

Summer Feeding Design Study— Final Report

Executive Summary

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By Anne Gordon and Ronette Briefel, Mathematica Policy Research, Inc.

Abstract

The executive summary and three accompanying volumes of this report describe the design of a national study of USDA's Summer Food Service Program (SFSP). The SFSP was created in 1975 to provide children from low-income families with nutritious meals when school is not in session. On a typical summer day, the program provides meals to more than 2 million children. Since 1975, eligibility criteria, administrative procedures, and funding levels have changed. The study, which is currently underway, will describe program operations and assess how they contribute to participation levels and the nutritional benefits of SFSP participation. USDA's Economic Research Service (ERS) contracted with Mathematica Policy Research, Inc. (MPR), to design the study to help ERS determine the appropriate sample and data collection methodologies, analytic methods, and study costs.

For more information on the Summer Feeding Design Study—Final Report, see the following:

- *Volume I, Design and Costs for Program Component*, E-FAN-01-004-1
- *Volume II, Feasibility, Design, and Cost of a Participant-Nonparticipant Study*, E-FAN-01-004-2
- *Volume III, Survey Instruments*, E-FAN-01-004-3

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EXECUTIVE SUMMARY

The Summer Food Service Program (SFSP) was created to provide children from low-income families with nutritious meals when school is not in session. On a typical summer day, the program provides meals to more than 2 million children. Since its authorization in 1975, the program has undergone many changes in eligibility criteria, administrative procedures, and funding levels. However, it still serves many fewer children than does the free and reduced-price component of the National School Lunch Program (NSLP), which was designed to serve a similar population of children from low-income families.

The Economic Research Service (ERS) of the U.S. Department of Agriculture (USDA) contracted with Mathematica Policy Research, Inc. (MPR) to design a national study of the SFSP to (1) assess whether the program is efficiently meeting its goal of hunger prevention, and (2) identify possible barriers to program participation by low-income children. The study design was intended to help ERS determine the appropriate sample and data collection methodologies, analytic methods, and costs of a national study of the SFSP. The design work had two primary components: (1) to design an evaluation of program operations; and (2) to conduct an assessment of the feasibility of a study of participants and eligible nonparticipants, and to design such a study if feasible. The final report includes the recommended design, data collection plans, and associated costs for conducting the program operations component of the study (Volume I) and the participant-nonparticipant study (Volume II). In addition, Volume III contains the survey instruments developed for the study.

RESEARCH AND POLICY ISSUES

USDA's Food and Nutrition Service (FNS) administers the SFSP at the national level and provides funds to states to operate the program. In most states, a state government agency--typically, the state education agency that administers the school meals programs--administers the SFSP. In states that choose not to administer the SFSP directly, regional offices of FNS manage the program. Local program sponsors, which are approved and monitored by their state or by an FNS regional office, carry out the daily operations of the program. Eligible sponsors include public or nonprofit private school food authorities; public or nonprofit private residential summer camps; local, municipal, county, or state government units; public or private nonprofit colleges or universities participating in the National Youth Sports Program; and private nonprofit organizations. Sponsors are responsible for applying for SFSP funds, providing meals or contracting with vendors to provide meals, and monitoring meal service. Each sponsor operates one or more sites at which meals are served free to children.

To evaluate how program operations contribute to participation levels and the nutritional benefits of SFSP participation, and to study the characteristics of participants and eligible nonparticipants and the factors affecting participation, many kinds of information must be obtained. The planned national study of the SFSP is intended to address the following broad research topics:

- C Administrative procedures at the state level
- C Factors affecting the participation of sponsors
- C Program management and operations at the sponsor level, including training, technical assistance, monitoring, and outreach
- C Financial management, including procedures for vendor contracting and the use of other funding sources to help meet administrative and food costs
- C Site operations, including activities offered, availability in urban and rural locations, transportation, and staffing
- C The number of children who participate and the number of meals served
- C The nutritional quality and safety of meals offered and the extent of plate waste
- C The extent to which SFSP sites are located in areas of need
- C Characteristics of participants and eligible nonparticipants
- C Factors affecting the participation of eligible children in the program

OVERALL DESIGN

The hierarchical and short-term nature of SFSP program operations imposes methodological challenges for the planned study. The recommended design for the program operations component of the SFSP study reflects the careful consideration of the study objectives, input from the expert panel, experiences during the instrument pretests, cost factors, and timing issues associated with the five separate, but related data collection efforts:

1. Interviews with program staff at the state agency or FNS regional office level
2. Interviews with current SFSP sponsors
3. Interviews with former sponsors who recently left the program
4. Interviews with site directors in conjunction with site visits to observe operations, meal content, and the extent of plate waste
5. Interviews with parents of participating and eligible nonparticipating children of elementary school-age.

