

WIC and the Nutrient Intake of Children

Victor Oliveira
Craig Gundersen

Introduction and Overview

The Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) is designed to improve the health of low-income, nutritionally at-risk infants, children, and pregnant, postpartum, and breastfeeding women by providing supplemental food, nutrition education, and health care referrals. This study examines the nutrient intake of children, who constitute over half of all participants in the program, to determine WIC's effect on their health. An underlying assumption is that improved diets lead to better health in the long run. Several different analyses are utilized. First, a univariate analysis is used to compare the socioeconomic characteristics and nutrient intake of WIC children both to income-eligible nonparticipants and to children whose high household incomes make them ineligible to participate in WIC. Second, a multivariate analysis is used to control for observable differences between WIC children and income-eligible nonparticipants. Third, an alternative multivariate analysis is used to address the greatest difficulty in designing evaluations of the WIC program—identifying a comparison group of children to control for selection bias. The analyses are based on the most recent available national intake data that reflect the period of rapid growth in the child component of WIC.

The WIC program, administered by USDA's Food and Nutrition Service, was established as a pilot program in 1972 and made permanent in 1974. The program is based on two premises: (1) that the inadequate nutritional patterns and health behavior of low-income women and children make them especially vulnerable to adverse health outcomes; and (2) that food intervention programs during critical times of growth and development can help prevent future medical and developmental problems (Rush 1986).

Eligibility in the WIC program is limited to pregnant women, women up to 6 months postpartum who are not breastfeeding, breastfeeding women up to 12

months postpartum, infants up to 1 year of age, and children up to their 5th birthday. To be eligible, family income must fall below 185 percent of the poverty guidelines.¹ Persons who participate in the Food Stamp Program, Medicaid, or Temporary Assistance for Needy Families Program (TANF) automatically meet the income eligibility. WIC recipients must also be individually determined to be at "nutritional risk" by a health professional. Four major types of nutritional risk are recognized for WIC eligibility: (1) detrimental or abnormal nutritional conditions detectable by biochemical or anthropometric measurements, such as anemia, low maternal weight gain, or inadequate growth in children; (2) nutritionally related medical conditions, such as nutrient deficiency diseases, some specific obstetrical risks, or gestational diabetes; (3) dietary deficiencies that impair or endanger health, such as highly restrictive diets, inadequate diet, or inappropriate infant feeding; and (4) conditions, such as homelessness and migrancy, that predispose persons to inadequate nutritional patterns or nutritionally related medical conditions.²

Most WIC participants receive checks or vouchers each month that allow them to purchase a monthly food package designed to supplement their diets at authorized foodstores. A few locations use alternative food delivery systems. The WIC food package is not intended to meet the total nutritional needs of the participants, and participants are educated on ways to obtain the balance of the necessary nutrients from other food sources. WIC provides foods that are high

¹WIC regulations define family as "a group of related or nonrelated individuals who are living together as one economic unit" (7 CFR Subpart A, Section 246.2).

²State agencies are not required to use all of the nutritional risk criteria on the national list.

in five target nutrients—protein, calcium, iron, and vitamins A and C. These nutrients are frequently lacking in the diets of the program’s target population, which may result in adverse health consequences. The WIC food packages also provide vitamin D, folate, and vitamin B-6 (pyridoxine) (USDA 1991). Local WIC agencies prescribe the types and quantities of supplemental foods appropriate for each participant, based on their age and individual needs and preferences.³ The food package for children 1 to 5 years old consists of milk or cheese, iron-fortified cereal, 100-percent fruit and/or vegetable juice, eggs, and peanut butter or dry beans/peas (children with special dietary needs may receive a different food package). This food package is expected to reduce the prevalence of iron-deficiency anemia, improve diets, and improve physical and mental growth and development (Institute of Medicine, 1996). The average monthly cost of the WIC food package for children in 1996 ranged from \$32.45 to \$46.20 across regions (USDA 1998c).

