CHILD AND ADULT CARE FOOD PROGRAM (CACFP):
ASSESSMENT OF SPONSORS’ TIERING DETERMINATIONS

PROGRAM YEAR 2015

FINAL REPORT

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CHILD AND ADULT CARE FOOD PROGRAM (CACFP): ASSESSMENT OF SPONSORS’ TIERING DETERMINATIONS

2015 FINAL REPORT

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EXECUTIVE BRIEF

The Child and Adult Care Food Program (CACFP) plays a vital role in the Food and Nutrition Service’s (FNS’s) efforts to ensure that all children and adults have access to nutritious food to improve and maintain their nutritional status and health. In addition, through reimbursing for meals and snacks, CACFP helps improve the quality, affordability, and accessibility of day care for low-income families.

The Improper Payments Information Act of 2002 and the Improper Payments Elimination and Recovery Act of 2010 require all federal agencies to identify programs and activities that may be susceptible to erroneous payments and to estimate and report annually to the U.S. Congress the value of such erroneous payments. To meet these requirements, the United States Department of Agriculture’s FNS has conducted 11 assessments of CACFP since 2005 to estimate the number of Family Day Care Homes (FDCHs) misclassified by sponsoring agencies into the wrong reimbursement tier and the resulting erroneous payments for meals and snacks reimbursed at the wrong rate.

Meals served in CACFP FDCHs are reimbursed according to a two-tiered system in which each tier has a different reimbursement rate. FDCHs are eligible for reimbursement at higher Tier I rates for all eligible meals if they satisfy either geographic eligibility (based on Census or school data) or provider income/program eligibility. Meals reimbursed at Tier I rates that should have been reimbursed at Tier II rates result in overpayment, and meals reimbursed at Tier II rates that should have been reimbursed at Tier I rates result in underpayments.

The 2015 assessment confirmed that the overall error rate for tiering determinations was below the Office of Management and Budget (OMB) threshold of 1.5% and $10 million of total program funding in a fiscal year. This assessment estimated that, nationwide in fiscal year 2014,

- 0.54% of reimbursements were paid in error (0.47% of overpayments to Tier I, and 1.83% of underpayments to Tier II); and
- $4.18 million of reimbursements were paid in error ($3.37 million overpayments to Tier I, and $1.09 million underpayments to Tier II).

Based on the assessment procedures and results, three recommendations are offered:

1) The sponsors’ use of certifications based on geographic eligibility, especially Census data, should be further increased to reduce administrative burden and errors.

2) The certification process based on geographic eligibility needs a user-friendly, interactive, web-based interface that uses both Census and school data to allow sponsors to quickly and accurately certify their FDCHs; thus, refocusing the program from error detection to error prevention.

3) The sampling design for future assessments needs to be adjusted to increase the sample size of FDCHs, especially Tier II FDCHs, to provide more precise error estimates.
EXECUTIVE SUMMARY

The Child and Adult Care Food Program Background
The United States Department of Agriculture’s (USDA’s) Food and Nutrition Service’s (FNS’s) Child and Adult Care Food Program (CACFP) plays a vital role in efforts to ensure that all children and adults have access to nutritious food. CACFP helps Family Day Care Home (FDCH) providers serve children in their care with well-balanced, nutritious meals that meet USDA guidelines.

The Improper Payments Information Act of 2002 (IPIA; P.L. 107-300) and the Improper Payments Elimination and Recovery Act of 2010 (IPERA; P.L. 111-204) require all federal agencies to identify programs and activities that may be susceptible to erroneous payments and to estimate and report annually to the U.S. Congress the value of such erroneous payments. As part of its efforts to meet IPIA and IPERA reporting responsibilities, in 2014, the FNS engaged Optimal Solutions Group, LLC (Optimal) to examine the accuracy of the classification of FDCHs participating in CACFP. This is the eleventh assessment of CACFP that covers the Program Year (PY) 2015 from August 2014 through July 2015.

CACFP Reimbursement Tiers
Meals served in CACFP FDCHs are reimbursed according to a two-tiered system in which each tier has a different reimbursement rate. Within each reimbursement tier, there are different rates for breakfast, lunch and supper, and snacks. FDCHs may claim up to two snacks and one meal (breakfast, lunch, or supper) or two meals and one snack each day for each participating child. Rates are adjusted annually each July, as required by the statutes and regulations governing CACFP. Thus, the rates in effect in PY 2015 (August 2014 through July 2015) include rates for 2014-2015 and 2015-2016 (Table ES-1).

Table ES-1. CACFP reimbursement rates for meals served in FDCHs, PY 2015

<table>
<thead>
<tr>
<th></th>
<th>BREAKFAST</th>
<th>LUNCH AND SUPPER</th>
<th>SNACK</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tier I</td>
<td>Tier II</td>
<td>Tier I</td>
</tr>
<tr>
<td>July 1, 2014–June 30, 2015</td>
<td>$1.31</td>
<td>$0.48</td>
<td>$2.47</td>
</tr>
<tr>
<td>July 1, 2015–June 30, 2016</td>
<td>$1.32</td>
<td>$0.48</td>
<td>$2.48</td>
</tr>
</tbody>
</table>

NOTE: Rates are for all States except Alaska and Hawaii.

Sponsoring organizations are responsible for determining the appropriate tier for each of their participating FDCHs. All eligible meals are reimbursed at higher Tier I rates in FDCHs if they satisfy either geographic eligibility or provider income eligibility.¹

1) Geographic eligibility is established when the FDCH is located in a low-income area within
   a) the attendance area of a school in which at least 50% of the enrolled children are certified eligible for free or reduced-price (F/RP) meals;
   b) the Census Block Group (CBG)² or Tract in which at least 50% of the children live in households with incomes at or below 185% of the Federal Poverty Guidelines (FPGs)³; or
   c) the CBG with a weighted⁴ average of the percentage of eligible children in up to three adjacent CBGs of at least 50%.

¹ In Tier II FDCHs, meals served to children whose households qualify are reimbursed at the Tier I rates; all other meals are reimbursed at the lower Tier II rates.
² A Census Block Group is the smallest geographical unit for which the bureau publishes sample data.
³ The income standard for F/RP meals.
⁴ Weighted based on the number of children residing in each CBG.
2) *Provider income eligibility* is established when the FDCH provider
   a) has the household income of 185% of the FPG or below; or
   b) is eligible for the Supplemental Nutrition Assistance Program, Temporary Assistance for 
      Needy Families, Food Distribution Program on Indian Reservations, Supplemental Security 
      Income, or Medicaid certification, which have income limits of no more than 185% of the 
      FPG.

During the Fiscal Year (FY) 2014, there were 117,335 FDCHs participating in CACFP in the contiguous 
United States, including 85.3% Tier I FDCHs and 14.7% Tier II FDCHs (Table ES-2). CACFP provided 
reimbursements to FDCHs for 535 million meals at a total cost of $771 million. Because of the large 
scope of the program, even a relatively modest percentage of misclassified FDCHs could lead to millions 
of dollars in erroneous payments.

**Table ES-2. FDCHs, meals, and reimbursements in the contiguous United States, FY 2014**

<table>
<thead>
<tr>
<th>TIER</th>
<th>FDCHs</th>
<th>Meals</th>
<th>Reimbursements</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percent</td>
<td>Number</td>
</tr>
<tr>
<td>Tier I</td>
<td>100,044</td>
<td>85.3%</td>
<td>463,397,967</td>
</tr>
<tr>
<td>Tier II</td>
<td>17,291</td>
<td>14.7%</td>
<td>71,986,004</td>
</tr>
<tr>
<td>Total FDCHs</td>
<td>117,335</td>
<td>100%</td>
<td>535,383,971</td>
</tr>
</tbody>
</table>

NOTE: Numbers may not add up to totals due to rounding.

**National Estimates of Misclassification Errors and Costs**
This assessment replicated the methodology of previous studies that used Census and school data, school 
districts’ contacts, and sponsor documents to independently verify a representative sample of FDCHs.
The PY 2015 assessment met FNS requirements to provide estimates of misclassification rates for 
FDCHs in CACFP and to determine the resulting erroneous payments. This assessment estimated that the 
erroneous payment rate in FY 2014 included 0.47%, or $3.37 million, overpayments to Tier I
reimbursements; and 1.83%, or $1.09 million, underpayments to Tier II reimbursements (Figure ES-3).
The overall erroneous payment rate was 0.54%, or total erroneous payments of $4.18 million. Thus, the 
assessment confirmed that the overall erroneous payment rate for tiering determinations was below the 
Office of Management and Budget (OMB) error threshold of 1.5% and $10 million of total program 
funding in a fiscal year.
**Comparison of Results with Previous Assessments**

The 2015 assessment produced results comparable to those of previous assessments. The estimates of misclassification rates, the cost of misclassification, and the meals reimbursed in error for the 2015 assessment are the lowest in 11 years (Figures ES-4, ES-5, and ES-6). Beginning in 2011, there has been a downward trend in the percentage of reimbursements paid in errors (from 1.58% in 2011 to 0.54% in 2015; Figure ES-4), the cost of misclassifications (from $11.98 million in 2011 to $4.18 million in 2015; Figure ES-5), and the number of meals reimbursed in error (from 16.53 million in 2011 to 5.35 million in 2015; Figure ES-6).

**Figure ES-4. Estimated misclassification as a percentage of reimbursements: 2005–2015**
NOTE: The 2005–2007 assessments did not provide confidence intervals for the estimated number of meals reimbursed in error.

Recommendations and Implications of the Assessment

Based on the assessment procedures and results, three recommendations are offered:

1) Promote certifications based on geographic eligibility, especially Census data, to reduce sponsors’ administrative burden and certification errors. The typical certification process conducted by sponsors involves contacting school districts, departments of education, or using other websites to determine the boundaries of school attendance areas for each FDCH, and then using the State’s department of education F/RP data to separately certify FDCHs. This certification approach is time consuming and error prone, while the Census certifications could involve the use of the web-based tool.
2) *Develop and refine web-based certification tools* to provide a user-friendly, interactive interface that uses both Census and school data, thus allowing sponsors to quickly and accurately certify their FDCHs. This is especially relevant because of the eligibility based on the weighted average of adjacent CBGs, which is difficult for sponsors to manually calculate and could result in errors. The existing FNS and Food Research & Action Center (FRAC) web tools for Census eligibility currently do not have built-in determinations for adjacent CBGs and require a manual approach, which could be especially burdensome in some CBGs with a large number of adjacent CBGs. Therefore, existing Census tools should be refined and the school verification tool should be developed to provide a user-friendly interface to facilitate sponsors’ certification processes. This will allow FNS to begin transitioning from error detection to error prevention, as the certification tools would prevent most of the certification errors.

3) *Adjust the sampling design* to increase the sample size of FDCHs to provide more precise estimates, especially for Tier II errors. The estimates of error rates for Tier II FDCHs for this and the previous studies have large confidence intervals, and these estimates fluctuate from year to year. To improve stability of Tier II estimates in future studies, Tier II FDCHs need to be oversampled. The sampling design should also be adjusted to minimize sampling the same large sponsors every year by oversampling small sponsors. This would reduce the burden on large sponsors and could also improve the validity of the error estimates. It’s possible that some of the small sponsors with limited staff and resources could have higher error rates than the large sponsors that have been audited multiple times.
1. INTRODUCTION

The Child and Adult Care Food Program

The Food and Nutrition Service’s (FNS’s) Child and Adult Care Food Program (CACFP) plays a vital role in efforts to ensure that all children and adults have access to nutritious food to promote and maintain a healthy lifestyle. CACFP helps Family Day Care Home (FDCH) providers serve children in their care with well-balanced, nutritious meals that meet United States Department of Agriculture (USDA) guidelines. Serving nutritious meals helps improve and maintain the health and nutritional status of children in day care and helps them develop good eating habits. In addition, through reimbursing for meals and snacks, CACFP helps low-income families improve the quality, affordability, and accessibility of day care.

In fiscal year (FY) 2014, CACFP provided reimbursement for meals and snacks each day to 3.3 million children who were enrolled for care at participating childcare centers and day care homes, and to 120,000 adults who received care in nonresidential adult day care centers. CACFP also provides reimbursements for meals and snacks to children and youth who participate in afterschool care programs or reside in emergency shelters. In FY 2014, CACFP provided 537 million meals to FDCHs, 1.4 billion meals to childcare centers, and 71 million meals to adult day care centers, for a total cost of $3.13 billion.\(^5\)

FNS administers CACFP through grants to States. The program is administered within most States by the State’s educational agency, although in a few States, it is administered by other agencies, such as the State health or agriculture department. Sponsors act as fiscal intermediaries, receiving claims from FDCHs and disbursing USDA funds for meal reimbursements.

This evaluation focuses only on the FDCH, which is defined as “an organized nonresidential childcare program for children enrolled in a private home, licensed or approved as a family or group day care home and under the auspices of a sponsoring organization.”\(^6\) FDCH providers are required to record meals served to each child on a daily basis. Each month, FDCHs submit meal claims to their sponsoring organization to obtain USDA reimbursement for meals served.

Organization of the Report

This report provides

1. the purpose of the assessment;
2. the methodology used for identifying misclassifications;
3. the results of the verification of sponsors’ tiering determinations;
4. nationally representative estimates of the percentage of misclassified FDCHs, meals claimed in error, and erroneous reimbursements;
5. comparison of results with previous assessments; and
6. conclusions and recommendations.

The Purpose of the Assessment

In recent years, the Executive Branch has increased efforts to improve children’s nutrition while providing support to low-income families. In this process, it is especially important that food programs are structured as efficiently as possible to achieve their intended outcomes. The Improper Payments Information Act of 2002 (PIA; P.L. 107-300), in conjunction with the Improper Payments Elimination and Recovery Act of 2010 (IPERA; P.L. 111-204), requires federal agencies to annually review all the programs and contracts they administer and identify those that may be susceptible to significant improper


or erroneous payments. As a part of its efforts to meet these reporting responsibilities, the USDA’s FNS engaged Optimal Solutions Group, LLC (Optimal) to conduct the assessment of CACFP sponsor tiering determinations. This assessment represents the eleventh CACFP study of sponsor tiering determinations and replicates the sampling approach, data collection strategies, verification algorithms, and analytical methodology used in the previous assessments. The purpose of this assessment is to provide estimates of 1) the percentage of erroneous payments that are due to assigning FDCHs to incorrect meal compensation tiers; and 2) the amount of reimbursements that were paid in error.

**CACFP Reimbursement for Meals Served in FDCHs**

Sponsors are responsible for determining the appropriate tiering levels (Tier I or Tier II) of each of their participating FDCHs. Tier I status can be established using one of the following:

1) **Census Area:** The provider must be located in
   a) a Census Block Group (CBG) in which at least 50% of the total number of children residing in the area live in a household that meets the income standards for free or reduced-price (F/RP) meals;
   b) a Census Tract in which 50% or more of the children are eligible for F/RP meals; or
   c) a CBG where the weighted average percentage of eligible children in up to three adjacent CBGs, including the FDCH’s own CBG, is 50% or more, provided that at least 40% of children in each of the combined CBGs are eligible.

2) **School Boundary Area:** The FDCH must be located in the attendance area of a school in which at least 50% of the enrolled children are certified eligible to receive F/RP meals.

3) **Provider’s Income:** The provider’s household income is at or below 185% of the federal poverty guidelines (FPGs).

4) **Provider’s Categorical Eligibility:** The provider is categorically eligible based on participation in the Supplemental Nutrition Assistance Program, Temporary Assistance for Needy Families, Food Distribution Program on Indian Reservations, Supplemental Security Income, or Medicaid.

Tier I determinations are valid for a specified time period, depending on the basis of determination:
- Geographic eligibility determined by Census or school data is valid for 5 years.
- Income and categorical eligibility must be reviewed annually.

Within each reimbursement tier, there are different rates for breakfast, lunch and supper, and snacks. FDCHs may claim up to two snacks and one meal (breakfast, lunch, or supper), or two meals and one snack each day for each participating child. Rates are adjusted annually each July, as required by the statutes and regulations governing CACFP. Thus, the rates in effect in PY 2015 (August 2014 through July 2015) include rates for 2014-2015 and 2015-2016 (Table 1-1).

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7 Significant improper payments are defined as gross annual improper payments in a program exceeding both the threshold of 1.5% and $10 million of total program funding, or $100 million in improper payments regardless of the improper payment percentage. https://www.whitehouse.gov/sites/default/files/omb/financial_/improper/PL_111-204.pdf.


9 A Census Block Group is the smallest geographical unit for which the bureau publishes sample data.

10 Adjacent Census Block Group and Census tract criteria were added in April 21, 2014, based on FNS memo SP 38-2014, CACFP 10-2014, SFSP 15-2014. (http://www.fns.usda.gov/sites/default/files/SP49_CACFP13_SFSP19-2014os.pdf). The average is weighted based on the number of children residing in each CBG.

11 The income standard for F/RP meals.

12 This and previous assessments focus on the PY, which does not align with the FY. The PY for this study is from August 2014 through July 2015, and covers two FYs, which run from October through September. Future studies could realign the program year definition to correspond to the FY.
Table 1-1. CACFP reimbursement rates for meals served in FDCHs, PY 2015

<table>
<thead>
<tr>
<th></th>
<th>Breakfast Tier I</th>
<th>Breakfast Tier II</th>
<th>Lunch and Supper Tier I</th>
<th>Lunch and Supper Tier II</th>
<th>Snack Tier I</th>
<th>Snack Tier II</th>
</tr>
</thead>
<tbody>
<tr>
<td>July 1, 2014–June 30, 2015</td>
<td>$1.31</td>
<td>$0.48</td>
<td>$2.47</td>
<td>$1.49</td>
<td>$0.73</td>
<td>$0.20</td>
</tr>
<tr>
<td>July 1, 2015–June 30, 2016</td>
<td>$1.32</td>
<td>$0.48</td>
<td>$2.48</td>
<td>$1.50</td>
<td>$0.74</td>
<td>$0.20</td>
</tr>
</tbody>
</table>

NOTE: Rates are for all States except Alaska and Hawaii.

Tier II FDCHs may receive reimbursement at Tier I rates for meals served to children who have been individually determined by the sponsor to be categorically eligible or reside in a household with an income at or below 185% of the FPG. The assessment does not verify this type of eligibility.

2. OVERVIEW OF THE ASSESSMENT METHODOLOGY

Data collection for the assessment began in December 2015 and continued through April 2016. Administrative data were collected from the Food and Nutrition Service (FNS), State child nutrition agencies, and Child and Adult Care Food Program (CACFP) sponsoring organizations. Family Day Care Homes (FDCHs) were not contacted for the assessment.

Sampling Design
The sampling design of the study replicated the methodology used in the previous assessments (see Appendix C for more details). A three-stage design involved successive use of probability proportional to size (PPS) sampling of States and sponsors, followed by a random sampling of FDCHs with the measure of size being the number of FDCHs. This approach ensured that every FDCH participating in CACFP had an equal chance of being selected for the tiering determination study. While sampling FDCHs directly would be more efficient, a complete sample frame of FDCHs is unobtainable without prior selection of, and communication with, State agencies and sponsoring organizations. The sample sizes at each stage of sampling were set at the same size as the previous studies (Table 2-1). States and sponsors with large numbers of FDCHs were given a chance to be selected more than once.

Table 2-1. Sample sizes for the three sampling stages

<table>
<thead>
<tr>
<th>Sampling stage</th>
<th>Sampling unit</th>
<th>Sample size</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>State</td>
<td>--</td>
<td>15</td>
</tr>
<tr>
<td>2</td>
<td>Sponsor</td>
<td>4</td>
<td>60</td>
</tr>
<tr>
<td>3</td>
<td>FDCH</td>
<td>11</td>
<td>660</td>
</tr>
</tbody>
</table>

NOTE: Two sponsors had to be replaced because they were unresponsive during data collection.

Sampling States
The sampling frame of States for the first sampling stage included the 48 contiguous States plus the District of Columbia (D.C.). FNS provided administrative data on the number of FDCHs, sponsors, and meals served by State and overall from its FY 2014 National Data Bank. Most (85.3%) of CACFP FDCHs in the United States were designated as Tier I in FY 2014, and the numbers varied greatly by State (Table 2-2).

---

Table 2-2. Number and distribution of FDCHs in the United States by reimbursement tier, FY 2014

<table>
<thead>
<tr>
<th>TIER</th>
<th>Number</th>
<th>Percent</th>
<th>Minimum per state</th>
<th>Maximum per state</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tier I</td>
<td>100,044</td>
<td>85.3%</td>
<td>41</td>
<td>13,382</td>
</tr>
<tr>
<td>Tier II</td>
<td>17,291</td>
<td>14.7%</td>
<td>0</td>
<td>4,571</td>
</tr>
<tr>
<td>Total FDCHs</td>
<td>117,335</td>
<td>100%</td>
<td>67</td>
<td>14,930</td>
</tr>
<tr>
<td>Total sponsors (for day care homes only)</td>
<td>550</td>
<td></td>
<td>1</td>
<td>49</td>
</tr>
</tbody>
</table>

NOTE: Numbers may not add up to totals due to rounding.

SOURCE: FY 2014 FNS National Data Bank totals for the contiguous United States (48 States and D.C.).

States were selected for each of the three study years on the basis of PPS. The measure of size was the number of FDCHs per State in FY 2013, as reported in the FNS National Data Bank. This approach has the advantage of spreading the 3-year reporting burden across States, which minimizes the probability that all but the largest States will be selected repeatedly across the three study years. Fifteen States were selected for three consecutive assessment years, with large States being selected twice (Appendix C). The sampled States were asked to provide the following (Appendix B):

- A list of CACFP sponsors in their State to serve as the frame for sampling sponsors. The requested elements of the sponsor list included sponsor contact information and the number of sponsored Tier I and Tier II FDCHs.
- The “State list of schools” with free/reduced-price (F/RP) meals for each school for the school year 2014–2015, provided by States to CACFP sponsors to determine FDCH eligibility for Tier I.

Based on the sampled States’ lists, the total number of sponsors was 312 and the total number of FDCHs was 71,930 (Table 2-3). The 2014 FNS National Data Bank and 2015 States’ lists had different numbers of sponsors and FDCHs per States. The number of FDCHs and sponsors tended to be larger in 2015 States’ lists than in the 2014 FNS Data Bank. This trend was reported by the previous assessments, and therefore sampling weights were adjusted by post-stratification to account for these variations. This minimized the effect of discrepancies in data sources on the results of this and previous assessments.

Table 2-3. Number of FDCHs and sponsors for sampled States

<table>
<thead>
<tr>
<th>STATE</th>
<th>2014 FNS Data Bank</th>
<th>2015 States’ lists</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FDCHs</td>
<td>Sponsors</td>
</tr>
<tr>
<td>Arizona</td>
<td>2,502</td>
<td>15</td>
</tr>
<tr>
<td>California</td>
<td>14,930</td>
<td>49</td>
</tr>
<tr>
<td>Illinois</td>
<td>7,214</td>
<td>7</td>
</tr>
<tr>
<td>Iowa</td>
<td>1,949</td>
<td>22</td>
</tr>
<tr>
<td>Louisiana</td>
<td>7,836</td>
<td>23</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>4,352</td>
<td>7</td>
</tr>
<tr>
<td>Michigan</td>
<td>4,340</td>
<td>2</td>
</tr>
<tr>
<td>Minnesota</td>
<td>7,835</td>
<td>6</td>
</tr>
<tr>
<td>New York</td>
<td>9,663</td>
<td>30</td>
</tr>
<tr>
<td>North Carolina</td>
<td>2,085</td>
<td>20</td>
</tr>
<tr>
<td>Oregon</td>
<td>2,217</td>
<td>7</td>
</tr>
<tr>
<td>Texas</td>
<td>5,492</td>
<td>45</td>
</tr>
<tr>
<td>Washington</td>
<td>2,059</td>
<td>11</td>
</tr>
<tr>
<td>TOTAL</td>
<td>72,472</td>
<td>243</td>
</tr>
</tbody>
</table>

NOTE: Numbers may not add up to totals due to rounding.


