USDA United States Department of Agriculture
Food and Nutrition Service

CHILD NUTRITION MEAL COST METHODOLOGY STUDY: FINAL REPORT

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Background

There have been several studies and attempts to measure the cost of producing reimbursable meals in the National School Lunch Program (NSLP) and the School Breakfast Program (SBP). However, past efforts were limited for several reasons, namely:

The inability to directly measure and allocate meal production costs to School Food Authority (SFA) activities. Existing meal cost measurement approaches heavily rely on indirect, econometric techniques to allocate costs to various food service functions, e.g., breakfast production and lunch production and reimbursable and non-reimbursable meals. Direct measurement is infeasible due to join production: there is no separate accounting of food, labor and other costs used to produce different meals (e.g., reimbursable versus a la carte meals). A widely used approach to allocate meal production costs to different activities is to convert breakfasts, adult meals, and a la carte sales into NSLP-lunch equivalents (LEQ). A variety of techniques have been used by SFAs and researchers to construct a LEQ measure. However, while feasible, this methodology does not provide a true measure of the costs directly attributed to each SFA activity.

Not considering the full cost of meal production when calculating per-meal costs. Previous studies have almost always relied on costs as reported by SFAs when measuring meal production costs. However, reported costs do not include all resources used by the SFA to produce school meals. These may include costs that are either not charged to, or paid by the SFA. Often space, utility and some labor costs may be subsidized by the school district. Omitting these costs reduces the total cost attributable to meal production.

The Food and Nutrition Service (FNS) is in need of accurate, comprehensive meal production cost estimates to inform policy and to facilitate program decision-making. The purpose of this study was to develop a methodology to provide the Agency with a feasible tool to collect reliable meal cost data on a national level.

Objectives

The major goal of the Child Nutrition Cost Methodology Study is to identify the best practical approach for measuring meal production costs for reimbursable meals in the NSLP and SBP. Primary study objectives include:

- To determine the full costs of producing reimbursable meals in the NSLP and SBP;
- To assess the reliability and validity of meal production costs reported by SFAs
- To develop technical assistance materials for use by SFAs that will enable them to calculate meal production costs for their own school districts.

The study was conducted by Abt Associates Inc. (AAI) of Cambridge, Massachusetts under contract to the Food and Nutrition Service. After designing the methodology, AAI pilot tested the methodology in 18 SFAs nested in four States: New Jersey, Maryland, Arizona, and Florida. Overall, 91 schools participated in the study. The study collected data on-site on food, labor, and other meal production costs for a five day period. A major goal was to test the feasibility of identifying meal production costs that were not charged to the SFA account (to obtain full costs) and directly allocating costs to different SFA activities. Data collection occurred in 1990; the data reflect meal production costs for the 1989-1990 school year.

Findings

The methodology developed and tested in this study builds on previous work to measure meal production costs. Major advancements were made in the area of identifying the full cost of meal production. The pilot also indicates that it is possible to allocate major meal production costs (food and labor) to the various SFA activities in a more direct fashion that algorithms currently used. The methodology was adaptable to the different types of meal production systems included in the study; on-site and satellite kitchens, and in districts receiving vended meals and using food service management companies.

The results of the pilot study indicate that the approach developed by this study is a feasible mechanism for measuring per-meal costs for reimbursable school meals. The methodology can be used in future studies to obtain reliable estimates of the full cost of meal production.

Measuring the Full Cost of Meal Production

Efforts to identify the full cost of meal production were successful; in most instances, respondents (SFA Directors and other school district personnel) were able to identify uncharged costs and provide information needed to estimate their value.

Uncharged costs were primarily made up of space, labor (usually at the school district level), and indirect costs that were not charged to the SFA.

Imputing space costs used in support of meal production, but not charged to the SFAs was problematic. While the participating SFAs were able to provide information necessary to impute space costs (square footage); the study team was unable to obtain rental values for comparable space in order to assign space costs. In these instances, construction costs were used to impute space costs. Due to the difficulty in obtaining rental values, construction costs are a viable alternative for imputing space costs.

Efforts to estimate the utility costs associated with meal production were also problematic. While there are a number of way to identify SFA utility costs, they represent a small proportion of operational costs (about 2%) and efforts to obtain these costs may not be worth the cost.

Allocating the Full Cost of Meal Production to Breakfast, Lunch and Other Meal Production Activities

The allocation of total annual food costs between breakfast, lunch, and other meals was conducted by extracting data from menus, production, and recipe records during a sample week. While data collectors were able to capture all food items served, some of the schools failed to correctly identify some (or all) of the costs of non-reimbursable lunch food items. Future uses of this methodology should highlight the importance of capturing the cost of a la carte food items when measuring total lunch food costs. This may be done by extensive training in this area. To correct this problem, the study team used an alternative approach to estimate meal costs based on food costs for all other meals; data which were measured reliably. No other problems occurred when allocating food costs to lunch, breakfast, and other meals.

The allocation of food costs between reimbursable and non-reimbursable meals is based on estimates of the costs of food that students actually take as part of reimbursable meals. Meal observers were able to accurately record the food items taken on reimbursable breakfasts and lunches at a sample of schools during the 5-day observation period.

A time study was used to allocate the majority of labor costs between SFA activities. Professional estimates made by school district staff were used to obtain estimates of labor for staff that only worked on one or two readily identifiable SFA activities (e.g., principals reviewing meal applications). These allocation methods proved feasible; however there was some confusion regarding the definition of one time category in the time study. Additional examples and/or training should eliminate this problem in future applications of the methodology.

There is substantial difference between the reported cost and full cost of meal production. On average, 19% of the full cost of meal production was not charged to the SFA. Among the pilot sites, the range of full costs per reimbursable lunch was $1.235 to $2.236 with a median cost of $1.698. The range of full costs per reimbursable breakfast was $0.991 to $1.792 with a median cost of $1.443.

The range of reported (charged to SFA) costs per reimbursable lunch was $1.034 to $1.704 with a median cost of $1.353. The range of reported costs per reimbursable breakfast was $0.68 to $1.492 with a median cost of $1.207.

The major elements of uncharged costs are space (32%), off-budget labor (27%), indirect costs that are not charged to the SFA budget (21%), utilities (12%), and equipment depreciation (7%). None of the 18 SFAs in the study were charged space costs for the use of school district facilities (e.g., kitchens, warehouses).

While all food costs, and the majority of labor costs are included in the reported cost of meal production, 61% of "other" costs (space, utilities) were not charged to the SFA budget. There is no apparent relationship between the type of production system and the elements of uncharged costs.

The study team suggested that a comparison of meal cost estimates obtained from the direct measurement approach used in this study yield similar estimated meal costs. The study team suggests further that the LEQ approach may be viewed as a cost-effective alternative to the more expensive, yet precise direct measurement approach. In conclusion, the study team recommends that a two-phase approach, combining the direct and indirect approaches, may be the best methodology to use in a national study of meal costs.