year for lunches received through the NSLP.

(continued)
reimbursements for free or reduced-price NSLP lunches and 11.3 percent of reimbursements for free or reduced-price SBP breakfasts were at non-base year P23 schools.

[3]The sample also includes directly certified students and other students certified for free meals without submitting an application.

TABLE V.1

TOTAL UNDERPAYMENTS AND OVERPAYMENTS PER MEAL FOR CERTIFICATION ERRORS IN THE NSLP, SY 2005–2006
(in Dollars)

Student's Certification Status	Student's Eligibility Status	Total Payments[a]	Underpayments[b]	Overpayments[b]
Less than 60 Percent[c]				
Free	Free	2.5127	0.00	0.00
Free	Reduced-price	2.5127	0.00	0.40
Free	Paid	2.5127	0.00	2.10
Reduced-price	Free	2.1127	0.40	0.00
Reduced-price	Reduced-price	2.1127	0.00	0.00
Reduced-price	Paid	2.1127	0.00	1.70
Denied	Free	0.4127	2.10	0.00
Denied	Reduced-price	0.4127	1.70	0.00
Denied	Paid	0.4127	0.00	0.00
60 Percent or More[d]				
Free	Free	2.5327	0.00	0.00
Free	Reduced-price	2.5327	0.00	0.40
Free	Paid	2.5327	0.00	2.10
Reduced-price	Free	2.1327	0.40	0.00
Reduced-price	Reduced-price	2.1327	0.00	0.00
Reduced-price	Paid	2.1327	0.00	1.70
Denied	Free	0.4327	2.10	0.00
Denied	Reduced-price	0.4327	1.70	0.00
Denied	Paid	0.4327	0.00	0.00

Source: FNS program data.

[a]In the NSLP, the "paid" rate is established in Section 4 of the National School Lunch Act (NSLA); the Section 4 rate is paid for all lunches served. Section 11 of the NSLA establishes additional reimbursement ("special assistance payment") for lunches served to students certified eligible for free and reduced-price meals. The Section 11 payment is paid in addition to the Section 4 payment for those meals served to children certified eligible for free or reduced-price meals. Total reimbursement per lunch therefore equals cash reimbursement from Section 11 and Section 4 and the per-meal value of commodities. For example, for regular free meals (those not receiving the additional two cents subsidy for providing a high percentage of free and reduced-price lunches), the total amount reimbursed per free lunch equals $2.5127, and is comprised of $0.22 (Section 4 paid rate), $2.10 (Section 11 extra subsidy for free lunches), and $0.1927 (value of commodities per lunch).

[b]Erroneous payments under the NSLP refer to the reimbursement amount in error under Section 11. That is, erroneous payments only involve the extra subsidy for free or reduced-price lunches above the Section 4 paid rate. For example, a district that certified a student to receive free meals who is really eligible for reduced-price meals would receive $0.40 more per lunch, which equals the difference in Section 11 amounts for free and reduced-price lunches ($2.10 minus $1.70).

[c]These reimbursement rates apply to school districts that claimed less than 60 percent of total lunches at the free and reduced-price rate in the second preceding school year.

[d]School districts that claimed 60 percent or more of total lunches at the free or reduced-price rate in the second preceding school year receive an extra two cents for each lunch claimed.

TABLE V.2

TOTAL UNDERPAYMENTS AND OVERPAYMENTS PER MEAL FOR CERTIFICATION ERRORS IN THE SBP, SY 2005–2006
(in Dollars)

Student's Certification Status	Student's Eligibility Status	Total Payments[a]	Underpayments[b]	Overpayments[b]
SBP, Non-Severe-Needs School[c]				
Free	Free	1.27	0.00	0.00
Free	Reduced-price	1.27	0.00	0.30
Free	Paid	1.27	0.00	1.04
Reduced-price	Free	0.97	0.30	0.00
Reduced-price	Reduced-price	0.97	0.00	0.00
Reduced-price	Paid	0.97	0.00	0.74
Denied	Free	0.23	1.04	0.00
Denied	Reduced-price	0.23	0.74	0.00
Denied	Paid	0.23	0.00	0.00
SBP, Severe-Needs School[d]				
Free	Free	1.51	0.00	0.00
Free	Reduced-price	1.51	0.00	0.30
Free	Paid	1.51	0.00	1.28
Reduced-price	Free	1.21	0.30	0.00
Reduced-price	Reduced-price	1.21	0.00	0.00
Reduced-price	Paid	1.21	0.00	0.98
Denied	Free	0.23	1.28	0.00
Denied	Reduced-price	0.23	0.98	0.00
Denied	Paid	0.23	0.00	0.00

Source: FNS program data

[a]In the SBP, payment rates for paid, reduced-price, and free meals are established in Section 4 of the Child Nutrition Act of 1966 (CNA). SBP breakfasts receive a cash subsidy only. The SBP does not receive commodities. For example, the total amount reimbursed per free breakfast in a non-severe needs school equals $1.27, and is comprised totally of the Section 4 rate.

[b]For the SBP, erroneous payments refer to the difference between the reimbursement rate for paid meals and the rates for free and reduced-price meals (including the additional payments for severe-needs free and reduced-price meals, as appropriate). For example, a district that certified a student to receive free meals who is really eligible for reduced-price meals would receive $0.30 more per non-severe-needs breakfast, which equals the difference between the marginal reimbursement amounts (above the rate for paid meals) for free and reduced-price breakfasts in non-severe-needs schools ($1.04 minus $0.74).

[c]These reimbursement rates apply to school districts that claimed less than 40 percent of their total lunches at the free and reduced-price rate in the second preceding school year.

[d]School districts that claimed 40 percent or more of total lunches at the free or reduced-price rate in the second preceding school year may receive extra severe-needs reimbursement of up 24 cents per meal for all free and reduced-price breakfasts claimed.

For the Full Sample of Students

- Across all students in the sample, calculate the weighted sum of annual NSLP erroneous payments to determine total erroneous payments for students in the 48 contiguous states and District of Columbia.
- Derive an estimate of total reimbursements for all NSLP lunches provided to students in the 48 contiguous states and District of Columbia.
- Divide total erroneous payments by total reimbursements to determine the rate of erroneous payments in the NSLP.

We used an analogous methodology to determine the separate rates of overpayments and underpayments. We followed the same procedures to estimate amounts and rates of SBP erroneous payments; the estimates for the SBP take into account whether the student attended a severe-needs versus a non-severe-needs school, as the extra subsidy for free and reduced-priced meals is different in the two types of schools.

In P23 schools not in their base year, there is no certification process during the school year, as reimbursements are determined largely by the results of the certification process conducted during the base year. Erroneous payments due to certification error in these schools in their non-base years are caused by errors made during the base year certification process. To determine a national measure of erroneous payments that would include the non-base year P23 schools, we imputed the rates of erroneous payments in P23 non-base year schools. The imputation—described in Appendix F—was based on rates of erroneous payments in P23 base year schools for which we did collect certification and eligibility data and which matched the non-base year schools in some important respects.

The procedures we actually used to calculate erroneous payments are more complicated than described above in several ways.

Accounting for Eligibility Changes During the School Year. Under the Child Nutrition and WIC Reauthorization Act of 2004, districts' eligibility determinations for free and reduced-

price meal benefits are now 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 generally 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. These situations and our methods for handling them are described briefly below (and summarized in Table V.3):[4]

- ***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 are automatically assumed to be eligible and certified for these benefits at the beginning of the current school year regardless of their household circumstances, for a period that may last from 10 to 30 days or until the student applies for benefits and his or her application is processed. When the carryover period ends, the student's certification status from the previous school year ends. When we sampled students during this carryover period,[5] 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 FS/TANF/FDPIR 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 households fails to provide documentation the student is considered to be ineligible for benefits regardless of his or her true household circumstances unless the school district can directly verify eligibility by obtaining information on eligibility from means-tested programs such as food stamps, FDPIR, TANF, Medicaid, or similar programs as determined by USDA. (For example, USDA includes the State Children's Health Insurance Program (SCHIP).) 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

[4]Some of these issues are addressed in Appendix G. For more details, see Ponza et al. (2007).

[5]Less than 2 percent of the student sample was determined to be certified by carryover status for at least some portion of the school year.

TABLE V.3

ERRONEOUS PAYMENTS IN THE NSLP DUE TO CERTIFICATION ERROR:
PRIMARY DEFINITIONS AND KEY ASSUMPTIONS

Time Period	School Year 2005–2006
Population	Students who applied for meal benefits (including directly certified students) attending public and private schools in the 48 contiguous states and District of Columbia offering the NSLP
Outcome Measures	
Dollar amount of overpayments	Amount by which Section 11 payments made to school districts for free or reduced-price reimbursable lunches were above the level of payments that would have been made if no students had been certified for a higher level of free or reduced-price meal benefits than they were eligible for on the basis of their income or receipt of FSP/TANF/FDPIR benefits (via direct certification or categorical eligibility)
Dollar amount of underpayments	Amount by which Section 11 payments made to school districts for reduced-price reimbursable lunches were below the level of payments that would have been made if none of the district's students had been certified for less than the level to which their income and FSP/TANF/FDPIR status entitled them, and the amounts of reimbursement below those that would have been made if none of the students denied benefits for either free or reduced-price meal benefits had been eligible for meal benefits on the basis of documented household income or receipt of FSP/TANF/FDPIR eligibility
Total dollar amount of overpayments and underpayments	The gross sum dollar amount of NSLP Section 11 overpayments and underpayments
Erroneous payments error rate	The ratio of the gross sum dollar amount of NSLP Section 11 overpayments and underpayments to the total dollar amount of reimbursements for all lunches (free, reduced-price, and paid) including commodities valued at a per-meal basis
Treatment of Special Cases	
Eligibility of certified students when application is incomplete	If an application is found that does not include all required information, it is considered an administrative error. However, if the certification status is correct based on the household's circumstances reported on the household survey, then it is not considered a certification error and was not included in the calculations of erroneous payments. (Administrative errors do not always equate to certification errors and thus erroneous payments.)