WIC service providers are required to offer participants (or their parent, guardian, or proxy) at least two nutrition education sessions during each certification period, which usually lasts 6 months (USDA 1998c). Education may include counseling on the importance of WIC foods in preventing and overcoming the specific risk conditions identified at the time of certification and the need to select a complete diet from a variety of nutritious WIC and non-WIC foods. WIC recipients also receive referrals to other social services and needed health care, such as immunizations.

An average of 7.4 million persons per month participated in the WIC program in fiscal 1998, including 3.7 million children (USDA 1998b). WIC is not an entitlement program and the number of people served by the program is limited by funding levels established by Congress. Because these funds have not been sufficient to serve all eligible persons, the program directs benefits to persons most in need and those most likely to benefit from participation. When funds are insufficient to serve all eligible applicants, local WIC agencies fill vacancies based on a priority system. Priority is given to persons demonstrating medically based nutritional risks over dietary-based nutritional risks, and to pregnant and breastfeeding women and infants over children (see box, next page). As a result, the

³WIC regulations specify the maximum quantities of supplemental foods that may be prescribed to WIC recipients (7 CFR Subpart D, Section 246.10).

participation rates for children have traditionally been lower than those of women and infants.⁴

However, children comprise the fastest growing group of WIC recipients. While overall participation in WIC increased by 63 percent from 1990 to 1998, child participation increased by 81 percent, compared with 67 percent for women and 33 percent for infants (fig. 1). Since a large proportion of the higher priority pregnant women and infants already participated in WIC, the program’s expansion in recent years has allowed the program to serve more lower-priority children.

The growth of WIC was the result of cost containment measures and increased Congressional funding fueled in part by favorable evaluations of the program that have shown WIC to be a successful and cost-effective program.⁵ For example, in a review of 17 studies, the General Accounting Office concluded that WIC reduced low birthweights by 25 percent and reduced the rate of very low birthweight by 44 percent (General Accounting Office 1992). GAO reported that each Federal dollar invested in WIC benefits returns an estimated \$3.50 of savings in Federal, State, local, and private health care costs. However, most of the research examining the effect of the WIC program has focused on birth outcomes.⁶ Reasons cited for the relatively few studies on WIC children include controversy in determining what constitutes program success, problems in measuring the effects of a change in nutrition in childhood over a short time period, and the difficulties in finding a comparable control group (Rush 1986).

⁴USDA estimated that about 69 percent of all eligible children participated in the WIC program in 1996, compared with about 85 percent of all eligible women and virtually all eligible infants (USDA 1998e).

⁵Reflecting a leveling off of funding for the program, total participation in WIC decreased by less than 1 percent in fiscal 1998, the first decrease since the program’s establishment in 1974.

⁶USDA had planned and field-tested a major evaluation of WIC’s impact on children in the early 1990’s. However, legislation enacted in 1992 specifically directed USDA not to undertake the study.

Nutritional Risk Priority System

Priority

- I Pregnant women, breastfeeding women, and infants at nutritional risk as demonstrated by hematological or anthropometric measurements, or other documented nutritionally related medical conditions which demonstrate the need for supplemental foods.
- II Except those infants who qualify for Priority I, infants up to 6 months of age of Program participants who participated during pregnancy, and infants up to 6 months of age born of women who were not Program participants during pregnancy but whose medical records document that they were at nutritional risk during pregnancy due to nutritional conditions detectable by biochemical or anthropometric measurements or other documented nutritionally related medical conditions which demonstrated the person's need for supplemental foods.
- III Children at nutritional risk as demonstrated by hematological or anthropometric measurements or other documented medical conditions which demonstrate the child's need for supplemental foods.
- IV Pregnant women, breastfeeding women, and infants at nutritional risk because of an inadequate dietary pattern.
- V Children at nutritional risk because of an inadequate dietary pattern.
- VI Postpartum women at nutritional risk.
- VII Individuals certified for WIC solely due to homelessness or migrancy and, at State agency option, previously certified participants who might regress in nutritional status without continued provision of supplemental foods.

Source: 7 CFR Subpart C, Section 246.7.

Figure 1
Participation in WIC, fiscal 1985-98

