

Child and Adult Care Food Program (CACFP)

Improper Payments Data Collection Pilot Project



FDCH Meal Claims

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Improper Payments Data Collection Pilot Project

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EXECUTIVE SUMMARY

The Child and Adult Care Food Program (CACFP) subsidizes nutritious meals served to eligible children and functionally impaired adults participating in family day care homes (FDCHs), day care facilities, emergency shelters, and afterschool programs. To assist in meeting the requirements of the Improper Payments Information Act of 2002 (IPIA) (Public Law 107-300) to estimate the annual amount of erroneous payments, the U.S. Department of Agriculture (USDA), Food and Nutrition Service (FNS) contracted with Mathematica Policy Research, Inc. (MPR) to explore the feasibility and validity of different methods for estimating the number of meals served by Family Day Care Homes (FDCHs) in the CACFP. This report discusses the experiences and results of a pretest and pilot study that explored four methods for estimating erroneous meal claim payments in the CACFP nationally. The focus of the pilot is on evaluating differences in the quality of the estimates each method would produce and the feasibility and relative costs of implementing the methods nationwide.

The Methodologies Tested

The pilot tested two different methodologies designed to estimate the true number of meals served to children. In the Parent Recall Method, parents are surveyed about their children's attendance at the FDCH during a target week and about the meals and snacks their children received at the FDCH each day. In the Observations and Modeling Method, observational data about the meals and snacks provided to children at FDCHs are collected, along with data on the characteristics of sponsors, FDCHs, and participating children. These data are used to develop statistical models to project estimates of actual meals served.

A pretest conducted prior to the pilot included two additional methodologies for measuring the number of meals served, both based on data from sign-in/sign-out (SISO) logs. SISO logs are maintained by some FDCHs and track the times each child arrives at and departs from the FDCH each day. However, the pretest found limited use of SISO logs, so the two methods that relied on SISO data were excluded from the full pilot.

Parent Recall Method. Assessing the potential of the Parent Recall Method to produce accurate estimates of meals served involved comparing estimates based on parent recall data to observational data on the number of meals actually served to children. The measure of meals served is based primarily on reports from parents of which specific meals their children received. If a parent was unable to report that detailed information, the measure is based on the parent's report of whether their children attended the FDCH on the target day. It is assumed that children received all meals specified on their enrollment forms on days they attended.¹

¹ Nearly all parents who completed interviews were able to answer questions about their child's daily attendance and receipt of most meals during the target week. However, about one-quarter of parents were unable to recall some specific information—typically whether their children had received snacks at the FDCH.

The differences between the estimates based on parent reports weighted to all children in the sampled FDCHs and the observed number of meals served are statistically significant, at the 0.05 level, for every type of meal except morning snacks.² For the estimates based on parent reports of their own children, however, none of the differences are statistically significant. Considered together, these findings suggest that, while estimates of meals served *to all children* at the sampled FDCHs based on parent reports for a subset of children are unlikely to be sufficiently accurate to fulfill the requirements of the IPIA, estimates of meals served *to children of respondents* are more reliable.

Estimates of meals received by children of survey respondents can be compared to claims data for those children—if disaggregated, child-level, claims data are available—to compute estimates of erroneous payments for those children. Assuming that the rate of erroneous payments for respondents’ children is the same as that for children of nonrespondents, then this rate could be applied to national claims numbers to produce national estimates of erroneous payments.

Observations and Modeling Method. Evaluating the Observations and Modeling Method involves assessing the reliability of the predictions generated by statistical models developed using the observations data, along with other data, from the FDCHs in the pilot. Although direct observations provide the most reliable and accurate assessment of the number of meals served, such data are expensive and burdensome to collect. Thus, the pilot explored the possibility of using observations data on a set of FDCHs collected in one year to develop models that will rely on more easily obtainable data sources to predict meals served in later years. In general, the regression equations explain the variance of the dependent variables—whether the child was observed to receive the meal or snack—reasonably well.

Ideally, we would verify the models by applying the estimated parameters to an independent sample and comparing the predicted meals to the actual meals observed. If the predicted and observed values were similar, we would have more confidence in the ability of the model to predict meals served in a later study. Unfortunately, such a sample is not available in the pilot. The lack of this type of verification is a limitation of our evaluation of the Observations and Modeling Method. Another limitation is that no models were developed for supper or for snacks served very early or late in the day, due to lack of observations data for those eating occasions.

Strengths and Weaknesses of Each Methodology

Parent Recall Method. The Parent Recall Method is straightforward to implement in terms of both data collection and analysis. Its strengths include its relatively low cost, compared to direct observations, and lower burden on FDCH providers. Importantly, parents’ reports of the meals their children received at FDCHs in the pilot were found to be consistent with estimates of meals served based on direct observations.

Weaknesses of the Parent Recall Method include the low quality of parent contact information on the enrollment forms provided by sponsors and the finding that parents tended to

² Tests of statistical significance could not be performed for supper, due to the sample size of 1.

report more meals than FDCHs claimed for reimbursement. The most serious weakness of this method is that, while the information reported on the survey was found to be fairly accurate, the number of meals reported for children for whom we have parent survey data is not representative of meals served to children for whom such data are not available.

Observations and Modeling Method. Among the strengths of the Observations and Modeling Method is that the observations on which it is based provide an independent assessment of the number of meals served. Although conducting the observations necessary to develop the statistical models is expensive and burdensome, once the models are fully developed and verified, the data needed to use them to predict meals served can be obtained at less cost and involve considerably less burden. The four models developed to predict children’s receipt of breakfast, lunch, and morning and afternoon snacks have the potential to produce fairly accurate estimates of children’s receipt of those meals.

However, the Observations and Modeling Method also has several weaknesses. First, while the models estimated in the pilot demonstrate the potential of the method, the specific models developed in the pilot are inadequate for use in estimating erroneous payments nationally, because (1) they were based on a small number of FDCHs, which were not representative of all homes nationally, (2) they have not been verified on an independent sample, and (3) no models were developed for supper or for snacks served early in the morning or late in the day.

SISO Log Method. Information collected from FDCH providers in the pilot sample confirmed the pretest finding that use of SISO logs by FDCHs is very limited. As a result, the methods relying on such logs are not feasible.

Recommendations

Based on the experiences in the pilot study, we recommend the Parent Recall Method for use in estimating erroneous payments in a national study:

Method	Feasibility	Potential Accuracy	Relative Cost
Parent Recall	High	National estimates of EP: High Separate estimates of over- and under-claims: High Subgroup estimates: High	Low
Observations and Modeling	High	National estimates of EP: High Separate estimates of over- and under-claims: Low Subgroup estimates: Low	Short run: High Long run: Low
SISO Logs	Low	Low	Low

I. INTRODUCTION

The Child and Adult Care Food Program (CACFP) subsidizes nutritious meals served to children and older adults in day care facilities, emergency shelters, and afterschool programs. To assist in meeting the requirement of the Improper Payments Information Act of 2002 (IPIA) (Public Law 107-300) to estimate the annual amount of erroneous payments, the U.S. Department of Agriculture (USDA), Food and Nutrition Service (FNS) contracted with Mathematica Policy Research, Inc. (MPR) to explore the feasibility and validity of different methods for estimating the number of meals served by Family Day Care Homes (FDCHs) in the CACFP. Such estimates could be compared to the meal claims submitted by FDCHs to compute estimates of erroneous payments. This report discusses the experiences and results of a pilot study that explored four methods and makes recommendations for a methodology to be used in estimating erroneous payments in the CACFP nationally.

A. BACKGROUND ON THE CACFP AND THE IPIA

Administered by FNS, the CACFP plays an important role in providing children and the elderly with access to adequate food and in improving the quality and affordability of day care for low-income families. The program subsidizes nutritious meals and snacks served to children and older adults in participating day care facilities and to children in emergency shelters and eligible afterschool programs. The providers of care are reimbursed at a fixed rate for each qualifying meal they serve to program participants.

In recent years, there have been concerns about program oversight and accountability in the family day care component of the CACFP. The integrity of the program depends in large part on the validity of meal claims submitted for reimbursement and the effectiveness of procedures for verifying this information. Evidence from state and federal program reviews, audits, and

investigations has raised concerns about the accuracy of claims and other problems resulting in improper payments (U.S. Department of Agriculture 1999). This evidence has raised concerns at USDA, in Congress, and among program participants and other stakeholders.

Under the IPIA, USDA must identify and reduce improper or erroneous payments in various food and nutrition programs, including the CACFP. Erroneous payments in the CACFP arise when program sponsors and individual FDCH providers submit inaccurate meal counts and claims for meal and snack reimbursements. Payment errors can result when providers claim reimbursement for meals that were not served to qualifying children or that did not include the necessary nutritional components to be eligible for reimbursement or when program sponsors claim reimbursement for unallowable administrative costs. Erroneous payments can also be caused by misclassification of the eligibility status of providers and the children in their care because of administrative errors or misreporting.

To comply with the requirements of the IPIA legislation, USDA will need to estimate the annual amount of erroneous payments in the CACFP. A full assessment of the rate of erroneous payments is a complex undertaking, because reimbursement and eligibility requirements vary for different components of the program. FNS recently initiated CACFP program assessment projects that will inform the development of strategies for measuring erroneous payments to sponsoring organizations and erroneous payments that result from misclassification of eligibility status (Macaluso 2006; Smith 2006). In addition, to explore approaches for measuring differences between provider claims and the number of meals actually served, FNS contracted with MPR to conduct the CACFP Improper Payments Data Collection Pilot Project.

B. THE PILOT STUDY AND RESEARCH QUESTIONS

The pilot study contributes to the understanding of how to estimate erroneous payments by evaluating different methods for estimating the true number of meals and snacks served to

participating children by CACFP FDCH providers. The estimates of meals produced by a follow-up evaluation that utilizes the recommended method with a nationally representative sample could then be compared with the number of meals claimed by providers as part of the calculation of erroneous payments in the CACFP.

The focus of the pilot is on evaluating differences in the quality of the estimates each method would produce and the costs of collecting data to produce them. Specifically, the pilot study employs quantitative and qualitative analyses to evaluate the validity, cost, and feasibility of implementing different data collection methods for estimating the number of meals served by FDCHs, to identify a preferred method. For each of the methods tested, the study addresses the following research questions:

- What are the strengths of the method for validating the meal reimbursement claims submitted by FDCHs?
- What are the weaknesses of the method for validating such claims? What, if any, steps could be taken to overcome these weaknesses?
- What is the level of confidence that the estimates of erroneous payments developed from application of the method will meet the requirements of the IPIA?
- What is the feasibility of administering the method on a national level? Could the method be administered on a national level at this time? What factors or events must be present for the projected level of feasibility to be met?
- What is the potential cost of implementing the data collection method nationwide?

C. THE METHODOLOGIES TESTED

The full pilot tested two methodologies designed to estimate the true number of meals served to children:

- **Method 1: Parent Recall.** For this method, parents or guardians are surveyed about their recollections of their children's attendance at the FDCH during a target week. A child's attendance at an FDCH is considered an indication that reimbursable meals or snacks were received by the child. In addition, the survey asks parents which meals and snacks their children received at the FDCH each day during the target week.

These data are used to produce estimates of the number of meals served at the FDCH, which could be compared to data on meals claimed for reimbursement to estimate erroneous payments.

- **Method 2: Observations and Modeling.** This approach collects observational data on the specific meals and snacks provided to children at FDCHs, along with data on the characteristics of sponsors, FDCHs, and participating children. These data are collected for a sample of FDCHs observed across their scheduled breakfast, lunch, supper, and snack times, and they are used to develop statistical models to project estimates of actual meals served. The coefficients from these models could be applied to data for other FDCHs to predict the number of meals served to children enrolled at those homes. These predictions could then be used, along with meal claims data, to estimate erroneous payments.

A pretest conducted prior to the pilot included two additional methodologies for measuring the number of meals served, both based on data from sign-in/sign-out (SISO) logs. SISO logs are maintained by some FDCHs and track the times each child arrives at and departs from the FDCH each day. However, as discussed in Chapter II, the experiences and results of the pretest suggested limited use of SISO logs by FDCHs and lack of uniformity of information in the logs. Thus, the two methods that relied on SISO data were excluded from the full pilot.

To estimate erroneous payments, the estimate of the number of meals served, by type, produced by the method found to hold the most potential could be compared to the number of meals claimed for reimbursement by FDCHs. The goal of the current study is not to compute estimates of erroneous payments, but to evaluate the feasibility, validity, and cost of each method for measuring the number of meals served in the CACFP.

The remainder of this report explores these issues. Chapter II discusses the experiences and results of a pretest of the original four methods. Chapter III describes the data collection for the two methods in the full pilot, including a discussion of the feasibility of collecting the necessary data on a larger scale. Chapter IV presents quantitative analyses, including discussions of data quality, the level of confidence of estimates produced by each method included in the full pilot, and how the estimates could be compared to meal claims data to estimate erroneous payments.

Chapter V summarizes the strengths and weaknesses of each methodology and presents our recommendations. Data collection instruments are included as appendixes.

II. PRETEST EXPERIENCES AND FINDINGS

Before proceeding with the full pilot, Mathematica Policy Research, Inc. (MPR) conducted a pretest of four approaches to estimating the number of Child and Adult Care Food Program (CACFP) meals served to children. Although the pretest involved inadequate sample sizes for statistical tests, it enabled us to examine the feasibility and cost of each method and to make some preliminary comments about their potential accuracy. Information from the pretest was used to identify issues in the data collection methods and determine which methods showed adequate potential to be included in the full pilot.

The pretest included four methods:

- **Method 1: Parent Recall.** This method surveys parents or guardians about their recollections of their children's attendance at the Family Day Care Home (FDCH) during a target week and the meals and snacks their children received at the FDCH each day that week.
- **Method 2: Observations and Modeling.** This approach collects observational data on the meals and snacks provided to children at FDCHs, along with data on the characteristics of sponsors, FDCHs, and participating children. These data are collected for a sample of FDCHs and are used to develop statistical models to project estimates of meals served. The coefficients from these models could be applied to data for other FDCHs to predict the number of meals served to enrolled children.
- **Method 3: Sign-In/Sign-Out Logs.** This approach collects data from sign-in/sign-out (SISO) logs maintained at FDCHs that track, by day, the time each child arrives at and departs from the FDCH. A child's attendance during a mealtime could be considered an indication that the child received a reimbursable meal or snack and thus could be used to generate an estimate of the number of meals served by type.
- **Method 4: Mixed Approach: Sign-In/Sign-Out Logs and Parent Recall.** This method combines the use of parent recall with the SISO logs to determine if more complete and accurate attendance data can be obtained by combining the two methods.

This chapter discusses the experiences and findings of the pretest of these four methods. Section A describes MPR's experiences in collecting the data for the four methods in the pretest,

Section B discusses the analysis of the limited pretest data, and Section C presents the resulting recommendations for the full pilot.

A. PRETEST DATA COLLECTION PROCEDURES

In the pretest, conducted between June 7 and July 25, 2007, MPR tested the four methods, separately and in combination, to determine which have the greatest chance of success for validating meal reimbursement claims submitted by FDCHs.

At the orientation meeting on January 12, 2007, MPR presented its plan for the pretest. The plan specified the number of FDCHs participating in the pretest and the methods to be employed with each home. At the meeting, the consensus was that MPR, in cooperation with the Food and Nutrition Service (FNS) of the U.S. Department of Agriculture (USDA), would identify sponsors and FDCHs that used SISO logs, as well as other standard forms, to participate in the pretest. At that meeting, we suggested the distribution of methods as listed in Table II.1. This distribution of methods across the FDCHs would have resulted in parent recalls in five FDCHs, SISO logs in eight FDCHs, and on-site observations in eight FDCHs.

TABLE II.1
 PLANNED DISTRIBUTION OF METHODS ACROSS FAMILY DAY CARE HOMES

Method	Description	Number of FDCHs for Testing Each Method or Combination of Methods
Method 1	Parent recalls (N = 2)	1
Method 2	Observations	3
Method 3	SISO logs	2
Method 4	Mixed method: Parent recalls (N = 3) and SISO logs	2
Methods 1 and 2	Parent recalls (N = 2) and observations	1
Methods 2 and 3	SISO logs and observations	3
Methods 2 and 4	Parent recalls (N = 2), SISO logs, and observations	1

For the pretest, MPR selected a convenience sample rather than a random sample of states, sponsors, and FDCHs. Given the restrictions on the number of respondents that we faced during the pretest phase, we purposively selected states, sponsors, and FDCHs to capture variability in the types of FDCHs and the types of data that can be used to validate meal reimbursement claims.

1. Identifying Pretest States and Sponsors

MPR selected two states, New Jersey and New York, to include in the pretest because they had sponsors using SISO logs that could be used to test Methods 3 and 4. In cooperation with our contact in each state, MPR selected one sponsor in each state on the basis of its willingness to cooperate, location, size, and availability of data. It was important to select sponsors willing to cooperate with MPR without conditions or requirements for their participation. We recognized that the pretest was to be completed on a brief schedule and that valuable data collection time could be lost if lengthy negotiations were needed to enlist a sponsor's cooperation. MPR also considered the locations of the sponsor's FDCHs in the selection process. To minimize data collection costs, especially for evaluating the Observations and Modeling Method, MPR selected FDCHs within 50 miles of its Princeton, New Jersey, office. In addition, MPR considered sponsors' size. Sponsors with a large number of FDCHs with heavy administrative burdens might have been less able to cooperate with MPR on the evaluation schedule, even if they were willing to do so.

Once a state contact had been identified by FNS staff, MPR got in touch with that person to obtain a list of CACFP sponsors. This process appeared to work well. However, it was apparent that the state contacts did not fully understand initially the types of activities that would take place during the project. MPR senior project staff provided that information.

MPR had discussions with state contacts to select appropriate sponsors. After selecting the sponsors, MPR contacted each one to describe the study and request a list of FDCHs. Both sponsors responded quickly to the request and plans for the pretest seemed to be on target. MPR then provided detailed information to the designated contact person at each sponsor about the project activities. The executive officer at one sponsor needed reassurance that the data collected would not impact the sponsor and that MPR would work to minimize burden on the sponsor and the FDCHs.

Following receipt of the detailed information about project activities, the other sponsor contacted MPR with a list of six conditions for continued cooperation. The sponsor was adamant that the conditions be met before further discussions could take place. The conditions were as follows:

1. A letter from MPR to the sponsor describing the study and listing all the activities that would take place regarding the FDCHs, parents, and children and including the items required from the sponsor.
2. A letter from MPR to the FDCHs providing full details about every activity and data collection effort to be carried out with the providers and the parents.
3. A letter to all parents of children in sampled FDCHs specifying all activities from observation to parent interviews, and including a request for permission for the sponsor and/or FDCH to release contact information. The sponsor required active consent from the parents. The letter was to be given to the parents in duplicate by the FDCH provider and then signed by the parent(s) giving permission for their contact information to be provided to MPR. The FDCH was to be responsible for distributing the letters and collecting signed parental consent forms.
4. A criminal background check for each MPR staff member who would visit an FDCH.
5. Reimbursement to the sponsor for hourly costs at the overtime rate and travel time for sponsoring agency workers who would accompany MPR observers.
6. A “hold harmless” document from MPR for the sponsoring agency, including a certificate of insurance and liability.

MPR contacted FNS and reviewed these conditions. After thorough consideration, FNS determined that MPR should respond to the requests for criminal background checks and the certificate of insurance and liability. MPR provided evidence of criminal background checks and insurance liability as requested by the sponsor. The sponsor then agreed to cooperate fully.

2. Selecting FDCHs

MPR used only two selection criteria to identify FDCHs for the pretest. First, each selected FDCH needed a sufficient number of parents in order to conduct the recall survey with up to three willing parents per FDCH for the Parent Recall Method and the Mixed Method. Second, a sufficient number of FDCHs needed to use the SISO logs required to evaluate the SISO Logs Method and the Mixed Method.

MPR planned to combine the in-home observation with one of the three sponsor-required monitoring visits to FDCHs, which would effectively restrict the sample of eligible providers to those who had not yet been visited three times in the past year. The sponsors did not seem to be persuaded that this was an option for them and, therefore, did not limit MPR's selection of FDCHs to those needing a sponsor-required monitoring visit.

To further assist in the selection of FDCHs, MPR asked sponsors which homes under their supervision used any kind of daily SISO log. Although the state contacts had indicated that the selected sponsors used SISO logs in their FDCHs, MPR later determined that such logs were not required by either sponsor. However, both sponsors identified FDCHs they believed were using SISO logs. The FDCHs were then assigned to one or more of the pretest methods.

To test each of the methods, MPR needed enrollment forms and meal claims for a three-month period. For two of the methods, SISO logs were also required. Before beginning the data collection, MPR asked the sponsors to provide copies of enrollment forms for each FDCH selected for the pretest. One sponsor provided the forms within two weeks of the initial request.

The second sponsor provided the enrollment forms for some of the FDCHs within three weeks of the initial request. MPR placed reminder calls to the provider to obtain the missing enrollment forms. Obtaining enrollment forms from the sponsor was an efficient method of collecting names of children, ages, scheduled attendance and meals, and contact information for parents and guardians. One sponsor required its monitor to accompany MPR staff during all on-site visits. The second sponsor wanted to notify the FDCHs and obtain permission for MPR staff to visit the homes without a monitor from the sponsoring agency.

3. Experiences Implementing Each Method

Once FDCHs had been selected, they were assigned to one of the seven approaches being tested. MPR set a data collection schedule for each FDCH participating in the pretest, including proposed days of the week and times for observations. When one or more methods were combined, data collection involved a series of activities that had to be carried out in a specific sequence. If an activity could not be accomplished within the scheduled time frame, subsequent activities associated with that method or combination of methods could not occur as scheduled. Postponed observations seriously impacted the schedule. The contact person at one sponsor had extended vacation periods and did not make arrangements for MPR to gain access to the FDCHs before leaving for vacation. Her assistant did not have the authority to make those arrangements. The other sponsor had assigned a part-time monitor to accompany MPR staff and that constrained the scheduling process. The monitor's limited and inflexible hours resulted in many changes to the planned schedule. Table II.2 summarizes the administration of various methods that were used during the pretest. For each method, the table indicates the number of FDCHs for which SISO logs were collected and observations conducted, and the number of parents interviewed. For the combined methods, both types of data collection took place within the same

FDCH. Each type of method being tested was limited to fewer than 10 respondents or observations.

TABLE II.2
PRETEST ADMINISTRATION OF FOUR METHODS

Pretest Method	Description	Number of FDCHs Using SISO Logs	Number of FDCHs Being Observed	Parent Recalls (Telephone Interviews)
Method 1	Parent recalls	0	0	7
Method 2	Observations	0	2	0
Method 3	SISO logs	0	0	0
Method 4	Mixed method: Parent recalls and SISO logs	0	0	0
Methods 1 and 2	Parent recalls and observations	0	2	2
Methods 2 and 3	SISO logs and observations	5	5	0
Methods 2 and 4	Parent recalls, SISO logs, and observations	0	0	0
Total		5	9	9

With so few FDCHs using SISO logs, the distribution of methods across FDCHs had to be modified during the pretest data collection. The Mixed Method was not tested in any FDCHs, and the SISO Logs Method was tested only in combination with the Observations and Modeling Method. One fewer FDCH was included in the pretest than originally planned, because of lack of SISO logs. Table II.3 shows the differences between the design used in the pretest and that in the original plan.

TABLE II.3

DISTRIBUTION OF METHODS IN ACTUAL PRETEST AND ORIGINAL PLAN

Method	Description	Number Used for Testing Each Method in Pretest	Original Number Planned for Testing Each Method
Method 1	Parent recalls	3 FDCHs with 7 parent recalls	1 FDCH with 2 parent recalls
Method 2	Observations	2 FDCHs	3 FDCHs
Method 3	SISO logs	0	2 FDCHs
Method 4	Mixed method: Parent recalls and SISO logs	0	2 FDCHs with 3 parent recalls
Methods 1 and 2	Parent recalls and observations	2 FDCHs with 2 parent recalls	1 FDCH with 2 parent recalls
Methods 2 and 3	SISO logs and observations	5 FDCHs	3 FDCHs
Methods 2 and 4	Parent recalls, SISO logs, and observations	0	1 FDCH with 2 parent recalls
Total		12 FDCHs with 9 parent recalls	13 FDCHs with 9 parent recalls

In the following sections, we review each method, noting what worked well and what did not work as planned.

a. Parent Recalls

Obtaining enrollment forms from sponsors prior to the start of pretest data collection worked well and ensured that parent contact information was available. There were no obstacles to obtaining the enrollment forms.

Since the recall period was the prior week, MPR staff had limited days (Sunday through Wednesday) in which to contact parents and complete telephone interviews. Interviewers called during daytime and evening hours. MPR attempted to contact 18 parents and completed 9 interviews within the data collection period, for a 50 percent response rate. On average, fewer than two attempts were made before reaching the parents. Few parents asked the interviewer to

call back at another time to complete the interview. Among the parents whom interviewers reached, there were no refusals and no break offs during the interviews.

