Programs That Mitigate the Effects of Poverty on Children

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Abstract

This article reviews six federally funded in-kind public assistance programs that are intended to mitigate the effects of poverty on low-income children by providing access to basic human necessities such as food, housing, education, and health care. The evidence suggests that, while each program can be improved, these programs do achieve their basic objectives. In general, food stamps, the Special Supplemental Food Program for Women, Infants, and Children (WIC), and school nutrition programs are successful at providing food assistance to low-income children, starting with the prenatal period and continuing through the school years. The Food Stamp Program provides food assistance nationwide to all households solely on the basis of financial need and is central to the food assistance safety net for low-income children. The WIC program has helped reduce the prevalence of iron-deficiency anemia in infants and children and has increased intakes of certain targeted nutrients for program participants. The school nutrition programs provide free or low-cost meals that satisfy the dietary goals of lunches and breakfasts to most school-age children. The Medicaid program has extended health insurance coverage to millions of low-income children. However, many children remain uninsured, and children enrolled in Medicaid do not have the same access to medical care as privately insured children. Relatively little is known about the effects of Medicaid on children’s health status. For Head Start, empirical evidence suggests that participating children show enhanced cognitive, social, and physical development in the short term. Studies of the longer-term impacts of Head Start are inconclusive. Although housing assistance improves housing quality and reduces housing costs for recipients, there is a large unmet need for acceptable, affordable housing among poor families. Important gaps remain in our knowledge of the effects of these programs on the well-being of children. Questions regarding a program’s effects over time on health and developmental outcomes particularly need more study.

Poverty can increase children’s exposure to a wide array of problems including inferior housing, insufficient food and poor-quality diets, deficient health care, inadequate parenting, and poor-quality child care, and result in delayed physical, cognitive, and socioemotional growth. (See the article by Jeanne Brooks-Gunn and Greg Duncan in this journal.)
issue.) A wide array of assistance programs and policies aid low-income households with children by providing either cash assistance payments or in-kind benefits to meet specific needs. This article reviews the effectiveness of several in-kind assistance programs in mitigating the impact of poverty on children. In addition, a number of programs, discussed in the article by Robert Plotnick in this journal issue, attempt to reduce the prevalence of poverty through increased earnings, public cash transfers and tax credits, and private cash support from absent parents.

The programs selected for this review comprise only part of a public safety net for children and their families and include large federally funded programs known to have effects on children, either because they are targeted directly to children or because benefits to low-income households with children account for a significant component of program expenditures. In general, the programs selected for review are also those designed to reduce the negative effects of poverty in such fundamental areas as food, shelter, and health care.

The six programs covered in this review are the Food Stamp Program, the Special Supplemental Food Program for Women, Infants, and Children (WIC), the school nutrition programs (breakfast and lunch), Medicaid, Head Start, and housing assistance programs. Of these, WIC, the school nutrition programs, and Head Start are targeted specifically at children, while the Food Stamp, Medicaid, and housing assistance programs are targeted more broadly at low-income households and individuals. For each of these programs, the discussion below provides a brief historical policy overview, reviews the empirical evidence on program coverage and achievement of program goals and objectives, and discusses the indirect effects of program participation. Emphasis is placed on studies with adequate controls for differences in the characteristics of program participants and eligible nonparticipants. (See Box 1.) In some instances, statistical models that account for potential selection bias provide the evidence concerning program effects. More often, however, the evidence is from more traditional regression models. Fortunately, all of the programs reviewed have been studied extensively over time, with various levels of complexity and different outcomes. Thus, judgments about program effectiveness come from the accumulated evidence produced by these repeated studies.

Table 1 provides an overview of the program characteristics including each program’s target population, eligibility guidelines, whether it is an entitlement program or not, the number of persons served, and the annual cost.
Evaluating the Effects of Programs on Child Outcomes

The goal of an evaluation is to assess program effectiveness. Program effectiveness is measured by comparing the outcomes of a program with what would have probably happened without the program. Conceptualizing and identifying appropriate comparisons is never an easy task. The preferred approach is an experimental design in which eligible individuals are randomly assigned to a treatment group that receives benefits from the program or to a control group that does not receive benefits. With this design, treatment and control cases are similar, on average, at the time of random assignment and any subsequent differences in outcomes between the two groups provide unbiased estimates of program effects.

Legal, ethical, and practical considerations, however, may preclude the adoption of an experimental design. These considerations typically exist when ongoing programs, such as those reviewed in this paper, are to be evaluated or when the “need” for the program is considered so great as to preclude assigning individuals to a control group.

When random assignment is not feasible, a nonexperimental design is typically used to conduct program evaluations. A nonexperimental design usually entails selecting (1) a treatment group from among program participants and (2) a comparison group from among nonparticipants who would be eligible to receive program benefits were they to apply. In this design, the comparison group may not have characteristics that are similar, on average, to those of the treatment group. In particular, program participants are a self-selected group of individuals who choose to apply for program benefits, and the decision to apply and receive program benefits may be the result of factors that independently affect key program outcomes.

In a nonexperimental design, participant and comparison groups may differ in both measured and unmeasured characteristics. If program participants differ from eligible nonparticipants only along measured characteristics, conventional statistical models, such as ordinary least squares (OLS) regression models, can control for such differences and provide unbiased estimates of program effects. The estimation of program effects is complicated considerably, however, if program participants and nonparticipants differ on unmeasured characteristics that also affect outcomes. For example, relative to eligible women not receiving WIC benefits, WIC participants may have greater motivation for a healthy pregnancy. This underlying difference between WIC participants and eligible nonparticipants may have led to better pregnancy outcomes among participants even in the absence of the WIC program. In this instance, conventional statistical models such as OLS, which do adjust for the difference in motivation, would overestimate program effects. Estimates of program effects that do not adequately control for differences in participants and nonparticipants are said to suffer from selection bias.