14 Selecting States for three study years on the basis of FY 2013 data introduces the potential for sampling error because State-level FDCH counts may change from year to year. This issue was examined by comparing the PPS probabilities to FDCH counts from FNS Data Bank data, and discrepancies were addressed by post-stratification adjustment of the sampling weights for FDCHs.

15 Based on the follow up with the State.
The 2014 and 2015 assessments explored the possible reasons for the differences between FNS and States’ data sources in the number of FDCHs and sponsors by contacting five States (AZ, CA, FL, TX, and VA) to gain their feedback. Some reasons for the discrepancies include:

- The FNS Data Bank is for FY 14 and State lists for PY 15.\(^1\)
- The FNS Data Bank calculates and estimates the number of sponsors and FDCHs, and these estimates are rounded up.\(^2\)
- The FNS Data Bank includes only active sponsors that submitted claims, whereas the State lists could include sponsors that had not submitted claims.
- The State lists include some FDCHs that had meal reimbursements during the fiscal year but no meal reimbursements during the study program year.
- Sponsors sometimes provide multiple claims (original and adjusted), which could result in duplicate records of FDCHs for some sponsors in State lists.
- States’ FDCHs lists could be updated monthly by the sponsors, and FDCHs could be terminated after 3 months of inactivity. As a result, States’ lists could include some inactive FDCHs.

**Sampling Sponsors**

During the second sampling stage, four sponsors from each State’s list were selected with a probability proportional to the fraction of their State’s total number of FDCHs. In addition, two replacement sponsors were selected for each State using the replacement sample. The sponsors were selected with PPS in which size is defined as the number of FDCHs of each sponsor. Based on this approach, the sampled sponsors are representative of all sponsors in the sampled States. Six sponsors with a large number of FDCHs\(^3\) were sampled more than once due to their size.

After agreeing to participate, sponsors were asked to provide the list of FDCHs that they sponsored, including name, address, tier status, method used for tiering determination, and the most recent tiering determination date (Appendix B). This information was used to construct the sample frame of FDCHs. The sampled sponsors, on average, had approximately 550 Tier I FDCHs and approximately 100 Tier II FDCHs (Table 2-4). The large standard deviations demonstrate the wide range of sponsor sizes. States’ and sponsors’ data sources were slightly different in terms of the number and distribution of FDCHs. Similar differences were reported by the previous CACFP tiering determination studies and, as mentioned previously, were addressed by post-stratification adjustment of the sampling weights for FDCHs.

<table>
<thead>
<tr>
<th>Source</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tier I</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>States’ list</td>
<td>565.5</td>
<td>535.8</td>
<td>35</td>
<td>2,112</td>
</tr>
<tr>
<td>Sponsors’ list</td>
<td>530.8</td>
<td>512.7</td>
<td>33</td>
<td>2,177</td>
</tr>
<tr>
<td><strong>Tier II</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>States’ list</td>
<td>134.0</td>
<td>356.7</td>
<td>0</td>
<td>2,430</td>
</tr>
<tr>
<td>Sponsors’ list</td>
<td>85.5</td>
<td>236.1</td>
<td>0</td>
<td>1,662</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>States’ list</td>
<td>699.5</td>
<td>775.9</td>
<td>57</td>
<td>4,447</td>
</tr>
<tr>
<td>Sponsors’ list</td>
<td>616.3</td>
<td>677.9</td>
<td>39</td>
<td>3,839</td>
</tr>
</tbody>
</table>

**SOURCE:** 2015 CACFP Assessment of Sponsor Tiering Determinations. Data are unweighted.

Sponsors selected in the second sampling stage had a total of 32,661 FDCHs, most of which (86.1%) were Tier I (Table 2-5). Tier I homes were primarily certified by sponsors using the school method (83.8%), followed by Census data (27.9%), provider’s income (18%), and program participation (6%).

---

\(^1\) Future studies could adjust the data collection and analyses milestones to allow for the latest FNS data to become available prior to conducting the analyses. Furthermore, future studies could realign the program year definition to correspond to the FY.

\(^2\) FNS National Data Bank integrates the most commonly used FNS program and financial data obtained from the Integrated Program Accounting System and Food Programs Reporting System into one database.

\(^3\) In MI, OR, IL, AZ, MA, and MN.
Table 2-5. The total number of FDCHs in the sample frame

<table>
<thead>
<tr>
<th></th>
<th># of FDCHs</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tier I</td>
<td>28,132</td>
<td>86.1%</td>
</tr>
<tr>
<td>Tier II</td>
<td>3,912</td>
<td>12.0%</td>
</tr>
<tr>
<td>Tier Mixed</td>
<td>617</td>
<td>1.9%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>32,661</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Certification Method of Tier I:

<table>
<thead>
<tr>
<th>Method</th>
<th># of FDCHs</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>School</td>
<td>23,564</td>
<td>83.8%</td>
</tr>
<tr>
<td>Census</td>
<td>7,836</td>
<td>27.9%</td>
</tr>
<tr>
<td>Income</td>
<td>5,052</td>
<td>18.0%</td>
</tr>
<tr>
<td>Categorical (program participation)</td>
<td>1,692</td>
<td>6.0%</td>
</tr>
</tbody>
</table>

SOURCE: 2015 CACFP Assessment of Sponsor Tiering Determinations. Data are unweighted.
NOTE: An FDCH could have more than one certification method.

Sampling FDCHs

The third sampling stage involved selecting FDCHs and replacements from each selected sponsor. On the basis of the lists of FDCHs that the sampled sponsors provided, a simple random sample of 11 FDCHs was selected for each sponsor, plus eight replacements, for a total of 19 FDCHs per sponsor. Six large sponsors were given a sample size of 22 or 33 FDCHs for a total sample size of 660 FDCHs. The number of FDCHs selected from each sponsor was allocated between Tier I and Tier II in proportion to the sponsor’s number of FDCHs in the two tiers. For sampling purposes, a small number of mixed tier homes was combined into the same group with Tier II homes. Although not a stratified sample, through sorting and randomization within tiers, the representation of Tier I and Tier II FDCHs in the sample approximated the distribution in the FDCH list received from the sponsors. For some sponsors, the fraction of FDCHs in Tier II was so small that the sampling algorithm did not select any Tier II FDCHs for them. Future studies should increase the sample size of Tier II homes to ensure adequate sample size within States.

Among the 660 sampled FDCHs, most (88.6%) were Tier I (Table 2-6). The sampled Tier I FDCHs were most frequently certified by sponsors into Tier I using the school method (80%), followed by Census data (27%), the provider’s income (14.7%), and program participation (9.5%).

Table 2-6. The number of FDCHs in the sample

<table>
<thead>
<tr>
<th></th>
<th># of FDCHs</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tier I</td>
<td>585</td>
<td>88.6%</td>
</tr>
<tr>
<td>Tier II</td>
<td>57</td>
<td>8.6%</td>
</tr>
<tr>
<td>Tier Mixed</td>
<td>18</td>
<td>2.7%</td>
</tr>
<tr>
<td>TOTAL FDCHs</td>
<td>660</td>
<td>100%</td>
</tr>
</tbody>
</table>

Certification Method of Tier I:

<table>
<thead>
<tr>
<th>Method</th>
<th># of FDCHs</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>School</td>
<td>528</td>
<td>80.0%</td>
</tr>
<tr>
<td>Census</td>
<td>178</td>
<td>27.0%</td>
</tr>
<tr>
<td>Income</td>
<td>97</td>
<td>14.7%</td>
</tr>
<tr>
<td>Categorical (program participation)</td>
<td>63</td>
<td>9.5%</td>
</tr>
</tbody>
</table>

SOURCE: 2015 CACFP Assessment of Sponsor Tiering Determinations. Data are unweighted.
NOTE: An FDCH could have more than one certification method.

After FDCHs were sampled, sponsors were contacted again and asked to provide information for monthly meal counts for each sampled FDCH and whether or not a redetermination had been done during the

19 In MI, OR, IL, AZ, MA, and MN.
20 Tier II homes were not sampled in AZ, LA, and TX due to very small proportions (1% or less) of Tier II homes.
assessment period (if so, previous tiering information was requested) (Appendix B). Monthly meal counts were requested for the reference period of August 2014 through July 2015, and sponsors were asked for separate counts of breakfasts, lunches and suppers, and snacks, broken down between Tier I-eligible and Tier II-eligible meals. The meal counts were used to estimate the meals reimbursed in error (described below and in Appendix A).

The analyses of sponsors’ meal data revealed that not all meals served by Tier I or Tier II FDCHs are reimbursed at the same tiering rates. For instance, Tier I FDCHs could have non-concurrent Tier I and Tier II meal reimbursements if they had changed tiering status during the study period. In addition, Tier II FDCHs could be reimbursed for meals at Tier I, Tier II, or both rates (concurrent and not concurrent), depending on whether some or all meals were served to Tier I-eligible children or whether the tiering changed during the study period. Among the sampled Tier II FDCHs, 22.7% were reimbursed for meals concurrently at Tier I and Tier II rates, and 6.7% had changed tiering status during the study period (Table 2-7). Thus, for Tier II homes misclassified as Tier I, it cannot be assumed that all meals were reimbursed in error, because some children might individually qualify for the higher Tier I reimbursement, or the FDCHs’ tiering status could have changed during the study period. Therefore, the estimation procedure was used to determine the proportion of meals reimbursed in error at misclassified FDCHs (described below and in Appendix D).

Table 2-7. Sampled FDCHs’ types of meal reimbursements

<table>
<thead>
<tr>
<th></th>
<th>TIER</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>I</td>
<td>II</td>
<td>TOTAL</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td># of FDCHs</td>
<td>Percent</td>
<td># of FDCHs</td>
<td>Percent</td>
<td># of FDCHs</td>
</tr>
<tr>
<td>Tier I only</td>
<td>567</td>
<td>96.9%</td>
<td>1</td>
<td>1.3%</td>
<td>568</td>
</tr>
<tr>
<td>Tier II only</td>
<td>2</td>
<td>0.3%</td>
<td>52</td>
<td>69.3%</td>
<td>54</td>
</tr>
<tr>
<td>Tier I and Tier II concurrent</td>
<td>4</td>
<td>0.7%</td>
<td>17</td>
<td>22.7%</td>
<td>21</td>
</tr>
<tr>
<td>Tier I and Tier II not concurrent</td>
<td>12</td>
<td>2.1%</td>
<td>5</td>
<td>6.7%</td>
<td>17</td>
</tr>
<tr>
<td>TOTAL</td>
<td>585</td>
<td>100%</td>
<td>75</td>
<td>100%</td>
<td>660</td>
</tr>
</tbody>
</table>

SOURCE: 2015 CACFP Assessment of Sponsor Tiering Determinations. Data are unweighted.
NOTE: “Concurrent” Tier I and II claims occur when both Tier I and Tier II children are served in the same month.

Sponsors’ Certification Procedures

As described previously, more than 80% of FDCHs are certified by sponsors using school data, which is a potentially burdensome and error-prone process. It involves contacting school districts, departments of education, or using other websites21 to determine the boundaries of school attendance areas based on addresses for each FDCH, and then using excel files or printouts provided by the State department of education to find F/RP data eligibility for corresponding schools. This certification approach is time consuming and error prone, especially if a school district or department of education does not have the web search tool to display school boundaries for a given address. In such cases, sponsors contact school districts or departments of education to obtain schools’ boundaries for each FDCH and sometimes use PDF maps with school boundaries to locate the school attendance area for an address. This process takes about 10–15 minutes for each home, but could take longer if a point of contact at a school district is not readily available. This burdensome and time consuming process continues to be the most prevalent certification approach and highlights the need for web-based certification tools.

3. INDEPENDENT VERIFICATION OF GEOGRAPHIC ELIGIBILITY

This section describes the steps taken to verify Family Day Care Homes’ (FDCHs’) geographic eligibility using Census and school data, followed by the results of the school and Census data matches. To verify FDCHs, Optimal Solutions Group, LLC (Optimal) built and annually updated Census and school verification tools that use Census and school eligibility data.

Ten annual assessments of sponsors’ tiering determinations were previously conducted from 2005 through 2014. The 2015 assessment follows the same methodology. The primary differences between the previous and the 2015 assessments include the following:

- For the assessments prior to 2011, FDCH school eligibility was based on the old rule (elementary schools only), while subsequent assessments used the new rule (elementary or secondary schools). For this assessment, only the new rule for determinations was used, and none of the FDCHs were certified prior to the 2010–2011 school year.
- For the 2015 assessment, as for the 2014 assessment, the Census tract—or up to three adjacent Census Block Groups (CBGs)—were used to determine an FDCH’s eligibility.

The steps used in the tiering verification process replicated the methodology of the previous assessments (Appendix A). Overall, the assessment used four methods to verify sponsors’ tiering determinations:

1. **Census verification** of geographic eligibility for Tier I by using the Census tool that matched the FDCHs’ addresses with Census CBGs, Census tracts, and adjacent CBGs’ data;
2. **School verification** of geographic eligibility for Tier I by using the school tool that matched the FDCHs’ addresses with free/reduced-price (F/RP) meal eligibility data for the five nearest schools (within a 5-mile, straight-line radius distance) using the National Center for Education Statistics’ (NCES’) Common Core of Data, or using States’ school data;
3. **School district contacts** to determine the schools’ attendance areas for FDCHs based on their addresses, and to ensure that for each FDCH, at least one of the schools met the F/RP requirement; and
4. **Verification of sponsors’ documents** of tiering determinations for all Tier I FDCHs that were not independently verified as geographically eligible for Tier I, and for all Tier II FDCHs that appeared to be geographically eligible for Tier I based on school or Census data matches.

The following provides the detailed description of the four steps involved in the tiering verification process.

---

22 The Healthy Hunger-Free Kids Act of 2010 expanded the eligibility criteria for FDCHs to qualify as Tier I. Effective retroactive to October 1, 2010, family and group day care homes may be classified as Tier I for purposes of reimbursement under CACFP if the home is located in an area served by any public school (covering any Grades 1–12) in which at least 50% of the enrolled children are certified eligible for free and reduced-price school meals. This requirement allows a FDCH to qualify based on secondary school as well as elementary school catchment areas.


24 This process replicates the methodology of previous assessments and is based on the assumption that if all nearest schools are F/RP eligible, then the correct school attendance area for the FDCH belongs to one of the nearest schools. This approach was cross-validated by contacting school districts to determine the correct school attendance areas for all schools based on an FDCH’s address. The FDCHs verified by the school tool were also verified using the school districts’ contacts.

25 NCES data were obtained from nces.ed.gov/cd/pubschuniv.asp. States’ school data were obtained from the States during the data collection.
Step 1: Census data eligibility was established using the following procedures:
   a) The addresses of the sampled FDCHs were geocoded to assign latitude, longitude, the CBG, and the Census tract identifier. This was done by matching FDCHs’ addresses with Application Programming Interface’s Census 2010 benchmark and Census 2010 vintage data.
   b) Census data eligibility was established using the Special Tabulations of CBGs, Census tracts, and adjacent Block Groups data. These data are based on the American Community Survey Census 2009-2013 file provided by FNS, which contains estimates for the 5-year period. Sampled FDCHs were matched with the Special Tabulations of CBGs to identify FDCHs located in CBGs with at least 50% of children age 12 or younger residing in households at or below 185% of the federal poverty guideline (FPG). For FDCHs with tiering dates after April 21, 2014, the Census tracts and the average of up to three adjacent CBGs (with at least 50% of children age 12 or younger, or 18 or younger in households at or below 185% of the FPG) were also used to establish area eligibility. If one of these three requirements was met, then Tier I status for an FDCH was verified.

Step 2: School data eligibility was established using the following procedures:
   a) School district boundary data were overlaid using the latitude and longitude coordinates of the FDCH. Then a spatial file of school district boundaries was used to identify the school district where the FDCH was located. The FDCH’s coordinates were then used to identify schools in the district, calculate distances to schools, and identify the nearest schools to the FDCH.26
   b) FDCHs were matched with F/RP meal eligibility data for the nearest schools using the NCES’ Common Core of Data or using States’ school data.27 It was then determined if each of the nearest schools had 50% or more students eligible for F/RP meals. Then:
      • If all of the nearest schools (either all three elementary or both of the middle/secondary schools) meet F/RP meal requirements in the tiering year, Tier I FDCH status was verified.
      • If some but not all of the nearest schools met F/RP meal requirements in the tiering year, the school district was contacted to determine the school attendance areas for the FDCH (see Step 3).28
      • If none of the nearest schools met F/RP meal requirements in the tiering year or a FDCH could not be geocoded, the sponsoring organization was asked to provide tiering determination documents (see Step 4).

Step 3: For the FDCHs not verified in Steps 1 and 2, school districts were contacted to determine the school attendance areas for FDCHs based on addresses29:
   • If one of the nearest schools (elementary or middle/secondary school) met F/RP meal requirements, then the FDCH was verified as Tier I.30
   • If none of the nearest schools for any grade met F/RP meal requirements, then sponsors were contacted for their tiering documentation (see Step 4).

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26 This was accomplished by calculating the distance from each FDCH to every school in the district(s), and then identifying the nearest (within a 5-mile radius) five schools (three elementary and two middle/secondary schools) in the school district.
27 NCES data were obtained from nces.ed.gov/ccd/pubschuniv.asp. States’ school data were obtained from the States during the data collection.
28 To ensure the validity of the results, all of the FDCHs verified by school tool were also verified by contacting school districts.
29 This approach is similar to the typical certification approach used by sponsors, which was described previously.
30 The Healthy Hunger-Free Kids Act of 2010 expanded the eligibility criteria for FDCHs to qualify as Tier I, which allowed a FDCH to qualify based on secondary school as well as elementary school catchment areas. (§226.2 Definitions. Eligible area.) http://www.ecfr.gov/cgi-bin/text-idx?SID=4c211a738d6109939e6054a6286ac109&mc=true&node=pt7.4.226&rgn=div5#se7.4.226_12
Step 4: Tiering documentation was requested from CACFP sponsoring organizations for each of the following:
- Tier I and Tier II FDCHs that could not be geocoded in Step 1a;
- Tier I FDCHs that could not be verified through matching to Census data in Step 1b, school data in Step 2b, or school district contacts in Step 3; or
- Tier II FDCHs that appeared to be area-eligible for Tier I based on Census data in Step 1b, school data in Step 2b, or school district contacts in Step 3.

Documents obtained from sponsors were reviewed using the tiering verification algorithms developed by the previous studies to verify the tiering status of FDCHs (described below and in Appendix A).

Based on these four steps, all Tier I FDCHs fell into one of five groups:
1. verified by the Census verification tool;
2. verified by the school verification tool if all of the nearest schools met the F/RP requirement;
3. verified by contacting school districts, if the correct school for the FDCH was identified by the school district and this school met the F/RP requirement;
4. verified by contacting sponsors and determining that their tiering documents for Census, school, program, or income verifications were consistent with Tier I eligibility; or
5. misclassified because none of these methods confirmed sponsor determinations of Tier I.

In addition, all Tier II FDCHs fell into one of the following groups:
1. verified as Tier II because they were not confirmed as Tier I by the school and Census tools or by the school district contacts;
2. verified as Tier II because they were confirmed as Tier I by the school and Census tools or by the school district contacts, but the sponsors’ documents established that they were not area eligible for Tier I; or
3. misclassified because the FDCH was confirmed as Tier I by the school and Census tools, or by the school district contacts, but sponsors incorrectly determined Tier II eligibility.

Outcomes of the Verifications
The school and Census tools streamlined the process of verifying sponsor tiering determinations and greatly reduced the study resources needed to verify FDCHs and the data collection burden on the sponsors. Most of Tier I FDCHs (61.9%) were verified by Census data, and 35.7% were verified by school data (Table 3-1). An additional 11.5% were verified by district contacts, and sponsor documentation was needed for 15.6% of the Tier I FDCHs.

<table>
<thead>
<tr>
<th>Overall Tier I verification results by source</th>
<th># of FDCHs</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Census tool</td>
<td>362</td>
<td>61.9%</td>
</tr>
<tr>
<td>School tool</td>
<td>209</td>
<td>35.7%</td>
</tr>
<tr>
<td>School district contacts</td>
<td>67</td>
<td>11.5%</td>
</tr>
<tr>
<td>Not verified – sponsor documents required</td>
<td>91</td>
<td>15.6%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>585</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

NOTE: Should not sum up to 100%, because 144 (24.6%) FDCHs were verified by both Census and school tools. SOURCE: 2015 CACFP Assessment of Sponsor Tiering Determinations. Data are unweighted.

Noteworthy, out of 362 Tier I FDCHs verified by Census data, 54 (14.9%) were verified by using the 2014 rules of adjacent CBGs or Census tracts (Table 3-2), suggesting that the 2014 criteria for Census eligibility

---

31 144 (24.6%) FDCHs were verified by both Census and school tools.
applied to a small proportion of homes. However, this proportion is likely to increase in the future as more homes will be certified and re-certified by sponsors using the 2014 Census criteria. Because FDCHs are certified by Census for 5 years, in the next 3 years all FDCHs will have to be (re)certified by sponsors using the new Census eligibility criteria of adjacent CBGs or Census tracts.

### Table 3-2. Detailed Tier I Census verification results

<table>
<thead>
<tr>
<th>Verified by:</th>
<th># of FDCHs</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBG CACFP eligible</td>
<td>308</td>
<td>52.6%</td>
</tr>
<tr>
<td>Adjacent CBGs Summer Food Service Program (SFSP) eligible</td>
<td>1</td>
<td>0.2%</td>
</tr>
<tr>
<td>Tract CACFP eligible</td>
<td>48</td>
<td>8.2%</td>
</tr>
<tr>
<td>Tract SFSP eligible</td>
<td>5</td>
<td>0.9%</td>
</tr>
<tr>
<td><strong>Census Verified Total</strong></td>
<td><strong>362</strong></td>
<td><strong>61.9%</strong></td>
</tr>
<tr>
<td>Census Not Verified</td>
<td>223</td>
<td>38.1%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>585</td>
<td>100%</td>
</tr>
</tbody>
</table>

**SOURCE:** 2015 CACFP Assessment of Sponsor Tiering Determinations. Data are unweighted.

Among Tier II FDCHs, the majority (64%) were verified as not being Tier I by Census or school data; an additional 14.7% were verified by school district contacts, and the sponsor documentation was requested for eight Tier II homes that appeared to be Tier I eligible based on Census or school tools or school district contacts (Table 3-3).