The interviews were planned to last no more than 15 minutes and ranged in time from 6 to 15 minutes (see Appendix A for the parent survey instrument). With an average time of 8.9 minutes, the interview length met our expectations. As described below, parents were able to answer the questions and there were no major problems with item nonresponse. The debriefing questions at the end of the parent interview revealed that all respondents found the questions easy to answer; they expressed confidence in their responses and indicated their willingness to respond to two to five additional minutes of questions. This suggests that a few more questions could be added to the parent interview without jeopardizing cooperation.

MPR intended the parent questionnaire to be administered without the knowledge of the FDCH provider, to avoid any possible impact of the provider on parents' cooperation or responses. The sponsors were made aware of the potential for parent interviews, but MPR did not identify the FDCHs selected for pretesting the Parent Recall Method. One parent who completed an interview became suspicious of MPR's intent and notified the provider, who, in turn, contacted the sponsor. The provider was concerned that MPR was conducting an audit and wanted the option of notifying parents prior to interviews. This experience raises the issue of the types of information that should be provided to FDCHs affiliated with sponsors selected for the pilot study.

b. Observations

Originally, MPR planned to observe two eating occasions at each FDCH and to conduct unannounced visits accompanied by the sponsor. The visits were planned to occur at mealtimes, based on information provided by the sponsor about the approximate times of meals. MPR had

suggested that sponsors use the visit as one of the required sponsor monitoring visits, provided the activities associated with the sponsor's monitoring did not contaminate the pretest data collection effort. Contrary to the study's plans, both sponsors notified the FDCHs in advance of the observation visits. Some providers from both sponsors appeared to make extraordinary preparations for the MPR visit. These preparations included having additional staff present, equipping the children's bathroom with special towels, decorating the space with special flowers, and providing special plates for the children's meals.

One sponsor did not require MPR staff to be accompanied; however, the limited availability of the monitor from the second sponsor often interfered with MPR's ability to observe meal service and did not allow for observation of more than one eating occasion per FDCH. In most cases, the mealtimes that the sponsor indicated were only approximate, and the FDCH provider had great flexibility in meal service times. This was another confounding factor in MPR's ability to observe more than one eating occasion. When MPR was able to arrange visits to two FDCHs on the same day, the ability to observe more than one eating occasion at each sponsor was also impacted. Unless the two FDCHs were located within a few minutes' drive of each other, the observers were unable to time their visits to coordinate with service times of the eating occasions.

With one exception, providers were comfortable with the presence of the MPR observers. The exception involved a non-English-speaking provider who did not fully understand what the observer was doing; the monitor was unable to communicate the purpose of the visit.

The visits were mostly observational (Appendix B); however, it was also useful for MPR observers to ask providers a few questions to better understand the context for providing meals (Appendix C). MPR planned for the interview portion of the visit to be limited to 15 minutes. The interviews ranged from 5 to 11 minutes and averaged 8.2 minutes in length, well within the

planned 15 minutes. Many providers had limited time, and this appeared to be an ideal length for the interview.

The provider interview could occur at any time during the visit. We asked providers to estimate how often (on average) they adhered to preplanned meals (as opposed to deciding closer to the day or time of the meal), and how often they typically filled out required forms (after each meal, at the end of the day, at the end of each week, or at the end of each month). At the FDCHs being observed and supplying SISO logs, observers asked questions about compliance with the form (for example, “How did they present the request to parents?” “Did parents remember to fill it in?” “How often did the provider fill in missing information?”). When the monitor from the second sponsor insisted on being present during the provider interview, her presence may have influenced the provider’s responses.

The management time associated with scheduling the observation visits exceeded MPR’s expectations. Considerable time was spent arranging and rearranging schedules and observer availability to accommodate changing needs of providers and the monitor. MPR needed to train four observers to accommodate the level of flexibility that the sponsors required.

c. Sign-In/Sign-Out Logs

Although sponsors indicated that many FDCHs used SISO logs, a limited number of homes actually completed them. For the pretest, MPR had expected eight FDCHs to use SISO logs and found that only five of the eight actually used them. At one sponsor, some FDCHs used SISO logs in addition to the meal claims forms signed by parents. At the other sponsor, a county-level community action program (CAP) asked FDCHs receiving a subsidy from the CAP to use some type of SISO log. The CACFP sponsor was not involved in the development, training, or

monitoring of those SISO logs. At least one provider completed the SISO log as a tool to record daily attendance. Another provider used the SISO log to note when a child was absent.

The fact that so few FDCHs were using SISO logs meant that it was not possible for MPR to test the Mixed Method that combined parent recall and the SISO logs. MPR found that FDCHs were not required to submit SISO logs to their sponsors, and, thus, the logs could be obtained only during on-site visits. As a result, MPR could test the SISO Logs Method only in combination with an on-site observation. There were several other problems in obtaining SISO logs for the target week, even from the FDCHs that were using them. At some FDCHs, the logs were single sheets of paper, and at others they were maintained in a bound book. In both cases, it was necessary to photocopy the pages. Illegibility was frequently a problem, and it was often unclear who signed the child in and out. Many parent signatures were missing. The greatest concerns were lack of uniformity of information on the logs and lack of uniformity in how the FDCH enforced their use. Observations suggest that unless the provider reminds the parents to sign in, parents may leave the FDCH without doing so.

4. Data Forms Collected from Sponsors in Other States

In addition to the two sponsors discussed above, MPR contacted sponsors in Colorado, Kansas, Massachusetts, and Pennsylvania to obtain hard copy administrative forms to determine the variation in the formats and the range of information available from these sources. Seven sponsors in these four states provided copies of enrollment forms, SISO logs (when their use by the sponsor was not limited to corrective action), and meal claims forms. Key findings from this data collection effort include the following:

- The core data elements—child’s name, date of birth, parent’s name, and telephone number—were consistently included on all sample enrollment forms.
- The date elements on the SISO logs were inconsistent across sponsors.

- There were some variations across sponsors in the presentation of data elements on the meal claims forms. The provider's name, child's name, and meal or snack type were found on all forms. However, the total meals claimed were aggregated (daily, weekly, semimonthly, and monthly), and totals for each child by meal type were not always provided.

Appendix D presents tables that summarize the data elements included on each type of form.

B. ANALYSIS

This section discusses the perceived strengths and weaknesses of each method included in the pretest. The pretest analysis is intended to give a more qualitative than quantitative review of each method. The pretest includes no more than nine data points for each type of data collection, which provides a limited base from which to assess the potential strengths and weaknesses of a method. In addition, sponsors and FDCHs for the pretest were carefully selected on the basis of location, cooperation, and their ability to work on the pretest schedule, so the pretest participants are not statistically representative of all sponsors or FDCH providers. In particular, it is possible that the pretest participants are more organized and cooperative than the average sponsor or FDCH.

1. Data Quality

Although the sample sizes are insufficient to conduct formal statistical tests, the pretest facilitates qualitative analyses to assess the quality of data collected through each tested method. In this section, we first address the extent to which parents, providers, or sponsors could consistently provide data for each method; we then provide summary statistics and tabulations for data collected. Finally, we make preliminary comments on the validity of each method, when possible, by comparing data collected using each method to data from direct observations.

a. Summary of Missing Data for Each Method

The amount of missing data found in the pretest is one indicator of the level of difficulty to expect in collecting similar data in the pilot and an eventual larger evaluation. Although small amounts of missing data are not a great concern, analyses based on the remaining data may be unreliable if a high percentage of data is missing. The cases with missing data may be systematically different from those without missing data. There are two different types of missing data: (1) unit nonresponse, in which all data are missing for a case (such as a parent interview that was not conducted, a SISO log that could not be collected, or a meal observation that did not take place); and (2) item nonresponse, in which some data were collected for the case, but specific items were missing (such as a parent unable to answer certain interview questions or an incomplete SISO log).

Unit Nonresponse. The pretest relied on purposive samples for each type of data collection, and the goal was to complete a certain number of cases, rather than to reach a target response rate, so response rates were not tracked. For each method, there were some cases for which we attempted to collect data but did not succeed. The obstacles encountered in the parent interviews and observations can be overcome by persistence, but those met in collecting the logs may be insurmountable. For the parent interviews, there were cases in which we attempted to survey parents and did not reach them or find a convenient time to schedule an interview, but no parent refused to participate. We originally had planned to observe two meals at each selected FDCH, but we completed only one observation for most homes because of scheduling difficulties.

Missing SISO logs were a more serious issue. Because not all states or sponsors require FDCHs to maintain such logs, we knew from the beginning that they would not be available for every home. However, even when sponsors reported that FDCHs kept SISO logs, we sometimes found that they did not, or that the document they were calling a log did not meet minimal

requirements for our data collection. As a result of missing logs, we could not collect the data needed for the Mixed Method for either of the FDCHs in which we intended to test that method.

Item Nonresponse. In addition to cases for which we were unable to collect data at all, some cases were missing certain items. Item missings were minimal for most methods but more problematic in the SISO logs data.

- **Parent Recall Interviews:** Although all parents who completed interviews were able to answer questions about their children's daily attendance and receipt of most meals during the target week, two of the nine parents were unable to recall some specific information: one did not know whether the child received breakfast at the FDCH on any day, and the other was unable to recall whether the child received an afternoon snack on one specific day during the target week. These missing data comprise only 2 percent of the 225 meal receipt data points collected in the pretest. There were no missing data on attendance during the target week.
- **Observations Data:** The only missing variable in the observations data is the time the observer left the FDCH. This variable is missing in 3 of the 11 observations, or 27 percent of data points. However, this piece of information is not critical to the assessment, because the variable for the type of meal observed is never missing. In addition, because the observation forms are completed by MPR staff, the missing data could be decreased through training.
- **SISO Logs:** Even when FDCHs kept SISO logs, these logs were often missing some details. Although the SISO log forms we collected were all designed to provide information on the specific times each child arrived and departed the FDCH, this information was not always recorded for all attendees.¹ In addition, because the logs were handwritten, there may have been some cases in which the information was filled in but was not legible enough to be used. These issues resulted in missing data on the precise hours children attended for 42 of the 312 daily log entries we analyzed, or 13 percent of pretest data points. Missing information on the hours children attended the FDCHs prevents accurate assessment of which meals they received there, as discussed below.

In addition, on some FDCH's SISO logs, there is no way to determine from the logs *themselves* if data on whether individual children attended the FDCH at all on a specific day were missing. In other words, if a child attended the FDCH but was not entered onto the log for the day, this would be missing data, but indistinguishable from the situation in which the child did not attend that day. The one way the pretest could assess this is by comparing the log data to the observational data at an

¹ In many of these cases, the log indicated the time that the child arrived in the morning but did not indicate the time the child departed the FDCH. In some cases, neither the arrival nor departure time was recorded.

aggregate level (discussed later), and that comparison suggests that there may be some missing data on whether children attended at all.

- ***Meal Claims Data:*** There were no individual items missing in the administrative claims data.

b. Descriptive Statistics for Each Method

In this section, we provide summary statistics and tabulations for the data collected for each method in the pretest to facilitate informal comparisons and provide a preview of the type and quality of data attainable through each method.

Method 1: Parent Recall. The parent survey provides information on attendance and the number of meals received, by type (breakfast, morning snack, lunch, afternoon snack, other meal), for each day during a target week. Table II.4 presents this information for the nine children—at five different FDCHs—that were included in the pretest. Sampled children attended their FDCH 3.7 days, on average, during the target week.

For each meal type, the average number of children who received a meal is lower than the number of children attending the FDCH that day. The difference is smallest for afternoon snacks (reportedly received 3.6 times during the week, on average) and largest for breakfast (received just 1.8 times). The differences between attendance and meal receipt may be due in part to FDCHs serving only certain types of meals—omitting breakfast, for example—and in part to children attending the home for only part of the day and, thus, not being present at all meal times. These differences suggest caution when considering the use of attendance as a proxy for meal receipt, because this may result in an overestimate, which is more pronounced for less commonly received meals, such as breakfast. Converting attendance data into reliable estimates of the number of meals received would require accurate information that was not collected in the Parent Recall Method pretest on (1) which meals the child’s FDCH serves each day, and at what times, and (2) what time the child arrives at and departs from the FDCH.

TABLE II.4
PARENT INTERVIEW DATA

	Average Across Interviews
Number of Meals Received During Target Week	
Breakfasts	1.8
Morning snacks	3.3
Lunches	3.3
Afternoon snacks	3.6
Other meals ^a	2.0
All meals	14.0
Number of Days Attended During Target Week	3.7

^aOther meals include supper, early morning snacks, and evening snacks. Some parents reported that their children received more than one “other meal.”

To test the validity of the Parent Recall Method in the later pilot, the parent survey data were weighted to generate estimates of the number of each type of meal each FDCH served during the target week for comparison to the number of meals claimed for reimbursement by the FDCH. However, because the pretest surveyed only one or two purposively selected parents at each FDCH, sampling error would render such weighted averages unreliable. For example, one sampled child in the pretest was absent from the FDCH every day during the target week, which would lower the average for that home dramatically because only two parents from the FDCH were interviewed. Although sampling error is a potential issue in the pilot as well, larger sample sizes make it less severe.

Method 2: Observations and Modeling. The observations data provide the number of meals MPR field staff observed being served to children at FDCHs and is the basis for validating the other methods, as described in the next section. In addition, the observations data from the pilot will be used to develop a model to predict the number of meals served by FDCHs.

Table II.5 presents the daily number of attendees—at two points in time—and meals served for 11 meal observations at nine FDCHs. The number of children in attendance when the

observer arrived at the FDCH was 6.1 on average, whereas the number in attendance at the observer's departure averaged 6.6 children. The number of meals served fell between these two, at an average of 6.3 meals. The numbers of each type of meal served are lower, because only one or two meals were observed at each FDCH. The changing number of children during the time the observer was in the FDCH demonstrates the importance of having accurate data on both mealtimes and the specific times children are in the home when using attendance as a proxy for meal receipt. In addition to changes in the number of children present during the day, it is possible for a child to be present but not receive a meal; during one meal observation, for example, two children were sleeping and thus did not receive the meal served to the others.

Although the pretest data do not provide an adequate number of observations to create a model, we used observations data from the later pilot, along with administrative data, to develop a statistical model to predict the number of meals served based on a sample of FDCHs observed across their scheduled breakfast, lunch, supper, and snack times. This process is described in Chapter IV.

TABLE II.5
OBSERVATION DATA

	Average Across Observations
Number of Meals Served	
Breakfasts	0.6
Lunches	2.2
Snacks	3.5
All meals	6.3
Number of Children Attending	
At observer's arrival	6.1
At observer's departure	6.6

Method 3: SISO Logs. The SISO logs kept by some FDCHs provided a list of every child who attended the home on a given day and, in many cases, the times that the child arrived at and departed from the FDCH. Table II.6 shows daily attendance based on the log data; one column presents simple averages across log days, and another column provides a weighted daily average in which each of the five FDCHs that provided logs for the pretest is weighted equally. About six children, on average, attended each of the FDCHs in the sample each day. Among those with valid sign-in and sign-out times, nearly three-fourths of these children attended all day, while the remainder attended only part of the day. For those children, data from the logs on the specific times of arrival at and departure from the FDCH can be used—along with information that was not systematically collected in the pretest on which meals the FDCH serves, and at what times—to determine which meals the child received that day. However, in some cases, the logs did not contain adequate information to determine whether a child attended all or part of a day. The lack of this information makes it impossible to determine accurately which meals the child received that day.

TABLE II.6
SIGN-IN/SIGN-OUT LOG DATA

	Average	
	Across Log Days ^a	Across FDCHs ^b
Number of Children Attending		
All day	3.7	3.9
Part of the day	1.3	1.5
Unknown duration	0.8	0.8
Total	5.8	6.2

^aIn the averages in this column, each of the 59 logged days is given equal weight.

^bIn the averages in this column, each of the six FDCHs for which SISO logs were collected is given equal weight, regardless of the number of days included in the logs.

Method 4: Mixed (Parent Recall and SISO Logs). We cannot present data for the Mixed Method because no FDCH provided both parent interview data and SISO logs for the pretest. As discussed above, we discovered that logs were not kept by the FDCHs in which we had planned to test the Mixed Method.

2. Performance of Data for Each Method

Calculating erroneous payments in the CACFP requires comparing the meal reimbursement claims submitted by FDCHs with the “true” count of meals and snacks that providers should have claimed. The data from direct observations of mealtimes at the FDCHs provide the most reliable and accurate assessment of the number of meals served to children and thus is the basis for validating the other methods. In this section, we comment on using the data collected to explore the validity of estimates from each method, assuming that data collected from the in-person observations is the “true” meal count. Because the sample sizes in this pretest are limited, we cannot formally evaluate the validity of each method in the pretest. In the pilot test, we will conduct such an evaluation for at least some of the methods.

- ***Method 1: Parent Recall.*** Validating this method involves comparing observational data on the number and types of meals served to children to parent survey data on their children’s attendance at the time of the observation. The pretest data do not permit direct comparison of parent survey data to observations data. Although we have both data sources for two FDCHs, the observations data do not provide detail on individual children, so we cannot determine whether the observation of specific children is consistent with data from the interview of their parents.² Instead, we would weight the parent survey data on sampled children to represent all children who attend the FDCH and compare that FDCH-level measure to the observations data.

However, as noted in the previous section, this is not possible in the pretest data because of the small sample sizes—we have both parent interview data and meal

² We could explore the possibility of collecting the names of students at observations in the pilot, but confidentiality concerns may prevent this type of data collection.

observation data for only two children at two FDCHs. Weighting those observations to create FDCH-level estimates would involve considerable sampling error. For example, one child was absent from the FDCH on the day of the observation; because that child was the only one sampled from that FDCH, weighting that observation would result in an estimate of no meals served at that home on that day. Thus, the pretest sample size is too small to draw any conclusions about the validity of the Parent Recall Method in estimating the number of meals served.

- **Method 2: Observations and Modeling.** The validity of the Observations and Modeling Method could not be addressed in the pretest because of insufficient data points for developing a statistical model. This was addressed in the pilot, as discussed in Chapter IV.
- **Method 3: SISO Logs.** To validate this method, we collected attendance recorded on SISO logs and used each child's attendance as an indication that a reimbursable meal was received. We compared these estimates of the number of meals served to the number of meals served during an observation, for the six observations in four different FDCHs for which we have both types of data.³

The SISO logs were not consistent with the observation data for any of the meals that were observed. This suggests that the validity of the SISO Logs Method in estimating the number of meals served is low.⁴ Most differed by only one child, but one case had larger differences: the log data indicated two fewer children than the observation data (three and five, respectively).

In one of the six observations for which we also had SISO log data, the log did not provide the specific hours children attended on the target day; thus, we could not positively determine whether the children were present during the observed meal. In this situation, we assumed the child attended the full day of the observation and did receive the meal. In the pretest data, the effect of this assumption could result in an underestimate of the difference between log and observation data, because the difference at the FDCH at which the log did not provide information on times would have increased if some children were not present for the observed meal.

- **Method 4: Parent Recall and SISO Logs.** To validate the Mixed Method, we would compare the combined parent interview and SISO log data to the observational data on the number and types of meals served. We cannot do this in the pretest data, however, because, as noted in the previous section, there are no FDCHs for which we have both parent interview and SISO log data.

³ We had both types of data for a fifth home, but not for the same day.

⁴ Possible reasons for the unreliability of SISO logs are suggested in Section A, including inconsistencies in who recorded data in the logs, incompleteness, and illegibility.

3. Feasibility of Implementing the Method on a Larger Scale

The Parent Recall Method would be the most feasible to implement on a larger scale—any number of children could be selected randomly from FDCH enrollment forms and their parents contacted to complete interviews. The Observations and Modeling Method also could be implemented on a larger scale, with additional observation visits made to more FDCHs. For these two methods, expanding the data collection and using a random sample may require more effort than for the convenience sample used in the pretest, but the increased logistical complications are manageable. The two methods relying on SISO logs (Methods 3 and 4) would be most difficult to implement on a large scale because of the limited number of FDCHs that use SISO logs and the challenge of accurately determining which homes actually use them.

4. Relative Cost of Implementing Each Method

The SISO Logs Method would be the least expensive to implement if sponsors were willing to assist in collecting the logs from the FDCHs.⁵ The Parent Recall Method would be somewhat more expensive to implement because it requires a separate interview for the parent of each sampled child. The Mixed Method would be more expensive than either the Parent Recall Method or the SISO Logs Method because it combines the two types of data collection. The Observations and Modeling Method, which requires field staff to visit FDCHs when meals are being served, would be the most expensive to implement. The logistics of planning such visits is complicated by two factors: (1) the actual time a meal is served on a particular day often deviates from the scheduled time, and (2) sponsors are likely to require a monitor to accompany field staff to the FDCHs, adding another person whose schedule must be accommodated.

⁵ If MPR staff must visit each home to collect the logs, however, that would increase costs.

C. RECOMMENDATIONS FOR THE PILOT TEST

Based on the experiences from the pretest, we assessed which of the four proposed methods have the potential to be implemented on a national scale, show promise in their ability to validate meal reimbursement claims based on the data collected through the pretest, and could be implemented within the budget constraints of the pilot test. This section first summarizes our assessments of each of the four methods, including our recommendations for which should be tested in the pilot, and then offers additional recommendations for changes in specific data collection procedures relevant for the recommended methods.

1. Summary of Experiences and Findings for Each Method

Although the pretest sample size was too small to draw any strong conclusions about the validity of the tested data collection methods in estimating the number of meals served, the pretest data collection experience and preliminary analysis were informative regarding which methods show the most promise.

- **Method 1: Parent Recall.** The parent interview data have the advantage of providing information not only on children's attendance, but also on which meals they received each day. Parents interviewed for the pretest were able to report on their children's daily attendance and receipt of each type of meal, although we were unable to measure the validity of the data because of the insufficient sample sizes at each FDCH in the pretest. This could be corrected in the pilot by including all parents in the survey or by taking random samples of approximately five parents per FDCH to weight up to home-level estimates.
- **Method 2: Observations and Modeling.** The direct observation data collected for this method are complete and are considered the best assessment of the meals children actually received at FDCHs. Although we were not able to test the model development with the pretest data, the observation data collected for the Observations and Modeling Method are necessary to validate the other methods.
- **Method 3: SISO Logs.** The relatively high level of missing data in the SISO logs—both unit data missing in FDCHs that do not keep such logs and item data missing in those that do—renders the SISO Logs Method less useful in providing reliable estimates of the number of meals served. In addition, comparing estimated meal

receipt from this method to that from direct observations found the validity of the SISO Logs Method to be low.

- **Method 4: Mixed Method (Parent Recall and SISO Logs).** The data collection issues affecting the SISO Logs Method are also relevant to the Mixed Method, because it combines the SISO Logs and Parent Recall Methods. Although we were unable to measure the validity of the Mixed Method in the pretest, the low validity of the SISO Logs Method suggests that combining it with the Parent Recall Method data would not be worth the additional effort required.

Based on these assessments, we recommended that the Parent Recall Method and the Observations and Modeling Method be included in the pilot. Both are feasible to implement on a larger scale and can be piloted within the budget. Although the validity of these two methods could not be assessed in the pretest, each method produced fairly complete data whose validity could be tested in the pilot.

2. Data Collection Process Issues

Lessons learned from the pretest also informed the specific data collection procedures used for each method included in the pilot.

- **Parent Interviews:** Although the pretest sample size was too small to allow us to test the validity of parent recall data on attendance compared to data on meals received, we did find sufficient difference between reported attendance and reported meal receipt to consider it worthwhile to include questions on meal receipt in the parent interview in the pilot.
- **Observations:** The usefulness of the observations data would be improved if it were possible to match specific children observed during the mealtime to information on those children in parent interview and SISO log data. This would require collecting the name of each child at the observation, which might raise confidentiality concerns. Both first and last names would be required, which could be considered sensitive information and thus not be practical to collect.
- **Both Methods:** Pretest experiences suggest that data collection may require more effort than originally projected. In addition to the time and effort of field staff, an unexpected amount of senior staff time was necessary to negotiate with each of the sponsors, including the assignment of a monitor to accompany field staff on observations. Scheduling of each type of data collection was also more complicated than anticipated. Related to the need for flexibility in scheduling activities, requests for meal claims data should be made after other data have been collected, to ensure

that meal claims data cover the same months as other data. However, enrollment forms must still be collected before any other data collection activities can begin.

FNS agreed with these recommendations, and the two methods that relied on data from SISO logs were excluded from the full pilot. Thus, the remaining chapters of this report do not include extensive discussion of SISO logs. However, we collected information from the FDCHs in the pilot about SISO log usage, which could then be used to verify the pretest findings.

III. PILOT DATA COLLECTION METHODOLOGY

This chapter describes the data collection procedures used in the pilot and the experience of Mathematica Policy Research, Inc. (MPR) in executing them. Section A reviews the methods tested in the pilot, Section B details MPR's experiences in implementing each method, and Section C discusses the feasibility of implementing each method on a larger scale.

If the parent recall or observation and modeling method will be used in the future, it is important to have clear documentation of precisely what the data collection necessary for each method entails. In order to assess the feasibility of each method and to ensure that the highest-quality method(s) possible will be used in any follow-up study, it is important to note how well the data collection procedures worked, what challenges were encountered, what changes from the original plans were necessary or useful, and the reasons for and consequences of those changes.

