Is WIC Worthwhile?

The Special Supplemental Food Program for Women, Infants and Children (WIC) was first authorized in Public Law 92-433 for fiscal 1973 at a level of $20,000,000. Considerable political controversy followed this authorization. The Administration impounded the funds and was taken to court by various interested parties. In the next year the authorization was doubled, to include the impounded funds of the first year. By 1975, the authorization had risen to $250,000,000, and rose to $950,000,000 for fiscal year 1982. In fact, the appropriation has remained stable over the last few years at somewhat over $900,000,000. Thus, in a decade the WIC program has become a very large program, exceeded among the federal feeding efforts only by food stamps and the school nutrition programs.

There has been no lack of support for, or opposition to, the WIC program. While Congressional support has been drawn from both political parties, commitment of the executive branch to this program has waxed and waned. As of the time of writing of this editorial, the current administration has proposed to cut the program to 640 million dollars, and to shift it to state responsibility, via the block grants for Maternal and Child Health.

The position toward WIC, not surprisingly, generally follows from prior political, social, economic, and philosophical beliefs, rather than on secure evidence of the benefit of the program, while commitment to, and belief in, the need for thorough evaluation of the highest scientific merit has been, from the evidence, less than certain. Some of this uncertainty is reflected in inconsistencies and changes in the legislation over time. The program is conceived as an eligibility, rather than an entitlement program, and thus there is a moral, but no legal, obligation to seek out all individuals at the very highest risk of nutritional need. Eligibility criteria have changed, however. The initial legislation, although somewhat ambiguous, defined risk on a population or group basis. Thus, “pregnant and lactating women . . . includes mothers from low income populations who demonstrate one or more of the following characteristics: known inadequate nutritional patterns, unexpectedly high incidence of anemia, high prematurity rates, or inadequate patterns of growth,” and later, “infants (are to come from) low income populations which have shown a deficient pattern of growth, by minimally acceptable standards, as reflected by an excess number of children in the lower percentiles of height and weight” [author’s emphasis in italics]. It seems fairly clear that risk was defined by membership in a group in which rates of risk characteristics are high. The regulations, however, did define risk much more on an individual basis. In Public Law 95-627, (1978) definitions were changed, to be closer to the former regulations, and now read, “Nutritional risk means (A) detrimental or abnormal nutritional conditions detectable by biochemical or anthropometric measurements, (B) other documented nutritionally related medical conditions, (C) dietary deficiencies that impair or endanger health, or (D) conditions that predispose persons to inadequate nutritional patterns or nutritionally related medical conditions including but not limited to alcoholism and drug addiction.” Thus, to come from a population exhibiting patterns presumed to indicate group nutritional deficiency is no longer a sufficient criterion for eligibility.
The importance of evaluation was also changing, as well as those meant to be served. The initial legislation, while only a few pages long, did require evaluation. By 1975, the legislation obligated "state or local agencies or groups carrying out any programs under this section to maintain adequate medical records on the participants assisted to enable the secretary to determine and evaluate the benefits of the nutritional assistance provided under this section." Later an Advisory Committee was created, and directed to "study the methods available to evaluate successfully and economically, in part or in total, the health benefits of the special supplemental food program." This Committee reported on March 1, 1976. In 1978 authorizing legislation required that "nutrition education shall be evaluated annually by each state agency, and such evaluation shall include the views of participants concerning the effectiveness of the nutrition education they have received." Presumably, by this time, health benefits were no longer considered matters of controversy.

There has been no dearth of research interest in the WIC program. This may be, in part, a function of its being the largest federal program with an explicit obligation for nutritional education. Among the large number of nutrition professionals involved in the program, many have been deeply interested in whether the program has been successful and in improving the services provided. However, the conclusions that can be drawn from the WIC evaluatory efforts are very limited. The only attempted comprehensive and nationwide evaluation of health benefits so far completed was done early in the program by Edozien, et al. There are several methodological limitations to that study. It was performed very early in the program, possibly before firm judgment was possible. There were no controls, but rather early recipients of benefits were compared to those who arrived in the program later. To assume comparability between those participating at different times in pregnancy or in the life cycle would appear to be unjustified from almost all past behavioral research. Also, the measure of WIC participation during pregnancy, duration of benefits, is confounded by duration of gestation. In other words, the same woman, delivering prematurely, would be categorized as receiving less treatment, than if she had carried to term. Thus, the approximate 136g birthweight difference observed, which the authors asserted was attributable to five or six days difference in duration of gestation and not to accelerated fetal growth, was probably an artifact of the analysis.

A second national evaluation was begun in 1979 and was active through the summer of 1981. At that time, the US Department of Agriculture decided to reformulate the research design, and the new design, created during 1981–1982, is about to enter nationwide field work, as a joint enterprise between our group at the Research Foundation for Mental Hygiene in New York City and the Research Triangle Institute in North Carolina.

While these have been the only two nationwide efforts, there have been many smaller studies, some of them reviewed recently by Graham and Greenberg, on request of the Office of Management and Budget. Graham and Greenberg concluded that observed improvements in average birthweight, the incidence of low birthweight, or in infant and child growth that were ascribed to WIC were more likely due to participation in general health programs, or to improperly controlled research design or artifacts of the way in which data were analyzed. In fact, benefit may have occurred, but past studies of WIC have not been designed, executed, or analyzed well enough to draw any firm conclusions one way or the other. We are thus faced with many serious questions. Why has the program not been better evaluated? Is it beneficial? Are the benefits commensurate with the costs? How can we improve future performance?

