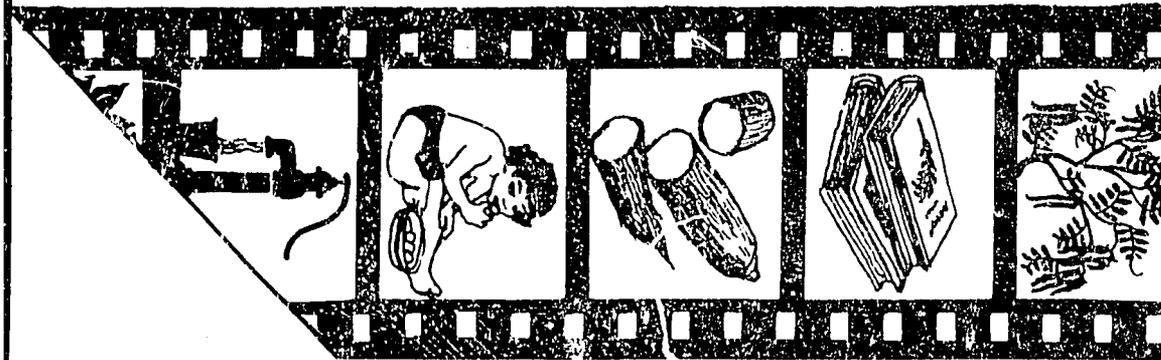


Using Communications to Solve Nutrition Problems

A COMPENDIUM



USING COMMUNICATIONS TO SOLVE
NUTRITION PROBLEMS: A COMPENDIUM

An International Nutrition Communication Service (INCS)
Publication

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Editor

- June 1986 -

This project has been conducted under Contract A.I.D./DSAN-C-0209, Project No.931-1065.14.
Project Officer: Maura Mack, Office of Nutrition,--Science and Technology Bureau,
Agency for International Development, Washington, D.C.

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ACKNOWLEDGEMENTS

The editor would like to acknowledge gratefully the assistance of other Education Development Center, Inc., staff in completing this publication. In particular, the work done by Barbara Allison, Ellen Knight, and Mary Jane Neuendorffer was essential in getting this Compendium into its final form.

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INTRODUCTION

Using Communications to Solve Nutrition Problems: A Nutrition Education Compendium contains eighteen articles profiling state-of-the-art nutrition education technologies and case studies. Many of the articles derive from the experience of the International Nutrition Communication Services (INCS), a USAID-sponsored project that has provided technical support in nutrition education to 40 developing countries since 1979. INCS specialists have collaborated with host country counterparts in developing ways in which communications skills can be used to change the nutrition-related knowledge, attitudes, and practices of vulnerable populations. Formative research, message design, materials development, media usage, training and other related techniques are increasingly being used in a systematic way to tackle nutrition- and health-related problems. The experience of INCS has provided us with with new insights into how communication skills can be used more effectively.

Our Compendium is divided into two sections: Part I, Nutrition Education Issues, and Part II, Case Studies. The "Issues" section highlights nutrition education trends, concepts, and techniques that are of current concern to professionals in the field. The "Case Studies" section profiles project experience from INCS and elsewhere in terms of lessons learned and relevant state-of-the-art methodological thinking.

The "Issues" section of the Compendium begins with "An Analysis of the State of the Art of Nutrition Education" by Ronald Israel. Israel reviews the literature of recent years and concludes that there has been a tremendous increase in our ability to design and implement effective nutrition education programs. The challenge is to translate our new base of pilot project experience into more broad-based policies and programs that can help solve the wide range of serious nutritional problems affecting the health of people around the world.

Israel believes the major problem currently facing nutrition education is one of institution building. For example, social marketing, perhaps the most effective nutrition communications approach of the last decade, requires a fairly sophisticated array of technical and management skills. Many countries, particularly in the developing world, lack the skills, resources, and manpower to carry out effective nutrition social marketing programs. Either new resources or new institutional vehicles are needed to enable us to realize the advances that have been made in nutrition education's state of the art.

The social marketing approach to nutrition education emphasizes understanding of the group of people to be addressed--the "target audience." Mark Nichter presents his "negotiation" approach to nutrition education as a means toward establishing rapport with the audience and working within their socio-cultural perceptions. He notes that any nutritional advice that does not take into account indigenous health values, perceptions, concerns, and needs will most likely be rejected. The educator should, therefore, go beyond identifying what the audience knows and "feels," to utilizing traditional ideologies in designing the educational messages and campaigns--to work within the system, so to speak.

Carol Farkas provides an even more specific example of cultural factors impeding effective nutrition-related communication in Canada. Her study explores culturally specific communication factors that influence and possibly hamper information-sharing between Native Canadians and non-Native North Americans (i.e., health educators). She finds that the cultural value that Native Americans place on social autonomy often acts as a barrier to nutrition education exchanges with outsiders. Besides this, there are basic differences in communication etiquette, including non-verbal behavior; in perceptions of teaching and learning styles; and pictorial, visual, and verbal literacy frames of reference—including colors and their symbolic content. Her studies also indicate that communication patterns are often brought about by essential differences in reasoning structures—ways in which concepts are analyzed and learned, such as the relationship between food and health. Farkas concludes by noting that unless educators can determine these communication variables and work within those norms, nutrition education programs will be destined for probable failure.

In keeping with this need to understand socio-cultural factors that affect communications, nutrition educators have had to pay more attention to gathering information about their audience before designing messages. Olivia Holmes provides an excellent description of focus group discussions, a qualitative research technique that is useful in providing information needed for designing communication materials and strategies. She also suggests guidelines to be followed in making the most effective use of this technique. This is done within the context of an INCS-supported project that took place in Tunisia, where Holmes trained communications/education personnel in focus group methodology. Trainees first explored the use of focus groups to examine the attitudes, behaviors, and motivations of their audiences. The same methodology was later used to select key content areas to be addressed in the educational materials, to concept test the educational aids, and finally, to pre-test the materials developed. Holmes notes that focus group sessions may indicate that a message or medium, appropriate for one audience, may be totally unsuitable for another.

This point is picked up by Richard Manoff, who stresses that there is no "perfect" message for all people. Message development is difficult because it needs the proper research and effort at each stage, but this effort is necessary because one poor message may doom an entire educational project. Manoff notes that educators need to segment their audiences and specify the particular problems to be addressed (the principle that different audiences need different messages at various times). He then outlines the factors that designers must follow in order to produce effective and relevant messages. These factors relate to content (what actions the audience is required to take to change behavior), design (number of ideas, cultural relevance, message style, etc.), persuasion (rationale for action, empathy with audience, believability of the solution proposed), and memorability (how should the main theme be reinforced). The "perfect" message is a result of careful work by people skilled in their craft.

But even the perfect message must be disseminated through the appropriate media. Benedict Tisa makes a plea for educators to look for and use innovative media to carry these messages. Tisa suggests some possible support media, which may promote awareness, arouse interest, and even encourage a chain reaction of information-sharing among people. Some media

he has used for this purpose include rubber stamps, postcards, chants, and newspaper inserts. He also recommends small, portable media, such as audiocassettes, since communicators often have to face the problem of distribution of information. As does Manoff, he emphasizes that materials and message design must be individualized for each situation, and that in their design, one must proceed slowly, testing all assumptions.

Marcia Griffiths' article on growth monitoring and nutrition education describes how a social marketing process was used in two INCS projects carried out in Ecuador and the Dominican Republic. In both cases, the emphasis was on designing and implementing an overall communications strategy in which growth monitoring and nutrition education are combined in a mutually supportive fashion. In this way, both activities can be utilized effectively in development and feeding programs to help reduce infant mortality and improve child health.

Peter Lamptey outlines ways in which nutrition education should be integrated into primary health care (PHC) programs. Lamptey feels that the primary health care's emphasis on community self-reliance needs to be supported with appropriate nutrition education activities. The priority areas that he identifies for integrating nutrition into primary health care are: growth monitoring, food supplementation, maternal/child health services, agricultural extension, nutritional rehabilitation, and training of field-level health workers.

Robert Hornik looks at health education programs from a different perspective--that of a program evaluator. Hornik notes that often evaluators are most useful during the design phase of programs, as they can help to focus on what factors should be measured (i.e. what questions should be answered in light of scarce evaluation resources and political realities). An evaluator can assist program designers in testing the assumptions upon which they have based their entire program concept and structure, thus helping to identify potential problem areas before they arise.

Hornik discusses several issues relevant to many breastfeeding program evaluations. Among these are the near impossibility of sorting out the overall effects of each project component in terms of general outcome, the difficulty of estimating the effect that mass media has upon behavior change and the fact that measures of knowledge and attitude change do not necessarily mean a subsequent change in breastfeeding practices. He also notes the pros and cons of using focus groups or individual interviews, in terms of sampling and reliability of information gathered.

The second section of the Compendium describes a variety of landmark nutrition education projects. Marcia Griffiths in her article "Nutrition Education's Promise: Can It Be Kept?" describes a project designed to show the effects of nutrition education in a program without food supplements or any other special intervention. The systematic and creative social marketing approach she describes significantly improved the growth of targeted children. Griffiths leads us through some of the processes employed by the Nutrition Communication and Behavior Change Component of the Indonesian Government's Family Nutrition Improvement Program (1977-1982).

We learn about the way in which target audiences were identified, analyzed, and segmented; how villagers contributed to decisions about the project's messages, media, and materials; how the project trained field workers to play an effective role; and how the crucial tasks of monitoring and evaluation were carried out. Griffiths believes that the Indonesian project's approach is replicable and, if correctly applied, can greatly increase the effectiveness of all nutrition education efforts in developing countries.

Somchai Durongdej and Ronald Israel present a social marketing case study of an INCS-supported breastfeeding promotion program carried out in Thailand. The project was intended to make hospital practices in Bangkok more supportive of women who want to breastfeed. The project organized lactation management training for health professionals from participating hospitals. An international advertising firm lent its support to the project, designing posters and other educational aids used to promote improved hospital practices. The program has recorded substantial accomplishments. Most of the hospitals have implemented changes in procedures to encourage mothers to breastfeed and to discourage the use of prelacteal feeds. Mothers' knowledge of breastcare has increased, and the proportion of mothers initiating breastfeeding within twenty-four hours of birth has increased.

The PROALMA study provides another example of a successful hospital-based breastfeeding promotion project. As described by Judy Canahuati, this pilot project was an integrated and coordinated effort to increase health professionals' awareness and understanding of breastfeeding and to change hospital policies and routines to support breastfeeding. As in Thailand, the program stressed the training of health professionals and developed educational materials. The project has managed to bring about substantial change: adoption of "rooming-in" as standard procedure, banishment of bottle and formula in participating hospitals, and more mothers breastfeeding soon after birth. Both the Honduras and Thailand projects testify to the tremendous effect that focused, integrated education programs can have in health institutions.

Both Dale Huntington and Nancy Minetti have provided us with case studies that illustrate many of the points brought out by the other authors. Huntington describes the CARE/Congo Nutrition Education Project, set up to attack the problem of protein-energy malnutrition through a combination of mass media, smaller-scale media, and group educational methods. The project focused on a target group (mothers with children aged 0-5 years), implemented a KAP field survey that led to the identification of improper weaning practices as the problem to be addressed, developed messages and selected media, produced materials and trained a large number of field agents from a variety of government services. While noting that this was a well conceived and managed project that accomplished a great deal, the project evaluation also brought out several problematic factors that need to be addressed by all education programs. In this case, training could have been more comprehensive and continuous; the research left several qualitative areas unexplored, including socio-cultural factors affecting nutritional behavior; the choice of media was not based on any research, nor were the various media and messages coordinated in their presentation; and, finally, a realistic system of formative evaluation was not included in the program design.

The CARE/Sierra Leone program, "Small Talks," on the other hand, was smaller in scale and employed a more systematic design. Following a baseline survey of pregnant and lactating mothers, five health outreach field sites were chosen for the project. Having discovered that radio was not widely used, that illiteracy levels were high among the target audience, and that electricity was unavailable, staff chose to use a simple medium, a flip chart, for group discussion sessions in the villages. Field workers were trained to use the flip charts and communicate interactively with villagers. Although an evaluation carried out at the end of the project did not indicate major behavioral change, it did demonstrate a movement in the direction of improved practices. Both projects show clearly that the design of educational strategies is a complex process which requires time, careful research, analysis, and effort at each stage.

Star Campbell-Lindzey looks at the role of nutrition education in voluntary agencies' feeding programs. She states that voluntary agencies have a unique opportunity to effect change through the educational process, but only if those programs are well designed and coordinated in a systematic manner. In particular, there are three areas that should be stressed: growth monitoring, training of health workers, and the coordination of education with other community development activities. She warns that, although growth monitoring may be a very useful educational tool, it must be handled in a culturally appropriate manner. Too often, people do not understand the relationship between growth and health or may feel that they are being chastised for feeding their children incorrectly. Training needs to be both task- and "hands-on"-oriented, allowing health workers to communicate empathetically relevant messages to their audiences.

Most of the examples and descriptions of programs provided so far refer to non-formal education settings. However, more and more attention is being centered on the incorporation of nutrition education into school curricula. Dr. Beryl Levinger sets forth several reasons why it is important to do this at the primary school level: that the instruction of mothers does not necessarily result in an automatic "trickle-down" of information to the children; that primary school students often serve as caretakers, particularly in terms of feeding, of their younger siblings; and that the school provides a supportive climate for change, including an atmosphere of peer reinforcement, that influences children to improve their nutritional practices. Levinger does note that introducing nutrition education into the curriculum is not a simple process and outlines several key issues that must always be addressed. These include: blending nutrition education with a country's curricular reform strategy; identifying relevant nutrition needs to which the curriculum should respond (major nutrition problems, which problems can be addressed through instruction); and designing appropriate instructional strategies (should nutrition be a separate subject or be incorporated into other fields? what resources are available or need to be designed? how should evaluations be conducted?). Levinger feels that a multidisciplinary team of educational and subject matter specialists are necessary for this process.

Such an effort to incorporate nutrition education into primary school programs is described in Christine Hollis's article on the Jamaica Primary Nutrition Education Project, another INCS-supported project. The main focus of this project is on integrating nutrition concepts and messages into

primary school reading primers. In collaboration with the Jamaica Ministry of Education, materials were developed in a participatory, community-based fashion. After baseline research was carried out, parents, teachers, and resource specialists came together in a special workshop to provide ideas, suggestions, and feedback for the preparation of materials. The materials will be pilot-tested in fifteen schools during the fall of this year. Reading and nutritional knowledge test scores of pilot school students will be evaluated at the end of the year, and, if appropriate, the project may then be expanded island-wide.

Laura Jane Harper describes the design and testing of a nutrition curriculum intended for use in secondary schools of agriculture in developing countries. In the 1970s, FAO developed worldwide nutrition curriculum guidelines that can be used to train agriculturalists. A regional workshop in the Philippines brought together leaders in agriculture, nutrition, and education to adapt these guidelines for use in Asian institutions. Dr. Harper, an INCS consultant to the workshop, was asked to draft a student text, workbook, and teacher's guide that could be field-tested at the Institute Putanian Bogor in Indonesia. The field test showed that the course was useful and filled a vacuum in the existing school syllabus. Dr. Harper subsequently collaborated with educators at the Catholic University of Chile in adapting the nutrition teaching/learning materials for use in schools of agriculture in Latin America.

The articles in this Compendium, although varied in nature and content, provide program planners and educators with guidelines for handling particular problems (such as message design), as well as innovative ideas to stimulate them to attempt new approaches in helping people effect change in their health practices. It is only by daring to use solutions appropriate and adapted to particular situations, as well as by applying rigor and precision in the development of strategies, that nutrition education can keep its promise to help malnourished populations in developing countries.

Christine Hollis
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June 1986

AN ANALYSIS OF THE STATE OF THE ART OF NUTRITION EDUCATION*

By
Ronald C. Israel

The art and science of nutrition education has reached a milestone in its development. The literature of the last five years reflects a growing focus on participatory teaching and learning methodologies and on a commitment to using education and communications as interventions to change the attitudes, behaviors, and health and nutrition status of target group communities. The emphasis has shifted away from a concern with the simple dissemination of knowledge and information, primarily in a one-to-one classroom or clinical setting, to the transmission of messages designed to improve health and nutrition-related behavior through reinforcing channels of communication. We have witnessed a broadening of the professional base of those who practice nutrition education; nutritionists and public health professionals increasingly are being joined by experts in education, communication, and training.

The major question now has become how to translate this new base of experience into more effective policies and programs that can help solve the wide range of serious nutritional problems affecting the health of people around the world. Few if any countries have clearly defined and budgeted national nutrition education policies that articulate priority problems, target groups, messages, training goals, etc. Antrobus (1977) in the Caribbean, Quelch (1977) in Canada, the Club Européen De La Santé (1980), and the United States Department of Agriculture (Cross, 1980) all speak of the need for such a policy, but there are not many precedents or policy models. It is hard enough in most places to develop consensus around what constitutes a country's nutrition policy, let alone what its nutrition education priorities should be (the two are often confused).

One of the more interesting efforts to establish a national nutrition education policy was associated with the Colombian PAN program (Mejía de Pizano, 1980), a unique multi-sectoral effort designed to combat malnutrition. Much of PAN focused on the use of educational interventions to improve the nutrition-related skills of health care providers and to change target group nutritional behaviors. In the Netherlands (1983), the Primary Education Act of 1985 will make it compulsory to teach "healthy living," including nutrition, at all levels in the formal school system.

*Adapted from "Nutrition Education: State-of-the-Art: a Review and Analysis of the Literature," Unesco Nutrition Education Series, Issue 7.

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Bilateral and international donor agencies have increased their policy and program commitments to nutrition education in recent years. The United States Agency for International Development's support for the activities of the International Nutrition Communication Service (INCS) represents the largest donor agency programmatic commitment to date exclusively for the use of education and communication to solve the nutrition problems of developing countries. The World Bank (Hornik, 1983) has increased its funding for the educational components of nutrition sector loans, notably in Indonesia and India; UNICEF has provided extensive technical and financial support for the Brazilian breast feeding promotion program and has recently increased its commitment to social marketing approaches for health and nutrition; Unesco (1979, 1983) continues to publish excellent case studies, curricula, and source book materials for the field. FAO (McNaughton, no date) also has stepped up its interest and commitment to nutrition education.

The proper scope of a nutrition educator's focus has been a major policy issue over the last five years. Eide (1982) and Gussow (1980) argue for expanding nutrition education's area of activity to include all aspects of the food cycle, not just the consumer. Gussow and Contento (1984) suggest three priority areas of concern for future nutrition education activity: (1) effects of urbanization; (2) the wider distribution of processed foods; and (3) the growing women's movement.

New approaches to nutrition education in both substance and methodology imply new considerations for the training of nutrition educators. Wardlaw (1981) sees that future training programs should address the relationships between biological and social sciences, between nutrition education and health education, and between academia and field practice. Manoff (1985) and Israel (1984) argue that nutrition educators ought to begin to receive training in social marketing related skills.

Austin and Zeitlin (1981) summarize many of the new conceptual approaches that have been applied to the field of nutrition education over the last decade, such as new uses of mass media, traditional folk media, and nonformal education. An interesting distinction is made in much of the literature between nutrition education in the more economically developed countries, which tends to stress the provision of information for individual choice, and nutrition education in developing countries, which tends to focus on behavior change objectives.

The conceptual need to develop multi-sectoral promotional strategies for nutrition education is best exemplified by the experience to date with breastfeeding promotion programs. WHO conferences in Barbados, Nigeria, and Brazil (WHO, 1978, 1979), amplified by subsequent experience in many countries around the world, have defined such a strategy to include supportive government policy, such as a code regulating the marketing of breastmilk substitutes (WHO, International Code, 1981); supportive health care practices such as the establishment of rooming-in facilities at hospitals and clinics; the training of health care professionals in techniques of lactation management; the development and transmission of breastfeeding behavior change messages to target communities; and private sector participation through the provision of creches or day-care facilities for nursing mothers. Nutrition education has a role in the design and implementation of each component as well as the strategy as a whole. In

countries where breastfeeding promotion has been most successful, e.g. Brazil, nutrition communications professionals have been involved with all aspects of the program, not just the design of messages for the public. This model could be applied to the promotion of other important nutrition behaviors, such as weaning practices.

The difficulties involved in cross-cultural nutrition communications are described by Fugelsang (1982) who admonishes us to rethink some of our basic assumptions about language, learning, and understanding. The starting point in a Western conceptual model may be wrong. Nichter and Nichter (1981) outline the role that anthropology can play in the design of nutrition education projects. The Nichters believe that nutrition messages need to be negotiated within the context of traditional belief systems about food and health. Berggren and Murray (1980), in a conceptual framework for a nutrition education baseline study in Cameroon, describe a further important role for ethnographers: to research the attitudes and behaviors of the target community related to a given nutrition or health problem. Such qualitative research is essential for the design of project baseline studies, messages, and materials. Target community involvement in all phases of a nutrition education project is advocated by Drummond (1975) who applied the participatory educational principles of Paulo Freire to the design of a project in Northeast Brazil.

A growing body of literature profiles target group knowledge, attitudes, and practices in various countries. Israel and Tighe (1982-85) have edited a series of Maternal and Infant Nutrition Reviews which summarize available data on maternal and infant nutritional status, beliefs, practices, policies, and programs in thirty-five developing countries. The World Health Organization (Contemporary Patterns..., 1981) offers a detailed look at breastfeeding practices in nine countries. FAO offers an excellent Bibliography of Food Consumption Surveys (1981) for those interested in documents on aggregate intake patterns (FAO also offers its basic Food Composition Table reference documents). The Population Reference Service and UNICEF annually publish an excellent chart, entitled World's Children Data Sheet, that highlights basic epidemiological information about the nutrition and health status of the world's children. CARE (Vemury, 1980) provides us with in-depth knowledge about traditional nutrition-related beliefs in six countries (Peru, Colombia, Guatemala, Tunisia, Jordan, and Bangladesh). In short, there is less and less excuse for nutrition educators to go into the field without knowing certain basic facts about a country's nutritional problems and the knowledge, attitudes, beliefs, and practices of a target community, though referenced data should never be used alone as a basis for the development of educational messages or materials.

There also are some excellent references available on tools that will help the nutrition educator collect baseline information. Griffiths' classic work Growth Monitoring (1981) describes in detail the techniques available for weighing and measuring children. Essential dietary recall methodologies are referenced by Krantzler et al. (1982). Griffiths (1986) believes she has developed useful ways to chart dietary intake and relate it to the design of educational interventions. Martorell (1982) profiles nutrition and health status indicators that can be used for standard of living surveys in developing countries. Berggren and Murray (1981), Pelto (1981), and Van Esterik (1983) profile ways in which ethnographic research

contributes to the design of baseline studies. Sadsad (1979), Dumlao and Onate (1980), and Johnston and Schwartz (1978) describe ways in which baseline studies can be used to acquire information about channels of communication that influence the health and nutrition-related values of a community.

The literature on nutrition baseline surveys is notable for two conspicuous omissions. The first is the absence to date of any overall baseline study design manual that integrates epidemiological, anthropometric, ethnographic, communications and survey design and analysis techniques. The second is the absence of a salient document highlighting the limitations of baseline research, e.g. it is frequently costly, quickly becomes out of date, can never anticipate all the relevant questions, etc. We hope someone will rush in to fill these voids before too long.

The contradiction between the promise of nutrition education and its reality is brought to light by a review of existing case studies. Most of the nutrition education case study literature focuses on small experimental projects whose very nature is oriented more towards research than action, of limited duration, and which involve small groups of people. Evaluation of impact is usually expressed in terms of changes in knowledge and rarely in terms of behavior or health and nutrition status. This reflects in part the fact that few governments have made commitments to a sustained use of educational communications as a means of changing group behavior and nutrition status.

In recent years there have been a small but highly significant number of national and regional-level projects which might serve as models and precedents that other countries can follow. A number of INCS-supported projects, some described in this volume, are worth noting. INCS-assisted projects in Thailand and Honduras illustrate the way in which education, communications, and training can be used to improve hospital-based breastfeeding practices. INCS collaborative efforts in the Dominican Republic and Ecuador are important models for those interested in the integration of growth monitoring and nutrition education.

The Indonesian Nutrition Improvement Project (Mantra et al., 1982) is another case in point. The nutrition education component of this project succeeded in demonstrating that nutrition education alone, without any other complementary intervention such as the provision of supplementary food, could succeed in improving the nutritional status of the target community.

The Moroccan Food Aid and Nutrition Education Project (Gilmore et al., 1980) is another example of a successful large-scale nutrition education project. The inclusion of a well designed educational intervention in a national food and distribution program resulted in a 69% reduction in the incidence of moderate and severe malnutrition, apparently through increases in mothers' knowledge and changes in their food-related practices. Similarly, the breastfeeding promotions in Brazil (Jelliffe and Jelliffe, 1983), Trinidad (Gueri et al., 1978), and Yemen (Greiner, 1982) have been effective in increasing breastfeeding duration and frequency levels among women of all socioeconomic classes.

There are few country-level case studies that can serve as precedents for dealing with health problems related to overconsumption. Lamm (1981) reports on the achievements of WHO's cardiovascular disease program in Europe. Buhl (1980) reports on the French experience in public nutrition education programs (which has yet to be formally assessed). The United States National High Blood Pressure Education Program is beginning to experiment with educational messages on diet as a way to prevent and control high blood pressure, and there is a base of experience (e.g., Brownell and Kaye, 1982) related to the use of behavior modification techniques for weight control programs which needs to be analyzed more extensively. In general, however, more emphasis and resources have been put into educational programs designed to prevent or remedy malnutrition in developing countries than in controlling overconsumption in the West.

The case study literature is filled with examples of the application of different teaching and learning methodologies to nutrition problems. Case studies involving the use of mass media are by now quite abundant (Debry, 1980; Duyff, Marcantel and Ray, 1982; Zeitlin and Formacion, 1977). Greiner and Latham (1982) described the way in which commercial advertising can negatively affect food practices, focusing on the inappropriate trend to early bottle feeding in developing countries. Colle and Colle (1978) describe how modern audio-visual technology, e.g. cassette recorders, can effectively be used by nutrition educators in developing countries. Berggren's description of nutrition education in mothercraft centers in Haiti (1981) makes a case for using carefully designed demonstration education programs for the promotion of home based weaning foods. Srinivasan and Sawyer (1980) describe how participatory learning techniques are often needed to involve the target community in a nutrition education project.