A. DATA COLLECTION PROCEDURES

In the pilot conducted between August 13 and October 8, 2008, MPR tested two methods—Parent Recall and Observations and Modeling—to determine which has the greater chance of success for accurately estimating the number of meals served by Family Day Care Homes (FDCHs), for comparison to meal reimbursement claims submitted by FDCHs. Each method was summarized in Chapter I, and the necessary data collection procedures for each are described below in greater detail.

1. Sample Selection and Recruitment

The pilot used a convenience sample from three states: New Jersey, New York, and Pennsylvania. These states, in close proximity to MPR's Princeton, New Jersey, office, were

chosen for convenience and efficiency. The pilot involved recruitment at three levels: states, sponsors, and FDCHs. As in the pretest, MPR obtained a list of state contacts from the Food and Nutrition Service (FNS), and FNS assisted in securing the cooperation of states. We worked with the state contacts to obtain a list of Child and Adult Care Food Program (CACFP) sponsors and selected one or two from each state to participate in the pilot study. The state contacts helped MPR select sponsors using the following criteria:

Cooperation. As a result of the tight schedule for the pilot study, it was important to select sponsors willing to cooperate with MPR. State contacts provided insight into which sponsors would be mostly likely to agree to participate in the pilot. As discussed in Chapter II, our pretest experience revealed that some sponsors are willing to participate only if their specific conditions or requirements are met. Meeting these conditions can add significant time to the recruitment phase.

Location. MPR also considered the locations of the sponsors' FDCHs in the selection process. To minimize data collection costs, especially for the Observations and Modeling Method, MPR selected FDCHs within 50 miles of its Princeton, New Jersey, office.

Data availability. Following advice from state contacts, MPR did not contact new sponsors, sponsors having difficulty with their administrative work, or sponsors with high staff turnover, as the burden of data collection would have been greater for them. Also, they may not have had the necessary administrative records easily available for the study's use.

Pretest inclusion. Furthermore, MPR decided to work with sponsors that were not involved in the pretest, in order to minimize the burden on those sponsors and to gain a broader knowledge of how CACFP is implemented across sponsors.

Although the findings of the pilot are useful in that they identify many issues that would likely be encountered in a similar national study, the nature of the sample analyzed implies that

there might be other important issues or problems that a national study would have to confront that did not show up here. It is necessary to keep in mind that the pilot sample was recruited from FDCHs only in the Northeast, from predominantly suburban communities within close proximity to large urban areas. A national study using randomly selected sponsors, instead of this convenience sample, would include more geographically diverse sponsors, which would make data collection more difficult and costly. A national study might also encounter sponsors that are less cooperative, requiring more recruiting time and assistance from FNS. A random selection is also more likely to include some sponsors whose administrative records are not easily available. In this case, different modes of data collection for enrollment and meal claims data, such as obtaining these forms directly from FDCH providers, may have to be explored.

In the pilot, MPR staff contacted each selected sponsor, described the study, and provided detailed information about the planned data collection activities. The sponsors were reassured that the data collected would not affect them (that is, that any errors discovered in the pilot would not be used to establish claims against them) and that MPR would work to minimize burden on the sponsors and the FDCHs. MPR also provided evidence of criminal background checks and insurance liability for the staff members who would be conducting the on-site observations. All five sponsors agreed to cooperate fully and provided MPR with a list of FDCHs.

From these FDCH lists, MPR randomly selected six primary FDCHs and four alternate FDCHs per sponsor to participate in the study, totaling 30 primary and 20 alternate FDCHs. During data collection, we replaced two primary FDCHs with alternates because one was no longer operating under sponsorship and one FDCH provider was unavailable during the entire data collection period. All 30 of the selected FDCHs were included in the sample for the Observations and Modeling Method, and 25 of the FDCHs were also included in the Parent Recall Method sample. No FDCHs refused to participate in the pilot. Because we sampled only

cooperative sponsors in the pilot, this might indicate that their FDCHs were more likely to be cooperative as well. In a national study, securing participation of all FDCHs in the sample might be more challenging.

Before beginning the data collection, MPR asked the sponsors to provide copies of enrollment forms for each FDCH selected for the pilot. Information from these forms was used to draw the sample of parents for the survey in the Parent Recall Method and to provide information to potentially be used in the model developed as part of the Observations and Modeling Method. Obtaining enrollment forms from the sponsor was an efficient method of collecting names of children, ages, scheduled attendance and meals, and contact information for parents and guardians. However, there were some issues with the information on these enrollment forms, which will be discussed further in Section B.

2. Parent Recall Interviews

From each sponsor, MPR randomly selected four of the six FDCHs chosen for the Observations and Modeling Method sample to also be included in the sample for the Parent Recall Method. All parents, except those who were also FDCH providers, were selected to participate in the parent survey. In 6 of the 25 FDCHs in the parent survey sample, the provider was also a parent of one or more of the children at that FDCH. To avoid any conflict of interest, we did not include these providers in the parent interview sample. In addition, parents with more than one child enrolled at a FDCH were asked to provide responses for only one randomly selected child. This approach was used to include in the study as many unique parents in each FDCH as possible, without overburdening parents with multiple children in a FDCH.

Parents were asked to recall which days of a target week their children attended day care, as well as which meals their children were served at day care on those days. (See Appendix A for the parent survey instrument.) The target week was the week of the FDCH's on-site observation,

so that parents provided information about their children’s experiences during the same week as the observation was conducted. This facilitated direct comparisons between data from the two sources.

To minimize recall error, parents were interviewed Sunday through Wednesday of the week following the FDCH’s observation. Our goal was to interview parents as soon as possible after the target week to minimize recall error while allowing enough time to contact parents and complete parent surveys to maximize the response rate.

3. On-Site Observations and FDCH Provider Interviews

On-site observations were conducted at six FDCHs from each of the five sponsors. Trained staff members observed two eating occasions at each FDCH, totaling 60 observations. During the on-site visits, observers recorded the number of children present (those participating in the CACFP as well as those not participating), the number of children served at each eating occasion, and the types of meals or snacks served (see Appendix B for the observation instrument).

The on-site observations also included a short interview with each FDCH provider. Observers asked providers to estimate how often (on average) the meals requested by parents on the enrollment forms correlated to the actual meals served in day care, and how often they typically filled out required claims forms: after each meal, at the end of the day, at the end of each week, or at the end of each month. (See Appendix C for the provider interview instrument.) At the observed FDCHs that used sign-in/sign-out (SISO) logs, observers asked questions about compliance with the form (for example, “How did they present the request to parents?” “Did parents remember to fill it in?”). At the FDCHs that did not use SISO logs, observers asked questions about hypothetical compliance with this type of form (for example, “How difficult would it be to have the parents complete this type of form?”).

4. Meal Claims Data

Estimating erroneous payments through either method requires data on meals claimed by the FDCHs. The claims forms contain information on the number of meal types served at each FDCH for an entire month, disaggregated by day and child. Although MPR asked for the claims forms for each FDCH as a whole, it was most useful for comparison if the claims were broken out by child.

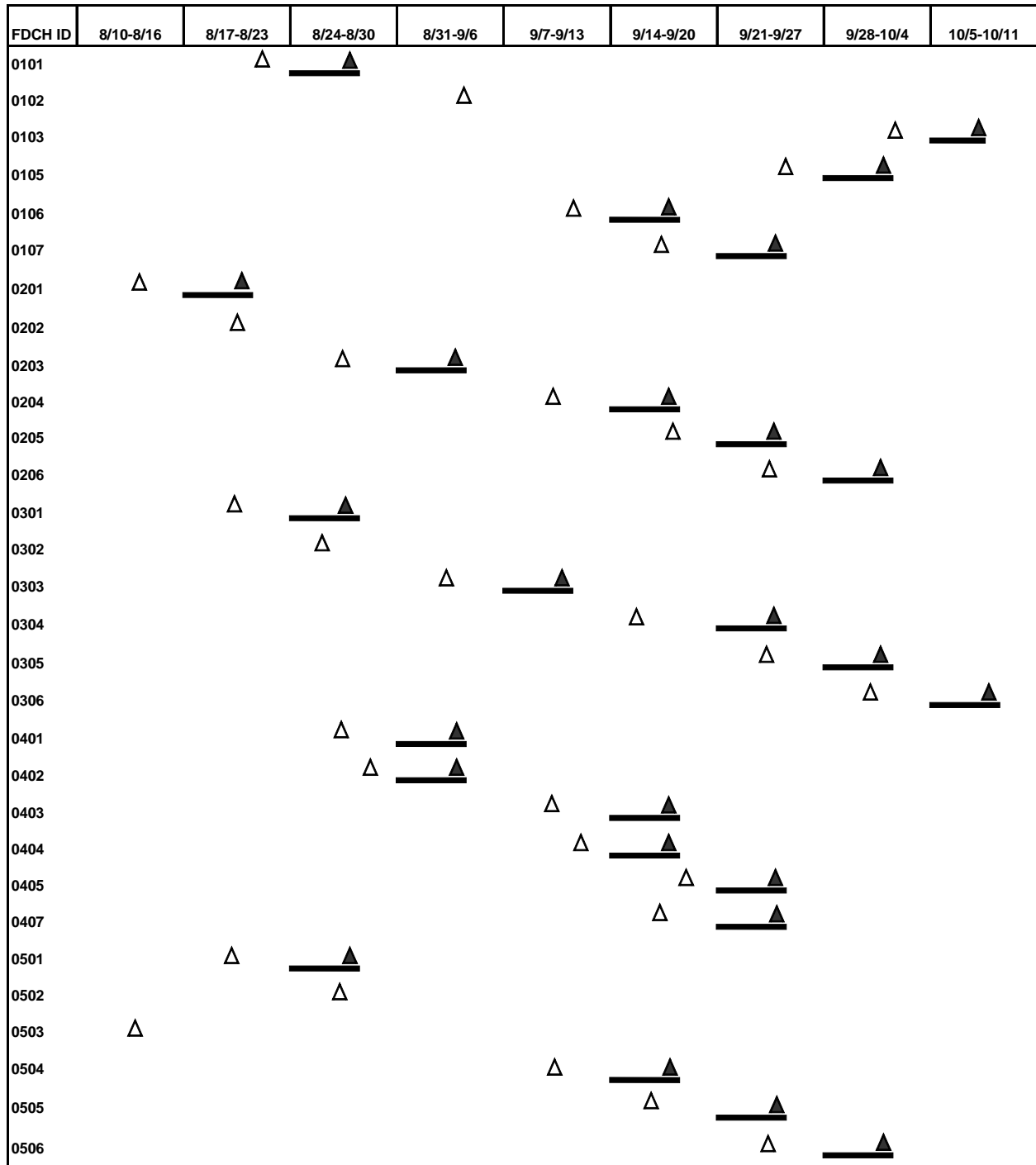
For each FDCH in the study, MPR collected meal claims data for three months: the month prior to the observation, the month of the observation, and the month following the observation. The sponsors sent MPR hard copies of the meal claims forms they received from each FDCH provider. The formats of the claims forms varied across sponsors, as there is no standard CACFP form. In Chapter IV, we compare the meal claims data with the parent interview and observations data collected on the number of meals served.

B. EXPERIENCES IMPLEMENTING EACH DATA COLLECTION METHODOLOGY

For both the Parent Recall Method and the Observations and Modeling Method, when the FDCHs were selected, MPR established a data collection schedule for each FDCH participating in the pilot, including proposed days of the week and times for observations and subsequent parent surveys. Because four of the five sponsors required a monitor to accompany MPR observers during on-site visits, the observation schedule took into account the schedules of these monitors as well. As the sample schedule presented in Figure III.1 shows, data collection involved a series of activities that had to be carried out in a specific sequence. If an activity could not be accomplished within the scheduled time frame, subsequent activities could not occur as scheduled. Figure III.1 illustrates the timing of the parent interviews in relation to the observations.

FIGURE III.1

DATA COLLECTION SCHEDULE



△ Observation ▲ Parent Interview

Table III.1 illustrates each type of data collected, the sample sizes, number of completed responses, and response rates. The table also shows which data collection pieces are associated with each method tested in the pilot.

TABLE III.1
RESPONSE RATES OF DATA COLLECTION

Data Collection	Sample Size	Number of Completes	Response Rate	Parent Recall Method	Observations and Modeling Method
Parent Interviews	129	96	74%	Yes	No
Observations	60	60	100%	No	Yes
Provider Interviews	30	30	100%	No	Yes
Claims Data	30	30	100%	Yes	Yes

In the following sections, we review the data collection for each method, noting procedures that worked well and challenges that required adjustments and adaptations.

1. Parent Recall Interviews

Of the 129 eligible parents with whom MPR staff attempted interviews, 96 responded, yielding a 74 percent cooperation rate, as shown in Table III.1.¹ Our initial goal was to complete 120 parent recall interviews. The actual number of interviews was lower than expected, because of both a smaller universe of parents eligible for interviews than the number of enrollment forms suggested and a lower-than-expected response rate. Here, we discuss the reasons for these outcomes and the changes in procedures undertaken to increase the number of completes.

MPR received enrollment forms for a total of 277 children at the sampled FDCHs. Of those children, 80 were reported by providers to no longer be enrolled at the FDCH at the time of the

¹ Six of the 33 nonrespondents refused to participate in the survey. One made an appointment for a later call but did not keep the appointment, and two were out of town during the interview period. Interviewers were unable to reach the remaining parents.

data collection. Of the 197 that were enrolled during the data collection period, 55 were considered ineligible because they were either the child of a provider or had a sibling in the FDCH who was included in the sample. When randomly selecting one sibling to be the focus of the parent interview, we found that there were many more siblings attending the FDCHs than expected.² We also found that 6 of the 25 providers had their own children (a total of 13) enrolled in their day care homes. An additional 13 parents were found to be ineligible when we called to attempt an interview, because they reported that their children no longer attended day care. That yielded a sample of 129 eligible parents.

MPR obtained child enrollment forms from sponsors prior to the start of data collection to ensure that parent contact information was available. The collection of enrollment forms went smoothly, but the data on the enrollment forms, specifically the parent contact information, were not always accurate, up to date, and/or legible. For the first two weeks of data collection, MPR had difficulty completing parent interviews because of inaccurate telephone numbers. The inaccurate contact information affected the response rate; MPR could not reach 24 parents, mainly because of incorrect telephone numbers from the enrollment forms.

We realized that the best source for accurate enrollment data and parent contact information was the FDCH providers, not the sponsors. Therefore, MPR verified the enrollment data and contact information with the providers directly during the on-site observations. This finding suggests that in a future study using only the Parent Recall Method, providers would need to be contacted—either by MPR staff or CACFP sponsors—to verify enrollment data and parent contact information before the parent interviews.

² Forty-two children were excluded from the parent survey sample because they had a sibling attending the FDCH who had been selected as the focus child for the parent interview.

Unfortunately, the narrow interviewing window (Sunday through Wednesday of the week following the FDCH observation) in the pilot made it impossible for us to contact these parents at a later time, after discovering and correcting the faulty information. In a national study based only on the parent survey, however, it would not be necessary to be as strict about the length of the contact period. Because the parent interview data would not need to be matched to data from observations, parents could be asked about the most recently completed week regardless of when the interview was conducted.

In addition to problematic contact information, MPR discovered that the number of children enrolled in the FDCHs indicated on the sponsors' enrollment forms was not always current. Only by speaking directly with the providers during the on-site observations did MPR obtain the current number of children enrolled in their day care homes. These enrollment numbers were typically lower than those indicated by the enrollment forms, resulting in a smaller initial sample of parents.

The need to confirm enrollment and parent contact information with providers undermined the pilot study's intention that providers be unaware of the parent interviews. To obtain accurate and unbiased information from parents, MPR had planned to administer the parent questionnaire without the knowledge of the FDCH provider, so that providers would not have the opportunity to influence parents' responses. The sponsors were made aware of the potential for parent interviews during the recruitment phase, but MPR did not identify which FDCHs were selected for that part of the study. To avoid alerting providers to the parent survey in a national study, two rounds of interviews could be conducted. First, interviewers would contact as many parents as possible using the contact information on the sponsor-maintained enrollment forms. Then, sponsors would be asked to contact providers to confirm the parent contact information on enrollment forms. This two-stage process would ensure that providers were unaware of the initial

set of parent interviews (and, thus, unable to either influence parent responses or modify enrollment forms) while still enabling interviewers to potentially reach all sampled parents.

In addition to confirming contact information with providers, MPR took two other steps to increase the number of parent survey responses. Originally, MPR planned to attempt parent recall interviews with parents of children attending four FDCHs from each sponsor, for a total of 20 FDCHs. However, because the first two weeks of data collection were less productive than expected, MPR revised the plan and attempted parent recall interviews from 25 FDCHs. Also, for FDCHs with a large number of children enrolled, we had originally planned to attempt to complete parent interviews with no more than five parents. We removed this cap on the number of parent interviews completed from an individual FDCH.

When we reached parents, MPR experienced fewer challenges. Five interviewers were trained to complete the parent recall interviews by telephone, during daytime and evening hours. The number of interviews attempted varied from week to week, ranging from 5 to 40 attempted interviews. The interviews were planned to last no more than 15 minutes. In practice, they ranged in time from 5 to 20 minutes. With an average time of 8.7 minutes, the interview length met our expectations. As discussed in Chapter IV, parents were generally able to answer the questions, and there were no major problems with item nonresponse. On average, fewer than six attempts were made before reaching the parents, and very few parents asked the interviewer to call back at another time to complete the interview. There were only six refusals and one incomplete call during the interviews.

2. On-Site Observations and Provider Interviews

On-site observations were conducted at each of the 30 FDCHs in the pilot. The visits occurred at mealtimes, based on information provided by sponsors about the approximate times

of meals. MPR staff observed two eating occasions at each FDCH. For the most part, the observations went smoothly.

Four of the five sponsors required MPR staff to be accompanied by a monitor during the on-site observations. Based on lessons learned during the pretest, unannounced visits, even accompanied by monitors, were not practical. Therefore, for the pilot, MPR conducted announced observation visits. Because FDCH providers knew about the observations in advance, we cannot be sure if, or to what extent, they changed their regular schedules or procedures for the visits.

The eating occasions to be observed were selected based on the monitors' and observers' schedules. MPR staff observed 10 breakfasts, 23 lunches, 1 supper, 10 morning snacks, and 16 afternoon snacks. Federal regulations do not establish specific times for meals and snacks, leaving providers some flexibility in designating the time and type of meal served at each eating occasion. Because the reimbursement rate is higher for meals than for snacks, some providers refer to the mid-afternoon eating occasion as supper. This was the case for the FDCH for which supper was observed; the eating occasion took place at approximately 3:30 p.m. and a full meal was served.

Because FDCH providers can establish fairly broad time ranges during which a specific meal or snack will be served, it was necessary to confirm mealtimes before scheduled site visits, to make efficient use of limited time. MPR staff members spoke with the monitors from four sponsors within a few days of each visit in order to confirm mealtimes. For the sponsor that did not require a monitor to accompany MPR staff, observers confirmed mealtimes directly with the FDCH providers. This practice reduced the time and resources that might have been needed for rescheduling missed eating occasions.

The two eating occasions were usually several hours apart from each other. Therefore, in order to minimize the disruption to the FDCH's schedules, MPR staff left the day care home after the first eating occasion and returned just before the second eating occasion began. For three of the four sponsors requiring monitors to accompany MPR staff on the site visits, the monitors were present only for the first eating occasion, mostly in order to introduce the MPR staff to the providers. For one sponsor, the monitor was present for both eating occasions.

As mentioned previously, the enrollment data MPR originally received from the sponsors were not always accurate. Many times, observers found that some children they expected to see in an FDCH were no longer enrolled. MPR staff also observed other children participating in the food program for whom the sponsors did not have enrollment forms. In addition, one FDCH provider informed MPR at the time of the observation that she would no longer be participating in the CACFP.

The visits were mostly observational (Appendix B); however, it was also useful for MPR observers to ask providers a few questions to better understand the context for providing meals (Appendix C). MPR planned for the interview portion of the visit to be limited to 15 minutes. The interviews ranged from 6 to 23 minutes and averaged 12.3 minutes in length, well within the planned 15-minute time frame. Many providers had limited time, and 15 minutes appeared to be an appropriate length for the interview.

The provider interview occurred at any time during the visit. It was important that the observers' presence did not disrupt the FDCHs' schedules or divert the providers' attention from the children. In most cases, the provider interview did not seem to interfere with the FDCHs' schedules, but in one case there was no appropriate time during the on-site observation to complete the provider interview. This interview was completed by telephone in the evening, when the provider had more time.

Ideally, the provider interview took place without a monitor present, so that the providers felt free to respond with candor about the meal claims process. However, for the providers who were non-English speaking, the monitors were needed to translate the provider interview. Also, one sponsor required a monitor to be present at all times during the observations, including the provider interviews. We cannot be certain if, or to what degree, the monitors' presence affected the providers' responses.

The management time associated with scheduling the observation visits exceeded MPR's initial expectations for the pretest, so we took this into account in planning the pilot. Considerable time was spent arranging and rearranging schedules to accommodate changing needs of providers and monitors. Three trained observers were needed to accommodate the level of flexibility that the sponsors required.

3. Meal Claims Data

MPR collected meal claims data for all FDCHs in the study from each of the sponsors.³ The process went smoothly, and all sponsors were cooperative, sending MPR the claims data as quickly as possible.

Variations across sponsors occurred in the presentation of data elements on the meal claims forms. The provider's name, child's name, and meal or snack type were found on all forms. However, the format varied across sponsors. One sponsor's forms indicated which children attended on each day and the total meals, by type, served each day but did not allow providers to record which meal types were served to each individual child.

³ We collected meal claims forms for the month prior to the observation, the month of the observation, and the month after the observation. For each meal, average claims for the month in which the observation occurred tended to fall between the means for the previous and subsequent months.

C. FEASIBILITY OF IMPLEMENTING EACH METHOD ON A LARGER SCALE

With some adjustments, either method tested in this pilot study would be feasible to implement on a larger scale. Expanding the data collection and using a nationally representative random sample would clearly require more effort than the smaller convenience sample used in the pilot, but the increased logistical complications are manageable.

Some issues with expanding the study would affect both data collection methods. For example, recruiting sponsors that were randomly selected, rather than selected based on the criteria discussed in Section A, would require greater recruiting effort, including FNS support to preclude refusals. Additional staff would need to be trained to carry out the expanded data collection activities. Next, we discuss key adjustments that would be required to implement each method on a larger scale.

For the Parent Recall Method, any number of children could be selected randomly from FDCH enrollment forms and their parents contacted by telephone to complete interviews. However, as discovered in the pilot, enrollment forms do not always include accurate and legible parent contact information. If the Parent Recall Method were to be implemented on a larger scale without the Observations and Modeling Method, it would require additional effort to contact the FDCH providers directly to obtain more accurate enrollment data and contact information. It might be more difficult to get this confirmation by telephone than it would be in person during on-site observations.

The data needed for the Observations and Modeling Method (on-site observations, provider interviews, and enrollment information) could also be collected on a larger scale with additional FDCHs. If the full set of data collection activities were implemented, costs per FDCH would increase for traveling outside of the convenient 50-mile radius used in the pilot and for the increase in sample size.

As MPR learned in the pretest, the data collection method of obtaining SISO logs from FDCH providers is not practical to implement. The provider interviews in this pilot test confirmed what MPR learned in the pretest: FDCHs rarely use SISO logs.

IV. PILOT QUANTITATIVE ANALYSES

Accurate measures of the number of Child and Adult Care Food Program (CACFP) reimbursable meals and snacks claimed and served by Family Day Care Homes (FDCHs) are necessary for estimating the number of incorrectly claimed meals and the dollar amount of erroneous reimbursements. The previous chapter discussed the data collection necessary for two methods of measuring the number of meals and snacks served by FDCHs: (1) the Parent Recall Method, involving parent surveys and (2) the Observations and Modeling Method, involving observational and other data that would be used to develop a set of prediction models. This chapter focuses on differences in the quality of the data from each source and of the estimates produced by each method. In particular, this chapter presents three types of quantitative analyses of the CACFP pilot data. First, we examine the quality of the data collected for each method. Then, we evaluate the performance of each method in producing accurate estimates of meals served. Finally, we discuss how estimates of meals served from the two methods would be compared to meal claims data to estimate erroneous payments.

A. DATA QUALITY

The first step in evaluating the performance of an estimation method is to assess the quality of the data collected and used for that method. To that end, we begin this section by discussing missing data, including unit and item nonresponse, for each data source. Then, we present summary statistics for key elements of each type of data collected.

1. Summary of Missing Data

The amount of missing data found in the pilot is one indicator of the level of difficulty that might be expected when collecting similar data for a larger study. Although small amounts of

missing data are not a great concern, analyses based on the remaining data may be unreliable if a high percentage of data is missing, since the cases with missing data may be systematically different from those without missing data. There are two types of missing data: (1) unit nonresponse, in which all data for a case are missing (such as a parent interview that was not conducted or a meal observation that did not take place) and (2) item nonresponse, in which some data for the case were collected, but specific items were missing (such as a parent unable to answer certain interview questions or an incomplete observation).