In addition, geographic information systems (GIS) analysis of census data in conjunction with data on sponsor and site addresses is recommended to shed light on the extent to which the SFSP is available in areas of need.

Study Planning and Publicity Efforts

MPR recommends that the study contractor, in cooperation with ERS, conduct two critical up-front activities to create awareness and support of the study among states and SFSP sponsors: (1) the development of a brochure that explains the study's goals and data collection activities and that provides key contact information for the study contractor and USDA, and (2) presentations about the study at sponsor-training sessions in large states and FNS regions. MPR recommends that the brochure be sent to state agencies for use at training sessions, and to states and sponsors with the advance letter mailing. These two efforts will inform states, sponsors, and site personnel about the importance of participating in the study.

Interviews with State Administrators

Three contacts with states are recommended. MPR recommends first contacting state administrators in the winter to introduce the study and to obtain lists of last year's sponsors (and sites, if available). The second contact in May or June will be made to obtain lists of organizations that attended training for new sponsors. The two lists will be used to select samples of new and continuing sponsors.

In early fall, the final contact with state administrators will occur. MPR recommends waiting until fall to conduct 45-minute telephone interviews with administrators in all 54 jurisdictions (the 50 states, the District of Columbia, Guam, the Virgin Islands, and Puerto Rico) that operate the SFSP. At this time, state administrators will not be preoccupied with running the program day-to-day and should be able to provide a full picture of the summer just passed. The interviews will provide important information on (1) recruiting, training, and monitoring of sponsors; (2) administrative staffing and costs at the state level; (3) sponsor application procedures; and (4) program management practices. In addition, information such as the number of participants and meals served will be obtained from official USDA sources and confirmed during the interview. Information will also be obtained on administrators' assessments of effective outreach methods and reasons for low program participation. In the early fall, states will also be asked to provide final sponsor and site lists for the year. These lists will be used to make any necessary adjustments to the sampling weights and to identify additional former sponsors. (Some former sponsors will have been identified when prior-year sponsors were contacted in the spring, as discussed next.)

Sponsor Sampling

The selection of the samples of sponsors and former sponsors will occur in three phases:

1. Prior-year sponsors will be selected from the previous year's lists; those continuing will be in the sponsor sample, while those leaving the program will be in the former sponsor sample.
2. New sponsors will be selected from the lists of those attending new sponsor training, recognizing that not all who attend training will complete the application and be approved.
3. Additional former sponsors will be selected in the fall when the full current-year list can be compared with the previous year's list.

The sponsor sample frame will include sponsors from the 50 states and the District of Columbia. In each phase, sponsors will be selected from a national list (that is, there is no prior stage of state selection) with probability proportional to size (measured as average daily attendance for the SFSP), but the list will be stratified by region, sponsor size, and (possibly) rural versus urban location. Thus, the sponsor sample will be nationally representative of the types of programs participants experience. Larger sponsors, with more participants, will have a greater probability of selection than smaller sponsors. However, it will be straightforward to reweight the sample to make it nationally representative of sponsors, rather than participants, and both perspectives will be considered in the analysis.

Interviews with Sponsors

During initial contacts in late spring, prior-year sponsors will be asked to confirm that they are operating in the current year and to provide lists of current sites. Sponsors will be contacted for the full data collection after their sites have been open for several weeks.

A mixed-mode approach to data collection is recommended. The sponsor interviews, when completed as telephone interviews, will last about 60 minutes. However, sponsors will also be given the option of completing a self-administered version of the survey and returning it by mail. We recommend starting the sponsor interview process for each sponsor about two weeks after the sponsor begins program operations, so that interviews will be conducted in June through September. The sponsor survey will require a sample of 480 completed sponsor interviews to meet a precision standard of 5 percent for the average coefficient of variation (CV) or a sample of 120 completed interviews to meet a 10 percent standard.

The sponsor interview will collect information on the number and characteristics of sponsored sites; recruitment, training, and monitoring of site personnel; the adequacy and effectiveness of the training and technical assistance provided by states; and the adequacy of reimbursements. It will also collect information on meal characteristics, such as the use of commercial vendors to prepare and provide meals; partnerships and sources of supplemental resources to cover program costs; outreach activities to publicize or expand the program; and sponsors' perceptions about barriers to participation.

