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INTERNATIONAL ASSISTANCE FOR MATERNAL AND INFANT NUTRITION IN DEVELOPING COUNTRIES

Report of a Conference

January 30-31, 1978

Committee on International Nutrition Programs
Food and Nutrition Board
National Research Council

CONTRACT AID/TA-C-1428

National Academy of Sciences
Washington, D.C.
August 1978

NOTICE: The project that is the subject of this report was approved by the Governing Board of the National Research Council, whose members are drawn from the Councils of the National Academy of Sciences, the National Academy of Engineering, and the Institute of Medicine. The members of the Committee responsible for the report were chosen for their special competences and with regard for appropriate balance.

This report has been reviewed by a group other than the authors according to procedures approved by a Report Review Committee consisting of members of the National Academy of Sciences, the National Academy of Engineering, and the Institute of Medicine.

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At the request of the Office of Nutrition of the U.S. Agency for International Development (AID), the Committee on International Nutrition Programs of the Food and Nutrition Board, National Academy of Sciences, sponsored a meeting of experts in Washington, D.C., on January 30-31, 1978, to discuss approaches and actions that AID and other national and international assistance agencies could consider with respect to nutritional problems of mothers and infants, especially weanlings in developing countries. The meeting was organized and chaired by Dr. Giorgio Solimano, a member of the committee. It was attended by experts from several developing countries and from the World Health Organization. (Attendees are listed in the Appendix.)

Reflecting the purpose of the meeting, this report does not attempt to review scientific knowledge, but it does present a consensus of expert opinion and judgment exercised over two days of discussion on actions that appear to be desirable and feasible in light of the nutrition problems of pregnant and lactating women and of young children.

Although there are insufficient data on many aspects of the subject, action on the recommendations made in this report should not be postponed. The final section identifies areas in which studies are needed.

Women and children in low-income families, who constitute the majority of the population in developing countries, are the most vulnerable to nutritional deprivation. Consequently, poor nutrition is particularly severe in this group. High rates of morbidity and mortality among infants and preschool children in developing countries, which consistently have been associated with malnutrition, attest to the intensity and pervasiveness of the problem. The improvement of the nutritional status of infants can contribute to the reduction of the incidence, severity, and duration of disease and the number of deaths in young children. Well-fed infants are more likely to grow into healthier, more alert, productive children and adults than those who have suffered nutritional deprivation. The provision of adequate nutrition for pregnant and lactating mothers and for young infants requires particular attention from policymakers and program planners because fetuses and infants have dietary needs that reflect the special demands of rapid growth and physiological change. These are sufficient arguments for making infant and maternal nutrition a major concern of government policy and international assistance efforts.

In recent years, special attention has been focused on the decline in the incidence and duration of breast-feeding in developing countries. Low-income families in those countries frequently cannot afford adequate amounts of substitute food for infants. They also have a high risk of microbial contamination. In these situations, the decision not to breast-feed has particularly serious consequences for birth spacing and for infant health, growth, and chances of survival.

But even where breast-feeding is normally practiced, severe malnutrition can exist in early childhood. Poor maternal nutrition during pregnancy often contributes to low birth weight (fetal malnutrition) and early infant death. Nonetheless, the quantity and quality of breast milk is usually surprisingly good, even in poorly nourished women, despite cumulative detriment to the mother's health. However, recent reports show that malnourished, unhealthy, overworked mothers in some countries may have difficulty in sustaining adequate breast milk as the baby's sole food after the early months. Even when lactation is adequate, breast milk should be supplemented by weaning foods after four to six months; otherwise, nutritional deficiencies will result. These deficiencies may become increasingly serious as the child's need for food increases with age. Nonetheless, in most situations, there are substantial nutritional and immunologic advantages to breast-feeding in the early months of life, when the child is particularly vulnerable to nutritional deprivation.

Infant malnutrition is nearly always associated with other forms of deprivation, such as poor family nutrition, low family income, crowded and unhygienic living conditions, and inadeaquate access to health and other social services. Even relatively high rates of aggregate economic growth do not always lead to improved nutrition among low-income groups. The persistence and pervasiveness of malnutrition and deprivation often are linked to particular national patterns of production, consumption, and distribution, and to underlying political and economic

relationships. However, in certain cases, other patterns and relationships may result in high standards of nutrition among adults and children despite relatively low levels of national income.