TABLE V.3 (*continued*)

Eligibility of certified students when applications or direct certification documents are missing from district files	Students are considered to be ineligible for free or reduced-price meals if the application for free or reduced-price meals (or direct certification information) could not be found in the district's files. This definition corresponds to FNS rules, which require districts to keep all applications on file, and conforms to how the state's Coordinated Review Effort (CRE) reviewers handle these situations. For the study, we considered this an administrative error and a certification error, and it is included in the estimate of erroneous payments.
Eligibility of certified students who reapply later in the school year	Students who reapplied for benefits at some point after their initial application are assumed to still be eligible for the same level of benefits reflected in the data reported in their initial household survey. It is possible that the reapplication was prompted by a change in household circumstances, but we did not collect survey data on the households at the later date, so information from the initial survey was our best estimate.
Eligibility of carryovers	Students sampled during the carryover period were assumed to be eligible for the level of benefits they received during the carryover period. Once the carryover period ended, however, their eligibility status was determined by their household circumstances as reported in the household survey.
Eligibility of non-responders to verification	A student's eligibility status could change as a result of failing to respond to a verification request. We did not collect information on verification results for individual sample members, so we could not identify students who failed to respond to the eligibility request. We could identify students in the sample whose certification status changed from free or reduced-price meals to paid meals in November or December 2005 (just after verification typically is completed). Based on estimates on 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. These students were assumed to be ineligible for free or reduced-price meals in subsequent months.
Eligibility of reapplicants	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 submit a new application for free or reduced-price meals in the middle of the school year. Because we had no new information on their eligibility for benefits, as 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 reported in the original household survey and did not actually change. This provides an upper bound on the error rate estimate. We also generated a lower bound estimate by assuming that their new certification status after their reapplication was correct—that their eligibility matched their certification status.

free or reduced-price meals to paid meals in November or December 2005 (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, and thus these students were assumed to be ineligible for free or reduced-price meals.[6]

- ***Reapplication.*** 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 submit a new application for free or reduced-price meals in the middle of the school year. With the new application, their district makes a new determination of their eligibility for free or reduced-price meals, potentially leading to a change in their status. 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, as 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 provided an upper bound on the error rate estimate. We also generated a lower bound estimate by assuming that their new certification status after their reapplication was correct, that is, their eligibility matched their certification status.[7]

Approaches for Addressing Other Measurement Issues. We faced two additional challenges that arose because of measurement issues. These challenges and our approaches for addressing them are:

- ***Measuring NSLP/SBP Participation Over the Full School Year.*** To get an accurate measure of erroneous payments over the course of 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). In part because such detailed data on participation has not been previously available, past studies have not attempted to precisely measure annual erroneous payments.

[6]Because most districts verify no more than 3 percent of approved applications and change the benefits of only a portion of those verified, this adjustment affects very few sample members. In particular, the eligibility status of less than one-half of one percent of the student sample was changed as a result of the verification process adjustment.

[7]Again, relatively few students were affected by this adjustment (106 students, or roughly 4 percent of the certified sample). Furthermore, the estimated upper bound and lower bound estimates turned out to be very close, indicating that our findings are not sensitive to different assumptions about the eligibility status of reapplicants (see Appendix G). The estimates presented in the text assume that the eligibility status of reapplicants did not change during the year—that is, it was assumed to be the same as that determined by the information reported in their original household survey.

However, many school districts now maintain administrative data on students' school meal participation because they use electronic point-of-sale technologies. For about three-fourths of students in the sample, we were able to collect such detailed administrative participation data.[8] 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. The imputation process for SBP and NSLP participation is described in Appendix D.

- ***Accounting for Mid-Month Certification or Eligibility Changes.*** The procedures described above are based on erroneous payments in a given month for a given student, which 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 erroneous 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 one-half of the month eligible for free meals and one-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 ERRONEOUS PAYMENTS DUE TO CERTIFICATION ERRORS

During SY 2005–2006, there were an estimated $759 million in erroneous NSLP reimbursements due to certification error (Table V.4; Figure V.1). This represented 9.4 percent of the roughly $8.06 billion in total cash and commodity reimbursements provided to school districts for all NSLP lunches served in the 48 contiguous states and District of Columbia (Figure V.2).[9] The $759 million in erroneous payments in the NSLP is a gross measure; in addition to

[8]For a small proportion of these students, we have participation data for only a single semester. For most of the students, however, the participation data cover the full school year.

[9]Our estimates of erroneous payments are influenced very little by our assumption that the eligibility status of certified students who re-applied for benefits later in the school year and became certified for a different level of benefits remained the same as when they initially applied for benefits. If we made the extreme assumption that the eligibility status of these students matched their new certification status (resulting in no erroneous payments for meals subsequently consumed), the overall rate of erroneous payments in the NSLP changes only slightly, from 9.4 percent to 9.2 percent.

TABLE V.4

ERRONEOUS PAYMENTS DUE TO CERTIFICATION ERROR IN THE NSLP AND SBP, SY 2005–06, ALL SCHOOLS

	NSLP	SBP
Total Reimbursements (millions of dollars)	8,060	1,938
Overpayments (millions of dollars)	573	137
	(50)	(17)
Underpayments (millions of dollars)	186	40
	(15)	(6)
Total Erroneous Payments (millions of dollars)	759	177
	(54)	(18)
Erroneous Payments as Percentage of All Reimbursements		
Overpayments	7.11	7.07
	(0.62)	(0.91)
Underpayments	2.31	2.08
	(0.19)	(0.29)
Total erroneous payments	9.42	9.15
	(0.67)	(0.94)

Source: APEC study, weighted data.

Note: Standard errors in parentheses.

The estimates include erroneous payments at all schools participating in the NSLP and/or SBP, including provision 2 or 3 non-base year schools. They are based on all students who applied for free or reduced-price meals (including denied applicants) and directly certified students. For the NSLP, Section 11 of the NSLA establishes reimbursement above the Section 4 paid rate. Erroneous payments under the NSLP refer to the reimbursement amounts in error under Section 11 of the NSLP. For the SBP, erroneous payments refer to the difference between the reimbursement rate for paid meals and the rates for free and reduced-price meals (including the additional payments for severe-needs free and reduced-price meals, as appropriate). The denominator in the erroneous payment rate calculation refers to reimbursements for all meals (free, reduced-price, and paid). For the NSLP, total reimbursements equal total cash reimbursement from Section 11 and Section 4 and the value of commodities (valued at a per-meal rate). In the SBP, payment rates for paid, reduced-price, and free meals are established in Section 4 of the CNA. SBP breakfasts receive a cash subsidy only. The SBP does not receive commodities. Total reimbursements for the SBP therefore equal total cash reimbursement from Section 4.

Figure V.1

Total Reimbursements and Erroneous Payments Due to Certification Error—NSLP and SBP

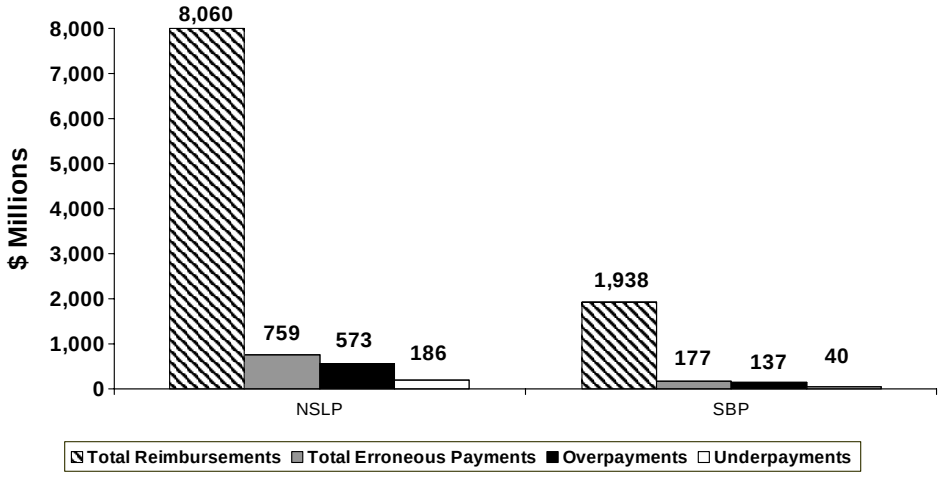
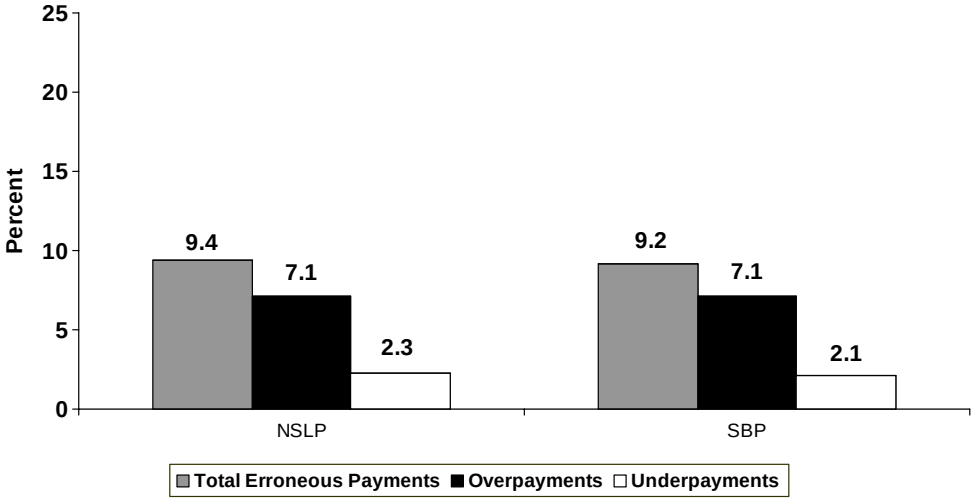


Figure V.2

Rates of Erroneous Payments Due to Certification Error—NSLP and SBP



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).