Often, program evaluation studies use selection-bias models to control for differences between participants and nonparticipants in both measured and unmeasured characteristics. Unfortunately, data limitations and other problems may make application of selection bias models extremely difficult or impossible. In particular, to disentangle the effects of program participation from the effects of unmeasured characteristics on key outcomes, it is necessary to identify variables that affect participation but do not affect outcomes. Such variables are often not available so that the estimates produced by selection-bias models may be imprecise, lack robustness, and continue to suffer from selection bias. This lack of identifying variables and the resulting imprecision of selection-bias estimates of program effects plague many of the studies summarized in the accompanying article and in the articles by Brooks-Gunn and Duncan and by Janet Currie.
<table>
<thead>
<tr>
<th>Program</th>
<th>Target Population</th>
<th>Income Eligibility</th>
<th>Entitlement Program</th>
<th>Number of Persons Served/Annual Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food Stamp Program</td>
<td>Low-income households needing food assistance</td>
<td>Gross household income less than or equal to 130% of the federal poverty level (FPL); net household income less than or equal to 100% of the FPL; AFDC, SSI, and state General Assistance participants are automatically eligible.</td>
<td>Yes</td>
<td>28.0 million individuals per month</td>
</tr>
<tr>
<td>Special Supplemental Food Program for Women, Infants, and Children (WIC)</td>
<td>Low-income pregnant, breast-feeding, or postpartum women, infants, and children up to five years of age who are at nutritional risk</td>
<td>Household income less than or equal to 185% of the FPL; AFDC, SSI, and Medicaid participants are automatically eligible.</td>
<td>No</td>
<td>1.6 million pregnant, postpartum, and children per month</td>
</tr>
<tr>
<td>National School Lunch Program (NSLP) and School Breakfast Program (SBP)</td>
<td>School-age children</td>
<td>All meals have some level of subsidy. Free meals—family income less than or equal to 130% of FPL; reduced-price meals—family income between 130% and 185% of FPL.</td>
<td>Yes</td>
<td>NSLP 25.6 million children per day $5.3 billion SBP 6.3 million children per day $1.1 billion</td>
</tr>
<tr>
<td>Medicaid</td>
<td>Low-income persons who are pregnant, children, aged, blind, disabled, or members of families with dependent children</td>
<td>Net family income less than or equal to 133% of the FPL for children less than 6 years; net family income less than or equal to 100% of the FPL for children less than 19 years born after 9/30/83. States may use higher income eligibility standards for these groups. Income standards for children born before October 1, 1983, vary by state.</td>
<td>Yes</td>
<td>36.3 million individuals annually including 17.2 million children $151.8 billion</td>
</tr>
<tr>
<td>Head Start</td>
<td>Infants and children up to five years of age in low-income families</td>
<td>Family income less than or equal to 100% of the FPL, with allowance for 10% of enrollment to have family income greater than the FPL.</td>
<td>No</td>
<td>750,696 children annually $3.5 billion</td>
</tr>
<tr>
<td>Housing Assistance</td>
<td>Low-income households needing housing assistance</td>
<td>Depends on household income and varies by household size and geographic location. Public housing—family income less than or equal to 50% of median income for an area; Section 8 housing—family income less than or equal to 80% of median income for an area.</td>
<td>No</td>
<td>5.1 million households annually $14.1 billion</td>
</tr>
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</table>
The Food Stamp Program (FSP) is the cornerstone of the public assistance safety net for low-income individuals. Based on uniform national standards, the FSP is the only federal program that provides assistance to households solely on the basis of financial need. All other programs use other criteria, such as categorical criteria or nutrition risk criteria, in deciding whom to serve. Single individuals, childless couples, one- or two-parent households, elderly and disabled individuals, and working-poor households all are eligible for food stamp benefits, as long as they meet the financial eligibility criteria. Thus, the FSP is closer to a universal support program than any other federal program.

The FSP originated in the 1930s with a New Deal food stamp program largely designed to dispose of surplus agricultural commodities to stabilize farm prices. This initial program was discontinued in 1943. The discovery that many low-income families were going without food, combined with a continuing interest in farm price supports, led to the creation of a pilot food stamp program in 1962, its permanent authorization under the Food Stamp Act of 1964, and program strengthening and expansion during the 1970s. With outlays of $25.7 billion in fiscal year 1995, FSP expenditures exceeded combined federal and state cash expenditures through the Aid to Families with Dependent Children (AFDC) program. The FSP also served approximately twice as many individuals as AFDC. For many low-income families, FSP benefits account for a major share of total household resources. For families receiving AFDC, food stamps were estimated to account for 25% to 50% of total household resources.1

PRWORA also grants states the discretion to change the food stamp benefit structure, and such changes could result in benefit levels that vary from state to state. In addition, PRWORA makes the great majority of legal immigrants ineligible for food stamps.

The FSP was designed to raise the level of nutrition through the provision of coupons that legally can be used only to purchase food. However, at least three possible behavioral responses might disrupt the intended effects of the FSP. First, households that meet FSP income eligibility standards may choose not to participate in the program. Second, households may simply substitute food stamps for other sources of funds ordinarily devoted to food expenditures, thereby resulting in no increase in food expenditures or an increase that is less than the dollar amount of food stamp benefits. Finally, even if food stamps increase food expenditures, improved nutrition is not assured. Because the FSP neither mandates the types of foods that can be purchased nor provides nutrition education, FSP participation may not improve nutritional status.

Program Coverage
The FSP is reasonably successful at reaching those who are eligible for benefits and very successful at reaching eligible children. In January 1992, the FSP participation rate was...
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74% among income-eligible individuals and 89% among income-eligible households below the poverty level. In addition, most eligible children participate in the FSP; in 1992, 95% of income-eligible preschool children and 86% of all income-eligible children under 18 years of age participated in the FSP. Of nonparticipating households, approximately half were only eligible for the lowest benefit levels and most had household income exceeding the poverty level. Other reasons for nonparticipation include stigma associated with using food stamps, the administrative requirements for eligibility, lack of access to issuance offices, and perceptions that food stamp benefits are not needed.

Achievement of Program Goals
The goal of the FSP is to improve nutritional status, and numerous studies have examined the effects of food stamp benefits on food consumption, focusing on either food expenditures, nutrient availability, or nutrient intakes. Nutrient availability refers to the availability of calories and individual nutrients from household food supplies. Nutrient intakes refer to the actual consumption of nutrients. Nutrient intakes are generally less than nutrient availability.

Broadly summarized, the FSP is successful in increasing both food expenditures and the availability of nutrients to participating households; less is known about FSP effects on nutrient intakes. A careful and comprehensive review of studies of the effects of food stamps on food expenditures suggests that each dollar increase in food stamp benefits is associated with additional food expenditures of between 17 cents and 47 cents. In general, the studies reviewed all used careful statistical modeling and included adequate controls for differences between FSP participants and eligible nonparticipants. Several studies attempted to control for the potential effects of the self-selection of FSP participants, with little evidence of selection bias observed. Thus, monthly expenditures on food were increased by $29 to $79 for a typical FSP household receiving $168 worth of food stamp benefits monthly in 1993.

Most studies of the FSP’s dietary effects use the household as the unit of analysis and examine the availability of nutrients from household food supplies. In general, the findings from these studies indicate that FSP participation increases the availability of calcium, vitamin C, and iron. However, a review of existing studies of nutrient intakes with adequate controls for differences in characteristics between FSP participants and nonparticipants failed to consistently show statistically significant effects of food stamp program participation on the actual consumption of nutrients. Despite the fact that mean nutrient intakes for Americans are adequate, a substantial fraction of children, particularly poor children, consume less than 70% of the recommended dietary allowance (RDA) for most nutrients; for this population, food stamps may be important. Some evidence indicates that poor children who participate in the FSP are more likely than nonparticipating poor children to consume more than 70% of the RDA.

Indirect Program Outcomes
Two major secondary outcomes are associated with the Food Stamp Program. First, since food stamps are frequently substituted for other cash income in purchasing food, the FSP acts as a cash income supplementation program. Approximately 30% of food stamp benefits go to increase household food expenditures, and 70% is used to divert other household income to nonfood expenditures. This substitution of food stamps for income normally devoted to food purchases has led some policymakers to question whether it would not be simpler and less expensive to administer food stamp benefits in the form of cash. Experimental studies of the effects of cash versus coupon benefits, however, suggest that the substitution would result in a reduction of household food expenditures.

The other secondary outcome is related to the policy concern regarding the extent to which food stamps and other public assistance programs create incentives for participants not to work. As participants earn more from paid employment, food stamp

PRWORA does include food stamp benefit reductions. By 1998, families with children are expected to lose an average of $435 annually in food stamp benefits.
benefits decline. For each dollar earned from work, food stamp benefits are reduced by somewhere between 24 cents and 36 cents (depending on housing costs and other allowable deductions). Estimating the degree of work reduction associated with FSP benefits per se is very difficult, however, because many FSP households are eligible for and participate in other programs whose benefits also decline as household income increases. A careful review of the evidence on the work disincentives associated with FSP participation suggests some work reduction effects but of uncertain size. (For further discussion of work reduction effects of means-tested programs, see the articles by Janet Currie and Robert Plotnick in this journal issue.)