An array of exemplary nutrition education materials now exists from most regions of the world (the Near East is one exception). These materials are highlighted by Israel and Lamptey (1982), by Griffiths et al. (1984), the United States Department of Agriculture (1982), and the U.S. Centers for Disease Control (1982). Training manuals in nutrition have been written for a wide variety of target audiences. Most of them tend to focus more on the transmission of technical information about nutrition and less on the art and science of nutrition education. Werner's Helping Health Workers Learn (1982) and Save the Children's Bridging the Gap (1982) are exceptions to this trend. Nutrition education needs training materials that can be used to increase the project design, management, and evaluation skills of nutrition educators.

The rapidly expanding literature on evaluation of nutrition education evaluation is filled with interesting attempts to develop techniques that will document the impact of communications interventions. In an era when resources for social programs are scarce, those in charge of public sector health and nutrition policy must document their programs' effectiveness. Nevertheless, as evaluation professionals such as Green (1977) and Hornik (1986) have pointed out, the impact of nutrition education is extremely difficult (and costly) to document. The many factors, intrinsic and extrinsic to the program, that affect the target groups' knowledge, attitude, behavior, and health status make cause-and-effect relationships difficult to establish. Many projects operate without a well established

baseline of information or a control group. Even with baseline information and control groups, documented impacts still are questioned. There will always be a need to conduct impact evaluations, of course, but nutrition educators should learn to budget wisely for this phase of their projects and to review and analyze quantified outcomes before reaching final conclusions.

Green, Hornik, and others emphasize the need for process evaluations to document projects' success or failure in carrying out intended activities. For example, does the training of physicians and nurses in clinical techniques of lactation management really make a difference in the ability of health professionals to promote breastfeeding, or are there basic constraints of time and economic considerations that preclude them from doing so? Formative evaluation and project monitoring should be given just as much emphasis as impact or summative evaluation, because in a sustained nutritional intervention there is always a need to retrain staff and to redesign messages and materials. Monitoring and information systems designed to assure effective project management frequently are missing from nutrition education projects.

In conclusion, the literature of the last five years reflects a new set of priorities for nutrition education. There is a growing commitment to the systematic application of skills from the fields of anthropology, epidemiology, education, communications, nutrition, and the social sciences, to the solution of nutrition problems. Nutrition educators are saying that education, as an intervention in its own right, ought to be taken seriously in the field of nutrition and public health. There are now enough successful case studies to make that contention seem plausible.

As policy-makers see more and more evidence that nutrition education can be a valid intervention, the question arises "How can local resources be strengthened to design and implement effective projects?" For example, social marketing, perhaps the most effective nutrition communications approach of the last decade, requires a fairly sophisticated array of technical and management skills. Many countries, particularly in the developing world lack the manpower to carry out effective nutrition-related social marketing programs. Either new resources or new institutional vehicles are needed to enable us to realize recent advances in nutrition education's state of the art.

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A NEGOTIATION APPROACH TO NUTRITION EDUCATION

By
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and
Najma Rizvi

A negotiation approach to nutrition education accords with the convergence model of communication (Kincaid, 1979; Rogers and Kincaid, 1981) wherein overlapping spheres of conceptual/experiential relevance shared by communicants (an educator and the local population) are identified and expanded as a first step toward establishing rapport. The negotiation approach is based upon the premise that in those cultures where a folk dietetic system is pervasive and guides everyday behavior and common sense reasoning, it is advantageous to work within this system whenever possible. Nutrition advice which is insensitive to indigenous health concerns and values is commonly rejected or, while accepted in a curing context, is not integrated as promotive health behavior. The negotiation approach goes beyond an identification and evaluation of folk dietary behavior as positive/neutral or negative, to a consideration of indigenous health concerns, ideologies, and cultural presuppositions which underscore this behavior. Emphasis is placed on working from what a population does know before focusing on what it does not know. Before dismissing folk dietetic behavior that has negative biomedical consequences, educators are encouraged to investigate underlying health concerns (such as digestive capacity, the balancing of bodily humors or hot/cold, blood quality/quantity, worm activity, etc.) and to work with/through these concerns and relevant cultural concepts. Utilization of these ideas as cultural resources to enhance health communication constitutes a form of appropriate technology which Fuglesang (1977) has aptly termed "appropriate conceptualization."

Working with indigenous notions of health as well as gross dietary behavior situates the nutrition educator within the conceptual universe of the lay population. Credence is paid to the fact that most indigenous knowledge systems in general, and folk dietetic systems in particular, are discontinuous and composed of several different kinds of reasoning. When communicating with a person or group about an existing food-related behavior, what is initially identified are health concerns and explanatory models (Kleinman, 1975) underlying such behavior. If, for example, a young child is not given green leafy vegetables because it is believed they cause diarrhea or green feces, ideas as to why this is so are explored in relation

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to contingent notions of ethnophysiology and pathology. Next, indigenous notions of transformation are queried. If green leafy vegetables are considered too cooling for a child's weak but developing digestive capacity, the following should be considered: How can a child's digestive capacity be enhanced? Of green leafy vegetables, which are considered the easiest to digest and in what seasons are they available? Are there ways of transforming leafy vegetables (by combination or preparation) so as to make them more digestible?

Where one health concern or "person near" line of reasoning proves resistant to negotiation, another may be brought to the fore. For example, in parts of South Asia where digestibility is a major health concern, only a small quantity of rice gruel will be consumed during many illnesses. When this concern presented itself as a "cultural block" to nutrition advice, the introduction of other indigenous health perceptions facilitated the negotiation of eating a different diet. The eating of culturally appropriate and nutritionally valued foods concordant with the health concern "bloodlessness" was promoted in South India, while the health concern "weak digestion" was paid credence by advocating only the consumption of the most digestible of "blood producing" nutritious foods (Nichter and Nichter, 1981).

A negotiation approach is also extremely useful when one is working within a lay health culture. For example, many rural South India women do not increase their dietary intake during pregnancy for "health" as well as for economic reasons (Nichter and Nichter, 1983a). When confronted by Primary Health Centre field staff who requested that women consume more food in order to ensure a "big healthy baby" many pregnant women questioned the validity of such advice. In their culture, a big baby is not associated with a healthier baby or an easier delivery. Reasoning about baby size was found difficult to negotiate. However, a focus on alternative health concerns related to blood quality and quantity, strength, and promotive health (dhatu) facilitated negotiation of existing dietary behavior while promoting the idea of a stronger--not a larger--baby and mother.

Where conceptual negotiation cannot be utilized effectively, experiential reasoning and cultural wisdom outside the domain of folk dietetics may be applied to the dietary realm via analogical reasoning. This generalization of folk wisdom may be particularly useful in cultures where the use of analogical reasoning, story telling, and proverbs are a prominent rhetorical style (De Hertaing and Courtegoie, 1973; Fuglesang, 1982; Werner and Bower, 1982). For example, cultural wisdom about agriculture or cooking may be applied to human nutrition via metaphorical reference to the "field within the body and health as a crop" or to digestion as a cooking process. In the South Indian context, Nichter and Nichter (1981, 1983b) have described a strategy of comparing the need for a measured amount of green leaf fertilizer, ash, and dung for a rice field to the need for green leafy vegetables, ash (mineral foods), and pulses/fish for human health/development.

In contexts where new dietary advice or nutrients are to be introduced, a negotiation approach seeks to place these ideas within a cultural context by attempting to anticipate how they will be culturally interpreted. It is here that negotiation-oriented research emerges as an initial step in the development of culturally appropriate social marketing approaches to

nutrition education. This research begins at the interpersonal level and moves toward investigation of communication networks (Buck et al., 1983). Exploration of the associational fields and semantic networks encompassing new nutrition ideas and materials may provide feedback for the cultural tailoring of these messages and communication materials. This step prevents the introduction of culturally inappropriate themes such as "biggest is best" (in the aforementioned case relating to babies) pervading the rhetoric of more western/cosmopolitan health messages.

What is the state of the art of the negotiation approach to nutrition and health education? In the western clinical context, a negotiation approach to doctor-patient communication is gaining increased recognition (Eisenthal et al., 1979; Lazare et al., 1978). Research has linked the application of this approach to increased patient satisfaction and adherence to follow-up care among Western patient populations. In the realms of international health, nutrition education, and health promotion, the approach, while advocated by social scientists, albeit in passing, has yet to be rigorously tested. What exists at present are a growing body of social science and health related studies providing a critical mass of data required for the application of this approach (Nichter and Nichter, 1981). In the field of nutrition, extensive work has been done by nutrition anthropologists on folk dietetics; specifically, the qualitative way in which foods are classified and the manner in which food-related behavior is influenced by such classification as well as health concerns. In respect to the identification of promotive health concepts found within folk dietetic systems, researchers working in diverse cultures, Cosminsky (1977) in Guatemala, Nichter (1983a) in South India, and Rizvi (1983) in Bangladesh (among others), have pointed out that distinct indigenous food categories exist for foods deemed to be health promoting, blood producing, strength giving, or which are capable of being consumed without worry as to health consequences. It has been suggested that these foods should be carefully examined as the foods nutritionists should consider first when formulating dietary advice (Nichter and Nichter, 1981; Rizvi, 1979).

In respect to nutrition projects which have tried to incorporate a cultural sensitivity to folk dietetics, Project Poshak in India found that a suitable indigenous weaning food could be created out of low cost indigenous resources deemed culturally appropriate for children (Gopalidas and Grenwal, 1975). The project report further stressed the importance of paying credence to such folk dietetic concerns as the hot/cold classification of foods and illness (Nichter, 1983b) when developing nutrition education and intervening strategies. A recent rehydration project in Honduras benefited from an anthropological analysis of folk dietetics and indigenous notions about the relationship between worms, health, and diarrhoea in what may be deemed a culturally negotiated, social marketing approach to oral rehydration (Kendall, 1983).

With respect to an analogical approach to health education, Nichter and Nichter (1981, 1983b) have explored the application of an agricultural referential framework to nutrition education in South India. Their research focused on the development of a methodology for analogical communication and did not attempt to rigorously test or evaluate the model. Impressionistic data suggest the approach was warmly received in two village communities where it was introduced. More extensive application of an analogical

approach to health communication has been successfully employed and evaluated in the field of family planning by the International Institute of Rural Reconstruction (Maglalang, 1976).

A recent suggestion which has been made within the negotiation purview has been that folk illness categories, which are manifest states of malnutrition, be examined as a resource for culture specific nutrition education training programs (Nichter, 1983c). It was pointed out that in South India, children under age three, as a group at risk, are more often treated by home cures for several folk illnesses associated with states of malnutrition. They are taken to practitioners only when illness becomes acute. As a means of enhancing self care (through diet or rehydration) community health workers have been identified as a manpower resource capable of being trained to negotiate dietary behavior with parents within lay health culture. Negotiation about diet is considered particularly important because folk dietetics are more closely adhered to in the case of young children and pregnant women than for other family members.

There is a current need to develop, test, and evaluate the negotiation approach to nutrition education in a more rigorous fashion. Toward this end, an INCS/International Diarrhoeal Disease Research Center, Bangladesh project under the direction of Dr. Rizvi is presently being undertaken in rural Bangladesh. An evaluation of the project will focus on process as well as outcome variables impacting on the quality of rapport between nutrition educators and the population, the communication flow of nutrition ideas within lay communication networks, and the more immediate impact of the education approach on observable dietary behavior.

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NUTRITION EDUCATION PLANNING FOR NATIVE CANADIANS:
AN APPLICATION OF THE ETHNOGRAPHY OF COMMUNICATION

By
Carol Spindell Farkas

This study was concerned with identifying factors which impede nutrition education communication between Euro-Canadian nutrition educators and Ojibwa or Cree clients or audiences, with special attention being given to nutrition education in urban settings.

Differences between Euro-Canadian and Native Canadian communication patterns and structures of reasoning were investigated as being major factors influencing the process and outcome of nutrition education encounters. Structures of reasoning are defined in this work as epistemology or basic patterns of cognition and casual explanation.

The means used to collect information on these differences included:

1. Applying information obtained from socio-linguistic and Native studies literature to native/non-Native nutrition education interaction
2. Applying this information to the development of a method to obtain information from Euro-Canadian nutrition educators and Native Canadians on selected aspects of structures of reasoning considered by the author as being important for an understanding of how structures of reasoning differences could impede nutrition education interaction.

Applying Socio-linguistic Theory to Euro-Canadian/Native Canadian Nutrition Interaction

Culturally specific communication patterns have been identified as being an important aspect of social interaction between Native and non-Native North Americans. Communication difficulties in a Native non-Native interaction may arise due to:

1. perception of the event itself
2. differences in organization of speech and conversational etiquette
3. non-verbal behaviors
4. the message form (process used to convey a message)
5. the channel (medium utilized to convey the message)

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These factors were judged by the researcher to be important for the process and outcome of nutrition education interactions between a Euro-Canadian nutrition educator and a Native client. A summary of some of the factors which were identified as influencing this interaction are:

1. The event itself

The purpose of the communication event of interest in this work is the transfer of nutrition information by a nutrition educator to a Native client. In order for the nutrition educator to influence change it is necessary to intervene in the life of the client. Intervention is evident in the suggested use in diet counselling of WHO, WHAT, WHERE, HOW, and WHEN questions; intervention is likewise reflected in the conceptual basis of nutrition program planning by use of phrases, such as nutrition education intervention strategies.

An important value in Ojibwa and Cree culture is non-intervention and protection of autonomy. The event itself, therefore, will influence the interaction.

2. Differences in organization of speech and conversational etiquette

It has been suggested that it is useless to ask direct questions when seeking information from Cree and Ojibwa individuals because in their interactional etiquette, answers to questions are not obligatory. Emphasis is placed on the respondents' freedom to decide when to talk and when to communicate content. This is a reflection of protection of autonomy. It is in contrast to Euro-North American questioning etiquette which assumes that an answer will be given.

Ojibwa-Cree response to a direct question may be silence and a deflective or ambiguous reply. This type of reply to a nutrition educator's question may result in the educator considering that the client is disinterested or does not comprehend the question.

Another important difference between Native and non-Native organization of speech is the use of conversational interruption. In Ojibwa and Cree discourse the assumption is made that one has the floor until one relinquishes it. Interruption is considered a breach of etiquette. This differs from the Euro-North American use of interruption as feedback and/or an indication that attention is being paid to the speaker (for example by the use of yes or uh-huh). Nutrition educators may interpret the lack of interruption of their discourse as a lack of interest.

3. Non-verbal behaviors

Non-verbal behaviors of Native North Americans are often more subtle in nature than those of Euro-North Americans. These differences can cause misunderstanding of intent and can lead to frustration or offense. Among these differences are Natives' smaller total amount of body motion (less folding of hands and legs, less body shifting and head alignment); less use of arm and hand gestures to accompany speech; avoidance of direct eye contact; and rare use of head nods (yes/no) as feedback.

4. Message form

Differences exist between Native North American and Euro-North American teaching and learning styles. Chief among these differences are the Euro-North American use of instruction without demonstration, while Native instruction is usually action-oriented with little verbal explanation. The Euro-North American tends to use verbal description without concreteness, while the Native conveys facts within a context and with concreteness. Also, Native exchange takes place at a slower pace, with allowance being made for silence and pausing, whereas Euro-North American discourse is characterized by a fast pace of exchange and repartee.

These differences will affect the process and outcome of a Native/non-Native nutrition education interaction.

5. The channel

Important aspects of the medium used to convey the message, or the channel, are the audience's print and visual literacy. This literacy affects the effectiveness of the materials used in the interaction.

Nutrition educators have a strong bias towards using print and, therefore, may have few reservations about using those materials to complement their verbal interaction with a client or audience. Print nutrition education materials are rarely assessed for the literacy level needed for comprehension of the material. Even less attention is given to the level of visual or pictorial literacy needed to comprehend pictures, graphics, or symbols used in these materials. Often these images are presented in a sophisticated, abstract and stylistic manner. Clients unfamiliar with this type of representation will find these images confusing.

For instance, meanings assigned to colors are not universal. Using colors as symbols, such as use of traffic light colors of red to represent stop, yellow for caution and green for go may not be relevant to some cultures. For example, red is a color associated with bravery and courage by the Ojibwa.

Use of Projective Technique to Obtain Information on Selected Aspects of Structures of Reasoning

An attempt was made to obtain information from Ojibwa and Cree respondents respecting the culturally specific communication patterns cited above. To obtain this information an adapted projective technique method was devised. This method consisted of six posters showing Native and non-Native semi-cartoon characters in food-related situations, and narratives and queries about the poster which were coded with specific concepts related to structures of reasoning. These concepts, considered by the author to be important for nutrition education interaction were: cause and effect relationships between food and health, classification of foods, body image as a cultural norm, locus of control beliefs, and orientation to nutritional knowledge. The posters were shown both to groups of Native Canadians, as well as to individual Euro-Canadian nutrition educators in Toronto.

From information obtained in this study it could be predicted that different structures of reasoning between Ojibwa or Cree clients and Euro-Canadian nutrition educators will contribute to communication misunderstandings. Among the differences identified in this study are:

- the nutrition educator's message that foods are classified into good and not-as-good foods may prove to be irrelevant to a client who does not categorize food in this same manner
- the nutrition educator expressing the belief that an individual can influence his own health by the food he chooses (beliefs of relationship between food and health and internal locus of control beliefs) and the client not sharing these beliefs (external locus of control beliefs)
- the nutrition educator referring to overweight body size being associated with health problems and the client not seeing this relationship.

The findings of this study indicate that the standard approach used by nutrition educators may not be effective with Ojibwa and Cree clients or audiences. This is due to differences in Euro-Canadian and Ojibwa-Cree patterns of discourse and teaching and learning styles, and to a lesser (but nonetheless important) degree due to differences between Euro-Canadian and Native Canadian structures of reasoning.

FOCUSED GROUP SESSIONS: A TOOL IN DEVELOPING NUTRITIONAL MESSAGES

By
Olivia Holmes

This article has been written to demonstrate applications of focused group discussions to the development of communication messages on nutrition. The illustrative example is a workshop conducted in Tunisia in May, 1983, as part of a project underway by the International Nutrition Communication Service (INCS) and the Tunisian Institut National de Santé de l'Enfance (INSE). The overall objective of the project is the improvement of infant and maternal nutrition through training and education of medical and paramedical personnel, as well as the general public. The areas of concentration of the overall project are:

- o Infant dehydration, diarrhea (causes and treatment)
- o Pre-natal care
- o Post-natal care (breastfeeding importance and procedures).

In order to fulfill the communications objectives of the project, an Audio-Visual Materials Production Unit was formed. The members of this production unit are all volunteers and include doctors, nutritionists, and public health administrators.

This Production Unit staff participated in the May workshop to learn how to design and develop audio-visual materials. The specific goal of the workshop was to create one prototype slide presentation on the subject of breastfeeding targeted toward 4th year medical students.* Focused group discussions were used at three separate stages, in order to develop hypotheses on:

- Stage 1: Key content areas for inclusion in the slide presentation and their relative importance
- Stage 2: Relevance and clarity of the completed slide presentation to its target audience
- Stage 3: Relevance and clarity of the completed slide presentation to extended audiences: "sage femmes" and nutritionists.

*This audience was selected for the workshop to enable full participation of the consultants, who speak fluent French (the language in which all medical course are taught), but who are not fluent in Arabic, the language of the general public.

**A "sage femme" or "wise woman" translates rather loosely to someone having a medical status somewhere between a nurse and a doctor.

Olivia Holmes, a specialist in marketing research, specifically focus group work, is president of Holmes Research, Ltd. She has had experience working in Asia and Africa on communication projects.

Focused group discussions have been widely used as a research tool in the private sector for many years. However, they are only beginning to be used in the social sector. In order to understand how they are appropriately (and inappropriately) used, it is necessary first to have some idea of what they are.

The focused group discussion is an informal, yet structured, discussion which lasts between one and two hours and is led by a discussion leader, or moderator. It is held among a group of participants--usually between six and twelve, depending on the preferences of the moderator, on the extent to which the sensitivity of the subject matter requires individual probing, and on how many of those invited to participate actually arrive for the discussion). The primary difference between the group discussion and the individual depth interview is that the group discussion permits an exchange of ideas that allows and encourages participants to think at greater depth about their attitudes, behavior, and motivations. Group discussions are used:

- o To explore the variety of attitudes and behavior held by a target audience in a given area of investigation
- o To explore the variety of factors influencing target audience behavior and attitudes
- o To gain some understanding of the language used by the target audience to express their attitudes, behavior, and influencing factors.

This exploration is used for the development of hypotheses, most often for subsequent quantitative testing. It is also appropriately used to gain insights into unexpected results of quantitative research, and as a tool in the development of materials, whether for testing or promotional purposes, that can communicate in a language easily understood by the intended audience.

It is as important to understand what the focused group discussion is not, as it is to understand what it is. It is not a substitute for quantitative research--it is not an appropriate vehicle for the development of statistical data--it is not an appropriate vehicle for evaluation research. The results of focused group discussions represent the opinions of only a small number of people. While they are a valuable tool in the development of hypotheses, they are not projectable in any way.

The overall process for undertaking focused group sessions is as follows:

1. Selection of the subject to be researched
2. Definition of the study objectives
3. Selection of research technique based on study objectives (i.e., if exploratory: depth interviews or focused groups; if evaluative: quantitative techniques)
4. Definition of the relevant audience
5. Determination of relevant demographic (or lifestyle/stage) criteria

6. Selection of research locations and determination of number of discussions to be conducted (number of regions, appropriate specific facilities)
7. Selection of moderator and research team
8. Selection and preparation or purchase of materials required
9. Development of questionnaire to be used to screen for qualifying demographic and/or lifestyle/stage criteria
10. Selection of date, time, and duration of each session
11. Development of the discussion guide--an outline of the issues targeted at the study objectives on which the moderator will focus his or her questions which takes into consideration the most logical flow of conversation
12. Implementation of the session
13. Written analysis of results, including sections on project background, objectives, method, findings, conclusions, and recommended next steps.

The following sections of this article deal with the specific application of focused group discussions at each of the three stages already mentioned in the development of the workshop's slide presentation on breastfeeding; they include the specific objectives, discussion guide, and results of each discussion. They also address some of the particular constraints and considerations which arose in this specific project.

Stage 1: Develop hypotheses on key content areas for inclusion in the slide presentation and their relative importance.

Since the workshop participants were doctors and nutritionists working regularly with expectant and breastfeeding mothers, they had a good idea of the types of questions most frequently asked by women and of the types of information they believed to be most important to impart to women about breastfeeding. What they did not have was any real understanding of the breadth, depth, and accuracy of the students' knowledge about correct breastfeeding practices. Without this information, it would be impossible to focus the content of the slide presentation on the students' informational needs.

Ordinarily, focused group discussions would be a logical first step--which would be undertaken before any work was done on the script; and the obvious purpose would be to gain insights into the students' knowledge base. Since the timing of the workshop forced development of the script before group discussions could be organized and held, the purpose of the first discussion was expanded to explore the relevance to the students of the key informational points on which the workshop participants had based the script. Thus, the specific objectives of the first discussion were as follows:

1. Gain insights into what 4th year medical students do and do not know (either uninformed or misinformed) on the subject of breastfeeding.
2. Based on the students' perceptions as outlined above, what emphasis should be placed on the information that has already been included

in the script, and what information is missing (if any) that should be included.

In developing the guide that the moderator would use in leading the discussion, consideration was given to the most productive approach. There was a clear risk of intimidating and offending the students by asking them directly what they did and did not understand. The approach which was adopted, and which worked effectively, was to ask them what they felt (based on what they had learned in medical school and what they had learned in their own experiences) all the important areas were which should be covered in explaining proper breastfeeding procedures to the general public. A list was made of the eight areas the workshop participants themselves thought were the main points in the script they had drafted, with the idea that the students' views on each of these points should be explored in detail, whether they brought them up or whether the moderator had to introduce them.

Discussion Guide

I. Introductions

- o Moderator, other team members who will listen to the discussion, tape recorder, or other equipment to be used
- o Participants (name, several simple questions relevant to the subject, if possible).

II. Exploration of Important Information to Communicate to Breastfeeding Mothers and Pregnant Women

- o What are the key information areas?
- o What information areas are most important and why?
- o Which are the least important and why?
- o For each area of information, what are the specific points that should be communicated and why?

III. Hypotheses to Explore on the Key Information Areas

1. Prenatal preparation: nutritional, psychological, nipple
2. Early commencement of breastfeeding: to encourage the flow of milk, to avoid hypoglycemia, hypercalcemia
3. Colostrum: immunological value, nutritional value
4. Breastfeeding technique: position of the mother; position of the baby, manner of holding the breast; timing (on demand, and for 10 minutes); alternation of breasts
5. Hygiene of the mother: the hands, the breasts
6. Nutrition of the mothers: supplementation of beverages
7. Duration: diversification beginning at the 4th to 6th month
Duration up to the 12th month
8. Termination: not brusque, counter-indications.

Two rules to which I adhere rigidly in conducting focused group sessions were disregarded because of the time pressures of the workshop:

1. Never run fewer than two discussions with members of a specific target audience. This rule exists because any one discussion is only as productive as its participants allow. The classic example

is the totally dominant person who ultimately prevents the points of view of other participants from being heard.

2. Always report the results in writing. A debriefing was held as soon as the discussion was over, and the results were acted upon immediately. Thus, I find myself attempting to offer from memory an accurate record of the productivity of a discussion held 4 months ago.

Briefly, then, the following conclusions were drawn:

1. The students were well informed on the importance of prenatal preparation, early commencement of breastfeeding, colostrum, nutrition of the mother, and duration of the breastfeeding period. They also generally agreed on the details of the ways in which and reasons why these issues were important.
2. However, their knowledge was more sketchy regarding proper timing of diversification, considerations in termination, and appropriate techniques for breastfeeding. In fact, most had not even thought about the position of mother and baby or about the issue of hygiene.
3. The students did not bring up any issues of potential importance which had not been covered in the drafted script.

It should be pointed out that the script itself was not read to them or given to them to read for several specific reasons. First, the objective was not to gain insights into their reactions to details of the script, rather to understand the main points the script would have to make to be useful to students. Second, the script was for a slide presentation approximately 10 minutes in length. It would have been unwieldy and unproductive to take the time required to read it in full.

Stage 2: Develop hypotheses on the relevance and clarity of the completed slide presentation to its target audience.