Erroneous SBP reimbursements totaled $177 million, or 9.2 percent of the $1.94 billion in cash reimbursements paid for all SBP breakfasts served. The rate of SBP erroneous payments was slightly lower than the NSLP erroneous payments rate; this difference came entirely through a lower rate of underpayments in the SBP.[10]

Patterns of erroneous payments in the NSLP and SBP were similar. Overpayments were considerably larger than underpayments in both programs: more than three-fourths of erroneous payments in both the NSLP and SBP were overpayments. In absolute terms, an estimated $573 million in NSLP reimbursements and $137 million in SBP reimbursements were paid out to districts over and above what should have gone to them because of overcertification errors (Figure V.1). Conversely, the amount of payments that should have gone to school districts but did not (because of undercertification errors) was $186 million in the case of the NSLP and $40 million in the case of the SBP. The estimated overpayment rate was about 7.1 percent and the underpayment rate was slightly more than 2 percent for both the NSLP and SBP (Figure V.2).

Erroneous payments are more common in Provision 2 or 3 base-year schools than in schools not using these provisions. School districts that use Provisions 2 or 3 to calculate

[10]One possible reason for this has to do with the fact that most underpayments arise from full-price meals served to students who applied for free or reduced-price meal certification but were erroneously denied. Since a much smaller proportion of SBP breakfasts than NSLP lunches are served at the full price (19 percent versus 41 percent in fiscal year 2006), there is a correspondingly smaller proportion of erroneous payments in the form of underpayments in the case of the SBP.

reimbursement claims make eligibility determinations and take meal counts during a base year. Provision 2 schools use the number of meals claimed by category in the base year to calculate claiming percentages that are applied to total meals counts to determine reimbursements during the next three years. Provision 3 schools receive reimbursement based on the total reimbursement they received during the base year for the four succeeding years, adjusted for enrollment and inflation. The four year claiming periods (base year and the following three years for Provision 2; the four years following the base year for Provision 3) are called a "provision cycle." When a provision cycle is over, the district must conduct a new base year, receive approval from the state agency for an extension based on socioeconomic data, or return to regular counting and claiming procedures. Analysis of APEC data indicate that the total erroneous payments rates for the NSLP and SBP at P23 base-year schools were substantially larger than the rates at non-Provision 2 or 3 schools (for example, approximately 1.75 times larger for the NSLP). Because a large proportion of students certified for free meals in the base year of P23 schools were overcertified (eligible for a lower level of benefits), the free meal claiming percentage at these schools is overstated in future (non-base) years, and USDA is reimbursing these schools too large an amount for meals consumed by students. (Our estimate of overall erroneous payments accounts for these "future" erroneous payments, however, by including estimated erroneous payments at P23 non-base year schools.) The significance of this finding is that because the claiming percentages in these schools are fixed for at least three years (students are not certified annually at P23 schools during non-base years), USDA has limited mechanisms for correcting the erroneous claiming percentages unless the schools reestablish them in a new base year.

Roughly two-thirds of erroneous payments due to certification error in the NSLP and SBP are the result of households misreporting information on applications for free or

reduced-price meals. In Chapter IV, we presented findings that showed reporting error was substantially more prevalent than administrative error (between three to five times more likely to occur, depending on treatment of students with both reporting and administrative error). Consistent with this finding, most erroneous payments are due to reporting error. For the NSLP, household reporting error resulted in $521 million in erroneous payments in SY 2005 – 2006 (Table V.5). This represented 68.6 percent of the $759 million total Section 11 NSLP reimbursements in error. Administrative error accounted for $150 million in erroneous payments in the NSLP, or 19.8 percent of erroneous Section 11 reimbursements. Another $54 million of erroneous payments in the NSLP (7.1 percent of total NSLP erroneous payments) involved students with both reporting and administrative errors. Similarly, erroneous SBP reimbursements arising from reporting error totaled $117 million, or 65.8 percent of the $177 million reimbursements in the SBP that were in error. Administrative error accounted for $37 million of the erroneous payments in the SBP (20.8 percent of total SBP erroneous payments); $14 million of erroneous payments in the SBP (7.6 percent) were from students with both reporting and administrative errors.

Erroneous payments due to administrative error were more heavily skewed toward overpayments than were erroneous payments from household reporting error, especially for the NSLP. For the NSLP, administrative error resulted in $127 million in overpayments compared to $23 million in underpayments (when there is just a single source of error); overpayments were over five times larger than underpayments when administrative error occurred. In comparison, overpayments in the NSLP were four times larger than underpayments when reporting error occurred. Household reporting error resulted in $413 million in overpayments in the NSLP, compared to $107 million in underpayments (Table V.5). Reporting and administrative errors more often resulted in overpayments than underpayments for both the NSLP and SBP.

TABLE V.5

ERRONEOUS PAYMENTS DUE TO CERTIFICATION ERROR IN THE NSLP AND SBP, SY 2005–06, ALL SCHOOLS, BY TYPE OF CERTIFICATION ERROR

	NSLP		SBP	
	Dollars (Millions)	Percent	Dollars (Millions)	Percent
Overpayments				
Administrative error	127	22.16	31	22.74
Reporting error	413	72.10	96	70.31
Both administrative and reporting error[a]	26	4.56	6	4.64
Other[b]	7	1.18	4	2.31
Total overpayments	573	100	137	100
Underpayments				
Administrative error	23	12.53	6	14.27
Reporting error	107	57.58	20	50.50
Both administrative and reporting error[a]	29	15.15	7	17.82
Other[b]	27	14.74	7	17.41
Total underpayments	186	100	40	100
Total Erroneous Payments				
Administrative error	150	19.80	37	20.82
Reporting error	521	68.55	117	65.80
Both administrative and reporting error[a]	54	7.15	13	7.64
Other[b]	34	4.50	10	5.74
Total	759	100	177	100

Source: APEC study, weighted data.

Note: The estimates include erroneous payments at all schools participating in the NSLP and/or SBP, including provision 2 or 3 non-base year schools. They are based on all students who applied for free or reduced-price meals (including denied applicants) and directly certified students.

[a]Includes students with both administrative and reporting error where the errors are either reinforcing or offsetting.

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

C. IMPLICATIONS FOR IPIA REPORTING

The implementing guidance of the Improper Payments Information Act of 2002 (IPIA) and the Office of Management and Budget (OMB) require federal agencies to annually review all programs and activities to identify those susceptible to significant improper payments. The guidance defines significant improper payments as those in any particular program that exceed both 2.5 percent of program payments and $10 million annually. The APEC Study finds that improper payments made in the NSLP and SBP during SY 2005–06 are significant. As a result, FNS will need to annually report the amount of estimated improper payments, along with steps taken and actions planned to reduce them, to the President and the Congress.

D. COMPARISONS WITH THE FOOD STAMP PROGRAM

To put the findings on erroneous payments due to certification error in the school meal programs into perspective, we compared them with those of the Food Stamp Program (FSP), USDA's largest means-tested food assistance program.[11] The FSP provides monthly benefits to eligible low-income families to allow them to purchase food. With annual outlays of $33 billion in FY 2006, the FSP served more than 27 million participants a month. Eligibility for the FSP is based on financial and non-financial factors. The application process includes completing and

[11]The FSP is the only other USDA food and nutrition program in which FNS has generated national estimates of the amounts and rates of erroneous payments due to certification error. FNS is in the process of conducting studies that will generate national estimates for the Women, Infants, and Children (WIC) program and Child and Adult Care Food Program (CACFP). A measure of the dollar amount and rates of erroneous payments due to certification error in WIC is scheduled to be reported in the FY 2008 Performance and Accountability Report; a measure of the dollar amount and rates of erroneous payments due to certification error in the CACFP is scheduled to be reported in the FY 2010 Performance and Accountability Report. FNS has conducted studies which have generated national estimates of the proportion of WIC participants who were ineligible (certification error rates); however, these estimates did not include individuals who were erroneously denied benefits. In 1988, FNS estimated that 5.7 percent of WIC participants were income ineligible; and in 1998, 4.5 percent of WIC participants were income ineligible (this is when WIC required most applicants to document income and residency at time of application). Comparing the WIC certification error rate to the broad certification error rate in the NSLP (excluding denied applicants) is the most relevant comparison, since both rely on the same single income threshold (185 percent of the federal poverty level). For the NSLP, the broad certification error rate for certified students equals 9 percent, which is two times as large as the WIC certification error rate (4.5 percent).

filing an application form, being interviewed, and verifying facts crucial to determining eligibility. With certain exceptions, a household that meets the eligibility requirements is qualified to receive benefits. The national erroneous payments rate in the FSP is slightly less than 6 percent: 4.5 percent overpayments and 1.3 percent underpayments (GAO January 2007).