The Special Supplemental Food Program for Women, Infants, and Children (WIC)
The Special Supplemental Food Program for Women, Infants, and Children (WIC) started as a two-year pilot program in 1972 in response to growing concern about evidence of malnutrition and related health problems among low-income pregnant women and children. Over the years, WIC has expanded and now serves almost seven million women and children per month. WIC focuses on the special nutritional needs of low-income pregnant women, infants, and children, based on the assumption that insufficient nutrition during these critical development periods may result in adverse health outcomes.

WIC participants must satisfy the eligibility conditions listed in Table 1. The WIC program provides three main benefits to participants: (1) vouchers for specific supplemental foods; (2) nutrition education; and (3) referrals to health care and social service providers. The foods target specific nutrients—protein, vitamins A and C, calcium, and iron. Nutrition education in the WIC program focuses on the relationship between nutrition and health, assists participants to make positive changes in eating habits, and considers ethnic, cultural, and geographic food preferences. WIC providers also advise clients about types of health care, accessible locations of health care, and the utility of health care; however, WIC funds cannot be used directly to provide health care to participants.

Like the FSP, WIC is a food and nutrition assistance program for low-income individuals that attempts to raise the nutrition of participants. However, WIC is expected to be only supplemental to the FSP and is not an entitlement program. Participation in WIC is limited by federal funding levels, which have never been adequate to serve all eligible applicants. Federal regulations specify that a waiting list of eligible applicants be maintained. As program openings become available, a priority system, which gives priority to pregnant and breastfeeding women and infants over children, fills these openings from the waiting list.

Program Coverage
Evidence concerning WIC’s success in serving eligible individuals indicates almost full coverage (100% participation) of eligible infants but substantially less coverage (57% participation) of eligible children one to four years of age. Because WIC is not an entitlement program, estimated coverage rates reflect both the ability of WIC to serve all applicants with available funds and the decision of eligible individuals to apply for and receive WIC benefits. The extremely high infant participation presumably reflects WIC’s system of giving priority to infants over children and the strong incentive of receiving free infant formula as an important motivator for eligible mothers.

Achievement of Program Goals
Most large-scale evaluation studies of WIC have not used random assignment and, instead, compare the outcomes of WIC participants with those of a comparison group, with adequate statistical controls. The most comprehensive WIC program evaluation was the National WIC Evaluation (NWE), conducted during the early 1980s. The NWE compared outcomes for preschool children enrolled in WIC in 1983 with outcomes for preschool children previously enrolled in WIC and with those for children...
never enrolled in WIC, with controls for age, sex, and a vast array of socioeconomic characteristics.

Findings from the NWE indicate that participation in the WIC program is associated with increased intakes of some of but not all the nutrients targeted by WIC food packages. WIC participation is associated with higher intakes of iron and vitamin C for both infants and children, lower intakes of calcium and protein for infants, and no significant differences in vitamin A intakes for either infants or children. These dietary patterns are consistent with the almost exclusive use of iron-fortified formula by WIC infants compared with the use of whole cow's milk by the comparison group of non-WIC infants. Whole milk is higher in calcium and protein but lower in iron than WIC formula and is not recommended for infants. The strongest dietary effects were observed for the poorest children and for children from very large families and from female-headed households. Children receiving WIC benefits also were more likely than other similar children to receive any immunizations. Finally, children receiving WIC benefits were significantly more likely to have a regular source of health care than non-WIC children, although no statistically significant relationship was found between WIC participation and the actual use of preventive health care by infants or children.

Overall then, the findings from the NWE suggest that the WIC program achieves some of its program goals, especially regarding the intake of some key nutrients. The NWE may not, however, have adequately controlled for differences in socioeconomic status between WIC children and non-WIC children and may therefore underestimate WIC program effects.

Other evidence from the 1988 National Maternal and Infant Health Survey also indicates improved infant feeding practices for WIC participants. These data show that mothers of infant WIC participants are significantly more likely than mothers of income-eligible nonparticipants to follow infant feeding guidelines and feed iron-fortified formula rather than cow's milk in the fifth and sixth months of infant feeding. It is impossible to determine, however, whether these findings reflect WIC's nutrition education efforts or its provision of iron-fortified formula or a combination of the two. To date, no systematic evaluation of the nutrition education provided by WIC clinics has been conducted, although there are currently some ongoing studies.

In contrast to evaluation studies of the FSP, which focus primarily on food expenditures and dietary outcomes, many studies of the WIC program examine its effects on key health outcomes, in particular, the effects of the food supplements on reducing iron-deficiency anemia and on improving the physical and mental growth and development of infants and children. Although there are few rigorous evaluations of the effects of WIC on anemia, repeated measurements of the hematological status of WIC enrollees provide fairly convincing evidence of WIC's effect on reducing the incidence of iron-deficiency anemia among participating infants.

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Other evidence of WIC's beneficial effects comes from studies of pregnancy outcomes among prenatal WIC participants. Numerous studies have documented the effects of prenatal WIC participation on increasing newborn birth weight and preventing low birth weight, preventing preterm delivery, reducing Medicaid costs, and even reducing infant mortality. Mixed and very dated evidence, however, suggests that little is known about the long-term effects of WIC on improving behavioral and cognitive development, outcomes that would presumably result from better iron nutrition status. In addition, little evidence exists concerning the effects of WIC participation on children one to four years of age, an age group that comprises about half of the total WIC caseload.

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estimated effects for potential selection bias. The major problem with these selection bias models is that it is very difficult to find predictors of WIC participation that are not predictors of the outcomes in question, and thus it is very difficult to separate the effects on pregnancy outcomes of prenatal WIC participation from those of other factors. Despite the fact that the research on WIC’s beneficial effects on birth outcomes may suffer from selection bias, the number of studies that have examined the effects of prenatal WIC participation, the broad range of outcomes that have been examined, and the efforts to control for participant-nonparticipant differences all suggest some beneficial effects of prenatal WIC participation.

Indirect Program Outcomes
WIC is a broad-based program that often goes far beyond providing food in that it attempts to integrate the services available to low-income children. The finding presented earlier that WIC participation is associated with some improvements in immunization status is consistent with both WIC’s referral role and with recent evidence that WIC may be used to promote immunizations.22

In addition, WIC may also have had a role in reducing the prevalence of iron-deficiency anemia over time among all infants and children, including those who do not receive WIC. Because WIC vouchers constitute a large share of the market for infant formula and children’s cereal, manufacturers may have changed the iron content of their products to meet WIC’s eligibility requirements that include iron fortification.

The School Nutrition Programs
The National School Lunch Program (NSLP) and the School Breakfast Program (SBP) are federally sponsored nutrition programs operating daily in the nation’s schools. All public and private nonprofit elementary and secondary schools are eligible to participate. The two programs make a substantial contribution to what children eat and represent a large investment of federal dollars.

The NSLP was largely a response to the discovery during World War II that many young men from poor families were denied admittance to the armed forces because of physical conditions associated with poor nutrition. The NSLP was created in 1946 to provide nutritious foods, either free or at low cost, to children during the critical school-age years. Currently, the NSLP provides financial assistance and commodities to schools whose lunches meet required nutritional standards.