### Table 3-3. Overall Tier II verification results by source

<table>
<thead>
<tr>
<th></th>
<th># of FDCHs</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Census or school tools</td>
<td>53</td>
<td>70.7%</td>
</tr>
<tr>
<td>School district contacts</td>
<td>14</td>
<td>18.7%</td>
</tr>
<tr>
<td>Not verified – sponsor documents required</td>
<td>8</td>
<td>10.7%</td>
</tr>
<tr>
<td><strong>TOTAL TIER II</strong></td>
<td><strong>75</strong></td>
<td><strong>100.0%</strong></td>
</tr>
</tbody>
</table>

**SOURCE:** 2015 CACFP Assessment of Sponsor Tiering Determinations. Data are unweighted.

**Request for Tiering Determination Documents**

For 99 FDCHs that could not be independently verified as Tier I or Tier II, Optimal requested from sponsors copies of the documentation on file for the most recent tiering determination prior to August 31, 2015. This documentation included one or more of the following:

- school data—boundary information and school F/RP percentages or other available school eligibility documentation;
- Census data—block group or tract code and the percentage of children in households with income at or below 185% of FPG;
- household income—copies of documents used to verify Tier I income eligibility, such as wage stubs, income tax forms, and bank statements; or
- categorical eligibility—income eligibility statements listing household members and their income, and documentation about program participation that confers categorical eligibility.

Documentation was obtained for all requested FDCHs. All documentation was reviewed by senior project staff to determine whether the provided information confirmed the sponsors’ tiering determinations. When there were questions or concerns, the project team conducted follow-up contacts with sponsors to clarify questionable data elements and/or obtain additional documents.

This study used the tiering assessment algorithms developed by the previous studies to confirm that a sponsor’s tiering determination was correct and consistent with the FNS rules applicable to determinations made on that basis (geographic, program, or income). Separate algorithms were used for
each of the four types of determination: school, Census, program participation, and provider income (refer to Appendix A for more details).

1) The school verification algorithm required all of the following conditions to confirm Tier I eligibility:
   a) Valid documentation that the FDCH was located in the attendance area of the school:
      • A document was provided identifying the school attendance area (school boundary map, page from school directory, website print-out, letter from school official, or memorandum from contact with school official).
      • The document was dated after June 1, 2010.
      • The FDCH address was identified on the document (not needed if the document was a memorandum to the file).
      • If the document was a letter from a school official, it was signed.
   b) Valid documentation of area-eligibility for the school:
      • A document was provided establishing the school’s F/RP percentage (copy of State school list, print-out from a State website, or letter from a school official).
      • The document was dated after June 1, 2010.
      • If the document was a letter from a school official, it was signed.

If the sponsor did not provide sufficient documentation to verify the Tier I eligibility of the FDCH, the lack of documentation was not sufficient to find that the FDCH was misclassified. A sponsor could make a correct determination but fail to provide adequate documentation. Therefore, Optimal used the information provided by the sponsor and other sources to independently verify the Tier I eligibility of FDCHs. This was achieved by matching the FDCHs’ addresses to school boundaries (for cases where sponsors provided schools’ F/RP but failed to provide school boundaries documentation) or by matching schools to F/RP (for cases in which sponsors provided school boundaries but failed to provide F/RP for the schools). This applied only to FDCHs certified by sponsors using the school data and which could not be verified using the Census tool, the school tool, or school district contacts.

2) The Census verification algorithm required all of the following conditions to confirm Tier I eligibility:
   a) a document indicating the CBG or tract code;  
   b) a document indicating that the FDCH address was in the CBG or tract;  
   c) the address on the document corresponded to the FDCH address the sponsor provided; and  
   d) a document showing the percentage of children in households with incomes less than or equal to 185% of the FPG for the CBG, tract, or adjacent CBGs calculations.

3) The program certification algorithm required all of the following conditions to confirm Tier I eligibility:
   a) Provider submitted a valid Income Eligibility Statement (IES):
      • The provider’s name and address on the IES matched the files provided by the sponsors.
      • The IES was signed by the provider.
      • The IES was signed between July 31, 2014, and July 31, 2015.
      • A Social Security number (SSN) was provided, or the provider indicated that he or she did not have a SSN.
      • A case number was provided.
   b) The program indicated on the IES was the Supplemental Nutrition Assistance Program (SNAP), Temporary Assistance for Needy Families (TANF), Food Distribution Program on Indian Reservations, Supplemental Security Income, or Medicaid.
   c) Provider submitted valid documentation of eligibility for the program indicated on the IES:
      • The document was a certification letter or other official document.
      • The date of the document indicated the eligibility as of the date of the IES.
4) The provider income certification algorithm required the following criteria to confirm Tier I eligibility:
   a) The provider submitted an IES.
   b) The provider’s name and address on the IES matched the files provided by the sponsor.
   c) The IES was signed by the provider.
   d) The IES was signed between July 31, 2014, and July 31, 2015.
   e) A SSN was provided, or the provider indicated that he or she did not have a SSN.
   f) Acceptable documentation was provided for each item of income reported for all persons in the household with reported income.
   g) The total annual household income was equal to or less than 185% of the FPG for the household size indicated on the IES.

For determinations based on a tax return (i.e., Internal Revenue Service Form 1040), the algorithm also required that all adults listed on the IES were listed on the Form 1040 or had other acceptable income documentation.

For determinations based on income documentation other than Form 1040, the algorithm also required that:
   • The provider had to report income from family day care or indicate that this self-employment resulted in a loss or no net income. If a provider reports a loss or no net income from day care, other household income must be reported and documented.
   • A statement of provider income and expenses was prepared by a third party, receipts were provided, or the documentation indicated that the sponsor had verified the statement. If receipts for expenses were not provided, Tier I eligibility was evaluated on the basis of the provider's gross revenues from day care and other income.

Results of the Review of Sponsors’ Tiering Documentation
The following presents the results of the sponsor’s documentation review for FDCHs, a summary of the sources of misclassification, and the overall verification results for the study.

Documentation Review Results for Tier I FDCHs
Sponsors’ documents were reviewed for a total of 91 Tier I FDCHs, and 85 of them were verified (Table 3-4). Among the six FDCHs in error, none were found to have program certification errors, three were school errors, two were Census errors, and one was an income error. The Census errors involved sponsors providing school data documents that did not verify Tier I status and failing to provide Census documentation. School errors involved sponsors choosing the wrong schools when using maps of school boundaries or providing a department of education’s website printout for the wrong schools. An income eligibility error involved using the wrong household size to establish eligibility based on FPG. There were no errors using the program eligibility based on participation in SNAP, TANF, or other programs that have income limits of 185% of the FPG.

<table>
<thead>
<tr>
<th>Errors:</th>
<th># of FDCHs</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>School</td>
<td>3</td>
<td>3.3%</td>
</tr>
<tr>
<td>Census</td>
<td>2</td>
<td>2.2%</td>
</tr>
<tr>
<td>Income</td>
<td>1</td>
<td>1.1%</td>
</tr>
<tr>
<td>Tier I verified by sponsor documents</td>
<td>85</td>
<td>93.4%</td>
</tr>
</tbody>
</table>

| TOTAL Tier I REQUIRING SPONSOR DOCUMENTS | 91 | 100.0% |

SOURCE: 2015 CACFP Assessment of Sponsor Tiering Determinations. Data are unweighted.
**Documentation Review Results for Tier II FDCHs**

There were eight Tier II FDCHs that appeared to be potentially eligible for Tier I after verification procedures were completed. Upon review of sponsors’ documentation, four Tier II FDCHs were found to be in error. Sponsors had certified two of these FDCHs by using school data only. However, the verification revealed that these homes were eligible for Tier I based on Census data. The other two errors involved using the F/RP percentages for the wrong school year.

### 4. NATIONAL ERROR ESTIMATES

To provide context for the error estimates, Table 4-1 presents the total number of Family Day Care Homes (FDCHs), the number of meals, and the amount of reimbursements for the contiguous United States in fiscal year (FY) 2014, by tier and overall. In FY 2014, within the continental United States, a total of 100,044 Tier I FDCHs served 463 million meals, and an additional 17,291 Tier II FDCHs served almost 72 million meals. Total reimbursements were $711.2 million for Tier I FDCHs and $59.9 million for Tier II FDCHs. Given the large scope of the program, even a relatively modest percentage of misclassified FDCHs could result in millions of dollars in erroneous payments.

**Table 4-1. Contiguous United States FDCHs totals, FY 2014**

<table>
<thead>
<tr>
<th>TIER</th>
<th>FDCHs Number</th>
<th>Percent</th>
<th>Meals Number</th>
<th>Percent</th>
<th>Reimbursements Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tier I</td>
<td>100,044</td>
<td>85.3%</td>
<td>463,397,967</td>
<td>86.6%</td>
<td>$711,203,545</td>
<td>92.2%</td>
</tr>
<tr>
<td>Tier II</td>
<td>17,291</td>
<td>14.7%</td>
<td>71,986,004</td>
<td>13.4%</td>
<td>$59,857,240</td>
<td>7.8%</td>
</tr>
<tr>
<td>Total FDCHs</td>
<td>117,335</td>
<td>100%</td>
<td>535,383,971</td>
<td>100.0%</td>
<td>$771,060,785</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

**SOURCE:** FNS National Data Bank totals for contiguous United States FY 2014.

**Sampling Weights**

The data were weighted to make the results representative of the overall population of Tier I and Tier II FDCHs in the United States. The weights had to be adjusted due to the differences in administrative data sources. The total number of FDCHs reported across all sponsors by the States as of August 2015 was slightly different from the corresponding totals in the FNS’s National Data Bank for FY 2014. Similarly, the numbers of FDCHs on the sponsors’ lists differed from the numbers the States reported (see Appendix C). Because this assessment aims to provide estimates for FY 2014 for the United States, the base sampling weights were adjusted by post-stratification to the total number of Tier I and Tier II FDCHs in FY 2014, as reported in the FNS National Data Bank.

**National Estimates of Misclassified FDCHs**

The weighted estimates of national misclassification rates due to sponsors’ tiering determination errors for FDCHs in program year (PY) 2015 were 0.93% for Tier I, 3.74% for Tier II, and 1.34% for all FDCHs (Figure 4-2).32 Given the total number of FDCHs in the United States, this misclassification rate implies that 1,576 FDCHs were misclassified, including 935 Tier I FDCHs and 642 Tier II FDCHs.

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32 The estimates meet the Office of Management and Budget standard, which requires 90% confidence intervals plus or minus 2.5 percentage points or less. https://www.whitehouse.gov/sites/default/files/omb/assets/omb/circulars/a123/a123_appx-c.pdf.
Figure 4-2. National estimates of misclassification rates of FDCHs by tiering status

<table>
<thead>
<tr>
<th>Tier</th>
<th>Number of FDCHs</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tier I</td>
<td>1564 (1.82%)</td>
<td>2321 (2.15%)</td>
</tr>
<tr>
<td>Tier II</td>
<td>935 (0.93%)</td>
<td>1576 (1.34%)</td>
</tr>
<tr>
<td>Total</td>
<td>306 (0.48%)</td>
<td>832 (0.84%)</td>
</tr>
</tbody>
</table>

SOURCE: Weighted estimates from 2015 sample data.
NOTE: All reported estimates were calculated separately for population subgroups (Tier I and Tier II FDCHs) and for the overall sample. Due to sampling design and applied analytic and post-stratification weights, Tier I and Tier II estimates should not be summed to obtain population totals because their sum is likely to differ from the population-level estimate. This is due in part to a small sample size and a high degree of sampling variability in the estimates for Tier II FDCHs.

National Estimates of Meals Reimbursed in Error Due to Misclassification of FDCHs

For misclassified FDCHs, the number of meals reimbursed in error is the difference between the number actually reimbursed at Tier I rates and the number that would have been reimbursed at Tier I rates if they had been correctly classified. Meals reimbursed at Tier I rates that should have been reimbursed at Tier II rates resulted in overpayments; meals reimbursed at Tier II rates that should have been reimbursed at Tier I rates resulted in underpayments. Overpayments represent costs to taxpayers, while underpayments represent costs to FDCH providers.

Tier II FDCHs may claim meals for eligible children at the Tier I rates. For Tier II homes seeking reimbursement at the Tier I level for individual children, sponsors administer the eligibility determination. Sponsors determine individual child eligibility based on income eligibility forms submitted by parents to the sponsor or on other documentation that shows the child is categorically eligible for meals under federally funded child nutrition programs. Therefore, when an FDCH is misclassified, not all of the meals served are reimbursed in error. For an FDCH misclassified as Tier I, the meals they served to children who would have been individually eligible are not errors, but any meals served to children who would not have been individually eligible are errors because they were reimbursed at the incorrect (Tier I) rate. Conversely, for an FDCH misclassified as Tier II, any meals served to children deemed individually eligible are reimbursed at the correct rate, but, because all meals should have been reimbursed at Tier I rates, the meals for children not individually deemed eligible were reimbursed at the incorrect (Tier II) rate.

33 http://www.ers.usda.gov/media/1195465/fanrr22apdf00%C8%BC2_s.pdf
For FDCHs misclassified as Tier I, the exact number of meals for which each FDCH was reimbursed in error cannot be determined. If the FDCH was misclassified as Tier I, no applications for individual child eligibility would be submitted by parents. Therefore, the number of eligible children served by FDCHs is unknown, and thus the number of meals that would have been correctly reimbursed at Tier I rates cannot be determined. Therefore, to estimate the expected number of Tier I and Tier II meals for which FDCHs misclassified as Tier I would have been reimbursed if those FDCHs had been correctly classified, the average percentage of Tier I meals served at Tier II FDCHs in each of the States in the sample was used.34

The statewide proportion of meals for a specified type of meal (breakfast, lunch/supper, snack) in Tier II FDCHs that were reimbursed at the higher Tier I rate were calculated based on data from FY 2014 meal counts in the FNS National Data Bank. The percentages of meals in Tier II FDCHs reimbursed at the Tier I rate varied substantially across the States, thus highlighting the need to use separate State percentages in the computation (Table 4-3). These percentages reflect program operations, reimbursements, and types of meals served in Tier II FDCHs in different States and do not suggest misclassifications.

Table 4-3. Percentage of meals in Tier II FDCHs reimbursed at Tier I rate, by State

<table>
<thead>
<tr>
<th>STATE</th>
<th>Breakfasts</th>
<th>Snacks</th>
<th>Lunches/Suppers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arizona</td>
<td>19.4%</td>
<td>20.9%</td>
<td>24.4%</td>
</tr>
<tr>
<td>California</td>
<td>7.0%</td>
<td>6.9%</td>
<td>7.0%</td>
</tr>
<tr>
<td>Illinois</td>
<td>9.4%</td>
<td>9.3%</td>
<td>10.6%</td>
</tr>
<tr>
<td>Iowa</td>
<td>7.8%</td>
<td>7.3%</td>
<td>7.4%</td>
</tr>
<tr>
<td>Louisiana</td>
<td>62.7%</td>
<td>70.5%</td>
<td>72.1%</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>11.0%</td>
<td>10.3%</td>
<td>11.4%</td>
</tr>
<tr>
<td>Michigan</td>
<td>5.3%</td>
<td>7.1%</td>
<td>7.0%</td>
</tr>
<tr>
<td>Minnesota</td>
<td>28.0%</td>
<td>28.5%</td>
<td>28.4%</td>
</tr>
<tr>
<td>New York</td>
<td>10.7%</td>
<td>12.8%</td>
<td>13.6%</td>
</tr>
<tr>
<td>North Carolina</td>
<td>20.6%</td>
<td>27.2%</td>
<td>23.8%</td>
</tr>
<tr>
<td>Oregon</td>
<td>3.4%</td>
<td>4.2%</td>
<td>5.2%</td>
</tr>
<tr>
<td>Texas</td>
<td>3.3%</td>
<td>4.8%</td>
<td>5.6%</td>
</tr>
<tr>
<td>Washington</td>
<td>9.1%</td>
<td>8.8%</td>
<td>9.2%</td>
</tr>
<tr>
<td>TOTAL SAMPLE</td>
<td>14.8%</td>
<td>16.5%</td>
<td>16.8%</td>
</tr>
<tr>
<td>TOTAL U.S.</td>
<td>14.2%</td>
<td>15.4%</td>
<td>16.6%</td>
</tr>
</tbody>
</table>

NOTE: Total computed for the continental United States (sample universe for the assessment); Alaska, American Samoa, Guam, Hawaii, Puerto Rico, and Virgin Islands were excluded.

To estimate the meal counts by tier and type that are expected if the misclassified Tier I FDCHs had been correctly classified, the Statewide proportion (above) for each meal type was multiplied by each misclassified FDCH’s sum of the actual Tier I and Tier II meals of that type. Then, the number of meal types claimed in error at Tier I was calculated by subtracting the actual counts of Tier I meal types from the expected counts of Tier I meal types. The number of meals claimed in error by type was computed separately for the two program years (August 2014–June 2015 and July 2015) to apply the correct reimbursement rates35 later. Finally, the total Tier I meals claimed in error were computed by summing the number of meals claimed in error for each type for two program years. For FDCHs misclassified as Tier II, all meals claimed at Tier II rates would have been claimed at Tier I rates. Thus, the number of meals claimed in error equals the number of meals claimed at Tier II rates, which is the number of meals that should have been paid at Tier I rates but were not.

34 This approach replicated the previous assessments that assumed that for each meal type (breakfast, lunch or supper, and snack) the average across 12 months in the State for Tier II FDCHs provided the best predictor of the expected percentage of meals by tier for the FDCHs misclassified as Tier I. This approach takes into account variation across States, while using data with no sampling errors.
Then, the percentage of meals claimed in error by misclassified FDCHs by tier and overall were obtained by dividing the weighted number of the meals claimed in error (as described above) by the weighted number of the total meals claimed by FDCHs multiplied by 100. A ratio estimation procedure was then used to estimate the total meals reimbursed in error. For each tier and overall, the proportion of meals paid at the incorrect tier rate (from weighted sample data, as described previously) were multiplied by the actual national total count of meals (from FNS data) to estimate the total number of meals paid at the incorrect rate in the United States. To estimate the lower and upper limits for the confidence intervals of the meals paid at the incorrect rate, the lower and upper limits of the estimates by tier and overall were multiplied by the national totals (Appendix D).

The national estimates of the percentage of meals claimed in error indicated that 1% of all meals were claimed at the incorrect reimbursement rate; with 0.92% of Tier I and 1.74% of Tier II meals claimed in error (Figure 4-4). This corresponded to 5.35 million meals claimed in error: 4.29 million meals with overpayments and 1.25 million meals with underpayments. These estimates have substantial confidence intervals, especially for Tier II due to the limited sample size.36

**Figure 4-4. National estimates of the meals claimed in error due to misclassification of FDCHs**

<table>
<thead>
<tr>
<th>Meals claimed in error ( million)</th>
<th>TIER I</th>
<th>TIER II</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.8m (0.18%)</td>
<td>2.6m (3.62%)</td>
<td>1.7m (0.32%)</td>
</tr>
<tr>
<td></td>
<td>4.3m (0.92%)</td>
<td>1.3m (1.74%)</td>
<td>5.3m (1.00%)</td>
</tr>
<tr>
<td></td>
<td>7.7m (1.67%)</td>
<td>1.0m (0.00%)</td>
<td>9.0m (1.68%)</td>
</tr>
</tbody>
</table>

**SOURCE:** Weighted estimates from 2015 sample data.

**NOTE:** All reported estimates were calculated separately for population subgroups (Tier I and Tier II FDCHs) and for the overall sample. Due to sampling design and applied analytic and post-stratification weights, Tier I and Tier II estimates should not be summed to obtain population totals because their sum is likely to differ from the population-level estimate. This is due in part to a small sample size and a high degree of sampling variability in the estimates for Tier II FDCHs.

**Costs of Misclassification Errors**

The costs of misclassification errors (i.e., the erroneous payments) include overpayments to FDCHs misclassified as Tier I and underpayments to FDCHs misclassified as Tier II. For each meal reimbursed at the wrong rate due to misclassification, the cost equals the difference between the Tier I and Tier II rate. Both overpayments and underpayments are treated as costs when computing the total cost of errors.

36 In this and in previous assessments, the reported confidence intervals are truncated at zero if the actual confidence interval extends below zero because values lower than zero are not readily interpretable. Truncation could potentially be avoided by increasing the sample size for Tier II FDCHs, making estimates more precise and yielding narrower confidence intervals.
As with the counts of meals reimbursed at the incorrect rate, the percentages of reimbursements paid in error due to misclassification of FDCHs were estimated from the weighted data, and then the national total costs of misclassification errors were estimated by applying percentages to total costs reported in the FNS National Data bank. The costs of misclassification were calculated separately for breakfasts, lunches and suppers, and snacks claimed in FY 2014 (August 2014 through June 2015) and FY 2015 (July 2015). For each type of meal and program year, the cost of misclassification error was computed as the product of the number of meals claimed at the incorrect rate and the difference between the Tier I and Tier II rates for the program year. Costs were then summed across years and meal types to compute the total cost for each misclassified FDCH. The weighted total cost of misclassification errors was divided by the estimated total reimbursements to estimate the percentage of reimbursements paid in error, both by tier and overall.

Then, to calculate the total cost of misclassification, as for the total meals reimbursed in error, a ratio estimation procedure was used. For each tier and overall, the proportion of reimbursements paid in error (from sample data, as described previously) was multiplied by the national reimbursements (from the FNS National Data bank) to estimate the national cost of misclassification errors. To estimate the lower and upper limits of the costs of misclassification, the lower and upper limits of the estimates by tier and overall were multiplied by the national totals.

The estimated national percentage of reimbursements paid in error was 0.47% for Tier I FDCHs and 1.83% for Tier II FDCHs, and 0.54% for all FDCHs (Figure 4-5). The estimated national FY 2014 cost of misclassification errors was $3.37 million for Tier I FDCHs and $1.09 million for Tier II FDCHs, resulting in a total cost (overpayments plus underpayments) of $4.18 million for all FDCHs. The 90% confidence intervals for these estimates were substantial, especially for Tier II, due to the limited sample size.

**Figure 4-5. National estimates of percent of reimbursements paid in error**

![Diagram showing national estimates of percent of reimbursements paid in error](image)

SOURCE: Weighted estimates from 2015 sample data.
NOTE: All reported estimates were calculated separately for population subgroups (Tier I and Tier II FDCHs) and for the overall sample. Due to sampling design and applied analytic and post-stratification weights, Tier I and Tier II estimates should not be summed to obtain population totals because their sum is likely to differ from the population-level estimate. This is due in part to a small sample size and a high degree of sampling variability in the estimates for Tier II FDCHs.
5. COMPARISON OF RESULTS WITH PREVIOUS ASSESSMENTS

The 2015 assessment is the eleventh annual assessment of sponsors’ tiering determinations for Child and Adult Care Food Program (CACFP) Family Day Care Homes (FDCHs). The estimated improper payment rate as a percentage of reimbursements in 2015 (0.54%) is the lowest for the past 11 years (Figure 5-1). Also, beginning in 2011, there has been a downward trend in the percentage of reimbursements paid in errors (from 1.58% in 2011 to 0.54% in 2015; Figure 5-1).

Figure 5-1. Estimated national misclassification as a percentage of reimbursements, 2005–2015

![Figure 5-1](image)

The misclassification cost of $4.18 million in 2015 is the lowest but consistent with a trend of declining misclassification costs from $11.98 million beginning in 2011 to $4.18 million in 2015 (Figure 5-2).

Figure 5-2. Estimated national cost of misclassification, 2005–2015 (in millions of dollars)

![Figure 5-2](image)
In 2015, the number of meals reimbursed in error, 5.35 million, is the lowest so far, with the trend of a declining number of meals reimbursed in error from 16.53 million in 2011 to 5.35 million in 2015 (Figure 5-3).

**Figure 5-3. Estimated national number of meals reimbursed in error, 2005–2015**

NOTE: The 2005–2007 assessment reports did not provide the results for the confidence intervals.