The fact that we had been able to use the results of the first discussion to help focus the content of the slide presentation toward students' informational needs did not guarantee in any way that we had executed the presentation flawlessly. It was also possible that the specific verbiage we had chosen to use, the way in which various points had been constructed, or the slides used to illustrate the text might be misleading or confusing. Therefore, it was agreed to conduct two focused group discussions among 4th year medical students to gain some insights into how well we had done our job.

Specific objectives set for these discussions were as follows:

- o Gain a greater depth of understanding about the ideas of students (correct or incorrect) on key information to communicate to women about proper breastfeeding practices
- o Explore the students' perceptions of the key points made in the completed slide presentation to understand its effectiveness in communicating messages as intended

- o Explore the students' evaluations of the relative importance of the points they saw as being emphasized in the slide presentation
- o Gain an understanding of any areas of misunderstanding or confusion among the students based on their exposure to the completed slide presentation.

The discussion guide which was used and a summary of results written at the time follow. It should be noted that the guide calls for written responses to specific questions. This is the only way to assure individual responses which are not biased by others' opinions in the group environment. This tool is used to force people to commit themselves to their own opinions before discussion of a point begins.

If the moderator senses that opinions are being swayed by those speaking as the discussion continues, he or she then has the option of encouraging people to read directly from their notes. While these notes are frequently collected and reviewed to be sure no opinion was lost in discussion, they are never tabulated. Obviously, this tool only works in literate audiences.

Discussion Guide

I. Introductions

- o Moderator, workshop participants attending, materials being used, discussion objectives
- o Discussion participants.

II. Points of Information Important to Communicate

- o Reasons why each is considered important
- o Differences in opinions which exist on key points
- o Exploration of what motivates the different opinions.

III. Viewing of Slide Presentation

Questions for written (individual) response:

- o Key points to communicate, as communicated by the slide presentation
- o Evaluation of the relevance of the information transmitted in the slide presentation
- o Points the students were not aware of before exposure to the slide presentation
- o Points considered incorrect, or on which the students have questions.

IV. Discussion of Written Responses

- o Usefulness of slide presentation (relevance to target audience)
- o Points which need to be clarified
- o Points which are disputed, which could have a negative impact upon the reception of the slide presentation
- o Points which must be strengthened.

These two discussions with students indicate that, on an overall basis, the intended messages were communicated by the slide presentation. However, it was felt that the presentation would be more useful if a few points were added to the text:

- o Clarify at the beginning of the text that the presentation's focus is on cases of normal infants
- o Immunoglobulines are only available in mother's milk
- o Mother's milk is clean (hygienic advantage)
- o Several words on the subject of problems of mothers who work
- o One or two words which compare mother's milk with artificial milk.

Two problems within the text needed to be corrected:

- o In the text and in the conclusions, the information on the timing of the first breastfeeding must be consistent (during the first hour)
- o In the text and conclusions, the appropriate age for beginning diversification must be the same: either 4 months or 6 months.

Photos:

Based on the discussions, a decision was made to: search for new slides to replace some which did not appear to illustrate the text clearly, change the title to indicate the focus on normal children, and find a better way to represent breastfeeding women from different socioeconomic levels. A simpler representation of actual national statistics was needed. The slide illustrating nipple massage was actually representative of colostrum, not the massage. A symbol more appropriate for Arab countries or a photo of food needed to be found to replace the clover symbol used. A simpler, more appealing slide for milk, yogurt, and cheese needed to be found. A more appealing slide for oil, onions, and cabbages needed to be found. The women photographed at the educational meeting at Zouhour appeared to be in a cage. The mother's expression in the slide depicting alternation of breasts showed an inappropriately large grin.

Stage 3: Relevance and clarity of the completed slide presentation to extended audiences.

Once the slide presentation was nearly finalized for the student audience, the obvious next question was whether the same presentation could be used to communicate to other audiences within the medical fraternity. Two alternative audiences that were important to the overall project are "sage femmes" and nutritionists--both of whom are in regular contact with expectant or breastfeeding women.

While time again allowed for only one group discussion with each audience, another factor came into play. There are only a dozen or so "sage femmes" in Tunis. This means that even though we only held one discussion among them, we did, in fact, gain the opinions of the majority of the local representatives of this market.

The overall objectives of both of these sessions were virtually identical to those of the Stage 2 sessions and are listed specifically in

the example of an analytic summary which follows. The discussion guide follows basically the same flow as the Stage 2 guide, although it differs in style because it was written by a different workshop participant. This is also true of the analytic summary.

Discussion Guide

I. Introductions

- o Moderator and seminar participants (if present)
- o The subject
- o The materials
- o The participants

II. Questions most frequently asked by pregnant or breastfeeding mothers

- o Develop a list of questions
- o Determine participants' views on which questions are most important
- o Determine motivations for selecting key questions.

III. Responses participants offer to each of the women's most frequently asked questions

IV. Projection of slide presentation

- o Questions for written responses.
 - Note the information areas which were most important in the slide presentation.
 - Are there issues you consider more important which were not brought out in the slide presentation?
 - If yes, what are they?
 - Are there areas of information in the slide presentation that you believe to be incorrect or which are not clear?
- o Discussion of written responses, beginning with the first questions.
- o Are there slides which you can recall which did not clearly illustrate the point being made?

"Sage Femmes": Brief Analysis of Discussion

1. What are the informational needs of the target audience?

- o It appears that the informational needs of the "sage femmes" are directed more toward abnormal cases or exceptional situations than toward normal cases. They asked for precise information regarding the following:
 - Breastfeeding women who work
 - Twins and premature infants
 - Cases of malnourished women
 - Pathological difficulties encountered by breastfeeding women
 - Abscesses and swollen breasts

- Negative effects of artificial milk, to give more importance to breastfeeding
 - Diarrhetic children
 - Low socioeconomic conditions.
2. Does the slide presentation clearly communicate the messages its creators believed important?
 - o Yes, the messages we believe important were transmitted, as evidenced by the fact that the women had clearly understood key points.
 3. Do the messages communicated respond to the informational needs of the target audience?
 - o No, the messages (information) transmitted do not respond to the informational needs of the "sage femmes" in the region of Tunis, because they require more information on the special cases listed above.
 - o Possibly the case would not be the same with "sage femmes" from other regions; thus, the slide presentation should be pretested in other areas for relevance.
 4. What changes are required to make the slide presentation relevant to the target audience?
 - o No changes should be made to this slide presentation; a different slide presentation is required to respond to the informational needs of the "sage femmes."

The value of pursuing the production of materials (whether slide presentations or other vehicles) for so small an audience as the "sage femmes" seems questionable given the amount of effort required to produce such materials. Thus, on the basis of the work done a hypothesis was developed that the level of sophistication of the informational needs of the "sage femmes" might make them an appropriate co-target audience with doctors. To gain insights into the validity of this hypothesis, group discussions could be conducted among doctors to develop an understanding of the compatibility of their informational needs.

In the case of the nutritionists, their informational needs were found to be very similar to those of the students, and the slide presentation was equally effective in communicating key information areas regarding proper breastfeeding procedures to this group.

Many of the informational issues which were relevant to developing the slide presentation would also be relevant in creating nutritional messages in other forms--brochures, articles, posters--even packaging copy such as directions or illustrations of correct product use. Focused group discussions are an appropriate tool, regardless of specific materials being developed, as long as the informational objectives are exploratory and the exchange of ideas is desired.

Because group discussions are still a new tool in social research, continued openness to experimentation is required to learn what techniques will work most effectively in a given culture. For example, in some cultures it is most effective if the participants and moderator are all total strangers, because people feel more comfortable "exposing" their thoughts and behavior among strangers. In other cultures the reverse might be true. In the case of the work being done in Tunisia, there was neither time nor financing available within the project to organize formal group discussions among the general public. Hence, the Audio-Visual Production Unit personnel are experimenting with an alternative of gathering groups from among those women waiting to see the doctors at a specific health center on a given day. The wait can be lengthy, and the discussion might be seen as an informative diversion. Whether this environment will prove conducive to a sincere exchange of ideas among this "captive audience" has yet to be determined.

The key in each culture will be to explore and experiment with methodological alternatives, until a system is found that ensures that the information being obtained is truly representative of the real thinking of the participants without being so complex in administration or so costly as to render the use of group discussion impracticable.

HOW TO DESIGN THE PERFECT NUTRITION MESSAGE

By
Richard K. Manoff

Designing a nutrition message is like playing with a Matrushka doll. For those unfamiliar with this ancient Russian toy, the Matrushka is a nesting of identical hollow wooden dolls just small enough to fit inside each other. One simply lifts off the first, and presto, there is one more, a slightly smaller apple-cheeked, smiling, buxom peasant woman in the leaping colors of her traditional garb. Lift her off and there is yet another and another.

The longer I work in nutrition education, the more I see how each simple-seeming problem turns out, when probed, to be a Matrushka--a nesting of problems.

How is it possible, for example, to design a breastfeeding message to mothers but not to peek inside her to discover that she is more than one? She works at home. She is a salaried worker. She is rich. She is poor. And for each of her there are distinct concerns to cope with and psychological barriers to lower before she can be helped to breastfeed.

Peer deeply into the nutrition Matrushka again. See, there is more than a nesting of mothers there. Doctors who discourage breastfeeding. Hospitals that separate a mother from her newborn. Milk companies that woo her with bottle feeds. Legislators who are numb to needful laws. Businessmen who violate them when they pass. Officials who are blind to the violations.

You can see our target audience is a Matrushka. Take one audience in hand and you uncover another. And for each target audience, a message must be prepared.

But even the message is a Matrushka. For example, improving infant nutrition means exclusive breastfeeding for the first four months of age; after four months, the introduction of a proper weaning food in addition to breast-feeding; at eight or nine months, the transition to "family food," etc. Each stage calls for a special message to the mother. Nor is that all. What about diarrhea management at every age? And the importance of weighing? More messages. What of the mother? Improving her infant's nutrition demands a better diet for her. What about the expectant mother? Again, more messages.

Richard K. Manoff, President of Manoff International Inc., has been a leader in applying commercial marketing techniques and strategies to programs aimed at solving social problems such as malnutrition and family planning. He is the author of the book, Social Marketing: A New Imperative for Public Health (Praeger 1984), from which this article was adapted.

How shall the message designer deal with all this? The answer is, he/she does it calmly and deliberately in accordance with principles fashioned from experience.

First, is the principle of priority. At any given time, one audience and its problem take precedence. The rest can also be ranked in importance. The messages can be dealt with in the same fashion. Some are more urgently needed than others. Suddenly, the task assumes an orderliness. The chaos subsides. Now, we know where we have to begin.

Second, is the principle of zero-sum knowledge. Accept nothing on faith. Start with a presumption of total ignorance. Challenge the validity of every opinion, every conclusion. It may slow matters and offend the vanity of some authorities at the start, but it will advance the cause more rapidly and with greater assurance once it is engaged.

Figure 1 sets forth the process for developing the campaign. Though the tasks involved are mainly the responsibility of others, the message designer should be familiar with them. They are the source for all the material from which messages will be fashioned.

The message is the hope of the program. A poorly-crafted message will doom the program in advance. Once communications strategies have been agreed to, target audiences described, objectives set, necessary messages identified, the task of message design will benefit from adherence to its own strategy of tested disciplines.

Disciplines of Message Design Strategy

Message design strategy is guided by disciplines of Content, Design, Persuasion, and Memorability Factors. Each of these has an important part to play in overall message impact. Not every message will make either the same use or any use at all of these factors, but they should be considered seriously every time. That way they serve the designer as a checklist so he will be less apt to overlook the decisive contribution some factor could make.

Content Factors: (1) The Problem; (2) Target Audience; (3) Resistance Points; (4) Solution; (5) Required Action and (6) Authoritative Source.

The Problem has to be dealt with so everyone comprehends it clearly. It is not satisfactory to identify the problem as "the decline of breast-feeding." That is the the overall problem of the program. But for an individual message directed at the mother with a job outside the home, for example, the specific problem is how to manage a breast-feeding regimen around her job.

Thus, focused identification of the Target Audience is a significant factor. We have already noted that mothers are a segmented group. A message designed to build maternal confidence must somehow invoke her presence so as to create an empathetic environment for winning her attention. Typically, she should be riddled with self-doubts and other Resistance Points. The research should have detected them. They must be countered and neutralized so she is freed to respond to the message.

FIGURE 1
PROCESS FOR DEVELOPING NUTRITION COMMUNICATIONS

DEVELOP COMMUNICATIONS STRATEGY				IMPLEMENT STRATEGY		ASSESS STRATEGY
<u>WHAT</u>	<u>Beginning with.</u>	<u>Basic Investigation</u>	<u>Followed by Production of Draft Materials</u>	<u>Testing Messages and Materials with:</u>	<u>Utilization/Implementation</u>	<u>Formative Evaluation</u>
	General Goals General Target Groups	The problem itself Target groups Communication systems Complimentary systems	Specific objectives for specific target groups; segmented audience; better understanding of the target group Delivery systems for information for each objective for each target group Integration with health clinics, pharmacies, public and private service and commodity distribution centers	Messages for different materials and media "Experts" Policy Makers Target Audience	Place of diffusion Frequency of diffusion Training of local agents Coordination with other IE&C programs Coordination with services	Feedback results to project managers Disseminate strengths and weakness to policy makers Assess costs
<u>HOW</u>	Conducts: Participative studies → Review: existing studies Include: feedback from ongoing program Prepare: a model describing the relationship & assumptions upon which the project will be based	Quantitative studies	In-house production or contract out	Focus groups Individual interviews Comparing materials & messages with others or in isolation Purpose: test for comprehension, cultural relevance, practicality, emotional appeal, memorability	Control Systems: ● observation by supervisors ● report by the community ● periodic reporting by field workers ● surveys of KAP changes ● contract monitoring of media	

The objective is for her to be receptive to the Solution. The solution depends on her carrying out Required Actions. Presumably these were "concept-tested" earlier with a sampling of the target group and the determination made that the actions are reasonable, practical, and acceptable.

The message may benefit from an Authoritative Source to lend credence to its claims. This may be in the words of a doctor or another respected member of the community--the community health worker, the midwife, the lady home visitor, etc.

Design Factors: (1) The Single Idea; (2) Language and Cultural Relevance; (3) Situation and Character Identification; (4) Distinctive Message Style and (5) Low "Fatigue" Index.

Each message--a radio spot, a poster, a film, a booklet, etc.--is more effective when it is confined to a Single Idea directed at a special problem of a specific target audience. Such messages are more likely to be absorbed, concentrated on, and reacted to. Furthermore, a Single Idea message enables the designer to say more in less time and to build into it other elements to enhance its effectiveness. Too many ideas, thrown haphazardly together, produce a clutter in which no single idea can be vigorously advocated. Even in booklets ideas should be sorted out and developed individually, both for easier reference and greater impact.

Language and Cultural Relevance is the guiding rule of presentation. The style and expression employed must be suitable. The designer is aware that his purpose is to advocate change. But the proposal must be set in a cultural context not alien to the audience. If there are personalities involved, the Situation and Character Identification must be thoughtfully established. Slavish mirroring of target types is often inadvisable. People may more readily identify with aspirations than with their realities. A well-known sports personality or a famous woman may offer more potent identification value to target audiences than people like themselves. The testing of alternatives can help the designer decide.

Since the campaign is likely to employ more than one message and in diverse media, it will benefit from a Distinctive Message Style. The sounds, the look, the attitude, and the key language should be consistent, message to message, medium to medium. Such treatment has a cumulative effect on public awareness. Music is often a helpful device so long as it supports rather than dominates the message.

Messages accumulate impact with repetition so long as they maintain their consistency. No message lasts forever. Eventually it wears out, loses its effect, and must be replaced. Sometimes we replace it prematurely. Those close to the campaign are usually the first to tire. The message designer must fend off the assault. The surest weapon is a message with a Low "Fatigue" Index--one that remains interesting and captivating as well as instructive and persuasive for as long as possible. The finest creative instincts of the designer are called for.

Persuasion Factors: (1) Reason; (2) Empathy; (3) Concern Arousal; (4) Action Capability; (5) Believability; (6) Creativity; and (7) Benefits.

A message is obliged to offer the Reason for its proposal and why it is desirable. This "reason why" may help to dispel doubt before it arises and throws up a barrier to the rest of the message.

Because emotion always affects decision, Empathy with the audience is essential. The audience must sense an emotional assurance that someone cares and understands the problem. Advice is rarely taken from an unsympathetic or indifferent source.

But she must also be made to feel concern with the problem. Otherwise, why should she bother? Concern Arousal, but not guilt or paralyzing fear, is a valuable message equity. It is the incentive to give attention.

Action Capability is the compatibility between what the message asks of a mother and what she is capable of performing despite limitations of income, time, transportation, food availability, water supply, fuel, etc. Even the slightest conflict between the two fatally impairs the effectiveness of the message.

Believability of the statement of the problem, the solution, the message environment, the promised benefits--must fit the belief systems of the audience. These vary among audiences. Messages must contain themselves within the audience's permissible limits. The temptation to go beyond--to "oversell"--can be overwhelming. The results are almost always damaging; the audience becomes disillusioned and is lost to the effort.

But the promise of Benefits from the new behavior is something the audience expects to hear. Otherwise, there is little incentive. But the benefits must be realistic, neither overblown or indifferently offered.

Memorability Factors: (1) Idea Reinforcement; (2) Minimizing Distractions and (3) Reprise (repetition).

To "seat" the new idea and persuade its adoption calls for Idea Reinforcement. The aim is for maximum awareness in the well-founded belief that it will make a qualitative difference in attitude and behavior. Repeated references to key phrases maximizes awareness. Theme music can be a potent reinforcement device, but rarely jingles, despite their popularity. They may be remembered but usually for the wrong reasons and not for the serious content we aim to transmit.

Keeping out clutter means Minimizing Distractions like offering more detail than the audience needs to know. "What will happen if they do not know this?" is a good test of the information. Every element must be essential to the message. If not, eliminate it. The time and attention of the audience must not be trifled with.

Reprise is the repetition of key elements. It almost always enhances memorability. It can never diminish it.

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Message design is no casual obligation. If the facts were potent enough "to speak for themselves," design would be unnecessary. But to

employ facts, to persuade, to move someone to action means they will have to be "communicated" with the help of practitioners skilled in the special wisdom of message design. Such people, in full command of their craft, are blessed with a gift of the Gods.

When given the opportunity to be one of them, do not hesitate. Do not dawdle. Seize it. The gift should not be squandered.

INNOVATIONS IN MATERIALS DESIGN

By
Benedict Tisa

"Innovative (adj.) - introduced as new, or as if new."

The ideas contained in this article are innovative not because they did not exist before, but because they had not been tried. Their value in terms of project support hadn't been recognized or exploited. Being innovative really only means being resourceful, making the best use of what is available. (This goes beyond the meaning of "making do," which implies resorting to second best.) The few ideas presented briefly here will seem fairly modest and low key, but they are ideas that were "created" by the situations in which they were applied. They are ideas that worked. Formulas for successful materials cannot be handed out in advance. Each situation creates its own demands on project planners. As any good teacher will tell you, the information he conveys may remain the same, but the learners are different and require an approach adapted to them. Innovative materials are successful when they mesh with normal, on-going processes of communications, so that the information they convey is absorbed by the community. It does not remain a sort of overlay, given lip service because of the novelty or prestige associated with its delivery.

We are familiar by now with the technique of adapting traditional forms of drama, song, dance, and poetry to the purposes of conveying a message. It is not enough, however, to simply approach a culture and pick out what appears to be a handy vehicle for what needs to be said. There are numerous stories that tell of the dismay of field workers who found out that the audio-visual they felt sure would communicate did not, fine illustrations were totally misperceived, radio programs were not listened to, slogans were misunderstood. Why the shock and surprise among development workers? These audio-visuals had been perfectly comprehensible to themselves...should they not have been so to their audience?

The first and greatest mistake in project planning is to make any assumptions at all about the audience. The next biggest mistake is to proceed on those assumptions without testing materials first. Although unified politically, few nations are ethnically, religiously, linguistically, or socially homogeneous. One message, one medium usually cannot be used everywhere without some adaptation. Knowing the audience is paramount to being able to communicate successfully with it. Careful observation is the key to gaining understanding. Unspoken clues to communication exist in every culture: people can "read" a holiday by the food that is displayed in a picture; clothing can indicate role and status. Available materials will affect the format of a message or symbol: wooden carvings are used in parts

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of Africa where wood is plentiful; earthen constructions are not used where rainfall is heavy; Aborigines in Australia use bark; in the USA, we use TV and satellites. Body language, ornamentation, clothing, housing, food, art, religious and political symbols--all have a role to play in the communication network of any given community. Unbiased observation can lead to innovative ways of communicating. Many good ideas spring from the little things in life, usually taken for granted, which suddenly present themselves in a new light.

Rubber Stamps

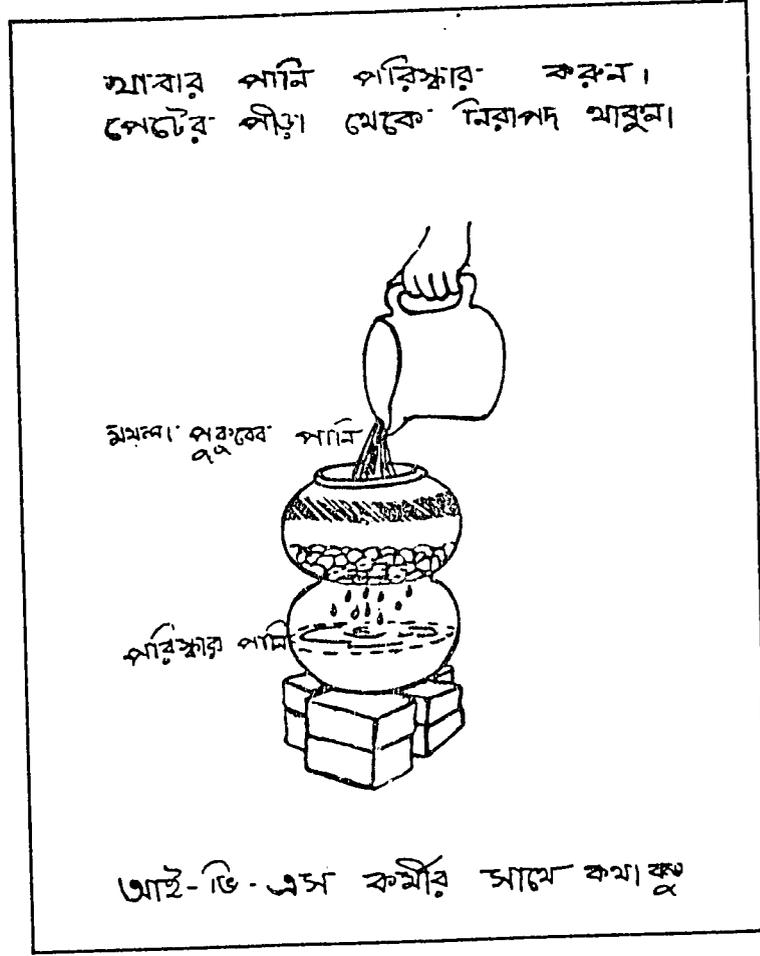
Rubber stamps seem to be as ubiquitous as the bureaucracies that use them. Entering or exiting a country requires an array of stamped authorizations. Health records, school records, currency exchanges, postal transactions, banking--at some time everyone encounters the necessity of getting something stamped. The CARE Health and Nutrition Project in the Congo took a careful look at rubber stamps. They are, basically, a miniature printing press. They are fairly easily manufactured, or hand made. They are easy to manipulate, and inexpensive. And there is a certain verifiable (if immeasurable) personal satisfaction derived from using them (perhaps something to do with that gesture of authority associated with their use). Whatever, CARE/Congo decided to make up some stamps with health slogans on them reinforcing information already being disseminated on posters and broadcast on the radio. Health workers stamped the cards of mothers who visited the clinics. Not all the mothers were literate, but enough interest was generated for these mothers to seek out health workers and friends who could explain what they said. A natural dialogue was encouraged between the mothers and health workers, and much information travelled by word of mouth this way.

In another example, the Friends in Village Development Project in Bangladesh used hand stamps to produce materials for the functional literacy classes. Learners could stamp out words using the appropriate letters separately, which helped them to learn to read and spell before actually coordinating eye and hand well enough to write. For those of us who are used to manipulating a pen, we tend to forget how difficult a skill it is to master, especially later in life. Using the stamps did not preclude handwriting instruction, but actually encouraged many members of the classes to keep pace in their handwriting with the reading skills they were acquiring. The stamps could be used, too, to make postcards, posters, flashcards, and handouts, bringing the learners into the process of educating the other villagers.

Stamps are not by any means limited only to letters of the alphabet. They can easily be made from line drawings and other illustrations, so that their application is virtually limitless. And stamps can usually be produced locally. In Bangladesh we had the Bengali alphabet carved in wood. Other possible materials are erasers and oil tires.

Postcards

One morning when the postman handed me my mail, which included some postcards, he offered the comment: "Your friend is sure lucky to be spending time in England." Later, when I sat down to read them, it struck



Postcard used in the Bangladesh clean water campaign

me that the postman had been reading my mail. At first I was irritated, but on second thought I realized that if a card were not meant to be public, it would have been put in an envelope. Besides, illustrations are a big attraction. The more interesting the picture, the more one's curiosity is aroused.

This incident set me thinking about the fact that because they are attention-getting, postcards might be adapted for educational purposes. International Voluntary Services, in designing a postcard experiment in Sylhet, Bangladesh, took the following facts into consideration:

- o Mail service was not regular (mail passed from hand to hand until it reached the addressee), but it was reliable

- o Postcards could be made by hand at nominal expense, and the cost of postage was not prohibitive
- o Receipt of mail in the villages was not common. It seemed likely that the delivery of a postcard could provoke some interest, curiosity and discussion, especially as it would have passed through several hands
- o Extension workers were living in the villages and would be able to explain the illustrations and information on the cards. They would quite naturally be drawn into a "mini-lesson" this way
- o The cards could be a motivational tool, or a form of recognition or reward for the recipient.

Two differently illustrated postcards were tested in three villages where a clean water campaign was planned. On the message side of each card we printed a few words that were being taught at the time in the functional literacy classes. The cards were mailed to the extension workers, who had been asked to monitor the reactions and questions of the villagers. We wanted them to get an idea of how much gossip was generated, and whether it was favorable.