1. Possible Reasons for a Lower Erroneous Payments Rate in the FSP

As recently as a decade ago, the FSP payment error rate was considerably higher. For example, in 1998 the FSP payment error rate exceeded 9 percent, comparable to our estimates of payment error rates due to certification error in the NSLP and SBP. Since then, the FSP has taken several actions that have led to systematic and continuous reductions in erroneous payments over the past several years. The lower payment error rates in the FSP relative to the school meal programs are likely attributable to differences in three key program attributes:

- **Comprehensive verification of eligibility at time of application.** The FSP verifies information provided on the application by the applicant. Applicants must provide documentation of the information they report when they submit their application. Moreover, the FSP certification process involves direct contact, usually in person, between administrative staff and applicants. In contrast, the school meal programs do not require documentation of household income or benefits receipt at the time of application. In the verification process, school districts select a small sample of applications that have already been certified and collect income or benefit documentation from the households in order to verify the students' eligibility for free or reduced-price meals. However, districts typically do not verify more than 3 percent of approved applications. The fact that relatively few applications are subject to verification suggests that this process is not likely to prevent or identify misreporting by households on their applications or identify administrative errors made during the initial certification process.
- **Rigorous quality control systems in place to identify and prevent errors.** The FSP has a rigorous and extensive quality control system to continuously evaluate and improve program performance. States conduct reviews on a sample of cases from all participants as well as for those denied participation or terminated from the program. States report the findings of the reviews to FNS, which then conducts validation reviews on a subsample of the selected cases to establish the accuracy of the state-reported information. This provides a strong feedback loop to program operators, enabling them to understand the sources of errors and take steps to reduce them. In the school meal programs, state agency staff evaluates eligibility certification, food

items planned and served, and the accuracy of counting and claiming procedures through the Coordinated Review Effort (CRE) process and the staff provides training and technical support to school districts and schools to help improve the accountability of local programs. However, districts are generally reviewed only once every five years; follow-up reviews may be required if serious program integrity issues are identified during a CRE, and a district's operations may be reviewed more often at the state agency's discretion.

- **Financial incentives for continuous improvement.** There appear to be stronger incentives to reduce erroneous payments in the FSP than in the school meal programs. The FSP uses the official payment error rates to assess penalties against states with high payment error rates. It also provides financial awards to states with low payment error rates. These features provide strong incentives to minimize erroneous payments. In the school meal programs, districts exceeding error thresholds for key performance standards must take steps to correct those errors. Overclaims can be recovered by USDA and may be extended back to the beginning of the school year or to that point in time when the infraction first occurred. State agencies and FNS may also withhold funds if corrective action is not taken on problems identified in the CRE reviews. There are no reward incentives for having low rates of erroneous payments and states are not required to repay districts for underclaims identified as a result of CREs. (In the most recent reporting year, about 25 percent of underclaims identified during CRE administrative reviews were repaid to SFAs.)

2. Challenges to Adopting FSP Features in the School Meal Programs

Key differences between the school meal programs and the FSP would create challenges in trying to adopt the features used by the FSP to combat erroneous payments in the NSLP and SBP. While the key function of the offices that administer the FSP is ensuring that benefits go to eligible households in the appropriate amounts, the district administrating agency's key function is educating children. The district administrating agencies are not typically set up to effectively assess and monitor the household financial circumstances of their students. In addition, there is not an obvious point of contact between a household applying for free or reduced-price meals and district staff; while the household must complete the application, it is often submitted to the school either by mail or delivered in person by a child. Most FSP applicants, by contrast, must appear in person in food stamp offices. Finally, data on rates of free or reduced-price eligibility within a school or district are used for a wide range of purposes beyond determining the free or

reduced-price meal benefit status of students. Statistics about the percentage of students in the district certified for free or reduced-price meals are often used as indicators of the level of poverty in the district and sometimes used to determine eligibility (or levels of funding) for other programs, such as Title I. This may create incentives for schools to ensure that their certification rate is as high as possible, and would undermine efforts to implement more rigorous application requirements on households seeking certification for free or reduced-price meals.

In addition, adopting features of the FSP accountability system would significantly increase the burden on schools, district central offices, and state agencies, and therefore increase their administrative costs. Given the limited staff resources available to districts and schools, there is concern that such new burdens could undermine their educational mission. Finally, there are differences in the benefits versus costs of accuracy in the two programs. The typical monthly benefit in the FSP is approximately $200. For a family with two children who receive meals free and participate in the school meal program about three-fourths of the time, the typical monthly benefit is approximately $75. Errors in establishing eligibility therefore can be much more costly in the FSP than in school meal programs.

One feature of the FSP that the school meal programs have tested in an attempt to reduce erroneous payments is requiring income documentation at the time of application for free and reduced-price meals. As part of the NSLP Application/Verification Pilot Projects, FNS tested an "up-front documentation" requirement in nine self-selected districts. Burghardt et al. (2004a) estimated the impact of this pilot program and found that up-front documentation did not lead to statistically significant reductions in the districts' certification error rates for free and reduced-price meals. Further, the pilot intervention had the unintended consequence of reducing participation in the program among low-income children who were eligible for free or reduced-price meals.

VI. NATIONAL ESTIMATES OF ERRONEOUS PAYMENTS DUE TO NON-CERTIFICATION ERROR

This chapter presents findings about non-certification error, which is error that occurs in the stages between certifying students' eligibility status and reporting meal counts to the state agency for reimbursement. Non-certification error includes cashier error and three types of aggregation error. As with erroneous payments due to certification error, our measures of the dollar amount of erroneous payments arising from non-certification error equal the gross total of overpayments and underpayments. However, when there is a non-certification error, the total reimbursement for a meal contributes to erroneous payments (not just the additional subsidy for free and reduced-price meals). The rate of erroneous payments equals the ratio of the total dollar amount of reimbursement either paid in error or not paid which should have been paid due to non-certification errors to the total reimbursement paid for all meals.

The chapter is organized into three sections. The first two sections focus on cashier error and the three types of aggregation error, respectively. Each of these sections begins by describing the methodology used to estimate the relevant rate of erroneous payments due to non-certification error, and then provides estimates from these analyses. The chapter concludes by discussing the total non-certification erroneous payment rate estimate, derived by combining the types of non-certification error.

A. CASHIER ERROR

Cashier error refers to errors by cafeteria staff in assessing and recording whether a specific meal selection (the tray) meets the criteria for a reimbursable meal under the NSLP or SBP. This type of error includes:

- Counting meals that do not contain the required number of items or components and meals served to ineligible people (such as teachers or adult visitors) as reimbursable
- Failing to count meals that meet nutrition requirements and are provided to eligible students as reimbursable

This section first describes the methodology used in generating estimates of cashier error and then presents our findings.

1. Methodology for Estimating Cashier Error

MPR field staff observed random samples of breakfast and lunch transactions at study schools and recorded the following data for each transaction: (1) what items were on the tray and the amounts of each item; (2) whether the cashier recorded the transaction as a reimbursable meal; and (3) whether the transaction involved a student, non-student, or adult. We compared the reimbursable meal status recorded by the cashier to the "actual" reimbursable meal status as determined by MPR based on tray contents and the status of the person who received the meal. Determining the "actual" reimbursable status of each tray had three main steps:

1. ***Determining Whether the Meal Was Served to a Student.*** Meals served to non-students were categorized as not reimbursable.
2. ***Determining the Meal Component Codes of the Food Items on the Tray.*** MPR central office staff coded food items based on USDA guidelines for meal components.[1] These codes varied according to whether the school used food-based or nutrient-based meal-planning approaches.[2] For schools using food-based meal planning, items were coded as either (1) a meat or meat alternative, (2) a fruit or vegetable, (3) a grain or bread, (4) a milk, or (5) a nonnutritive item. For schools using nutrient-based planning, items were coded as (1) an entrée, (2) a side dish, (3) a milk, or (4) a nonnutritive item.

[1]A more detailed study of cashier error would collect data on the actual serving sizes of the food items offered by the schools. This information would allow for more precise determinations of whether food items met minimum requirements for meal components.

[2]There is also some variation based on the specific type of food-based meal planning system used. In particular, schools using enhanced food-based meal planning may count grain-based desserts (such as cake) as grain or bread components, whereas those using traditional food-based meal planning may not.

3. ***Determining Whether the Selected Food Items Meet the Requirements for a Reimbursable Meal.*** After coding individual food items, we evaluated whether the selected meal items constitute a reimbursable meal. This involved comparing the tray's meal components to the meal requirements specific to the meal-planning approach used by the student's school. Requirements for reimbursable lunches and breakfasts are different depending on whether the school uses nutrient- or food-based planning and on whether the school operates under Offer-versus-Serve (OVS).

We used the cashier-recorded reimbursement status and the MPR-determined reimbursement status for each study school to calculate: (1) the fraction of meals that did not meet reimbursement criteria that the cashier incorrectly recorded as reimbursable, and (2) the fraction of reimbursable meals the cashier recorded as not reimbursable. This information yielded an estimate of the rate in which breakfasts and lunches were in error and of component error rates—that is, the percentage of breakfasts (lunches) that represent overpayments and the percentage of breakfasts (lunches) that represent underpayments.

We were not able to observe the reimbursement category of the students whose meals were recorded incorrectly as reimbursable (or not reimbursable).[3] Therefore, in estimating the monetary costs associated with the observed cashier errors, we assumed that the errors were distributed proportionately among the categories of student-level reimbursement eligibility. For example, if, at a given school 40 percent of meals are claimed as free, 10 percent are claimed as reduced-price, and 50 percent are claimed as paid, then we estimated the average monetary cost of errors by assuming that the erroneously recorded meals had this proportionate distribution.[4]

[3]It was not possible to identify the certification status of students due to confidentiality issues.

[4]We believe that this assumption represents a reasonable approximation. However, systematic factors could lead to some differences in cashier error rates by meal type. For example, if students certified for free meal were more likely than other students to take meals that were *clearly* reimbursable (and hence less subject to cashier error), then the method described in the text might ascribe somewhat too much of this kind of error to the free-meal students. Overall, however, we believe that the these differences in cashier error rates are likely to be quite small.