6. **CONCLUSIONS**

The 2015 Child and Adult Care Food Program (CACFP) assessment provides the Food and Nutrition Service (FNS) with national estimates of the percentage of Family Day Care Homes (FDCHs) that were misclassified as Tier I or Tier II in the program year 2015 and the associated erroneous payments. The 2015 assessment confirmed that the overall error rate for tiering determinations was below the Office of Management and Budget (OMB) threshold of 1.5% and $10 million of program payments. The error estimates of misclassification for 2015 are somewhat lower than the estimates from prior assessments but are still within the range of sampling fluctuations and also reflect the trend of declining error rates.

In considering the implications of this assessment, it is important to acknowledge that tiering determinations are only one source of improper payments in CACFP. There are other potential sources of erroneous payments to FDCHs, including errors in determining eligibility of children in Tier II FDCHs for Tier I meals, meal-claiming errors by providers, and meal-claiming processing errors by sponsors. Furthermore, this assessment addresses FDCHs only and does not address erroneous payments to childcare centers or adult day care programs.

**Recommendations and Implications of the Assessment**

Three recommendations are offered based on the assessment process and results:

1) Sponsors’ use of certifications based on geographic eligibility, especially the Census data, should be increased to reduce sponsors’ administrative burden and errors.

2) The certification process based on geographic eligibility needs a user-friendly, web-based interface that will allow sponsors to quickly and accurately certify their FDCHs prior to conducting burdensome and error-prone school district, income, and categorical eligibility certifications.

3) Future studies should adjust the sampling design to provide more stable estimates for Tier II.
Promote Certifications Based on Geographic Eligibility

The typical certification process conducted by sponsors involves contacting school districts, departments of education, or using other websites to determine the boundaries of school attendance areas for each FDCH, and then using the State’s department of education free or reduced-price (F/RP) data to separately certify FDCHs. This certification approach is time consuming and error prone, especially if a school district or department of education does not have the web search tool to display school boundaries for a given address. In such cases, sponsors contact school districts and the State’s department of education, or sometimes use PDF maps with school boundaries to locate the school attendance area for an address, which is a burdensome process. This process takes about 10-15 minutes for each home, but could take longer if a point of contact at a school district is not readily available. Because sponsors are using school data to certify most (83.8%) of their FDCHs, this burdensome process continues to be the most utilized certification approach.

To reduce the burden on sponsors and improve the accuracy of tiering determinations, the use of Census data should be further promoted. Unlike the burdensome process of contacting school districts, the Census certifications involve the use of the web-based tool. In spite of the relative ease of use of the Census tool, the Census certification use among sponsors is still low. The percentage of FDCHs that were certified by sponsors using Census data increased since the 2014 assessment (about 7% in 2014 vs. about 27% in 2015). This suggests that FNS activities to promote the use of Census data for certifications are effective, and more sponsors are becoming knowledgeable of the Census tool. However, it was also found that some sponsors failed to match some of the FDCHs to Census data, which resulted in errors. Furthermore, based on the study results, the majority of the FDCHs can be verified by Census, and more than a third can be verified by the school data tool. Therefore, if sponsors were provided with access to geographic eligibility tools, such as those developed by FRAC, FNS, and the current study, they would be able to approve the vast majority of FDCHs for a 5-year period, eliminating the need to conduct annual reviews. Unlike determinations that are based on income or program eligibility, which have to be validated each year, determinations based on geography remain valid for 5 years. Therefore, it’s still imperative to further develop, refine, and promote the use of geographic certification tools.

Develop Interactive Web-Based Certification Tool

In order to minimize errors, geographic certification tools require a user friendly, interactive, web-based system. This is especially relevant because of the rules that allow eligibility based on the weighted average of adjacent Census Block Groups (CBGs), which was difficult for sponsors to manually calculate and could result in errors. The existing FNS and Food Research & Action Center (FRAC) web tools for Census eligibility currently do not have built-in determinations for adjacent CBGs and require a manual approach, which could be especially burdensome in some CBGs with a large number of adjacent CBGs. For both FNS and FRAC tools, users have to look through adjacent CBGs and manually calculate all possible combinations to determine whether an address is eligible or not. This manual process could involve up to 528 possible combinations of adjacent CBGs.

There are also additional usability issues with these web tools. For instance, clicking on an address entry option in the FRAC tool opens a new input window, which is not a recommended usability approach for websites. The FRAC website also uses counter-intuitive approaches for zooming or panning, which can frustrate users. The FRAC website does not provide easily accessible instructions, which are available in a Word document file that users have to download. Similarly, the FNS tool provides a counter-intuitive label for eligible areas and does not provide instructions on the website. Due to these usability issues, it was found that some sponsors made errors by misinterpreting the eligibility flags provided by the existing verification tools, which further suggests that the ease of use for the tools needs to be improved. To develop, refine, and improve the ease of use of the Census and school certification tools, future assessments should conduct qualitative and quantitative surveys of sponsors to examine which Census and school verification systems and databases they use and their views of and experiences with these
systems and databases. Describing the current certification methods and tools used by sponsors, the time and effort required by each method, and potential issues and errors associated with each method would help to determine sponsors’ specific needs for the Census and school certification systems. The results will then allow the development and refinement of the most user-friendly interface that would specifically address sponsors’ needs and resources in conducting the FDCHs certification process. Obtaining sponsors’ perspectives will also minimize potential errors involved in using and interpreting the results of Census and school certification tools.

In the process of developing the school certification tool, it’s important to acknowledge that there is no national database available for school attendance areas. Therefore, the previous studies and the current evaluation used the approach of examining F/RP eligibility among the five nearest schools within 5 miles of the FDCH. The future CACFP evaluations should consider revising this approach by obtaining school boundary files from all school districts identified as relevant for the study. However, these files would not be available from all school districts. In addition, obtaining these files would greatly increase the data collection effort and may require revisions to the OMB package. Alternatively, there are ongoing efforts conducted by other researchers to compile a national database with school boundaries. Future studies should conduct a systematic literature and document review to determine the accuracy and feasibility of using such databases for the study verification procedures, as well as for the development of the school certification tool.

These considerations highlight the importance of developing and refining web-based tools to assist sponsors with certifications using Census and school data, as well as promoting the existing tools. Promoting the web-based, interactive certification tools will allow FNS to begin transitioning from error detection to error prevention because the web-based certification tools will likely prevent most of the certification errors. Optimal proposes to assist FNS with developing, refining, and maintaining Census and school certification tools. For example, the Census and school tools developed for this study could be modified and implemented as a user-friendly, web-based interface that would allow sponsors to quickly certify most of their Tier I FDCHs individually or in batches. In addition, the study’s algorithm for establishing eligibility based on adjacent CBGs could be integrated into the existing FNS Census tool to automate this calculation. Finally, based on the relationships developed with the sampled sponsors, Optimal proposes to provide them with access to the study’s Census tool, which would further improve collaboration for the future studies because the large sponsors sampled by this study are likely to be sampled by the future studies as well.

Increasing the Sample Size
The future studies should consider increasing the sample size. The sampling design of the current study replicated the methodology used in the previous assessments of CACFP sponsors’ tiering determinations (Appendix C). Therefore, the estimates of Tier II FDCHs’ error rates and cost of misclassifications for this and the previous studies have large confidence intervals, and these estimates fluctuate from year to year. To improve stability of Tier II estimates in future studies, Tier II FDCHs need to be oversampled. This method would ensure that the sampling design and comparability to previous studies are maintained, while estimates for Tier II FDCHs would be more precise. This approach will also allow for future ad hoc analyses with respect to Tier II FDCHs. Increasing the Tier II sample size would also improve the overall error estimates because the “noise” from Tier II estimates “spills-over” to the overall estimates and increases confidence intervals for the overall estimates. In addition, if the error rates continue to decline, then future studies may need to increase the overall sample size to accurately detect declining errors.

The sampling design should also be adjusted to minimize sampling the same large sponsors every year. Some of the sampled sponsors were disgruntled during the data collection process due to them being sampled for this and other studies every year. This not only adds a burden on the sponsors but could also reduce the validity of the assessment. It’s possible that some of the small sponsors with limited staff and
resources could have higher error rates than the large sponsors, especially when large sponsors have been audited by the previous assessments and are expected to be verified again. Oversampling small sponsors could improve the accuracy of the error estimates, but it may require increasing the sample size substantially.

Additional Suggestions
Future studies should also adjust the data collection and analyses milestones to allow for more current FNS data to become available prior to conducting analyses. This would likely reduce the sampling frame differences between FNS and States’ data sources for the number of sites and sponsors. In addition, this and previous assessments focus on the program year, which does not align with the fiscal year. The program year for the studies is from August through July and covers two fiscal years, which run from October through September. The future studies should realign the program year definition to correspond to the fiscal year. This could further reduce the sampling frame differences between FNS and States’ data sources and is likely to better reflect CACFP operations.
APPENDIX A: FAMILY DAY CARE HOMES (FDCHS) VERIFICATION APPROACH

To verify FDCHs, Optimal built and annually updated Census and School verification tools that use Census and school eligibility data. The main steps involved in verifying the Tier I eligibility of FDCHs are based on the replication of the approach used by the previous Child and Adult Care Food Program (CACFP) evaluations and included the following (figure 1):

**STEP 1**

a) **Geocode** sampled FDCHs by matching with Census.gov API’s Census 2010 benchmark and Census 2010 vintage to determine latitude, longitude, the Census Block Group (CBG), and the Census tract identifier of an FDCH address.

**Identify and clean up addresses that could not be geocoded** by using the following methods to confirm and/or revise addresses:
- Google searches;
- Web searches using CDYNE, Melissa Data, and Experian services; and
- Sponsor follow-up contacts.

There is a small possibility that a correct address might not return a corresponding CBG through the Census verification algorithm. This might be due to changes in address or CBG mapping that vary from the Census benchmark. In that case, Google API\(^1\) are used to determine the latitude and longitude of the address. That latitude and longitude are then fed into Federal Communications Commission API\(^2\) to get the corresponding CBG.

b) **Match sampled FDCHs with the Child and Adult Care Food Program (CACFP)** special tabulations of CBGs, Census tracts, and adjacent Block Groups provided by the Food and Nutrition Service (FNS). These data are based on the American Community Survey Census 2009–2013 file, which provides estimates for a 5-year period and not separate estimates for each year.\(^3\)

For an FDCH whose tiering determination/redetermination was made before May 21, 2014: Tier I eligibility is based on the FDCH being located in a CBG that meets the poverty criteria of at least 50 percent of children age 12 or under residing in households at or below 185 percent of the federal poverty guidelines (FPG).\(^4\)

For an FDCH with a tiering determination/redetermination made on or after May 21, 2014: Eligibility is based on either the above criteria or based on the poverty criteria of at least 50 percent of children age 12 or under or children 18 and under residing in households at or below 185 percent of the FPG\(^5\) for the Census tract or for up to three adjacent CBGs.\(^6\)

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\(^1\) https://developers.google.com/maps/
\(^2\) www.fcc.gov/developers/census-block-conversions-api
\(^3\) This data is approximate information available to sponsors for the tiering determinations: http://www.fairdata2000.com/CACFP and http://www.fns.usda.gov/areaeligibility
\(^5\) Instructions for Determining Eligibility Based on Census Data http://www.fns.usda.gov/sites/default/files/Census%20Instructions%202014_0.pdf
• If adjacent CBGs are used, the weighted average of up to three adjacent CBGs (including the FDCH’s own CBG) must meet the poverty criteria above, and each of the adjacent CBGs included in the average must individually meet a child poverty standard of at least 40 percent. Therefore, to become eligible based on an average of adjacent CBGs, up to two adjacent CBGs would have to have more than 50 percent of eligible children each. Thus, it’s necessary to calculate the weighted average of a total of up to three adjacent CBGs, all of which have at least 40 percent of eligible children.

• 2015 TIGER/Shape files from Census.gov will be used for determining the adjacency for CBGs. Any two CBGs are considered adjacent if any portion of their boundaries are shared or if their boundaries touch each other at a node, even without a shared boundary.

• In the process of determining adjacent CBGs, CBGs from different tracts can be considered adjacent.

STEP 2

a) Identify the school district in which an FDCH is located and find schools in the school district based on the Census school district boundaries (identified in 2015 TIGER Shape file). This involves obtaining and processing school district boundary files from the Bureau of Census:

• There are up to three files of school district boundaries for each State, depending on the types of districts in the State: elementary districts—highest grade is 8 or less; secondary districts—lowest grade is 5 or higher; and unified districts—lowest grade is prekindergarten or kindergarten and highest grade is 12.

• If an area does not have a unified district, then it has one or more elementary districts within the boundary of a secondary district.

• For each FDCH address, identify the relevant unified, secondary, and elementary district based on the FDCH’s latitude and longitude coordinates.

Merge National Center for Education Statistics’ (NCES’) Common Core of Data (CCD) and States’ school lists data for school year (SY) 2014–15.

• For the verification algorithm matching FDCHs with school data, the NCES CCD master list of schools is considered the universe of schools in the United States, and NCES free or reduced-price (F/RP) percentages are used (except for SY 2014–2015). NCES data are also used to obtain the latitude and longitude for the schools.

• The State list of schools with F/RP meal percentages obtained from State agencies for SY 2015–16 are merged with the CCD data because CCD does not have these data for SY 2015 at the time of the evaluation.

Find the distance between FDCH and each school in the district (using the straight-line radius distance) for each of the 5 years from SY 2009–10 to SY 2015–16.

• Select all schools in districts where FDCHs reside.

• Drop charter schools (CHARTR=1), magnet schools (MAGNET=1), and alternative schools (TYPE= 4) because these do not have defined geographic boundaries.

• Drop schools with a grade span that does not include any of the grades from Grade 1 through Grade 12 (LEVEL = 1, 2, 3).

• Compute the straight-line distance using latitude and longitude for each remaining school. Do this for each school year because some schools might not be operational across all of the years.

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7 It is necessary to use CCD data for the F/RP meal percentages because some States did not provide this data for all schools and/or did not have IDs or school addresses for the merge. CCD is the clean data for the universe of schools in the United States.

8 Previous assessments identified some cases in which a school was identified in the CCD as a magnet school, but the school was in fact a regular school that included a magnet program. This issue will be considered if the school match appears to indicate a sponsor tiering determination error.
study years.

b) **Identify the nearest schools** (within 5 miles’ straight-line radius distance) for each elementary, middle, or secondary school within the school district for FDCHs based on a tiering date. Up to five of the nearest schools are identified. When a school district has fewer than the maximum schools for a school level (elementary, middle, or high), all of the schools at that level in the district are used. Then, identify a maximum of three nearest elementary schools (includes any Grade 1 to 5) and two middle and/or secondary schools (does not include any Grade 1 to 5).

**Match the nearest schools for each FDCH with F/RP meal eligibility data.** Match the tiering date for an FDCH to the appropriate school year data with F/RP percentages.

- For FDCHs with a tier determination date before SY 2014–2015, match schools with NCES CCD data for F/RP percentages (these data are clean and available for all States).
- For FDCHs with a tier determination date during SY 2014–2015, match schools with State data for F/RP percentages (NCES CCD data are not available for SY 2014–2015). This requires merging the NCES universe of the list of schools in 2013–2014 with Excel, PDF, and Word files provided by States. Some of these files lack IDs, others do not include the addresses for the schools, and some only include eligible schools (>=50%). Therefore, the NCES file for 2013–2014 was designated as the universe of schools and States’ files were merged and the schools not merged were assumed to have F/RP of <50 percent.

**c) Determine F/RP meal eligibility** for each of the nearest schools based on a tiering date. Determine if all, some, or none of the nearest schools meet the F/RP meal requirement for CACFP Tier I eligibility (50 percent or more students eligible for F/RP meals) for the SY based on a tiering date. If the FDCH was verified as area-eligible for Tier I based on school data for the SY matched to the tiering date, this determination will be valid even if the attendance area for the FDCH was not area-eligible in some of the SYs 2010–15, because the verification based on school data is valid for 5 years.

- **If all** of the nearest schools meet F/RP meal requirements based on a tiering date—Tier I FDCH is verified and evaluation of the FDCH is complete.
- **If some but not all** of the nearest schools met F/RP meal requirements in the tiering year — contact the school district (Step 2) to ensure that at least one of the nearest schools had the attendance area that covered the FDCH and this school was FR/P eligible.
- **If none** of the nearest schools meet F/RP meal requirements in the tiering year and the Census verification does not meet requirements or an FDCH cannot be geocoded—contact the sponsor organization (Step 3) for tiering determination documents.

For a Tier II FDCH, being verified as Tier I based on Census or school data is not a sufficient basis to determine that the individual FDCH is misclassified as Tier II. It must also be determined from sponsor

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9 Since there is no national database available for school attendance areas, the previous studies and the current evaluation used the approach of examining FR/P eligibility among the five nearest schools within 5 miles of the FDCH. The “nearest schools” approach approximates the sponsor’s determination of area eligibility, which is based on exact information about school boundaries. During the previous studies, FNS agreed that this approximation is sufficient. This is based on the assumption that the correct school attendance area for the FDCH belongs to one of the five nearest schools. If all five nearest schools are eligible, then the FDCH is verified, as it’s assumed that one of the schools has the attendance area for the FDCH. The nearest schools provide a reasonable predication of whether or not the FDCH is area-eligible for Tier I based on school catchment area.


11 The sensitivity analyses were conducted to ensure that all FDCHs that were verified by the school data were also verified using the school districts’ contacts.
documentation (Step 3) that the sponsor made an error. Thus, for Tier II FDCHs, review of sponsor
documentation supersedes the results of the school and Census match.

**STEP 3**

*If some, but not all* of the nearest schools for any level meet F/RP meal requirements, then school
districts are contacted to identify the school attendance area for the FDCHs. Three methods are used to
contact school districts:
- If the school district has an online “School Finder” function that identifies schools based on a
  home’s address, it’s used to identify the schools for all school levels for an FDCH.
- If the school district has an online map of school attendance area boundaries on its website, then
  it’s used to identify the school attendance areas for all school levels for an FDCH.
- For FDCHs located in districts without a school finder or online map, the school district
  administrative offices are contacted to identify the school attendance areas for all school levels
  for FDCHs.
- After identifying the correct school attendance areas for all school levels (elementary, middle, and
  high school), an FDCH is manually coded as verified if at least one school had 50 percent or
  more students eligible for F/RP meals in the SY of the tiering date based on NCES data or for the
  2014–2015 SY based on the State data files.

**STEP 4**

*For Tier I FDCHs that could not be verified* through Steps 1 and 2, sponsors are contacted by e-mail
and follow-up phone calls to request the following copies of the documentation on file for the most recent
tiering determination, as applicable:
- School boundary information and school F/RP percentages or other available school eligibility
documentation;
- Census data with the percentage of children in households with incomes at or below 185 percent
  of the FPG;
- Household income information application forms listing household members and their respective
  incomes; and
- Categorical eligibility information about participation in programs that confer Tier I eligibility.

*For Tier II FDCHs that appear area-eligible for Tier I based on school or Census data, and for Tier
II FDCHs that cannot be geocoded* (due to insufficient address data) the following information is
requested:
- Whether the provider’s tier status was determined or re-determined from September 2009 to June
  2015;
- Copies of all documents associated with the tiering determinations (as listed above for Tier I
  FDCHs); and
- Whether a Tier II FDCH requested to have its tiering level revaluated during this period.

Optimal verified that it has received all required documentation for each FDCH. If documentation was
missing, Optimal followed up with the sponsor to determine why and to obtain the documentation if
possible.

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12 USDA Child and Adult Care Food Program (CACFP): Assessment of Sponsor Tiering Determinations (2012 Final Report)
Figure 1. Flowchart of the tiering verification process

Sample FDCHs →
STEP 1a. Geocode FDCHs and assign CBG and Tract codes

Use Internet or contact sponsors to confirm address

Is geocode successful?

YES →
STEP 1b. Match FDCHs with the CACFP Special Tabulations of CBGs and Tracts

NO →

STEP 2a. Overlay school district boundaries

STEP 2b. Identify nearest schools in district and match with F/RP meal data

STEP 2c. Do all nearest schools (3 elementary or 2 middle/secondary) meet F/RP meal requirements?

None →

NO →

TIER I CONFIRMED by school data

All →

YES →

TIER I CONFIRMED by Census

Some →

NO →

Is the FDCH Tier II?

YES →

YES →

TIER CONFIRMED by sponsors’ data

NO

NO →

NO →

YES

NO →

YES →

TIER CONFIRMED by sponsors’ data

YES

NO

NO

NO

YES

NO

NO →

YES

THE FDCH IS MISCLASSIFIED

STEP 3. Contact school districts to get attendance areas

STEP 4. Contact sponsors for documentation

STEP 5. Review sponsors’ documents

Is the FDCHTier I eligible?

NO →

NO

YES

NO

YES

NO

YES

TIER I ELIGIBLE

YES

NO

YES

NO

YES

TIER I ELIGIBLE

NO

YES

NO

NO

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TIER I ELIGIBLE

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STEP 5
All tiering determination documents provided by the sponsor were reviewed. The team reviewed and extracted information from the documents and determined if each FDCH is correctly or incorrectly classified or if there is insufficient information to verify classification. The algorithms used in the tiering verification process replicated the methodology of the previous assessments.

Because Tier I eligibility is re-determined periodically, all types of documents must have dates appropriate to the determination date, and determination dates must be consistent with determination periods. The following rules are applied to determination periods:

- If Census or school data are used, then the FDCH determination date must be after July 2010 (Census and school data provide 5 years of eligibility).
- If provider income or program participation is used, then the FDCH determination date must be after July 2014 (income and program eligibility is re-determined each year).

If the date of determination provided by sponsors’ documents indicates that the FDCH determination period has expired, the FDCH is not verified for Tier I eligibility.

Complete documentation in any of the following categories verifies Tier I eligibility:

- **School data** documentation for any school containing any subset of Grades 1–12, which indicates the tiering date, that the FDCH address falls in the attendance area (school boundary map, a printout from a State agency website, a page from a school directory, or a signed letter from a school or school district official), and valid documentation of area-eligibility for the school’s F/RP percentage (copy of State agency’s school list, printout from a State agency website, or a signed letter from a school official). Alternative documents include:
  - A memo with the name of the school official, dated and initialed by the staff of the sponsoring organization, verifying that the FDCH’s address was within the attendance area as of the certification date and that the school met F/RP meal requirements.
  - Sufficient documentation to verify the school attendance area, so that NCES or State data could be used to verify that the school met F/RP meal requirements.

- **Census data** of the CBG code that was used by the sponsor to determine the FDCH’s eligibility, documentation that the FDCH was located within this CBG, the address on the document corresponded to the FDCH address provided by the sponsor, and a document showing the CBG meets income requirements. For an FDCH with a tiering determination/redetermination after April 21, 2014, the documentation for Census tracts and the average of up to three adjacent CBGs are also used to verify area eligibility determined by the sponsor.