Unit Nonresponse. Because collecting data on meals served requires the cooperation of FDCH sponsors, providers, and sometimes parents, unit nonresponse can occur at different levels. The pilot study experienced no unit nonresponse at the state or sponsor level, due in part to the assistance of U.S. Department of Agriculture (USDA) Food and Nutrition Service (FNS) staff in contacting state officials, who, in turn, assisted in securing the cooperation of the purposively selected FDCH sponsors for the pilot. In a national evaluation, in which large, random samples of sponsors and FDCHs are critical to ensure representativeness, FNS support will likely be required to encourage participation.

Of the two FDCHs originally selected for the pilot that did not participate (as discussed in Chapter III), the one that ended its affiliation with the sponsor was thereby ineligible for inclusion in the study. The provider that was unavailable during the field period is considered a nonrespondent, however, resulting in a FDCH-level response rate of 97 percent.

Because the Parent Recall Method involved an additional level of respondents—parents—unit nonresponse was more prevalent in the data collected for the Parent Recall Method than in those for the Observations and Modeling Method. Details of unit nonresponse by data source are discussed below.

- *Parent Interviews:* Of the 129 parents in the survey sample at the 25 FDCHs, 96 successfully completed interviews, for an overall response rate of 74 percent. As described in Chapter III, the importance of interviewing parents within a few days after the target week, to minimize recall error, resulted in a narrow survey window. The response rate was also affected by the quality of contact information found on enrollment forms obtained from sponsors, and the resulting change in procedures to confirm this information with FDCH providers, also discussed in Chapter III.
- *Observations Data:* We successfully completed every observation planned at the 30 participating FDCHs. Thus, there was no unit nonresponse in the observations data. A provider survey was also completed at each observation.
- *SISO Log Data:* As noted in Chapter I, the pilot did not test methodologies based on sign-in/sign-out (SISO) logs. However, we did collect information from the FDCHs in the pilot about the prevalence of usage of these logs, which supports the pretest finding that data from this source would not provide an adequate measure of meals served. SISO logs were kept by only 9 of the 30 FDCHs observed in the pilot. Thus, if we had attempted to collect these logs from all FDCHs, the response rate would have been only 30 percent.
- *Meal Claims Data:* There was no unit nonresponse in the meal claims data. We successfully collected claims data from sponsors for every FDCH included in our study.

Item Nonresponse. In addition to cases for which we were unable to collect data at all, some cases were missing certain items. As with unit nonresponse, item nonresponse was more prevalent in the Parent Recall Method than in the Observations and Modeling Method.

- *Parent Interviews:* The parent survey allowed parents to indicate that they did not know the answer to a given question. These “don’t know” responses are the most common type of item nonresponse. Although nearly all parents who completed interviews were able to answer questions about their children’s daily attendance and receipt of most meals during the target week (the week prior to the parent interviews), about one-quarter of parents were unable to recall some specific information. When asked if their children had received various types of meals and snacks at the FDCH during the previous week, 25 of 96 of parents responded that they did not know (or simply did not respond) for at least one type of meal or snack. Such responses were most common regarding snacks, however, suggesting that the Parent Recall Method may provide a more accurate estimate of breakfasts and lunches served than of snacks. Only three parents did not know if their children ever received breakfast, and just one did not know if their children received lunch. Attendance data were complete for every day of the week for all but two parents.
- *Observations Data:* There were no individual items missing in the observations data. Two meals or snacks were observed at each of the 30 FDCHs in the pilot sample, and

complete data were collected for each. However, there were a few “don’t know” responses to the provider survey.

- *Enrollment Form Data:* There was some item-level missing information from the enrollment form data provided by sponsors. For example, the age of the child was missing for 6 percent of the sample, and information about which meals the child was to receive at the FDCH was missing for almost 20 percent.
- *Meal Claims Data:* There was minimal item nonresponse in the meal claims data. We successfully collected all requested meal claims data from sponsors for every FDCH included in our study, with one exception. One FDCH ended its participation in the CACFP between the time homes were sampled and the time of the observation. Thus, although we collected other data for this home, no meal claims data were submitted for the month of the observation.

In summary, although both unit nonresponse and item nonresponse occurred in the data collected for the pilot, the overall level of missing data is not a major problem for either method. The parent survey is the only data source with a notable amount of unit nonresponse. In much of the analysis, we weighted the survey responses of parents from each FDCH to represent all children enrolled at that home (including nonrespondents as well as siblings and providers’ children).

2. Descriptive Statistics for Each Method

In this section, we provide summary statistics and tabulations for the data collected for each method in the pretest to provide an overview of the type and quality of data attainable through each method.

Method 1: Parent Recalls. This method relies on data from the survey of parents to estimate the number of meals served to children in FDCHs. The parent interviews provide information on children’s attendance and the number of meals received, by type (breakfast, morning snack, lunch, afternoon snack, and so on), at the FDCH for each day during a target week. As noted in Chapter I, we attempted interviews with all parents of children enrolled at the 25 FDCHs included in the sample for the Parent Recall Method, with the exception of providers’

own children. For parents who had more than one child enrolled at the FDCH, we randomly sampled one sibling to be the focus of the interview. In the analysis, the parent survey data were weighted to generate estimates of the total number of each type of meal the FDCHs served.¹

Table IV.1 presents both weighted and unweighted information on attendance and meals received by children at the FDCHs included in the pilot, as reported by parents, aggregated across days during the target week. On average, children attending the FDCHs received 3.6 breakfasts, 3.9 lunches, and 1.1 suppers during the target week. Between three and four snacks were received in the morning and afternoon, on average, whereas early morning and

TABLE IV.1
PARENT INTERVIEW DATA

	Mean Number of Meals and Snacks Parents Reported Their Children Received During Target Week	
	Unweighted	Weighted to Represent All Children Enrolled in the 25 FDCHs in the Sample
Meal Type		
Breakfasts	3.78	3.60
Lunches	4.01	3.89
Suppers	0.78	1.07
Early snacks	0.34	0.54
Morning snacks	3.75	3.50
Afternoon snacks	3.92	3.97
Evening snacks	0.53	0.72
All meals and snacks	16.35	16.84
Number of Days Attended During Target Week	4.12	4.06
Sample Size (Number of Children)^a	96	199

^a The unweighted sample size is the number of children for whom parents responded to the survey. The weighted sample size is the total number of CACFP participants enrolled in the 25 FDCHs for which any parent interviews were conducted.

¹ The weight for each respondent was computed as the inverse of the proportion of enrolled children for whom we had a response—that is, the number of children with a nonmissing response for a given meal divided by the total number of CACFP participants (including respondents and nonrespondents as well as siblings and providers' children who were excluded from the survey sample) enrolled at the FDCH.

evening snacks were considerably less common. Children attended the FDCHs an average of just over four days during the target week.

Method 2: Observations and Modeling. The Observations and Modeling Method relies on direct observations, along with data from other sources, including the provider survey and enrollment forms from sponsors, to develop a model to predict meals served by FDCHs.

Observations Data. The observations data provide the number of meals MPR field staff observed being served to children at the 30 FDCHs in the pilot. In addition to providing dependent variables for the models developed in the Observations and Modeling Method, these data are used as the basis for validating the parent recall estimates generated in the Parent Recall Method. As discussed in earlier chapters, the data from direct observations of mealtimes at the FDCHs provide the most reliable and accurate assessment of the number of meals served to children.

Table IV.2 presents the number of meals served during 60 meal observations at the 30 FDCHs and the number of children present at the homes during these observations. An average of four children were observed receiving breakfast at the 10 FDCHs in which that meal was observed, and an average of almost five were observed receiving lunches at the 23 homes in which lunch was observed. FDCHs served 5.5 morning and 3.6 afternoon snacks, on average, during observations of those meals. Supper was observed at only one home and was served to 10 children.

Although observers can readily ascertain the number of meals served, they cannot independently determine the CACFP participation of each child they observe receiving a meal. For this, they relied on providers, who indicated that at least one child present during the observations at 11 of the 30 FDCHs in the pilot study was not participating in CACFP. Although

TABLE IV.2
OBSERVATION DATA

	Sample Size (Number of FDCHs)	Mean Number of Meals and Snacks Served to Children During Observations	
		Including Children Not Participating in CACFP	Adjusted to Exclude Children Not Participating in CACFP
Meal Type			
Breakfasts	10	4.00	3.14
Lunches	23	4.91	4.72
Suppers	1	10.00	10.00
Morning snacks	10	5.50	5.35
Afternoon snacks	16	3.56	3.42
Number of Children Present	30	5.37	4.70

5.4 children, on average, were in attendance at the FDCHs during the observation, only 4.7 were participating in CACFP. We adjusted the meal counts used in our analysis to account for these nonparticipating children.² This adjustment reduces the average number of meals somewhat, as shown in the final column of Table IV.2. The remaining analyses involving observation data rely on these adjusted numbers.

Provider Survey Data. The models developed based on the observation data also rely on information collected from providers. The provider survey includes questions on policies and experiences with SISO logs, paperwork used to document meals, and the amount of variation in attendance and types of meals served.

Enrollment Data. In addition to providing sampling and contact information for the parent survey in the Parent Recall Method, enrollment form data collected from FDCH sponsors provided explanatory variables for use in developing the model in the Observations and

² Determining precisely which meals were served to nonparticipating children was not always possible because the observation data were aggregated by age group, rather than collected at the child level. To exclude children not participating in CACFP from the meal counts, we adjusted the number of meals observed in FDCHs in which any CACFP nonparticipants were present by multiplying the total number of meals served within any age group that included nonparticipating children by the proportion of children in that age group who were participating in CACFP (according to the provider).

Modeling Method. As discussed in Chapter III, we found the parent contact information from enrollment forms maintained by sponsors to be inadequate, and we also discovered discrepancies between the number of enrolled children based on the forms and the number reported by providers. The pilot obtained more accurate contact information and enrollment data from FDCH providers, rather than relying on the sponsor information. However, these issues may call into question the quality of other data from sponsor-maintained enrollment forms, for which there is no convenient alternative source.³

Claims Data. Estimating erroneous payments involves comparing estimates of meals served (based on either method explored in the pilot) to data on meals claimed. FDCHs submit meal reimbursement claims to their sponsors each month. In these submissions, meals are reported separately by day and meal type (breakfast, lunch, supper, and snack) for each child. We collected data from sponsors on sampled FDCHs' meal claims for the months surrounding the parent survey and observation.

The claims forms used by FDCHs under four of the sponsors collected disaggregated information on the number of meals of each type served to each child on each day. The fifth sponsor's claims forms aggregated the number of meals of each type served each day across children. However, those forms also provided disaggregated data for each day on each child's attendance, along with the usual arrival and departure times for each child and the types of meals and snacks each child was generally served. Based on this detailed information, it was always possible to clearly deduce which meals each child received each day during the target week of the pilot study.

³ Like enrollment status and parent contact information, other information on enrollment forms could potentially be confirmed with each FDCH provider. However, this additional data collection effort would entail greater burden and costs.

Table IV.3 summarizes the information on the number of meals claimed for reimbursement for the 29 FDCHs for which such data were available for the month of the observation.⁴ Unlike the data collected via parent surveys and observations, the meal claims data have only four meal categories: breakfast, lunch, supper, and a single category for all snacks. On average, FDCHs in the pilot sample claimed 60 breakfasts, 111 lunches, 67 suppers, and 118 snacks during the target month.

TABLE IV.3
MEAL CLAIMS DATA

	Mean Number of Meals and Snacks Claimed by FDCHs		
	Month of Observation	Week of Observation	Day of Observation
Meal Type			
Breakfasts	59.72	14.21	2.72
Lunches	111.41	25.69	4.52
Suppers	67.34	15.69	2.59
Snacks	118.38	27.00	4.72
All meals	356.86	82.59	14.55
Sample Size			
Number of FDCHs	29	29	29
Number of Children for Whom Any Meals Were Claimed	213	204	156

B. PERFORMANCE OF EACH METHOD

Calculating erroneous payments in the CACFP requires comparing the meal reimbursement claims submitted by FDCHs with the count of meals and snacks that providers actually served and, thus, should have claimed. As discussed in the pretest report, the data from direct observations of mealtimes at the FDCHs provide the most reliable and accurate assessment of the number of meals served to children and are therefore the basis for validating the Parent Recall Method and for developing the model in the Observations and Modeling Method. In this section,

⁴ The one FDCH that ended its participation in the CACFP before the observation is not included in analyses of claims data.

we explore the accuracy of estimates of meals served derived from each method, assuming that data from the in-person observations provide the true meal count.

1. Evaluating Method 1: Parent Recall

Assessing the potential of the Parent Recall Method to produce accurate estimates of meals served involves comparing the estimates based on parent recall data to observational data on the number of meals actually served to children. As described in Section A, data on parent recollections of the meals their children received and the days their children were in day care were used to generate estimates of the number of meals served, by type, during each day of the target week. For each meal, three different estimates were produced using the parent survey data: one based on parent reports of which specific meals the child received, one based on parent reports of whether the child attended the FDCH on the target day, and one combining the two data sources.

- The estimates using only data on specific meals rely on the responses of fewer parents for some meal types, particularly for snacks, since some parents were unable to report such details. This lower sample size, and the possibility that meals served could differ systematically in FDCHs in which parents are more aware, could make this measure more subject to nonresponse bias.
- The estimates using only data on attendance assume that children received all meals specified on their enrollment forms on days they attended. This measure does not capture as much detail as the previous one and misses any day-to-day variation in meals served. In addition, as noted previously, the quality of the enrollment data collected from sponsors may be questionable.
- The third measure combines the two types of data, using the more detailed parent reports for specific meals when that information is available and filling in missing data points based on parent-reported attendance.

The analysis in this section compares each of the three measures to the observation data to determine which would be most accurate in assessing the number of meals served for a future national study of erroneous payments.

For each measure, we computed a weighted sum across parents to arrive at an estimate of the number of meals of each type served at the FDCH on the day of the observation. We then computed the mean of these FDCH-level estimates for each measure and meal type across the FDCHs in the pilot sample for the Parent Recall Method in which the relevant meal type was observed. To assess the accuracy of each parent survey measure, we conducted a paired t-test of the difference between its mean and the actual mean number of meals observed across FDCHs.⁵ Table IV.4 presents the results of this analysis. For each meal, this analysis is restricted to those FDCHs in which the meal was observed and those that were included in the parent survey sample.⁶ Since not all parents at each FDCH were interviewed, the survey data were weighted to generate estimates of the total number of each type of meal the FDCH served on the day of the observation.

For most meal types, weighted parent reports yielded generally higher estimates of the number of meals served to all CACFP participants at the FDCHs than were observed. The sole exception is supper, which was observed in only one FDCH and, thus, is likely less reliable because of the extremely small sample size. Estimates based on weighted parent reports ranged from 4.6 to 4.7 breakfasts and 7.2 to 7.3 lunches, compared to the 3.6 breakfasts and 5.0 lunches observed. Weighted parent reports also resulted in estimates of more than 7 morning and about 5 afternoon snacks, compared to the 5.9 and 3.3 snacks observed.

⁵ A paired t-test was used to account for the fact that the samples are not independent. However, simplifying assumptions are made in this test that do not account for the variation in parent reports within a given FDCH.

⁶ Because just 25 of the 30 FDCHs observed were also included in the parent survey, Table IV.4 includes fewer FDCHs than does Table IV.2.

TABLE IV.4

COMPARISON OF PARENT INTERVIEW DATA FOR THE TARGET DAY TO OBSERVATIONS,
BASED ON THE FULL SAMPLE

Meal Type	Sample Size (Number of FDCHs) ^a	Mean Number of Meals and Snacks Observed ^b	Mean Number of Meals and Snacks Estimated Based on Parent Reports for the Day of the Observation		
			Based on Parent- Reported Meals Received	Based on Parent- Reported Attendance ^c	Based on Parent- Reports of Both Meals Received and Attendance ^c
Breakfasts	8	3.55	4.59*	4.74*	4.59*
Lunches	19	4.97	7.17*	7.32*	7.17*
Suppers ^d	1	10.00	5.00	10.00	5.00
Morning Snacks	9	5.94	7.14	7.36	7.20
Afternoon Snacks	13	3.28	5.19*	4.90*	5.00*
Sample Sizes (Number of Parents Reporting)					
Breakfasts			31	30	31
Lunches			68	54	69
Suppers ^d			4	2	4
Morning Snacks			30	32	37
Afternoon Snacks			44	42	46

Note: Means based on parent reports are weighted to represent parents of all CACFP participants enrolled in the FDCHs in the sample.

^aThe sample size varies by meal because only two meals were observed at each FDCH. Both parent survey and observation data were restricted to observed meals at homes included in the parent survey sample.

^bThe number of meals and snacks observed is adjusted to exclude children not participating in the CACFP.

^cFor this measure, parent reports on attendance are combined with information on meal types specified on enrollment forms.

^dTests of statistical significance could not be performed for supper, because of the low sample size.

*Difference between the estimate based on parent reports and the observed number of meals served is statistically significant at the 0.05 level.

**Difference between the estimate based on parent reports and the observed number of meals served is statistically significant at the 0.01 level.

The differences between the estimates based on weighted parent reports and the observed number of meals served are statistically significant, at the 0.05 level for every type of meal except morning snacks.⁷ This suggests that data collected through surveying a sample of parents of children at the FDCHs about their children's attendance and meal receipt are unlikely to produce estimates of breakfasts, lunches, and afternoon snacks that can reliably yield FDCH-level estimates of erroneous payments that will fulfill the requirements of the Improper Payments Information Act of 2002 (IPIA).

There are several possible explanations for the higher parent reports. Parents may not recall, or may simply not know, which meals their children received at the FDCH each day during the previous week. Some may assume their children are served a consistent set of meals and snacks at day care every day, when, in fact, the eating occasions are less regular. Differences in the weighted means presented above could also be caused by differences in the meal receipt of children whose parents completed a survey and those who did not. To explore this possibility, we conducted an additional analysis to isolate recall error by examining only those children for whom we have data from both sources.

Table IV.5 presents data similar to those in Table IV.4 but for a sample restricted to children with both parent interview and observation data.⁸ To compute these means, we began with

⁷ Tests of statistical significance could not be performed for supper, because of the sample size of one.

⁸ Individual-level comparisons were not possible for children whose parents did not provide complete survey data for the relevant meal. In addition, it was not always possible to clearly determine from the observations data whether a specific child received a meal, as the data were collected in aggregate form by age group. Arrivals, departures, the presence of children not participating in CACFP, and differences between the number of children present and the number of meals served during the observation in some FDCHs made clear determinations of breakfast receipt impossible for 14 percent of children, lunch receipt uncertain for 2 percent of children, morning snacks uncertain for 12 percent, and afternoon snacks uncertain for 8 percent. For these cases, we computed the probability that the child received a meal by multiplying the number of meals of that type served to children in the child's age group by the total number of children in the child's age group who were present during the observation.

individual child-level data from both parent survey and observations.⁹ We summed the number of meals indicated by each data source across children for whom both types of data were available to result in an unweighted sum for each FDCH. We then computed means across FDCHs and tested the statistical significance of the differences between means based on parent reports and those based on observations. The means in this table are lower than those in Table IV.4, because they include only meals served to children with parent survey data and (unlike the parent data in Table IV.4) are not weighted to represent all children. However, the estimates from the two data sources are more similar to each other in Table IV.5. None of the differences is statistically significant, suggesting that parent reports provide an accurate estimate of the actual meals received by their children.

Considered together, the findings from Tables IV.4 and IV.5 suggest that although estimates of meals served *to all children* at the FDCH based on parent reports for a subset of children may not be sufficiently accurate, estimates of meals served *to children of respondents* are more reliable. This finding suggests two possible options for using parent survey data to produce estimates of erroneous payments that meet IPIA requirements:

1. **Lowering nonresponse and sampling error.** If a parent survey were completed for all children at a given FDCH, then estimates of meals received by respondents would be the same as meals served by the FDCH. However, eliminating nonresponse completely is unlikely to be feasible. Although confirming parent contact information with providers and extending the survey period should increase response to some degree, achieving a 100 percent response rate is unlikely under any circumstances. There are also challenges in reducing sampling error. Collecting data from parents on all of their children who attend a sampled FDCH would increase the length of the interview substantially for some parents, resulting in higher burden on them and possibly more refusals. Including

⁹ Rather than reporting on all three measures of meals served based on parent survey data, we chose one to focus on here and in the remaining analyses in this report. We chose the measure based on both meals received and attendance, since it uses the most detailed data available and performs as well as either other method in the comparisons to the observation data.

TABLE IV.5

COMPARISON OF PARENT INTERVIEW DATA FOR THE TARGET DAY TO OBSERVATIONS,
BASED ON RESPONDENTS ONLY

Meal Type	Sample Size		Mean Number of Meals and Snacks Served to Respondents	
	Number of FDCHs ^a	Number of Children	Observed ^b	Estimated Based on Parent Reports ^c for the Day of the Observation
Breakfasts	8	31	2.40	2.75
Lunches	19	69	3.02	3.11
Suppers ^d	1	4	4.00	2.00
Morning				
Snacks	9	37	3.52	3.44
Afternoon				
Snacks	13	46	2.06	2.54

^aThe sample size varies by meal because only two meals were observed at each FDCH. Both parent survey and observation data were restricted to observed meals for children whose parents completed a survey.

^bThe numbers of meals and snacks observed are adjusted to exclude children not participating in the CACFP.

^cThis measure relies on parent reports of meal receipt when such data are available, and on parent reports of attendance, combined with information on meal types specified on enrollment forms, otherwise.

^dTests of statistical significance could not be performed for supper, because of the low sample size.

*Difference between the estimate based on parent reports and the observed number of meals served is statistically significant at the 0.05 level.

**Difference between the estimate based on parent reports and the observed number of meals served is statistically significant at the 0.01 level.

providers in the survey sample is potentially even more problematic, as providers could bias the results by deliberately aligning their responses with their meal claims.

2. **Estimating erroneous payments for children of respondents.** If parent survey data could generate reliable estimates of meals received by children of respondents, this could be compared to claims data for those children—if disaggregated, child-level claims data are available—to compute reliable estimates of erroneous payments for those children. Assuming that the rate of erroneous payments for respondents’ children is the same as that for children of nonrespondents, then this rate could be applied to national claims numbers to produce national estimates of erroneous payments that would be sufficiently accurate to meet IPIA requirements.

These options are discussed further in Chapter V.

2. Evaluating Method 2: Observations and Modeling

Evaluating the Observations and Modeling Method involves assessing the reliability of the predictions generated by statistical models developed using the observations data, along with other data, from the FDCHs in the pilot. Although direct observations provide the most reliable and accurate assessment of the number of meals served, as noted above, such data are expensive and burdensome to collect. Thus, the Observations and Modeling Method explores the possibility of using observations data on a set of FDCHs collected in one year to develop models that would rely on more easily obtainable data sources to predict meals served in later years. In particular, observational data on the meals and snacks served to each CACFP-eligible child during the observation period are used in conjunction with characteristics of the children, the FDCH, and the sponsor to develop a series of regression models. Information on these characteristics is derived primarily from enrollment forms collected from sponsors and surveys of FDCH providers.

In later years, these types of data could be collected from a nationally representative sample of sponsors and FDCHs. Information on the child, FDCH, and sponsor characteristics obtained for this later sample could be used in conjunction with the estimated coefficients from the

models developed in a baseline year to predict meal receipt in later years. If the models work well, these predictions can then be compared to meals claimed by providers to estimate the number of erroneously claimed meals, which can be translated into amounts and rates of erroneous payments.

The overall econometric model consists of a series of four equations estimated using individual child-level data. Each equation has a different dependent variable representing a particular meal: breakfast, lunch, morning snack, and afternoon snack. (We were unable to estimate a model for supper in the pilot because of the extremely limited sample size for that meal type.) The independent variables are characteristics of the FDCHs, their sponsors, and the children enrolled, which may differ from equation to equation.

The basic form of the model is:

$$(1) M_{ik} = \alpha_k + \beta_k X_{ik} + \delta_k Z_{ik} + \gamma_k W_{ik} + u_{ik},$$

where $k = 1, \dots, 4 =$ an index representing the meal type

$i =$ an index representing each child

$\alpha =$ a constant

$M_k =$ binary variable indicating whether the child received a meal of type k

$X_{ik} =$ vector of the characteristics of the sponsor¹⁰ of the FDCH that child i attends included in equation k

$Z_{ik} =$ vector of the characteristics of the FDCH¹¹ that child i attends included in equation k

¹⁰ Sponsor characteristics include location, the number of providers under the sponsor's supervision, and the percentage of these providers in Tier I.

¹¹ FDCH characteristics include tier status; the number of children enrolled, by age group; aggregated versions of some child characteristics, such as the mean age of the children enrolled at the home and the consistency of the days and hours of care provided; and survey data on the use of SISO logs, how closely the meals indicated on the enrollment forms correspond to the meals children actually receive in day care, and how much day-to-day variation there is in attendance and meal counts.

W_{ik} = vector of the characteristics of child¹² i included in equation k

$\beta_k, \delta_k, \gamma_k$ = parameter estimates representing the relationships between characteristics and the number of meals M_{ik}

The dependent variable in each econometric model is a binary variable indicating whether a meal of the relevant type was served to the child, according to the observation data. In selecting independent variables for the models, we sought factors likely to be highly correlated with receiving a meal. In addition, our strategy for selecting a specification for the econometric model was influenced by two additional considerations: (1) the limited number of degrees of freedom in the model and (2) the practical need for a model that will be easy to use to predict future erroneous payments.