Interviews with Former Sponsors

The former sponsor survey will be a 30-minute telephone interview with a national sample of sponsors who dropped out of the SFSP between summer 2000 and summer 2001. Although much of the survey content will be similar to that for current sponsors, the former sponsor survey will also seek to identify factors that contribute to sponsors leaving or being dropped from the program. (State administrators will also be interviewed about the reasons for dropping sponsors and the reasons why sponsors voluntarily leave the program.) We estimate that a sample of 200 completed former sponsor interviews is sufficient to achieve a CV of 5 percent, as the universe is likely to be only 350 to 400. Because the costs to complete the former sponsor survey are relatively low, we recommend a sample of 200.

Observations of Sites

The recommended design for the site data collection is based on conducting an interview with the site director and observing program operations in either 350 sites (to achieve a 5 percent CV) or 150 sites (to achieve a 10 percent CV). Sites will be selected from a subsample of the interviewed sponsors. Sites will be selected from each sponsor's site list with probability proportional to size. An average of 1.5 sites per sponsor will be selected, except that more sites will be selected from the largest sponsors (which will be sampled with certainty). We recommend no clustering of sponsors or sites by state, because we estimate that the cost of the required increase in sample sizes for a clustered sample outweighs the savings in travel costs. Thus, we assume that site visits may occur in any of the 50 states and in the District of Columbia.

Site directors will be interviewed about their sites' summer hours and weeks of operation, the frequency and types of other activities provided, the characteristics of meals and of participating children, factors contributing to program participation, food storage and handling procedures, and the staffing and training of site personnel. Interviewers will also observe and record program operations, activities, and attendance.

Observations of Meals and of Plate Waste

Meal observations are necessary to obtain an accurate picture of the quality of SFSP meals and of the meals' contribution to the diets of participating children. Interviewers will be trained to observe and record the content and portion size of a representative sample of five SFSP meals at each site visited. Information on foods offered and their portion sizes will be used to estimate the average food and nutrient content available from SFSP meals. Observation of wasted or discarded foods will be conducted for a representative sample of up to 10 meals per site. Taken together, these measurements can be used to estimate the average consumption of foods and nutrients from SFSP meals for participating children across sites. Average food and nutrient estimates will be compared with meal requirements and nutritional standards. The data also will be used to evaluate the extent of plate waste.

Participant-Nonparticipant Study

MPR considered the feasibility of three possible approaches to obtaining a sample frame and completing interviews for the participant-nonparticipant study:

1. Obtaining student lists from schools near selected sites, then conducting telephone interviews with parents of a sample of students
2. Making random-digit-dialing telephone calls to phone numbers in the areas covered by selected sponsors, then screening for the presence of a child and an address sufficiently close to an SFSP site
3. In-person listing and screening of addresses in areas around study sites. This would involve interviewers going door to door and screening for the presence of a school-age child, then completing the interview in-person with those who passed the screener.

Option 1 is likely to be the least costly, but there is some question about the feasibility of obtaining lists from a large proportion of schools. However, FNS staff have indicated that they believe that adequate school participation can be obtained, since schools that participate in the NSLP are required to provide lists of children receiving free or reduced-price lunches to USDA. In light of this information, it was decided that a detailed design would be developed for the school list approach.

The school list approach involves identifying sites as early as possible during the school year before data collection, in order to request lists from nearby schools before the end of the school year. To do this, MPR recommends limited the participant-nonparticipant study to continuing sites (those that operate both in 2000 and 2001) and selecting the sample of sites for the participant-nonparticipant interview as a subset of the random sites selected from continuing sponsors. To reduce costs, it was decided to seek lists only from elementary schools and to focus the participant-nonparticipant survey on families of children in grades K to 5 in the 2000-2001 school year. The addresses on the lists will be geocoded in order to restrict the sample frame as much as possible to those families in the catchment area of the sites. Then, students in the catchment area will be selected for the sample.

The survey will occur using computer-assisted telephone interviewing. To achieve a 5 percent CV, a sample of 4,500 families from 75 sites would need to be interviewed. If a 10 percent CV is chosen, a sample of 1,200 families from 20 sites would need to be interviewed.