- **Provider income data** that list all members of the household and all income available to the household, plus valid documentation of all income listed on the application. Income documentation must meet one of the following sets of criteria:
  - IRS form 1040 filed by the provider (or jointly with spouse), with business income from childcare reported (Schedule C is not required).
  - Documentation of provider income from day care and all reported income from other sources for all household members.
  - For the provider, income from child care must be documented by:
    - a) a signed statement or worksheet indicating receipts from child care for a specified month, if the statement is marked as verified by a sponsor staff member;
    - b) signed statements from parents indicating the amount paid for a specified period;
    - c) copies of receipts given to parents by the provider for day care payments;
    - d) IRS Schedule C signed or initialed by the provider; or
    - e) an income statement prepared by an accountant or other third party.
If provider eligibility is based on net income after expenses, expenses must be documented by:

(a) a statement or worksheet signed by the provider, the statement is marked as verified by a sponsor staff member;
(b) copies of check stubs or receipts/statements for payment of expense;
(c) an IRS Schedule C signed or initialed by the provider; or
(d) an income statement prepared by an accountant or other third party. The basis for allocation of prorated expenses (e.g., utilities) need not be documented.

For any household members other than the provider, documentation is needed only for reported income; it is presumed that if no income information is indicated on the application, the individual has zero income.

For reported income from sources other than child care, acceptable documentation includes:

a) pay stubs or similar documents indicating gross pay (not just a copy of a net paycheck);
b) a benefit letter or check for Social Security, pension, etc.;
c) a bank/investment statement showing interest and dividends; or
d) other third-party documentation sufficient to verify gross income from a source for a specified period.

Provider program participation data including an application for Tier I eligibility that lists a Supplemental Nutrition Assistance Program (SNAP)/Food Stamps, Temporary Assistance for Needy Families (TANF), or Food Distribution Programs on Indian Reservations (FDPIR) case number, plus documentation of benefit receipt (e.g., notice of eligibility or dated and signed letter from the agency) or an application for Tier I eligibility and documentation of receipt (e.g., dated and signed letter from the agency) of benefits from means-tested programs approved for use by the State Agency—Special Supplemental Nutrition Program for Women, Infants, and Children; Pre-Kindergarten Participants of the Even Start Program; Commodity Supplemental Food Program; The Emergency Food Assistance Program; Medicaid program with eligibility at 185 percent of FPG or less; F/RP meals in the National School Lunch Program and School Breakfast Program; or other programs accepted by the State Agency as proof of categorical eligibility.

The procedures for reviewing Tier I FDCHs that were not verified as Tier I by Census or school matching include the following:

- If after multiple mail, e-mail, and phone contacts no sponsor documents are provided and the sponsor confirms that no documents are available, then the Tier I determination is in error.
- If school or Census documents are provided with a tiering determination date before July 2010, then the Tier I determination is in error.
- If school documents are provided, the verification process involves verifying the following: the SY used to determine Tier I eligibility, whether at least one document contains data for the correct SY and is signed or initialed, whether the FDCH address falls within the school boundary, and whether the school has at least 50 percent of children eligible for F/RP meals.
- If Census documentation is used, then a valid CBG or tract code was provided by the sponsor; a document was provided indicating that the correct FDCH address was used to look up the CBG or tract code; and a document was provided indicating that the CBG or tract for the FDCH has at least 50 percent of children age 12 and under in households with incomes less than or equal to 185 percent of the FPG. For the FDCH with the tiering date after April 21, 2014, the documentation for Census tracts and the average of up to three adjacent CBGs are also examined.
- If program participation documentation is used, then valid Income Eligibility Statement (IES) is provided with the program being SNAP, TANF, or another program accepted for provider eligibility for Tier I in the State; a valid CACFP FDCH application form for the State is provided; the name and address on the form match the records; the form is signed by the provider; the form
is dated between June 1, 2014 and August 31, 2015; a social security number (SSN) (or an indicator that there is no SSN) is provided; and a case number is provided.

- If income documentation with an IRS 1040 is provided, then the name and address on the form match the records (unmatched addresses are verified with the sponsor); the form is signed by the provider; SSN (or an indicator that there is no SSN) is provided; the form is for the relevant year, or the sponsor indicates why older documentation was acceptable; the form contains income amount or reported zero income for provider; and household size and total income indicate a household income of less than 185 percent of FPG.

- If income documentation other than an IRS 1040 is provided, then in addition to IRS 1040 verification requirements, the following are also required: a valid CACFP FDCH application form for the State is included; the form is dated between June 1, 2014 and August 31, 2015; and there is acceptable documentation for each item of income reported on the IES documentation for each person with income; and household size and total income indicate a household income of less than 185 percent of FPG.

If the sponsor did not provide sufficient documentation to verify the Tier I eligibility of the FDCH, the lack of documentation is not necessarily sufficient to find that the FDCH was misclassified. A sponsor could make a correct determination but fail to provide adequate documentation. Therefore, Optimal uses the information provided by the sponsor and other resources to independently verify the Tier I eligibility of FDCHs by matching the addresses to school boundaries for cases in which sponsors provided schools’ FR/P but failed to provide school boundaries documentation, or provided school boundaries but failed to provide FR/P for the schools.

The procedures for reviewing Tier II FDCHs that could not be geocoded or were verified as Tier I by Census or school matching include the following:

- If there is no application for Tier I and no sponsor re-determination between September 2009 and June 2015, then Tier II is verified.

- If there was an application for Tier I during a year when the FDCH was area-eligible and the sponsor did not act on the application, then the FDCH is considered misclassified.

- If the sponsor reviewed eligibility for Tier I during a year when the FDCH was potentially area-eligible (based on the school or Census data match), and the sponsor’s documentation confirms that the FDCH was not area-eligible for Tier I, then Tier II is verified.

- If the sponsor reviewed eligibility for Tier I during a year when the FDCH was potentially area-eligible (based on the school or Census data match) and the sponsor documentation confirms that the FDCH was area-eligible for Tier I, then the FDCH is misclassified.

These criteria for Tier II FDCHs assume that the sponsor was expected to consider area-eligibility whenever an FDCH requested a tiering determination, even when the FDCH submitted an application for Tier I based on provider income or program participation. For Tier II FDCHs, reviewed sponsor documentation supersedes the results of the school match and verifies the Tier II determination if the FDCH was area-eligible based on school match, but the correct school attendance area documented by the sponsor indicated that it was not.

**QUALITY ASSURANCE**

Optimal conducted its standard quality control procedures while developing the sampling files, compiling the meals data, and obtaining and reviewing sponsors’ documents. All data requests, received data files, and data management procedures that were used to compile the data file from different data sources were checked by multiple reviewers. Optimal also made appropriate and feasible checks to ensure the integrity of the documentation obtained from sponsors. Any missing documents or inconsistencies in documents
were resolved by contacting sponsors. In addition, all data analyses and iterations of the report were checked by independent reviewers.

OUTCOME OF THE VERIFICATIONS
For this assessment, as in previous assessments, Tier I eligibility was confirmed using the Census verification tool, school verification tool, and school district contacts, followed by the review of sponsors’ documents (table A-1):

1. Census tool verified the majority of Tier I FDCHs (61.9%).
2. Then, the school verification was confirmed if the school data indicated that all of the nearest schools were area-eligible (11.1%).
3. If the school match indicated that “some” of the nearest schools were area-eligible or there were no schools nearby, Optimal conducted school district website searches or contacted school districts to verify FDCHs (11.5%).
4. Finally, for the 91 Tier I FDCHs not verified as Tier I using Census and school data or school district contacts, tiering determination documentation from the sponsors was requested.

<table>
<thead>
<tr>
<th>Source of Determination</th>
<th># of FDCHs</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tier 1 verified by Census tool</td>
<td>362</td>
<td>61.9%</td>
</tr>
<tr>
<td>Tier 1 verified by school tool</td>
<td>65</td>
<td>11.1%</td>
</tr>
<tr>
<td>Tier 1 verified by school district contacts</td>
<td>67</td>
<td>11.5%</td>
</tr>
<tr>
<td>Sponsor documents required</td>
<td>91</td>
<td>15.6%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>585</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

SOURCE: 2015 CACFP Assessment of Sponsor Tiering Determinations. Data are unweighted.

The school and Census matches using the verification tools streamlined the process of verifying sponsor tiering determinations and greatly reduced the burden on the sponsors. Of the Tier I FDCHs independently verified as Tier I, the largest proportion was verified using Census only (37.3%), some by school data only (11.1%), and others by both of these sources (24.6%) (table A-2). Overall, 61.9 percent were verified by Census and 35.7 percent by school data. An additional 11.5 percent were verified by district contacts, and sponsor documentation was needed for 15.6 percent of the Tier I FDCHs. Noteworthy, out of 362 Tier I FDCHs verified by Census data, 54 (14.9%) were verified by using the rule of adjacent CBGs or Census tracts. This suggests that the new criteria for Census eligibility applied to a small proportion of homes, but this proportion is likely to increase in the future as more homes will be certified and re-certified by sponsors using the new Census criteria. Since FDCHs are certified by Census for 5 years, in the next 3 years all FDCHs will have to be re-certified by sponsors using the new Census eligibility criteria of adjacent CBGs or Census tracts.
### Table A-2. Detailed Tier I verification results by source of determination

<table>
<thead>
<tr>
<th>Source of Determination</th>
<th># of FDCHs</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Census verification</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Census PASS TOTAL</td>
<td>362</td>
<td>61.9%</td>
</tr>
<tr>
<td>Adjacent CBGs SFSP eligible</td>
<td>1</td>
<td>0.2%</td>
</tr>
<tr>
<td>CBG CACFP eligible</td>
<td>308</td>
<td>52.6%</td>
</tr>
<tr>
<td>Tract CACFP eligible</td>
<td>48</td>
<td>8.2%</td>
</tr>
<tr>
<td>Tract SFSP eligible</td>
<td>5</td>
<td>0.9%</td>
</tr>
<tr>
<td><strong>CENSUS FAIL</strong></td>
<td>223</td>
<td>38.1%</td>
</tr>
<tr>
<td>No schools nearby</td>
<td>152</td>
<td>26.0%</td>
</tr>
<tr>
<td>No schools verified</td>
<td>62</td>
<td>10.6%</td>
</tr>
<tr>
<td>Some but not all schools verified</td>
<td>162</td>
<td>27.7%</td>
</tr>
<tr>
<td>SCHOOL PASS (All schools verified)</td>
<td>209</td>
<td>35.7%</td>
</tr>
<tr>
<td><strong>SCHOOL FAIL TOTAL</strong></td>
<td>376</td>
<td>64.3%</td>
</tr>
<tr>
<td>Tier 1 verified by Census only</td>
<td>218</td>
<td>37.3%</td>
</tr>
<tr>
<td>Tier 1 verified by school only</td>
<td>65</td>
<td>11.1%</td>
</tr>
<tr>
<td><strong>Overall Verification</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tier 1 verified by Census and school</td>
<td>144</td>
<td>24.6%</td>
</tr>
<tr>
<td>Tier 1 verified by school district contacts</td>
<td>67</td>
<td>11.5%</td>
</tr>
<tr>
<td>Sponsor documents required</td>
<td>91</td>
<td>15.6%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>585</td>
<td>100%</td>
</tr>
</tbody>
</table>

**SOURCE:** 2015 CACFP Assessment of Sponsor Tiering Determinations. Data are unweighted.

The sponsor documentation was requested for eight Tier II homes that appeared to be Tier I eligible based on Census data, school data, or school district contacts (table A-3).

### Table A-3. Overall Tier II verification results by source of determination

<table>
<thead>
<tr>
<th>Source of Determination</th>
<th># of FDCHs</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tier 2 verified by Census or school tools</td>
<td>48</td>
<td>64.0%</td>
</tr>
<tr>
<td>Tier 2 verified by school district contacts</td>
<td>11</td>
<td>14.7%</td>
</tr>
<tr>
<td>Sponsor documents required</td>
<td>8</td>
<td>10.7%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>75</td>
<td>100%</td>
</tr>
</tbody>
</table>

**SOURCE:** 2015 CACFP Assessment of Sponsor Tiering Determinations. Data are unweighted.

### Overall Verification Results for the Sample

The assessment confirmed sponsor tiering determinations for 650 FDCHs (98.4%). The Tier I FDCHs verified by the study included (table A-4):

1. 33 percent that were verified by Census only.
2. 9.8 percent were verified by using school data only (all of the nearest schools were area-eligible).
3. 21.8 percent were verified by both Census and school data.
4. 10.2 percent were verified using school district contacts.
5. 12.9 percent were verified using sponsors’ documentation.
6. 0.9 percent were found to be in error.

In addition, 10.7 percent of Tier II FDCHs were verified as Tier II by Census and school matches (8.0%), school districts contacts (2.1%), or sponsors documents (0.6%), and 0.6 percent were found to be in error (table A-4).
## Table A-4. Final results of tiering verification

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tier 1 verified by:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Census only</td>
<td>218</td>
<td>33.0%</td>
</tr>
<tr>
<td>School only</td>
<td>65</td>
<td>9.8%</td>
</tr>
<tr>
<td>Census and school</td>
<td>144</td>
<td>21.8%</td>
</tr>
<tr>
<td>School districts</td>
<td>67</td>
<td>10.2%</td>
</tr>
<tr>
<td>Verified by sponsor documents</td>
<td>85</td>
<td>12.9%</td>
</tr>
<tr>
<td>TIER 1 ERROR</td>
<td>6</td>
<td>0.9%</td>
</tr>
<tr>
<td>Tier 2 verified by:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Census and school</td>
<td>53</td>
<td>8.0%</td>
</tr>
<tr>
<td>School districts</td>
<td>14</td>
<td>2.1%</td>
</tr>
<tr>
<td>Sponsor documents</td>
<td>4</td>
<td>0.6%</td>
</tr>
<tr>
<td>TIER 2 ERROR</td>
<td>4</td>
<td>0.6%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>660</td>
<td>100%</td>
</tr>
</tbody>
</table>

SOURCE: 2015 CACFP Assessment of Sponsor Tiering Determinations. Data are unweighted.
APPENDIX B: DATA COLLECTION MATERIALS

1. Letter from Optimal to the State Agencies
2. Instructions to Upload Files on the Dropbox Website
3. Letter from Optimal to the Sponsors
4. CACFP Brochure
5. Letters of Support for Sponsors
6. MOU for Sponsors
7. Letter from Optimal to Sponsors for 2nd Mailing
8. Sampled FDCHs Template for 2nd Sponsor Mailing
9. Monthly Meal Counts Template for 2nd Sponsor Mailing
10. Email from Optimal to Sponsors for 3rd Mailing
11. FDCHs Tiering Verification Template for 3rd Mailing
Dear <Name>:

The USDA Food and Nutrition Service (FNS) needs your agency’s help for the 2015 Assessment of Sponsor Tiering Determinations of Child and Adult Care Food Program (CACFP). As required by the Improper Payments Information Act, FNS conducts this assessment each year to estimate the accuracy of tiering determinations conducted by CACFP sponsors for family day care homes (FDCH). FNS must report to Congress an estimate of the FDCHs that are misclassified as Tier I or Tier II. Optimal Solutions Group, LLC (Optimal) is conducting the 2015 assessment for FNS.

As explained in the enclosed brochure, the sponsors in your state along with 14 other states have been randomly selected to represent all CACFP sponsors in this year’s assessment. USDA/FNS and Optimal need your participation to assure that this assessment accurately represents the integrity of CACFP. Your participation is crucial to ensure scientifically valid findings.

Please provide the following information by **November 25, 2015**:

1. A list of CACFP sponsors of FDCHs in your state, including sponsor name, address, telephone number, email, and the number of FDHCs sponsored by tier status (Tier I and Tier II). This information will serve as the sampling frame to select sponsors for the assessment.

2. A list of schools in the state with each school’s percentage of students approved for free or reduced-price (F/RP) meals in 2014-15 school year. State CACFP agencies are required to provide this list to sponsors by February 15 of each year. This information will assist in determining the accuracy of sponsors’ tiering determinations of FDHCs.

The information could be provided in any form and format most convenient for you and your agency. The list could be mailed, faxed, emailed, or uploaded at:
Optimal will not reveal the identities of participating sponsors or selected FDCHs to USDA/FNS. Information provided by your agency will be kept confidential, to the extent provided by law, and results will be reported only at the aggregate level.

We thank you in advance for your time and cooperation in this important study. If you have any questions about the study, please feel free to:

- Call the helpline at (toll-free) 1-844-884-9753 and (toll) 240-473-2742
- Send an e-mail to Optimal at CACFP@optimalsolutionsgroup.com, or
- Send an e-mail to FNS at veronica.uzoebo@fns.usda.gov

Sincerely,

Mark Turner, Ph. D.
Project Director
Upload Files on the Dropbox website

1. Sign in to the Dropbox website.
   
   URL: https://www.dropbox.com/home;
   
   LOGIN: cacfp@optimalsolutionsgroup.com;
   
   PASSWORD: cacfpdropbox.

2. Click the Upload button from the very top of the window.

   ![The upload button]

3. A window will appear. Click the Choose File button and then select the file on your computer that you'd like to add to your Dropbox.

4. Choose as many files as you like, and then click the Start Upload button.

The window will disappear, your files will start uploading, and you'll be shown a progress indicator. That's it, you've added files to your Dropbox!

Note: Each file you upload through the website must be 10 GB or less. For even larger files, use the desktop application or mobile app, which don't have this limit.
Dear <Name>:

The USDA Food and Nutrition Service (FNS) needs your help for the 2015 CACFP Assessment of Sponsor Tiering Determinations. FNS collects information each year to estimate the accuracy of tiering determinations by CACFP sponsors for family day care homes, as required by the Improper Payments Information Act. Optimal Solutions Group LLC is conducting the 2015 assessment for FNS. You may have heard about this assessment from FNS email. I am writing to explain the assessment and to ask you to participate.

As explained in the enclosed brochure, you are one of 53 sponsors nationwide that have been randomly selected to represent all CACFP sponsors in this year’s assessment. Your participation is crucial to ensure scientifically valid findings.

In brief, here’s what we ask you to do by January 25, 2016:

1. Read and sign the enclosed Memorandum of Understanding (MOU), which explains the requirements of the assessment and how your data will be protected and used. Please keep one signed copy of the MOU for your own records. Return the MOU to Optimal using the enclosed pre-paid envelope.

2. Compile a list of all family day care homes (FDCH) that you sponsor, including their name, street address (no PO Boxes), city, state, zip code, Tier I/Tier II status, method used for tiering determination, and most recent tiering determination date BEFORE AUGUST 2015. The information could be provided in any form and format most convenient for you and your agency. The list could be provided by:

   i. Mail: Optimal Solutions Group, LLC; Attn: CACFP Project Manager; 5825 University Research Court, Suite 2800; College Park, MD 20740 USA
   ii. Fax: 301-985-3760
   iii. E-mail: CACFP@OptimalSolutionsGroup.com
   iv. Uploading at Dropbox: URL: https://www.dropbox.com/home; LOGIN: cacfp@optimalsolutionsgroup.com; PASSWORD: cacfpdbx. See the attached instructions.
v. Sending the list on a CD or on paper in the enclosed pre-paid envelope.
vi. Using the attached Excel file “FDCH Sponsor Chart” to manually enter the required information, and emailing the completed Excel file or uploading to Dropbox.

Once we receive your list of FDCHs, we will select a sample of about 11 homes that you sponsor. Then, we will send you the list of homes and ask for their counts of meals approved for reimbursement for August 2014 through July 2015. Optimal will attempt to verify the tier status of each home using Census and school information. About a month after we receive your meal counts, we will let you know if we are not able to verify the Tier I eligibility for any of your sampled homes and will ask you to send us the documentation of tiering determination for these homes.

We will not contact family day care homes.

We will not reveal the identities of participating sponsors or selected family day care homes to USDA/FNS. Information provided by you will be kept confidential, to the extent provided by law, and results will be reported only at the national level.

Section 305 of the Child Nutrition Reauthorization Act (CNR) requires participation in assessment and evaluation studies conducted on behalf of USDA/FNS. However, in recognition of your time and effort, we will provide a $110 honorarium to you after completing all parts of the assessment and an additional $150 if you meet all of the deadlines specified during each mailing.

In this packet, you will also find letters of support for the CACFP Assessment of Sponsor Tiering Determinations from the CACFP Sponsors Forum and The CACFP Sponsor’s Association. These organizations recognize the importance of documenting the integrity of the CACFP. USDA/FNS and Optimal need your participation to assure that this assessment fairly and accurately represents the integrity of the CACFP. We thank you in advance for your time and cooperation in this important study. If you have any questions about the study, please feel free to call the toll-free help line at 1-844-884-9753, or send an e-mail to CACFP@Optimalsolutionsgroup.com.
Sincerely,

Mark Turner  
Project Director

Enclosures:
1. Program Assessment Brochure  
2. Letters of Support  
3. Memorandum of Understanding  
4. Instructions for using Dropbox website  
5. Envelope for returning documents/data
Frequently Asked Questions

When do I get the honorarium?

» Optimal will send you a check when we receive the requested information. You will receive $110 if you provide all of the requested data. If you meet all of the deadlines, you will receive an additional $150.

What if all my information is on paper and I can’t send you a data file?

» We like to get EXCEL or delimited text (CSV or tab-delimited) files because it’s less work for us! We can also accept WORD files. But if all you have is paper, you can enter the information using the template on our secure website or mail it to us and we will compile a file.

If I participate once, do I have to do it again?

» Each year, an independent sample of sponsors and homes is selected for assessment. If you are a large sponsor, there is a chance you will be selected in multiple years. It’s important that you participate!

Will Optimal contact the selected homes?

» NO. We will obtain all of the information for the Assessment from you.
About the Assessment

Each year, the USDA Food and Nutrition Service (FNS) is required to report to Congress the percentage of CACFP family day care homes that are misclassified as Tier I or Tier II, and the resulting improper payments.

This year, Optimal Solutions Group, LLC will be conducting the assessment.

Error rates are low in the CACFP!

In 2012, only 1.77% of homes were misclassified and 1.09% of payments were associated with errors.

CACFP Family Day Care Homes 2012

CACFP provides over $782 million in meal benefits annually, and so the Improper Payments Information Act of 2002 requires continued measurement of error rates.

The study of CACFP tiering determinations has become easier! Sponsors can now upload their files to a secure website. Sponsors will only be able to view their own data. You can also download templates for entering your data or to view items included in each mailing.

Your Role in the Assessment

You are one of 60 sponsors nationwide that have been randomly selected this year to represent all CACFP sponsors. Your participation is crucial to ensure scientifically valid findings.

Optimal will not visit you or intrude on your operations. We will provide you with a secure website where you can upload files. We’ll also provide prepaid envelopes for mailing. You will receive up to $260 honorarium for your effort.

Optimal will collect the following from Sponsors:
1. Signed Memorandum of Understanding. This document confirms your participation.
2. List of homes that you sponsor, tiering status, method used, most recent tiering determination date that was applicable between August 2014 and July 2015. This information is needed so that we can draw a sample of your homes for the Assessment and begin verifying their status.
3. Meal counts for the sampled homes. We will send you the list of sampled homes. For each selected home, we will need the monthly counts of approved Tier I and Tier II breakfasts, snacks, and lunches/dinners for the period from August 2014 to July 2015. Use our secure website or mail us the information.
4. Certification documents. We will let you know if we were unable to verify a home and need more information from you. We anticipate that most homes can be verified as Tier I based on Census or school information, so few homes will need a follow-up.

Due dates vary depending upon when you receive our request. Deadlines will be included with each request.

What should you do next?

First, read and sign the Memorandum of Understanding. This is an important document that tells us that you understand:

a) The requirements of the assessment,
b) The honorarium that you will receive for completing the assessment, and
c) How your data will be protected and used.

Sign both copies, keep one for yourself, and return one copy in the envelope provided.

Second, compile a list of all family day care homes that you sponsor. This list should include all homes that you currently sponsor, regardless of whether they received reimbursements for the most recent month.