In 1966, Congress established the SBP as a pilot program to provide funding for breakfast in “poor areas and areas where children had to travel a great distance to school.” It was largely a response to observations that many children came to school without eating breakfast and to concerns that skipping breakfast impeded school performance. The 1975 amendments to the Child Nutrition Act made the SBP a permanent program.

The federal government subsidizes all school lunches and breakfasts served to children, who receive free, reduced-price, or “full-price” meals, depending on their family’s size and income.

NSLP lunches are planned to provide approximately one-third of the RDA for specific nutrients over some unspecified period of time. Lunch must include five items: meat or meat alternate, two or more vegetables and/or fruits, whole-grain or enriched bread or bread alternate, and fluid milk. SBP breakfasts are supposed to provide approximately one-fourth of the RDA, and each breakfast must include a serving of fluid milk, a serving of either fruit or veg-
etable or a full-strength fruit or vegetable juice, and two servings of either bread or meat or their alternates. In addition, recent legislation mandated that schools participating in the NSLP and SBP meet the goals in the Dietary Guidelines for Americans for lower fat content in school meals by the 1996–97 school year.  

The most recent evidence concerning the effectiveness of the two school nutrition programs comes from the School Nutrition Dietary Assessment (SNDA) study, conducted between February and May 1992. This study determined the dietary effects of program participation by collecting data from a nationally representative sample of schools and a nationally representative sample of students attending these schools. The SNDA study used a comparison group methodology, where selection bias and traditional statistical models provided information about the dietary effects of program participation. Unless otherwise noted, the review below presents findings from the SNDA study.

Program Coverage
Almost all public schools participate in the NSLP. The NSLP is available to 92% of all students in the country, and on a typical school day, 56% of those students to whom school lunches are available participate. Participation in the school nutrition programs depends on family income. Almost 80% of students certified for free meals (family income is less than or equal to 135% of poverty) eat a school lunch, 71% of students certified for reduced-price meals (family income between 135% and 185% of poverty) participate, while only 45% of students paying full price participate. In contrast to the NSLP, the SBP is available only to slightly more than half of the nation’s students, and just less than 20% of those to whom it is available participate. The SBP is more prevalent in schools that serve a larger proportion of low-income children than the national average. About 47% of NSLP lunches and more than 85% of SBP breakfasts are served to children whose family incomes are below 185% of the poverty level. Reasons for not eating either NSLP lunches or SBP breakfasts include disliking the foods served and stigma associated with free or reduced-price program participation.

Achievement of Program Goals
The bulk of the research regarding the effectiveness of the NSLP and SBP focuses on the dietary effects of program participation. In general, the NSLP and SBP are successful at achieving the basic dietary objectives of providing one-third of the RDA for lunch and one-fourth of the RDA for breakfast. The School Nutrition Dietary Assessment study findings indicate that NSLP is associated with increased intakes of some, but not all, dietary components. There is some evidence, however, that NSLP participants are a self-selected group of students who differ from other comparable students in either food preferences, needs, or appetites. After controlling for this bias, the findings show no significant difference in the intakes of...
calories, cholesterol, iron, and sodium among NSLP participants relative to nonparticipants. Relative to nonparticipants who eat lunch, NSLP participants do have statistically significant higher lunch intakes of vitamin A, calcium, magnesium, and zinc, and have statistically significant lower intakes of vitamin C (although their lunchtime intakes of vitamin C average 60% of the RDA).

Compared with nonparticipants who eat breakfast, SBP participants have higher breakfast intakes of calories, protein, calcium, and magnesium. In contrast to the NSLP, there is no evidence that the self-selection of SBP participants affects the estimated dietary effects of SBP participation.

The dietary intake findings suggest that both the NSLP and SBP are fairly successful at achieving their meal-specific RDA goals. School meals, however, are not successful at conforming to the Dietary Guidelines for Americans, which include both broad recommendations for healthy diets and specific quantitative goals regarding total fat and saturated fat intakes. For NSLP lunches, the levels of fat and saturated fat exceed the Dietary Guidelines. SBP breakfasts are actually close to meeting the Dietary Guidelines for total fat but not for saturated fat. It is important to note, however, that until recently (in fact, until the findings from the SNDA study were published), meeting the Dietary Guidelines was not an objective of the school nutrition programs.

The SBP does not apparently achieve one of its primary goals of providing a breakfast to students who otherwise would not eat one. In 1992, on a typical school day, approximately 12% of students did not eat breakfast. This percentage was the same for students in schools that participated in the SBP and for students in schools that did not, even after controlling for other demographic and socioeconomic student characteristics. This finding also persisted when the sample was restricted to students from low-income households. In addition, since the NSLP is almost universally available, it is difficult to determine whether it increases the likelihood of eating lunch. Although the school nutrition programs were created in response to the evidence that inadequate nutrition was impeding poor children’s healthy development, there have been few well-controlled studies of whether the school nutrition programs substantially improve health outcomes or reduce hunger among children.

Limited evidence concerning the effects of the SBP on school performance comes from a “natural experiment” study conducted in 1986–87 in Lawrence, Massachusetts. Using a pre/post study design, which compared changes in test results for SBP participants with changes in test results for nonparticipants, researchers found that SBP participation was associated with increases in total test scores and reductions in tardiness and absences. The positive effects were small, but the SBP had only been in place three to four months at the time of the study. While these results suggest positive program effects, especially in low-income school districts such as Lawrence, the study was very limited in duration and has not been replicated on a larger scale.

The Medicaid Program
Enacted in 1965, Medicaid, an entitlement program that provides health insurance coverage for low-income children, represented a major shift in federal health policy for poor families—moving from direct service delivery to a financing model. Its passage, however, received little notice, and it was generally regarded as an afterthought to Medicare, the health insurance program for the elderly and disabled. Perhaps this explains why the basic Medicaid legislation does not include any clear statement of the program’s goals or expected outcomes beyond that of providing access to medical care for the poor.

From the start, states have administered Medicaid with joint financing by the state and federal governments. Medicaid requires that children receive what is called “early and periodic screening, diagnosis, and treatment (EPSDT),” and therefore, the Medicaid benefit package for children is generally comparable to most private health insurance plans. All state Medicaid programs
must provide children with a comprehensive array of preventive or well-child care, as well as necessary diagnosis and treatment services for both acute and chronic illnesses, even if such services are not available to other Medicaid enrollees.

Not all low-income children are eligible for Medicaid. Medicaid eligibility standards for children vary substantially among states, although there is now more uniformity and greater coverage of children living in poverty than in the past. Medicaid eligibility for children was originally tied to eligibility for AFDC. However, congressional mandates during the 1980s severed this welfare link and imposed national income eligibility thresholds, based on the federal poverty level (FPL). These mandates vastly expanded the number of children potentially eligible for Medicaid, but the phase-in implementation of these mandates to include children through 19 years of age will not be complete until 2002.

Increasing numbers of uninsured children, high rates of infant mortality and low birth weight infants, declining immunization coverage, and continued reports of poor health status among low-income children, particularly uninsured children, led to the expansions of Medicaid eligibility in the 1980s. Implicit in the program is the assumption that the enrollment of low-income children in Medicaid will enable them to achieve access to health care services comparable to that of privately insured children. In turn, this access to health care services is expected to lead to improvements in health status for low-income children. However, as the following discussion indicates, most research has focused on process measures, not health outcomes, as evidence of Medicaid’s success.