The recommendations in this report are restricted to health and nutrition matters. The conferees have not attempted to formulate recommendations related to the widely held view that the success of infant nutrition programs of national and international assistance agencies is more likely in countries that are effecting increases in real incomes in low-income groups; extending social, economic, and political participation to formerly excluded groups; and restructuring social services to make them available to the entire population.

Nonetheless, the conferees' recommendations do go beyond what traditionally have been considered nutrition activities. Indeed, the conferees believe that infant nutrition cannot be discussed without placing it squarely within a more general framework of infant, maternal, and family health care. One reason for adopting this broader framework is the inherent relationships between health and nutrition on the one hand and between infant health and maternal health on the other. A second reason is that efforts to improve infant nutrition in developing countries may have to be organized and managed by the health care services in those countries. A critical determinant of the success of these efforts will be the extent to which a country's health services are accessible to the target groups, i.e., infants and mothers from low-income families.

Where access to health services is limited and is not being extended, efforts solely to improve infant nutrition are likely to produce only limited improvement in health status.

Many of the ideas and recommendations contained in this report are not new. Some work related to the recommended programs and research is underway in various institutions in several countries. Because of the limited time available to the conferees, they could not assess this work, nor could they assess the extent to which these suggestions are already practiced by national and international assistance agencies and their effectiveness. The conferees believe it to be of utmost importance that these agencies comprehensively review their programs in health, nutrition, and family planning. The purpose of such a review would be to determine what is and what is not working, e.g., in the reduction of mortality and morbidity; to provide information needed for determining substantive and operational (including funding) modifications; and to provide a basis for deciding whether a more integrated strategy in these program areas would require organizational or procedural changes within the agencies.

An important consideration in proposing a strategy for improving infant and maternal nutrition is the resources available, e.g., funding, trained manpower, and the number of assistance agencies that would provide health care at the international, national, and local level. An additional consideration is the requirement for community participation and support at the local level. Resource availability will

determine the feasibility of any specific intervention, and in some cases, may affect the selection of interventions.

Different social, economic, and environmental characteristics must be taken into account. The design of interventions should reflect an awareness of traditional culture, socioeconomic organization, and environmental hazards. Effective planning in nutrition also requires readjustment for differences in food availability, marketing practices, family relationships, consumption patterns, and food preferences.

The role of international assistance should be considered from several perspectives. Bilateral and multilateral assistance efforts must be sensitive to the suitability of certain activities for specific areas, donor agencies, and the international setting for those activities, and to the need for sharing financial and administrative tasks. Assistance programs should range from consulting services to the direct initiation and full sponsorship of programs.

The etiology and pattern of early childhood disease in disadvantaged populations point to the critical linkages among such factors as lactation, birth spacing, health status, and nutritional status. Therefore, problems of maternal and infant nutrition probably should be addressed by a comprehensive approach within which nutrition intervention would be fully integrated. Maternal and Child Health (MCH) services such as prenatal care, prevention and treatment of infection, and supervision of growth and development are likely to be crucial to the success of any nutrition intervention. Moreover, the

benefits of birth spacing from family planning and the effect of certain contraceptives on lactation have important nutritional implications. In turn, appropriate nutrition activities are likely to reinforce the effectiveness of health and family planning services.

Programs in nutrition, maternal and child health, and family planning also have a common need for health education components, outreach efforts, training of personnel, and evaluation. The target populations for health, family planning, and nutrition programs overlap considerably, adding to the advantages of a comprehensive approach.

RECOMMENDATIONS

In addition to the recommendations set forth below, national and international assistance agencies will need to be particularly sensitive to the needs and priorities put forth by developing countries; to the importance of incorporating practical evaluation techniques into field programs; to the multidisciplinary nature of planning, project design, implementation, and evaluation; and to their own organizational shortcomings in both intraagency and multilateral coordination. There may also be a need to increase the national and international financial resources that are devoted to assistance on problems of nutrition and the health of mothers and children.