For each home, include: name of home, street address (no PO boxes), Tier I or Tier II status, method used to determine tiering, and most recent determination date.

Enter data or upload it in a WORD or EXCEL file using our secure website. If you prefer to mail the data, use the prepaid envelope.

Third, let us know if you have questions. We want to work with you to reduce your burden and to make this a successful assessment! We can be reached at:
1-(844)-884_7753
Or
CACFP@Optimalsolutionsgroup.com
Dear Colleague,

I am writing on behalf of the National CACFP Sponsors Forum to encourage you to participate in the annual CACFP Program Assessment of Sponsor Tiering Determinations. You are one of approximately 60 sponsors that have been randomly selected to participate in this study.

As you may know, USDA must report to Congress an estimate of the percentage of family day care homes that are misclassified as Tier I or Tier II, and the resulting improper payments. Optimal Solutions Group, LLC (Optimal) will be conducting the CACFP Program Assessment of Sponsor Tiering Determinations. Optimal has worked cooperatively with the National CACFP Sponsors Forum to minimize the burden placed on sponsors and homes in order to produce accurate, unbiased results.

The assessment will not involve on-site visits to sponsors to review their tiering documentation. Instead, the tiering status of most the homes selected will be verified independently only using census information or school eligibility. If Optimal is unable to verify tiering status for the selected homes, you will need to provide additional documentation to support the tier classification. You will receive an honorarium in recognition of your time and effort.

This annual study is important—it has helped establish the integrity of the CACFP. The National CACFP Sponsors Forum encourages you to participate in this study. Remember, you are one of only a small number of sponsors across the country randomly selected to represent all CACFP sponsors.

Thank you in advance for your participation in this study.

Sincerely,

President
National CACFP Forum Board
Dear Colleague,

The Improper Payments Information Act of 2002 (Public Law 107-300) requires Federal agencies to determine the amount of erroneous payments in Federal programs and to periodically conduct detailed assessments of vulnerable program components. The CACFP Program Assessment of Sponsor Tiering Determinations is a program assessment developed to produce a national estimate of the share of CACFP day care homes that are misclassified into the wrong reimbursement tier. Similar studies to this one have been conducted in recent years and found a very low error rate of misclassifications. Good news for CACFP!

It is vitally important that we continue to demonstrate that CACFP meets the goals of the program with a high degree of integrity. One way the program accomplishes this milestone is through the results of this year’s CACFP Program Assessment of Sponsor Tiering Determinations, which we are confident will once again show a low error rate of misclassifications resulting in improper payments.

The National CACFP Sponsors Association (NCA) is very pleased that Optimal Solutions Group, LLC and USDA will use a process that minimizes the burden to the sponsors who participate. Some improvements to the procedure first made in 2008 include:

- No on-site reviews
- Verification of the tier status by first using census information and school eligibility, requiring only that you supply names, addresses, and tiering dates of the selected group.
- Requesting additional documentation only if this information does not support the tier classification, which would typically be the case if the provider was classified for Tier I based on household size and income.
- An honorarium paid to participating sponsors for their time and effort.
- Reporting only misclassifications and the resulting improper payments and not including procedural errors.

The NCA Board of Directors encourages you to participate in this important study and thanks you in advance for your cooperation. We will post its results on our website when they are published.

Sincerely,

Blake Stanford,
President
The National CACFP Sponsors Association (NCA)
August 18, 2014

Dear Colleague,

I am writing to you on behalf of the Child Care Food Program Roundtable to encourage you to participate in the annual CACFP Program Assessment of Sponsor Tiering Determinations. It is vitally important that we continue to demonstrate that the CACFP is meeting the goals of the program. The CCFP Roundtable is pleased that Optimal Solutions Group, LLC (Optimal) and the USDA will be conducting this assessment through a process that minimizes the burden to the sponsors that participate.

The assessment will not involve on-site visits to sponsors to review their tiering documentation. Instead, the tiering status of most of the homes selected will be verified independently using census information or school eligibility. If Optimal is unable to verify tiering status for the selected homes, you will need to provide additional documentation to support the tier classification. You will receive an honorarium in recognition of your time and effort.

The CCFP Roundtable encourages you to participate in this important study and thanks you in advance for your cooperation. Remember, you are one of only a small number of sponsors across the country randomly selected to represent all CACFP sponsors.

Sincerely,

Paula James, Chair
CCFP Roundtable Advisory Committee
MEMORANDUM OF UNDERSTANDING BETWEEN
OPTIMAL SOLUTIONS GROUP LLC AND
«Sponsor_Name», «State»

This MEMORANDUM OF UNDERSTANDING is entered into by «Sponsor_Name» (SPONSOR) and Optimal Solutions Group LLC (Optimal).

A. PURPOSE OF AGREEMENT:
Optimal and SPONSOR hereby agree to the terms of an exchange of information between SPONSOR and Optimal. The USDA Food and Nutrition Service (FNS) has contracted with Optimal to conduct the CACFP Program Assessment of Tiering Determinations (the Assessment). This annual Assessment is required by the Improper Payments Act of 2002. The sampling approach used by the Assessment provides an alternative to comprehensive federal reporting requirements. Section 305 of the Child Nutrition Reauthorization Act (CNR) requires participation in assessment studies on behalf of USDA/FNS.

For Optimal, this agreement assures that the SPONSOR consents to participate and understands the requirements and honorarium for participating in the study.

For SPONSOR, this agreement provides assurance that information provided to Optimal will be safeguarded and used only for specific research purposes directly connected to the administration of the CACFP. None of the information provided by SPONSOR to Optimal will be released in a way that will identify SPONSOR or individual homes to USDA or any third party, unless required by law.

B. OPTIMAL AGREES TO:
1. Provide clear instructions to SPONSOR for sending information to Optimal.
2. Provide a toll-free telephone number, dedicated e-mail address, and secure website for SPONSOR to use when contacting Optimal.
3. Provide timely feedback, within 3 business days of receipt, if Optimal is unable to read a data file, fax, or other document, or if Optimal deems the data incomplete.
4. Provide a $110 honorarium to SPONSOR in recognition of the effort of participating in the study. Optimal will provide an additional $150 honorarium if SPONSOR meets all specified deadlines.

C. SPONSOR AGREES TO: Provide the following to Optimal:
List of family day care homes. SPONSOR will provide a list of all homes under sponsorship as of August 2015, regardless of whether the home received CACFP reimbursements for July 2015. The list must include the following data elements:
• Name of home or name of provider
• Street address (not PO Box) of home including city and zip code
• Tier I or Tier II status as determined by SPONSOR
• Method used to determine tiering status
• Most recent tiering determination date for the home that was applicable between August 2014 and July 2015.
SPONSOR will provide this information in any form and format most convenient for them, such as emailing the requested information in a WORD or EXCEL file to CACFP@optimalsolutionsgroup.com, sending it to Optimal using the pre-paid envelope provided by Optimal, using Drop Box site with the instructions provided, or entering the data using the EXCEL template provided by Optimal.

**Monthly meal counts for selected homes.** Optimal will select a sample of 11 homes from the list that SPONSOR provides and will send the list of sampled homes to SPONSOR. For each sampled home, SPONSOR will provide to Optimal monthly counts of meals approved for reimbursement for the twelve-month period from August 2014 through July 2015. For sampled FDCH whose tiering status was redetermined between 8/1/2014 and 7/31/2015, SPONSOR will provide the tiering status, date, and method used for BOTH the redetermination and the previous determination.

2. **Documentation of tiering determination.** Optimal will attempt to independently verify the Tier I eligibility of the selected homes using Census and school data. If Optimal is unable to verify Tier I eligibility for a home, Optimal will ask SPONSOR to provide copies of the complete documentation of tiering determination for that home.

**D. HONORARIUM:**
Optimal will pay an honorarium to SPONSOR in recognition of the expected costs and effort of participating in the Assessment. The amount of the honorarium is $110 payable upon receipt of the final data (documentation of tiering determination) or when SPONSOR is notified that no further data are needed. SPONSOR will receive an additional $150 if they meet all of the specified deadlines for submitting information to Optimal. Each deadline will be clearly specified in the letter from Optimal requesting the information.

Please tell us who we should make honorarium checks payable to: ____________________________________________

**E. DISCLOSURE OF INFORMATION AND PROTECTION OF CONFIDENTIALITY:**
Optimal will keep all information provided by SPONSOR confidential, to the full extent allowed by law, and will use the information only for the purposes of the Assessment. Optimal will use the data to prepare a final Assessment report, in which all data will be reported in an aggregated form and information cannot be linked to individual sponsors or homes. The information provided by SPONSOR under this agreement will be protected against unauthorized access or disclosure:

a) The information subject to this agreement shall be used only to the extent necessary to assist in the valid needs for this specific Assessment and shall be disclosed only for the purposes as defined in this agreement.

b) Optimal will not use the information for any purposes not specifically authorized under this agreement.

c) All members of the Optimal project team with access to data provided by sponsors will sign data confidentiality agreements. Data will be stored in locked cabinets or password-protected files.

d) Optimal will not identify participating sponsors, providers, or the location of providers in any publications or data files provided to the Food and Nutrition Service, USDA.

e) Under these restrictions, Optimal will provide data files to FNS, which plans to use the files to...
replicate the research and to release a public-use data set. Non-FNS users will be asked to sign a pledge that they will not combine the public-use data with other data in a way that may identify sponsors or providers.

F. DURATION OF AGREEMENT
The confidentiality provisions of this agreement shall remain in effect indefinitely. All other provisions shall be in effect for one year from the date of signature.

PRINCIPAL CONTACTS:

Optimal Contact
Mark Turner, Project Director
Optimal Solutions Group, LLC
5825 University Research Court
Suite 2800
College Park, MD 20740
Phone: 1-844-884-9753
FAX: 301-985-3760
E-Mail: CACFP@Optimalsolutionsgroup.com

SPONSOR Contact
Name: ________________________________
Address: ________________________________
City, State, Zip: ________________________________
Phone: ________________________________
E-Mail: ________________________________

SIGNATURE ___________________________ DATE __________ SIGNATURE ___________________________ DATE __________
Dear [SPONSOR]:

On behalf of the Food and Nutrition Service (FNS) and Optimal, I want to thank you for agreeing to participate in the 2014 CACFP Assessment of Sponsor Tiering Determinations. Your participation is crucial to ensure scientifically valid findings.

Enclosed you will find two different types of forms, which need to be completed by March 28, 2014.

1. The first form is the Excel file with the list of the CACFP family day care homes under your sponsorship that we have selected for this year’s assessment. Please read the instructions and provide the updated address and relevant tiering information.

2. The second form is for monthly meal counts. We have included a separate form for each selected home. Please provide the following information for each FDCH:

   • **Monthly counts of meals** approved for reimbursement during August 2014-July 2015. We need separate counts of breakfasts, lunches or suppers, and snacks, broken down between Tier I-eligible and Tier II-eligible meals.

   • If meal counts for a home are not available for any of the 12 specified months, **please provide an explanation** on the list of homes.

   • Although, we have included the Word file to assist you in tabulating the monthly meal counts of selected providers, you may provide us with your reports, documents, or copies of approved claims that contain the requested information, in any form or format convenient for you. Please, see instructions on the Word file.

The list could be provided by:

i. E-mail: CACFP@OptimalSolutionsGroup.com

ii. Uploading at Dropbox: URL: https://www.dropbox.com/home; LOGIN: cacfp@optimalsolutionsgroup.com; PASSWORD: cacfpdropbox. See the enclosed instructions. The Dropbox account is monitored regularly and files will be removed as soon as they have been uploaded.

iii. Fax: 301-985-3760

iv. Mail: Optimal Solutions Group, LLC; Attn: CACFP Project Manager; 5825 University Research Court, Suite 2800; College Park, MD 20740 USA

v. Sending the list on a CD or on paper in the enclosed pre-paid envelope.

Please submit all completed forms by March 28, 2016.
Once again, we remind you that Optimal will not contact family day care homes, and we will not reveal the identity of homes selected for the assessment.

Thank you in advance for your time and cooperation with the assessment. As specified in the Memorandum of Understanding, we may contact you for information again in about one month. If you have any questions, please call us toll-free at 1-844-884-9753, or send an e-mail to CACFP@Optimalsolutionsgroup.com. Your agency will receive a check for $110 at the end of your data collection and an additional $150 if you meet all of the specified deadlines.

Sincerely,

Mark Turner
Project Director

Enclosures:
1. Selected Family Day Care Homes
2. Monthly meal count form
3. Dropbox instructions
Instructions: The table below lists the family day care homes that have been selected for the 2015 CACFP Assessment of Sponsor Tiering Determinations. Based on information you provided earlier, we have completed Columns for you:

- Please, verify completed information, especially whether each FDCH is a Tier I or Tier II home and the date of the most recent tiering determination that was done BEFORE AUGUST 1, 2015.

- In Column M, indicate whether or not you conducted a tiering redetermination for that FDCH FOR ANY REASON between 8/1/14 and 7/31/15. If your response is “No,” you do not need to complete Columns N thru S for that FDCH.

- Only if you responded “Yes” in Column M, complete Columns N thru S for the FDCH. We need the tiering information that was in place PRIOR to the tiering information provided in Columns K and L.

<table>
<thead>
<tr>
<th>sponsor ID</th>
<th># FDCH ID</th>
<th>Provider First Name</th>
<th>Provider Middle Name</th>
<th>Provider Last Name</th>
<th>Address</th>
<th>City</th>
<th>State</th>
<th>ZipCode</th>
<th>RECENT TIERING INFORMATION</th>
<th>PREVIOUS TIERING INFORMATION</th>
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<td>Tier Determination Date</td>
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<td>FDCH 8</td>
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<td>FDCH 10</td>
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</table>
Instructions: For each of the 11 homes below, please provide the number of approved CACFP meals for each month from August 2014 through July 2015. Provide separate counts for Tier I and Tier II meals and for each type of meal: breakfast, lunch or supper, and snacks.

At the end of the table for each home, if the number of months for which meal claims are provided is less than 12 months, explain in the space provided.

If you prefer, you could send us reports, documents, or copies of approved claims that contain the requested information, in any form or format convenient for you.
<table>
<thead>
<tr>
<th>MONTH</th>
<th>TIER I ELIGIBLE MEALS</th>
<th>#</th>
<th>TIER II ELIGIBLE MEALS</th>
<th>#</th>
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<td>August, 2014</td>
<td>Breakfast:</td>
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<td>Lunch or Supper:</td>
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<td>Snacks:</td>
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<td>September, 2014</td>
<td>Breakfast:</td>
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<td>October, 2014</td>
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<td>Lunch or Supper:</td>
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<td>Snacks:</td>
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<td>November, 2014</td>
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<td>December, 2014</td>
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<td>January, 2015</td>
<td>Breakfast:</td>
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<td>February, 2015</td>
<td>Breakfast:</td>
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<td>March, 2015</td>
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<td>Snacks:</td>
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<td><strong>Total Number of Months of Claim Data Provided:</strong></td>
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<tr>
<td>Please, explain if less than 12 months of claim data provided:</td>
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</table>
<DATE>

Dear «Contact»:

Optimal Solutions Group, LLC., is nearing completion of the 2015 CACFP Assessment of Sponsor Tiering Determinations. Your continued participation is greatly appreciated! We have one final request for information from you before we can complete the assessment.

Attached you will find an Excel file with the list of the CACFP family day care homes (FDCHs) under your sponsorship for which we were unable to verify tiering status. Tier I FDCHs may not have been verified due to an error on our part in matching to school and Census data, or because the provider applied for Tier I status on the basis of income or program participation. Tier II FDCHs may have been mistakenly verified by us as Tier I based on matches to school and Census data.

Please provide the following information for each listed FDCH by May 5, 2016, or sooner if at all possible:

NOTE: if you completed a determination between 8/1/2014 and 7/31/2015 for any of the FDCHs listed, you will need to provide documentation for both the current determination and the previous determination.

1. For Tier I FDCHs: please provide copies of all documentation that you have on file for the most recent tiering determination done before August, 2015. This will include one or more of the following:

   ▪ School data – boundary information and schools FRP percentages; a letter from school official, a printed copy of website information, a page from a school directory, or other available school eligibility documentation included in the FDCH’s file.
   ▪ Census data – Census block group (CBG) codes and documentation showing that the FDCH address is located within the CBG and that CBG is income-eligible based on the percentage of children in households with income at or below 185% of Federal Poverty Level. For the FDCHs with a tiering date on or after May 21, 2014 the Census tract or the weighted average of up to three adjacent CBGs could be used.¹
   ▪ Household income or categorical eligibility – an application form listing all household members and their incomes (wage stubs, income tax forms, an income statement prepared by an accountant, etc.), and/or information about participation

¹ USDA “Area Eligibility Using Census Data” Memorandum (Code: SP 38-2014, CACFP 10-2014, SFSP 15-2014)
http://www.ped.state.nm.us/nutrition/2014/USDA_%20Area%20Eligibility%20Using%20Census%20Data%20Memo_April%202014.pdf
in programs that confer categorical eligibility (Income Eligibility Statement, benefit certification letter, etc.).

2. **For Tier II FDCHs**, indicate:

- If a tiering determination was made between September 2009 and June 2015, provide copies of all documents associated with the tiering determination(s) (as listed above for Tier I FDCHs).
- Whether the provider’s tier status was determined or redetermined during the period from September 2009 to June 2015.
- If a Tier II FDCH requested to have their tiering level re-evaluated during the period from September 2009 to June 2015, please provide a copy of their request. Given the sensitive nature of the forms that we are requesting, please provide the forms by:

1) Uploading at Dropbox: URL: [https://www.dropbox.com/home](https://www.dropbox.com/home); LOGIN: cacfp@optimalsolutionsgroup.com; PASSWORD: cacfpdropbox. See the enclosed instructions. The Dropbox account is monitored regularly and files will be removed as soon as they have been uploaded.

2) Fax: 301-985-3760 or 301-985-3768

Once again, we remind you that Optimal **will not contact family day care homes** and we will not reveal the identity of homes selected for the assessment. All documents of tiering determinations provided to Optimal will be kept confidential, as described in the Memorandum of Understanding between your agency and us. In recognition of your participation in this assessment, Optimal will provide your agency with a check for the full honorarium of $260.

Thank you in advance for your time and cooperation with the assessment. If you have any questions, please call us toll-free at 1-844-884-9753, or send an e-mail to CACFP@Optimalsolutionsgroup.com.

Sincerely,

Mark Turner
Project Director

Attachments:
1. FDCHs Tiering Verification File
2. Dropbox instructions
**Verification of Tier I Family Day Care Homes**

**Instructions**: The table below lists the FDCHs that you have classified as Tier I and we were unable to verify using Census or school data. Based on information you provided earlier, we have completed some columns for you. If any of this information is incorrect, please record the correct information.

For all FDCHs listed below, please provide copies of all documents associated with the Most Recent Tiering Determination (Before 8/1/15). Documents will vary according to the method of determination and may include:

- If school data were used – street address (not PO box or rural route), school boundary map, State list of schools indicating FRP percentage for school, letter from school official, printed copy of website information.
- If Census data were used – street address (not PO box or rural route), block group or tract boundary map, documentation showing that block group or tract are income-eligible.
- If provider income or categorical eligibility was used - copy of forms used by provider to list household members and their income - for example income tax form or wage stubs.
  - Or information about participation in Food Stamps/SNAP, TANF, or other program approved for Tier I determinations - for example, food stamp/SNAP certification letter.

If you can’t provide documentation for an FDCH, please provide an explanation in Column P.

Previous Tiering Determination. If you conducted a redetermination between 8/1/14 and 7/31/15, please provide copies of all documents associated with the previous determination.

If you can’t provide documentation for an FDCH, please provide an explanation in Column X.

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### Tier I Family Day Care Homes

**Instructions**: The table below lists the FDCHs that you have classified as Tier I and we were unable to verify using Census or school data. Based on information you provided earlier, we have completed some columns for you. If any of this information is incorrect, please record the correct information.

If Tier I status was determined or redetermined – or if a Tier I FDCH applied for Tier I eligibility – at any time from September 2009 through June 2015, please provide copies of all documents associated with all tiering determinations. Documents may include:

- Requests from provider for tiering determination based on school or Census data
- If school data were used – street boundary map, State list of schools indicating FRP percentage for school, letter from school official, printed copy of website information.
- If Census data were used – street address (not PO box or rural route), block group or tract boundary map, documentation showing that block group or tract are income-eligible.
- If provider income or categorical eligibility was used - copy of forms used by provider to list household members and their income - for example income tax form or wage stubs.
  - Or information about participation in Food Stamps/SNAP, TANF, or other program approved for Tier I determinations - for example, food stamp/SNAP certification letter.

If you can’t provide documentation for an FDCH, please provide an explanation in Column R.

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## Tier II Family Day Care Homes

**Instructions**: The table below lists the FDCHs that you have classified as Tier II and we were unable to verify using Census or school data. Based on information you provided earlier, we have completed some columns for you. If any of this information is incorrect, please record the correct information.

If Tier II status was determined or redetermined – or if a Tier II FDCH applied for Tier I eligibility – at any time from September 2009 through June 2015, please provide copies of all documents associated with all tiering determinations. Documents may include:

- Requests from provider for tiering determination based on school or Census data
- If school data were used – street boundary map, State list of schools indicating FRP percentage for school, letter from school official, printed copy of website information.
- If Census data were used – street address (not PO box or rural route), block group or tract boundary map, documentation showing that block group or tract are income-eligible.
- If provider income or categorical eligibility was used - copy of forms used by provider to list household members and their income - for example income tax form or wage stubs.
  - Or information about participation in Food Stamps/SNAP, TANF, or other program approved for Tier I determinations - for example, food stamp/SNAP certification letter.

If you can’t provide documentation for an FDCH, please provide an explanation in Column R.
APPENDIX C: SAMPLING DESIGN

The sampling design of the study closely followed the methodology used in the previous assessments of the Child and Adult Care Food Program (CACFP) sponsors’ tiering determinations. This included a three-stage design, successive use of probability proportional to estimated size (PPES) sampling of States and sponsors, followed by a random sampling of family day care homes (FDCHs). The measure of size at the first and second stages was the number of FDCHs. This approach ensured that every FDCH participating in the CACFP had an equal chance of being selected for the tiering determination study. While sampling FDCHs directly would be more efficient, a complete sample frame of FDCHs is unavailable without prior selection of and communication with State agencies and sponsoring organizations.

Stage 1 Selection: Selection Probabilities for States
The first stage sampling corresponds to the selection of States among the 48 contiguous continental States and the District of Columbia (DC). Alaska, American Samoa, Guam, Hawaii, Puerto Rico, and all Department of Defense installations were excluded as not participating in CACFP. Fifteen States are selected each year to be part of the survey. To reduce the overlap between samples over time, the 3-year sample was selected, which comprised 45 total selections allocated across the three years of the study. Selecting States for three study years introduces the potential for sampling error since state-level FDCH counts may change from year to year. However, this drawback is balanced by the advantage of spreading the 3-year reporting burden more evenly across States and sponsors by minimizing the probability that (all but the largest) States will be selected repeatedly across the three study years. This issue was examined by comparing the actual PPES probabilities to FDCH counts from Food and Nutrition Service (FNS) National Data Bank data and addressing discrepancies by post-stratification adjustment of the final sampling weights for FDCHs.