- The degrees of freedom for each of the equations to be estimated as part of the econometric model are limited by the fact that the pilot study included just 30 FDCHs, and only two of the five types of meals were observed at each. With a limited number of degrees of freedom, the number of independent variables whose relationship with meals served can be estimated with a reasonable degree of precision is also limited. Partly for this reason, we estimated the regressions at the child level, rather than the FDCH level. In addition, we decided to allow each of the four equations in the model to have a unique set of independent variables, so that each equation includes the independent variables that best predict that equation's dependent variable.
- Second, our strategy for selecting the model's independent variables was influenced by the fact that the results of the model are designed to be used in the future to predict erroneous payments. This future effort will involve assembling a data set that includes values of each independent variable over a larger sample of FDCHs, so we had to select independent variables that would be obtainable in future years with relative ease and at modest cost. Thus, we did not consider using any information

¹² Child characteristics include child's age, the days of the week and hours of the day for which the child was enrolled at the FDCH, and the meals the FDCH was expected to provide.

from the observations themselves or from the parent survey as independent variables in the models.¹³

Given these considerations, we first created a list of candidate variables to consider as potential independent variables in the model. The explanatory variables we considered were constructed from data from three sources: (1) enrollment forms collected from FDCH sponsors, (2) the provider survey that was typically completed during the observation visit but could be conducted by telephone, and (3) other basic information collected from sponsors:

- The enrollment forms contained child-level data, including the child's age, the days of the week and hours of the day for which the child was enrolled at the FDCH, and the meals the FDCH was expected to provide. In addition to using these as child-level characteristics, we also computed FDCH-level variables from this information, such as the mean age of the children enrolled in the home; the mean number of days per week for which children were enrolled; whether all children were enrolled for the same number of days, hours, or meals; and the proportion of children enrolled to receive a particular meal type.
- The provider survey included responses to questions about the use of SISO logs, how closely the meals indicated on the enrollment forms correspond to the meals children actually receive in day care, and how much day-to-day variation there is in attendance and meal counts. Providers also confirmed the number of children enrolled, by age group. (This information was actually recorded on the observation form, but it could be added to the provider survey if it is used alone.)
- In addition to the enrollment forms, sponsors provided information on the tier status of each FDCH and on sponsor characteristics, such as location, the number of providers under the sponsor's supervision, and the tier status of these providers.

We considered multiple measures for some characteristics. For example, for the days of the week, we considered a continuous measure of the number of days per week each child attended and a binary measure indicating attendance on Monday through Friday. We also considered FDCH-level averages of these measures.

¹³ Although the provider survey was conducted during the observation in the pilot study, the survey is a separable data collection activity that could be conducted by telephone with considerably less effort, cost, and burden than the on-site observations.

We explored a total of 42 potential explanatory variables in developing the models. Each of these variables was considered because theory suggested that it might be related to meal receipt. For example, a child's age may be related to meal receipt in several ways. Younger children may take longer or more frequent naps and thus sometimes miss scheduled meals. Alternatively, older children may not be present for meals served during school hours. Information on the enrollment forms indicates the days and times parents expected their children to attend day care and the meals they were expected to receive there. Although such initial expectations may not match the daily realities and may vary over time, we would expect these to be positively related to meal receipt. The enrollment information for other children at the FDCHs may also be positively related to a child's meal receipt, since providers may find it easier to serve the same meals to all children. The number of children enrolled at the FDCH could make consistency of days, hours, and meals more difficult or more important. Consistency of data across enrollment forms for different children at a FDCH may indicate a higher level of structure, which could influence the types and regularity of meals and snacks served. Responses to several questions on the provider survey provide measures of consistency over time of meals served and attendance. Sponsor characteristics could affect meals served through rules or informal guidance provided to their FDCHs.

Based on theoretical considerations as well as some preliminary empirical work, we selected from the enrollment form data a set of child-level independent variables we defined as core variables in each model. For all four models, the set of core variables includes the child's age, the number of meals the enrollment form indicated the child is to receive each day, the number of hours per day the enrollment form indicated the child is to attend care, and whether the enrollment form indicated that the child is to attend care Monday through Friday. The final core variable is a binary indicator of whether the enrollment form indicated that the child is to receive

the specific meal predicted by the model. Thus, this variable is different in each of the four models. For example, in the breakfast model, this variable indicates that the child was expected to receive breakfast.

After selecting the core variables, an automated process was used to select additional variables for each model. These additional variables were selected in a stepwise fashion based on correlations of all variables in the set being considered with each dependent variable, controlling for the core variables (that is, with the residual from the regression of each dependent variable on the core variables). The variables that explained the greatest proportion of the variation of this residual were included as additional independent variables in the model. Finally, we compared the model results from various specifications to determine a preferred specification.

We estimated the four equations using logistic regression techniques. Coefficient estimates and goodness-of-fit statistics from the estimated equations are presented in Table IV.6. The coefficient on age of the child—a core independent variable that appears in all four models—is negative and statistically significant in each, implying that younger children are more likely than older children to have received each type of meal and snack. The coefficient on whether the child was enrolled to receive care Monday through Friday is positive and statistically significant in the models for breakfast and afternoon snacks, suggesting that children with more unusual weekly schedules are less likely to have received those meals. Children enrolled to receive supper at the FDCH are less likely to have received breakfast or lunch.

TABLE IV.6
COEFFICIENT ESTIMATES FROM REGRESSION EQUATIONS

Independent Variables	Dependent Variables: Meal Types Child Received			
	Breakfast	Lunch	Morning Snack	Afternoon Snack
Child-Level Data from Enrollment Forms:				
Child's age	-0.73* (0.32)	-0.76** (0.17)	-0.62** (0.17)	-0.92** (0.22)
Child enrolled to receive care Monday through Friday	5.27** (1.87)	0.89 (0.73)	1.28 (2.55)	1.80** (0.58)
Child enrolled to receive care during business hours	-2.80 (1.57)	—	—	—
Number of hours per day child is enrolled at the FDCH	0.60 (0.64)	0.22 (0.19)	-0.37 (0.36)	0.18 (0.20)
Number of meals per day child is enrolled for at the FDCH	1.54 (1.32)	0.18 (0.70)	-0.60 (1.58)	-1.91** (0.70)
Child enrolled to receive breakfast at the FDCH	-1.17 (3.16)	-2.47 (1.31)	—	3.89** (1.49)
Child enrolled to receive lunch at the FDCH	-2.52 (3.19)	0.42 (2.02)	—	—
Child enrolled to receive supper at the FDCH	-6.54** (2.44)	-3.07* (1.26)	—	—
Child enrolled to receive a morning snack at the FDCH	—	—	3.15 (2.73)	—
Child enrolled to receive an afternoon snack at the FDCH	—	—	—	3.46** (1.28)
Flag indicating age was imputed	-3.90 (3.10)	-1.01 (0.93)	-0.03 (1.07)	2.32 (2.02)
Flag indicating days per week were imputed	-0.07 (1.71)	0.50 (0.64)	1.30 (1.20)	-3.04* (1.34)
Flag indicating meals per day were imputed	1.75 (2.26)	0.76 (0.61)	1.56 (1.70)	2.29* (0.93)
FDCH-Level Data Aggregated from Enrollment Forms:				
Mean age of children enrolled at the		-0.75*		

TABLE IV.6 (continued)

Independent Variables	Dependent Variables: Meal Types Child Received			
	Breakfast	Lunch	Morning Snack	Afternoon Snack
FDCH	—	(0.31)	—	—
Mean number of days per week children are enrolled at the FDCH	—	-0.63 (0.75)	—	—
All children at the FDCH are enrolled for the same number of days per week	3.99 (2.82)	—	—	—
All children at the FDCH are enrolled for the same number of hours per day	—	2.79** (0.88)	6.49** (1.52)	5.12** (1.64)
All children at the FDCH are enrolled for the same number of meals per day	7.44** (2.07)	—	—	1.62* (0.74)
Proportion of children enrolled to receive afternoon snack	—	—	—	-3.11 (1.83)
Proportion of children enrolled to receive supper	—	—	-13.31* (5.90)	—
Provider Reports:				
Number of children enrolled	0.71 (0.48)	0.18 (0.21)	-0.09 (0.10)	—
Number of infants enrolled	—	-1.91* (0.86)	—	—
Number of preschool children enrolled	—	-0.34 (0.22)	—	—
Number of school-age children enrolled	—	—	0.89** (0.31)	—
Day-to-day consistency in number of children attending	0.98 (0.90)	2.23** (0.72)	—	0.56 (0.34)
Day-to-day consistency in number of meals served	—	-1.02 (0.56)	2.34** (0.54)	--
FDCH uses sign-in/sign-out log	—	—	—	2.36* (0.88)
Other Data from Sponsors:				
FDCH is Tier I	11.83* (5.65)	—	—	—

TABLE IV.6 (continued)

Independent Variables	Dependent Variables: Meal Types Child Received			
	Breakfast	Lunch	Morning Snack	Afternoon Snack
Percentage of sponsor's FDCHs that are Tier I	-13.04 (6.90)	—	—	—
Number of Observations	63	193	101	115
R-Square	0.57	0.43	0.57	0.41
AIC	124.40	247.89	160.40	205.75

*Statistically significant at the 0.05 level.

**Statistically significant at the 0.01 level.

AIC = Akaike Information Criterion

Different types of consistency are positively associated with meal receipt. Most notably, children are more likely to have received lunch and morning and afternoon snacks at FDCHs in which all children are enrolled for the same number of hours per day, and children are more likely to have received breakfast and afternoon snacks at FDCHs in which all children are enrolled for the same number of meals per day. The consistency of attendance from day to day, as reported by the provider, is positively associated with receipt of lunch, and provider-reported consistency of meal totals across days is positively associated with morning snacks.

In general, the regression equations explain the variance of the dependent variables—whether the child was observed to receive the meal or snack—reasonably well. The R-squared value of the breakfast is 0.57, whereas that of the lunch model is 0.43. The R-squared values of the models for morning and afternoon snacks are 0.57 and 0.41, respectively. The Akaike Information Criterion (AIC) values range from 124 for breakfast to 247 for lunch.¹⁴ These two

¹⁴ The AIC was useful in choosing the final model specification for each meal. This criterion assists in identifying the model that best explains the dependent variables while minimizing the number of parameters in the model. Lower AIC values indicate a better fit of the model.

measures of goodness-of-fit suggest that the breakfast model would provide a more accurate prediction of breakfasts served than the lunch model would of lunches served.

Ideally, we would verify the model developed above by applying the estimated parameters to an independent sample for which we had observation data and comparing the predicted meals to the actual meals observed. If the predicted and observed values were similar, we would have more confidence in the ability of the model to predict meals served and, thus, to estimate erroneous payments in a larger study. Unfortunately, such a sample is not available in the pilot. The lack of this type of verification is a limitation of our evaluation of the Observations and Modeling Method. In a national study using the Observations and Modeling Method, the sample selected in the baseline year should be sufficiently large so that the models could be developed using half of the sample, and the remaining sample could be used to verify the models.

Another limitation of the Observations and Modeling Method is that no models were developed for supper or for snacks served very early or late in the day, because of the lack of observations data for those eating occasions.¹⁵ Because pilot observations were scheduled at the convenience of sponsors, FDCHs, and observers, they tended to occur between 8:00 a.m. and 4:00 p.m. Although these may be core hours of operation for some homes, many children arrive earlier or stay later, and meals and snacks may be served at any time during the day. Thus, developing models to accurately estimate all meals served would require observations covering FDCHs' full operating hours. This necessity would increase the difficulty and cost of data collection in the baseline year of a national study using the Observations and Modeling Method.

¹⁵ Supper was observed only at one FDCH, and early morning or evening snacks were never observed in the pilot.

C. COMPARISONS TO MEAL CLAIMS DATA

Computing estimates of erroneous payments is beyond the scope of this pilot study. For such estimates, a nationally representative sample of sponsors and FDCHs would need to be drawn, and the appropriate data collected for the method to be used.¹⁶ The Parent Recall Method would require that parent surveys be completed with a nationally representative sample of children's parents, and the Observations and Modeling Method would require complete and verified models, along with collection of enrollment form data and provider surveys for a representative sample of FDCHs.

However, to explore how the estimates from the two tested methods would be used to estimate erroneous payments, this section discusses comparisons of data on the meal reimbursement claims submitted by providers with data from each of the two methods to estimate the number of meals that should have been claimed. We illustrate these comparisons using disaggregated child-level claims data from the pilot sample, along with parent survey data collected for the Parent Recall Method.

In general, the number of each type of meal or snack erroneously claimed can be calculated for those reimbursed at the Tier I rate and separately for those at the Tier II rate, as the following:

$$E = C - S$$

In the preceding formula, E equals the total number of each type of meal or snack erroneously claimed reimbursed at Tier I rates and separately at Tier II rates. C equals the number of each type of meal or snack reimbursed at Tier I rates and separately at Tier II rates (as measured by one of the methods explored in this pilot). S equals the number of each type of meal or snack

¹⁶ Chapter V discusses developing such a sample.

served to eligible children and reimbursed at Tier I rates and separately at Tier II rates. Estimating erroneous payments requires first, computing the number of incorrectly reimbursed meals and snacks, separately by type and by tier level of reimbursement. Secondly, each type of incorrectly reimbursed meal and snack is multiplied by the appropriate reimbursement rate (Tier I or Tier II).

Under the IPIA, total erroneous payments are defined as the sum of overpayments and underpayments. However, neither method explored in the pilot can measure underpayments. Although the Parent Recall Method could produce estimates of the number of meals served but not claimed, such under-claims are not necessarily erroneous. For example, it is possible that a meal served did not include the required nutritional components to be eligible for CACFP reimbursement and, thus, was appropriately not claimed.¹⁷ Even if a meal would qualify for reimbursement, if the provider chooses not to claim the meal, that would not be considered an error.

Measuring the number of meals that are served but not claimed is necessary to ensure that such under-claims for some children do not offset over-claims for others in the calculation of erroneous claims. For example, if one child received a meal that was not claimed (perhaps because it did not meet the CACFP nutritional requirements), and another child was not served a meal that was claimed, an analysis of under-claims and over-claims at the child and meal levels would correctly estimate the number of erroneous claims as one meal. However, an analysis conducted at the FDCH level would find no erroneous claims, because the total number of meals served to all children at the FDCH would equal the number claimed by the home. Thus, disaggregated analysis is necessary to avoid underestimating error in such cases. As discussed

¹⁷ Neither method explored in the pilot can measure whether meals served include the required nutritional components to be eligible for CACFP reimbursement.

below, the Parent Recall Method allows analysis at a more disaggregated level than does the Observations and Modeling method.

Method 1: Parent Recall. For this method, the estimates of meals served based on parent recall data would be compared to the meal-reimbursement claims submitted by FDCH providers to their sponsors for the target week. Before these comparisons can be made, the parent survey data must be adjusted to account for the fact that parents may provide information on more meals and snacks than CACFP rules allow FDCH providers to claim for reimbursement. Parents report on all meals their children receive at the FDCH; according to CACFP regulations, day care homes may only claim up to two reimbursable meals (breakfast, lunch, and/or supper) and one snack, or two snacks and one meal, for each eligible participant each day (FNS <http://www.fns.usda.gov/CND/Care/CACFP/aboutcacfp.htm>).

The meal claims data collected for the pilot never exceeded two meals and one snack per child on the target day. However, the majority of parents responding to the survey report that their child received more than three meals and snacks, combined, on the target day. To account for this, we adjusted the parent survey data for cases that exceeded CACFP reimbursement rules for the day by capping the number of meals reported at the maximum allowed. Deciding which meal types in the parent survey data to adjust downward required some assumptions. When a FDCH claimed the maximum number of meals and snacks allowed in a day for a child, we adjusted the parent-reported data for any type that was not claimed. (For example, if a FDCH claimed breakfast and lunch for a child, but the parent reported that the child had received breakfast, lunch, and dinner, we adjusted the parent data to indicate receipt of breakfast and lunch only.) When meal claims were below the maximum, we adjusted the parent data for the types with the lowest reimbursement rate. These assumptions affect the results presented below, and different assumptions may be more appropriate.

Table IV.7 illustrates the effect of these adjustments and presents summary statistics for the data that would be used to compute the number of erroneously claimed meals of each type under the Parent Recall Method. The sample in this table includes only those children whose parents responded to the survey. Because there are only four meal categories in the claims data, the different types of snacks in the parent survey were combined into a single category. For most meal types, parent reports exceed the number claimed. Adjusted parents reports indicate that children were served an average of 2.4 reimbursable meals and snacks during the day, while only 2.2 meals and snacks were claimed.

TABLE IV.7

COMPARISON OF MEALS REPORTED BY PARENTS TO MEALS CLAIMED BY FDCHS FOR SURVEY RESPONDENTS' CHILDREN

Meal Type	Sample Size (Number of Parents)	Mean Number of Meals and Snacks on the Target Day		
		Reported by Parents, Unadjusted	Reported by Parents, Adjusted to Not Exceed CACFP Maximums	Claimed by FDCHs
Breakfasts	93	0.77	0.58	0.36
# of Reported/- Claimed Breakfasts	93	(72)	(54)	(34)
Lunches	93	0.82	0.82	0.74
# of Reported/- Claimed Lunches	93	(76)	(76)	(69)
Suppers	87	0.26	0.25	0.34
# of Reported/- Claimed Suppers	87	(23)	(22)	(30)
Snacks	87	1.63	0.83	0.70
# of Reported/- Claimed Snacks	87	(142)	(72)	(61)
All meals	87	3.46	2.44	2.15
# of Reported/- Claimed All Meals	87	(301)	(212)	(187)

Note: The mean (total) number of meals and snacks by type do not sum to the mean (total) number for all meals because of different sample sizes for some meals.

The only type of meal that is claimed more often by FDCHs than it is reported by parents is supper. Anecdotal evidence gleaned during the pilot suggests that this could be a result, at least in part, of a difference in what parents and providers call a specific eating occasion, rather than an actual difference in meal receipt. Because the CACFP reimbursement rates are higher for meals than for snacks, some homes may serve the necessary elements of a meal at a time that

parents would think of as a snack time. For example, the one supper observed in the pilot was served at 3:30 p.m.

There are several possible explanations for the generally higher parent reports. FDCHs may claim fewer meals than parents recall by mistake or because some of the meals they serve do not meet CACFP nutritional requirements. Alternatively, parents may systematically overreport the meals their children received at the FDCH. However, as shown in Section B, the number of meals parents reported were not statistically significantly different from the number of meals observed being served to their children. In addition, child-level analysis can ensure that overreports by some parents do not offset erroneous over-claims for other children. A child-level analysis would fail to detect error only when two offsetting errors occurred for the same child, which would be less common but could result in a slight underestimate of overpayments. Although Table IV.7 presents aggregated means from each data source, estimates of erroneous claims would need to be computed at the individual level, to ensure that over-claims for some do not offset under-claims for others.

Table IV.8 shows the total numbers of meals, by type, for which the meal claims data do not match the meals served, as measured by the Parent Recall Method, on the target day for the FDCHs in the pilot survey sample. Meals that were claimed but not served (over-claims) are considered to be erroneously claimed and would be used to compute erroneous payments. As discussed above, however, meals that were served but not claimed (under-claims) are not necessarily erroneous.

Under-claims (meal claims below the number served) are considerably more common than over-claims (meals claimed in excess of meals served) for all meals but supper. For example, the Parent Recall Method estimates indicate that 22 breakfasts were served but not claimed for reimbursement, while only 2 breakfasts were claimed but not served. Interestingly, the 14

TABLE IV.8

ESTIMATED NUMBER OF MEALS ERRONEOUSLY CLAIMED FOR SURVEY RESPONDENTS' CHILDREN, USING THE PARENT RECALL METHOD

Meal Type	Sample Size (Number of Parents)	Number of Meals and Snacks on the Target Day	
		Claimed but Not Served, According to Parent Recall Method Estimate	Served, According to Parent Recall Method Estimate, but Not Claimed
Breakfasts	93	2	22
Lunches	93	1	8
Suppers	87	14	6
Snacks	87	2	13

children for whom suppers were claimed but not served were reported to have been served breakfasts that were not claimed for reimbursement. These children all attended FDCHs that claimed reimbursement for lunch and supper for some children but did not claim any breakfasts (possibly because of the limit on the number of meals that can be claimed each day under CACFP rules). Thus, the overall number of meals reported by parents matched the number claimed, but the numbers by type did not.

To determine the dollar amount of the reimbursements that correspond to the erroneous claims, we would multiply E by the fixed reimbursement rate for the relevant meal. Reimbursement rates vary by meal type and tier, as shown in Table IV.9. Thus, these calculations would have to be conducted separately for Tier I and Tier II. The pilot study collected information on the tier status of each FDCH in the pilot but not the tier status of individual children.¹⁸ A national study would need to collect tier information at both levels to accurately estimate the dollar amount of erroneous reimbursements.

¹⁸ Tier I FDCHs are located in low-income areas or are operated by providers whose household income is at or below 185 percent of the federal income poverty guidelines. All meals served to children in Tier I homes are

TABLE IV.9

CACFP FDCH REIMBURSEMENT RATES, BY TIER AND MEAL TYPE

Meal	Tier I	Tier II
Breakfast	1.17	0.43
Lunch	2.18	1.31
Supper	2.18	1.31
Snack	0.65	0.18

Source: Federal Register (<http://www.fns.usda.gov/cnd/care/ProgramBasics/Rates/CACFP-ReimbRates-08-09.pdf>, accessed December 2008).

In a national study, after computing the dollar amount of erroneous payments for children of survey respondents, the next step would be to convert the amount into a rate of erroneous payments for this group by dividing the amount of erroneous payments by the total reimbursement amount for meals claimed for these children. The final step in computing national estimates of erroneous payments would involve applying this error rate to the national reimbursement claims amount for the universe of FDCHs.

Method 2: Observations and Modeling. To estimate erroneous payments using the Observations and Modeling Method, the predictions of meals served produced by applying the statistical models developed from observations on a nationally representative sample of FDCHs in a baseline year to data on children from a similar sample in later years would be used in place of the parent survey estimates in a process similar to that described for the Parent Recall Method.

First, a nationally representative sample of sponsors and FDCHs would be drawn. In the baseline year, observations would be conducted across all meal and snack times at each sampled home, surveys would be administered to all providers, and enrollment forms and meal claims

(continued)

reimbursed at the Tier I rate. Tier II homes do not meet the criteria for a Tier I home but can still be reimbursed at the Tier I rate for meals served to children who have been identified as income eligible.

data would be collected from sponsors for each FDCH in the sample. Models would be developed, following the same procedures discussed in Section B, but using only half the sample. These models would then be verified by applying the coefficients from the models to the enrollment and provider survey data for the other half of the sample and then comparing the results to the observation data for that subsample.

In later years, the process of applying the statistical models to estimate erroneous payments would involve seven basic steps:

1. Enrollment form data and meal claims data would be collected from sponsors for each sampled FDCH, and surveys would be administered to all sampled providers.
2. Predicted values of receipt of each type of meal (M_k in the model equation) would be generated for each child enrolled in an FDCH by multiplying the values of the variables in X_{ik} , Z_{ik} , and W_{ik} (from the enrollment form and provider survey data) by the values of the associated coefficients from the econometric model $(\beta_k, \delta_k, \gamma_k)$.
3. The prediction for each child would be aggregated to produce estimates of the number of meals served, by type, at each FDCH in the sample. This aggregation is necessary because model-based estimates involve some individual-level errors that balance out over larger samples. However, as noted above, in such an aggregated analysis, under-claims for some children may offset over-claims for others.¹⁹
4. Comparing these predictions to the meal-reimbursement claims submitted by the FDCH providers to their sponsors, as illustrated for the Parent Recall Method above, would produce estimates of the number of meals and snacks erroneously claimed for each FDCH in the sample. Separate estimates would be computed for each meal type.
5. Reimbursement rates, for each meal type and tier, would be applied to the estimates of the number of meals and snacks erroneously claimed to compute the dollar amount of erroneous payments for the sample.
6. These dollar amounts would then be used to compute rates of erroneous payments for the sample.

¹⁹ Training observers to count only reimbursable meals could minimize one source of measured under-claims. However, the feasibility and costs of such training were not explored in the pilot study.

7. Finally, these rates would be applied to reimbursement amounts at the national level to yield national estimates of erroneous payments.

Additional analyses related to meal claims data are presented in Appendix E.

D. LIMITATIONS

Our ability to evaluate the validity of each method is limited by the modest sample sizes in the pilot, the data quality issues described in Section A, and the soundness of the assumptions necessary for adjustments discussed in Sections B and C. Two other key limitations mentioned above merit repeating here: (1) neither of the two methods for estimating the number of meals and snacks served can determine if a meal or snack served meets FNS nutritional requirements, and (2) neither method can measure underpayments.

In addition, neither method accounts for possible variation in meal counts over the year. Data collection for the pilot took place during a single week, with observations on a single day, for each FDCH, and all data collection activities were completed within a three-month period. In a national study, the data collection window could be staggered across sites, or data could be collected at more than one point in time at each site to capture variation over time.