**Program Coverage**

Measurement problems have plagued attempts to obtain a reliable estimate of Medicaid’s participation rate. Nevertheless, an Urban Institute study, which used data from the Current Population Survey and attempted to control for many of the known measurement problems, estimated that the Medicaid participation rate among AFDC participants was 90% in 1993 and 69% for children who qualified for Medicaid on the basis of family income alone. Although Medicaid child enrollment has increased as a result of the expansions in the 1980s, the number of uninsured children in 1994 reached 10 million, higher than at any time since 1987. Because the majority of uninsured children have family incomes somewhat above the poverty level, Medicaid in its current form cannot be expected to reduce the size of the uninsured childhood population to zero. The General Accounting Office estimates, however, that about one-third of uninsured children in 1994 would have qualified for Medicaid but were not participating.

Medicaid participation may not occur for several reasons. There is a general lack of awareness that children can now qualify for Medicaid even if both parents are present in the home or one parent is working full time. The time-consuming, sometimes difficult application process is an obstacle to many people. Families may not apply for Medicaid because of its stigma as a welfare program. Finally, because most children are healthy, their parents may not feel there is a compelling reason for them to apply for Medicaid.

There is also concern that the new welfare reform legislation (the PRWORA of 1996) may further reduce participation. Currently the majority of children on Medicaid are automatically eligible because they qualify for AFDC. The welfare reform legislation ends this tie. Although states are generally required to continue using their old AFDC rules to determine eligibility for Medicaid, they are given the option of requiring a separate Medicaid application, apart from the application for welfare. Previous experience has shown that participation rates are lower for persons having to apply for Medicaid separately and that enrollment tends to occur at a point when there is a medical need, thus reducing the likelihood that Medicaid’s preventive services will be used effectively. The legislation also restricts welfare eligibility for children.

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**About one-third of uninsured children in 1994 would have qualified for Medicaid but were not participating.**
who are legal immigrants and eliminates welfare eligibility for certain disabled children, and these actions may make these children ineligible for Medicaid.

Achievement of Program Goals
Program outcomes for the Medicaid program include both process outcomes such as access to and utilization of health care and health outcomes such as mortality, morbidity, and health status. Although there is strong evidence that Medicaid children have greater access to services than poor children who are uninsured, recent studies indicate utilization parity has not been achieved relative to children with private insurance. Data from the 1991 National Health Interview Survey (NHIS) showed that, although Medicaid children are as likely as privately insured children to have at least one physician contact during the year, they average fewer physician contacts overall (5.4 visits compared with 6.2 for privately insured children). Medicaid children's lower average rate of utilization compared with privately insured children suggests that Medicaid children may be less likely to obtain needed care than privately insured children. Medicaid children are also less likely than privately insured children to receive their care in physicians' offices, and they are more likely to use clinics, hospital outpatient departments, and emergency rooms. Further, Medicaid children are more likely to see different providers for routine and for sick care visits, which can have a negative effect on continuity of care.

The use of preventive care is a measure of access to health care not dependent on illness. Recent studies suggest that Medicaid's success with preventive care is mixed. On the positive side, data from the 1987 National Medical Expenditure Survey adjusted for child age show that Medicaid children are only slightly less likely than privately insured children to have well-child visits during the year and to have received the number of preventive care visits recommended by the American Academy of Pediatrics (AAP). However, both groups lag far behind the AAP's recommended visit schedule. Among other measures of preventive care, Medicaid children fare worse. Using 1991 NHIS data, preschool-age Medicaid children have lower completed immunization rates than privately insured children, a statistically significant difference of 40% versus 53%, and Medicaid children are much less likely to see a dentist during the year (39% versus 56%).

Part of the reason Medicaid children have not achieved access equal to that of privately insured children is low Medicaid participation rates by office-based physicians, primarily because of Medicaid's historically low reimbursement levels. Because beneficiaries who receive a greater portion of their care in physicians' offices are less likely to be hospitalized, the Omnibus Budget Reconciliation Act of 1989 attempted to increase Medicaid payment levels to pediatricians and obstetricians. However, while higher reimbursement levels may improve access for some children, they may have little effect on the availability of care for children residing in some inner cities and rural areas where the supply of providers is extremely limited to begin with.

Although the assumption is that Medicaid coverage has improved the health status of low-income children, there is little hard evidence for this proposition using traditional measures of health status such as morbidity and mortality statistics. Low-income children lag behind other children on many conventional measures of health status.

Difficulties in finding good indicators of children's health status and in designing studies have made determining the effects of changes in medical care financing, organization, and delivery on children's health outcomes problematic. Further, many other factors affect the health status of low-income children such as poor housing and nutrition, making it difficult to isolate the impact of the access to health services.

Not surprisingly then, a 1991 literature review of health outcome studies for poor children noted that few studies analyzed...
health outcomes data and included information about insurance status. The review concluded that, directly following the enactment of Medicaid, there was some evidence that this program had improved the health status of children but that more recent evidence was indirect or inconclusive. However, there is strong direct or inferential evidence that medical care is efficacious with a wide variety of conditions for children.

Recently, a few studies have analyzed infant mortality and low birth weight outcomes associated with Medicaid expansions for pregnant women; however, the results are not consistent. A study using data from the Current Population Survey, Vital Statistics, and the National Longitudinal Survey of Youth showed a positive association between Medicaid expansions to pregnant women during the 1980s and a reduced incidence of low birth weight and infant mortality.

The effect was much greater for very poor women than for women with incomes between 100% and 185% of poverty, in part because this latter group of women were less likely to participate in Medicaid. However, separate studies using data concerning pregnant women in Tennessee and in Massachusetts did not find improvements for pregnant women on Medicaid in the use of prenatal care, birth weight, or neonatal mortality. The preponderance of research on this topic seems to suggest that improved Medicaid coverage alone will not be able to improve birth outcomes, given the continuing problems of provider participation in Medicaid and the broader problems facing high-risk pregnant women such as poverty, poor nutrition, unhealthful lifestyles, and drug and alcohol problems.

Indirect Program Outcomes
Two secondary outcomes with regard to Medicaid eligibility and low-income families have received attention lately. First is the possible work deterrent effect. Many low-wage jobs do not include health insurance benefits, and several studies have confirmed that the loss of Medicaid coverage can be a deterrent to a family’s leaving welfare for work. To prevent this disincentive, beginning in 1990, all families no longer qualifying for cash assistance benefits as a result of earnings became eligible for up to 12 months of transitional Medicaid coverage. After this period of transitional coverage, younger children in a family may continue to qualify for Medicaid depending on family income, but teenage children and parents face the potential loss of Medicaid. This loss will occur even if the family does not obtain insurance coverage through work.

A second and related issue is whether or not the transitional work coverage provisions and the child Medicaid expansions of the 1980s had the effect of substituting Medicaid coverage for private insurance coverage for some pregnant women and infants. Studies suggest that some of the recent decline in employment-based insurance coverage for pregnant women and children is attributable to expanded Medicaid coverage, although there are differing conclusions about the size of this “crowd-out” effect. Caution must be taken in interpreting any crowd-out results because the relationship between Medicaid eligibility and employment-related insurance coverage for children is particularly complicated. Theoretically crowd-out could occur either because employers reduced coverage options in response to expanded Medicaid eligibility or because families chose Medicaid as preferred to private insurance—for cost or other reasons. In any event, changes to Medicaid policy in this area could make even worse the continuing problem of uninsured children.