Indeed, on the whole, villagers expressed interest and curiosity in the program. We were very encouraged by this trial run and were convinced that postcards were potentially an effective motivational tool. More than that, they opened up the learning process in a very natural way, causing the villager to approach the extension worker, rather than the other way around. We realized, however, some common sense would have to be applied to using postcards, for it would be unwise to send them indiscriminately. We felt that they had their best effect as an interest and awareness-creating tool.

Newspapers

Newspapers are an obvious, available medium of reaching a broad population, but have not been used to their full potential. In a country with a high illiteracy rate, printed materials, especially newspapers, are esteemed, as well as the people who can read them. In the tea shops in the towns and villages of Bangladesh, people gather around a man with a newspaper to hear what it has to say. In many parts of Africa, children who go to school have the duty of reading the newspaper to their elders.

Newspapers usually have a very well-developed distribution system. In Sylhet, Bangladesh, International Voluntary Services used the local paper for announcements, public relations, and as a teaching and motivational tool in the functional literacy component of its integrated rural development program (which also included nutritional and agricultural education). A special column was designed to be inserted in the paper on a weekly basis and these editions were then brought into the literacy classes and used to increase visual recognition of words and sentence formation. Learners were also encouraged to identify known words in other stories on the page. The use of newspapers in the class helped to build a habit of newspaper reading which carried over as a form of post-literacy reinforcement. Whereas books

are often considered an unjustifiable expense for a low-income family, newspapers are usually readily available and affordable.

Coordinating Radio and Newspapers

Newspapers and radio can work well together. Radio Rurale in the Congo, in addition to producing health, agriculture, and literacy programs for the radio, also publishes a newspaper in the two languages of the country. The paper is distributed through the extension workers and used in functional literacy classes. CARE/Congo's health program worked with Radio Rurale to supply educational materials for the paper and spots for the radio. Since these radio messages were supported by posters and rubber stamps, there were plans to use the newspaper as a vehicle for health material in the literacy classes run by Radio Rurale. One of the many proposed ideas was to supply the newspaper with a foldout section which could be used as a poster in health and literacy classes.

Informal Evaluation Through Radio

At one time considered innovative in project support, radio has become a normal means of informing and motivating audiences. Radio formats are fairly standard, and numerous guides have been written to aid materials planners. One health and nutrition project in Tunisia found a way to use radio to get a quick, informal "reading" of the degree of public interest in its health broadcasts. They invented a fictitious Doctor So-and-so as the moderator of their Question and Answer program. They then simply asked individuals at random if they had ever heard of a certain Doctor So-and-so. Since radio reaches such a broad population indiscriminately, this kind of quick informal evaluation helps to avoid gross errors and allows for mid-course corrections.

Audio Cassettes: Logistics of Distribution

Audio cassettes have been used in health programs for years. One of the most well documented is the Pila Project in Guatemala, which was focused around the village laundry center (Pila) where women gathered. Information on cassettes was made available to the village women so that they could listen in groups or individually. This format works well where there is sensitive material such as family planning to convey. Women who may be reluctant to discuss such matters in public can take the cassettes to the privacy of their home or work area.

It is fairly common nowadays to find cassette/radio combinations among people in even the remotest areas. It pays to take a closer look at how people use this new technology. During the Mali Livestock II Project in West Africa, with a large component aimed at improving the health and nutrition of the herders, it was found that the nomadic tribes made rather sophisticated use of the cassette/radios for taping music off the radio and for corresponding with their relatives in France. Tapes were regularly traded and passed around. The project devised pilot programs in several of the languages of the region and left the cassettes off at different camp sites with the provision that they would be passed on after they had been listened to. Provision was also made for the listeners to record comments on the reverse side of each cassette if they wished. The innovation in this

case was not in the design of the message, but in its distribution system which was integrated into an existing communication network.

Chants

Again, in Bangladesh with International Voluntary Services a few years back, I happened to pass a primary school in one of the villages. A familiar sound rang out: children chanting their lessons in unison. Then as I approached my house, I could hear 6-year old Razu, who lived nearby, vocalizing her lessons in a high voice. Memorization and repetition out loud are important elements of education in these villages. Everyone, parents and friends alike, like to know what the children are studying and learning. At that instant, I thought of the town criers of our own colonial era. They were like walking radios before the time of modern technology. Couldn't the children also "transmit" information for the benefit of the whole village?

IVS was preparing to implement a clean water campaign. Normally, the villagers used the community pond water for all their needs--cooking, washing, drinking, irrigating. The project intended to make villagers aware of the value of tube well or filtered water for drinking, and a method involving two clay pots, sand and charcoal had been developed locally for filtering water. After talking to the Bengali field workers, we decided to approach the school masters to enlist their cooperation, which we felt would be of great benefit. And, certainly, making children aware of clean water would be crucial for success in the long run. The cost, of course, would be minimal since all we needed to do was prepare the message which the children would learn to chant. A local musician and poet helped us by composing a little chant: "Pond water is dirty and can make you ill; filtered or tube well water is better for your family." (It rhymed nicely in Bengali.) A few days before start-up of the campaign, this little chant could be heard throughout the village, along with the ABC's and the arithmetic tables. The extension workers then followed with demonstrations and other support media and activities. But the ground had been prepared and curiosity aroused by this little chant.

The Cost of Electrical Energy

It costs money to produce educational materials; in many instances it also costs to use them. Tape recorders, slide projectors, and other small electrical equipment have become almost standard items on development projects, so that the cost and availability of batteries, generators, or other power sources must be figured into the overall budget. No demonstration or lecture supported by audio-visuals can get off the ground if the power source fails. In regions where batteries are expensive and hard to come by, hand-cranked tape recorders (produced by Gospel Recordings, Inc.) can be an answer. These are magneto-powered recorders equipped with a crank that turns the playback mechanism.

Another possible answer receiving much attention now is solar energy. The Mali Livestock II proposed solar power for tape recorders, flashlights, and slide projectors. Mali is an ideal country for solar power as cloud cover is seasonal and slight, and most days are clear with intense solar radiation. The advantage of sun-power in this case was its economy. Small

solar panels cost less than \$100.00 and would prove to be a less expensive investment in the long run than locally-produced batteries.

SOUNDINGS ▶▶▶▶▶

FROM AROUND THE WORLD

AN IDEA EXCHANGE IN
RURAL DEVELOPMENT
COMMUNICATIONS

January 1983

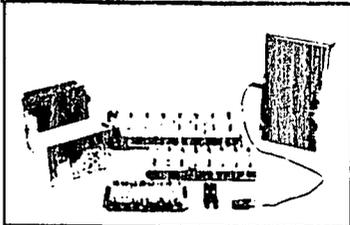


WORLD NEIGHBORS - 5116 NORTH PORTLAND - OKLAHOMA CITY, OKLAHOMA 73112 U.S.A.

POWER FROM SUNLIGHT AT LOWER COST IS FEATURE OF BATTERY CHARGER PRESENTLY AVAILABLE FROM WORLD NEIGHBORS DEVELOPMENT COMMUNICATIONS

Solar technology is now an appropriate technology for those working in rural development. Although solar technology is not yet inexpensive, prices are decreasing every year. The decline in price is expected to continue. World Neighbors has taken advantage of these lower prices to make available solar chargers for use with battery-operated filmstrip projectors. Seven hours of good sunlight restores chargeable 12-volt batteries and will give one hour and 15 minutes of projection time. Besides charging ordinary 12-volt batteries, the solar charger can charge "D," "C" and "AA" cells by utilizing the cradles listed below. From World Neighbors Development Communications, prices are:

Item	Surface	Air
Solar charger only	U.S. \$75.00	U.S. \$85.00
"D" cell cradle for 8 cells	U.S. \$20.00	U.S. \$30.00
"C" cell cradle for 8 cells	U.S. \$20.00	U.S. \$30.00
"AA" cell cradle for 8 cells	U.S. \$20.00	U.S. \$30.00
Combination cradle (not shown) for 4 "AA", 4 "C" and 4 "D" cells	U.S. \$25.00	U.S. \$35.00



Learn more about solar technology. **Electricity from Sunlight: The Future of Photovoltaics**, a Worldwatch Institute publication, is an excellent report on the state of the art. Available in English from the Worldwatch Institute: 1776 Massachusetts Avenue, NW; Washington, D.C. 20036, U.S.A., a single copy is U.S. \$2.00.

Article from World Neighbors' "Soundings" Newsletter

Cooperative Efforts

An organization may sometimes set out to solve development problems as though success depended on its efforts alone. As a matter of fact, the goals of different organizations often overlap. Working together--combining or sharing resources and expertise--can often be the key to solving communications problems, to the benefit of all concerned. In Bangladesh, the idea of getting several organizations to share the expense of printing posters and flipcharts came about out of necessity, since it was prohibitively expensive for one organization to have materials offset printed. Through cooperation, International Voluntary Services, Save the Children, and Terres des Hommes got high quality health and nutrition materials at a much reduced cost to each agency. This cooperative effort

also served to instruct workers in designing and field-testing visually relevant and comprehensible materials before printing. Participants also learned the mechanics and hidden costs involved in getting something produced. Project planners learned that it was profitable, financially and otherwise, to employ local talent and facilities for producing educational materials. In the Congo, CARE combined efforts with Alphabetization (functional literacy organization), Radio Rurale, and Service Maternel et Infantal (maternal/child care program) to design, test and produce materials that could be used by all. In the end, all the organizations benefited from the different strengths and expertise of each.

Conclusion

The following steps have proven to be universally effective in developing project support media:

- o Obtain baseline data defining the audience, in terms of language, family structure, socioeconomic conditions, perceived problems, etc.
- o Define the objectives of the program and the problems, as they are perceived by the program and the audience
- o Design a message; what will be said or illustrated
- o Select the medium for conveying that message and produce a prototype
- o Test the prototype material on a selected audience
- o Modify the message or medium according to the indications of the pretest
- o Re-test the material, if necessary
- o Produce the finalized material
- o Distribute and utilize
- o Obtain feedback from the audience about the material
- o Evaluate the material.

Although suggestions can be made, as above, about sound procedures to follow, it should be evident by now that "innovative" methods of materials design are not ready-made, but are individualized to each situation. There are pitfalls in resorting to gimmicky devices or inappropriate technology. They often turn out to have a transitory effect, producing a burst of enthusiasm and interest, followed by apathy, or worse, ill-feeling. It is usually wiser to proceed cautiously, testing out ideas and strategies first on small groups before going ahead with full-scale production. The best results are those aimed for and achieved in the long term.

GROWTH MONITORING AND NUTRITION EDUCATION:
CAN UNIFICATION MEAN SURVIVAL?

By
Marcia Griffiths

Growth monitoring¹ and nutrition education have been important activities of nutrition and health programs in many countries for more than a decade. However, both activities are now under review because they are considered to pose management and training burdens without having demonstrated a potential for commensurate reductions in infant and child morbidity and mortality rates. Proponents of one or the other are laboring to find ways to make each activity more viable and effective. A third option, devising a strategy that combines these activities to achieve a balance of their respective strengths and weaknesses, may offer the most direct route to halting and even reversing the trend of deteriorating child health, and thus to increasing child survival in the world.

But first, what are the respective strengths and weaknesses of growth monitoring and nutrition education activities? The great strength of growth monitoring is its ability to make children's growth visible both to health practitioners and to parents. The concept of better health for children--including the steps to getting there and maintaining good health--is made more accessible to parents through growth monitoring. Parents can observe what is happening to their children directly and come to interpret and act upon what they see, with counsel from the health worker. When done well, growth monitoring is a wonderful motivator and, as such, a cornerstone for community programs.

But growth monitoring alone cannot produce dramatic changes in child health; those changes come about only as a result of a well formulated action program. Growth monitoring is a means of detection, not an intervention (i.e., it does not correct or prevent problems). It sets the stage for corrective action by spotting problems. Action plans are the Achilles heel of programs that use growth monitoring. Because growth monitoring alone cannot save children's lives, it must be planned and carried out in tandem with an effective action program.

The action plan most programs rely on to address faltering growth consists of two parts: (1) parental education to teach parents about what they can do at home to improve children's education and nutrition, and (2) referrals to more sophisticated health facilities.² Simple as the action

Marcia Griffiths, Senior Vice President of Manoff International Inc., has a decade of experience working with community-based growth monitoring and education programs in more than 10 countries around the world. She is the author of Growth Monitoring of Preschool Children, a UNICEF/World Federation of Public Health Associations monograph. She provided technical assistance to both the Dominican Republic and Ecuador projects referred to in this article. Lukas Hendrata contributed to an early draft of this paper.

plan is and crucial as it is to making growth monitoring meaningful, it has largely been neglected.

Just as a growth monitoring activity needs to be coupled with an action program, so intervention schemes need a targeting mechanism to make them efficient and effective. The educational and referral components that are the staples of intervention-type programs gain in both efficiency and effectiveness by the relatively simple targeting growth monitoring makes possible.

What is more, when advice is related to growth monitoring results, it is less abstract than when it is offered as a standard list of "dos" and "don'ts." Growth monitoring also allows advice to be targeted in terms of the time to give advice and what advice to give. It ensures that mothers will receive relevant advice when they need it most--that is, at the time a problem has been spotted.

Consider for a moment the mother's situation at the monitoring session: she has just helped weigh and may have helped measure her child. The health worker recorded something on her child's card and returned it to her. What does it mean? A few minutes of explanation now will take advantage of the mother's curiosity, and advice about what she can do will be given at the moment she is most prepared to act. As soon as the child's growth is recorded and analyzed, the health worker knows if there is a health problem. That information and the approximate age of the child is enough for the health worker to ask questions and then offer advice tailored to the child's age and condition. With repeated exposure to this process, and to good advice, mothers learn to recognize common symptoms of disease and the consequences of their cooking and feeding practices on children's growth and to gauge children's progress by the ascent of the growth line on the chart. Bit by bit, they develop greater confidence in their competence as mothers, and their confidence in the health workers' knowledge also increases.

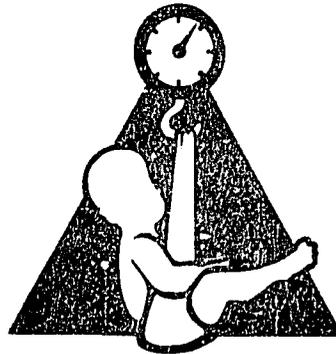
The Communications and Growth Monitoring Strategy

If growth monitoring and nutrition education are to complement one another, they must be designed together as part of a total communications strategy. A look at existing programs indicates that only a handful were designed in this way. Indonesia's national nutrition program (UPGK)³ is the classic and most discussed model. More recently a national program in Haiti⁴ and pilot projects in the Dominican Republic (ANEP)⁵ and Ecuador (PEM-PAAMI)⁶ have followed Indonesia's example. These programs have exemplified advantages of linking growth monitoring and education--in fact, of using growth monitoring as a forum for nutrition education. The collective experience of these programs indicates essential steps and considerations for combining the two activities.

Creating Awareness

The first step is to develop the awareness of health practitioners, mothers, and the community in general that nutritional health is one of the most important determinants of children's health and that by organizing a weighing program they can judge for themselves whether or not children are in good nutritional health. Participation in the monitoring program and

looking for weight gain should be marketed as something positive and desirable. The UPGK program developed a slogan--"A healthy child gains weight each month"--which appeared in print virtually everywhere in Indonesia. The ANEP project's symbol (of a child in weighing pants with an upward triangle in the background) increases the visibility of its growth monitoring program. That project also designed a poster for public areas, asking if parents know if their children are healthy.



ANEP Project's Symbol

The poster emphasizes the health workers' expertise with growth monitoring, which it promotes as a method parents can rely on to know if children are healthy. ANEP stimulates further community interest with its large growth charts. Each community completes one every six months to show the weights of all the local children. In that way, the community sees for itself whether the children have grown better or worse and whether the health of the community is improving.

Developing a Positive Climate

Striking a positive note that creates a good feeling about the program is as important to promoting growth monitoring as it is to promoting almost anything else. Many programs have found that having health workers congratulate the mothers of children who gain weight is one way to do this. Some programs have even given inexpensive prizes to mothers whose children gained weight over several consecutive months.

It is important for the tools of the growth monitoring program, particularly the card, to be sensitive to changes in growth velocity and help to create a good climate. The more mothers can understand and participate, the more positively they will regard the program. The experiences of UPGK and PEM-PAAMI led to these innovations:

- o UPGK: Developed a rainbow pattern for its growth chart. The rainbow is a series of colored channels corresponding to international standards of weight-for-age. Each channel represents 5% of the standard weight. A child is said to have his or her "own color." Mothers are given the goal of helping the child "grow along the channel" (in the same color) or along the next channel above it. Health workers are instructed to be positive and encouraging with all mothers, especially to those whose children have grown below standard.

- o PEM-PAAMI: In creating its chart, project personnel wanted to be sure that the colors for different zones (normal - malnourished) were colors the mothers associated with wellness and illness. This project found that the traditional "stoplight" colors had to be rejected. To select the colors, the project showed a series of colors and pictures of three children--a healthy, sick, and very sick child--to groups of mothers. They were asked which color seemed best suited to each of the children and why. The mothers decided that red or deep pink were the most suitable colors for the healthy child, because those were the colors in the cheeks of robust children. They chose yellow or light pink for the sick child, because those were the colors that signified illness and a loss of skin tone. They chose green or white for the very sick child. The card was printed with red as the upper zone and green as the lowest zone. In addition to choosing the colors for the growth chart, mothers decided what should be printed on the cards. Since most were functionally illiterate, the text was to be kept to a minimum.

Encouraging Community Participation in Designing the Action Plan

The most fundamental component of the action plan is the education, or counseling, of mothers and other family members. Counseling may be about where to refer children, what to feed them, or how to prepare oral rehydration solution. Counseling a mother in response to her child's growth is not the same as traditional nutrition education, because the message is tailored to the child's needs: the mother is given a prescription for action instead of a lecture. The educational messages can be standardized, as long as the intended audience for the message has taken part in the formulation of the messages. This participation goes beyond the usual surveying by most educators to understand the target audience before designing educational contents.

We say that the community participates in message design when a small but representative sample of mothers or families has actually tested, modified, retested, and commented upon a recommendation. The original recommendations are selected because of their technical soundness and because they appear to be practical. The testing and retesting ensure as far as possible that the messages fit the perceptions and practices of people in the communities the program will serve. What emerges after intense work with carefully selected participants is the synthesis of a

traditional practice and a new technique--a message that can affect daily feeding practices or actions taken during illness because it addresses the mother's or family's fears, doubts, and aspirations. Such a synthesis would be impossible to formulate without the participation of members of the communities, especially the mothers, no matter how well the persons designing the recommendations may believe they understand the communities.

Affecting Changes in Practices

The sophistication of the package of counseling materials depends on the personnel doing the counseling and on the resources of the program's participants. The goal is to get as specific as possible without making the system too cumbersome. For example, because community workers with low literacy skills are the nutrition educators in the UPGK and ANEP programs, the materials are simpler than those developed for the PEM-PAAMI project, where auxiliary nurses handle the counseling sessions. Despite differences in the sophistication of their materials, all of these programs have found that it is useful to provide health personnel with advice for mothers of children of the ages and with the conditions noted below; that is, each box in the graph is completed with specific, carefully designed recommendations and rationales.

Age (mos.)	Weight Gain	No Weight Gain Once	No Weight Gain Twice or More	Diarrhea Now or Lately
0-4				
5-9				
10-12				
13-18				
19-24				
25-36				

One or more recommendations differentiated by the child's age, weight status, and recent history of diarrhea can be offered by the health worker as he or she deems most appropriate for the child's condition. By working with the mother in this focused way to find one or two actions she can implement, there is more likelihood of success than if she attended a

lecture and had to select by herself the single most fitting recommendation for her child.

The first program that used this counseling strategy was the UPGK. In that program a child's inability to gain weight becomes a warning sign for the health worker. The number of months the child has failed to gain weight and the age of the child determine what message is communicated to the mother.

Selected UPGK messages for mothers of children in several target age groups and with different kinds of growth results are shown below:

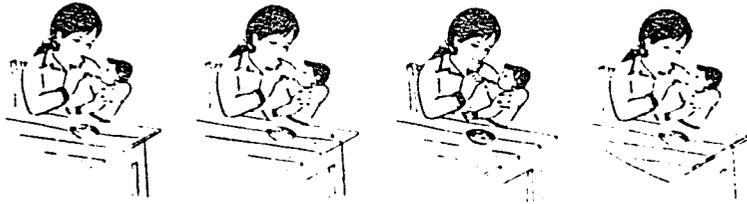
- o For a child 0-3 months old who has not gained weight over the last month: 1) the child should be breastfed three to five times more than usual every day; 2) the mother should drink a total of six glasses of water every day.
- o For a child 4-6 months old who has not gained weight for two months: the child should eat a medium-sized plate of soft food five times a day.
- o For a child 12-24 months old who has not gained weight for two months: 1) the child should eat adult food five times a day; 2) the child should be given food between meals.

While UPGK's strategy of delivering educational messages at the time children are weighed has proven sound, some practitioners have questioned whether the recommendations are realistic. As this author notes elsewhere (see "Nutrition Education's Promise: Can It Be Kept"), Indonesia's Nutrition Communication and Behavior Change pilot project, which adopted the social marketing process, paid more attention to audience research with village families and to having them participate in the design of the project's messages. The success of this pilot project was proven by significant improvements in the nutritional status of children in the pilot project villages. It worked within the UPGK framework of educating mothers at weighing sessions but with messages that had been designed with their help.

In the last three years, two projects have assimilated the lessons of the work in Indonesia and have taken it several steps further. ANEP, in the Dominican Republic, and PEM-PAAMI, in Ecuador, both have combined the individual counseling with carefully crafted messages and a growth monitoring program. Both have tried to make the individual counseling materials more flexible and easy to use. For example, instead of making a flip chart, which the UPGK uses, ANEP and PEM-PAAMI have developed counseling cards. Each card is printed on one side and illustrated on the other and clearly specifies the target audience for which it is appropriate. To use the cards, the health worker selects one or two from the group of cards. This reduces time, because the health worker does not have to leaf through a book, and it reduces error, because the health worker is less likely to mistake the message he or she should give.

The purpose of the cards is to help health workers discuss the recommendations with mothers in terms of the mothers' resources and thus to adapt the messages to individual situations. Therefore, besides the

7 - 9 MESES
NO ESTA GANANDO PESO



" LO MEJOR PARA UN GUAGUA A ESTA EDAD ES " :

- DARLE MAS VECES EL SEÑO.
- DARLE UNA COMIDA MAS, O SEA UN TOTAL DE 4 COMIDAS.
- EL GUAGUA DEBE TENER UN PLATITO HONDO PROPIO DE EL.
- DARLE LAS COMIDAS ESPESAS.
- COCINAR CON MANTECA O ACEITE.

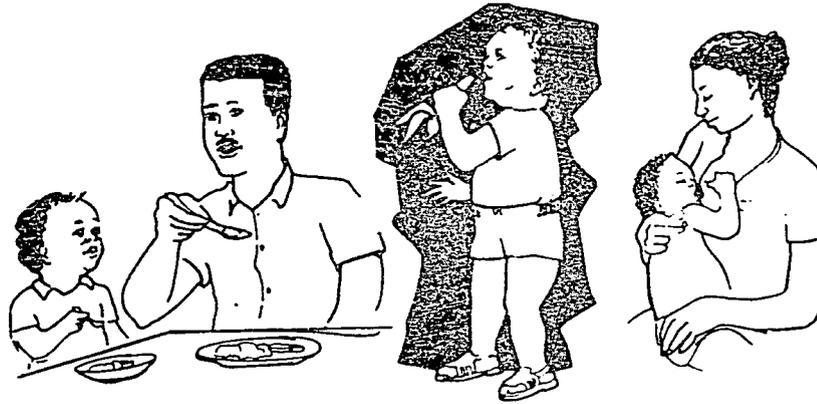
PREGUNTE Y ESCUCHE. REFUERCE LOS CONSEJOS. BUSQUE LA MANERA DE QUE LA MAMA PONGA EN PRACTICA LAS RECOMENDACIONES.

- o ¿ LE DA EL SEÑO MAS VECES QUE ANTES ?
 - El médico en estos casos recomienda que es importante que le aumente el número de veces que le da el seno, para que le ayude a crecer fuerte y sano.
 - o ¿ CUANTAS VECES AL DIA LE DA COMIDA AL GUAGUA ?
 - Déle una comida más en el día, para que en total sean 4 comidas, a esta edad el estómago ya resiste las comidas.
 - o ¿ COMO PREPARA LA COMIDA PARA SU GUAGUA ?
 - Para que crezca fuerte y sano, prepare la comida para su guagua espesando las coladas y las sopas, con pedacitos aplastados de algo, por ejemplo papas, hasta que quede bien espeso, hecho puré.
 - o ¿ COCINA CON MANTECA O ACEITE ?
 - Cocine con manteca o aceite porque la grasa les ayuda a los guaguas a ganar peso. Y no se le debe quitar la grasa de la comida antes de darle al guagua.
 - o ¿ EN QUE LE DA LA COMIDA AL GUAGUA ?
 - Déle la comida en el platito hondo de él, para que usted sepa cuanto come y le sea fácil aplastar la comida.
- ¿ DE LO QUE HEMOS CONVERSADO AHORA, QUE VA A HACER DESDE HOY PARA AYUDAR A SU GUAGUA A GANAR PESO ?
- Déje más veces el seno, para que crezca sano y fuerte.
 - Déle un total de 4 comidas, porque su estómago ya resiste.
 - Déle la comida en el platito hondo de él, para que sepa cuanto come y pueda aplastar.
 - Déle las comidas ESPESAS, para que crezca fuerte y sano.
 - Cocine con manteca o aceite, porque la grasa les ayuda a ganar peso.

- VER LAMINA DE MADRE LACTANTE No. 17.

- VER LAMINA DE "CHAPO FUERSAN" No. 18.

- RECUERDE A LA MADRE LA FECHA DE LA PROXIMA CITA.



**9 - 23 MESES
NO GANANDO PESO**

**DARLE AL NIÑO LO MISMO QUE COME LA FAMILIA.
DARLE AL NIÑO UNA COMIDA MAS Y ALGO MAS ENTRE COMIDAS
EN TOTAL 4 COMIDAS AL DIA Y 2 VECES ALGO MAS ENTRE COMIDAS.
SEGUIR DANDO EL SENNO.**

(PREGUNTAS PARA HACER A LA MAMA
EL PROMOTOR DEBE ESCUCHAR PRIMERO A LA MAMA Y REFORZAR LOS MENSAJES)

• ¿ESTA COMIENDO SU NIÑO LO MISMO QUE COME LA FAMILIA?