V. RECOMMENDED METHODOLOGY FOR THE NATIONAL STUDY

The purpose of the pilot was to identify a method for estimating the number of meals served by Family Day Care Homes (FDCHs) that could be used in computing estimates of erroneous payments in the Child and Adult Care Food Program (CACFP). The pretest narrowed our focus from four methods to two, which were explored in the full pilot. The previous chapters described the methods, our experiences in collecting the data required, analytical procedures, and results. This chapter synthesizes key issues discussed earlier to assess which method has the greater potential to provide accurate estimates of meals served for use in estimating erroneous payments. In Section A, we summarize the strengths and weaknesses of each method. In Section B, we recommend a method to be used in a national study. In Section C, we discuss key procedures and estimated costs necessary to implement the recommended method.

A. STRENGTHS AND WEAKNESSES OF EACH METHOD TESTED

Each method considered in the pilot has its own strengths and weaknesses in terms of ease of implementation and the reliability of estimates produced. As noted in Chapter IV, two key weaknesses are shared by all methods tested in the pilot—none can produce separate estimates of over- and underpayments or determine whether a meal or snack served meets CACFP nutritional requirements. This section discusses other weaknesses and strengths specific to each method.

1. Method 1: Parent Recall

The Parent Recall Method is straightforward to implement in terms of both data collection and analysis. Its strengths include its relatively low cost compared to direct observations and lower burden on FDCH providers. Although the method would entail some burden on parents, the pilot found that the average parent interview required fewer than 10 minutes to complete.

Parents' reports of the meals their children received at FDCHs in the pilot were found to be accurate estimates of the meals served to their children, based on direct observations. As shown in Table IV.5, although the number of meals reported by parents tended to be slightly higher, on average, than the number observed, these differences were not statistically significant for any meal type. Thus, the estimates the Parent Recall Method produced could be compared to claims data for those children to provide accurate estimates of erroneous payments for survey respondents' children.

The most serious weakness of the Parent Recall Method concerns using the parent survey data to estimate the number of meals served to all children in the sampled homes. As discussed in Chapter IV, although the information reported on the survey was found to be fairly accurate, the meals reported for children for whom we have parent survey data are not representative of meals served to children for whom such data are not available. Thus, estimates of meals served to *all* children at an FDCH, based on parent reports for a subset of children, may not be accurate. Parent survey data were not available for three groups of children: (1) children of FDCH providers, (2) siblings of children who were the focus of a parent interview, and (3) children who were selected for the survey but whose parents did not respond. Each of these subgroups suggests a possible modification to the survey procedures to improve accuracy of FDCH-level estimates:

1. Children of FDCH providers could be included in the survey sample. Providers' children were excluded in the pilot, as noted in Chapter III, because of concerns that providers might bias the results by deliberately aligning their responses with their meal claims. Because this issue would also be relevant in a national study, we do not recommend including providers in the parent survey sample.

2. Parents with more than one child attending a sampled FDCH could be surveyed about the meals received by all of their children at the FDCH. This would eliminate the sampling error but would increase the burden on parents. Although sampling error is unlikely to explain the differences discussed in Chapter IV, this change could be implemented at fairly low cost.
3. Additional effort could be made to maximize the response rate. Asking sponsors to confirm parent contact information with providers should improve the response rate. In addition, a broader window for contacting parents could be used for the Parent Recall Method than that used in the pilot, for which parent interviews needed to take place soon after the observations were conducted. In a national study using the Parent Recall Method alone, parents could be interviewed any time during the data collection period. Claims data would be collected later for the period covered by the parent survey.

As noted, some of these options are more appealing than others. However, even if none of these modifications were feasible or sufficient, reliable estimates of erroneous payments for children of respondents could potentially be computed by comparing parent reports to claims data for their own children—if disaggregated, child-level, claims data are available.

The finding that parents tended to report more meals than FDCHs claimed for reimbursement raises the concern that some meals parents report were either not actually reimbursable or not actually served. Again, however, the number of meals parents reported was not found to be statistically significantly different from the number of meals observed for their children. In addition, the child-level analysis used in the Parent Recall Method ensures that over-reports by some parents do not offset erroneous over-claims for other children, so this method would fail to detect offsetting errors only when both errors occurred for the same child. Although the coincidence of two such errors is likely to be uncommon, it could result in a slight underestimate of overpayments.

Other weaknesses of the Parent Recall Method include the low quality of parent contact information on the enrollment forms provided by sponsors. The Parent Recall Method was originally designed to require no contact between researchers and FDCH providers to minimize

burden on providers and to avoid informing them of the survey, which could give providers an opportunity to influence parents' responses. However, experiences with the pilot indicate that the assistance of providers is necessary to confirm enrollment and contact information for sampled parents to ensure an adequate response rate. In a national study, to improve the quality of this information without alerting FDCH providers to the parent survey in advance, researchers could ask CACFP sponsors to confirm parent contact information with providers *after* interviews had been completed with as many parents as possible. Interviewers could then attempt additional interviews using the confirmed contact information. However, this process would place an additional burden on sponsors and FDCH providers and add to the estimated cost of the Parent Recall Method.

2. Method 2: Observations and Modeling

Among the strengths of the Observations and Modeling Method is that the observations on which it is based provide an independent assessment of the number of meals served, which is not subject to parent recall error. Direct observations provide the most reliable and accurate assessment of the number of meals served. Conducting the observations necessary to develop the statistical models is expensive and burdensome for both FDCH sponsors and providers; however, once the models are fully developed and verified, the data needed to use them to predict meals served (provider interview and enrollment form data) could be obtained at less cost and would involve considerably less burden.

The four models developed to predict children's receipt of breakfast, lunch, and morning and afternoon snacks have the potential to produce fairly accurate estimates of children's receipt of those meals. Each of the models developed in the pilot was found to explain the variance of the relevant dependent variable—whether a child received a type of meal—reasonably well.

However, the Observations and Modeling Method also has several weaknesses. First, although the models developed in the pilot study demonstrate the potential of the Observations and Modeling Method for predicting CACFP meal receipt, they are inadequate for use in estimating erroneous payments nationally, for three reasons:

1. They were based on a small number of FDCHs, which were not representative of all homes nationally.
2. They have not been verified on an independent sample.
3. No models were developed for supper or for snacks served early in the morning or late in the day.

To address these weaknesses, a complete set of models—for breakfast, lunch, supper, and all snacks—would need to be developed and verified based on a nationally representative sample. Developing national models would be a challenging and costly undertaking. The sample would need to be sufficiently large for models to be developed using half of the sample and verified using the other half. The data collection effort would require observing the sampled FDCHs throughout the day, as well as conducting provider interviews and collecting enrollment forms and other information from sponsors. This data collection effort would involve relatively high cost and burden on both FDCH providers and sponsors. The recruitment and scheduling effort for a large representative sample would be considerably more involved than that required for a parent survey. In addition, accurately measuring the number of snacks served throughout the day would involve observing FDCHs from early morning through evening, which adds to the expense of conducting observations. Conducting such full-day observations may be particularly challenging when sponsors require monitors to accompany field staff—as most in the pilot did. The observations in the pilot were scheduled at the times most convenient for monitors, who might not be available early in the morning or in the evening.

If models for all meals were fully developed and verified, several weaknesses would remain. Model-based estimates, although based on actual observations, can predict meals served only with some error. The independent variables in the model explain much of the variation in actual meals served, but the model also fails to explain a substantial proportion of this variation. The number of meals served in a specific FDCH is likely to be affected by various factors not included in the model, and, as a result, the model prediction will have some error for that home. However, the accuracy of model-based estimates typically improves with more aggregated data. If models were used to produce estimates of the mean number of meals served in FDCHs across the full sample of homes, errors for individual FDCHs would be expected to balance out across the full sample and so would provide a more accurate estimate overall. Thus, only aggregated analysis would be possible under the Observations and Modeling Method, and disaggregated analysis—such as estimating errors among subgroups of students or FDCHs—would likely be much less accurate. This necessary aggregation would also preclude computing separate estimates of over-claims and under-claims. Thus, under-claims for some children may offset over-claims for others, potentially resulting in underestimates of erroneous claims.

Other weaknesses include that the analysis necessary for the Observations and Modeling Method is more extensive than that for the Parent Recall Method, involving a larger number of data sources and more complex statistical methods. In addition, the specific information included on enrollment forms varies across sponsors, resulting in uncertainty about whether all variables needed to use the model would be available for all FDCHs in a national sample. Another concern is that the providers would necessarily be aware of when observations take place and, thus, could

alter their claims data for that day accordingly, potentially resulting in an underestimate of erroneous payments.¹

3. Other Methods Examined in the Pretest: SISO Logs

Although sign-in/sign-out (SISO) logs were not a focus of the full pilot, they were examined in the pretest for the study, as discussed in Chapter II. Information collected from FDCH providers in the pilot sample confirmed the pretest finding that use of SISO logs by FDCHs is limited. As a result, the methods relying on such logs are not feasible.

Table V.1 summarizes our assessment of each method along several dimensions.

TABLE V.1
SUMMARY OF ASSESSMENT OF EACH METHOD

Method	Feasibility	Potential Accuracy	Relative Cost
Parent Recall	High	National estimates of erroneous payments: High Separate estimates of over- and under-claims: High Subgroup estimates: High	Low
Observations and Modeling	High	National estimates of erroneous payments: High Separate estimates of over- and under-claims: Low Subgroup estimates: Low	Short run: High Long run: Low
SISO Logs	Low	Low	Low

¹ The analysis in Appendix E found no evidence that meal claims submitted by FDCH providers in the pilot were systematically different for the time period of the observations.

B. RECOMMENDED METHODOLOGY

Based on the experiences in the pilot study, as discussed in the previous chapters and summarized above, we would recommend the Parent Recall Method for use in estimating erroneous payments in a national study, provided two conditions are met:

1. *Disaggregated claims data are obtainable.* As discussed in Chapter IV, computing accurate estimates of erroneous payments using parent survey data requires the availability of claims data that are disaggregated at the child and meal levels, so that parent reports for a particular meal and child can be compared with the meal claims data for that meal and child. Experiences in the pilot study suggest that most, but not all, sponsors collect claims data at the requisite level of disaggregation. In the future, FNS could require all FDCH sponsors participating in the CACFP to collect claims data at the child level to ensure that erroneous payments could be estimated accurately.
2. *Similar error rates are expected for respondents and nonrespondents.* Using the error rates of parent survey respondents to estimate erroneous payments nationally assumes that the error rates of meal claims would not differ systematically between survey respondents and nonrespondents. This seems a reasonable assumption, but it should be considered by FNS staff most familiar with the CACFP.

If these conditions hold, then the Parent Recall Method is recommended, following the procedures described in Section C below, including suggested modifications to the procedures followed in the pilot. However, if either of these conditions were found not to hold, then the Parent Recall Method would not provide accurate estimates of erroneous payments and, thus, could not be recommended.

If the Parent Recall Method is not feasible, then the potential of the Observations and Modeling Method should be explored further. As discussed in the previous section, although the ability of such models to explain variation in meal receipt for children in the pilot sample has been demonstrated, the pilot was not able to assess the generalizability of the models. Before the Observations and Modeling Method could provide predictions of meal receipt that would be sufficiently reliable to be used in estimating erroneous payments, a complete set of models

should be developed on a nationally representative sample of FDCHs and verified on an independent sample.

C. NECESSARY PROCEDURES FOR IMPLEMENTING THE PARENT RECALL METHOD NATIONALLY

This section describes necessary procedures and costs of implementing the Parent Recall Method to estimate erroneous payments on a national level.² First, we summarize the key tasks for the Parent Recall Method and discuss which procedures used in the pilot would need to be revised for a national study. Then, we discuss the sample sizes that would be necessary to implement the method at the national level and provide a cost estimate.

1. Necessary Procedures for Implementing the Parent Recall Method

For the Parent Recall Method, confirmation of the conditions discussed in the previous section is critical. Assuming both conditions are met, the data collection procedures used in the pilot (as described in detail in Chapter III) and the analytical methods used to estimate meals served based on the parent data (as described in Chapter IV) would be followed, with a few exceptions. Here, we summarize the procedures necessary to implement the recommended method successfully on a national level and highlight key differences from the procedures used in the pilot.

Preliminary steps for implementing the Parent Recall Method include constructing a national sample of sponsors, FDCHs, and parents and recruiting the sampled states and sponsors to participate. Enrollment data and parent contact information are collected from sponsors. Based

² If FNS is interested in pursuing the Observations and Modeling Method, we can calculate estimated budgets both for the additional model development and verification necessary and for using the models in later years.

on our experience with the pilot, two modifications to the original procedures will be required at this stage:

1. Extra time and an additional data collection effort will be needed to verify parent contact information. Because the contact information on sponsor enrollment forms was found to be inaccurate in many cases, sponsors will need to contact FDCH providers to confirm these data. As discussed above, to avoid giving providers the opportunity to influence the responses of parents, we recommend having sponsors confirm this information *after* interviews have been completed with parents who could be reached based on the contact information on the sponsor's enrollment forms. The payments to participating sponsors may need to be increased to offset this additional burden.
2. Along with parent contact information, sponsors should be asked to provide information about the home language of the family so that appropriate arrangements can be made to engage bilingual phone interviewers. In the pilot, we relied on our bilingual on-call interviewers to translate the questions spontaneously. For a national study, a more systematic approach to translation is needed. (The cost estimate provided to FNS includes funds to translate these instruments into one language; however, it may be necessary to translate them into additional languages.)

In selecting parents to be included in the survey, FNS should consider the trade-offs involved in maximizing the representativeness of the sample by adding to the survey sample types of children that were excluded from the survey in the pilot. Parents with more than one child attending a sampled FDCH could be surveyed about the meals received by *all* attending children, if the additional burden on these parents was deemed acceptable. FNS could also consider including children of FDCH providers in the survey sample, although we would not recommend this step, because of the potential bias.

Data collection for the Parent Recall Method involves training interviewers and conducting the parent interviews. At this stage, additional efforts should be made to increase the response rate, including extending the survey period beyond the narrow window used in the pilot. Another modification to the procedures used in the pilot involves the treatment of children for whom the sponsor provided an enrollment form but who parents report no longer attend the FDCH. In the

pilot, these cases were considered ineligible and were not included in the analysis. However, since the sponsor's information indicates that these children are enrolled, the provider could include them in its meal claims. Thus, in a national study, these cases would be kept in the analysis, although their parents would not have completed a full interview. These children would be recorded as not having received any CACFP meals, so that information could be compared to the claims data in the analysis to determine if any meals were incorrectly claimed for these children.

The final data collection activity in the Parent Recall Method is collecting meal claims forms data from sponsors. This data collection effort is conducted after the parent interviews, to ensure that the period covered by the meal claims data includes the week reported on by each parent surveyed.

When all data collection activities are complete, responses to the parent interview and information from the meal claims forms are key-entered into a data file. Then, parent interview and meal claims data are analyzed. The rate of erroneous payments is computed and then weighted to be nationally representative.

Two additional revisions to the procedures used in the pilot would be relevant regardless of which method was used:

1. *Recruitment.* The assistance of FNS staff would be required to recruit reluctant sponsors. FNS was helpful in contacting states in the pilot study, and such support is likely to be more important in a study with a large, random sample of providers.
2. *Tier information for children.* To estimate the amount of erroneous payments, rather than merely the number of erroneously claimed meals, information on the tier of both FDCHs and individual children will be needed. In the pilot, sponsors provided such data for FDCHs, but data on the tier for children were not collected.

In addition to these necessary steps, the timing of the data collection should be considered. To facilitate accurate data collection, a focused data collection window of two months was included in the estimated budget for the Parent Recall Method. However, this may not be the optimal approach. If variation of erroneous payments over the calendar year is an issue—for example, if erroneous claims are expected to be more common during the summer months—data collection could be staggered to cover the entire year or targeted in months that are of greatest interest. A national study should choose the data collection period that best meets FNS requirements.

2. Necessary Sample Sizes for Implementing the Parent Recall Method

One key consideration in estimating the cost of any data collection effort is the necessary sample size. This section discusses the sample size required for implementing the Parent Recall Method to produce estimates that would meet the criteria of the Improper Payments Information Act of 2002 (IPIA) for measuring erroneous CACFP payments to FDCHs. The sample required depends on three factors: the required precision, the assumed design effect (due to clustering and weighting), and the variation within the population. We assume the sample design will be multi-stage, with the first stage of selection being sponsors, the second, FDCHs (sampled within sampled sponsors), and then some sampling of children within sampled homes.³

We assume that the precision required is the same as required by the Implementation Guidance for the IPIA, P.L. 107-300 <http://www.whitehouse.gov/omb/memoranda/m03-13-attach.pdf>. If we assume that 5 percent of payments are erroneous, then we estimate the average

³ The pilot study did not involve sampling children within FDCHs, except for siblings. In addition, although Section A discusses the possibility of surveying parents about the meals received by *all* their attending children, the sample plan does not incorporate that option.

(mean) error to be between \$0.0525 and \$0.057, based on average reimbursements per meal of between \$1.05 and \$1.14 for FY2008. For our calculation of sample size (number of meals) we employ an adjusted version of the formula found in footnote 1 of the Implementation Guidance. The formula in the Guidance is based on the assumption that the error is to be estimated with data collected from a simple random sample (SRS), such as an SRS of meals. However, it would not be cost-efficient to sample and collect data for a random sample of meals, so a CACFP study to measure erroneous payments to FDCHs would instead use a clustered sample that will require analysis weights to adjust for nonresponse. For a given sample size of meals, the precision of estimates from such a study would be lower than that obtained from an SRS of meals. In statistical terms, they would be subject to a design effect (DEFF).⁴ Thus, the actual sample would need to be larger than this effective sample, based on the expected size of the DEFF.

We believe that a reasonable lower end estimate for DEFF would be about the same as the DEFF found in SNDA III (approximately 3.5 for the full sample). An alternative estimate of DEFF can be derived using data from the CACFP pilot study. The DEFF estimated from these data is approximately 5.9.⁵ We believe this to be a reasonable upper bound for a study design that does not depart greatly from those tested in the pilot. The lower design effect is consistent with the assumption that erroneous claims are made independently across children within an FDCH. The higher DEFF is more likely to arise if other patterns of erroneous claims emerge that lead to errors being concentrated among specific children within the home. Errors might be

⁴ A DEFF is defined as the ratio of the sample variance obtained from a given sample to that of a simple random sample of the same size. For example, if a complex sample with 1,000 observations has a variance that is twice as large as would be obtained from a simple random sample of 1,000, then we say it has a DEFF of 2.0.

⁵ This study obtained parent reports on 2,960 meals. However, because the study did not employ a probability sample and included parent survey data for only 25 FDCHs and 96 children, the estimates of DEFF may be unreliable. The estimate DEFF of 5.9 can be decomposed as a design effect of 4.9 due to clustering and a design effect due to unequal weights of 1.2. The overall DEFF is the product of the two components.

concentrated by child, for example, if an FDCH continues to submit claims for meals for children who no longer attend the home. Since this type of error seems possible, we use the higher, more conservative, DEFF in the remainder of this discussion.

To incorporate the DEFF we would expect from a CACFP study into the formula from the Guidance document, we use the concept of an effective sample size (n_{eff}), which we define as the nominal (actual) sample (n) divided by the design effect (DEFF):

$$n_{eff} = n / DEFF$$

The effective sample size can be thought of as the sample size that would generate a given level of statistical power under the assumption that the analysis sample was chosen using simple random selection (that is, there is no clustering or stratification of the sample). Using the formula in the Implementation Guidance document, we find that if 5 percent of payments are in error, an effective sample size of 206 meals is needed. In other words, if we selected and analyzed a simple random sample of all reimbursable meals served to children at FDCHs nationally, a sample of 206 would be sufficient to generate the required level of statistical precision. To get $n_{eff} = 206$ in a clustered sample assuming $DEFF = 5.9$, we would need a sample of 1,216 meals.

In FY2008, there were approximately 990 sponsors and 141,000 FDCHs. Based on FNS data and our experience in the pilot, we expect approximately seven children to be served by a home, consuming 14 meals a day (including all types of meals and snacks). To obtain information on 1,216 meals (the number necessary using the more conservative DEFF), we could sample children in FDCHs and ask their parents about a weeks' worth of meals. A responding sample of 44 sponsors and two FDCHs per sponsor would yield information on slightly more than the number of meals needed. If we sample enough children per FDCH so that we get

information on two, and assume conservatively that each child consumes seven meals per week at the FDCH, we obtain observations on 1,232 meals (44x2x2x7). This produces an effective sample size of 209 meals (slightly higher than the 206 needed).

The initial sample size of sponsors, homes, and children would need to be higher to allow for nonresponse. In addition, the sample sizes presented here are the minimum required, given the assumptions stated, for national estimates that meet published guidelines for precision. Larger sample sizes would be required for subgroup estimates (for example, estimates for FNS regions or separate estimates for Tier I and Tier II homes) or for comparisons across time.

While the pilot involved five sponsors for a sample of 30 FDCHs, a national study would require 44 sponsors for a sample of 88 FDCHs. The costs of the study would increase along with the sample size, and additional costs would be involved in implementing many of the changes in data collection procedures discussed previously.

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APPENDIX A
PARENT INTERVIEW

#: 0584-0549
Exp. Date: 07/31/2011

CACFP FAMILY DAY CARE HOME STUDY PARENT QUESTIONNAIRE

MPR ID #: |_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|

SPONSOR ID #: _____ FDCH ID#: _____

DATE: |_|_|_|/|_|_|_|/|2|0|0|_|_|_|
MONTH DAY YEAR

INTERVIEWER ID NUMBER: |_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|

TIME INTERVIEW BEGAN: |_|_|_|:|_|_|_| AM.....1
HOUR MINUTE
PM2

NOTE: All parent interviews will take place for four days, Sun. – Wed. The target week will be the previous week, Sunday through Saturday.

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0584-0549. The time required to complete this information collection is estimated to average 15 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. If you have any comments concerning the accuracy of time estimates or suggestions for improving this form, please contact: U. S. Department of Agriculture, Food and Nutrition Service, ORNA, Alexandria, VA 22302.

SECTION A: INTRODUCTION

- A1. **INTRODUCTION: WHEN CALLING TO MAKE AN APPOINTMENT:** Hello, may I please speak with the parent or guardian of [NAME OF CHILD]? My name is (INTERVIEWER'S FULL NAME) and I am calling on behalf of the U.S. Department of Agriculture's study of Family Day Care Homes. I would like to ask (you/him/her) a few questions about (your/his/her) child's experience in the day care program.

INTERVIEWER: ATTEMPT APPOINTMENT. (IF FDCH SPONSOR IS IN "INCENTIVE STRATUM" ONLY: MENTION \$10.00 INCENTIVE TO PARENT.)

DO INTERVIEW NOW (TELEPHONE ONLY) (GO TO A2)	1
IF APPOINTMENT MADE—RECORD ON CONTACT SHEET AND POLITELY THANK RESPONDENT AND TERMINATE CALL.....(RECORD ON CONTACT SHEET).....	2
WANTS TO KNOW MORE ABOUT THE STUDY(GO TO A2).....	3
HOW DID YOU GET MY NAME OR NUMBER.....(GO TO A3).....	4
DO INTERVIEW NOW (TELEPHONE ONLY)(GO TO A2).....	5
TARGET CHILD DECEASED ..(GO TO B6).....	6
PARENT FROM ENROLLMENT FORM DECEASED.....(GO TO B6).....	7
NOT INTERESTED—RECORD ON CONTACT SHEET AND TERMINATE CALL(RECORD ON CONTACT SHEET).....	8
CHILD NO LONGER ENROLLED IN FDCH—RECORD ON CONTACT SHEET AND TERMINATE CALL (RECORD ON CONTACT SHEET)	9

A2. The U.S. Department of Agriculture is interested in learning about children’s experiences in family day care homes. In order to do this we have selected a sample of parents whose children are enrolled in family day care homes. You were selected as the parent of (NAME OF CHILD) who is enrolled at (NAME OF FAMILY DAY CARE HOME). The interview usually takes about fifteen minutes, (**IF INCENTIVE STRATUM ONLY**: and we will send you \$10 when it has been completed). Participation in this study is voluntary and will not affect your child’s participation in day care and any meals (he’s/she’s) receiving there. All information is kept private to the extent permitted by law and will not be used in any way that could identify you or your child. Can we begin now?

YES(GO TO B1)..... 1

NOT A GOOD TIME, SCHEDULE INTERVIEW2

REFUSED OR NOT INTERESTED—
RECORD SITUATION ON CONTACT
AND TERMINATE INTERVIEW 3

NOT SURE ABOUT DOING THE SURVEY OR HAS
QUESTIONS(GO TO A3)..... 4

NAMED PERSON NOT AVAILABLE OR
NOT CORRECT—RECORD SITUATION ON
CONTACT SHEET AND TERMINATE INTERVIEW 5

NO LONGER HAS CUSTODY OF FOSTER CHILD
ATTEMPT INTERVIEW..... 6

TARGET CHILD RESIDES IN
GROUP HOME—ATTEMPT INTERVIEW 7

TARGET CHILD NOW LIVES
WITH ANOTHER PARENT OR
GUARDIAN—ATTEMPT INTERVIEW 8

CHILD NO LONGER ENROLLED IN FDCH—RECORD
SITUATION ON CONTACT SHEET AND TERMINATE
INTERVIEW 9

TARGET CHILD DECEASED ..(GO TO A4)..... n

A3. **INFORMATION FOR PARENTS' STUDY**

WHAT IS THE PURPOSE OF THE STUDY?