While a high level expert panel (the Advisory Committee on Nutrition Evaluation) did report to the Congress and the Secretary of Agriculture on these issues, the Committee did not have a further direct role in evaluation. Moreover, while the resources available for program improvement evaluation have a limit of no more than one-half of one per cent of program funds, or $3,000,000, a year, there is no obligation to fully spend that money and some of these funds are likely to be returned to WIC program operation for fiscal 1982. The legislated mandate to the states to maintain data for evaluatory purposes has been acted on only fitfully. There is no regular flow of information to the Department of Agriculture on the health benefits of the WIC program that could be used for nationwide surveillance. (Some states voluntarily participate in the Nutrition Surveillance Program of the Centers for Disease Control.)

In addition to other methodologic difficulties in executing high quality evaluation such as the great diversity in implementation of the program at the local level. An important limitation has been lack of agreement on what indices of benefit would be both valuable and likely to be responsive to the WIC program. It is generally agreed that there is so little overt clinical malnutrition in the United States that rates of such disorders are irrelevant. Rather, we must be concerned with more subtle, sub-clinical problems of nutrition. With these we are less sure about what represents abnormality. What deficits the program might be expected to prevent or reverse, nor to whom the program should be aimed. Thus, goals become unclear. While no one would argue that decreased perinatal and childhood mortality, or more advanced performance on behavioral and psychological examinations, or reduction rates of anemia, would not be beneficial, the value of other changes is less clear. Unless accompanied by reduced mortality, it is not at all certain that small changes in birthweight confer other health benefits. Excess weight, unaccompanied by linear growth, is almost surely not in the long-term benefit of the child. Even increased size may or may not confer greater vigor, longer life, less morbidity, etc. In other words, growth measures tend to be surrogates for well-being that may be correlated with, but not caused by, growth.

Can we direct evaluatory efforts toward goals that are not uncertain or intermediate steps in well-being, but rather are outcomes that might truly justify this complex and expensive program? We think so. The current national WIC evaluation for the first time will attempt a nationwide study of the quantitative effects of participation in the WIC program on perinatal mortality, as well as on birthweight.
maternal anemia, child somatic and psychological development, etc. The study of Hicks, et al, in this issue of the Journal, is an important first step in addressing possible effects of WIC participation on cognition and behavior. This study needs extension, replication, and elaboration, because, although of moderately sound design, there are limitations in accepting the dramatic findings as generally applicable. It is a very small study (only 21 sibling pairs), the assessor was not blinded to whether a child was a case or a control (the only cognitive measure that was blinded was the grade point average in the first year of schooling), and the older (control) sibling was recruited into WIC as a child, rather than in utero, and therefore may have been identified as being at nutritional risk in order to be eligible for benefits. Thus, the controls are likely to have been unrepresentative of the population from which they were drawn, but rather skewed toward being of lower health or at higher risk than their sibs. (This effect has been termed “skimming” by Kenny.) Also, these dramatic results are of far greater magnitude than might be expected from past studies of nutritional supplementation in populations probably far more deprived than the one studied in Louisiana and the positive effects are far greater than the adverse sequelae of Kwashiorkor. Positive results are, not surprisingly, more dramatic and find their way into the literature more easily than do negative findings. The large differences found by Hicks and colleagues should be carefully reassessed. The study is a challenge to look further at the behavioral and cognitive effects of the WIC feeding program.

A program of the magnitude of WIC should have routine and regular surveillance of both process and outcome. If we are to rationally allocate resources, we must know whether programs work. Perhaps, as a society, we do not really wish to rationally allocate, but rather to create, support, extend, or terminate programs based on prior assumption and belief, rather than on the actual benefits, either achieved or potential. The current Administration has suggested that the WIC program be drastically reduced and included in the maternal and child health block grants to the states. Others have fought this plan vigorously. Neither side has much information on which to base attack or defense of the WIC program. Possibly, as a society, we can move to more rational ways of dealing with resource allocation.

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Research Quality, Methodologic Rigor, Citation Counts, and Impact

We might all hope that, in some sense, good research has more impact than poor research. Does it? Before one can begin designing research studies to assess this matter, at least three issues require some attention.

- First, how shall we define the “quality” of a published research report? We might define it in terms of the report itself: does it tell us what we need to know, warts and all, or does it lead us away from a full understanding of the study design, findings, and implications? Alternatively, we may choose to define quality in terms of the work itself, not the report. But what weight shall we give to innovativeness, relevance, or methodologic rigor? Could a study that is outrageously bad in scientific terms be, in fact, very good on other scales by stimulating new (and perhaps better) work? If quality is defined in terms of lasting impact, should we not expect to find that the seminal studies, undertaken before a field has been well mapped out, would rank higher than those that come last, filling in third decimal places with exquisitely designed but now nearly irrelevant exercises? Setting on a definition of quality in research investigation is not a trivial task.
- Second, once we have defined quality, how shall we...