**DARLE AL NIÑO LO MISMO QUE COME LA FAMILIA.
NO DEBE LIGARLA CON AGUA.**

• ¿CUANTAS VECES AL DIA COME EL NIÑO?

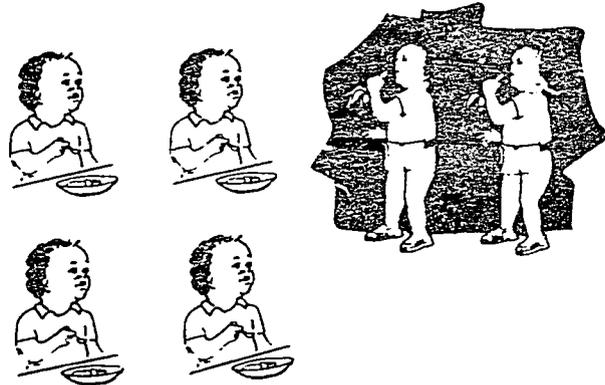
**DARLE 4 COMIDAS Y 2 VECES ALGO MAS ENTRE COMIDAS DIARIAMENTE
PARA QUE SU NIÑO GANE PESO.**

• ¿QUE VA A HACER PARA QUE SU NIÑO AUMENTE DE PESO?

SEGUIR DANDO EL SENNO.

DARLE AL NIÑO LO QUE COME LA FAMILIA PORQUE NECESITA DE TODO PARA CRECER.

**DARLE UNA COMIDA MAS Y ALGO MAS ENTRE COMIDAS.
EN TOTAL EL NIÑO DEBE COMER 4 COMIDAS Y 2 VECES ALGO MAS ENTRE COMIDAS.**



targeted recommendations (for a particular condition of children in one of the target age groups), the printed side of the card also has a list of questions the health worker should ask the mother to tailor the advice to her situation. The illustrations on the front of the card give mothers reinforcement of what the health workers have said.

The ANEP project was concerned that mothers should be given a reminder of the advice to take home with them. The project developed such a material by adopting the Action Poster developed for the Nutrition Communication and Behavior Change Component (see Griffiths, "Nutrition Education: Can Its Promise Be Kept?"). The adaptations are: 1) the worksheets are given only to the mothers of children who fail to gain weight; 2) they are printed with one color ink on newsprint so they are extremely inexpensive and therefore more disposable; 3) they are meant to be marked on to show the mother the ideal and what she will try to do if less than the ideal exists. The worksheet below indicates that the mother should try to feed her child four times a day. But if during the counseling the mother says that because of economic hardship she has restricted the number of times she feeds her child to twice a day, the health worker might ask the mother to try adding just one more meal, so that the child will eat three times a day. By circling three of the four pictures the health worker adapts the recommendation. It will be an improvement over what the mother has been doing but will be shy of the ideal which is beyond the mother's means.

Both ANEP and PEM-PAAMI have developed additional materials to supplement the information on the individual counseling cards when mothers have had more questions than usual, or to meet special situations, such as strong resistance to changing certain practices. The PEM-PAAMI project produced a series of radio spots for the sierra and another for the coast region. ANEP produced a series of materials (silkscreened cloth flipcharts and tape-recorded stories) for mothers' club meetings.

Results

Unfortunately, the educational strategy of UPGK has never been thoroughly evaluated. But the positive results of the NCBC project in Indonesia (see Griffiths, op. cit.) indicate the usefulness of pairing growth monitoring with nutrition education. Both the ANEP and PEM-PAAMI projects have undergone preliminary qualitative assessments of the usefulness and effectiveness of the messages and communications strategies, particularly of the individual counseling messages and materials. Some quantitative information on nutritional status is now being made available on the ANEP project. To summarize these findings:

1) PEM-PAAMI: The auxiliary nurse training consisted principally of a thorough explanation of the messages and of the purpose and use of the cards plus role playing. Careful supervision was provided on the job for three months after training. This combination worked well in the project area where it was implemented correctly. It prepared the nurses to run the monitoring plus counseling system. During the first months of use, the auxiliary nurses reported that they liked having the cards to work with and that mothers also seemed to like them. A number of the nurses reported that they knew of many instances of mothers modifying their practices and of children growing better. In the coastal region success in persuading mothers

to continue breastfeeding beyond the first month and not to use feeding bottles was noted.

Growth monitoring through government-sponsored programs is done in health centers. For that reason, the PEM-PAAMI project's planners have experimented with how to fit the growth monitoring and nutrition education activities into the health center routine. They think that it would be better to combine the growth monitoring and counseling in the "preconsulta" meeting (when the nurse weighs the child and completes records before mother and child see the doctor) than to divide the two activities: growth monitoring in the "preconsulta" and education in the "post-consulta," which is standard practice now. By the time the mother has finished seeing the doctor she wants to go home, not stay for a counseling session by the nurse, however short.

2) ANEP: Several process evaluations have led to minor modifications in the counseling materials, such as the addition of cards to differentiate between children not gaining weight one time or more than one time, and the use of worksheets to remind mothers of what they have agreed to try. The community workers like the counseling cards and feel that the cards lend more authority to their advice. Overall, the community workers have been observed handling the cards competently, although some tend to read, rather than discuss, the messages printed on the backs of the cards. They spend a maximum of five minutes on counseling mothers whose children are gaining weight. Some community workers have been observed spending as much as 15 minutes with mothers of children who have not gained weight. It is largely because of the intensity and quality of the community workers' efforts that the project personnel feel that they are beginning to see positive changes in the nutritional status information they have been collecting over the past several years. These nutrition data indicate that children participating in the program are maintaining or improving their nutritional status, while those not in the program are slowly declining as the economic situation of the country worsens.

The program experience described here provides sufficiently clear guidelines and enough evidence of impact to indicate that more programs should try the combination. It is hoped that the notion of growth monitoring as merely a data collection system has been laid to rest and that the pitfalls of growth monitoring in the absence of an action program are clear. Drawing on the strength of growth monitoring to spot problems and on the immediacy it conveys to health and nutrition education messages may well make the difference to child survival.

Footnotes

1. Growth monitoring is the process of routinely measuring children at intervals of a month or two to evaluate their growth over time. Growth monitoring should not be confused with nutritional surveillance for which growth data are collected less frequently in order to document the nutritional status of a population. Nor should it be confused with nutritional screening, which also measures children less frequently in order to establish who is at risk based on nutritional status.

2. Some programs have food or medical help on hand, but these are exceptions.
3. UPGK is the Indonesia National Family Nutrition Improvement Program. It operates at the village level. Its health workers, or kader, are women who come from the communities they serve. The kaders' tasks include weighing children each month, counseling mothers, and running a nutrition center where they hold food demonstrations and occasionally supply mothers with supplementary food for children.
4. In Haiti a national primary health care program has been started. The Haitian growth card resembles Indonesia's and the education package includes messages for individual counseling.
5. Dominican Republic (ANEP): The Applied Nutrition Education Program (ANEP) is a collaborative effort between CARITAS and Catholic Relief Services to demonstrate that nutritional status improvements can be achieved by the community through educational and community nutrition activities. The program does not use food donations. The program has a promoter in each community who is from that community and is responsible for weighing at risk children every month, weighing all children every six months, counseling mothers, conducting group discussions, and initiating community projects.
6. Ecuador (PEM-PAAMI): This project was begun by the Ministry of Health's Institute of Nutrition (ININMS) to evaluate and test ways to improve the current nutrition program, whose main activity is to distribute food supplements. PEM-PAAMI is a health-center-based project whose educational activities, in conjunction with growth monitoring, are conducted by auxiliary nurses.
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NUTRITION EDUCATION OF PRIMARY HEALTH CARE WORKERS

By
Peter Lamptey

I. Rationale

Malnutrition is a major public health problem affecting large numbers of people in the developing world. The World Bank has estimated that 1.3 billion people are affected by protein energy malnutrition alone (World Bank, 1975). Practically all of these people are from developing countries, with Africa constituting 15% of the total. Unfortunately, malnutrition in developing countries will probably get worse as a result of present severe economic problems, poor food production, and rapidly increasing populations.

Malnutrition is a disease that leads to impaired resistance to infection, to illness, and finally to death. It is also a social problem--a reflection of poverty, inadequate incomes, and/or inadequate purchasing power. The real solution to malnutrition lies in general economic development and growth, resulting in improved family income and greater food availability. It will be a slow and lengthy process to achieve these long term and permanent solutions in many parts of the Third World.

Primary Health Care (PHC) has been accepted by most developing nations as the most feasible and immediate way of improving the health status of the bulk of their populations. The integration of nutrition activities into PHC is seen as a logical approach to alleviating major nutrition problems in the developing world. A successful PHC program requires:

- (i) High level policy and political commitment at the central level as well as the periphery
- (ii) A shift to more local level decision making and control over available resources
- (iii) Direct community involvement
(Involvement in this case means having the community identify their own health and nutrition needs, develop their own plans for meeting these needs, recruit the necessary manpower from within and mobilize resources for funding sub-activities.)

The error of many national governments lies in the belief that government action can solve local problems. A government's role is to evolve overall strategy, provide model inputs and the necessary encouragement. Success is only achieved when the community itself works in full partnership with governmental agencies (Lamptey and Sai, in press). To

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this end, the nutrition education/training of the primary health care worker is an indispensable component of any PHC strategy. The primary health care worker must be able to accurately advise the community on the kinds of individual and community-level practices that must be initiated in order to solve basic nutrition problems.

II. Priority Areas in PHC/N

Nutrition programs in PHC generally tend to focus on preventive health, which involves educational and social community-oriented activities. Wilcox et al. (1984) reviewed twenty-one PHC projects or programs that have explicit nutrition objectives (Lamprey et al., 1977). These projects include such well known ones as Danfa, Narangwal, Jamked, Hanover, INCAP longitudinal, Candelaria, Bohol and Tripsha. The focus in most of the twenty-one PHC/N (Primary Health Care/Nutrition) projects revolves around growth monitoring, food supplementation, maternal nutrition services, and nutrition education. Wilcox et al. argue that these four focus areas are consistent with PHC strategies of access and equity.

Growth monitoring is an essential PHC management tool for promoting PHC coverage, especially to high-risk groups such as preschool children. It can also be an important educational activity, promoting understanding of the relationship between food consumption, physical growth, and health (Wilcox et al., 1984). It is a task that can be performed with a good measure of success by most PHC/N workers (given adequate training), but it is time-consuming.

Growth monitoring is a very useful screening tool for identifying groups at risk and who are in need of food supplementation and education. It provides an excellent opportunity for contact with the mother to assess the health status of the child and mother. It also serves as a link to other complementary services such as oral rehydration, immunization and family planning.

The amount of information and skill needed to train a PHC/N worker in growth monitoring depends on the educational status and experience of the trainee as well as the nutritional priorities in the area. In the most basic approach the PHC/N worker is trained to weigh young children, record it on a "Road to Health" chart and identify at-risk children for special target programs. Whatever the content of the training program, the emphasis should always be on providing the PHC/N worker with specific skills in growth monitoring. Regular re-education and supervision are essential in order to have reliable measures of nutritional status throughout a program.

III. Food Supplementation

Food supplementation helps to promote the use of services and provides much needed nutrients to deprived target populations. Supplementary feeding interventions may be vertical programs or part of an integrated PHC/N strategy. The obstacles in the successful implementation of supplementary feeding programs are primarily: (1) failure to identify those people most likely to benefit from supplementation; (2) difficulty in reaching that defined target population; (3) the cost and difficulty of distributing food supplements. The use of the PHC/N worker operating at the community level

should improve the impact of supplementation programs on malnourished populations.

Wilcox et al. (1984) contend that efforts that are targeted and that stress limited periods of supplementation to prevent growth faltering or that promote recovery and local self-sufficiency appear to have the greatest feasibility and potential for measurable impact. Again, the type of food supplements and strategies to be employed in distribution depend on local resources, social setting and type of nutritional problems found in the community.

IV. Maternal Services

Maternal nutrition services are essential because of their effect on the health of the mother, the young child and indirectly on the entire family. These services actually comprise several intervention programs such as nutrition education, food supplementation, growth monitoring, birth spacing and other health inputs.

In most of the developing world, traditional birth attendants (TBAs) carry out tasks related to basic maternal health and nutrition care. Some PHC programs have opted to train and utilize these TBA's to provide better maternal care, including nutrition.

In training TBAs, it is essential to:

- o use appropriate criteria for the selection of TBAs to be trained— not all TBAs would make a significant contribution to maternal care
- o design a task-oriented training program
- o avoid the use of a didactic, top-down approach in teaching. The training session should be designed as an exchange of ideas and information between the relatively younger trainers and the older and "experienced" birth attendant.

Even more important than the training session is the follow-up and supervision of the trained TBAs in the environment in which they operate. Constant contact and support is essential for the success of this program. It (1) prevents TBAs from resorting to their old, established ways of doing things, (2) serves as a re-education device both for the TBA worker and the supervisor, (3) enables the performance of the TBA and the training program to be evaluated.

The overall curriculum for the training of TBAs will again depend on the local conditions and the results of studying what the TBA already knows and practices. The tasks that TBAs or other PHC/N workers contribute towards the improvement of the nutritional status of mothers and their babies include:

- (i) Advising women on local foodstuffs appropriate for the diet of pregnant and lactating mothers

- (ii) Educating women on harmful food taboos and traditional practices likely to have an adverse effect upon the nutritional status of the mother or child
- (iii) Distributing food supplements such as iron and folic acid to pregnant women
- (iv) Identifying some of the obvious clinical signs and symptoms of malnutrition and referring cases, e.g., severe anemia, marasmus, maternal goitre, and kwashiorkor
- (v) Promoting breastfeeding and discouraging the use of formula feeding and advising mothers on appropriate weaning methods and foods
- (vi) Promoting birth spacing. (In the Danfa Project in Ghana we employed TBAs to provide family planning education to women, especially after delivery. The TBAs have better access to couples in the community than the other members of the health system.)

V. Agricultural Extension

An important component of the education of PHC workers in nutrition is agricultural extension work. Shortage of food is one of the more fundamental causes of malnutrition. In most areas of Africa, land availability is not as serious as primitive methods of food production. Use of low yielding seeds, lack of knowledge in the use of fertilizers and insecticides, and poor storage techniques are related problems. PHC workers may be educated in rudimentary modern farming methods and receive regular supervision by a mid-level agricultural worker.

The content and extent of agricultural knowledge will be dictated by local conditions and priorities. However, there is always the danger of providing too much information to the PHC worker to the extent of making him/her ineffective. One possible solution is not to train a generalist PHC (one responsible for everything under the sun) but to train specialist PHC workers in various disciplines such as agricultural extension work, environmental sanitation, maternal and child care, who will then work together as a team. In the Danfa Project we used a PHC-level type of agricultural extension worker, a specialist rather than a generalist. He was attached to the Health Centre and his work involved maintaining a demonstration farm at the Centre and providing help to the community in farming methods, including the distribution of higher yielding seeds, insecticides, fertilizers and agricultural information to the principally subsistence-level farming community.

Since protein-energy malnutrition (PEM) in young children is the most important nutritional problem of developing countries, improvements in staple food quality and "fortification" of weaning foods should be regarded as an important component of PHC/N strategies. Most PHC/N interventions have neglected and omitted these strategies in their intervention programs (Wilcox et al., 1984).

VI. Nutrition Rehabilitation

Nutrition rehabilitation may not seem to be a priority for primary health care, but the magnitude of clinical malnutrition and the paucity of secondary and tertiary health care makes it necessary to involve PHC workers in these programs. Since basic curative care is part of PHC, there is no reason why curative nutritional care (which is much better managed at the periphery) cannot be integrated into PHC/N programs.

Nutrition rehabilitation centers (NRCs) serve several purposes: nutritional rehabilitation of the child, nutrition education of the mother and a reminder to the community that malnutrition is caused by inadequacy of food intake and its quality. The example of the nutri-huts in the Philippines has shown that nutrition rehabilitation can be successfully carried out at the community level using PHC-level type of workers (Lamptey et al, no date).

A comparison of nutri-huts with nutri-wards (hospital-based) NRCs demonstrated that patients were able to stay longer in the village-based nutri-huts, had lower overall mortality (with no difference in the severity of malnutrition between the two types of institutions) and they attracted patients more from the rural rather than urban areas.

PHC workers can be trained to run day care NRC centers. That is, they may supervise the feeding of the malnourished children during the day and return to their homes for the night. In countries where malnutrition is a serious problem, the use of PHC/N workers to rehabilitate uncomplicated cases of malnutrition is recommended.

VII. Selection of the PHC/N Worker

The criteria for the identification and selection of the PHC/N worker will vary from area to area. Various types of workers have been successfully employed in PHC/N strategies. In Danfa, for example, village health workers, traditional birth attendants, community-based health-education assistants were used. They were supported and supervised by a health-centre-based staff comprised of a medical assistant, midwives and community health nurses (Lamptey et al., 1977; Lamptey et al, 1980; Neumann, 1974). The Bohol Project, Philippines (Williamson, 1979), employed midwives assisted by trained hilots (TBAs) and in Imesi, Nigeria, locally trained nurses were primarily used in conducting growth monitoring (Morley, 1973).

Some of the elements of success in the selection of these workers were:

- o Use of locally appropriate and carefully chosen criteria for the selection and training of PHC workers
- o Evaluating the knowledge, attitudes and practices of the trainees, either formally (survey) or informally (personal interviews) before the training. This is especially important in training traditional birth attendants and traditional healers; the step is essential for understanding the practices of the trainee as well as in the design of a more appropriate curriculum

- o Involvement of the community, especially the chiefs, elders or opinion leaders, in the selection of PHC workers is necessary for the success of the programs in the community. Otherwise, PHC workers may be rejected by the community after training
- o The PHC worker should preferably come from the area or be familiar with the customs, beliefs and behavior of the community in which he/she will be working.

VIII. Training the PHC/N Worker

During the training of PHC workers, follow these principles, some of which have been well described by David Werner (Werner and Bower, 1982) and which have been followed by several trainers elsewhere (Lamptey et al., 1980; Neumann, 1974; Danfa Final Report, 1979; Williamson, 1979).

- (i) Make your own teaching aids and encourage the trainee to do likewise, using low-cost materials. Do not make the aids for the trainee
- (ii) Use real objects and items. Graphics and pictures are not recommended as substitutes
- (iii) Make the teaching aid as natural and life-like as possible
- (iv) Make the aids as fascinating and as fun for the audience as possible
- (v) Use aids that the trainee must handle or put together
- (vi) Employ techniques that help the trainee think through a problem. Do not spoonfeed solutions. Encourage him/her to discover solutions
- (vii) Keep teaching aids relatively simple and use readily available home-made materials for their creation
- (viii) Repeatedly test the impact of a teaching aid on the trainee. Community messages that may be "obvious" to you may have different connotations to other people
- (ix) Observe the trainee as s/he uses these aids doing an actual session in the community
- (x) Encourage demonstrations by members of the community. They may be much better at communicating some ideas than the PHC worker to the rest of the community.

In our experience with training PHC workers in the Danfa Project, we found the following guidelines to be useful:

- o Locate the training session in a village or community similar to the one where the PHC worker will be working. In our TBA program, for example, the candidates were grouped into clusters and a

village that was centrally located was used as the training venue (Neumann, 1974). In the VHW program however, we found it more convenient to carry out the training at the local Health Centre, but with practical programs in various local communities (Lamprey et al., 1980)

- o The need to involve the community in the planning and implementation of the training exercise cannot be over-emphasized. The community should see the program as theirs.

IX. Other Useful Guidelines in Training

In educating the PHC worker in nutrition, emphasis should be on health prevention techniques. Though everyone agrees that most of the health problems of developing countries are preventable, most health systems have concentrated their scarce resources on curative care. The danger of producing PHC workers seen as "village doctors" is therefore a real one, and should be avoided.

It is imperative for the PHC worker to understand the need to work as a team with other workers. This is even more important in nutrition work because of the multifaceted nature of malnutrition. The most obvious group to work with are other members of the "health team" such as community health workers, midwives, etc. The least obvious, but equally important members of the team should be village chiefs, elders, opinion leaders, social workers, agricultural extension workers and volunteers.

In training PHC workers, the trainer should concentrate on imparting specific skills in a task-oriented approach. Weighing of children for growth monitoring, for example, is a skill that can be easily taught. It is also an important and very useful nutrition activity that is equally easy to evaluate. Most trainers in health transfer the didactic, knowledge-oriented, top-down training approach (the only methods they know) to the training of lower level health workers. The trainers of PHC/N workers should be trained in modern task-oriented teaching methods. Other examples of specific activities in nutrition are food demonstration, backyard gardening and distribution of food supplements.

Problems of nutrition cannot be solved by any health care worker alone nor simply by the health care system. The PHC worker should be made to recognize this very early in the training program. He/she is only a catalyst in making people aware of their problems and ways of alleviating them. It is only the community that can solve the multifaceted and complex problems of malnutrition. Various local groups may be identified with whom PHC workers may collaborate. They may be women's groups, teachers, chiefs, school children or specific, respected members of the whole community. The ultimate measure of successful community "participation" is for the community to be able to recognize its own health problems and provide appropriate solutions without dependence on the government's health system.

In areas of the world where malnutrition is a serious problem, the numbers of children or adults affected are usually large and virtually unmanageable considering the lack of resources available to most countries. There is, therefore, a need to identify the groups most in need and most at

risk. The at-risk groups normally targeted for nutrition intervention programs are children under five and pregnant and lactating mothers. It is often desirable to identify even a non-focused target group such as preschool children whose growth is faltering--the precise definition will depend on the magnitude of the problem and the resources available. Failure to work with manageable target groups will result in programs spread too thin to have any significant impact on nutritional status.

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AN APPROACH TO EVALUATION FOR BREASTFEEDING CAMPAIGNS

By
Robert C. Hornik

Introduction

It is my impression that evaluation of breastfeeding campaigns is rare and that when it is undertaken it is generally not helpful to the project concerned or to institutions considering future campaigns. In these few pages I will try to deal with that problem constructively, making the following points.

a) Focus on narrow "did it work?" questions, in isolation, is likely to be unproductive for most breastfeeding campaigns. The institutions which fund and operate programs can rarely use the answers to simplistic effectiveness questions.

b) There are a very large number of productive questions which an evaluator might wish to answer in order to help a program operate. Defining the possible questions to investigate and then choosing among them is no less a responsibility of the evaluator than choosing the research methods for obtaining answers.

c) One productive approach to defining questions includes the explicit statement of both an operational model and a conceptual model for a program.

d) Choosing which questions to answer will involve considerations of (i) possible leverage that knowing the answer to a given question will have in project operations, (ii) prior knowledge of where trouble is likely to be found in a project, and (iii) the feasibility of obtaining a credible answer to a question in a timely fashion.

e) Choosing methods for answering chosen questions must be done in the light of scarce evaluation resources. Tradeoffs between the credibility of answers to one's questions and one's ability to answer more questions less confidently need be considered.

In these comments I am concerned only with evaluation designed to help a program function more effectively. That is the appropriate place for a project to spend its scarce evaluation resources. However, this evaluation activity is distinct from, and may or may not contribute to, the evaluation concerns of an international planning and funding agency like USAID. If USAID wants an answer to its policy concerns, "is this an appropriate use of

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scarce foreign assistance funds?" and "under what conditions do breast-feeding campaigns work?" the evaluation approach will be rather different.

In the section of the essay which follows, I will present the general logic of the approach outlined here. That essay precedes an appendix which addresses a series of evaluation issues often faced in breastfeeding campaigns.

"Did It Work?" Evaluations Do Not Work

Much evaluation has been a waste of time. One can say this even if one is about to argue, as I am, in favor of an evaluation component for breastfeeding campaigns. The waste is not the result of poor technical work by evaluators, although that is often a problem. Rather, evaluations are a waste of time because they are so often based on a technocratic understanding of the way programs are hammered out. They focus on the big issue, "Did the program work?" and try to provide an overall judgement about effectiveness. In doing so they assume that program management is free to make major changes in a program given essentially technical considerations. If they know an activity failed to reach its specific goal they can cancel it or redo it.

Yet when we take off our evaluation hats we know full well that most public programs are political programs whose structure and even operations are worked out in negotiations among concerned constituencies. Once the money has been spent, the people hired, and the participating institutions are accruing benefits, flexibility is likely to be limited. The leverage of information about effectiveness, particularly if it is negative information, is going to be constrained.

No program which works politically is open easily to major transformation on the grounds that its effectiveness is not well established. Also, in the case of breastfeeding campaigns which may have limited duration, effectiveness information is unlikely to be available before all resources are expended.

However, an admission that overall effectiveness evaluation is likely to prove unproductive is not the same as rejecting all evaluation activity. Cronbach et al. (1980) define evaluation as "any systematic examination of events . . . conducted to assist in improving [a] program" (p. 14). It may turn out that a particular program, although substantially closed to major transformations, may use some evaluation results productively. Despite historical emphasis on "did it work?" questions, that is only one of a very large number of questions one may ask about a breastfeeding campaign. And the answers to some of those questions may turn out to be useful to ongoing programs.

What Questions Are There?

The evaluator has two major tasks: deciding what questions to answer and deciding how to answer them. It is the skill at the second task, that of research design, which is most often admired in evaluators. Yet it is skill at the first task, choosing what is worth answering, which is more rarely found. It requires not only technical training in research logic but

also a thorough understanding of the structure of a program and in the substance of the problem addressed.

The first step in choosing questions is the generation of a list of potential questions. One systematic approach to organizing such a list makes use of explicit conceptual and operational models for a project. As the following example will illustrate, they can be used to identify issues worth examining.

Imagine a training program for hospital staff designed to change the advice and treatment vis-a-vis breastfeeding commonly given to mothers immediately post partum. Such a program might expect to increase the proportion of mothers breastfeeding when they leave the hospital and extend the duration of breastfeeding afterwards.

Such a training program, explicitly or implicitly, contains an underlying conceptual model about what hospital staff know and do and why they do it and why mothers breastfeed or not. The simple schema of Figure I details one statement of such a conceptual model. It suggests that if nurses are given retraining they will improve their knowledge and attitudes about how best to encourage breastfeeding. If knowledge and attitudes are changed, the model assumes that relevant practice in the hospital will change as well. Finally, the model suggests that change in hospital practice will affect what mothers actually do with regard to breastfeeding.