Selection of the 3-year State sample
For selecting a 3-year sample of 45 States, the probability of selection for each State was determined by each State’s estimated size. Size was calculated as the number of FDCHs in each State as listed in the FNS National Databank for fiscal year (FY) 2013, omitting from the total number in the denominator those States and territories excluded from the sampling frame for this assessment (i.e., Alaska, Guam, Hawaii, Puerto Rico, and Department of Defense installations):

\[
P(state \ i \ in \ 3-year \ sample) = \frac{45 \times (Number \ of \ FDCHs \ in \ State \ i)}{Total \ number \ of \ FDCHs} \quad (1)
\]

States were selected into the 3-year sample with their selection PPES using a systematic selection procedure. For 12 States, the number of FDCHs was sufficiently large that their selection probability, according to the above formula, was greater than 1. Each of those States was selected with certainty to be part of the 3-year sample. Some States were selected more than once. Therefore, among the 49 contiguous States (including DC) in the sampling frame, only 27 unique States were selected into the 3-year sample.

Selection Probabilities of States into the Annual Sample
The 45 occurrences of the 27 States included in the 3-year sample were assigned to one of the three study years (2014, 2015, and 2016) using a systematic sampling approach. The 3-year sample was sorted alphabetically by State name to ensure that the States selected at least three times were guaranteed to be in each of the three annual study samples. Six large States, in terms of their measure of size, were selected with certainty to each of the three annual samples. All the other States were selected with non-certainty for any given year.

The final probability of selection for each State into the annual sample for a given year, \( f_{1i} \), is:

\[
f_{1i} = \frac{P(State \ i \ in \ 3 - year \ sample)}{3} \quad (2)
\]
The allocation of the State sample across three years of the study involved 45 selections across 27 uniquely sampled States (Table C-1).

### Table C-1. Sampled States: 2014–2016

<table>
<thead>
<tr>
<th>STATE</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arizona</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>California</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Delaware</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Florida</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Illinois</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Indiana</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Iowa</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Kansas</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Louisiana</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Maryland</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Massachusetts</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Michigan</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Minnesota</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Nebraska</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Mexico</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>New York</td>
<td>1</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>North Carolina</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ohio</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oklahoma</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oregon</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>South Carolina</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Texas</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Virginia</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Washington</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Wisconsin</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wyoming</td>
<td>1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Based on the sampled States’ lists, the total number of sponsors was 312 and the total number of FDCHs was 71,930 (table C-2). The 2014 FNS National Data Bank and 2015 States’ lists had different numbers of sponsors and FDCHs per State. The number of FDCHs and sponsors tended to be larger in 2015 States’ lists than in the 2014 FNS Data Bank. This trend was reported by the previous assessments and base sampling weights were adjusted by post-stratification weights to account for these variations. This minimized the effect of discrepancies in data sources on the results of this and previous assessments.

### Table C-2. Number of FDCHs and sponsors for sampled States

<table>
<thead>
<tr>
<th>STATE</th>
<th>2014 FNS Data Bank</th>
<th>2015 States’ lists</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FDCHs</td>
<td>SPONSORS</td>
</tr>
<tr>
<td>Arizona</td>
<td>2,502</td>
<td>15</td>
</tr>
<tr>
<td>California</td>
<td>14,930</td>
<td>49</td>
</tr>
<tr>
<td>Illinois</td>
<td>7,214</td>
<td>7</td>
</tr>
<tr>
<td>Iowa</td>
<td>1,949</td>
<td>22</td>
</tr>
<tr>
<td>Louisiana</td>
<td>7,836</td>
<td>23</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>4,352</td>
<td>7</td>
</tr>
<tr>
<td>Michigan</td>
<td>4,340</td>
<td>2</td>
</tr>
<tr>
<td>Minnesota</td>
<td>7,835</td>
<td>6</td>
</tr>
<tr>
<td>New York</td>
<td>9,663</td>
<td>30</td>
</tr>
<tr>
<td>North Carolina</td>
<td>2,085</td>
<td>20</td>
</tr>
<tr>
<td>Oregon</td>
<td>2,217</td>
<td>7</td>
</tr>
<tr>
<td>Texas</td>
<td>5,492</td>
<td>45</td>
</tr>
<tr>
<td>Washington</td>
<td>2,059</td>
<td>11</td>
</tr>
</tbody>
</table>

| TOTAL         | 72,472  | 243      | 71,930   | 312      |

$^1$ Based on follow-up with the State.
The 2014 and 2015 assessments explored the possible reasons for the differences between FNS and States’ data sources in the number of sites and sponsors, by contacting four States (Arizona, California, Florida, Texas, and Virginia) to gain their feedback. Some reasons for the discrepancies include:

- The FNS Data bank is for FY 2014 and State lists for program year 2015.\(^2\)
- The FNS Data bank calculates and estimates the number of sponsors and sites and these estimates are rounded up.\(^3\)
- The FNS Data bank included only active sponsors that submitted claims, whereas the State lists could include sponsors that had not submitted claims.
- The State lists include some FDCHs that had meal reimbursements during the FY, but no meal reimbursements during the study program year.
- Sponsors sometimes provide multiple claims (original and adjusted), which could result in duplicate records of FDCHs for some sponsors in State lists.
- States’ FDCHs lists could be updated monthly by the sponsors and FDCHs could be terminated after 3 months of inactivity. As a result, States’ lists could include some inactive FDCHs.

**Stage 2 Selection: Selection Probabilities for Sponsors**

Each State selected into the annual sample submitted a complete list of sponsors and the number of FDCHs serviced by each of those sponsors, and then these sponsor lists were used to create a sampling frame of sponsors for each State. Four sponsors from each State were selected into the sample with a PPS, where the measure of size was the total number of FDCHs serviced as listed by that State. In addition, two replacement sponsors from each State were selected. The selection of replacement sponsors was necessary given the possibility that each State’s list could include sponsors not currently active or sponsors that may not be able to participate.

Let \( n_i \) be the required number of sponsors to be selected in State \( i \). The probability of selecting sponsor \( j \) into the sponsor sample at the second stage of selection for State \( i \) is calculated as:

\[
f_{2ij} = \frac{n_i \times (\text{Number of FDCHs of sponsor } j)}{(\text{Number of FDCHs in State } i)}
\]  

The primary sample size of sponsors for each State was fixed at four, with two replacement sponsors selected, except for large States which were selected into the sample twice within a given year, from which eight sponsors were selected into the primary sample and four were selected into the replacement sample. Some sponsors were selected with certainty due to their large size relative to the other sponsors within the same State. Six sponsors with a large number of FDCHs\(^4\) were sampled more than once due to their size. Therefore, the sampling yielded a sample of 60 total sponsors and 53 unique sponsors across States.

Recruitment of sampled sponsors for the assessment began in December 2015. Optimal contacted selected sponsors via email, mail, and follow-up phone calls (See appendix B for the sponsor recruitment package). The sampled sponsors were invited via e-mail, mail, and phone to participate in the assessment. To increase participation and minimize refusals, sponsors were reimbursed $110 to offset the costs of providing information for the assessment and an additional $150 if they met all of the specified deadlines. If a sponsor in the main sample was unable to participate, a replacement sponsor was selected at random from the replacement sample and added to the main sample. Two sponsors, one in Washington and one in Massachusetts, were unreachable after numerous attempts to contact them by e-mail, mail, and telephone, Therefore, they were replaced using sponsors from the replacement sample. Follow-ups with State agencies confirmed that these two sponsors were nonoperational. In addition, one sampled sponsor became nonoperational during the data collection. However, the collaborative relationships developed with this sponsor allowed Optimal to collect all necessary data ahead of the sponsor’s termination date.

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\(^2\) Future studies could adjust the data collection and analyses milestones to allow for current FNS data to become available prior to conducting the analyses. Furthermore, future studies could realign the program year definition to correspond to the FY.

\(^3\) FNS National Data Bank integrates the most commonly used FNS program and financial data obtained from the Integrated Program Accounting System and Food Programs Reporting System into one database.

\(^4\) In MI, OR, IL, AZ, MA, and MN.
The sampled sponsors, on average, had nearly 550 Tier I FDCHs and approximately 100 Tier II FDCHs (table C-3). The large standard deviations demonstrate the wide range of sponsor sizes. Furthermore, States’ and sponsors’ data sources were slightly different in terms of the average number and distribution of FDCHs. Similar differences were reported by the previous CACFP tiering determination studies and as mentioned previously, were addressed by post-stratification adjustment of the final sampling weights for FDCHs.

**Table C-3. The average number of FDCHs per sponsor**

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tier I</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>States’ list</td>
<td>565.47</td>
<td>535.8</td>
<td>35</td>
<td>2,112</td>
</tr>
<tr>
<td>Sponsors’ list</td>
<td>530.77</td>
<td>512.7</td>
<td>33</td>
<td>2,177</td>
</tr>
<tr>
<td>Tier II</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>States’ list</td>
<td>134.02</td>
<td>356.7</td>
<td>0</td>
<td>2,430</td>
</tr>
<tr>
<td>Sponsors’ list</td>
<td>85.47</td>
<td>236.1</td>
<td>0</td>
<td>1,662</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>States’ list</td>
<td>699.49</td>
<td>775.9</td>
<td>57</td>
<td>4,447</td>
</tr>
<tr>
<td>Sponsors’ list</td>
<td>616.25</td>
<td>677.9</td>
<td>39</td>
<td>3,839</td>
</tr>
</tbody>
</table>

**Stage 3 Selection: Selection Probabilities for FDCHs**

Sponsors selected in the second sampling stage were asked to submit a complete list of FDCHs that were active as of August 2015; sponsors were asked to include the provider’s name, street address, city, state, zip code, Tier I/Tier II status, method used for tiering determination, and the most recent tiering determination date. At the third stage, a systematic random sample of homes was taken for each sponsor using lists of FDCHs provided by each of the sponsors selected into the sample. On the basis of the lists of FDCHs that the participating sponsors provided (as of August 2015), the number of FDCHs to be selected from the sponsor was allocated between Tier I and Tier II in rough proportion to the sponsor’s numbers of FDCHs in the two tiers. This was achieved through implicit stratification of each sponsor list via the sorting and randomization of homes within each sponsor list. FDCHs were sorted by tier within each sponsor, and then within each tier the list of homes was randomized.

A systematic sample of homes was drawn such that the proportion of Tier I and Tier II FDCHs in the sample would approximate the distribution in the target population, defined by the received list of FDCHs from each sampled sponsor. Therefore, for each sponsor, a systematic sample was selected to have the number of FDCHs selected from each tier approximately proportional to the total number of homes by tier for the sponsor, and the overall sample distribution approximately represented tier distribution in the population. The number of FDCHs selected from each sponsor was allocated between Tier I and Tier II in proportion to the sponsor’s number of FDCHs in the two tiers. For sampling purposes, a small number of mixed tier homes were combined into the same group with Tier II homes. Although not a stratified sample, through sorting and randomization within tiers, the representation of Tier I and Tier II FDCHs in the sample approximated the distribution in the FDCH list received from the sponsors. For some sponsors, the fraction of FDCHs in Tier II was so small that the sampling algorithm did not select any Tier II FDCHs for them. Future studies should increase the sample size of Tier II homes to ensure adequate sample size.

Let \( n_m \) be the required number of homes to be selected to be selected from sponsor \( j \). The probability of selecting FDCHs into the sample of homes is calculated as follows:

\[
\tilde{f}_{stijk} = \frac{n_m \times (\text{Number of FDCHs in tier } k)}{(\text{Number of FDCHs of sponsor } j)}
\]

It was necessary to use the replacements that were selected in order to compensate for ineligible homes that were inactive (had no meal reimbursements) during the study period. In the calculation of the base sampling weight for each home, inactive or other ineligible FDCHs were considered part of the sample; that is, the numerator of \( \tilde{f}_{stijk} \) was equal to the combined number of eligible and ineligible FDCHs. (The

---

5 Tier II homes were not sampled in AZ, LA, and TX due to very small proportions of Tier II homes.
ineligible FDCHs, however, were not used in estimation.) This approach is a standard way of handling ineligible sample units and allows that the ineligible FDCHs in the sample represent the ineligible FDCHs in the universe of FDCHs, whereas the eligible FDCHs in the sample represent the universe of eligible FDCHs.

**Second Sponsor Contact**

After FDCHs were sampled, sponsors were contacted again and asked to provide information for monthly meal counts for each sampled FDCH and whether or not a redetermination had been done during the assessment period (if so, previous tiering information was requested). Monthly meal counts were requested for the reference period of August 2014 through July 2015, and sponsors were asked for separate counts of breakfasts, lunches and suppers, and snacks, broken down between Tier I-eligible and Tier II-eligible meals. The meal counts were used to estimate the meals reimbursed in error.

Based on the sponsors’ meal data, 38 FDCHs (5.8%) were found to be inactive (had no meal reimbursements) during the study year; therefore, they were replaced with FDCHs from the replacement sample. The sponsors were then asked for monthly meal counts and whether or not a redetermination had been done during the assessment period for the 38 replacement FDCHs. The 2014 replacement rate of 5.8 percent is comparable to the replacement rates reported in 2012 and 2011 (6.5% and 6.8%), but is higher than rates reported in 2010, 2013, and 2014 (4.2%, 3.9%, and 3.6%, respectively).

The analyses of sponsors’ meal data revealed that not all meals served by Tier I or Tier II FDCHs are reimbursed at the same tiering rates. For instance, Tier I FDCHs could have not-concurrent Tier I and Tier II meal reimbursements if they had changed tiering status during the study period. In addition, Tier II FDCHs could be reimbursed for meals at Tier I, Tier II, or both rates (concurrent and not concurrent), depending on whether some or all meals were served to Tier I-eligible children or whether the tiering changed during the study period. Among the sampled Tier II FDCHs, 22.7 percent were reimbursed for meals concurrently at Tier I and Tier II rates, and 6.7 percent had changed tiering status during the study period (table C-4). Thus, for Tier II homes misclassified as Tier I, it cannot be assumed that all meals were reimbursed in error, because some children might individually qualify for the higher Tier I reimbursement or the FDCHs’ tiering status could have changed during the study period. Therefore, the estimation procedure was used to determine the proportion of meals reimbursed in error at misclassified FDCHs (appendix D).

**Table C-4. Number of sampled FDCHs by type of meal reimbursements, as reported by sponsors**

<table>
<thead>
<tr>
<th>Type of meal claims:</th>
<th>TIER</th>
<th></th>
<th></th>
<th>TOTAL</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>I</td>
<td>Count</td>
<td>%</td>
<td>I</td>
<td>Count</td>
</tr>
<tr>
<td>Tier I only</td>
<td>567</td>
<td>96.9%</td>
<td>1</td>
<td>1.3%</td>
<td>568</td>
</tr>
<tr>
<td>Tier II only</td>
<td>2</td>
<td>0.3%</td>
<td>52</td>
<td>69.3%</td>
<td>54</td>
</tr>
<tr>
<td>Tier I and Tier II concurrent</td>
<td>4</td>
<td>0.7%</td>
<td>17</td>
<td>22.7%</td>
<td>21</td>
</tr>
<tr>
<td>Tier I and Tier II not concurrent</td>
<td>12</td>
<td>2.1%</td>
<td>5</td>
<td>6.7%</td>
<td>17</td>
</tr>
<tr>
<td>TOTAL</td>
<td>585</td>
<td>100%</td>
<td>75</td>
<td>100%</td>
<td>660</td>
</tr>
</tbody>
</table>

NOTE: “Concurrent” Tier I and Tier II claims occur when both Tier I and Tier II children are served in the same month.

**Calculation of Sampling Weights**

The base sampling weight of an FDCH is equal to the inverse of the probability of selection for each home given the three-stage sampling design. Thus, the base sampling weights reflect the probability of selecting the State into the annual study sample, the probability of selecting the sponsor (given that the

---

6 In calculating the sampling weights, inactive FDCHs were considered part of the sample. The identified inactive FDCHs, however, were not used. This approach is a standard way of handling ineligible sample units that allows the inactive FDCHs in the sample to represent the inactive FDCHs in the universe of FDCHs, whereas the active FDCHs in the sample represent the universe of active FDCHs.

State had been selected), and the probability of selecting the FDCH (from the sponsor’s list of FDCHs in the particular tier, given that the sponsor had been selected).

Both States and sponsors within States were selected with PPES, where the number of FDCHs was used as a measure of size for both stages. In the third stage, FDCHs were selected via a systemic random sampling approach, with homes implicitly stratified by tier within each sponsor. The base sampling weight for each FDCH \( m \) in tier \( k \) within sponsor \( j \) in State \( i \) can therefore be written as follows:

\[
w_{ijk}(m) = \frac{1}{f_{1i} \times f_{2ij} \times f_{3ijk}}
\]  

(5)

As written above, \( f_{1i} \) is the probability of selection for State \( i \) in the first stage of the sampling design; \( f_{2ij} \) is the probability of selection for sponsor \( j \) given that State \( i \) has been selected into the sample; and \( f_{3ijk} \) is the probability of selection for FDCH \( m \) in tier \( k \), given that sponsor \( j \) in State \( i \) has been selected. If there was no stratification by tier within a particular sponsor list, then the subscript \( k \) is redundant.

**Post-Stratification**

The total number of FDCHs reported by the States in the current study differed from the corresponding totals in the FNS National Databank for FY 2014. Similarly, the numbers of FDCHs in the sponsors’ lists (as of August 2015) differed from the corresponding numbers reported by the States. This was reported by the previous studies as well. Therefore, following the methodology of the previous studies, post-stratification adjustments were applied to analytic weights for the current assessment.

Because the current assessment aims to provide estimates for FY 2014, the base sampling weights were adjusted by post-stratification to two control totals: the total number of Tier I FDCHs and the total number of Tier II FDCHs in the FNS National Databank for FY 2014. The control totals excluded the States and territories that were not in the sampling frame (Alaska, American Samoa, Guam, Hawaii, Puerto Rico, and all Department of Defense installations).

Post-stratification weights are calculated separately for each home type, either Tier I or Tier II, with mixed tier homes being counted as Tier II homes. Let \( C_t \) denote the total number of homes in the FNS National Databank of home type \( t \), then the post-stratification adjustment \( ADJ_t(m) \) for homes of that type is calculated as follows, where \( n_t \) is the number of sampled homes of type \( t \) and \( w_{ijk}(m) \) is the non-response adjusted home weight:

\[
ADJ_t(m) = \frac{C_t}{\sum_{1}^{n_t} w_{ijk}(m)}
\]

(6)

The final FDCH weight, \( w_{ijkm,\text{final}} \), was then calculated as the product of the non-response adjusted sampling weight and the post-stratification adjustment factor:

\[
w_{ijkm,\text{final}} = w_{ijk}(m) \times ADJ_t(m)
\]

(7)

The weights \( w_{ijkm,\text{final}} \) obtained through post-stratification were the final weights used for estimation.
APPENDIX D: DATA ANALYSES

Meals served in Child and Adult Care Food Program (CACFP) Family Day Care Homes (FDCHs) are reimbursed according to a two-tiered system in which each tier has a different reimbursement rate. Within each reimbursement tier, there are different rates for breakfast, lunch and supper, and snacks. CACFP reimbursement rates in effect during the Program Year (PY) 2015 (August 1, 2015 through July 31, 2015) include the Fiscal Year (FY) 2014 rates (for August 1, 2015 through June 30, 2015) and the FY 2015 rates (for the month of July 2015) (table D-1).

Table D-1. CACFP reimbursement rates for meals served in FDCHs, PY 2015

<table>
<thead>
<tr>
<th></th>
<th>BREAKFAST</th>
<th>LUNCH AND SUPPER</th>
<th>SNACK</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tier I</td>
<td>Tier II</td>
<td>Tier I</td>
</tr>
<tr>
<td>FY 2014: July 1, 2014–June 30, 2015</td>
<td>$1.31</td>
<td>$0.48</td>
<td>$2.47</td>
</tr>
<tr>
<td>FY 2015: July 1, 2015–June 30, 2016</td>
<td>$1.32</td>
<td>$0.48</td>
<td>$2.48</td>
</tr>
</tbody>
</table>

NOTE: Rates are for all States except Alaska and Hawaii.

Meals reimbursed at Tier I rates that should have been reimbursed at Tier II rates result in overpayments, and meals reimbursed at Tier II rates that should have been reimbursed at Tier I rates result in underpayments. The national error estimates for the PY 2015 were computed for:
- The numbers and percentages of misclassified FDCHs;
- The numbers and percentages of meals reimbursed in error; and
- The percentages and amounts of erroneous reimbursements.

These estimates and their standard errors were computed using sampling weights adjusted to sum to the actual numbers of Tier I and Tier II FDCHs in the Food and Nutrition Service (FNS) National Databank FY 2014 (Appendix C). Thus, the misclassification estimates were weighted to represent FDCHs in the U.S. population (48 contiguous continental States and the District of Columbia). The analyses were conducted using SPSS complex samples module that controls for the weights and the sampling design when calculating estimates and their standard errors.

National Estimates of Misclassified FDCHs

The following estimates and their 90 percent confidence intervals were calculated (table D-2):
1. The number of FDCHs misclassified in Tier I, which is a weighted sum of the misclassified FDCHs in Tier I.
2. The number of FDCHs misclassified in Tier II, which is a weighted sum of the misclassified FDCHs in Tier II.
3. The number of all misclassified FDCHs, which is a weighted sum of all misclassified FDCHs.
4. The misclassification rate for Tier I, which is the proportion of the estimated number of misclassified FDCHs in Tier I (1) divided by the total number of FDCHs in Tier I.
5. The misclassification rate for Tier II, which is the proportion of the estimated number of misclassified FDCHs in Tier II (2) divided by the total number of FDCHs in Tier II.

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1 This and previous assessments focus on the Program Year (PY), which does not align with the fiscal year (FY). PY for this study is from August 2014 through July 2015 and covers two FYs, which run from October thru September. The future studies could realign the PY definition to correspond to the FY.
2 FNS National Databank FY 2015 data were unavailable during the data analyses. Future studies should adjust the data collection and analyses milestones to allow for more current FNS data to become available prior to conducting analyses.
3 The estimates meet the OMB standard, which requires 90 percent confidence intervals plus or minus 2.5 percentage points or less. https://www.whitehouse.gov/sites/default/files/omb/assets/omb/circulars/a123/a123_appx-c.pdf.
6. The misclassification rate for all FDCHs, which is the proportion of the sum of the estimated number of misclassified FDCHs in Tier I and Tier II (3), divided by the total number of FDCHs in Tier I and Tier II.

<table>
<thead>
<tr>
<th>Tier as determined by sponsor</th>
<th>Percentage of FDCHs misclassified</th>
<th>90% confidence interval</th>
<th>Number of FDCHs misclassified</th>
<th>90% confidence interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>TIER I</td>
<td>0.93%</td>
<td>0.48% - 1.82%</td>
<td>935</td>
<td>306 - 1,564</td>
</tr>
<tr>
<td>TIER II</td>
<td>3.74%</td>
<td>1.97% - 6.99%</td>
<td>642</td>
<td>235 - 1,049</td>
</tr>
<tr>
<td>OVERALL</td>
<td>1.34%</td>
<td>0.84% - 2.15%</td>
<td>1,576</td>
<td>832 - 2,321</td>
</tr>
</tbody>
</table>

SOURCE: Weighted estimates from 2015 sample data.
NOTE: All reported estimates were calculated separately for population subgroups (Tier I and Tier II FDCHs) and for the overall sample. Due to sampling design and applied analytic and post-stratification weights, Tier I and Tier II estimates should not be summed to obtain population totals, because their sum is likely to differ from the population-level estimate due in part to a high degree of sampling variability in the estimates for Tier II FDCHs.