Head Start
Head Start was created in 1965 to “strike at the basic cause of poverty,” which was seen as a lack of education among the poor. Over the years the program has matured into the nation’s primary federally sponsored child development preschool program. Ninety percent of the children served are three and four years old; two-thirds are four-year-olds. About 13% are children with disabilities. The program is implemented with considerable variation around the nation to meet diverse community needs. More than 90% of the children are served in centers, but among offered programs, the number of
days per week and hours per day is variable. In 1994, the annual federal cost per child was $4,345. Like WIC, Head Start is not an entitlement. In addition to the federal income eligibility criterion (see Table 1), local programs add other criteria relating to family characteristics designed to help Head Start better serve community needs.

The overall goal of Head Start is to bring about “a greater degree of social competence in preschool children from low-income families.” Social competence includes cognitive, intellectual, and social development; physical and mental health; and adequate nutrition. Key principles of Head Start include providing comprehensive services (including education, health, nutrition, social services, and parent involvement), fostering the parent’s role as the principal influence on the child’s development, encouraging parents to be involved in policy and program decisions, and establishing partnerships with community agencies to improve the delivery of services to children and families.

**Target Population Coverage**

In terms of the incomes of Head Start families, the program achieves its goal of targeting families below the poverty line; in 1994–95, 64% of participating families had annual incomes under $9,000, and 83% had yearly incomes of less than $12,000. In terms of coverage, however, the limited budget of Head Start means that only 38% of eligible three- and four-year-olds are served. Additionally, in an era of increasing need for child care by parents who are either working or in job training programs, the largely part-day structure of Head Start programs makes it difficult for them to serve this share of the eligible population. Head Start’s part-day structure is likely to become increasingly problematic with the work requirements imposed by the recent welfare reform legislation. Head Start’s traditional emphasis on parent involvement—both in the educational program and in policymaking roles—may also become more difficult to achieve as eligible parents cope with the increased demands of education and/or work requirements.

**Achievement of Program Goals**

Head Start research has examined program outcomes across the full range of children’s well-being, although the bulk of the research has focused on cognitive development. This review focuses on evidence of Head Start’s short-term outcomes as they provide the most robust evidence of program effectiveness. The findings show positive effects of Head Start in both the cognitive and socioemotional domains of development at the end of the Head Start year. This evidence of beneficial effects of programs is critical, given the recent evidence that long-term poverty depresses the cognitive and socioemotional development of young children.

No national evaluations have been conducted of the Head Start program in the past 20 years, although many specific demonstration programs within Head Start have been rigorously studied. Head Start’s parent agency—the Administration for Children, Youth and Families (ACYF) in the Department of Health and Human Services (DHHS)—has placed greater emphasis on conducting smaller-scale studies that are able to focus on particular policy questions. Still, Head Start evaluations have examined all of the primary outcomes listed above, with an emphasis on cognitive development. Because Head Start serves predominantly four-year-olds, this review focuses on findings relating to their development. In 1985, DHHS published a synthesis of existing studies based on meta-analytic methods. Although this synthesis is now more than 10 years old, it still provides the most comprehensive assessment of Head Start’s benefits. The review that follows begins with this synthesis, supplementing its findings with more recent studies where appropriate.

Across 72 studies, regardless of the particular measures used, the synthesis study found Head Start to have sizable effects on children’s cognitive development when measured at the end of the Head Start year. Furthermore, the 21 most rigorous studies (those that employed an experimental treat-
ment-control group design) showed an average effect size of 0.52 across all cognitive measures. An effect size of 0.52 indicates that the mean of the cognitive measures for the Head Start group was more than half a standard deviation above the mean for the control group. Differences of this magnitude are generally considered to be educationally meaningful. As Barnett recently noted, differences of this magnitude constitute “meaningful improvement in cognitive ability and can have important implications for children in terms of academic performance and placement in special education classes.”60

A recent study based on assessments conducted as part of the National Longitudinal Survey of Youth (NLSY) bolsters these cognitive development findings.61 The study involved a comparison of Head Start children with siblings who had another type of preschool experience or no preschool. The study is based on a national sample, an advantage over many of the smaller local studies included in the synthesis report. However, there are difficulties with the sibling-comparison design, and the sample may not be representative of all Head Start programs and participants. Study findings associate Head Start with large and significant gains in test scores among both whites and African Americans. With careful controls for family background factors, not only did Head Start children perform better than siblings who attended no preschool, but also, for white children in the sample, the effects of Head Start were much greater than the effects of attending other preschool programs. The cognitive outcome measure in this case was the Peabody Picture Vocabulary Test, which, although flawed in a number of respects, remains a strong predictor of later school achievement.

Head Start has also shown beneficial effects on children’s socioemotional development at the end of the Head Start year. Across 17 studies, the Head Start synthesis report found benefits of Head Start participation in educationally meaningful effect sizes on both achievement motivation and social behavior.69 These findings cannot be attributed to a particular outcome measure: the 17 studies included 18 different measures of achievement motivation and 11 measures of social behavior.

Even though the national Head Start program has, from the beginning, emphasized the importance of health services for children and their families, research focused on children’s health or physical development outcomes has been sparse. However, a random assignment evaluation in the mid-1980s in four counties with highly underserved populations found that, at the end of the year, Head Start children were much more likely than the controls to have received basic health services, enjoyed better access to health care services, experienced improved health status, eaten meals significantly higher in nutrient quality, and exhibited better motor coordination and development.62

Further, Head Start children who displayed pediatric problems upon program entry were less likely to have the same problems remaining one year later. An analysis of NLSY’s limited health data supported these findings of improved delivery of health services, associating Head Start with an 8% to 9% higher probability of being immunized.61

### Findings show positive effects of Head Start in both the cognitive and socioemotional domains of development at the end of the Head Start year.

### Indirect Program Outcomes

Most reviews of Head Start’s effectiveness include a discussion of the long-term benefits. However, policy considerations and methodological weaknesses are reasons for de-emphasizing the research of long-term gains. Although Head Start program planners had hoped that their program efforts would sustain benefits well into the elementary school years, a one-year program such as Head Start may not be sufficient to protect children from future risk. Additionally, while a number of studies claim to show a fade-out effect (such that gains present immediately after the end of the Head Start year are no longer found in second or third grade), their methodologies have not been sufficiently rigorous to support the conclusion that Head Start fails to have positive benefits in the long term.65

Longitudinal studies of a limited number of other early childhood programs
(many of which have features in common with Head Start) have demonstrated long-term effectiveness. Effects include positive outcomes on school achievement beyond third grade and reduced rates of grade retention, enrollment in special education, and delinquency.64 As the authors of the non-Head Start studies point out, however, the non-Head Start programs studied are smaller in scale than Head Start and thus able to be implemented with greater consistency. Model programs generally have been found to have larger effects than large-scale programs. Also, the “average” Head Start program might not be expected to produce the same results as high-quality Head Start programs.64

Studies of Head Start’s indirect effects for families, staff, and communities have been few, but the synthesis report found several areas in which the benefits of Head Start programs can be seen to extend beyond enhancing children’s development.59 Head Start parents participate in various paid and volunteer program positions that range from clerical to classroom to policymaking. In 1992, some 94% of enrolled families received needed support services through the program.65 Some studies have shown that parental child-rearing practices have been positively affected by Head Start participation, but others have not.39 Career development is only secondary to Head Start’s aims, yet some 35% of Head Start staff in 1992 were former children or parents of the enrolled Head Start children.65 Such employment opportunities become an increasingly important program benefit as low-income parents seek alternatives to public assistance.