Program Recommendations

AID, together with other interested national and international assistance agencies, should:

1. Encourage and assist interested governments in their attempts to include the promotion of adequate breast- and infant-feeding in the design and management of all levels of health services and to integrate nutrition improvement efforts with related program areas. Special assistance should be given to governments in assessing alternative delivery systems, in directing supplementary feeding programs to high risk groups (especially weanlings, pregnant teenagers, and pregnant and lactating women); in linking such programs with health services and nutrition education programs; and in assuring periodic evaluation of supplementary feeding in relation to other programs.
2. Assist governments that require financial and technical support in developing educational programs and materials on breast-feeding, child-spacing, and nutrition practices for mothers and infants, especially weanlings; and in training professionals in maternal/child health and nutrition with emphasis on the training and utilization of auxiliaries, community health workers, and volunteers.
3. Create and fund an independent international consultative group on maternal and infant nutrition problems, including the special requirements of weanlings. This group would provide advice and evaluation drawing on experts from developed and developing countries; build an information clearinghouse mechanism to promote

efficient dissemination and sharing of data and reports on research, services, training techniques, programs, and projects; and provide information to national and international policymakers on the significance of maternal and infant nutrition problems and practices, including breast-feeding and supplements for weanlings.

4. Assist, when appropriate, those governments and international organizations that wish to investigate the need for and feasibility of policies and measures affecting the practices of the commercial food sector, particularly in the promotion and marketing of infant foods as substitutes for breast milk.
5. Assist, when appropriate, governments that are interested in evaluating the costs and desirability of measures to protect pregnant and lactating women, including the provision of crèches, occupational health and safety codes, maternity leave policies, supplementary feeding programs, and child care facilities.
6. Finance and provide technical advice to governments for nutrition surveillance of high risk groups as part of the process of generating the information that is needed to initiate and manage nutrition and health programs.

Recommendations on Research, Evaluation, and Data Collection

Although enough is known to justify the program recommendations set forth above, it is important for national and international assistance agencies to support work directed at filling the gaps

in knowledge in order to arrive at a better understanding of the nature, determinants, and consequences of maternal and infant nutrition problems and to design and implement cost-effective interventions. Research and the collection and analysis of data are likely to encompass three categories: biomedical programs, cultural settings and practices, and service delivery systems.

I. Biomedical Programs.

Examples

1. Investigations of the impact of nutrition on pregnancy outcomes.
   a. Development of maternal anthropometric methods (weight, height, body composition) for surveillance and risk assessment purposes to be used before, during, and after pregnancy.
   b. Evaluations of the effect of supplementary feeding--type, amount, timing--on maternal and infant health.
2. Investigation of the interaction of nutrition, lactation, and amenorrhea. Analysis of the effect of specific contraceptives on these variables and development of methods that do not interfere with breast milk production.
3. Investigation of factors responsible for successful or inadequate lactation (including maternal nutrition and ill-health and environmental stress), as judged by the volume of milk secreted, the

composition of the milk, and, above all, the growth and health of infants; and assessment of the effectiveness of methods of improving lactation with specific attention to maternal diets during lactation and pregnancy, including the optimal use of local foods or, when appropriate, targeted maternal feeding programs.

4. Evaluation of the impact on pregnancy outcomes and maternal and child health that may result from fortification of food to counteract specific deficiencies.

II. Cultural Settings and Practices.

Examples

1. Basic epidemiologic research on infant feeding and care practices in order to understand the characteristics, especially the attitudes, knowledge, and practices of mothers of families that have been successful in child-rearing under adverse circumstances.
2. Collection of information on the quantity and quality of available weaning foods. Development of means to improve the cost/nutrient value of locally available foods.
3. Assessment of health workers' knowledge, attitudes, and practices with respect to the promotion of breast-feeding and infant-feeding. Evaluation of the content of training programs for all levels

of personnel working in the areas of breast-feeding, infant care, and maternal nutrition.

4. Determination of whether, or the extent to which, the promotion and marketing of infant formula and food products affect mortality and morbidity.

III. Service Delivery Systems.

Examples

1. Collection of data on alternative models for delivery of integrated nutrition, health, education, and community services, their utilization and acceptor and nonacceptor characteristics, and their cost-effectiveness relative to improved health and nutrition.
2. Evaluations of the potential impact of other social services on health and nutrition, particularly their promotion and support of breast-feeding and other beneficial infant care practices.

The foregoing is not an all-inclusive list; rather, it is a basis for the development of an internationally coordinated and financed research, evaluation, and data collection program. This preliminary list lends itself to consideration by national and international assistance agencies as well as by the independent international consultative group that was recommended above.

APPENDIX

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