Food and Nutrition Service	**February 2019**

CHILD AND ADULT CARE FOOD PROGRAM (CACFP) SPONSOR TIERING DETERMINATION AGING STUDY, 2015-2020 (SUMMARY)

Background

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

One series of studies (2005-2015) estimates the number of family day care homes (FDCHs) that were misclassified for Tier I and Tier II reimbursement rates[1] and the corresponding improper payments from 2005 through 2015. Tiering misclassification results in improper payments because misclassified FDCHs do not receive the appropriate level of reimbursement for the meals and snacks provided to the children. These studies generally found that although the tiering error rates, and associated cost estimates were not statistically different over time, the estimated rates have declined steadily since 2011. The 2015 tiering error rate was 1.3 percent.[2]

This report describes the feasibility of a modeling approach to forecast tiering error rates based on prior data, in lieu of annual assessments of misclassified FDCHs. It presents estimates for forecasted rates and associated improper payments for FDCHs for each fiscal year (FY) from 2016 to 2020. This study sought to determine the feasibility of an econometric model to project CACFP tiering errors. Given the limitations outlined below, the report concludes that building a reliable model is not possible with the currently available data and estimates produced by the models cannot be used for IPERIA reporting.

Methods

The analysis used available annual data from the 2005-2015 CACFP Tiering assessments as well as other sources to build statistical models that estimate tiering errors and associated costs. The analysis consisted of two stages:

(1) Selection of sociodemographic, economic, and structural factors as control variables. Multiple State-level factors were tested for associations with historical error rates, including: CACFP descriptive data, socioeconomic variables, educational achievement variables, and technological advancement indicator variables.[3] Factors with statistically significant correlations with the historical error rates were selected as control variables for model inclusion in Stage 2.

(2) Use of multivariate regression modeling to forecast overall, Tier I, and Tier II error rates and the resulting improper payments in each year from FY 2016 to FY 2020.

This stage involved three steps:

- Forecast tiering error rates for each year from 2016 to 2020 using multistage regression.

- Estimate the number of meals provided in error, given that an error has occurred.

- Estimate the associated inflation-adjusted reimbursement costs for meals provided in error.

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[1] Eligibility for the Tier I rate is based on the location of the day care home in a low-income area or the provider's own household income level. Providers who do not meet the Tier I eligibility criteria are classified as Tier II and receive lower rates of reimbursement.

[2] https://www.fns.usda.gov/child-and-adult-care-food-program-cacfp-assessment-sponsor-tiering-determinations-2015

[3] Data sources included the National Data Bank, the U.S. Department of Commerce, Bureau of Economic Analysis and U.S. Census Small Area Income and Poverty Estimates, the Institute of Education Sciences, and the Internal Revenue Service Data Book and Federal Communications Commission (FCC) Broadband Report.

Findings

Tiering Classification Error Rates

The study estimates that the overall tiering error rate (probability of tiering errors) would steadily decline from 1.49 percent in FY 2016 to 0.92 percent in FY 2020. During this period, Tier I error rates are predicted to steadily decline from 1.13 percent to 0.52 percent while the rates for Tier II errors are predicted to increase from 3.61 percent to 5.35 percent. However, the low number of Tier II errors in the data makes any Tier II estimation or prediction difficult.

Number of Improperly Reimbursed Meal Claims

Similar to the trend observed for predicted tiering errors for FY 2016-2020, the estimated overall number of meals reimbursed in error (meals-in-error) is also expected to decrease from 4.9 million meals in 2016 to 2.3 million meals in FY 2020. This trend is predicted for Tier I and Tier II meals combined but expected to decrease for Tier I and increase for Tier II. Again, because of the small sample size to estimate Tier II error rates in the CACFP assessment, this observation is subject to large variation. Using this model, the estimated overall national cost of misclassification errors is predicted to be $3.9 million in FY 2016 and $2.0 million in FY 2020.

Conclusion

The findings in this report indicate that the overall decreasing trends in CACFP FDCH tiering errors, meals-in-error, and costs of misclassification are expected to continue. However, due to several weaknesses of the proposed model, reliable estimates of tiering error cannot be generated and used for IPERIA reporting. The limitations of the model include:

- Missing or limited CACFP assessment data resulted in a large variance of outcome estimates. While the analysis attempted to use all assessment data from 2005 through 2015, data for 2005 through 2007 were missing or produced with a methodology incompatible with other years. In addition, State identifiers for 2009 and 2010 were coded in a way that prevented the use of State-level variables in the analyses. Lastly, data for 2011 were missing several key

characteristic variables that precluded the use of the information provided for this year. Due to these limitations, the analysis partially used the information from 2009 and 2010 and fully used information from years 2008 and 2012-2015.

- The CACFP assessment data across years only contained data at the State level rather than the finer geographic levels (e.g., census block).

- The CACFP assessment data did not contain sponsor or FDCH characteristics other than State (where identifiable) and the assessment data. This further limited the ability of the model to estimate and predict error rates, as it precludes the analysis from obtaining different estimates for each FDCH as a function of their unique characteristics. Instead, the model could only estimate the same tiering error value for all FDCHs in a given State for a given year.

- Because the CACFP sample of States and FDCHs changed every year, it was not possible to use FDCH-specific characteristics (such as number of meals) that can further explain the variation in error rates. Instead, the equivalent FNS National Data Bank (NDB) State-level data variables, which display less variation than the FDCH-specific variables would have provided, were used.

For More Information