Housing Assistance

For more than half a century, the federal government has provided housing assistance to low-income households with the overarching goal of providing “a decent home and suitable living environment for every American family.” The majority of federal housing assistance for low-income renters is through either project-based or household-based subsidies. Project-based subsidies include low-rent public housing and Section 8 construction or rehabilitation, through which the federal government subsidizes the rents of apartments or housing units built by private developers. Household-based subsidies provide rent subsidies to families to use in existing privately owned apartments as long as the rent is below the fair market rent, which is set at approximately the 45th percentile of the local rents for units that have been on the market during the previous two years. Both types of subsidies are designed to improve the quality of housing and to reduce housing costs to 30% of net family income. About 70% of housing assistance goes to recipients of project-based subsidies. Recently, however, the vast majority of new authorizations for rental assistance have been for Section 8 household-based subsidies because it is considerably cheaper to subsidize a family in an existing unit under a voucher program than to subsidize new construction or substantial rehabilitation.

Like the Food Stamp Program (FSP), housing assistance programs target one of the most fundamental of all human needs—a place to live. Unlike the FSP, however, housing assistance is not an entitlement: when the funds allocated to housing assistance are used up, eligible households are placed on a waiting list. In general, the system assigns highest priority to households with the following characteristics: (1) very low income, defined as income that does not exceed 50% of the median income in the local area; (2) housing costs that are more than half of family income; and (3) substandard housing.

To the extent that the goal of housing assistance is to provide decent and suitable housing for all, evaluating program outcomes depends on how criteria are defined and on whether families, especially those with children, live in housing that meets these criteria. Standards have been established for housing programs, but the relationship of these standards to child well-being has not been studied. Yet, housing assistance, perhaps more than any other program considered in this article, has a broad range of potential positive and negative outcomes.
Program Coverage

One of the most important factors inhibiting the effectiveness of housing assistance is the lack of funds to serve all eligible families. Estimates from the 1993 American Housing Survey indicate that rental housing assistance serves only about 26% of eligible very-low-income households (household income not greater than 50% of the local median income) and 6% of low-income rental households (household income between 50% and 80% of an area’s median income). In 1995, only 31% of AFDC households received any housing assistance. A more recent Conference of Mayors report based on 29 cities found that applicants for public housing waited for 19 months on average from the time they applied to the time they received assistance, and for Section 8 housing certificates, the average wait was 31 months. Households with children comprise 41% of unsubsidized very-low-income households with priority. In short, there is a huge unmet demand for housing assistance, especially among low-income households with children.

Achievement of Program Goals

Among recipients, housing assistance reduces the prevalence and magnitude of housing problems, but does not resolve them completely. In 1989, approximately half of recipient households experienced one or more housing problems—defined as either substandard housing quality, overcrowded housing, or excessively high housing costs—compared with almost 80% of eligible households not receiving assistance.

Affordability of housing is the major housing problem experienced by low-income households. Consistent with the program’s goals and design, housing subsidies reduce the cost of housing of recipient households compared with eligible households not receiving assistance. Nonetheless, 45% of subsidized households reported out-of-pocket housing costs in 1989 that exceeded 30% of their income. This finding likely reflects the choices of households to spend more than 30% of their income on housing or, perhaps, some underreporting of household income. In contrast, all eligible and unserved households with priority (by definition) and more than 60% of other eligible very-low-income renters had housing costs that exceeded 30% of household income.

Housing assistance also leads to a lower prevalence of substandard or overcrowded housing conditions. Only 13% of subsidized households live in substandard or overcrowded housing as compared with 26% of very-low-income households not receiving assistance. Physically substandard or overcrowded housing is more prevalent, however, among large families regardless of program status.

Indirect Program Outcomes

Housing status is directly related to families’ living standards, health, safety, education, and economic prospects. The cost of housing determines how much is left from a limited income for expenditures on food, clothing, and other items, and housing may also affect health, family formation, and stability.

A common criticism of project-based housing is the concentration of poor and minority families in economically depressed, violent, and physically deteriorating inner-city neighborhoods. This concentration of poor families can produce joblessness and general isolation from the economic mainstream, segregation, substance abuse, poor school performance, teen parenthood, and crime. Current housing assistance policy options recognize these negative effects of project-based housing and focus on the provision of household-based assistance in the form of rental certificates and vouchers. Presumably, the use of certificates and vouchers would enable poor families to move out of areas with high concentrations of poverty. However, empirical evidence on the success of certificates and vouchers is mixed. Although families receiving certificates and vouchers generally find housing in areas that are less poor and less segregated than public housing neighborhoods, many...
of these families continue to find housing in racially segregated and poor neighborhoods. Several factors are responsible for these location choices, including racial discrimination in the rental housing market, limited housing search experience and resources among families receiving assistance, and a limited supply of units.$^{71}$

Recent housing initiatives that have promoted residential mobility by combining vouchers with additional services such as outreach to landlords, participant screening, and housing search counseling seem more successful. Findings from these initiatives suggest improved opportunities for recipients: less segregated housing, higher employment rates, better success in school for children, higher graduation rates and college admission rates, and a higher level of satisfaction with life.$^{71-73}$

One unanswered question about housing voucher programs is the extent to which they cause rents in the private market to rise in response to the increased demand for housing. Available evidence suggests that vouchers had relatively small effects on market rents, but this conclusion may not apply in all housing markets or for large-scale programs.$^{74}$

Like food stamps, housing assistance acts as both an income supplement and an inducement to consume more of the subsidized goods. Without housing assistance, housing costs can have detrimental effects on children by squeezing household budgets and reducing expenditures on other necessities. Overall, it is estimated that housing assistance can effectively double family cash income for AFDC households, and this may result in improved outcomes for children.$^{74}$ Moreover, studies of both public housing and Section 8 programs indicate that recipients consume more housing and fewer other goods than they would with a cash equivalent.$^{75,76}$

One issue to address in assessing federal housing assistance is the extent to which the program creates incentives for households to work less. Rent subsidies decrease as household income increases, until 30% of income equals the fair market rent and the housing subsidy disappears altogether. Families living in public housing can never be evicted, but as their income goes up, rents also increase, until some project-specific, maximum level is reached. Although almost no evidence is available on the specific work disincentives of housing assistance, because most families that receive housing assistance also receive other support programs, it is likely that the combined effects of benefit reductions across a number of programs would present an important work disincentive.$^{76}$

**Conclusion**

The six programs reviewed in this article constitute most of the federally funded in-kind public assistance safety net for low-income children and their families. These programs are intended to mitigate the negative effects of poverty on the ability to meet such basic human needs as food, housing, education, and health care.

In general, the three food and nutrition programs are considered successful at providing food assistance to low-income children, starting with pregnancy and continuing through the critical growth and development periods of infancy, preschool ages, and school years. Currently, in the United States there is little evidence of energy and protein deficiencies caused by not having enough food. Iron-deficiency anemia in infants and children, once a very common public health problem with long-lasting effects on children’s cognitive growth and development, has declined significantly since the 1970s. The FSP is central to the food assistance safety net for low-income children. It provides food assistance nationwide to all households solely on the basis of financial need, without regard to age, sex, marital status, or family composition. The improved dietary status of FSP participants is consistent with empirical evidence concerning the low prevalence of energy and protein deficiencies in the United States. Moreover, the FSP appears to benefit poor children proportionately more than other population subgroups. The participation rate among eligi-
ble children is quite high, more than 90%, and the dietary impacts of FSP participation are strongest for children.