After estimating the *incidence* of cashier error by reimbursement category, we multiplied these error incidence rates by the total number of meals recorded as served in each of these reimbursement categories to estimate the total number of meals involving the various types of cashier errors in the school during the time of the observation. Multiplying these totals by the *monetary amount per error associated with each reimbursement category* then yielded an estimate of the total amount of dollar error by reimbursement category.[5] We then summed these estimates to derive an estimate of total dollar error for the school. We calculated both a gross and net estimate of total dollar error for the school. Dividing the dollar amount of error by the total reimbursements for the school produced a dollar-based error rate.[6]

The final step was to derive a national estimate of cashier error. To do this we summed the dollar error across schools and divided this by the sum of schools' reimbursements for all meals. These sums were weighted based on the sampling weights that made the schools nationally representative of the population of reimbursable meals. As mentioned, the above calculations were conducted separately for underpayments and overpayments using *absolute* (gross) values. We also estimated net erroneous payments attributed to cashier error. We calculated separate estimates for the SBP and NSLP programs.

[5]Our approach takes into account whether the school's breakfast program is severe needs or not and whether the lunch program is greater or less than 60 percent of the free or reduced-price meal threshold, to ensure that we use the appropriate reimbursement amounts.

[6]In the estimation of erroneous payments due to non-certification error, the relevant reimbursement amount in error when there is an error is the full subsidy of the meal (not the additional subsidy above the paid rate, as in the case of certification error). For example, in the NSLP, this is the Section 4 and Section 11 amounts, as well as the per-meal value of commodities. So if the cashier records a lunch provided to a student certified for free meals as reimbursable but the meal does not meet the requirements for a program lunch, then the district in this case erroneously received $2.5127 (inclusive of the value of commodities) for this lunch. This assumes the school is not entitled to the additional 2 cents subsidy. Similarly, when expressing erroneous payments over total reimbursements, total reimbursements equal full reimbursements for all meals provided (free and reduced-price meals as well as paid meals).

2. Findings on Cashier Error

The process of assessing and recording whether a meal is reimbursable appears to be a substantial source of error, especially in the SBP. Total gross erroneous payments due to cashier error in the NSLP equaled $248 million and represented 3.1 percent of total reimbursements in the NSLP; and equaled $189 million and represented 9.8 percent of total reimbursements in the SBP (Table VI.1). Most of this error was from overpayments, particularly in the SBP. Three-quarters of cashier error in NSLP and more than 95 percent of cashier error in the SBP came in the form of overpayments.

Although cashier error represented a somewhat large proportion of total reimbursements, most schools had fairly low levels of cashier error. The median rate of this type of erroneous payment was 1.0 percent in the NSLP and 1.7 percent in the SBP (Table VI.2). However, an important minority of schools had very high levels of cashier error. Among schools offering the NSLP, 10 percent had an erroneous payment rate due to cashier error of more than 10 percent. Among schools offering the SBP, about 20 percent had an erroneous payment rate due to cashier error of more than 10 percent.

a. Cashier Error by Meal Planning Approach

We examined whether cashier error rates varied by meal planning approach. Because the food-based planning approach has more complicated requirements than the nutrient-based planning approach, we expected schools using the nutrient-based planning approach to have lower rates of cashier error than schools using food-based planning systems. We found that this is the case. Erroneous payments due to cashier error were 2.1 percent of total reimbursements for the NSLP in nutrient-based planning schools, compared to 4.4 percent in food-based schools. In the SBP, the differences were even larger: nutrient-based planning schools had a cashier error erroneous payment rate of 2.6 percent compared to 11.2 percent in food-based planning schools.

TABLE V1.1

ERRONEOUS PAYMENTS DUE TO CASHIER ERROR
(NATIONAL ESTIMATES)

	Erroneous Payments (in Dollars)	Percentage of Reimbursement in Error
NSLP		
Gross Error		
Overpayment	186,346,610	2.31
	(33,789,212)	(0.42)
Underpayment	61,476,318	0.76
	(16,155,344)	(0.20)
Total	247,822,929	3.07
	(40,851,040)	(0.50)
Net Error	124,870,292	1.55
	(33,713,568)	(0.42)
Sample Size	**245 schools**	**245 schools**
SBP		
Gross Error		
Overpayment	185,223,491	9.56
	(52,814,826)	(2.45)
Underpayment	4,253,675	0.22
	(1,433,042)	(0.07)
Total	189,477,167	9.78
	(52,836,347)	(2.45)
Net Error	180,969,816	9.34
	(52,832,181)	(2.46)
Sample Size	**218 schools**	**218 schools**

Source: APEC study, weighted data.

Note: Standard errors in parentheses.

TABLE VI.2

PERCENTAGE OF REIMBURSEMENTS IN ERROR DUE TO CASHIER ERROR
(SCHOOL-LEVEL ESTIMATES)

	NSLP	SBP
Mean	3.43	7.61
Median	1.00	1.67
75th Percentile	3.40	8.00
90th Percentile	10.00	20.37
Sample Size	**245**	**218**

Source: APEC study, weighted data.

b. Characteristics of Schools with High Cashier Error Rates

Because most schools have fairly low levels of cashier error, it is important to assess what distinguished schools with high cashier error rates from those with low cashier error rates. Understanding differences in these groups of schools could aid in the development of policies to reduce cashier error. We compared the characteristics of schools that had higher rates of cashier error to schools with no cashier error. We considered a school to have a high rate of cashier error if the erroneous payment rate due to cashier error exceeded 20 percent. Among schools that offer the NSLP, 45 percent of schools had no cashier error and 2 percent had a high rate of cashier error. For schools that offer the SBP, 48 percent had no cashier error and 11 percent of schools had a high rate of cashier error.

Because of the relatively high cashier error rate in the SBP, we were particularly interested in the differences between SBP schools that had high cashier error and those with no cashier error.[7] One important difference is in the meal-planning approach that they use. Almost all high-error schools use food-based menu planning (95 percent), whereas only about one-half of schools with no cashier error use food-based menu planning (53 percent); the difference is statistically significant at the .01 level. The only other significant difference that we found between these schools was in school type; 88 per cent of the high-error schools are elementary schools, compared to 71 percent of no-error schools. Other characteristics of high-error and no-error schools are similar. They have similar percentages using OVS (89 percent for high-error versus 91 percent for no-error schools), similar average enrollments (653 for high-error versus

[7]There are some differences between the small number of schools with high error in the NSLP and schools with no error in the NSLP. Schools with high levels of cashier error in the NSLP have a significantly higher percentage of students certified for free meals and are significantly more likely to be high schools. Many more high-error schools use food-based planning than do schools with no error (78 versus 51 percent), and high-error schools tend to be larger than schools with no error, although these differences are not significantly different than zero.

608 for no-error schools), and similar percentages of students certified for free meals (74 percent for high error versus 70 percent for no-error schools).[8]

c. Common Sources of Cashier Error in the SBP

We are particularly interested in the reasons that trays are in error in schools that use food-based planning in the SBP, because a percentage of these schools have very high cashier error rates. In order to be considered a reimbursable meal, breakfast trays in schools that do not operate under OVS must contain one milk, one serving of a fruit or vegetable, and either two meat or meat alternative servings, two grain or bread servings, or one meat or meat alternative serving and one grain or bread serving. Trays in schools that do operate under OVS must contain one serving of three of these four components. Trays that were in error in food-based schools were not reimbursable for a variety of reasons. In schools using OVS, the most common error was that the tray contained only two of the three required meal component servings. For example, a student may have selected only a doughnut and milk, Pop Tart and milk, or honeybun and juice. In schools not using OVS, the most common missing meal components were milk and fruit or /vegetable. In two schools, a reimbursable meal could not be constructed from the items offered by the schools.[9] Thus none of the meals were reimbursable although the cashier recorded all meals as reimbursable. In these schools the cashier error rate was 100 percent.

[8]Schools with high levels of cashier error in the SBP also have similar distribution of values of the sampling weights as schools with no error. Thus, high overall cashier error rates in the SBP do not seem to be driven by large sampling weights for high-error schools.

[9]One of these schools, not operating under OVS, offered yogurt, toast, and milk, but no fruit or vegetable. The other, operating under OVS, offered only breakfast pizza and 10 percent fruit punch (which SBP classifies as a nonnutritive item).

3. Robustness Checks for Cashier Error Estimates

Some key steps in ensuring accurate estimates of cashier error included field staff correctly observing and recording the reimbursable status recorded by the cafeteria staff and determining whether the school uses OVS. We took steps to minimize the extent to which our cashier estimates were subject to these potential sources of error.

a. Correctly Recording Cafeteria Staff Determination of Trays' Reimbursable Status

To accurately estimate cashier error, it was important to ensure that the field staff collecting data were correctly interpreting the reimbursable status recorded by cafeteria staff. Although field staff collecting these data were given extensive training on this topic, it is possible that some observers did not understand the distinction between a reimbursable meal and a meal for which the student does not pay full price. The latter concept includes only free and reduced-price meals, whereas reimbursable meals also include paid (full-price) meals that meet USDA requirements for reimbursement. If field staff incorrectly coded all paid meals as "not reimbursable" (that is, if they misinterpreted the cashier as recording them at the point of sale as not reimbursable), then paid meals that meet the requirements for a reimbursable meal would be incorrectly classified as in error. This would lead to an overstatement of underpayments and gross cashier error.