The U.S. Department of Agriculture is interested in learning about children's experiences in family day care homes and the meals they receive while in day care.

MY CHILD DOES NOT EAT MEALS AT THE FAMILY DAY CARE HOME

Even if your child has never eaten food at the family day care home, we need information on his or her schedule in day care. This will help us understand how the day care programs are working in your area.

HOW DID YOU GET MY NAME? WHY SHOULD I PARTICIPATE?

Families with children enrolled in your child's day care program were randomly selected from a list provided by the organization that sponsors or reimburses your family day care home provider for meals and snacks. This list included children who did and did not receive meals or snacks. The information you share will help provide an accurate picture the meals and snacks children receive in day care.

AM I REQUIRED TO PARTICIPATE?

Your participation in the survey is entirely voluntary and it will not affect you or your child's eligibility for meals or snacks at the family day care home. You may refuse to answer any question during the interview. However, your experiences and opinions are very important for the study and for the program's success. **(IF INCENTIVE STRATUM ONLY:** I will send you a check for \$10 when the interview has been completed.)

I HAVE OTHER CHILDREN WHO ATTEND DAY CARE, BUT YOU DID NOT NAME THEM

We have only identified one enrolled child to ask questions about for each household that we are contacting in the area. For the purposes of this survey, all the questions we ask you refer to (NAME OF CHILD).

I DO NOT HAVE THE TIME FOR THE SURVEY

I understand how valuable your time is. This survey will only take about 15 minutes. We can try to do it now or if this time is not convenient, I can arrange to call back at a better time for you.

WILL MY INFORMATION BE PROTECTED?

Yes. All of the information we collect in the survey will be kept private to the full extent allowed by law and will be used for research purposes only. Your answers will be combined with the answers of other survey participants and will never be linked to your name or your child's name in any reports.

HOW LONG WILL THE SURVEY TAKE?

The length of the interview is different for different people, but it usually takes about 15 minutes.

WHAT IS THE INTERVIEW ABOUT?

We may ask you about your child's attendance in day care and the meals or snacks served by the day care program. Remember, all information will be kept private. The information you provide will not affect the meal reimbursements your family day care home receives or your child's eligibility to receive meals.

INCENTIVE STRATUM ONLY: WHEN WILL I RECEIVE MY PAYMENT?

Mathematica will send you your check after the completion of the interview.

*** * * * ALL GO TO QUESTION B1 * * * ***

A4. I am very sorry to hear about your loss. Thank you for your time. We will not do an interview. **INTERVIEWERS TERMINATE CALL.**

SECTION B: ENROLLMENT STATUS

B1. CODE WITHOUT ASKING IF KNOWN OR ASK: Is (NAME OF CHILD) male or female?

- MALE.....1
- FEMALE2
- DOES NOT KNOW.....d
- REFUSED r

B2. Does (NAME OF CHILD) currently attend (NAME OF FAMILY DAY CARE HOME)?

- YES(GO TO B4).....1
- NO0
- DOES NOT KNOW.....(GO TO C1).....d
- REFUSED(GO TO C1)..... r

B3a. When did (she/he) stop attending (NAME OF FAMILY DAY CARE HOME)?

|_|_|/|_|_|/|_|_|
MONTH DAY YEAR

- DOES NOT KNOW.....d
- REFUSED r

B3b. INTERVIEWER: CHECK Q. B3a IF TARGET CHILD LEFT DAY CARE LESS THAN ONE WEEK AGO, CONTINUE INTERVIEW. OTHERWISE, GO TO D3, TERMINATE INTERVIEW AND REPORT DISPOSITION TO YOUR SUPERVISOR. IF d OR r, GO TO D3 AND TERMINATE INTERVIEW.

B4. When did (she/he) begin attending (NAME OF FAMILY DAY CARE HOME)?

PROBE: Was that in the beginning, middle, or the end of the month? **IF BEGINNING ENTER 5, IF MIDDLE ENTER 15, IF END ENTER 25.**

|_|_|/|_|_|/|_|_| **(GO TO C1)**
MONTH DAY YEAR

- FIRST WEEK OF SCHOOL ..(GO TO C1).....f
- NEVER ATTENDED.....n
- DOES NOT KNOW.....(GO TO C1).....d
- REFUSED(GO TO C1)..... r

SECTION C: PARTICIPATION IN FDCH AND RECEIPT OF MEALS

C1. The next series of questions are about the meals and snacks (NAME OF CHILD) eats at (NAME OF FAMILY DAY CARE HOME).

Does the family day care home serve meals and snacks to (NAME OF CHILD), does (he/she) usually bring food from home or, does (he/she) do both?

PROBE: That is, does (he/she) get meals and snacks from the family day care home and but brings the food from home?

PROBE: We mean the meals and snacks provided by the family day care home.

INTERVIEWER: CODE IF KNOWN

- MEALS FROM DAY CARE (GO TO C3) 1
- FOOD FROM HOME..... 2
- BOTH 3
- DON'T KNOW (GO TO C3) d
- REFUSED (GO TO C3)..... r

C2. What is the main reason your child usually brings food from home?

- CHILD PREFERS FOOD FROM HOME..... 1
- FDCH REQUESTED (HIM/HER) TO..... 2
- FDCH FOOD NOT NUTRITIOUS ENOUGH..... 3
- OTHER (SPECIFY)..... 4
- _____
- DON'T KNOW..... d
- REFUSED..... r

INTERVIEWER: BEFORE BEGINNING THE NEXT SERIES OF QUESTIONS, FILL IN DATE FOR EACH DAY OF PAST WEEK.

	Sunday	Monday	Tuesday	Wednes day	Thursday	Friday	Saturday
C3. My next questions are about (NAME OF CHILD's) attendance at (NAME OF FAMILY DAY CARE HOME.) last week from Sunday, DATE to Saturday, DATE.	____/____ MONTH DAY	____/____ MONTH DAY	____/____ MONTH DAY	____/____ MONTH DAY	____/____ MONTH DAY	____/____ MONTH DAY	____/____ MONTH DAY
C4. First, which days did (he/she) attend day care last week? AS NECESSARY: Did (he/she) attend on DAY? PROBE: By last week, I mean from Sunday, DATE to Saturday (DATE)? INTERVIEWER: MARK ONE RESPONSE FOR EACH DAY.	YES.....1 NO.....0 DON'T KNOW...d REFUSED.....r	YES.....1 NO.....0 DON'T KNOW...d REFUSED.....r	YES.....1 NO.....0 DON'T KNOW...d REFUSED.....r	YES.....1 NO.....0 DON'T KNOW...d REFUSED.....r	YES.....1 NO.....0 DON'T KNOW...d REFUSED.....r	YES.....1 NO.....0 DON'T KNOW...d REFUSED.....r	YES.....1 NO.....0 DON'T KNOW...d REFUSED.....r

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
<p>C5. Next, I will ask about which meals or snacks the family day care home provided to your child each day during last week, that is, from Sunday, DATE to Saturday, DATE.</p> <p>C5a. Did CHILD get breakfast at (NAME OF FDCH) last week?</p> <p>YES.....1 No.....2 (GO TO C6) DK.....3 (GO TO C6)</p> <p>C5b. What days did (NAME OF CHILD) get breakfast at (NAME OF FDCH) last week?</p> <p>IF NEEDED, ASK FOR EACH DAY CHILD ATTENDED.</p> <p>CODE IF KNOWN</p>	<p>YES.....1 NO.....0 DON'T KNOW...d REFUSED.....r</p>	<p>YES.....1 NO.....0 DON'T KNOW...d REFUSED.....r</p>	<p>YES.....1 NO.....0 DON'T KNOW...d REFUSED.....r</p>	<p>YES.....1 NO.....0 DON'T KNOW...d REFUSED.....r</p>	<p>YES.....1 NO.....0 DON'T KNOW...d REFUSED.....r</p>	<p>YES.....1 NO.....0 DON'T KNOW...d REFUSED.....r</p>	<p>YES.....1 NO.....0 DON'T KNOW...d REFUSED.....r</p>

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
<p>C6. . Did (NAME OF CHILD) get mid-morning snack at (NAME OF FDCH) last week?</p> <p>YES.....1 No.....2 (GO TO C7) DK.....3 (GO TO C7)</p> <p>C6a. What days did (NAME OF CHILD) get mid-morning snack at (NAME OF FDCH) last week?</p> <p>IF NEEDED, ASK FOR EACH DAY CHILD ATTENDED.</p> <p>CODE IF KNOWN</p>	<p>YES.....1 NO.....0 DON'T KNOW...d REFUSED.....r</p>	<p>YES.....1 NO.....0 DON'T KNOW...d REFUSED.....r</p>	<p>YES.....1 NO.....0 DON'T KNOW...d REFUSED.....r</p>	<p>YES.....1 NO.....0 DON'T KNOW...d REFUSED.....r</p>	<p>YES.....1 NO.....0 DON'T KNOW...d REFUSED.....r</p>	<p>YES.....1 NO.....0 DON'T KNOW...d REFUSED.....r</p>	<p>YES.....1 NO.....0 DON'T KNOW...d REFUSED.....r</p>
<p>C7. . Did (NAME OF CHILD) get lunch at (NAME OF FDCH) last week?</p> <p>YES.....1 No.....2 (GO TO C8) DK.....3 (GO TO C8)</p> <p>C7a. What days did (NAME OF CHILD) get lunch at (NAME OF FDCH) last week?</p> <p>IF NEEDED, ASK FOR EACH DAY CHILD ATTENDED.</p> <p>CODE IF KNOWN</p>	<p>YES.....1 NO.....0 DON'T KNOW...d REFUSED.....r</p>	<p>YES.....1 NO.....0 DON'T KNOW...d REFUSED.....r</p>	<p>YES.....1 NO.....0 DON'T KNOW...d REFUSED.....r</p>	<p>YES.....1 NO.....0 DON'T KNOW...d REFUSED.....r</p>	<p>YES.....1 NO.....0 DON'T KNOW...d REFUSED.....r</p>	<p>YES.....1 NO.....0 DON'T KNOW...d REFUSED.....r</p>	<p>YES.....1 NO.....0 DON'T KNOW...d REFUSED.....r</p>

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
<p>C8. Did (NAME OF CHILD) get mid-afternoon snack at (NAME OF FDCH) last week?</p> <p>YES.....1 No.....2 (GO TO C9) DK.....3 (GO TO C9)</p> <p>C8a. What days did (NAME OF CHILD) get a mid-afternoon snack at (NAME OF FDCH) last week?</p> <p>IF NEEDED, ASK FOR EACH DAY CHILD ATTENDED.</p> <p>CODE IF KNOWN</p>	<p>YES.....1 NO.....0 DON'T KNOW...d REFUSED.....r</p>	<p>YES.....1 NO.....0 DON'T KNOW...d REFUSED.....r</p>	<p>YES.....1 NO.....0 DON'T KNOW...d REFUSED.....r</p>	<p>YES.....1 NO.....0 DON'T KNOW...d REFUSED.....r</p>	<p>YES.....1 NO.....0 DON'T KNOW...d REFUSED.....r</p>	<p>YES.....1 NO.....0 DON'T KNOW...d REFUSED.....r</p>	<p>YES.....1 NO.....0 DON'T KNOW...d REFUSED.....r</p>

	Sunday	Monday	Tuesday	Wednes ay	Thursday	Friday	Saturday
<p>C9. Did (NAME OF CHILD) get any other meals or snacks such as supper, early morning snack, or evening snack at (NAME OF FDCH) last week?</p> <p>YES... 1 No.....2 (GO TO C10) DK..... 3 (GO TO C10)</p> <p>C9a. What other meals or snacks did (NAME OF CHILD) get at (Name of FDCH) on DAY?</p> <p>IF NEEDED, ASK FOR EACH DAY CHILD ATTENDED.</p> <p>CODE IF KNOWN</p>	<p>CIRCLE ALL THAT APPLY</p> <p>Early Snack1 Supper.....2 Evening Snack...3 No other food...4 DON'T KNOW...d REFUSED.....r</p>	<p>CIRCLE ALL THAT APPLY</p> <p>Early Snack1 Supper.....2 Evening Snack...3 No other food...4 DON'T KNOW...d REFUSED.....r</p>	<p>CIRCLE ALL THAT APPLY</p> <p>Early Snack1 Supper.....2 Evening Snack...3 No other food...4 DON'T KNOW...d REFUSED.....r</p>	<p>CIRCLE ALL THAT APPLY</p> <p>Early Snack1 Supper.....2 Evening Snack...3 No other food...4 DON'T KNOW...d REFUSED.....r</p>	<p>CIRCLE ALL THAT APPLY</p> <p>Early Snack1 Supper.....2 Evening Snack...3 No other food...4 DON'T KNOW...d REFUSED.....r</p>	<p>CIRCLE ALL THAT APPLY</p> <p>Early Snack1 Supper.....2 Evening Snack...3 No other food...4 DON'T KNOW...d REFUSED.....r</p>	<p>CIRCLE ALL THAT APPLY</p> <p>Early Snack1 Supper.....2 Evening Snack...3 No other food...4 DON'T KNOW...d REFUSED.....r</p>
<p>C10. INTERVIEWER: CHECK Q. C1. DID CHILD BRING ANY FOOD FROM HOME (C1=2 OR 3)?</p>	<p>YES.....1 NO.....0→</p>	<p>YES.....1 NO.....0→</p>	<p>YES.....1 NO.....0→</p>	<p>YES.....1 NO.....0→</p>	<p>YES.....1 NO.....0→</p>	<p>YES.....1 NO.....0→</p>	<p>YES.....1 NO.....0→ IF NO TO ALL DAYS, GO TO C12</p>

	Sunday	Monday	Tuesday	Wednes ay	Thursday	Friday	Saturday
C11. On DAY, which meals or snacks did (NAME OF CHILD) bring from home to replace the meal or snack (he/she) could get from the (NAME OF FDCH)?	CIRCLE ALL THAT APPLY Early Snack1 Breakfast.....2 Mid-am. snack...3 Lunch,,,,,,,,,,,,,4 Mid-pm snack...5 Supper.....6 Evening Snack...7 DON'T KNOW...d REFUSED.....r	CIRCLE ALL THAT APPLY Early Snack1 Breakfast.....2 Mid-am. snack...3 Lunch,,,,,,,,,,,,,4 Mid-pm snack...5 Supper.....6 Evening Snack...7 DON'T KNOW...d REFUSED.....r	CIRCLE ALL THAT APPLY Early Snack1 Breakfast.....2 Mid-am. snack...3 Lunch,,,,,,,,,,,,,4 Mid-pm snack...5 Supper.....6 Evening Snack...7 DON'T KNOW...d REFUSED.....r	CIRCLE ALL THAT APPLY Early Snack1 Breakfast.....2 Mid-am. snack...3 Lunch,,,,,,,,,,,,,4 Mid-pm snack...5 Supper.....6 Evening Snack...7 DON'T KNOW...d REFUSED.....r	CIRCLE ALL THAT APPLY Early Snack1 Breakfast.....2 Mid-am. snack...3 Lunch,,,,,,,,,,,,,4 Mid-pm snack...5 Supper.....6 Evening Snack...7 DON'T KNOW...d REFUSED.....r	CIRCLE ALL THAT APPLY Early Snack1 Breakfast.....2 Mid-am. snack...3 Lunch,,,,,,,,,,,,,4 Mid-pm snack...5 Supper.....6 Evening Snack...7 DON'T KNOW...d REFUSED.....r	CIRCLE ALL THAT APPLY Early Snack1 Breakfast.....2 Mid-am. snack...3 Lunch,,,,,,,,,,,,,4 Mid-pm snack...5 Supper.....6 Evening Snack...7 DON'T KNOW...d REFUSED.....r

C12. Does (NAME OF CHILD) usually attend day care more often than this past week, less often than this past week, or about the same as this past week?

MORE OFTEN 1
LESS OFTEN.....2
ABOUT THE SAME AS..... (GO TO C20)3
DOES NOT KNOWd
REFUSEDr

C13. How many days a week does(he/she) usually have an **early morning snack** at day care?

NUMBER OF DAYS

NONE, DID NOT EAT EARLY SNACK
AT DAY CARE0
DOES NOT KNOWd
REFUSEDr

C14. How many days a week does (he/she) usually have **breakfast** at day care?

NUMBER OF DAYS

NONE, DID NOT EAT BREAKFAST
AT DAY CARE0
DOES NOT KNOWd
REFUSEDr

C15. How many days a week does (he/she) usually have a **mid-morning snack** at day care?

NUMBER OF DAYS

NONE, DID NOT EAT MID-MORNING SNACK
AT DAY CARE0
DOES NOT KNOWd
REFUSEDr

C16 How many days a week does (he/she) usually have **lunch** at day care?

NUMBER OF DAYS

NONE, DID NOT EAT LUNCH
AT DAY CARE0
DOES NOT KNOWd
REFUSEDr

C17 How many days a week does (he/she) usually have a **mid-afternoon snack** at day care?

NUMBER OF DAYS

NONE, DID NOT EAT MID-AFTERNOON SNACK
AT DAY CARE0
DOES NOT KNOWd
REFUSEDr

C18 How many days a week does (he/she) usually have **supper** at day care?

NUMBER OF DAYS

NONE, DID NOT EAT SUPPER
AT DAY CARE0
DOES NOT KNOWd
REFUSEDr

C19. How many days a week does (he/she) usually have an **evening snack** at day care?

NUMBER OF DAYS

NONE, DID NOT EAT EVENING SNACK
AT DAY CARE0
DOES NOT KNOWd
REFUSEDr

C20. My next question is about your satisfaction with meals at (NAME OF CHILD'S) day care. How satisfied are you with the **healthfulness** of the food (NAME OF CHILD) is served at day care? Overall are you very satisfied, somewhat satisfied, somewhat dissatisfied, or very dissatisfied?

PROBE: Very satisfied, somewhat satisfied, somewhat dissatisfied, or very dissatisfied?

VERY SATISFIED 1
 SOMEWHAT SATISFIED 2
 SOMEWHAT DISSATISFIED 3
 VERY DISSATISFIED 4
 DOES NOT KNOW d
 REFUSED r

C21. Does your family day care home have a sign-in and sign-out procedure for arrival and departure from day care?

YES 1
 NO (GO TO D1) 0
 DON'T KNOW (GO TO D1) d
 REFUSED (GO TO D1) r

C22. Has the family day care home given you any instructions about signing your child in and out?

YES 1
 NO 0
 DON'T KNOW d
 REFUSED r

C23. Do you or the person who takes your child need to sign your name and write the time your child arrives at and departs from day care?

YES 1
 NO (GO TO C25) 0
 DON'T KNOW (GO TO D1) d
 REFUSED (GO TO D1) r

C24. Would you say you or the person who takes your child always signs in and out, usually signs in and out, sometimes signs in and out, or never signs in and out?

ALWAYS SIGNS IN.....(GO TO C25).....1

USUALLY SIGNS IN.....(GO TO C25).....2

SOMETIMES SIGNS IN3

NEVER SIGNS IN4

DOES NOT KNOW.....(GO TO C25)d

REFUSED.....(GO TO C25).....r

C24a. Please tell me why you might not sign your child in and out from daycare.

C25. Please describe the system (NAME OF CHILD's) day care has for signing (him/her) in and out.

SECTION D: DEMOGRAPHIC CHARACTERISTICS

D1. Just a few more questions. What is (NAME OF CHILD's) birth date?

|_|_| / |_|_| / |_|_|_|_|
 MONTH DAY YEAR

DOES NOT KNOW.....d
 REFUSEDr

D2. What is the primary language spoken in your home?

CIRCLE ONE

- ENGLISH.....1
 - SPANISH.....2
 - FARSI OR PERSIAN.....3
 - VIETNAMESE4
 - ARABIC5
 - TONGAN6
 - OTHER ASIAN LANGUAGE7
 - FRENCH8
 - ITALIAN.....9
 - RUSSIAN10
 - OTHER (SPECIFY)11
-
- DON'T KNOWd
 REFUSEDr

D3. Those are all my questions. Thank you for participating in our study.

ONLY IF INCENTIVE STRATUM: Please tell me your full name and mailing address so we can send you the check for \$10 that we mentioned at the beginning of the interview. It might take three or four weeks for the check to arrive.

PARENT NAME: _____

ADDRESS: _____

ZIP CODE: _____

TIME INTERVIEW ENDED: |_|_|:|_|_| AM 1
 HOUR MINUTE PM..... 2

APPENDIX B
OBSERVATION FORM

CACFP FAMILY DAYCARE HOME OBSERVATION FORM

OBSERVER MPR ID#: _____

SPONSOR ID#: _____ **FDCH ID#** _____

OBSERVER: COMPLETE QUESTIONS 1 AND 2 PRIOR TO VISIT

1. Total enrollment from sponsor records: |__|__|

|__|__| Infants (under 1 year)

|__|__| Preschool children (1-5 years)

|__|__| School-age children (6+ years)

2. Does the enrollment form have a place for parents to record the meals or snacks their children will need while they are in day care?

- 1 Yes
 0 No

Visit #1:

3. Check day of visit:

- 1 Monday
 2 Tuesday
 3 Wednesday
 4 Thursday
 5 Friday

4. DATE: |__|__| / |__|__| / |2|0|0|__|
MONTH DAY YEAR

5. Was FDCH operating on day of visit?

1 Yes → **GO TO Q6**

0 No

5a. Is FDCH still operating?

1 Yes

0 No → **GO TO Q6**

5b. Why was FDCH not operating on date of visit?

6. Time observer arrived: |__|__|:|__|__| AM/PM

7. Accompanied by sponsor:

1 Yes

0 No

8. IF AVAILABLE, COLLECT COPIES OR PROVIDE FEDEX SUPPLIES FOR THE FOLLOWING:

a. Daily Participation or Meal Counts forms for week of observation

b. (If available) Sign in/Sign out sheets for week of observation

c. Enrollment forms for new children participating in meal program

9. Record the attendance at time of arrival:

Total number of infants and children: |__|__|

	Meal #1	Meal #2
11. Check name(s) of eating occasion observed	<input type="checkbox"/> 1 Breakfast <input type="checkbox"/> 2 Lunch <input type="checkbox"/> 3 Supper <input type="checkbox"/> 4 Snack	<input type="checkbox"/> 1 Breakfast <input type="checkbox"/> 2 Lunch <input type="checkbox"/> 3 Supper <input type="checkbox"/> 4 Snack
11a. Start time of meal	__:__:__ AM/PM	__:__:__ AM/PM
11b. Total number infants served at each eating occasion.	____ ____	____ ____
11c. Total number preschool children served at each eating occasion	____ ____	____ ____
11d. Total number school age children served at each eating occasion	____ ____	____ ____
11e. ASK SPONSOR: Was this meal/snack reimbursable for each age group of children? SPONSOR NOT PRESENT = NA	<u>Check all that apply</u> <input type="checkbox"/> 1 Infants <input type="checkbox"/> 2 Preschool <input type="checkbox"/> 3 School <input type="checkbox"/> 4 Not reimbursable <input type="checkbox"/> 5 NA	<u>Check all that apply</u> <input type="checkbox"/> 1 Infants <input type="checkbox"/> 2 Preschool <input type="checkbox"/> 3 School <input type="checkbox"/> 4 Not reimbursable <input type="checkbox"/> 5 NA

Sign-in/Sign-out sheets

12. Check the sign-in/sign-out procedure used at the FDCH.
- 1 Sign-in/sign-out sheet completed by parents/guardians
 - 2 Attendance form completed by provider → **GO TO Q16**
 - 3 No sign-in or attendance procedure observed → **GO TO Q16**
 - 4 No sign-in/sign-out procedure used → **GO TO Q16**
 - 5 OTHER PARENT SIGN-IN PROCEDURE (SPECIFY): → **GO TO Q16**
-

13. Did the parents/guardians record the times of arrival and departure on the sign in/sign out sheet?

- 1 YES, the time of arrival only
- 2 YES, the time of departure only
- 3 YES, both arrival and departure times
- 4 NO, arrival and departure times not required
- 5 OTHER (SPECIFY):

14. Did the FDCH provider remind the parents/guardians to sign in or sign out?

- 1 Yes
- 0 No
- n Not Observed

OTHER OBSERVATIONS:

16. Was a Daily Participation or meal counts form completed while children were eating or being served, after each meal, at the end of the day, or was this not observed?

- 1 WHILE CHILDREN EATING/ BEING SERVED
- 2 AFTER EACH MEAL/SNACK
- 3 AT THE END OF THE DAY
- n NOT OBSERVED → **GO TO Q18**

17. Who completed the information on the daily participation or meal counts form?

- 1 OWNER/ MANAGER OF FDCH
- 2 ASSISTANT/HELPER
- 3 VOLUNTEER/ PARENT
- 8 OTHER (SPECIFY):

18. Record the attendance at time of observer's departure:

Total number of infants and children: |_|_|

19. ASK AGES OF CHILDREN STILL PRESENT

	Provider's Children	Other Children	Children not in program
INFANTS (UNDER 1 YEAR)	_ _ _	_ _ _ _	_ _ _
Preschool (1-5 years)	_ _ _	_ _ _ _	_ _ _
School age (6+ years)	_ _ _	_ _ _ _	_ _ _

20. Time of departure: |_|_|_|:|_|_|_| AM/PM

INTERVIEWER: COMPLETE THE FOLLOWING QUESTIONS AFTER LEAVING THE FDCH AT THE END OF THE FIRST VISIT.