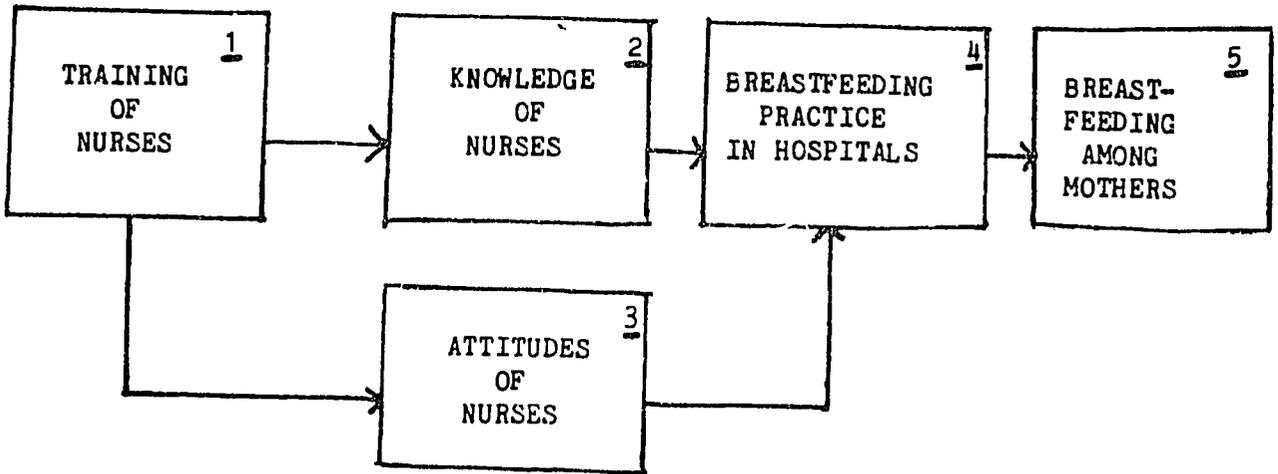
The statement of such a conceptual model immediately raises questions for the evaluator, questions that can be addressed even before the project itself is underway. For example, implicit in the notion that training will affect knowledge about appropriate practice ([2]) is an assumption that current knowledge is inadequate. Is it the case that nurses do not know what they ought to about breastfeeding? Are they unaware of the advantages of breastfeeding over bottlefeeding? Are they unaware of the risks of giving newborns sugar water before the mother's milk supply is established? What is pre-project knowledge among those to be trained? Is the assumption of poor knowledge justified?

A second assumption of the model is that knowledge (and attitudes) are major determinants of current practice, that if only one could improve knowledge among hospital staff, changed practice would follow ([2]-->[4]). But is it true that nurses with better knowledge, now, are practicing better? Is the assumption that knowledge has a substantial influence on practice reasonable? Or is current hospital practice explained not by nurse's knowledge but by other factors, for example, hospital rules about rooming in and feeding of newborns, by the extra burden on nurses associated with providing opportunities for mothers to breastfeed, or by mothers' disinterest in breastfeeding.

On the basis of Figure I, the evaluator can generate a list of research questions whose answers can help define the promise of a training project and can help in planning it. There are descriptive questions which ask what is the state of affairs currently with regard to an element referred to in a box (e.g., What is the current hospital practice vis-a-vis breastfeeding [4]?). And there are causal questions about the links between two elements of the conceptual model (e.g., Does changed knowledge among nurses lead to

FIGURE I

CONCEPTUAL MODEL: WHY NURSES DO OR DO NOT SUPPORT BREASTFEEDING EFFORTS OF NEW MOTHERS, POST PARTUM



changed hospital practice [2]-->[4]?). The more confident a project is about its fundamental assumptions, the less likely it is to follow an unproductive strategy. The evaluator's tests of those assumptions can be of great value, in particular because they will be available before the project design is set.

Just as a conceptual model helps define questions to be asked as a program is being planned, an operational model of a program can stimulate questions to be asked about an ongoing activity. Figure II illustrates a hypothetical operational model for the hospital staff training program. It begins with activities related to recruitment of trainees: program managers arranging with hospital administrators for assignment of nurses to a one-week course [A] which is said to lead to actual assignment of nurses [B] and then registration of nurses [C] on day one of the course. In a parallel track, activities related to preparation of a one-week training course, including hiring of trainers, development of curriculum and logistical arrangements are also expected to occur [X].

The recruitment and courses preparation activities, in turn, preceded the actual course activities, including attendance [D] which leads to learning of new skills [E], and intention to change practices [F]. Proximate outcomes of course attendance should include both immediate (the week of return to the hospital) [G], and longer term (six-month delayed) [H] practice change. In this model it is assumed that some nurses who are not trained will learn the new practices from trained nurses and change their practice also [I].

Changed practice of nurses is assumed to be linked to changed knowledge, skill [J], and practice among mothers [K] in the hospital. In turn in-hospital practice is expected to lead to out-of-hospital extension of mean breastfeeding duration [L].

Clearly this model of project operations is a relatively undetailed one. Each of the activities described in a box could be broken down into many more sub-activities. However, it allows us to illustrate just how such an operational model, at any level of detailing, can be used to generate potential questions for the evaluator.

Each box represents an activity which is supposed to take place if the project is to work. As such it is a project which can be monitored. Do hospital administrators assign nurses to the course in appropriate numbers and according to the proposed schedule [B]? What proportion of the nurses who have undergone training intend to practice in recommended ways when they return to the hospital [F]? How many nurses actually give sugar water bottles to newborns six months after completion of the course [H]? What is the average duration of breastfeeding among mothers six months after staff training has begun [I]?

Monitoring research of this sort does not permit direct attribution of success to the program. Change in breastfeeding duration could be the result of external-to-the-project activities also, for example. However, knowledge about success or failure in actually undertaking expected activities or in achieving expected states of skills or practices can be invaluable. It provides a warning about possible problems in operations.

It suggests where more careful examination of a particular component is justified.

More careful examinations will involve verification of the link between the elements found in each box of the model. Does hospital administrator assignment of nurses to training actually lead to their attendance at the training course [B]→[C]? Does changed nurse practice at the week of return from the training course related to practice six months later [G]→[H]? Do changes in nurse practice actually lead to changes in mother's initiation of breastfeeding [H]→[J]? While the monitoring questions describe the state of affairs, these questions about links seek verification of effects of project activities. If a project undertakes an activity, will the consequences expected in the operational model actually occur as a result?

As the result of the stimulation provided by the creation of conceptual and operational models, the evaluator should have at hand a very long list of potential questions. And that long list can be extended (and often ought to be) by more detailed looks at each stage in a model, or by studies of the interactions surrounding project operations--what level of success is achieved by what types of training situations with what types of hospital staffs working in what types of hospitals with what types of mothers?

However, no matter how long the list, evaluation resources are scarce and have to be allocated among questions. Some questions may be answered fully, some only in part and some not at all. The evaluator's next task is to choose among questions those that deserve attention. This will be an ongoing process and responsive to the evolution of the project itself.

Choosing Evaluation Questions

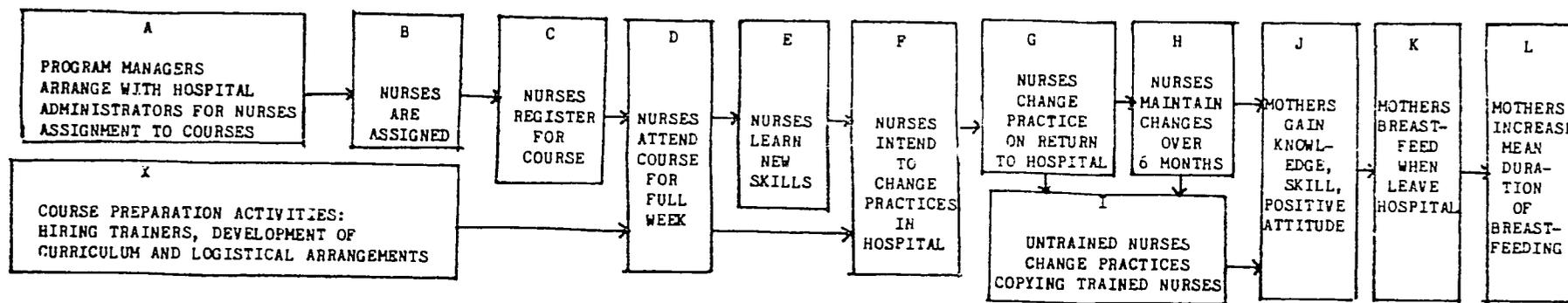
Seeking truth for its own sake is to be admired and should be supported, but not on a slim internal-to-the-project evaluation budget. Using each of the following guidelines may help an evaluator in choosing how to expend that budget most productively.

1. Scarce evaluation resources should only be spent to answer a question if the program is ready to make use of information in an important way.

The prime criterion for choosing questions should be leverage--that is, what will be open to change in project activity if a question is answered in one way rather than another. What can be done and what will be done and how much differences will it make if the question is answered?

The operational model for the hypothetical training project captured in Figure II suggests that assignment to a course is sufficient to assure attendance at the course [B]→[C]. Let us assume that as the result of research one might find one of two results: one might find either that assignment produced enrollment of only 40% of those who were expected to enroll or one might find that assignment produced 90% of expected enrollment. Would that research be worth doing? It would depend on the leverage associated with the results. Would program management change the operational model if the answer was 40% rather than 90%? Would they be able

FIGURE II: OPERATIONAL MODEL: PARTIAL STATEMENT OF HOW THIS PROJECT IS TO WORK



to implement economic incentives for participation, or develop some other motivational activity? If such a change could be expected, if research showed only 40% enrolled, then the research might well be worthwhile. If no program change could be implemented as the result of the research no matter whether 40% or 90% were enrolling, then this would be an evaluation question without leverage, and thus a question undeserving of evaluation resources.

An evaluation question might have no leverage because the resources were unavailable to implement indicated changes, or the political commitments to the current way of operating were unalterable, or because prior certainty about a project element was so strong that no research results, with their inevitable ambiguity, could challenge managers' faith. A question might be undeserving of evaluation resources because it was only a side issue--for example, managers might be pleased to see the diffusion effects of training [H]-->[I], but did not really count on them and thus will not change the basic operational model regardless of whether they occur.

As was suggested when the conceptual model was discussed, the greatest leverage is likely to be found at the earliest stages of a project, during planning or early implementation. Before conceptual models and operational models are set, before budget commitments, personnel commitments, and institutional commitments are fixed, it may be easier to make major changes than when all is in operation. That the evaluator can be most helpful before the project is operating, that is before there are any effects to be seen, is something of a paradox, given usual evaluation perspectives.

2. Focus resources where previous experience suggests there is likely to be trouble.

Few projects are entirely novel. They often have precedents within the country implementing them; they almost always have precedents in other countries. In deciding what to evaluate, one should always be guided by such experience--it is likely to suggest where uncertainties in the conceptual and operational models lie.

For example, out-of-school face-to-face education projects the world over have been plagued by problems of organizing the instruction. Getting instructor and student together on a regular basis, particularly when a program is to last over some time, has been a constant cause of failure. In this hypothetical program, a crucial element is the change in the type of education and encouragement nurses are to provide for mothers. Prior experience suggests that no matter how well done the week-long training course, and even if the nurses start to give appropriate advice on their return, that before long they will revert to previous practice. Such reversion is particularly likely if there is no change in the hospital environment to reinforce the new practice. If prior experience suggests that this is a problematic link in the operational model, it is an obvious candidate for research.

In any operational model there are some links about which all observers are confident. Previous experience in other programs or specific experience in the immediate program suggest that a given link will operate with high probability. While there is always a chance that such prior expectations

are wrong (e.g., that hospital administrators will not assign nurses to courses although they say they will), it will not be worth checking on them given more urgent evaluation tasks. Like leverage, degree of uncertainty is an essential criterion for choosing which questions to answer.

3. Answer what there are funds and tools to answer.

There are a large number of questions to answer and an evaluator can expect to address only a small proportion of them. Some will be ignored because they have low priority given the leverage and uncertainty criteria described above. But others will be rejected because the evaluator can produce no timely, credible answer given the resources and research tools at hand.

Naive funders of evaluation look to evaluation for a definitive and objective judgement about the worth of a program. Yet that demand is almost always unrealistic. Funders could rarely use such a judgement were they to have it and in any case evaluators cannot provide it. The best evaluation reduces doubts, makes an observer somewhat less uncertain, points the way, with less than perfect confidence, to problems worth fixing and plausible solutions.

Shortfall from definitiveness has many explanations. Research designs can rarely incorporate an equivalent control group, so observed change in a project group may have other causes. Measurement of important variables is often problematic: estimation of nurse's knowledge may be possible, but confidence in estimates of their interactions with mothers may be limited. Tight controls in experimental design for the sake of unimpeachable evaluation results may produce unrealistic notions of how a program will function when the pilot phase is over. The project calendar constrains measurement of long term effects.

These obstacles are not arguments against doing evaluation; they are arguments for reasonable expectations about the outcome of evaluation. Evaluation research design is about compromise. This issue may be most clearly seen through a detailed example.

Confidence in the answer produced by a particular research design may be visualized as a point on a continuum. On the far right one has designs (essentially unattainable) which provide certainty about the answer to a particular question. On the extreme left are located designs which leave the observer no more informed than before the research was done.

Imagine an evaluator trying to verify the link between changed nurses' activities and changed mothers' breastfeeding practice in the hospital ([H]-->[K], in Figure 2). Research to verify that link could take many forms. I will suggest just three.

Design I: Choose a hospital in which some but not all nurses participated in the training program. After six months ask the nurses to report what breastfeeding support activities they undertake and what proportion of their patients were breastfeeding when they left the hospital. Expect an association between self-reported nurses' activities and reported breastfeeding proportion.

Design II: Choose four hospitals with each two matched as closely as possible. Implement the program in one of each pair of hospitals. Observe nurses' activities and mothers' breastfeeding before the program and then six months after its introduction. Expect that in the hospital where the training program was implemented both nurses' activities and mothers' breastfeeding practice are changed positively compared to the control hospitals. Expect, in addition, that patients whose nurses exhibit changed activities are particularly likely to have increased the probability of breastfeeding.

Design III: Choose one hospital. Survey a sample of mothers as they leave the hospital before the training program is implemented and again six months afterward. Ask them to indicate whether or not they are breastfeeding and what the nature of their interaction with nurses was vis-a-vis actions that might support breastfeeding. Expect that the overall rate of breastfeeding and of supportive nurses' activities will increase, that trained nurses will show greater increases in both areas, and that there will be a substantial association between reported mothers' breastfeeding and reported nurses' activities.

Of the three designs (at least in the abstract), design II is likely to be the strongest, leaving one least uncertain about the link between nurses' activity and mothers' practice. It uses direct observation of both variables and incorporates a likely to be equivalent control group with which to estimate program-independent changes. While it does not eliminate the possibility that the link is a reflection of some other aspect of the program, that is implausible. But if design II is powerful it is also expensive and logistically complex. It requires working in four hospitals and doing extended direct observation.

Design I is the weakest of the three. If nurses learned nothing else in training they would have learned which of their own activities they were supposed to change and that they were supposed to have more breastfeeding patients in their charge. Subjectively, I would be surprised not to find a link between self-reported activities and self-reported success in encouraging breastfeeding, regardless of whether any link between the actual behaviors existed. Subjectively, I would be little more certain about the actual behavior link given the results of design I than if no study had been undertaken at all.

Design III falls between the other two designs. On the one hand it is weaker than design II since it relies on mothers' reports of nurses' activities of their own breastfeeding, and because it depends on comparisons between non-equivalent groups of trained and untrained nurses in the same hospital. Nonetheless with its focus on change over time and its reliance on mothers' rather than nurses' reports which reduce pro-project bias, it is more credible than design I. Obviously it would be far less expensive and complex than design II.

In choosing which of the designs to implement, the evaluator must trade-off three factors: cost, reduction of uncertainty about a question associated with a design, and importance of this question compared to other evaluation questions. If, for project managers and the evaluator, design I produces very little reduction of uncertainty, then it is no better than no

research at all. The trade-off analysis then compares designs II and III. Is the subjectively perceived increase in confidence (it cannot be quantified) produced by design II versus design III worth the extra cost, the risk of failure associated with the additional complexity, and the loss in the ability to answer other questions on the agenda?

The evaluator must constantly both frame alternatives of this kind and with others make the appropriate choice among them. Always the evaluator needs to avoid buying too little reduction of uncertainty. And, at the same time, the evaluator must avoid buying too much certainty if such a purchase demands resources better used elsewhere. It is a balancing act and a difficult one. It requires both substantial technical knowledge of the quality of inference allowed by particular research designs and thorough knowledge of the project and the decision-making process surrounding it.

Appendix A
Notes on Common Evaluation Issues

The previous section introduced a general approach to project-helpful evaluation. This appendix turns to particular evaluation issues that are faced in many breastfeeding campaigns. Given the few pages and lack of a particular program to focus the discussion, no attempt at comprehensiveness could be or is attempted. What follows are notes about a series of issues that are of common concern.

1. Sorting out the effects of components of a campaign. Breastfeeding promotion campaigns often incorporate multiple components. For good policy reasons, funders would like to know just what each component (e.g., nurses' training, mass media outreach, and health clinic posters) produce in terms of the overall outcome. Each component entails different costs; if component cost and component effectiveness can be linked it becomes theoretically feasible to rationalize program expenditures. Yet no matter the interest of funders, sorting out overall effects due to each component is both methodologically and conceptually unlikely.

It is methodologically unlikely because a design would require that equivalent groups receive different sets of components in a systematic fashion. Rarely can that be achieved. It is conceptually unlikely because the effects of components are likely to be synthetic both for the receivers and for the creators of the component. A radio-based breastfeeding campaign will be different from the radio component of a radio plus face-to-face education program in its outcomes and in the way the messages are developed. Even were one to obtain an estimate of the effect of the radio sub-component alone, that effect would not easily generalize to a situation when only radio was to be used.

2. Estimating media effects. Most breastfeeding campaigns make some use of mass media, either as support for other elements of the campaign or as the central activity. A frequent concern of evaluators is estimation of the effects of such media activities particularly since they demand a large portion of centrally controlled budgets.

Estimation of media effects, however, is no easy task. Typically media campaigns reach a national audience and all at the same time. Unexposed control groups are then commonly unavailable. Inference of effectiveness then may lie with comparisons of breastfeeding rates before and after the campaign. Yet that will be problematic whether there is observed change or whether there is not. Observed change coincident with the mass media campaign is consistent with an inference of media effect. It also may be consistent with other inferences, however. If other project components are operating, they may be responsible for observed changes. Also breastfeeding rates may be unstable and be increasing regardless of campaign activities. The same forces which led a country to initiate a campaign may also be producing direct influences on mothers' breastfeeding choices. Regardless of specific campaign activities, medical professionals and hospital rules and general media coverage of breast versus bottle may all reflect the changing international climate. These might have caused some increase in breastfeeding rate anyway. At best the coincidence of campaign and

increasing breastfeeding will allow weak inference about direct effects. It may be that, as a practical matter, that is sufficient. Positive change is a desirable outcome and may be politically sufficient to justify continuation.

If positive change does not certify media effects, lack of change does not necessarily point to media failure. There are two reasons why change might not occur although a media campaign was effective. It may be that there was in place a declining rate of breastfeeding (common enough in many countries) and the effect of the media campaign was to slow or stall that decline. That possibility might be examined if data existed over a number of measurement occasions so that the pre-campaign rate of change could be compared to the campaign-associated rate of change.

It might also be that delayed effects of a media campaign are lost to an immediate before/after study. A media campaign may influence the background climate or work only in interaction with other changes in the environment to produce major practice change. Such effects may take some time to appear, but an inference of no effect would be misleading.

Inference about the effects of a media campaign, most of the time, will be a tentative affair. Unless a natural control group can be found (a locale beyond the broadcast range of the radio broadcasts but otherwise the same as the project audience) evaluators will have only before/after studies to rely on. The plausibility of attributing observed effects to media is increased if one has shown that listening is common, that people can recall specific messages only available on broadcast, and that increases in breastfeeding practice are particularly common among mothers who are known to make heavy use of mass media. Plausibility is not helped by evidence that women who breastfeed are particularly likely to recall pro-breastfeeding broadcast messages. That result is quite likely to reflect the effects of infant feeding practice on what people attend to in radio broadcasts rather than the reverse.

3. Knowledge and attitudes versus practice. Most evaluators readily recognize that knowledge or attitude change is not the same as breastfeeding practice change. The most common justification for that distinction is the understanding that all knowledge or attitude change does not lead to practice change. Depending on the circumstances of their lives (social support, economic opportunity, and the like) people may or may not turn knowledge into practice.

There is another justification for recognizing a knowledge/practice distinction as well. The theory which suggests that knowledge and attitude change must precede practice change may be wrong. It may be that an individual's social network is in the process of changing its norm with regard to breastfeeding. An individual may be persuaded to conform to that norm without having developed an elaborate cognitive structure to support the change. A person may be unable to recite many of the benefits of breastfeeding or describe the risks of bottlefeeding but nonetheless will choose the breast. Social persuasion may precede rather than follow cognitive persuasion and thus a focus on cognitive outcomes may be misleading.

4. A social versus a cognitive model of effects. It is worth repeating a point already made in passing. One can contrast a conceptual model of breastfeeding practice which attributes current practice to individual decision-making, a cognitive model, with a conceptual model which emphasizes social influence processes. If one accepts the first model as predominant, then one organizes a campaign to provide specific information to mothers so as to improve the quality of the decisions they make. As an evaluator one can expect short-term effects on stores of knowledge and on practice.

The second model suggests that the process of change is a much slower one. It assumes that individual behavior is a reflection of the social expectations communicated by all of the social institutions and reference groups which surround an individual. As those institutions are transformed and begin communicating a pro-breastfeeding message, individuals become free to adopt new practices. If the medical community, as reflected in hospital rules and advice given to mothers, and the mass media, by the stories they feature, and the industrial sector, through the compatibility of workplace and breastfeeding, and personal social networks, through example and direct support, expects a woman to breastfeed, she is likely to do so. This social model of breastfeeding practice is a model of slow change. Delayed change should be expected and the evaluator (or project sponsor) looking for short-term effects is sure to be disappointed. The evaluator needs to focus most research energy in establishing change in the implicit and explicit messages being communicated and, only after substantial delay, to expect significant practice change.

5. Self-reported behavior. The measurement of practice change is often a morass. Self-reports of behavior, when the respondent knows that the interviewer considers that behavior desirable, risk pro-project bias. Yet direct observation of behavior is often difficult and expensive. If one wishes to do research with a reasonably large sample, there may be no practical way to avoid reliance on reported rather than observed behavior. However, several strategies may help that problem.

In some circumstances it may be possible to ask someone else to report on the practice of a sample member. Design III in the main paper suggested asking hospital patients to report on the activities hospital staff undertook in support of breastfeeding, for example.

Another strategy is to employ an indirect measurement procedure-- counting the amount of infant formula sold at a sample of shops, or the number of women who request a formula sample kit on leaving the hospital. Each is an indirect surrogate for actual breastfeeding practice. How close any indirect measure comes to tapping actual practice will be a matter for study in a given context.

A third strategy is to use self-report as the primary measurement tool for the full research sample, but only after having validated the measure against observed behavior on a small sample. If one had been able to show that responses to an interview schedule were consistent with behavior as actually observed, then the use of the questionnaire to estimate practice can be justified.

A final strategy is to use self-report but do it carefully. Self-report questions should be phrased so the respondent is free to report "bad" behavior. The interviewer needs to indicate no preference for bottle or breastfeeding. (See Sudman and Bradburn, 1983, for a useful exploration of these issues.)

Also, wherever possible, reports of behavior should elicit details only likely to be known to current practices. Market researchers, when they wish to validate a respondent's report of the use of a product, will ask to see the product. While that might prove awkward in the case of breastfeeding, the logic may be analogous. Requesting details like "when was Johnny last fed" and "did he feed from both breasts or just one" may tend to eliminate respondents who say "yes" just to please the interviewer.

6. Individual interviews and focus groups. Much is made of the contrast between individual interview research based on a representative sample of the audience and focus group research for which no representativeness claims are to be made. Many authors disparage the one as expensive and call for the second enthusiastically. Unfortunately two issues are confounded in this discussion: how a sample is to be drawn and how measurement is to occur.

The sampling issue is straightforward. For most of the questions that an evaluator will choose to answer, it is a fact that a representative sample of the target audience will not be worth its cost. A representative sample is useful when one wants to be able to estimate how commonly found a phenomenon is in a population. If one is pretesting a message, there is little to be gained from knowing whether 35% of the population understand the message or 45% understand the message. One wants to be reasonably sure that almost everyone can make sense of it. For that purpose a representative sample would be overkill. It will be satisfactory to draw small contrast samples of people so that one has a group of respondents drawn from, for example, the most disadvantaged segment of the population, and one from a middle level group, and one from a more advantaged group. Alternatively, one can draw small samples from each major cultural group if those are likely to be the crucial contrast in determining message understanding.

If one can show that a message is understood by purposively selected members of each contrast group, one has a reasonable argument that it will be a useful message. For analogous questions, when one is not trying to produce precise estimates of population characteristics, a purposive contrast sampling strategy will be quite useful. It is, however, a sampling strategy and not just a gathering of respondents on the basis of who is most accessible.

Such a sampling strategy, given an appropriate research question, may be useful regardless of whether one is planning to do focus group research or individual interviews. The choice between those methods is a choice about methods of measurement.

Focus group interviews involve the recording and analysis of a group discussion in response to the guidance of a leader and addressing a topic of

interest. They may involve discussion after listening to a recorded broadcast message or they may involve a general discussion of breastfeeding.

Focus group discussions can have two roles. On the one hand they may be a highly productive method of immersing outside project implementers in the language and perspective of the target audience they wish to reach. As an exploratory device, discussions may produce anecdotal information which suggests ways to thinking about a problem that would otherwise not have been developed.

In addition, and as a measurement device rather than as a device for generating ideas, focus groups may be helpful when the behavior to be measured is consensus behavior. When everyone in a community acts the same way and thinks the same way with regard to some issue, the focus group is an efficient device for eliciting that information. As a group interview it tends to produce a consensus response.

At the same time, focus group procedures are not without their biases. Variation in a community with regard to an issue is likely to be missed. Some women in a group may be reluctant to explain that they do not share other participants' beliefs about breastfeeding. No picture about proportions of people doing or believing in a particular way can be drawn from group interviews.

