

## Summary

This is the first of four reports in the “Nutrition and Health Outcome Study,” which assesses the effect of USDA’s food assistance and nutrition programs on nutrition and health outcomes. This report reviews the research designs available to evaluators for assessing the effect of USDA’s food assistance and nutrition programs. The random assignment experiment is the “gold standard” design for such an evaluation. Where random assignment is impossible, quasi-experimental designs are used to infer what would have happened to program participants if the program had not existed. Eight types of quasi-experimental design are identified as having been used in evaluations of food assistance and nutrition programs, although none can guarantee unbiased estimates of program impacts.

Since the mid-1940s, the U.S. Government has committed to ensuring that its citizens neither go hungry nor suffer the consequences of inadequate dietary intake. Today, the U.S. Department of Agriculture (USDA) implements 15 programs as a “food safety net,” to provide low-income citizens with food or the means to purchase food. These food assistance and nutrition programs (FANPs) were funded at a level of \$33.5 billion in fiscal year 1998.

Under contract with the Economic Research Service of USDA, Abt Associates Inc. has completed a review of knowledge about FANP effects on nutrition- and health-related outcomes. A thorough literature review was conducted to evaluate the strengths and weaknesses of the research designs, analytical methods, and data sources employed to analyze FANP outcomes. A series of four reports has been produced to document what we know and do not know about these outcomes and to identify future research needs.

This report reviews the research designs and analytic approaches that have been used to assess FANP outcomes. The discussion focuses on the five main food assistance and nutrition programs: the Food Stamp Program (FSP); the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC); the National School Lunch Program (NSLP); the School Breakfast Program (SBP); and the Child and Adult Care Food Program (CACFP). The research designs found in this evaluation literature are applicable not only to other Federal food assistance programs but to practically all social programs that directly serve individuals and families.

In the same vein, although the discussion refers most often to nutrition- and health-related outcomes for participants, the research designs are generally applicable to any outcomes measured for individuals. However, the data available (or not available) on nutrition and health outcomes in existing data sets, along with the procedures required to collect these data, sometimes constrain design choices for evaluating food assistance and nutrition programs.

The random assignment experiment is the “gold standard” research design for evaluating food and nutrition assistance programs, as for many other social programs. It is particularly well suited to evaluating demonstration programs or proposed modifications of existing programs, such as raising the age limit for children in WIC or adding a nutrition education component to the Food Stamp Program.

Numerous quasi-experimental designs have been applied in evaluating food and nutrition assistance programs. The eight quasi-experimental designs discussed here offer varying ways to estimate program impact, where impact is defined as the difference between outcomes for program participants (or for a target population that includes participants) and the outcomes that would have been expected in the absence of the program. Quasi-experimental designs represent the outcomes expected in the absence of the program, called the “Counterfactual,” by outcomes in nonprogram time periods (pre-post and time-series designs) and/or by contemporaneous outcomes for nonprogram populations (comparison group designs).

All quasi-experimental designs are potentially vulnerable to selection bias, a situation in which an observed difference between participant and Counterfactual outcomes is caused by some force other than the intervention being evaluated. Researchers have used various statistical approaches that attempt to correct for selection bias, but none of these techniques provides certainty that selection bias has been eliminated. Because the properly implemented random assignment experiment is not vulnerable to selection bias, it is the best available approach to estimating program impacts.