Our approach to dealing with this potential source of error was to identify schools with unusually high levels of underpayments, that is, schools that had large numbers of trays that our field staff recorded as being coded as non-reimbursable by the cashier and that we determined to be reimbursable based on the tray's contents. This situation is likely the result of field staff recording error because students are unlikely to pay a (higher) price for a meal (that is, pay for items separately) that should be reimbursable. Underpayments represented more than 20 percent of total reimbursements in a few schools; there were 20 such schools meeting these conditions in

the NSLP and 11 such schools in the SBP. In these cases, we assumed that all meals that the field staff coded as not reimbursable were actually reimbursable.

Although this procedure eliminated cases in which the meal status was inappropriately coded as non-reimbursable, it also caused us to understate cashier error underpayments because it was not possible to have underpayments if all meals were coded as reimbursable. Overall gross error rates were about two percentage points larger in the NSLP and two and one-half percentage points larger in the SBP if we did not recode the data recorded by field staff.[10]

b. Determining Whether Schools Use OVS

There are different requirements for determining what constitutes a reimbursable meal in schools that use OVS than for schools that do not. Meals in schools that use OVS are not required to have as many meal items or components to be reimbursable as meals in schools that do not use OVS. Thus, if a school is classified as not using OVS when it does in fact use it, some meals may be incorrectly coded as not reimbursable even though they contain a set of meal components or items that meets requirements for being reimbursed. Although we believe that our information on schools' OVS status is correct, we conducted analyses to assess how reliant our estimates were on the accuracy of this information. In particular, we conducted our analyses assuming that *all* study schools use OVS. This assumption led to a decrease of less than one-quarter of one percentage point in the NSLP cashier error rates and a decrease of about one percentage point for the SBP cashier error rates. Because we believe our OVS information is accurate, our primary specification differentiates schools by OVS status.

[10]We experimented with different thresholds for recoding data. For example, six schools had more than one-half of meals recorded as underpayments in the NSLP and seven schools met this condition in the SBP. If only these meals are recoded, the overall gross error rate increases by 0.7 percentage points for the NSLP and 0.7 percentage points for the SBP.

B. AGGREGATION ERROR

The other type of non-certification error we examined was aggregation error. Aggregation error occurs between the time the meal reimbursement status is recorded by the cashier at the point of sale and the time the district claims reimbursement for its meals from the state agency. Aggregation error (sometimes referred to as counting, consolidation, and claiming error) can occur when:

1. Adding up the meals from individual points of sale to a total daily count at the school
2. Communicating the meal counts between the school and the SFA
3. Totaling counts across schools at the district level (consolidating meal counts) and filling out and submitting the appropriate meal reimbursement claims

The remainder of this section discusses methods and findings for each of these three types of aggregation error.

1. Point-of-Sale Aggregation Error

Point-of-sale aggregation error occurs when schools make mistakes in collecting and summing daily totals from individual points of sale (cash registers). Specifically, this error occurs when the sum of daily meal count totals from individual school cafeteria points of sale differs from the total meal counts reported by a school to the school district office that prepares the claim for reimbursement.

a. Estimation Method

Our general approach to estimating point-of-sale aggregation error was to compare the school-recorded total meal counts to MPR field staff-verified total meal counts for a target week

for each sampled school.[11] MPR field staff collected data on the school-recorded daily meal totals across all points of sale. They also verified the daily totals from each individual point-of-sale device (cash register) using receipts or other documentation. We compared school-recorded and MPR-verified total meal counts by reimbursement category and used that information to derive estimates of school meal-counting error rates for each meal type—free, reduced-price, and paid. Once we estimated these error rates, we multiplied them by the total number of meals recorded as served in each of these meal categories for the target month to estimate the total number of meals involving the various types of errors in the school. We then multiplied each of these totals by the *monetary amount per error associated with each reimbursement category*, to generate an estimate of the total amount of dollar error by reimbursement category. Next, we summed across these estimates to obtain an estimate of total dollar error for the school. We then generated national and school-level estimates of point-of-sale error with a method analogous to that used in generating national and school-level cashier error estimates.

b. Point-of-Sale Aggregation Error Findings

Estimates of point-of-sale aggregation error were extremely small, which suggests that schools are summing meal totals from their points of sale accurately. In particular, total erroneous payments for this error equaled $26 million and represented about one-third of one percent of total reimbursements for meals in the NSLP and equaled $5 million and less than one-quarter percent of total reimbursements in the SBP (Table VI.3). Moreover, we found that very few schools had any error at all; the 75th percentile of the school point-of-sale error rate distribution was zero for both the NSLP and SBP (Table VI.4). These findings indicate that processing data from points of sale was not an important source of non-certification error.

[11] If field staff could not verify meal counts for the target week, they collected data on the target day.

TABLE VI.3

ERRONEOUS PAYMENTS DUE TO AGGREGATION ERROR:
POINT-OF-SALE ERROR
(NATIONAL ESTIMATES)

	Erroneous Payments (in Dollars)	Percentage of Reimbursement in Error
NSLP		
Gross Error		
Overpayment	8,186,721	0.10
	(4,740,817)	(0.06)
Underpayment	18,092,480	0.22
	(11,114,714)	(0.14)
Total	26,279,200	0.33
	(13,267,529)	(0.16)
Net Error	–9,905,758	–0.12
	(10,770,195)	(0.13)
Sample Size	**181 schools**	**181 schools**
SBP		
Gross Error		
Overpayment	3,773,212	0.20
	(2,510,949)	(0.13)
Underpayment	974,531	0.04
	(849,375)	(0.04)
Total	4,747,743	0.24
	(2,639,032)	(0.14)
Net Error	2,798,681	0.16
	(2,662,351)	(0.14)
Sample Size	**171 schools**	**171 schools**

Source: APEC study, weighted data.

Note: Standard errors in parentheses.

TABLE VI.4

PERCENTAGE OF REIMBURSEMENTS IN ERROR DUE TO POINT-OF-SALE AGGREGATION ERROR (SCHOOL-LEVEL ESTIMATES)

	NSLP	SBP
Mean	0.20	0.35
Median	0.00	0.00
75th Percentile	0.00	0.00
90th Percentile	0.46	0.00
Sample Size (Schools)	**181**	**171**

Source: APEC study, school data, weighted.

2. Aggregation Error: School Reports of Meal Counts to the District Office

The second type of aggregation error we examined occurs when meal counts are not properly communicated between the school and the district administrative office (denoted here as the SFA).

a. Estimation Method

We collected data from the SFA on the reimbursement meal counts it had recorded for the study schools. In estimating "school reports to the SFA" error, we compared these central office counts with the relevant meal reimbursement counts recorded at the school for the target month to calculate school-specific error rates by type of reimbursable meal—free, reduced-price, and paid. We multiplied the error rates by the total number of meals recorded by the SFA in each of these categories for the target month to estimate the total number of meals involving the various types of errors. Multiplying each of these totals by the *monetary amount per error associated with each reimbursement category* yielded an estimate of the total amount of dollar error by reimbursement category. We summed across these estimates to calculate an estimate of total dollar error for the school. We then generated national and school-level estimates of "school reports to the SFA" error with a method analogous to that used in generating national and school-level cashier error estimates.

b. Findings

Erroneous payments due to "school reports to the SFA" error equaled $163 million and represented about 2 percent of the total NSLP reimbursements; and equaled $77 million and about 4 percent of total SBP reimbursements (Table VI.5).[12] A large majority of these erroneous

[12]Based on calculated standard errors of these estimates, the error rates in both the NSLP and the SBP are significantly different than zero.

TABLE VI.5

ERRONEOUS PAYMENTS DUE TO AGGREGATION ERROR:
SCHOOL REPORTS OF MEAL COUNTS TO THE SFA
(NATIONAL ESTIMATES)

	Erroneous Payments (in Dollars)	Percentage of Reimbursement in Error
NSLP		
Gross Error		
Overpayment	126,466,748	1.57
	(58,724,576)	(0.73)
Underpayment	36,162,799	0.45
	(23,426,146)	(0.30)
Total	162,629,547	2.02
	(62,652,356)	(0.78)
Net Error	90,303,948	1.12
	(63,791,870)	(0.78)
Sample Size	**208 schools**	**208 schools**
SBP		
Gross Error		
Overpayment	62,693,463	3.24
	(33,193,393)	(1.69)
Underpayment	14,552,048	0.75
	(12,982,830)	(0.67)
Total	77,245,512	3.99
	(35,318,219)	(1.80)
Net Error	48,141,415	2.48
	(35,962,950)	(1.84)
Sample Size	**206 schools**	**206 schools**

Source: APEC study, weighted data.

Note: Standard errors in parentheses.

payments came in the form of overpayments. In both the NSLP and SBP, approximately 80 percent of the "school reports to the SFA" erroneous payments were overpayments. Thus, when there were discrepancies between school and SFA reports, it was typically the case that the SFA reports contained larger meal counts than school reports.

Although these error rates were somewhat large, the vast majority of schools had negligible erroneous payments of this type. For both the NSLP and SBP, more than three-quarters of participating schools had no "school reports to the SFA" error (Table VI.6). Thus, this source of erroneous payments was concentrated in a small number of schools that had relatively large error rates.