Another risk comes if one depends on focus groups to define explanations for behavior. Focus groups can be used for this purpose only on the assumption that people are willing and able to articulate such explanations. That is rarely a tenable assumption. A request that an individual respondent or group of respondents explain why they do something (e.g., bottle rather than breast) is likely to produce a response. But whether the response is an accurate statement about cause or merely a polite answer reflecting conventionalized wisdom is likely to be unknown. Some explanations for behavior are socially acceptable (my milk dried up); others are less so (it wasn't worth the bother). Some explanations are easily thought of (I had to work); others are less easy to articulate (my social network didn't expect me to breastfeed). Since focus groups provide no way to validate the explanations provided by informants, one cannot rely on such results to develop a campaign. An advertising campaign addressing the reported cause of breastfeeding desertion, "my milk dried up," may prove unproductive if more important causes were undetected and thus were ignored.

Focus group research, because it has no useful way of locating variation in a population, may be particularly vulnerable to the striking anecdote. A group leader enters a discussion with certain expectations about what responses will be heard. If an unusual response is generated, that becomes noteworthy. It is likely to be reported to and remembered by program implementers. Because there is no accompanying caution (only 5% of the sample reported this), it may influence program activities more than it should.

Individual interview research has some strengths and some weaknesses also. The greatest liability in the developing country context is its unnaturalness. Few people are used to educated outsiders sitting with them individually and asking what they think. The awkwardness and status

inequality may contaminate individual responses while answering in a group may alleviate that obstacle. Great pains have to be taken in questionnaire design and interviewer training, and even so questions about facts may be more reasonably answered than questions which require introspection.

One advantage of individual interviews is the opportunity to describe the variation of characteristics in a population. Another is the ability to do direct hypothesis testing of explanations for a behavior without depending on the informant's ability to articulate them. Assume an evaluator wants to contrast a work requirement explanation for short breastfeeding duration with a social network explanation. One can compare women who do and do not work outside of their homes as to breastfeeding rates (all else being equal) and similarly compare women whose best friends do breastfeed with women whose best friends do not breastfeed. In both cases, one uses the separately measured characteristic of a woman to predict her actual breastfeeding behavior. The evaluator asks whether either or both external variables predict actual breastfeeding practice. This study would be impossible in a focus group context, yet it is likely to be productive in validating a particular message strategy in a breastfeeding campaign.

There is no question that both individual and group interviews can be productive depending on the research purpose. And, separately, it is also true that representative sampling strategies and contrast group sampling strategies can be productive, again depending on the research purpose. There is no point to taking sides in a debate between approaches if preference is only to be defined in a particular context.

7. Institutional evaluation. In the rush to look at concrete effects of programs there may be a tendency to ignore evaluation questions which consider institutional viability. Yet institutional functioning is where most long-term health programs fall apart. Institutional research is not merely the listing of all the products actually developed within a campaign (e.g., posters printed, radio tapes produced or staff trained). Products produced are but measures of short-term institutional functioning.

The tougher questions address what will have to be done if the program is to continue beyond the nine-month pilot phase, when UNICEF and USAID funds and technical assistance support is gone and when the special budgetary allocation disappears from the Ministry of Health budget. Is there evidence of a long-term solution to the problems of maintaining contact with the field or keeping existing fieldworkers doing the home visits the program demands? The evaluator will be looking for evidence that local talent will have the resources to maintain the activity. It will involve comparing projected budget and staffing commitments to current levels of activity. It would ask about the nature of incentives which will keep the field workers doing their jobs when the novelty is over.

8. Is this evaluation approach feasible? The final issue to be addressed in this appendix on assorted issues is the place of the evaluation function itself. The main argument of this overview is that evaluation must be far more responsive to the needs of projects than has been the case historically. I have recommended movement away from conventional research design so as to obtain uncertainty reducing answers at lower cost. These

requirements have implications for how the evaluation role is to be played.

The evaluator must be deeply integrated within a project's staff so as to understand what answers will have leverage in project decision-making. At the same time the evaluator needs a sophisticated understanding of technical research design issues so as to be able to define the implications of design compromises. Are those expectations likely to be fulfilled, realistically? That can only be answered in the context of a particular project.

However, I expect that the fulfillment of those requirements and the helpfulness of evaluations are closely related.

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NUTRITION EDUCATION'S PROMISE: CAN IT BE KEPT?
(THE EXAMPLE OF THE INDONESIA NUTRITION IMPROVEMENT PROGRAM)*

By
Marcia Griffiths

We nutrition educators promise the sky--increases in knowledge about nutrition, changes in attitudes and daily practices, and, ultimately, as the promise goes, improvements in the educational status of those who have learned and applied the knowledge. Thus, for several decades, program planners have made funds available to us for nutrition education. If malnutrition is caused in part by lack of knowledge about simple preventive measures and the appropriate use of limited resources at the household level, should not education on these subjects turn these problems around? Furthermore, because the investment for nutrition education is modest compared with other interventions embracing similar goals, would this not make investments in related efforts go further? These are the theories. But theories eventually must be substantiated. And nutrition educators have had a difficult time showing that what they have done has made a difference. Some nutrition education projects have shown substantial knowledge and attitude changes. Evaluations of a few nutrition programs with education components have shown general nutritional improvement, but, for want of an adequate evaluation design, the role of nutrition education in the improvement has been difficult to document. The performance overall has caused planners to question the value of nutrition education.

Despite nutrition education's early lackluster history, there is reason today to renew the promise made years ago that nutrition education can improve the nutritional status of a population.

o The evaluation of Morocco's nutrition program (USAID, 1980) indicated that nutrition education had made a difference in the outcome of a MCH feeding program. The evaluation showed that the nutritional status of children in the program was better when the program consisted of education and food than when, as before, it consisted solely of food distribution.

o Anecdotal evidence from (mostly Latin American) breastfeeding promotion programs with strong communications components indicates that the trend away from breastfeeding can be halted, and in the case of Brazil, it seems, reversed.

o A nutrition education pilot project in Indonesia demonstrated changes in nutritional status in children under the age of 2 through a program where the sole intervention was education (Manoff International, 1983).

*Adapted from a presentation for ACC/SCN Workshop on Nutrition Aspects of Project Food Aid, January 14-18, 1985

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However, what these examples demonstrate when examined closely is that the promise cannot be unconditionally renewed. The old expectations of nutrition education can only be fulfilled if a new approach and a greater openness to experimentation are brought to the field. The fact that one model for nutrition education programs did not work does not justify abandoning the entire enterprise when the principal is sound.

To support this appeal for a new approach to nutrition education, I would like first to describe the approach, social marketing, illustrate what it can achieve when applied to nutrition education, and tell how other, smaller, programs have adapted the social marketing process that was developed by a pilot project in Indonesia to their needs. Lastly, I would like to recommend ways that agencies can facilitate the development of social marketing programs.

The Social Marketing Approach

Over the years nutrition educators have seen that food patterns can change in response to fluctuations in the economy and the enticements of commercial marketing. The late 1970s saw the nutrition community trying to compete with commercial forces by mimicking their slogans and catchy jingles. While these efforts often caught the audience's attention, they did not realize meaningful behavior changes or improve nutritional status. The failure occurred because the substance had not changed; the slogans and jingles were only the old nutrition talks in new clothes. The messages were still concerned with trying to turn parents into para-nutritionists, supplying them with theories about the nutritive value of "The Four Food Groups" and other nutrition facts. The result was mothers who could repeat the theories but did not have an inkling about how to feed children when they reached the weaning age, failed to gain weight, or succumbed to diarrhea.

Only now that communicators are studying and adapting, rather than copying, the disciplines that make commercial marketing persuasive, and since they have replaced knowledge acquisition goals with behavior change goals, has social marketing emerged as an acceptable approach to nutrition education. Social marketing is a systems approach involving the application of specific techniques to determine how products, services, or behaviors will be advocated and how this advocacy can best be done (Manoff, 1985). Its rapid acceptance in the last several years led UNICEF to conclude: "Social marketing is one of the most important tools for taking child protection strategies out of the medical chest and putting them into the hands of parents." (Grant, 1985 State of the World's Children)

The beauty of the social marketing approach, correctly applied, is that it is a comprehensive way of solving nutrition educators' problems. The nutrition-educator-turned-social-marketer creates a program based on consumer needs and desires rather than a program to promote the points of view of the "experts." Nutrition educators of old specified the number and type of materials for projects at the time the projects were planned, often before even the simplest inquiry with village families. When faced with a problem, such as poor nutritional status among weaning-age infants, they applied textbook solutions, designing educational messages that called for eating more eggs, milk, and liver. Today's social marketer faces the

problem differently. For one thing, "the problem" is looked at as a complex of issues; for another, no social marketer would consider recommending anything--be it a food, a radio program, or flipcharts--before thoroughly exploring how the problem is perceived by the intended beneficiaries of the program, whether technically sound solutions are practical for that audience, and how and to what degree the audience will resist changing harmful practices and adopting new ones. Then the social marketer looks at the most reliable and authoritative media to carry the new information to that audience.

During the past several years, the social marketing approach has been tried in a number of nutrition programs. I would like to use Indonesia's Nutrition Communication and Behavior Change Component as my example of the social marketing approach, because it was evaluated, and the evaluation documented that the project realized its goal of improving nutritional status by persuading mothers to change basic household practices.

The Indonesian Nutrition Communication and Behavior Change Component

The Indonesian Government's Family Nutrition Improvement Program (UPGK) began in 1974, targeted primarily to addressing the nutrition problems of children under five and pregnant and lactating women. It operates on the premise that "the home and community are the most appropriate and effective points of entry for influencing behavioral changes which can best effect improvement in nutritional status" (UNICEF, 1984). Its principal features are a monthly weighing program and a trained corps of voluntary nutrition workers who are to provide nutrition education, ORS, and referrals to the health center.

In 1977, the Ministry of Health's Health Education Directorate established the Nutrition Communication and Behavior Change Component with a loan from the World Bank. This pilot project was implemented in five subdistricts of three provinces--Central Java, South Sumatra, and the Special Territory of Yogyakarta. Its purpose was to test communications techniques that would accomplish the national nutrition program's goal of achieving beneficial changes in mothers' feeding practices that would lead to improved nutritional status without involving food supplements or other costly schemes.

Four years later, and one and a half years after the intensive communications program began in 1981, the pilot project's evaluation was conducted. It compared socioeconomically matched households in the areas exposed to the "new" nutrition communications program to those exposed to the non-strengthened, on-going nutrition program. How did they compare? Here are highlights of the findings:

Key Foods: Significantly more project children consumed the recommended foods than comparison children.

Nutrient Intake: Children and nursing mothers in the project sample had significantly higher protein and calorie intakes.

Nutritional Status: Children in the project sample grew significantly better than comparison children after 5 months of age. The mean weights of

project children never fell below the normal zone, whereas the mean values for the comparison children dropped below the normal zone after the thirteenth month of life. At the end of the second year, 20% more project children were better nourished than their peers in the comparison group. And the mean weight of project children at 23 months of age was 1.5 kilos greater, or a half a standard deviation. Finally, these results were consistent in all five subdistricts.

Impact on Mothers: Not only did project mothers have higher scores on knowledge of nutrition, but those with less formal schooling who normally have less well nourished children had a score equal to the score of mothers with more education--indicating that the project met its special objective of reaching the most at-risk population in pilot areas, and that formal schooling is not a prerequisite for changing nutritional status.

Impact on Kaders: 20% more project kaders taught nutrition concepts to mothers. They taught and trained 12% more mothers. They reached 15% more children with the weighing program. Their sessions had a 10% higher monthly attendance rate. Thirty-one percent more of the project kaders made home visits and made 5.7 more visits per kader per month. They spent an average of more than 6.9 more hours at nutrition work.

What made the difference? After all, project and comparison communities were matched demographically. That is, mothers were the same age, with similar education levels, occupations, food expenditure, and media patterns. Both sets of communities had nutrition programs organized along the same lines, with monthly weighing programs and volunteer workers, and addressed the same priority nutrition problems through education.

What made the difference in results was the project's application of a social marketing approach to the tasks of concept development, message design, and media planning, specifically:

- The way target audiences were identified, analyzed, and segmented.
- The way villagers took part in the preparatory inquiries into health and nutrition problems--identifying the particulars of problems and proposing and testing solutions.
- The way the villagers contributed to decisions about the messages, media, and media materials.
- The way the project designed messages and planned and executed the media strategy.
- The way the project trained kaders to focus on priority issues, while enhancing morale and making the most of their precious donated time.
- The way the program was monitored.
- The way flexibility was built into research and the design and execution of the program.

Social marketing's hallmark is responsiveness to target audience perceptions and attitudes toward a set of problems, not only the obvious ones but also the more subtle "resistance points" that thwart educational efforts. While much of the work to uncover and understand the perceptions and motivations of the target audience takes place during the initial phases of audience research, consultations continue and adjustments are made when the program is underway. In Indonesia, the project conducted concept testing, materials pretesting, and tracking studies to provide repeated consultations with the mothers about their perceptions and needs. Regular consultations with field staff and kaders were equally important to ensure the project's effectiveness by keeping it continually responsive to new developments.

Briefly, what follows is an account of the project's consultations with its intended audience and the resulting decisions.

Concept Testing

In this first phase, the project explored the priority nutrition problems that had been identified by project management through nutrition and health surveys. Those problems were:

- Protein-calorie malnutrition in infants 0-4 months of age (probable cause: mothers' lactation practices).
- Protein-calorie malnutrition in infants 5-8 months of age (probable cause: delayed and inadequate supplementation).
- Protein-calorie malnutrition in toddlers 9-24 months of age (probable cause: inadequate total food intake and protein-calorie depletion from illness).
- Infant diarrhea.
- Undernutrition of pregnant women.
- Undernutrition of nursing mothers.
- Vitamin A deficiency.

In formulating basic objectives and messages to address each of these problems, the project adapted commercial marketing's concept testing--the trial of ideas and products with the intended audience--developing a highly qualitative, program-oriented, and inexpensive research methodology to define the changes mothers could make in feeding practices and to identify their resistance to taking up new but critical practices. The concept testing plan called for intensive household work with a small sample. Therefore, two villages in each subdistrict were selected to participate, or a total of 10 villages out of 60 in the project. The steps in the investigative process were these:

1. The community conducted a "self-survey," which consisted of weighing all children and charting their weights on a large community graph.

2. Next a community meeting was held to discuss the survey and to ask for solutions to problems it identified.

3. Central level staff met and developed a set of question guides, one for each identified problem area, based on the solutions that mothers and others had proposed. The question guide (not a questionnaire with precoded responses) was structured to stimulate discussion and to explore the experiences of mothers in greater depth. Each guide contained five parts: 1) a set of demographic questions, 2) a topic section addressing a single problem, 3) a food recall section, 4) a behavior trial section, and 5) a set of questions for the follow-up visit, up to a week later, when the results of the behavior trial would be documented.

4. In each province a small investigation team was hired and trained in qualitative research and participant-observation techniques. All the members were women who spoke the local language. The best investigators had high school training in home economics, had experience with nutrition programs (at a provincial level or a community level), and had children of their own. The investigators were housed in the villages where they worked.

5. The selection of households was biased towards those with malnourished children and those with limited resources. The sample included pregnant women, nursing mothers, and malnourished children less than 36 months old (with preference given to children 24 months and under) and children with diarrhea. The planners of the project hypothesized that if the most disadvantaged could change a practice, so could others. A total of 330 households participated. No more than two relevant topics were investigated per household. Village midwives, shopkeepers, health workers, and officials also contributed.

6. Kaders assisted investigators in locating the selected families. The investigators' work in the houses went as follows:

- a) Infants were weighed to confirm that their classification in monthly weighing records was correct.
- b) The investigator then used the question guide for one or two topics in the informal, leisurely conversation that followed, and she noted such things as the condition of the house, existence of a garden, or use of feeding bottles. The entire discussion was taped to spare the investigator extensive note taking. The investigator later transcribed the tapes, making special note of key phrases and important concepts to come from the interview.
- c) A 24-hour dietary recall was taken, using a sheet specifically developed for the project that allowed investigators to record the foods eaten and to calculate quickly whether the infant's or the mother's diet was deficient in protein, calories, or vitamin A.
- d) At this point, the interview departed significantly from the conventional household survey. Based on the age of the child and the outcome of the dietary recall (for mother or child), the investigator worked out particular dietary changes with the mother that would improve her own or the child's nutrient intake. For

example, the mother of a 6-month-old with an inadequate intake of major nutrients would have been asked to identify one or two ingredients she could add to her child's porridge that would make it more healthful. She would also have been asked what she thought about several predetermined alternatives. The investigator and the mother then collaborated in developing a recipe for an enriched weaning food. Since they did not follow a rigid format, they were able to use the ingredients that the mother had in the house, her methods for preparing foods, and her recipes, but adding critical ingredients, such as oil. The mother fed the new food to her child while the investigator was there, and she and the investigator discussed what she liked or disliked about the food.

- e) Before leaving, the investigator promised to return in three to four days and asked the mother to continue to try whatever activity they had agreed upon. In the case of the weaning food, the mother would continue to give this food to her child several times every day until the investigator returned.

7. When the investigator returned, invariably the mother had modified the recipe to suit her needs and had some comments or questions. This opportunity for "product development"-- for trial, adaptation, and retrieval--in the mothers' homes was one of the most important elements of the methodology. It was social marketing's adaptation of commercial product testing.

Establishing Objectives

At the completion of the concept testing, the project (1) had a comprehensive picture of current attitudes and practices, (2) had identified the rural mothers' openness to altering practices, including a list of which behaviors should be changed or modified and which needed reinforcement.

The findings on breastfeeding practices, for example, led to the development of unique objectives and messages concerning breastfeeding. In the rural areas of Indonesia where the project took place, frequent breastfeeding was practiced by all the mothers well into children's second year of life. Breastfeeding practices, which initially appeared to conform to medical guidelines, did not seem to merit special attention in the educational campaign. However, through the concept testing, it was learned that mothers believed their infants were not satisfied with breastmilk alone and fed them solids soon after birth. Further exploration brought to light the mothers' belief that one breast contained "food" and the other "water," which caused them to favor giving the breast with the "food." A baby who seemed content after being suckled at that breast was never offered the other. Within a short time the milk in the unused breast dried up, and it is possible that children were not being breastfed as fully as they might have been otherwise. Subsequently, the project approached this topic in terms of the mothers' concern for their infants' satisfaction. The knowledge objective was that mothers would learn that by using both breasts during a feeding their babies would be more satisfied. The message correlating with those objectives was: "Each time you breastfeed, use both the right and the left breasts: be sure your child is satisfied."

The concept testing highlighted the need for local adaptations of some recommended practices. The best example of this is the project's recommendations for a home-prepared weaning food. After many trials with mothers, it was clear that despite the cultural differences and the physical distances between the several populations served by the project, the basic weaning food ingredients were the same from community to community. It was the method of preparation that changed. The most notable regional difference was the way fat was added (to make the food calorically dense). This weaning food ingredient was new to most mothers and highly suspect; local adaptations made it palatable.

Besides detailed objectives concerning the preparation of enriched weaning food, concept testing led to practical and sound recommendations concerning the number of times mothers should feed the food to infants and how they should offer that food (i.e., patiently). The idea of introducing foods with patience was important because the concept testing showed that mothers mistook spitting as a rejection of food and would not persist in offering a food after an infant had spit it out. They were surprised and delighted to learn that babies might accept the foods if they offered it again in small amounts and with patience. Mothers showed acceptance of the idea that if offered patiently and in small amounts, children would become accustomed to the food, would eat more, and would be "easier to manage."

The Communication Strategy

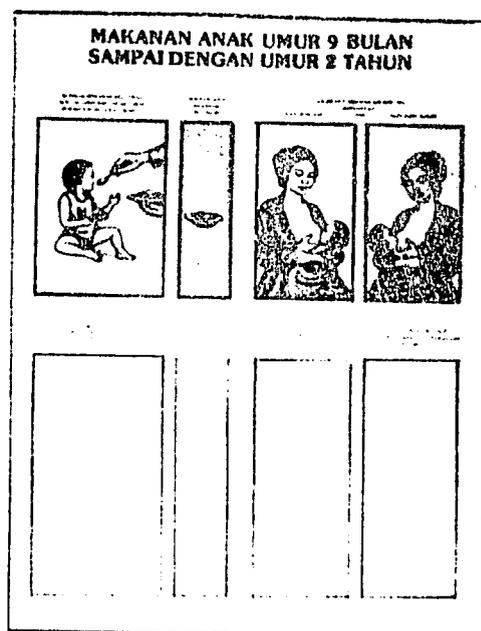
The concept testing brought into sharper focus the differences within the ostensibly homogeneous target audience of mothers. The projects segmented the mothers by their nutritional concerns before and after childbirth. Further segmentation after childbirth corresponded to the changes in the age-related dietary needs of children up to 3, and the project included a message reminding mothers to weigh children under 5 years of age. By designing specially tailored messages for each of those segments of the target audience, the project ensured that only immediately useful information would be directed to mothers in each category.

The opportunity to make the audience segmentation work came in using their weighing session for education. That role for the weighing session promised that the useful information would be delivered at precisely the right time (i.e., when the mother needed and would be interested in it most). This precision is social marketing's greatest virtue: focus on priority need when, where, and for whom it is essential and minimize all extraneous factors. (Manoff, 1985)

The household investigations were also the opportunity for finding out the mothers' sources of information and the potential of the mass media. It was learned that mothers' radio listening in Java was "lighter" than had been anticipated from the available data on ownership of working radios. Having anticipated giving a significant role to radio, the planners found it necessary to compensate. Kader, the principal medium, were to bear a proportionally greater burden than planned. This meant that their training and the materials they were to use had to be designed for a more intrusive effect on the target audience (in terms of message impact and the frequency).

The seven individual messages for each audience segment were translated into scripts for radio and posters for the kaders to teach from and distribute to mothers. The radio scripts were short mini-dramas, which besides bringing nutritional messages into the home, also identified kaders as a crucial source of information for mothers and children, thus increasing their prestige in the eyes of mothers.

Action Posters were designed to meet several strategic needs: first, to reinforce the kaders' advice in areas not reached by radio; second, to ensure that kaders accurately delivered the messages at weighing sessions and home visits. A poster was designed for each segment of the target audience. The name of the target group was printed at the top of each poster and large, step-by-step illustrations of the recommended practices were featured underneath. Columns of boxes corresponding to the number of times per day a feeding or feeding behavior was to be done were under each illustration, allowing mothers to record their compliance with the recommendations over a month's time.



Indonesian Action Poster

Pretesting the Materials

The Action posters and radio spots were drafted and tested with both the kaders and the mothers after they were developed. The testing showed that the basic messages were well understood and that mothers easily recalled the important points. The radio spots and the posters needed only minor changes in language and presentation. Most important, the pretesting provided insights into the special training needs of kaders.

Training Kaders

Their training taught kaders how to use the Action Posters in conjunction with the weighing and the interpretation of growth charts and only to give mothers Action Posters relevant to the mothers' dietary needs or those of their children. The job-oriented training, along with Action Posters to aid them in the actual performance of their work, later proved to have increased the confidence and morale that audience research had shown kaders to be lacking.

Tracking-and-Feedback

A monitoring system through monthly reports from the villages and monthly meetings of kaders with field staff kept the project's headquarters informed of developments. Furthermore, a management decision to allow local adaptations in the project prevented the rigidity that often discourages field personnel from taking control and responsibility for a project. The suggestions of kaders and field staff were considered and implemented. This not only contributed to better morale but to a more responsive program.

Cost

The cost per beneficiary in this project was the lowest of six interventions in nutrition projects assisted by the World Bank (Ho, 1984). To analyze the project, actual expenditures were used to calculate the initiation phase costs, then estimates for an expansion phase were made with the actual figures. Both nonrecurrent costs (vehicle and equipment purchases, consulting services, one-time training, and message and materials design, etc.) and recurrent costs (supervision, salaries, materials production, etc.) were included in the analysis. The Bank calculated that the annual cost per project beneficiary (children 0-24 months old and pregnant and lactating women) was \$3.94 during the pilot project stage, but that if the project were to be expanded to more areas in the country, the annual cost per beneficiary would be reduced to \$2.05. (This can be contrasted with costs of between \$20 and \$56 per beneficiary in feeding programs.) Based on the Bank's project cost estimates and the finding that 40% of the project children were growing better by 24 months of age than children in the comparison sample, the cost per child with nutritional status improvement was \$9.85 per year for the pilot project and would be approximately \$5.13 per year for an expanded program, figures which indicate that nutrition education programs are not without cost but can be among the most cost-efficient.

What are the implications of the social marketing experience in Indonesia for other programs?

Social marketing is indispensable to developing and implementing nutrition communications programs that have the potential

1) to improve practices at the household level that will affect nutritional status;

2) to make the program attractive to families, creating a demand for the program's services and thereby increasing participation (one of the most glaring failures faced by health and nutrition programs).

In trying to apply the lessons of Indonesia elsewhere, we have encountered some resistance. Among program planners' "resistance points" are that it is too time consuming, too costly, or that the process needs specialized expertise. Some are also uneasy about what is implied in a behavior-change orientation. But not everyone has been resistant to change. In both the Dominican Republic and Ecuador, under the auspices of the International Nutrition Communication Service, Manoff International, and collaborating local agencies, trials are going on right now to see if the methodology can be used to improve the nutrition education being done in these programs with less money and human resources and a minimum of outside technical assistance. They are making use of many of the lessons we learned in Indonesia, particularly: careful concept testing, segmentation of the audiences, use of growth monitoring sessions for individual counseling, careful pretesting of materials, job-related training, tracking studies, and special attention to communications within the program as well as with project participants. However, some adaptations have been made as well:

1) The problems that each of the current programs addresses have been narrowed. The Indonesian program worked on some priority problems simultaneously. In both of the ongoing programs, the principal foci are infant feeding and dietary management during diarrhea. They plan to address hygiene, maternal nutrition, and specific nutrient deficiencies in later phases.

2) Both of the current programs have reduced the length and thus the expense of the concept testing phase by combining focus group interviews* with the in-depth individual interviews and trials used in Indonesia. With this combination, the time-consuming individual interviews are only necessary to verify what is learned in the focus group.