National Estimates of Meals Reimbursed in Error
For misclassified FDCHs, the number of meals claimed in error is the difference between the meals actually claimed at Tier I rates and the meals that would have been claimed at Tier I rates if FDCHs had been correctly classified. Meals claimed at Tier I rates that should have been claimed at Tier II rates result in overpayments; meals claimed at Tier II rates that should have been claimed at Tier I rates result in underpayments.

Tier II FDCHs may claim meals for eligible children at the Tier I rates. For Tier II homes seeking reimbursement at the Tier I level for individual children, sponsors administer the eligibility determination. Sponsors determine individual child eligibility based on income eligibility forms submitted by parents to the sponsor or on other documentation that shows the child is categorically eligible for meals under federally funded child nutrition programs. Therefore, when an FDCH is misclassified, not all of the meals served are reimbursed in error. For an FDCH misclassified as Tier I, the meals they served to children who would have been individually eligible are not errors, but any meals served to children who would not have been individually eligible are errors because they were reimbursed at the incorrect (Tier I) rate. Conversely, for an FDCH misclassified as Tier II, any meals served to children deemed individually eligible are reimbursed at the correct rate, but, since all meals should have been reimbursed at Tier I rates, the meals for children not individually deemed eligible were reimbursed at the incorrect (Tier II) rate.

For FDCHs misclassified as Tier I, the exact number of meals for which each FDCH was reimbursed in error cannot be determined. If the FDCH was misclassified as Tier I, no applications for individual child eligibility would be submitted by parents. Therefore, the number of eligible children served by FDCHs is unknown, and thus the number of meals that would have been correctly reimbursed at Tier I rates cannot be determined. Therefore, to estimate the expected number of Tier I and Tier II meals for which FDCHs misclassified as Tier I would have been reimbursed if those FDCHs had been correctly classified, the average percent of Tier I meals served at Tier II FDCHs in each of the States in the sample was used. It was assumed that for each meal type (breakfast, lunch or supper, and snack) the average across 12 months in the State for Tier II FDCHs provided the best predictor of the expected percentage of meals by tier for the FDCHs misclassified as Tier I. This approach takes into account variation across States, while using data with no sampling errors.

Thus, Optimal calculated the following variables for each State in the sample using data obtained from the FNS National Data Bank FY 2014 meal counts (table 4-3):

4 http://www.ers.usda.gov/media/1195465/fnrr22apdf00%C8%BC2_s.pdf
7. The statewide proportion of breakfasts in Tier II FDCHs that were reimbursed at the higher Tier I rate.
8. The statewide proportion of lunches/suppers in Tier II FDCHs that were reimbursed at the higher Tier I rate.
9. The statewide proportion of snacks in Tier II FDCHs that were reimbursed at the higher Tier I rate.

The percentages of meals in Tier II FDCHs reimbursed at the Tier I rate varied substantially across the States, thus highlighting the need to use separate State percentages in the computation (table D-3). These percentages reflect different program operations, reimbursements, and types of meals served in Tier II homes among States.

Table D-3. Percentage of meals in Tier II FDCHs reimbursed at the Tier I rate, by State: FY 2014

<table>
<thead>
<tr>
<th>STATE</th>
<th>Breakfasts</th>
<th>Snacks</th>
<th>Lunches/Suppers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arizona</td>
<td>19.4%</td>
<td>20.9%</td>
<td>24.4%</td>
</tr>
<tr>
<td>California</td>
<td>7.0%</td>
<td>6.9%</td>
<td>7.0%</td>
</tr>
<tr>
<td>Illinois</td>
<td>9.4%</td>
<td>9.3%</td>
<td>10.6%</td>
</tr>
<tr>
<td>Iowa</td>
<td>7.8%</td>
<td>7.3%</td>
<td>7.4%</td>
</tr>
<tr>
<td>Louisiana</td>
<td>62.7%</td>
<td>70.5%</td>
<td>72.1%</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>11.0%</td>
<td>10.3%</td>
<td>11.4%</td>
</tr>
<tr>
<td>Michigan</td>
<td>5.3%</td>
<td>7.1%</td>
<td>7.0%</td>
</tr>
<tr>
<td>Minnesota</td>
<td>28.0%</td>
<td>28.5%</td>
<td>28.4%</td>
</tr>
<tr>
<td>New York</td>
<td>10.7%</td>
<td>12.8%</td>
<td>13.6%</td>
</tr>
<tr>
<td>North Carolina</td>
<td>20.6%</td>
<td>27.2%</td>
<td>23.8%</td>
</tr>
<tr>
<td>Oregon</td>
<td>3.4%</td>
<td>4.2%</td>
<td>5.2%</td>
</tr>
<tr>
<td>Texas</td>
<td>3.3%</td>
<td>4.8%</td>
<td>5.6%</td>
</tr>
<tr>
<td>Washington</td>
<td>9.1%</td>
<td>8.8%</td>
<td>9.2%</td>
</tr>
<tr>
<td>TOTAL SAMPLE</td>
<td>14.8%</td>
<td>16.5%</td>
<td>16.8%</td>
</tr>
<tr>
<td>TOTAL U.S.</td>
<td>14.2%</td>
<td>15.4%</td>
<td>16.6%</td>
</tr>
</tbody>
</table>

NOTE: Total computed for the continental United States (sample universe for the assessment); Alaska, American Samoa, Guam, Hawaii, Puerto Rico, and Virgin Islands were excluded.

To estimate the meal counts by tier and type that are expected if the misclassified Tier I FDCHs had been correctly classified, Optimal multiplied the statewide proportion (above) for each meal type by each misclassified FDCH’s sum of the actual Tier I and Tier II total meals of that type. Then, the number of meal types claimed in error at Tier I was calculated by subtracting the actual counts of Tier I meal types from the expected counts of Tier I meal types. The number of meals claimed in error by type was computed separately for the two program years (August 2014–June 2015 and July 2015) to apply the correct reimbursement rates\(^5\) later. Finally, the total Tier I meals claimed in error were computed by summing the number of meals claimed in error for each type for two program years.

The following variables were computed using unweighted data for each FDCH in error, separately for the two program years (August 2014–June 2015 and July 2015):

10. The expected count of Tier I breakfasts equals the sum the of actual counts of Tier I and Tier II breakfasts multiplied by the statewide proportion of breakfasts in Tier II FDCHs that were reimbursed at the higher Tier I rate (See #7 above).

11. The expected count of Tier I lunches/suppers equals the sum the of actual counts of Tier I and Tier II lunches/suppers multiplied by the statewide proportion of lunches/suppers in Tier II FDCHs that were reimbursed at the higher Tier I rate (8).
12. The expected count of Tier I snacks equals the sum the of actual counts of Tier I and Tier II snacks multiplied by the statewide proportion of snacks in Tier II FDCHs that were reimbursed at the higher Tier I rate (9).
13. The number of breakfasts claimed in error at Tier I equals the actual count of Tier I breakfasts minus the expected count of Tier I breakfasts (10).
14. The number of lunches/suppers claimed in error at Tier I equals the actual count of Tier I lunches/suppers minus the expected count of Tier I lunches/suppers (11).
15. The number of snacks claimed in error at Tier I equals the actual count of Tier I snacks minus the expected count of Tier I snacks (12).
16. The total Tier I meals claimed in error equals the sum of breakfasts, lunches/suppers, and snacks claimed in error at Tier I (13, 14, 15) for the program year one and two.

For FDCHs misclassified as Tier II, the computation of meals claimed in error is simpler than for Tier I. It’s assumed that all meals claimed at Tier II rates in misclassified Tier II FDCHs would have been claimed at Tier I rates. Thus, the number of meals claimed in error equals the number of meals claimed at Tier II rates, which is the number of meals that should have been paid at Tier I rates but were not. The following variables were computed separately for the two program years (August 2014–June 2015 and July 2015):

17. The number of breakfasts claimed in error at Tier II equals the actual count of Tier II breakfasts.
18. The number of lunches/suppers claimed in error at Tier II equals the actual count of Tier II lunches/suppers.
19. The number of snacks claimed in error at Tier II equals the actual count of Tier II snacks.
20. The total meals incorrectly claimed at Tier II rates for each misclassified Tier II FDCH equals the sum of the number of breakfasts, lunches/suppers, and snacks claimed in error (17, 18, 19) for program year one and year two.

Percentage of Meals Reimbursed in Error
The national estimates of the percentage of meals claimed in error were computed from the sample data. First, weighted totals of meals claimed in error by FDCHs in the sample and the total of all meals claimed were computed, by tier and overall. The percentage for each tier and overall was computed using the ratio of the meals claimed in error to the total meals. The following variables were computed (table D-4):

21. The weighted number of the total meals claimed in error by FDCHs misclassified as Tier I (16).
22. The weighted number of the total meals claimed in error by FDCHs misclassified as Tier II (20).
23. The weighted number of the total meals claimed in error by all misclassified FDCHs (21+22).
24. The percentage of meals claimed in error by misclassified Tier I FDCHs was obtained by dividing the weighted number of the total meals claimed in error in Tier I (21) by the weighted number of the total meals claimed by FDCHs in Tier I multiplied by 100.
25. The percentage of meals claimed in error by misclassified Tier II FDCHs was obtained by dividing the weighted number of the total meals claimed in error in Tier II (22) by the weighted number of the total meals claimed by FDCHs in Tier II multiplied by 100.
26. The percentage of meals claimed in error by all misclassified FDCHs was obtained by dividing the weighted number of the total meals claimed in error by all misclassified FDCHs (23) by the weighted number of the total meals claimed by FDCHs multiplied by 100.
Table D-4. National estimates of the percentage of meals claimed in error due to misclassification of FDCHs, PY 2015

<table>
<thead>
<tr>
<th>Tier as determined by sponsor</th>
<th>Percentage of meals claimed in error</th>
<th>90% confidence interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>TIER I</td>
<td>0.92%</td>
<td>0.18% - 1.67%</td>
</tr>
<tr>
<td>TIER II</td>
<td>1.74%</td>
<td>0% - 3.62%</td>
</tr>
<tr>
<td>OVERALL</td>
<td>1.00%</td>
<td>0.32% - 1.68%</td>
</tr>
</tbody>
</table>

SOURCE: Weighted estimates from 2015 sample data.
NOTE: All reported estimates were calculated separately for population subgroups (Tier I and Tier II FDCHs) and for the overall sample. Due to sampling design and applied analytic and post-stratification weights, Tier I and Tier II estimates should not be summed to obtain population totals, because their sum is likely to differ from the population-level estimate. This is due in part to a small sample size and a high degree of sampling variability in the estimates for Tier II FDCHs.

Number of Meals Reimbursed in Error

A ratio estimation procedure was used to estimate the national totals for the number of meals claimed in error for each tier and overall. The percentage of meals paid at the incorrect tier rate, by tier and overall (from sample data, as described above) was multiplied by the national total count of meals (from FNS National Data Bank, FY 2014) to estimate the total number of meals paid at the incorrect rate to misclassified FDCHs. To estimate the lower and upper limits of the total number of meals claimed in error by tier and overall, the lower and upper limits of the percentages were multiplied by the national totals.

The decision to use ratio estimates rather than rely on the results for the sampled FDCHs is based on the finding of the previous evaluations. In the 2008 assessment, the analysis indicated that the sample estimate of total meals claimed by FDCHs (Tier I and Tier II) underestimated the known totals from the FNS data. Therefore, using sample data yielded underestimates of total meals claimed in error and the cost of misclassification errors. Careful consideration of the nature of the sampling frames for the FNS reports and the 2008 assessment indicated that these frames differed in how they deal with FDCHs that do not claim meals in all twelve months of a fiscal year. The previous evaluations, in consultation with FNS, concluded that it was preferable to use estimates of total meals at each tier that aligned exactly with the FNS National Data Bank estimate. Therefore, Optimal also calculated ratio estimates that use the FNS National Data Bank (report table D-5):

27. The total meals claimed in error in Tier I FDCHs was estimated by multiplying the FNS National Data Bank total meals claimed in Tier I FDCHs in the United States in FY 2014 by the ratio of meals claimed in error in Tier I FDCHs (24), as estimated from weighted sample data.
28. The total meals claimed in error in Tier II FDCHs was estimated by multiplying the FNS National Data Bank total meals claimed in Tier II FDCHs in FY 2014 by the ratio of meals claimed in error in Tier II FDCHs (25), as estimated from weighted sample data.
29. The total meals claimed in error in all FDCHs was estimated by multiplying the FNS National Data Bank total meals claimed in all FDCHs in FY 2014 by the ratio of meals claimed in error in all FDCHs (26), as estimated from weighted sample data.

6 In this and in previous assessments, the reported confidence intervals are truncated to have lower bounds of zero if the actual confidence interval extends below zero. The reason for this truncation is because values lower than zero are not readily interpreted. Truncation could potentially be avoided if the estimates were more precise, yielding narrower confidence intervals of the estimates. This issue should be resolved by increasing the sample size for Tier II FDCHs in future assessments.
Table D-5. National estimates of the meals claimed in error due to misclassification of FDCHs, PY 2015

<table>
<thead>
<tr>
<th>Tier as determined by sponsor</th>
<th>Meals claimed in error</th>
<th>90% confidence interval</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Lower</td>
<td>Upper</td>
</tr>
<tr>
<td>TIER I</td>
<td>4,285,551</td>
<td>824,039</td>
</tr>
<tr>
<td>TIER II</td>
<td>1,254,672</td>
<td>0</td>
</tr>
<tr>
<td>OVERALL</td>
<td>5,345,479</td>
<td>1,722,916</td>
</tr>
</tbody>
</table>

SOURCE: Weighted estimates from 2015 sample data.
NOTE: All reported estimates were calculated separately for population subgroups (Tier I and Tier II FDCHs) and for the overall sample. Due to sampling design and applied analytic and post-stratification weights, Tier I and Tier II estimates should not be summed to obtain population totals, because their sum is likely to differ from the population-level estimate. This is due in part to a small sample size and a high degree of sampling variability in the estimates for Tier II FDCHs.

National Estimates of Reimbursements Paid in Error

The costs of misclassification errors (i.e., the erroneous payments) include overpayments to FDCHs misclassified as Tier I and underpayments to FDCHs misclassified as Tier II. For each misclassified meal, the cost equals the difference between the Tier I and Tier II rate. Overpayments represent costs to taxpayers, while underpayments represent costs to FDCH providers. For this assessment, as in prior assessments, both overpayments and underpayments were treated as costs when the total cost of misclassification errors was computed. As with the counts of meals claimed at the incorrect rate, Optimal first estimated the percentages of reimbursements paid in error due to misclassification of FDCHs and then estimated the total national cost of misclassification errors by applying that percentage to total costs based on the FNS National Data Bank.

Percentage of Reimbursements Paid in Error

For each type of meal and program year, the cost of misclassification error was computed as the product of the number of meals claimed at the incorrect rate and the difference between the Tier I and Tier II rates for the program year. Costs were then summed across years and meal types to compute the total cost for each misclassified FDCH. The following variables were computed for both Tier I and Tier II misclassified FDCHs by program year:

30. The cost of misclassified Tier I breakfasts equals the number of Tier I breakfasts claimed in error at the Tier I FDCH (13) multiplied by the difference of Tier I and Tier II breakfast rates for the program year.
31. The cost of misclassified Tier I lunches/suppers equals the number of Tier I lunches/suppers claimed in error at the Tier I FDCH (14) multiplied by the difference of Tier I and Tier II lunches/suppers rates for the program year.
32. The cost of misclassified Tier I snacks equals the number of Tier I snacks claimed in error at the Tier I FDCH (15) multiplied by the difference of Tier I and Tier II snacks rates for the program year.
33. The total cost of misclassified Tier I meals at the Tier I FDCH equals the sum of error costs for Tier I breakfasts, lunches/suppers, and snacks (30, 31, 32) for the two program years.
34. The cost of misclassified Tier II breakfasts equals the number of Tier II breakfasts claimed in error at the Tier II FDCH (17) multiplied by the difference of Tier I and Tier II breakfast rates for the program year.

7 In this and in previous assessments, the reported confidence intervals are truncated to have lower bounds of zero if the actual confidence interval extends below zero. The reason for this truncation is because values lower than zero are not readily interpreted. Truncation could potentially be avoided if the estimates were more precise, yielding narrower confidence intervals of the estimates. This issue should be resolved by increasing the sample size for Tier II FDCHs in future assessments.
35. The cost of misclassified Tier II lunches/suppers equals the number of Tier II lunches/suppers claimed in error at the Tier II FDCH (18) multiplied by the difference of Tier I and Tier II lunches/suppers rates for the program year.

36. The cost of misclassified Tier II snacks equals the number of Tier II snacks claimed in error at the Tier II FDCH (19) multiplied by the difference of Tier I and Tier II snacks rates for the program year.

37. The total cost of misclassified Tier II meals at the Tier II FDCH equals the sum of error costs for Tier II breakfasts, lunches/suppers, and snacks (34, 35, 36) for the two program years.

To compute the national estimate of the percentage of reimbursements paid in error, Optimal calculated:

38. Total overpayments made to FDCHs misclassified as Tier I equal the weighted sum of erroneous payments made to Tier I FDCHs (33).

39. Total underpayments to FDCHs misclassified as Tier II equal the weighted sum of erroneous payments made to Tier II FDCHs (37).

40. Total erroneous payments (treating underpayments as positive) equals the sum of total overpayments made to FDCHs misclassified as Tier I (38) and total underpayments to FDCHs misclassified as Tier II (39).

To estimate the national costs of erroneous payments, Optimal first calculated the weighted percentage of reimbursements paid in error to FDCHs in a tier due to misclassification by dividing the total overpayments and underpayments by the total payments made to all FDCHs in a tier. The following variables were calculated (table D-6):

41. The percentage of reimbursements to Tier I FDCHs paid in error was estimated by the ratio of total overpayments made to FDCHs misclassified as Tier I (38) to the total dollars paid to FDCHs in Tier I, multiplied by 100.

42. The percentage of reimbursements to Tier II FDCHs paid in error is estimated by the ratio of total underpayments made to FDCHs misclassified as Tier II (39) to the total dollars paid to FDCHs in Tier II, multiplied by 100.

43. The percentage of reimbursements to all FDCHs paid in error is estimated by the ratio of total underpayments made to all misclassified FDCHs (40) to the total dollars paid to all FDCHs, multiplied by 100.

<table>
<thead>
<tr>
<th>Tier as determined by sponsor</th>
<th>Percentage of reimbursements paid in error</th>
<th>90% confidence interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>TIER I</td>
<td>0.47%</td>
<td>0.09% - 0.86%</td>
</tr>
<tr>
<td>TIER II</td>
<td>1.83%</td>
<td>0% - 3.80%</td>
</tr>
<tr>
<td>OVERALL</td>
<td><strong>0.54%</strong></td>
<td><strong>0.17% - 0.92%</strong></td>
</tr>
</tbody>
</table>

SOURCE: Weighted estimates from 2015 sample data.

NOTE: All reported estimates were calculated separately for population subgroups (Tier I and Tier II FDCHs) and for the overall sample. Due to sampling design and applied analytic and post-stratification weights, Tier I and Tier II estimates should not be summed to obtain population totals, because their sum is likely to differ from the population-level estimate. This is due in part to a small sample size and a high degree of sampling variability in the estimates for Tier II FDCHs.

For Tier I FDCHs, the percentage of reimbursement paid in error (table D-6) was about one-half of the percentage of meals reimbursed in error (table D-4). This difference is due to the fact that the

8 In this and in previous assessments, the reported confidence intervals are truncated to have lower bounds of zero if the actual confidence interval extends below zero. The reason for this truncation is because values lower than zero are not readily interpreted. Truncation could potentially be avoided if the estimates were more precise, yielding narrower confidence intervals of the estimates. This issue should be resolved by increasing the sample size for Tier II FDCHs in future assessments.
overpayment is a fraction of the reimbursement for each meal. For example, the Tier I rate for lunch or supper was $2.47 and the Tier II rate was $1.49 (using July 1, 2014–June 30, 2015 rates); thus, the cost of a lunch or supper reimbursed at the wrong rate was $0.98, or about 40 percent of the Tier I rate. The ratio of the overpayment to the Tier I reimbursement varies by type of meal. Conversely, for Tier II FDCHs, the percentage of reimbursement dollars paid in error is slightly greater than the percent of meals reimbursed in error. This increase is due to the underpayment amounts for breakfasts and snacks being greater than the actual reimbursement for these meals. For example, the Tier II rate for breakfast was $0.48, while the underpayment is $0.83 ($1.31 minus $0.48).

Amounts of Reimbursements Paid in Error
To calculate the total cost of misclassification, as for the total meals reimbursed in error, a ratio estimation procedure was used. For each tier and overall, the percentage of reimbursements paid in error (from sample data, as described above) was multiplied by the national total reimbursements (from the FNS National Data Bank FY 2014) to estimate the total cost of misclassification errors. To estimate the lower and upper limits of the total costs of misclassification, the lower and upper limits of the percentages by tier and overall were multiplied by the national totals.

To estimate the total national cost of misclassification, the following were calculated (table D-7):

44. The total reimbursements paid in error in Tier I FDCHs was estimated by multiplying the total of all FY 2014 reimbursements in Tier I FDCHs in the United States (from the FNS National Data Bank FY 2014) by the percentage of reimbursements claimed in error in Tier I FDCHs (41), as estimated from weighted sample data.

45. The total reimbursements paid in error in Tier II FDCHs was estimated by multiplying the total of all FY 2014 reimbursements in Tier II FDCHs (from the FNS National Data Bank FY 2014) by the percentage of reimbursements claimed in error in Tier II FDCHs (42), as estimated from weighted sample data.

46. The total reimbursements paid in error in all FDCHs was estimated by multiplying the total of all FY 2014 reimbursements in all FDCHs (from the FNS National Data Bank FY 2014) by the percentage of reimbursements claimed in error in all FDCHs (43), as estimated from weighted sample data.

Table D-7. National estimates of reimbursements paid in error, PY 2015 9

<table>
<thead>
<tr>
<th>Tier as determined by sponsor</th>
<th>Reimbursements paid in error</th>
<th>90% confidence interval</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Lower</td>
<td>Upper</td>
</tr>
<tr>
<td>TIER I</td>
<td>$3,373,504.47</td>
<td>$613,406.33</td>
<td>$6,133,602.60</td>
</tr>
<tr>
<td>TIER II</td>
<td>$1,094,346.06</td>
<td>0</td>
<td>$2,271,746.64</td>
</tr>
<tr>
<td>OVERALL</td>
<td>$4,180,182.15</td>
<td>$1,298,457.37</td>
<td>$7,061,906.93</td>
</tr>
</tbody>
</table>

SOURCE: Weighted estimates from 2015 sample data.

NOTE: All reported estimates were calculated separately for population subgroups (Tier I and Tier II FDCHs) and for the overall sample. Due to complex sampling design and applied analytic and post-stratification weights, Tier I and Tier II estimates should not be summed to obtain population totals, because their sum is likely to differ from the population-level estimate. This is due in part to a small sample size and a high degree of sampling variability in the estimates for Tier II FDCHs.

9 In this and in previous assessments, the reported confidence intervals are truncated to have lower bounds of zero if the actual confidence interval extends below zero. The reason for this truncation is because values lower than zero are not readily interpreted. Truncation could potentially be avoided if the estimates were more precise, yielding narrower confidence intervals of the estimates. This issue should be resolved by increasing the sample size for Tier II FDCHs in future assessments.