The WIC program is widely considered to have played a strong role in reducing the prevalence of iron-deficiency anemia in infants and children and in increasing intakes of certain targeted nutrients for program participants. These effects have resulted from the provision of iron-fortified foods to WIC infants and children and, potentially, by altering the content of infant and child cereals for all children. WIC may also improve birth outcomes. The school nutrition programs provide free or low-cost meals to most school-age children. These programs also are credited with providing foods that satisfy the dietary goals of breakfasts and lunches.

Despite these positive effects of the food assistance safety net, several questions and concerns remain. Recent concerns about diets focus more on diet quality than on food quantity, and only lately have the food and nutrition programs begun to address diet quality. The school nutrition programs, in particular, have levels of fat and saturated fat that exceed recommended dietary guidelines. In addition, most of the empirical evidence regarding the effects of the FSP and the school nutrition programs focuses on a limited set of dietary outcomes, and the long-term health and developmental effects on children have rarely been examined.

The Medicaid program has been successful at extending health care coverage and benefits to millions of low-income children. However, between 8.7 and 11.1 million children remained uninsured in 1993. Probably about one quarter of these uninsured children were eligible for Medicaid but were not enrolled. In addition, children enrolled in Medicaid do not have the same access to medical care as privately insured children, and little is known about the effects of Medicaid on children’s health status.

For Head Start, evidence accumulated from many different studies supports the conclusion that children who experience at least one year of the program show significant short-term benefits in their cognitive, social, and physical development and in receipt of health services. Enhanced cognitive development is seen in academic achievement, intelligence, and school readiness. Improved social development includes achievement motivation and social behavior. In the area of health and physical development, Head Start children demonstrate lowered incidence of pediatric problems, higher immunization rates, more nutritious diets, and improved motor coordination and development as compared with nonparticipants. Studies of the longer-term effects of Head Start, however, are inconclusive, largely because of methodological limitations.

Housing assistance is successful at improving housing quality and reducing the burden of housing costs for recipients. However, because of limited budgets, the goal to provide “a decent and suitable living environment for every American family” is far from being realized. There is a large unmet need for decent, affordable housing; only 26% of eligible very-low-income households received rental housing assistance in 1993. Because the effects of housing assis-

Research should look beyond the provision of goods and services and attempt to quantify the effects of these in-kind benefit programs on children’s health status, development, and general well-being.

...
the household budgets of poor families, not only by increasing their access to specifically designated necessities but also by reducing the squeeze on poverty-level household budgets by allowing the diversion of cash from the purchase of the program-targeted items to the purchase of other goods. The value of this indirect effect of these programs, although little studied, could be important for poor children, particularly in the current changing policy environment that, through recent welfare reform legislation and other efforts, may affect not only these specific programs but also the total amount of resources available to poor families with children.


9. U.S. Department of Agriculture, Food and Consumer Service, Office of Analysis and Evaluation. *Special Supplemental Food Program for Women, Infants, and Children (WIC): Eligibility and coverage estimates, 1994 update—U.S. and outlying areas*. Alexandria, VA: USDA, April 1995. Several methodological issues affect these participation estimates. For any program, it is very difficult to estimate income eligibility based on survey data, while generally accurate data on number of participants are available from administrative data. In addition, for the WIC program, all income-eligible individuals must also be at nutritional risk, and very little information is available concerning the percentage of those who are income eligibles and also demonstrate nutritional risk. Given these potential errors in measuring eligibility, which most likely lead to underestimating the size of the eligible population, participation rates of more than 100% may be possible, especially if the program has achieved basically full coverage.


11. The WIC food packages for infants who are not being breast-fed consist of iron-fortified formula, iron-fortified cereal, and vitamin C-rich juices. For children up to age five, the food packages include milk or milk substitutes, eggs, iron-fortified cereal, vitamin C-rich juice, and either dried beans or peas or peanut butter. Thus, the WIC food packages target the following specific nutrients: protein, vitamin A, vitamin C, calcium, and iron.


22. Birkhead, G., LeBaron, C., Parsons, P., et al. The immunization of children enrolled in the Special Supplemental Food Program for Women, Infants, and Children (WIC): The impact of different strategies. *Journal of the American Medical Association* (July 26, 1995) 274,4:312–16. In a field trial, WIC sites were randomly assigned to different immunization strategies: (1) escort model, where the child was escorted for immunizations; (2) voucher incentive model, where the family had to return to the WIC clinic more frequently for vouchers until proof of immunization was obtained; and (3) the usual referral role of the WIC program. Both the escort and voucher models resulted in children being immunized more rapidly than the traditional referral model.


40. For example, a report from the Office of Technology Assessment noted that data collected regularly through national health surveys on health measures such as the prevalence of chronic conditions or self-reported health status are not easily interpreted because they can be affected by improvements in diagnosis, medical advances, and differences in individuals’ expectations about what constitutes good health or how illness should be treated. U.S. Congress, Office of Technology Assessment. Healthy children: Investing in the future. OTA-H-345. Washington, DC: U.S. Government Printing Office, February 1995.

41. For example, Starfield estimated that, for the RAND Health Insurance Study, a sample size of 21,500 children would have been required to detect a small difference in health status for children ages zero to four. Almost 5,000 children would have been required to detect a medium size effect, and 2,100 children to detect a large effect. Such sample sizes were well beyond the resources of the experiment; Starfield, B. Giant steps and baby steps: Toward child health. American Journal of Public Health (June 1985) 75,6:599–602.


57. Many of the demonstration program evaluations have reported favorable Head Start effects. See, for example, Love, J.M., and Nauta, M. *Evaluation of the Home Start demonstration program: Final report*. Ypsilanti, MI: High/Scope Educational Research Foundation, 1976. Their findings are not reviewed here because the demonstrations were special programs that went beyond standard Head Start practices and because they were implemented in a small number of selected locations.


59. McKey, R., Condelli, L., Ganson, H., et al. *The impact of Head Start on children, families and communities: Final report of the Head Start Evaluation, Synthesis and Utilization Project*. Washington, DC:CSR, Inc., June 1985. This report is the only formal, analytic attempt to combine findings from many disparate studies, following a careful process of including research studies in the meta-analysis only if they met strict criteria, including designs that were either experimental or studies comparing children before and after Head Start participation and having adequate information for calculating statistical effect sizes.


63. Barnett, for example, argues that the so-called fade-out effect is an artifact of the positive impact that Head Start has on grade retention and special education placements, and over time children retained or placed drop out of the longitudinal follow-up sample. Barnett, S. Commentary: Does Head Start fade out? *Education Week*. May 19, 1993, p. 40.

64. The winter 1995 issue of *The Future of Children* (vol. 5, no. 3) reviewed much of this literature. Particularly relevant to this discussion are the papers by Barnett and Yoshikawa (see note no. 58). Barnett reviewed 36 studies and found that large-scale programs can produce long-term cognitive and academic benefits for disadvantaged children. Yoshikawa argues that programs combining family support with early education (which the best Head Start programs do) show the greatest promise in reducing antisocial behavior and delinquency.