3. Aggregation Error: SFA Reports of Meal Reimbursement Claims to the State Agency

State agencies may require districts to claim reimbursements in one of two ways: (1) the district submits a single meal reimbursement claim disaggregated by each school in the district (that is, the number of free, reduced-price, and paid meals to be claimed is entered separately for each school onto the claim or transmitted directly from schools to the state agency), or (2) the district sums the meal counts across each school in the district separately for each meal type (that is, the district consolidates the meal counts) and submits consolidated counts to the state agency for each meal type. The way we calculate error rates and amounts for this type of error depends on the mechanism used.

a. Estimation Methods

In districts using the first method, we compared the number of reimbursable meals reported to the district by the school (according to the district's records) to the number of meals reported to the state agency by the district for that school to estimate error rates by meal type. We

TABLE VI.6

PERCENTAGE OF REIMBURSEMENTS IN ERROR DUE TO AGGREGATION ERROR: SCHOOL REPORTS OF MEAL COUNTS TO THE SFA (SCHOOL-LEVEL ESTIMATES)

	NSLP	SBP
Mean	1.91	2.36
Median	0.00	0.00
75th Percentile	0.00	0.00
90th Percentile	2.47	3.49
Sample Size (Schools)	**208**	**206**

Source: APEC study, weighted data.

multiplied these error rates by the total number of meals recorded by the district in each of these categories for the target month for the study school to yield an estimate of the total number of the various meal types. We multiplied each of these totals by the monetary amount per error associated with each reimbursement category to obtain an estimate of the total amount of dollar error by reimbursement category. Next, we summed across these estimates to calculate an estimate of total dollar error for the school and then divided by the total reimbursements for the school to obtain the school's dollar based error rate. We calculated both a gross and net estimate of total dollar error for the school.

For districts that consolidate meal counts across schools, we compared the sum of the school reimbursable meals by meal type for each school in the district that we obtained from the SFA to the consolidated meal claim made by the SFA to the state agency for all schools. We calculated an error rate for each meal type (free, reduced-price, and paid) separately for breakfast and lunch. This step produced a district-level error rate for each meal type. Because our unit of analysis is the school, the next step was to use the district-level error rates to estimate a school-level error rate for our study schools. Our approach assumed that consolidation error applied evenly to all schools in the district, so we applied the district rate to each of the study schools.[13] We used the error rates to estimate the total number of meals of the various types in error and multiplied each of these totals by the monetary amount per error associated with each reimbursement category to obtain an estimate of the total amount of dollar error by reimbursement category. We summed across these estimates to calculate an estimate of total dollar error for the school and then divided by the total reimbursements for the school to obtain the school's dollar-based error rate.

[13]This is a valid assumption if the source of the error is incorrect addition or incorrect use of the consolidation process. It is less so if the discrepancy between the sum of the school reports and SFA report comes from the SFA adjusting an incorrect or unreasonable total from a specific school. As we need to convert the estimate to school-level to combine the various types of aggregation error, this assumption is necessary.

In generating national estimates of error related to SFA reports to the state agency, we combined estimates of total dollar error for schools in SFAs that consolidate meal claims to the state agency with estimates for schools in SFAs that report individual school reimbursement totals to the state agency. Thus, we summed school dollar error across *all* schools and divided this by the sum of school total reimbursements. These sums are weighted based on the sampling weights that make the schools nationally representative of the population of reimbursable meals.

b. Findings

Estimates of "SFA reports to the state agency" aggregation error were smaller in magnitude than "school reports to the SFA" error rates. Erroneous payments due to this type of error equaled $118 million and represented about one and one-half percent of the total NSLP reimbursements; and equaled $35 million and approximately one and three-quarters percent of the SBP reimbursements (Table VI.7). A large majority of these erroneous payments came in the form of overpayments. In both the NSLP and SBP, more than 80 percent of erroneous payments from "SFA reports to the state agency" aggregation error were overpayments.[14]

We examined whether there were differences in the incidence of this error depending on the type of reporting the district uses. We found that error rates were considerably lower in districts that consolidate school meal reimbursement totals before reporting them to state agencies than in districts that report school totals directly to state agencies. "SFA reports to the state agency" erroneous payments represented 1.0 percent of the NSLP reimbursements of schools in districts that consolidate, compared to 3.0 percent of the reimbursements of schools in

[14]The school sample sizes for calculating "SFA reports to state agency" aggregation error are much smaller than those underlying the other non-certification error types. This is due to the greater prevalence of missing data. An important source of missing data was that some SFAs that consolidate meal counts were unable or unwilling to provide meal counts for schools in the district that were not included in the APEC study school sample.

TABLE VI.7

ERRONEOUS PAYMENTS DUE TO AGGREGATION ERROR:
SFA REPORTS OF MEAL COUNTS TO THE STATE AGENCY
(NATIONAL ESTIMATES)

	Erroneous Payments (in Dollars)	Percentage of Reimbursement in Error
NSLP		
Gross Error		
Overpayment	102,319,971	1.27
	(53,727,055)	(0.68)
Underpayment	15,482,931	0.19
	(7,596,821)	(0.09)
Total	117,802,902	1.46
	(53,960,441)	(0.69)
Net Error	86,837,039	1.08
	(54,560,857)	(0.69)
Sample Size	**135 schools**	**135 schools**
SBP		
Gross Error		
Overpayment	28,132,860	1.45
	(19,441,347)	(0.98)
Underpayment	6,436,986	0.33
	(3,306,587)	(0.17)
Total	34,569,846	1.78
	(20,016,697	(1.01)
Net Error	21,695,874	1.12
	(19,419,857)	(0.98)
Sample Size	**129 schools**	**129 schools**

Source: APEC study, weighted data.

Note: Standard errors in parentheses.

districts that report directly. Similarly, the error rate was 0.7 percent in the SBP for schools in districts that consolidate, compared to 5.1 percent for schools in districts that report individual school totals directly. In addition to being concentrated in districts that report individual school totals directly, these errors occur primarily in a small number of schools (Table VI.8). Nearly 75 percent of schools had no error in the NSLP, and slightly more than 75 percent of schools had no error in the SBP (Table VI.8).

C. TOTAL NON-CERTIFICATION ERRONEOUS PAYMENT RATES

In order to summarize our non-certification error findings, we generated estimates of total non-certification erroneous payment rates that summed estimates of cashier error and the three types of aggregation error. As with the component error rate measures, the measure of total non-certification erroneous payment rate is a gross measure, because the numerator is calculated as the sum of the overpayments and underpayments of each type of non-certification error.[15] Note that because we cannot adjust for errors across types of non-certification errors which might offset each other, these overall gross totals and rates should be considered the maximum erroneous payments due to non-certification errors.[16]

Total gross non-certification erroneous payment rates were relatively high, particularly in the SBP (Figures VI.1 and VI.2). Overall gross erroneous payments due to non-certification error in the NSLP equaled $555 million and accounted for 6.9 percent of the $8.06 billion in NSLP reimbursements. For the SBP, gross erroneous payments equaled $306 million and

[15]One could make an argument that the overall measure of erroneous payments due to non-certification error should be net and not gross as in the certification error estimates. Our certification error erroneous payments estimates focus on gross error because there are efficiency and targeting costs associated with overpayments and underpayments. For example, certification underpayments represent students not receiving the benefits to which they are entitled. This is not the case with non-certification error. Non-certification underpayments "cancel out" non-certification overpayments without cost to individual students.

[16]The 'true" non-certification error estimate is somewhere between the net and gross error rate figures.

TABLE VI.8

PERCENTAGE OF REIMBURSEMENTS IN ERROR DUE TO AGGREGATION ERROR: SFA REPORTS OF MEAL COUNTS TO THE STATE AGENCY (SCHOOL-LEVEL ESTIMATES)

	NSLP	SBP
Mean	1.37	1.22
Median	0.00	0.00
75th Percentile	0.10	0.00
90th Percentile	2.97	1.04
Sample Size (Schools)	**129**	**135**

Source: APEC study, weighted data.

Figure VI.1

Gross and Net NSLP Erroneous Payment Rates Due to Noncertification Error
SY 2005-06

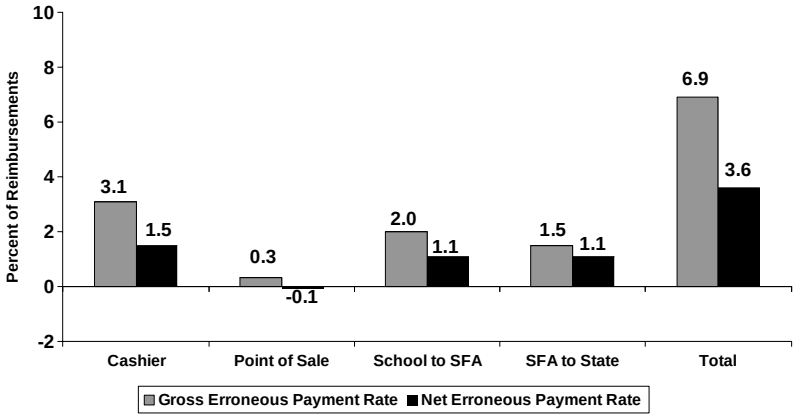
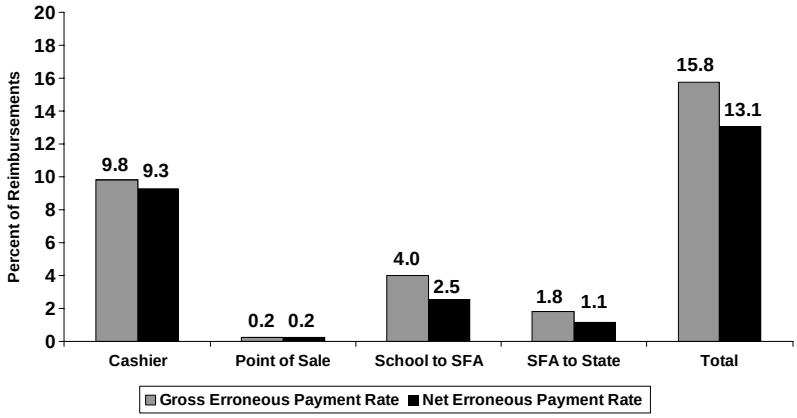


Figure VI.2

Gross and Net SBP Erroneous Payment Rates Due to Noncertification Error
SY 2005-06



represented 15.8 percent of the $1.94 billion SBP reimbursements. Cashier error is the largest component of non-certification error for both the NSLP and SBP: it represents almost one-half of the non-certification erroneous payment error rate in the NSLP and nearly two-thirds of the SBP erroneous payment error rate.