GIS Analysis

MPR recommends including a national analysis of accessibility and coverage of the SFSP using census data and GIS analysis. In particular, four types of analysis were piloted in the design study, and each could usefully be extended nationally:

1. ***Needs and Resources Mapping*** provides visual displays of SFSP sponsors and sites in geographic relation to concentrated areas of child poverty. Detailed maps could be prepared at the county level for the entire country. These maps could be provided in hard-copy form or, at some additional cost, on a CD-ROM, with additional data management capabilities included.
2. ***Distance-Based Analysis*** presents information similar to needs and resources mapping in a tabular format to permit methodical examination of results. For instance, tables could be produced that show how many low-income children live within one mile of an SFSP site, by county, by state, and nationally.
3. ***Tract-Based Analysis*** describes the areas around SFSP sites by detailing the demographic characteristics of the census tracts in which they are located. It also allows the option of creating similar profiles of census tracts without any sites.
4. ***State-Level Penetration Analysis*** demonstrates the reach of the SFSP into its target population--children in need--at the state level, using annual state-level poverty estimates that FNS produces for other purposes.

All these analyses would be particularly useful if it were possible to use data from the 2000 census. However, this is not feasible in the period of the planned study but would require extending the study at least another year, into 2003. MPR recommends that ERS consider extending this part of the study only, in order to use the most up-to-date information possible. Even if 1990 data on child poverty were used, however, the information on the locations of SFSP sites would still be current. The full report presents a variety of options for using census data.

DATA ANALYSIS

The analysis of data from the SFSP study will primarily involve computing descriptive statistics, such as means, medians, frequency distributions, and cross-tabulations, to describe the characteristics of program providers, procedures, and practices, as well as the characteristics of meals and participants. Factors contributing to participation among low-income families who live near sites will also be analyzed with multivariate methods. The data will be tabulated two ways: (1) to reflect the populations of states, sponsors, former sponsors, or sites, as appropriate; and (2) to reflect the population of participants served by the various levels of program administration. Sample weights will be designed to weight the data to be nationally representative of both the population served and the various administrative units.

COST ESTIMATES

Costs were estimated assuming that data collection will occur during 2001 and that the project will start on January 1, 2001, and will continue for 18 months. The report includes the cost estimates for each precision level, broken down by major tasks. Analysis costs are also broken down by major

data collection activity. The estimates include complete study costs (orientation meeting; publicity efforts; development of a data tracking system; data collection; data analysis and reporting, including the creation of final sample weights; draft and final reports; creation of documented files; and a final briefing). Estimates are based on MPR's experience in conducting the previous SFSP study (Ohls et al. 1988), other similar studies, and the pretest of the instruments for this study. These estimates are intended to give ERS the information necessary to assess which elements of the design should be funded, and with what precision goal, given the resources available.

Costs for the program operations component of the SFSP study are estimated to be approximately \$2.3 million to reach the higher of the two precision standards (a 5 percent CV for all components), and approximately \$1.5 million for the lower precision standard (a 10 percent CV for the sponsor and site data collection). Costs would thus be about 50 percent higher if the higher precision level is chosen throughout the course of the study. The site observations account for approximately half the study costs. For the site observations in particular, substantial savings of about \$550,000 could be achieved if ERS were to choose the lower precision level, with smaller savings obtained by choosing a precision level that falls between the two illustrated.

Estimated costs for the participant-nonparticipant study (including both the survey and the GIS analysis) are about \$1.6 million to reach the higher of two precision levels for the survey (a 5 percent CV) and about \$900,000 to reach the lower level (a 10 percent CV). The costs for the GIS analysis are estimated at approximately \$300,000. Thus, costs for the survey and associated analysis are about twice as large (\$1.3 million) for the higher level of precision than for the lower level (\$600,000).

We have used standard inflation assumptions in preparing these costs estimates. However, recent analysis suggests that the strong economy has led to substantial labor market pressures throughout the research industry, implying that salary increases over the next several years are likely to be higher than our estimates reflect. The estimates presented indicate that the cost of the full study will be in the range of \$2.4 million to \$3.9 million, depending on the precision levels chosen for the various study components. However, based on the tightness of the labor market, ERS may want to set aside an amount 5 to 10 percent higher than these estimates imply.

REFERENCES

Ohls, J., E. Cavin, E. Kisker, N. Chapman, and J. Homrighausen. "An Evaluation of the Summer Food Service Program: Final Report." Princeton, NJ: Mathematica Policy Research, Inc., July 1988.