21. Did it seem that FDCH provider was informed in advance of your visit?

1 YES

0 NO

Arrivals/Departures

22. What was the pattern of **arrivals** of children during your **first** observation period?

1 ALL THERE AT TIME OF MY ARRIVAL

2 MOST THERE AT TIME OF MY ARRIVAL

3 ARRIVED INTERMITTENTLY DURING THE OBSERVATION

23. What was the pattern of **departure** of children during your **first** observation period?

1 NONE LEFT DURING MY VISIT

2 ONLY A FEW LEFT DURING MY VISIT

3 LEFT INTERMITTENTLY DURING MY VISIT

23a. **INTERVIEWER: IF NO SECOND VISIT IS PLANNED OR PERMITTED, GO TO Q34**

n NO SECOND VISIT → **GO TO Q34**

VISIT #2:

24. Time observer arrived: |__|__|:|__|__| AM/PM

25. Accompanied by sponsor

1 YES

0 NO

	Meal #1	Meal #2
28. Check name(s) of eating occasion observed	<input type="checkbox"/> 1 Breakfast <input type="checkbox"/> 2 Lunch <input type="checkbox"/> 3 Supper <input type="checkbox"/> 4 Snack	<input type="checkbox"/> 1 Breakfast <input type="checkbox"/> 2 Lunch <input type="checkbox"/> 3 Supper <input type="checkbox"/> 4 Snack
28a. Start time of meal	_ _ : _ _ AM/PM	_ _ : _ _ AM/PM
28b. Total number infants served at each eating occasion.	_ _	_ _
28c. Total number preschool children served at each eating occasion	_ _	_ _
28d. Total number school age children served at each eating occasion	_ _	_ _
28e. ASK SPONSOR: Was this meal/snack reimbursable for each age group of children? SPONSOR NOT PRESENT = NA	<u>Check all that apply</u> <input type="checkbox"/> 1 Infants <input type="checkbox"/> 2 Preschool <input type="checkbox"/> 3 School <input type="checkbox"/> 4 Not reimbursable <input type="checkbox"/> 5 NA	<u>Check all that apply</u> <input type="checkbox"/> 1 Infants <input type="checkbox"/> 2 Preschool <input type="checkbox"/> 3 School <input type="checkbox"/> 4 Not reimbursable <input type="checkbox"/> 5 NA

29. Record the attendance at time of observer's departure:

Total number of infants and children: |_|_|

30. ASK AGES OF CHILDREN STILL PRESENT

	Provider's Children	Other Children	Children not in program
INFANTS (UNDER 1 YEAR)	_ _	_ _ _	_ _
Preschool (1-5 years)	_ _	_ _ _	_ _
School age (6+ years)	_ _	_ _ _	_ _

31. Time of departure: |_|_|:|_|_| AM/PM

Arrivals/Departures

32. What was the pattern of **arrivals** of children during your **second** observation period?

- 1 ALL THERE AT TIME OF MY ARRIVAL
- 2 MOST THERE AT TIME OF MY ARRIVAL
- 3 ARRIVED INTERMITTENTLY DURING THE OBSERVATION

33. What was the pattern of **departure** of children during your **second** observation period?

- 1 NONE LEFT DURING MY VISIT
- 2 ONLY A FEW LEFT DURING MY VISIT
- 3 LEFT INTERMITTENTLY DURING MY VISIT
- 4 NO SECOND OBSERVATION PERIOD

34. What is the status of the FDCH provider interview?

- 1 COMPLETED DURING VISIT
- 2 SCHEDULED TO COMPLETE BY PHONE
- 3 PROVIDER REFUSED

END. Did you give FDCH provider the certificate and the check?

- 1 YES
- 2 NO
- 3 OTHER (SPECIFY)

APPENDIX C
PROVIDER INTERVIEW

OMB No.: 0584-0549
Expiration Date: 07/31/2011

CACFP FAMILY DAY CARE
HOME STUDY
PROVIDER INTERVIEW

SPONSOR ID#: _____ FDCH ID#: _____

DATE: |__|_|/|__|_|/|2|0|0|_|
MONTH DAY YEAR

INTERVIEWER ID NUMBER: |__|_|_|_|_|

TIME INTERVIEW BEGAN: |__|_|:|__|_| AM.....1
HOUR MINUTE PM2

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is **0584-0549**. The time required to complete this information collection is estimated to average 15 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. If you have any comments concerning the accuracy of time estimates or suggestions for improving this form, please contact: U. S. Department of Agriculture, Food and Nutrition Service, ORNA, Alexandria, VA 22302.

SECTION A: INTRODUCTION

- A1. **INTRODUCTION WHEN CONDUCTING AN IN-PERSON INTERVIEW:** I have a few questions I need to ask for the U.S. Department of Agriculture's study of family day care homes. It should take about fifteen minutes. Is this a good time?

APPOINTMENT MADE FOR
FUTURE INTERVIEW BY
TELEPHONE.....(RECORD ON CONTACT SHEET)..... 1

WANTS TO KNOW MORE
ABOUT THE STUDY.....(GO TO A2)..... 2

DO INTERVIEW NOW(GO TO B1)..... 3

NOT INTERESTED—RECORD ON CONTACT SHEET 0

- A1. **INTRODUCTION: WHEN CALLING FOR TELEPHONE INTERVIEW:** Hello, my name is (INTERVIEWER'S FULL NAME) and I am calling on behalf of the U.S. Department of Agriculture's study of family day care homes. We recently visited (your family day care home/(NAME OF FAMILY DAY CARE HOME) and I needed to ask (you/PROVIDER NAME) a few questions but (you/he/she) did not have time during my visit. [Is this a good time?/May I speak with (him/her)?]

IF APPOINTMENT MADE—RECORD ON CONTACT
SHEET AND POLITELY THANK RESPONDENT AND
TERMINATE CALL.....(RECORD ON CONTACT SHEET)..... 1

WANTS TO KNOW MORE ABOUT
THE STUDY(GO TO A2)..... 2

DO INTERVIEW NOW
(TELEPHONE ONLY)(GO TO B1)..... 3

NOT INTERESTED—RECORD
ON CONTACT SHEET AND
TERMINATE CALL.....(RECORD ON CONTACT SHEET)..... 0

A2. ANSWERS TO COMMONLY ASKED QUESTIONS

WHAT IS THE PURPOSE OF THE STUDY?

The U.S. Department of Agriculture is interested in learning about how family day care homes submit counts for meals and snacks served to children in care.

HOW DID YOU SELECT MY FAMILY DAY CARE HOME? WHY SHOULD I PARTICIPATE?

Your family day care home was one of several selected in this state for the study. The questions we're asking for U.S. Department of Agriculture should be considered as part of your participation in the Child and Adult Care Food Program. The information you provide will help provide an accurate picture of how family day care homes submit claims for meals and snacks.

AM I REQUIRED TO PARTICIPATE?

Although your participation is entirely voluntary, it should be considered as part of your participation in the Child and Adult Care Food Program. Your responses will not affect your home's eligibility to participate in the CACFP or receive reimbursement for meals or snacks at the family day care home. You may refuse to answer any question. However, your experiences and opinions are very important for the study and for the program's success.

I DO NOT HAVE THE TIME FOR THE INTERVIEW

I understand how valuable your time is. The questions will only take about fifteen minutes. We can try to do it now or if this time is not convenient, I can arrange to call back at a better time for you.

WILL MY INFORMATION BE PROTECTED?

Yes. All of the information we collect in the study will be kept private to the full extent allowed by law and will be used for research purposes only. Your answers will be combined with the answers of other family day care home providers and will never be linked to your name or your family day care home in any reports.

HOW LONG WILL THE INTERVIEW TAKE?

The length is different for different people, but it usually takes about fifteen minutes.

WHAT ARE THE QUESTIONS ABOUT?

There may be questions about your sponsor's paperwork requirements and monthly forms you need to submit for reimbursement, along with questions about daily attendance and meals served.

SECTION B: DOCUMENTATION REQUIREMENTS

B1. Does (NAME OF SPONSOR) require you to have a sign-in and sign-out sheet for parents to complete when they drop off and pick up their children?

PROBE: By sign-in and sign-out sheet, I mean a form where parents sign their names and record the times they drop off and pick up their children.

YES 1
 NO(GO TO B1b)..... 0
 DON'T KNOW (GO TO B3) d
 REFUSED (GO TO B3) r

B1a. Do you regularly use a sign-in and sign-out sheet that parents sign when they drop off and pick up their children?

YES (GO TO B1.1) 1
 NO (GO TO B3) 0
 DON'T KNOW (GO TO B3) d
 REFUSED (GO TO B3) r

B1b. Although your sponsor does not require you to have a sign-in and sign-out sheet for parents, do you use one in your family day care home?

YES 1
 NO (GO TO B3) 0
 DON'T KNOW (GO TO B3) d
 REFUSED (GO TO B3) r

B1.1. Do you, the provider, usually sign the children in and out, do the parents usually sign them in and out, or do both you and the parents sign them in and out?

PROVIDER..... 1
 PARENTS (GO TO B1.3) 2
 BOTH 3
 DON'T KNOW (GO TO B2) d
 REFUSED (GO TO B2) r

B1.2. Do you fill out the sign-in/sign-out form after a child arrives or leaves, at certain times of the day, at certain times of the week, or at the end of the month?

- AFTER CHILD ARRIVES OR LEAVES..... 1
- CERTAIN TIMES OF THE DAY 2
- END OF THE MONTH..... 3
- DON'T KNOW d
- REFUSED r

B1.3 How difficult is it to have the parents of the children in your family day care home sign their names and the time when they drop off and pick up their children? Would you say it is very difficult, somewhat difficult, not too difficult, or not difficult at all?

- VERY DIFFICULT 1
- SOMEWHAT DIFFICULT 2
- NOT TOO DIFFICULT(GO TO B1.5)..... 3
- NOT DIFFICULT AT ALL.....(GO TO B1.5)..... 4
- DON'T KNOW(GO TO B1.5)..... d
- REFUSED(GO TO B1.5)..... r

B1.4 Why is it difficult to use this kind of form with parents of the children you watch?

B1.5. Do you think it is useful or helpful to have a sign-in and sign-out sheet for parents to use when they drop off and pick up their children?

- YES 1
- NO(GO TO B1.7)..... 0
- DON'T KNOW(GO TO B2)..... d
- REFUSED(GO TO B2)..... r

B1.6 Why is this type of form useful?

(GO TO B2)

B1.7 Why isn't this type of form useful?

B2. Did the sponsor train you on the use of the sign-in and sign-out sheet?

- YES (GO TO B5) 1
- NO (GO TO B5) 0
- DON'T KNOW (GO TO B5) d
- REFUSED (GO TO B5) r

B3. Do you think it would be useful or helpful to have a sign-in and sign-out sheet for parents to use when they drop off and pick up their children?

- YES 1
- NO (GO TO B4.2) 0
- DON'T KNOW (GO TO B4.3) d
- REFUSED (GO TO B4.3) r

B4.1 Why would this type of form be useful?

(GO TO B4.3)

B4.2 Why wouldn't this type of form be useful?

B4.3 Currently, if a parent claimed that their child was missing, how would you be able to show that a parent did or did not drop the child off or whether the parent came and picked up the child?

B4.4 How difficult would it be to have the parents of the children in your family day care home sign their names and the time when they drop off and pick up their children? Would you say it would be very difficult, somewhat difficult, not too difficult, or not difficult at all?

- VERY DIFFICULT 1
- SOMEWHAT DIFFICULT 2
- NOT TOO DIFFICULT(GO TO B5) 3
- NOT DIFFICULT AT ALL.....(GO TO B5) 4
- DON'T KNOW(GO TO B5) d
- REFUSED(GO TO B5) r

B4.5 Why would it be difficult to use this kind of form with parents of the children you watch?

B5. What other forms or paperwork does your sponsor require you to complete each month to document and claim reimbursement for meals and snacks?

CIRCLE ALL THAT APPLY

- DAILY ATTENDANCE FORM 1
- MONTHLY MENU 2
- YEARLY ENROLLMENT FORMS..... 3
- OTHER (SPECIFY) 4
-
- NONE/NO OTHER FORMS 5
- DON'T KNOW d
- REFUSED r

B6. (Other than the sign-in/sign-out sheets,) how much time do you spend each month completing the forms or paperwork required by your sponsor?

|_|_|_|_|.|_|_|_| HRS. PER DAY

|_|_|_|_|.|_|_|_| HRS. PER MONTH

- DON'T KNOW d
- REFUSED r

B7. Are any forms or paperwork difficult to complete?

- YES 1
- NO (GO TO B9) 0
- DON'T KNOW d
- REFUSED r

B7a. Which form or paperwork is most difficult to complete?

-
- DON'T KNOW d
 - REFUSED r

B8. Why is that form or paperwork difficult to complete?

DON'T KNOW d
REFUSED r

B9. What is the main method you use to keep track of the daily meals and snacks you provide to children in day care?

DON'T KNOW d
REFUSED r

B10. Is this the method that is required by the sponsor?

YES 1
NO, ANOTHER METHOD THEN FILL IN REQUIRED FORMS 0
DON'T KNOW d
REFUSED r

B11. Do you usually fill out the meal counts forms on a daily basis, at the end of each week, or at the end of the month?

DAILY 1
END OF EACH WEEK 2
END OF THE MONTH..... 3
DON'T KNOW d
REFUSED r

B12. Are the meals and snacks the parents indicated on the enrollment forms usually the same as, sometimes the same as, or never the same as the meals and snacks the children receive in day care?

- USUALLY 1
- SOMETIMES 2
- NEVER 3
- DON'T KNOW d
- REFUSED r

B13. How much does your daily attendance vary from day to day? Would you say a great deal, a moderate amount, a small amount, or not at all?

- A GREAT DEAL 1
- MODERATE AMOUNT 2
- SMALL AMOUNT 3
- NOT AT ALL/NONE (GO TO B15) 4
- DON'T KNOW (GO TO B15) d
- REFUSED (GO TO B15) r

B14. Are variations in attendance most closely related to weather conditions, children's health, cold or flu season, whether school is in session, or something else?

- WEATHER CONDITIONS 1
- CHILDREN'S HEALTH 2
- COLD OR FLU SEASON 3
- WHETHER SCHOOL IS IN SESSION 4
- OTHER (SPECIFY) 5
-
- DON'T KNOW d
- REFUSED r

INSTRUCTIONS FOR SUBMITTING COPIES OF ADMINISTRATIVE RECORDS

INTERVIEWER: CHECK THE FORMS THE FDCH PROVIDER NEEDS TO SUBMIT TO MPR.

IF THE FDCH PROVIDER IS ABLE TO USE FED EX, PROVIDE THE MAILING MATERIALS AND INSTRUCTIONS.

REMIND THE PROVIDER TO SEND LEGIBLE COPIES AND KEEP THE ORIGINAL IN THE FILES OF THE FDCH.

APPENDIX D

**DATA ELEMENTS INCLUDED ON ENROLLMENT FORMS, SISO LOGS, AND
MEAL CLAIMS FORMS COLLECTED DURING PRETEST**

As summarized in Chapter II, as part of the pretest, MPR obtained hard copy administrative data forms from nine sponsors in six states to assess the variation in the formats and the range of information available from these sources. In addition to the two sponsors (from New Jersey and New York) included in other parts of the pretest, this data collection effort involved sponsors in four other states: Colorado, Kansas, Massachusetts, and Pennsylvania.

These sponsors provided copies of enrollment forms, SISO logs (when their use by the sponsor was not limited to corrective action), and meal claims forms. One sponsor used an online database to collect this information. Two other sponsors that provided hard copy forms also used an online system for some of their FDCHs.

Table D.1 presents the data elements included on CACFP enrollment forms for each sponsor. The core data elements—child’s name, date of birth, parent’s name, and telephone number—were consistently included on all sample enrollment forms.

Table D.2 presents the data elements included on sign-in/sign-out (SISO) logs, from those sponsors that used such logs. The data elements on the SISO logs were inconsistent across sponsors. One of the sponsors on a military base provided the following comments about SISO logs:

Sign in sheets are my pet peeve. EVERY provider everywhere should have to do this! If this were a USDA requirement it might eliminate a thing or two for the sponsorships [and] add a level of professionalism to providers’ recordkeeping. Since they use time/space percentage for their taxes, they have to be able to [prove] who was there daily, and when. Or, if they don’t record [the] cost of food based on receipts and claim annual cost of food based on actual meals served based on attendance, the sign in sheets again document all of that.

Table D.3 presents the data elements included on CACFP meal claims forms for each sponsor. There were some variations across sponsors in the presentation of data elements on the meal claims forms. The provider’s name, child’s name, and meal or snack type were found on

TABLE D.1

DATA ELEMENTS ON CACFP ENROLLMENT FORMS

Data Element	Colorado		Kansas		Massachusetts	New Jersey	New York	Pennsylvania	
	Sponsor 1	Sponsor 2	Sponsor 1	Sponsor 2	Sponsor 1	Sponsor 1	Sponsor 1	Sponsor 1	Sponsor 2
Child Information									
Child's first name	x	x	X	x	x	x	x	x	x
Child's last name	x	x	X	X	x	x	x	x	x
Date of birth	x	x	X	X	x	x	x	x	x
Age					x				
Gender					x				
Child's relationship to provider			X						
Racial/ethnic identity of child	x	x	X	X			x		
Parent Information									
Mother's name	x	x	X	X	x		x	x	x
Address	x	x	X	X	x	x	x	x	x
Home phone – mother	x	x	X	X	x	x	x	x	x
Work phone – mother	x	x	X	X	x	x	x	x	x
Cell phone – mother	x	x			x		x		
Email address	x	x							
Father's name					x				
Address					x				
Home phone – father					x				
Work phone – father					x				
Cell phone – father					x				
Schedule and Meal Information									
Usual days in care	x	x	X	X	x	x		x	X
Usual hours in care by day	x	x			x		x	x	X
Usual hours daily			X	X		x			
Usual meals to be received by day	x	x			x				
Usual meals to be received daily			X	X		x	x	x	X
Schedule varies checkbox				X					
Provision of meals for infant by parent	x	x			x				
Provision of meals for infant by provider	x	x		X	x				
Provider offers formula (brand/breastmilk)			X	X					
Age at which infant ready for solid foods				X					
Accept/decline solid food for infant				X					

TABLE D.1 (continued)

Data Element	Colorado		Kansas		Massachusetts	New Jersey	New York	Pennsylvania	
	Sponsor 1	Sponsor 2	Sponsor 1	Sponsor 2	Sponsor 1	Sponsor 1	Sponsor 1	Sponsor 1	Sponsor 2
Other information									
Name of provider	x	x		X	x	x	x	x	X
Provider's address						x		x	X
Provider's signature								x	X
Parent's signature	x	x	X	X	x	x	x	x	X
Relationship to child					x				
Date of signature				X	x	x			
Name of other FDCH provider					x				
Provider's license number	x	x							
County of provider	x	x							
Sponsor's name	x	x						x	X
Other siblings in care?	x	x							
School age/kindergarten?	x	x							
Grade in school	x	x							
Hours in preschool/school	x	x		x					
Days in preschool/school	x	x		x					
Year-round school checkbox									
Name of school/number	x	x							
School district	x	x							
New child/updated information check			X	x					
Allows for multiple children in household			X				x		
First day on menu/Initial enrollment date			X	x			x	x	x
Preferred time and method for parental contact								x	x

TABLE D.2

DATA ELEMENTS ON SIGN-IN/SIGN-OUT LOGS

Data Element	Colorado		Kansas		Massachusetts	New Jersey	New York	Pennsylvania	
	Sponsor 1	Sponsor 2	Sponsor 1	Sponsor 2	Sponsor 1	Sponsor 1	Sponsor 1	Sponsor 1	Sponsor 2
Child's name	x	x					Information, when	Information, when	
Separate page/section for each child		x					available, varied from	available, varied from	
Provider's name	x	x					one FDCH	one FDCH	
Month and year		x					to another	to another	
Time in a.m./p.m.	x	x							
Time out a.m./p.m.	x	x							
Parent's initials daily		x							
Parent's signature daily	x								
Parent's signature monthly		x							
No SISO			x	x	x				x

all forms. However, the total meals claimed were aggregated (daily, weekly, semimonthly, and monthly), and totals for each child by meal type were not always provided.

APPENDIX E
SUPPLEMENTAL ANALYSES

This appendix presents two additional types of analyses related to meal claims data conducted using the data collected in the pilot study.

Comparison of Observations Data and Meal Claims Data

Table E.1 presents a comparison of the observations data with the meal claims data for the day of the observation. For each meal type, we conducted paired t-tests of the difference between the mean number of meals observed and the mean number of meals claimed for reimbursement for the target day by the FDCHs in which those meals were observed. Although more breakfasts and snacks were claimed for reimbursement by FDCHs than were observed, none of the differences were statistically significant.

TABLE E.1
COMPARISON OF MEALS OBSERVED TO MEALS CLAIMED BY FDCHS

Meal Type	Mean Number of Meals and Snacks per FDCH on the Target Day		
	Sample Size (Number of FDCHs)	Observed	Claimed by FDCHs
Breakfasts	9	3.15	3.67
Lunches	23	4.72	4.70
Suppers ^b	1	10.00	10.00
Morning snacks	10	5.35	
Afternoon snacks	15	3.65	
Snacks (combined)	25	4.33 ^c	4.64

^aThe sample size varies by meal because only two meals were observed at each FDCH. Both observations and meal claims data were restricted to observed meals in homes for which meal claims data were available for the month of the observation.

^bTests of statistical significance could not be performed for supper, because of the low sample size.

^cThe measure of the number of combined snacks observed is simply the weighted average of the number of morning snacks observed and the number of afternoon snacks observed. No more than one type of snack—either morning or afternoon—was observed at any FDCH. However, other snacks could have been served by these FDCHs at other times on the target day, and these could be included in the claims.

*Difference between the observed number of meals served and the number claimed is statistically significant at the 0.05 level.

**Difference between the observed number of meals served and the number claimed is statistically significant at the 0.01 level.

Comparisons of Meal Claims Data Over Time

Because FDCH providers are necessarily aware of when observations take place, there may be a concern that they might change their claiming behavior as a result. In particular, a provider may be more careful to ensure that the number of meals claimed for that day corresponds to the number served. This could result in lower erroneous payments for the observed days, and, thus, an estimate of erroneous payments based on these days would be biased downward. The analysis in this section examines whether there is any evidence that homes are changing their claiming behavior when they know they are being observed. For example, if a home was regularly submitting claims for meals that were not served but then stopped doing so during the day or month of the observation, then we might expect that the number of claims in those days or months would be lower than in the surrounding days or months.

To explore whether the presence of observers influenced the meal claims of providers, we first compared meal claims data for the day of the observation to the average claims on weekdays during that week (Table E.2). For each meal type, we conducted paired t-tests of the difference between the mean number of meals claimed for the target day and the mean number claimed for the average weekday during the same week. The only difference found to be statistically significant is the number of snacks—an average of 4.6 snacks were claimed on the day of the observation, compared to 5.4 on the average weekday during that week.

TABLE E.2

COMPARISON OF MEALS CLAIMED FOR REIMBURSEMENT BY FDCHS

Meal Type	Sample Size (Number of FDCHs) ^a	Mean Number of Meals and Snacks Claimed by FDCHs per Day	
		On the Day of the Observation	During the Week of the Observation (Weekdays Only)
Breakfasts	9	3.67	3.67
Lunches	23	4.70	5.23
Suppers	1	10.00	10.20
Snacks	25	4.64	5.42**

^aDifference between the number of meals claimed in the observation month and the number claimed in another month is statistically significant at the 0.05 level.

**Difference between the number of meals claimed in the observation month and the number claimed in another month is statistically significant at the 0.01 level.

In addition, we compared the meal claims data for the month of the observation to meal claims for other months to explore whether the observation may have influenced claims for the entire month. Table E.3 shows the number of meals claimed per child across all days during each month. Although the differences between the mean number of meals claimed during the observation month and other months are sometimes statistically significant, no clear pattern

emerged. Thus, this analysis offers no evidence that meal claims for the month of the observation were systematically different from those for other months.

TABLE E.3

COMPARISON OF MEALS CLAIMED FOR REIMBURSEMENT BY FDCHS ACROSS MONTHS

Meal Type	Sample Size		Mean Number of Meals Claimed per Child Across All Days During the Month		
	Number of FDCHs ^a	Number of Children	Month Before the Observation	Month of the Observation	Month After the Observation
Breakfasts	9	59	11.47	12.58	11.53
Lunches	23	195	16.34**	13.85	11.30**
Suppers	1	11	12.64**	19.82	18.73
Snacks	25	207	15.14	14.65	13.91

*Difference between the number of meals claimed in the observation month and the number claimed in another month is statistically significant at the 0.05 level.

**Difference between the number of meals claimed in the observation month and the number claimed in another month is statistically significant at the 0.01 level.