It is possible for more than one type of non-certification error to occur during the meal counting and claiming process. As was the case with certification error, when multiple errors occur they may cancel each other out, resulting in no actual payment error. However, the method we use to calculate non-certification errors does not allow us to specifically identify and eliminate offsetting errors from the overall erroneous payment calculation for this type of error. The "true" gross non-certification error rate estimate lies somewhere between the sum of the net erroneous payment rates and the sum of the gross erroneous payment rates for the four types of errors. This is because under or overpayments in one type of error can "cancel out" over or underpayments in another type of error, in the same way that over and underpayments within a specific error type cancel each other out to yield the net error rate. The total net erroneous payment rates for the NSLP and SBP equaled 3.6 percent and 13.1 percent, respectively. Therefore the overall gross non-certification erroneous payment rate accounting for offsetting errors lies within a range of 3.6 percent and 6.9 percent of total reimbursements for the NSLP, and 13.1 percent and 15.8 percent of total reimbursements for the SBP.

VII. IMPLICATIONS OF STUDY FINDINGS

The APEC study found that slightly more than one in five certified and denied applicant students were erroneously certified or incorrectly denied benefits. Household reporting error (occurring for 23 percent of certified and denied applicant students) was substantially more prevalent than administrative error (8 percent), occurring three times as often. For both the NSLP and SBP, approximately 9 percent of total reimbursements were erroneous due to certification errors. Within total payments due to certification error, overpayments were much more common than underpayments: more than three-quarters of erroneous payments in both the NSLP and SBP were overpayments. Districts and schools generally issued meal benefits, counted meals, and submitted claims for reimbursement fairly accurately. An exception at some schools was the process by which cashiers assessed and recorded whether a meal was reimbursable; this was a substantial source of erroneous payments, particularly in the SBP. In this chapter, we summarize recent actions by USDA to reduce erroneous payments and identify approaches that it might consider for reducing certification and non-certification error and the erroneous payments resulting from them, based on APEC study findings.

A. RECENT STEPS USDA HAS TAKEN TO REDUCE ERRONEOUS PAYMENTS

USDA has taken several steps recently to reduce erroneous payments. The Food and Nutrition Service (FNS) now requires school districts to report verification results and pursue corrective action for certification errors they uncover. Moreover, FNS analyzes verification summary data and prepares reports that summarize verification outcomes annually with the goal of providing information to districts and schools that can be used to make improvements in the accuracy of the certification process. FNS has also been conducting annual reviews of a probability sample of certified and denied applications to examine the accuracy of school

districts' certification decisions and any changes in administrative error rates over time. The information gained from these assessments is being used to provide technical assistance to districts and schools to help them reduce certification error caused by administrative errors.

The Child Nutrition and WIC Reauthorization Act of 2004 includes a range of program changes whose objective is to ensure access while addressing program integrity issues, including:

- Requiring direct certification for all children in food stamp households to improve certification accuracy over paper applications.
- Requiring households to submit a single application covering all children attending school. This is intended to reduce certification burden, therefore reducing one factor that can lead to administrative error.
- Providing for year-long certifications.
- Requiring verification samples to be drawn earlier in the school year, requiring school districts with high rates of non-response to verification to expand their sample and focus on error-prone applications, and allowing districts to directly verify certification status using information from agencies administering public assistance programs.

B. IMPLICATIONS OF STUDY FINDINGS FOR WAYS TO REDUCE ERRONEOUS PAYMENTS

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

- ***Emphasize to households the need to report all income sources and amounts for all household members.*** Based on information from the household survey, 80 percent of students with any reporting error on their applications had misreported income information. One-half of these errors were differences in gross income amounts for a specific person from a specific source, often secondary income sources from non-primary household members. 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.

- ***Follow up on incomplete applications before making a certification decision.*** More than one-fourth of administrative error is due to school district staff certifying students whose applications are incomplete. Most of these incomplete applications either lack a signature of a household member, or the Social Security number of the adult who signed the application or an indication that the signer does not have a Social Security number. Districts can significantly reduce administrative error by following up with households to obtain this missing information before making final certification decisions.

- ***Improve the accuracy of other administrative functions certifying students and transmitting the student's status to the district's benefit issuance instrument.*** While certifying applications that are incomplete is the most frequent administrative error, district staff makes other types of error, such as assessment, lookup, and transmittal errors. Although each of these types of error is relatively small, they contribute 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 cashier error at selected schools.*** For the NSLP, the rate of erroneous payments due to cashier error equaled 3 percent, and for the SBP nearly 10 percent. These high rates arose from a few large schools having very high levels of this type of non-certification error. A first step toward reducing cashier error involves identifying its source. One possibility is that individual cashiers are confused about the particular requirements for reimbursable meals under different menu-planning methods. Additional guidance to these cashiers about these requirements may help reduce cashier 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 the cashiers. 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 school food authority director believes they meet, and the resulting instructions to cashiers about which items should count as reimbursable are incorrect. In this instance, the most effective response may be guidance and technical assistance to cafeteria managers and school food authority directors concerning the meal pattern requirements.

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GLOSSARY

(Terms shown in *italics* within a definition are defined separately in another entry in the glossary.)

administrative error. A *certification error* that occurs when *school districts* make mistakes processing applications, determining eligibility, and recording *certification* status information on the application or *master eligibility list* or *benefit issuance* instrument. It includes *incomplete application error, assessment error, lookup error, missing application error,* and *transmittal error*.

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. The 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 (*categorically eligible*), or information on family size and income information that is used to determine if the household's income qualifies the students for free or reduced-price meals (*income eligible*).

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 was 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 students that applied 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 when they should be.

cashier 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*. Cashier 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 Food Stamps, Temporary Assistance for Needy Families (TANF), 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) which 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.

CFR. The Code of Federal Regulations. Child nutrition program regulations are in Title 7 of the Code of Federal Regulations.

CNP. The Child Nutrition Programs.

coordinated review effort (CRE). The system of periodic compliance monitoring reviews of *school districts* that operate the *NSLP/SBP*. A state agency that administers these programs must conduct a CRE of each participating *school district* at least once within a five-year cycle. The reviewer examines *certification, benefit issuance, reimbursable meal* compliance, *meal counting and claiming,* and other aspects of the meal program.

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 *Food Stamp, TANF,* and *FDPIR households* without an *application* for meal benefits. The *school district* and/or *state agency* obtains documentation from the state or local Food Stamp/TANF/FDPIR agency or other designated appropriate agency that enables the district to determine the children are members of qualifying households. Certain other categories of children (including those who are homeless, runaway, or from a migrant worker family) may also be certified for free meals without submitting an *application* for meal benefits.

erroneous 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 calculated *erroneous payments rates due to certification error* and *erroneous payments rates due to non-certification error*. Each of the two rates is calculated independently. They cannot be summed to obtain an overall error rate because of interaction between the two types of errors.

erroneous payments rates due to certification error. These are 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 erroneous payments. Total amount of reimbursements (the denominator in the rate), equals all *USDA* payments for that program.

erroneous payments rates due to non-certification error. These are 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 erroneous payments.

FDPIR. The Food Distribution Program on Indian Reservations, which provides commodity foods to low-income households on Indian reservations and to Native American families residing in designated areas near reservations.

FNS. The Food and Nutrition Service of the *U.S. Department of Agriculture*, which is responsible for administering the domestic food assistance programs.

FNSRO. A Food and Nutrition Service Regional Office.

food stamp household. Any individual or group of individuals currently certified to receive benefits under the Food Stamp Program.

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.

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.

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 between 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.*

incomplete application 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.

local education agency (LEA). See detail under *School District.*

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 eligibility 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 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.

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 *cashier error* and three types of *aggregation error.*

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

NSLA. The Richard B. Russell National School Lunch Act, which establishes the statutory authority for the *NSLP*.

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 which 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.

RCCI (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. RCCIs are included under the regulatory definition of "School" for CNP purposes. RCCIs were not part of the APEC study.

SBP (School Breakfast Program). 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 report, it is a local entity that enters into an agreement with a state agency to operate the *NSLP/SBP*. The *NSLA* uses two different terms to refer to these entities:

- The Child Nutrition and WIC Reauthorization Act of 2004 amended the *NSLA* by using the term *local education agency (LEA),* as 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. However, while this definition applies only to public entities, *state agencies* also enter into agreements with private nonprofit schools to operate the *NSLP*; many of these agreements cover only a single school.
- Sections of the *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 is currently defined in *NSLP* regulations as the governing body that has the legal authority to operate the *NSLP/SBP* in one or more schools.
- *FNS* is in the process of developing new regulatory language implementing the 2004 Act. These regulations will define the use of the term *LEA* for public schools in the NSLP/SBP in the same way as the ESEA, and will establish a definition of LEA for private non-profit entities that 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). See detail under *School District.*

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; 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.

Section 4 payments (SBP). Section 4 of the Child Nutrition Act establishes *reimbursement* payments that is made for free, reduced-price, and paid meals served under the *SBP.*

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.

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.

state agency (SA). 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.

transmittal error. A *certification error* that occurs when a student's eligibility status as recorded on the *master eligibility list* is different from the eligibility status determined during the *certification* process.

United States Department of Agriculture (USDA). The federal agency designated by Congress to administer the *National School Lunch, School Breakfast,* and Special Milk Programs.

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 (FNS-742). A summary of the results of *verification* activity in a *school district,* which must be reported to the district's *state agency* by March 1 of each year. The *state agency* must submit an electronic file with the results of *verification* activity for all *school districts* with which it has agreements to *FNS* by April 15 of each year.