3) The media plan is being implemented in stages. In both the Dominican Republic and Ecuador, the first step has been to develop materials for individual counseling at growth monitoring sessions** and promotional materials for the program, including some targeted to enhance the authority of promoters and health center personnel. The second step in the Dominican Republic is the development of materials for group discussions and demonstrations. In Ecuador, it is developing radio spots for families and a program for the promoters and health center personnel.

*The focus group interview is a method of qualitative research to understand attitudes and behavior and to obtain clues for modifying them. The typical focus group interview consists of 6 to 10 participants recruited from a specific target audience segment and is led by a moderator. The moderator follows a guide, which lists the topics to be covered in the interview. Unlike the traditional KAP-type questionnaire with its structured questions, the moderator's guide has open-ended questions, which allow the moderator to probe into the underlying reasons behind the attitudes expressed by participants and to stimulate them to exchange views.

**Individual counseling materials identify specific steps for families to take to ensure that children will gain weight steadily. The advice is age-specific and adjusted for whether or not the child has gained weight in the past month or has had diarrhea.

4) The materials have been designed by program staff in both cases, and the creative work and reproduction has been contracted out. Neither program has had a long-term adviser, but both have had short-term technical assistance.

With these modifications, the programs in the Dominican Republic and Ecuador have been developed on very limited budgets. Reliance only on short-term technical assistance at critical stages has meant that program personnel have truly built educational components and can take great pride in what they have achieved. Although the programs have not been evaluated, the first process evaluation in the Dominican Republic showed good use of the materials by the promoters and widespread knowledge and acceptance of their advice in the communities. An examination of some of the nutritional status data collected by the project indicates that while nutritional status is declining in nonprogram areas, it is staying the same or improving in program areas (Teller, 1985).

How can this approach be used by other programs?

The experiences in Ecuador and the Dominican Republic are showing that it is possible to use the social marketing approach as it was applied in Indonesia, adapting and refining it to the budgetary and scale limitations of each program. The challenges seem to be maintaining an openness to experimentation, having flexibility in budgeting, having patience with project development, and providing good management of the program. To meet these challenges, agencies can take several actions on both policy and operational levels:

1) Provide orientation to key agency planners on problems faced by field programs and the role that a strong educational component could play if conceived as part of the total program package to overcome common problems (i.e., low participation rates) and avoid unwanted outcomes (i.e., declining rates of breastfeeding initiation and duration).

2) Work towards instituting a policy that every program will have an educational component that is undertaken from a problem-solving point of view in a serious, systematic way and not fulfilled by simply printing pamphlets and posters designed in the program's office.

3) Brief key program managers about the process of using the social marketing approach to develop a communications component so they know the timetable for planning and how to budget. Such briefings will also make managers aware of the key decisions that must be made and in what order so that they can monitor the work. The steps outlined below offer some idea of this process. The program manager needs to know that considerable money will be spent prior to the reproduction of materials and that there are seven steps that precede materials design and at least 11 before implementation (see box).

Process for the Development of an Educational Plan

1. Identify general problems and general objectives for the educational program.
2. Gather quantitative information on the priority problems. (Often these data already exist.)
3. Determine educational priorities.
4. Gather qualitative information in the community through focus groups and individual depth interviews.
5. Analyze the qualitative information and decide action objectives, audience segments, and the creative message strategy.
6. Select appropriate media.
7. Develop prototype materials for each medium
8. Pretest materials.
9. Improve materials based on test.
10. Develop a media plan with detailed specifications about mix, frequency, duration, and budget.
11. Train workers in basic messages and use of materials.
12. Implement the public information program.
13. Evaluate and continually refine.

4) Make special funds available for the development cost of a communications component that can be obtained without a proposal that specifies the number and kinds of materials the component must produce. Such specifications only lock field personnel into a plan that may not be the most appropriate.

5) Look for continuity in the technical assistance. Most programs will need periodic guidance for different steps. Because not all sources share a common perspective, it is important to know the methodology a communicator uses in developing programs so that field staff will not be confused by conflicting methods and become discouraged.

The promise of nutrition education to affect the demand for services and routine feeding practices and consequently nutritional status can be renewed, as evidenced in Indonesia. The social marketing approach should be tried by all nutrition programs as they reach out to policy makers, community workers, and families.

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USING EDUCATIONAL STRATEGIES TO PROMOTE BREASTFEEDING:
A CASE STUDY OF THAILAND

By
Somchai Durongdej and Ronald C. Israel

Introduction

The following case study describes a project designed to change breastfeeding practices at nine hospitals in Bangkok, Thailand which began in 1984, and was recently evaluated. The project was developed by the Faculty of Public Health, Mahidol University with assistance from the International Nutrition Communication Service (INCS). It was designed to promote breastfeeding-related institutional changes in eight of the major hospitals where 70% of all births in Bangkok take place. The project received assistance in implementing this educational effort from INCS and from LINTAS, a private sector advertising firm in Bangkok.

The project was developed in response to a three-year study of the determinants of infant feeding practices, that was funded by USAID and carried out by the Mahidol University and a consortium of U.S. institutions, including the Population Council, Cornell and Columbia University. That study became the baseline against which the impact of the project is currently being measured.

The Baseline

The baseline study identified an important trend away from breastfeeding towards early and often inappropriate supplementation practices. A major determinant of this trend appeared to be a health care delivery system that failed to provide adequate medical support for mothers who wanted to breastfeed. Prior to the intervention, mothers and infants were usually separated from each other right after birth, and babies were kept in a separate nursery. The study documented a widespread belief among Thai health professionals that separation of mother and child after birth would lessen the rate of infection, despite recent evidence to the contrary.

The study also showed that health professionals lacked the practical knowledge to help mothers who had difficulties with lactation, and that mothers often received free samples of infant formula in hospitals.

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Furthermore, even though mothers from poor urban congested areas had sufficient milk to nurse for 3 to 4 months, the majority of them began bottlefeeding their infants from the very beginning. Infant formula and other breast milk substitutes were often improperly used, and foods consumed by young children were often highly contaminated, resulting in high rates of infant morbidity and mortality.

The Project

The project adopted a four-tiered strategy aimed at: a) increasing the breastfeeding-related knowledge, attitudes, skills, and practices of health professionals in Bangkok through professional training; b) changing hospital practices to increase the incidence of rooming-in and other practices that facilitate breastfeeding; c) improving the infant feeding behaviors of low-income mothers in Bangkok through a combined hospital and communications-based strategy; and d) institutionalizing public sector support of breastfeeding promotion activities through supportive legislation.

During the course of the project, the third objective was operationalized as an increase in the percentage of mothers initiating breastfeeding and practicing exclusive breastfeeding during their hospital stay.

The strategy focused on a series of action-oriented training seminars for health professionals from each of nine participating hospitals. Primary emphasis was placed on this component because of the important role that health care providers have been shown to play in determining the initiation and continuation of breastfeeding up to three months of age.

The project was conducted through the Faculty of Public Health, Mahidol University, under the direction of Dr. Somchai Durongdej, in collaboration with the International Nutrition Communication Service (INCS). INCS provided direct support to the project by sponsoring the training of Thai health professionals by the San Diego Lactation Management Program, and by providing technical assistance in the development of the communications and intervention strategies.

Initially, a four-member Thai health professional team was trained at an INCS-sponsored lactation management training seminar in San Diego, California. Upon their return, this core team, along with faculty from Mahidol University and Siriraj Hospital, became the principal trainers at three week-long workshops for approximately 75 other health professionals from each of the eight hospitals.

Eight hospitals participated in the project. These were: Rajvithi, Ramathibodi, Siriraj, Pramongkulkhao, Vachira, Taksin, Somdejphrapinkhao, and Bangkok Christian. All are government hospitals, except for Bangkok Christian, which is affiliated with The Church of Christ in Thailand. Of these, Vachira, Siriraj, Pramongkutkhao, Somdejphrapinkhao, and Rajavithi are utilized primarily by lower and middle socioeconomic groups.

Each hospital was invited to send a team consisting of a pediatrician, an obstetrician, a pediatric nurse and an obstetric nurse for training. At the training session, staff from each hospital were asked to serve as lactation management trainers for colleagues who did not attend, and to

develop goals for improving infant feeding practices at their hospitals. Staff from the Faculty of Public Health provided organizational support and encouragement for efforts that took place at individual hospitals.

At the end of the workshop, each group prepared goals and plans to encourage breastfeeding in their own hospitals. These plans consisted mainly of strategies for changing hospital practices, disseminating information, and passing along the skills gained by the participants at the training workshop. These plans were shared by each group during the last session of the workshop. Administrators from each institution were also invited to participate in this session in order to allow them to make comments, and to increase their commitment to the program.

The other elements of the project included a communications effort, and the development of supportive legislation by the Ministry of Public Health.

LINTAS, an international advertising firm with offices in Thailand, implemented the communications component. They developed two posters and one leaflet promoting rooming-in, which were widely displayed on the walls of the maternity wards and hospital corridors. The leaflets were distributed to mothers during antenatal visits. The leaflets also contained a breastfeeding "passport" for mothers. A booklet on the promotion of breastfeeding was also developed and distributed to working mothers who came from low-income groups. (See Figure 1)

The Ministry of Public Health recently issued guidelines to all the hospitals located in Bangkok. The guidelines contain information for establishing interventions to promote breastfeeding in hospitals.

Results

All hospitals implemented an intensive effort to change their practices. In teaching hospitals, the practice of separating infants from their mothers is now being gradually abandoned. Other efforts to change hospital practices include discouraging the use of medications during delivery that might inhibit lactation, providing early contact between infants and mothers, and withholding prelacteal feeds. In some cases these changes are being accomplished somewhat more slowly, particularly in the private hospitals.

By 1985, impressive changes had taken place in the participating hospitals. At Vachira Hospital, a government hospital under the responsibility of the Bangkok Metropolitan Administration (7,755 deliveries in 1984), the newborn nursery had been abolished except for babies with complications; infant formula and prelacteal feeds were no longer given out; all hospital staff had been trained in lactation management; several nurses had been given specific responsibility for promoting breastfeeding; mother-infant separation had been reduced to 4-6 hours; and a rotating milk-bank had been established.

At Pramongkutklao, a government hospital under the responsibility of the Medical Department of the Royal Thai Army, (4,246 deliveries in 1982) babies were being returned to their mothers within 6 hours of delivery; vigorous promotion of breastfeeding had resulted in estimated savings of 700

คำแนะนำให้คุณเป็นคุณแม่
ที่สมบูรณ์แบบ

เตรียมตัว เตรียมใจ
ไว้เลี้ยงลูก
ด้วยนมแม่



Figure 1: Cover of Breastfeeding Promotion Booklet

formula bottles per day; and an outpatient baby contest had been established for breastfed babies.

At Siriraj, a government hospital under the responsibility of the State University Bureau, and the teaching hospital that pioneered breastfeeding promotion in Thailand (19,817 deliveries in 1982), babies roomed-in with their mothers after a 4-6 hour separation; infant formula, prelacteal feeds and water bottles were no longer being given; privately purchased bottles were not permitted in the hospital; and an active training program had been established for health professionals.

At Somdejphrapinklao, a government hospital under the responsibility of the Naval Medical Department (6,196 deliveries in 1983), rooming-in was total; mothers began breastfeeding immediately after delivery; infant formula and prelacteal feeds were not given out; a mothers' education program had been instituted; a lactation clinic for new mothers had been set up; and a breastfeeding promotion video had been produced.

At Rajavithi, a government hospital under the responsibility of the Ministry of Public Health, administrative steps had been taken to shorten mother-infant separation time, and to discourage the use of prelacteal feeds; a lactation training center was being organized; a lactation component had been integrated into the activities of the hospital's well baby clinic; a lactation management workshop had been scheduled; and a new program had been established to counsel mothers, conduct breast examinations, and correct any physiological problems that might impair breastfeeding.

The evaluation showed that there was a positive association between the percentage of health professionals trained in a given hospital, and the percentage of mothers initiating breastfeeding. There was also a decrease in the length of time between delivery and the initiation of breastfeeding. The proportion of mothers breastfeeding at the time of discharge from the hospital ranged from 2% to 100%, with an average of 56%.

Mothers' responses to a questionnaire showed that their knowledge of breast care had increased with respect to the pretest, and that knowledge of breast cleaning and care was significantly associated with exclusive breastfeeding at one month. Eighty-five percent of mothers were rated moderate or high in breastfeeding-related knowledge on the post-test. As knowledge increased, the proportion of mothers initiating breastfeeding within 24 hours of birth also increased.

The data also showed that in 7 out of 8 hospitals, the proportion of mothers exclusively breastfeeding at six weeks postpartum was higher among mothers who had initiated breastfeeding within 24 hours than it was among mothers who did not initiate breastfeeding within 24 hours. The proportion of babies being exclusively breastfed at six weeks of age ranged from 20% to 74%, with an average of 50%.

On average, 89% of mothers reported that they followed their doctor's instructions with regard to breastfeeding and other child-rearing practices. Many of those who did not comply with their doctors' instructions reported that they worked outside the home, that they did not have sufficient milk, that their babies refused the breast, or that they had health problems.

Summary

It appears that the Bangkok Breastfeeding Promotion Project is having a major impact on breastfeeding practices in Bangkok hospitals. Five years ago, Bangkok was at the heart of the infant formula controversy. Today, the situation has radically changed.

As a result of the project, 80% of the staffs from the participating hospitals have been (or will shortly be) trained in lactation management skills. Infant feeding practices in each of the participating hospitals have changed. The new policies and practices are supportive of breastfeeding. A Ministerial Order on hospital practices related to infant feeding, originally drafted by project staff, has been issued by the Ministry of Public Health. Although it does not have the force of law, it has served as a catalyst to galvanize hospitals into action.

The project has created a snowball effect among non-participating institutions: representatives of several non-participating hospitals have already been sent as observers to lactation management workshops. The effect is also beginning to spread outside of Bangkok. Maharaj, a major hospital in northern Thailand is also undertaking a major effort to improve infant feeding practices. The posters and materials produced by the project are being disseminated to other hospitals throughout the country.

What is needed now are funds to support follow-up studies to track the post-hospital infant feeding practices of mothers who deliver at the eight project hospitals. This information would help shed some light on the degree to which changes in hospital practices influence subsequent infant feeding behavior and the extent to which supplemental educational interventions are needed. Nutrition educators agree, however, that hospitals are where the process must begin.

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PROALMA: A CASE STUDY OF THE PILOT BREASTFEEDING PROMOTION
PROGRAM IN HONDURAS

By
Judy Canahuati

Introduction

PROALMA, an acronym derived from the words that mean "project to support breastfeeding" in Spanish, was a two-year pilot project developed by the Honduran Ministry of Health (MSP), the Social Security Institute (IHSS), and the National Welfare Board (JNBS) in collaboration with the U.S. Agency for International Development (USAID). Technical assistance in project design, implementation and evaluation activities was provided by the International Nutrition Communication Service (INCS).

During the pilot phase, 1983-1985, four teams of health professionals, including doctors, nurses, and nursing auxiliaries, under the direction of Dr. Argentina de Chavez, a Honduran pediatrician, worked with institutional counterparts in the MSP hospital (Maternal-Infant Hospital), MSP outpatient clinics, the IHSS hospital in Tegucigalpa, and the IHSS hospital in San Pedro Sula to promote breastfeeding.

The specific objectives of the project were to increase health professionals' awareness of the importance of breastfeeding promotion, and to generate changes in the institutional policies and practices of hospitals to make them more supportive of breastfeeding and maternal-infant bonding.

Background

Honduras is a Spanish-speaking Central American country whose two principal cities, Tegucigalpa and San Pedro Sula, began urbanizing rapidly during the early 1920s. The process continues today.

As the country became increasingly urbanized, and lifestyles began to change, some of the traditional customs that are thought to have facilitated breastfeeding in the past, such as that of mothers carrying their babies on their backs, were abandoned, and breastfeeding began to decline.

While there are no longitudinal studies that can be used to measure changes in infant feeding practices in Honduras over time, cross-sectional surveys carried out in the late 1970s and the early 1980s suggested that breastfeeding had been declining all over the country; that there were differences in the duration of breastfeeding by both maternal age and area of residence; and that in general, urban women breastfed for a shorter period of time than rural women (Gov. de Honduras, 1983; Suazo et al., n.d.; O'Garra, 1983).

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In 1982, Honduras had an estimated infant mortality rate of between 99 and 115/1000 live births. Data show that a large proportion of infant deaths were due to diarrhea and dehydration. The proportion of infant deaths attributable to diarrhea rose from an estimated 12% in 1977 to 24% in 1982 (USAID, 1982).

The decline in breastfeeding appeared to be associated with the infant morbidity and mortality rates. The findings of a retrospective study carried out in the IHSS Hospital in San Pedro Sula during the period 1983-1985 showed that 50% of all new cases of diarrhea were among children under one year of age, and suggested that these might be attributable to premature weaning from the breast. All of the children who died of dehydration resulting from diarrhea during this period were exclusively bottlefed (Romero, 1985).

Studies also showed that an average of 68.5% of mothers delivering in the MSP and IHSS hospitals in Tegucigalpa were introducing bottles within 24 hours of birth (O'Gara, 1982), and that only 30% of the infants in low-income neighborhoods in Tegucigalpa were breastfed exclusively during the first month of life. Eighteen percent were exclusively bottlefed from the first month of age and over 80% of the infants had received bottles by two months of age (O'Gara, 1983).

Bottlefeeding therefore came to be perceived as a problem that was closely associated with urbanization, and the use of modern health care services. The fact that most urban births took place in hospitals (86% according to O'Gara 1983), led to the development of a project to promote breastfeeding in several urban hospitals.

The Proalma Project

PROALMA was developed as a pilot project. The initial hypothesis, later supported by the results of the evaluation, was that the decline in breastfeeding observed in urban areas was not due to a disinclination on the part of mothers to nurse their babies, but to their inability to cope with the problems that developed during early breastfeeding. This suggested that the principal need was for trained health professionals and other support personnel who could help mothers with their problems, rather than for a campaign to convince mothers of the value of breastfeeding. The project therefore adopted a "top-down" strategy based primarily on health professional training.

The objectives of the project were: to increase national awareness of the need to support breastfeeding; to change the knowledge, attitudes and practices of hospital staff with regard to breastfeeding (their current attitudes and practices were thought to be particularly detrimental to breastfeeding); to develop educational materials on breastfeeding; and to establish breastmilk banks for feeding premature and sick newborns.

The initial phase lasted two years. The plan was to conduct an impact evaluation after the completion of the pilot phase to determine whether the strategy adopted was effective, and whether it could be successfully implemented on a national scale. Baseline data for the project were collected using three separate knowledge, attitudes, and practice surveys:

one for physicians; one for post-partum mothers; and one for the community at large. The survey data were complemented by routine hospital observations, and the same instruments and methods were used to collect evaluation data after two years of work in the hospitals.

The main activity of the project consisted of training health professionals in hospitals and health centers in Tegucigalpa and San Pedro Sula. There were about 22,000 births a year in all three target hospitals.

At first, the project hired its own staff instead of using regular hospital personnel. Each participating hospital had its own program coordinator and breastfeeding counselor supplied by the project. All project staff members were women. During the first year, only one of them had had actual breastfeeding experience. They were initially trained by the staff of CALMA, a Salvadorean breastfeeding promotion project. This training was sponsored by the International Nutrition Communication Service (INCS).

These coordinator-counselor teams, consisting usually of nurses and nurse auxiliaries, worked with the Director (a pediatrician), the Assistant Director (a nurse), and a Technical Consultant (an anthropologist who was also a La Leche League Leader), to carry out in-service training for health professionals within the hospitals. They also supervised daily ward activities, worked with hospital and health center counterparts, counselled mothers with special problems, and helped develop hospital norms for rooming-in, for reducing mother-infant separation time, and for providing breastmilk for sick and premature infants.

In addition to these activities, PROALMA also organized two national medical seminars, developed educational materials, and disseminated them. During the pilot phase very little emphasis was placed on reaching mothers directly. Only one pamphlet targeted at patients was produced, in contrast to more than a dozen pamphlets targeted at nurses and physicians. In all, close to 2,000 health professionals received information and training during the pilot phase and more than 21,000 copies of different educational materials were distributed.

Results

The evaluation of the project took place between January and March, 1985. The project staff continued to work during that period. The results show that the project effected significant changes in hospital routines, and in mothers' and health professionals' knowledge, attitudes, and practices.

All three of the participating hospitals adopted "rooming-in" as a standard procedure (Autotte, 1985). The procedures related to rooming-in were formalized in a set of hospital norms which were adopted by the Obstetrical and Pediatric Services of 2 of the 3 hospitals and are in the process of being adopted by the third.

Routine provision of bottles for newborns and formula feeding to premature and sick newborns was abolished. Breastmilk banks have been established which provide enough own mother's milk to feed a large majority of all sick newborns. These supplies are augmented by those of an

increasing number of healthy breastmilk donors. In 1984, the three project milk banks provided 254 liters of breast milk for hospitalized newborns. In 1985, these banks collected over 1200 liters of breastmilk (PROALMA, 1984-1985).

Other hospital procedures were modified to facilitate early mother-infant bonding. The mean length of time between birth and the first time infants were touched by their mothers declined from 6.8 to 4.5 hours. During the postpartum survey, 77% of the mothers had their infants with them when they were interviewed, in contrast to 32% at the time of the baseline survey. In two of the three hospitals, 90% of the mothers had their infants in bed with them at the time of interview (Zeldin, 1985).

More mothers were breastfeeding within one hour of birth at the time of the evaluation. In 1982, none of the women studied initiated breastfeeding during the first hour after birth; in 1985, 63% of the mothers in San Pedro and 53% of the mothers in the Materno-Infantil hospital in Tegucigalpa had started breastfeeding their babies within the first hour.

More mothers were receiving prenatal and postnatal education in 1985 than in 1982. In 1985, over 90% of the mothers interviewed in hospitals reported that someone had recommended breastfeeding to them; 55% were actually shown what to do. In comparison, in 1982, 62% had had breastfeeding recommended to them, but only 6.8% had been shown what to do. This was one of the most dramatic indications of the effectiveness of the project.

There was a dramatic increase in the number of doctors and nurses recommending breastfeeding. In 1982, physicians were generally slightly more supportive of breastfeeding than nurses. By 1985, overall numbers had increased dramatically, but the pattern had been reversed. In 1982, 20% of nurses and 35% of physicians surveyed recommended the initiation of breastfeeding at birth. In 1985, 75% of physicians and 89% of the nurses were in favor of breastfeeding. The percentage of doctors recommending on-demand breastfeeding increased from 46% to 68% during the pilot phase. The percentage of nurses favoring this procedure increased from 33% to 90%.

There was a dramatic change in mothers' infant feeding practices. In 1982, exclusive breastfeeding averaged 19% among mothers surveyed and exclusive bottlefeeding averaged 46%. By 1985, exclusive breastfeeding had doubled, increasing to an average of 38% for the first year of life. Exclusive bottlefeeding dropped by two-thirds to an average of 15%.

The project technical staff had predicted an increase in the incidence of mixed feeding (it did increase modestly, from 36% to 46%) but no one had foreseen the great increase in exclusive breastfeeding nor the dramatic decline of exclusive bottlefeeding that occurred in just two years.

Infant morbidity and mortality also appeared to have declined. The extent of these changes has yet to be fully appreciated, but the survey provides some indication of the magnitude and direction. Women practicing exclusive breastfeeding reported a reduced frequency of child illness for both the two weeks preceding the interview, and other times, in relation to women practicing mixed or bottlefeeding. Only seven deaths (1.3% of the

interviews) were encountered in the community sample. Of these seven, one was breastfed, one was mixed-fed, four were bottlefed, and one died at birth. It is clear, even from this small sample, that bottlefed infants are at a greater risk of illness and death than breastfed ones.

Necrotizing enterocolitis disappeared from the newborn nursery in San Pedro Sula. Its disappearance coincided with the period in which hospitalized newborns began receiving substantial quantities of breastmilk. The mortality rate for neonatal sepsis dropped from 1.9/1000 live births in the second semester of 1982 to 0 in the same period in 1984 (IHSS, 1985).

The use of infant formula declined. Consumption by the Social Security hospital system dropped by over 12,000 lbs., a decrease of 36%. In the San Pedro Sula hospital 2,427 cans of formula were distributed during the month of December, 1982. Consumption declined to 208 cans during November 1985, and averaged 296 cans a month for the year 1985, a drop of 87% with respect to 1982-1983.

Other Accomplishments

Breastmilk banks were established within target institutions. These banks played an important role in the decline of intra-hospital use of formula for hospitalized newborns. After an initial training course for PROALMA staff and counterparts in Costa Rica in 1984, all participating institutions set up these banks, which were equipped with electric and manual breast pumps donated by USAID.

A clearinghouse for information about breastfeeding was established. During the pilot phase, the project collected and catalogued over 500 documents, many in Spanish, related to its areas of concern. These documents have already been consulted by dozens of medical, nursing, and university students as part of their thesis or other research. In addition, it reproduced and distributed journal articles and book chapters to over 1,000 physicians and nurses.

Educational materials were developed. A pamphlet for mothers with basic information about breastfeeding was developed with funds donated by UNICEF. Since the evaluation, UNICEF has donated additional funds which have been used to develop a poster combining information on infant feeding with information about growth and development, to be used as a teaching instrument in MSP, JNBS, and IHSS infant facilities all over the country for 1986. In 1986, a pamphlet on nutrition for pregnant and lactating women and on infant feeding was also developed with support from private industry.

The Successes of PROALMA

The PROALMA strategy can essentially be considered an integrated one. It combined all the necessary elements of breastfeeding promotion: health professional training; message dissemination; development and monitoring of hospital norms and practices supportive of breastfeeding (mother-infant bonding, rooming-in, elimination of routine bottles, etc.); and the development of breastmilk banks, mother support groups, and management of breastfeeding problems.

The approach aimed first at the nurses and physicians responsible for the management of neonatal services. Daily presence within the hospitals made it possible for project staff to work closely with both counterparts and mothers, to analyze the problems of these services, and to develop strategies for changing negative practices. The basic strategies developed for training hospital staff were daily ward rounds and periodic meetings, where staff members could discuss with counterparts immediate problems. Practical management courses for medical residents and interns were also held which involved ward rounds and practical problem solving.

Staff training appears to have been crucial in changing attitudes and practices, although the most visible aspect of its work has probably been its involvement with mothers, through community organizations, pilot mother support groups, and patient education.

Professional development undoubtedly contributed to the success of the project. The staff began with the formal training they received from CALMA staff, but over the course of the project they gained from both professional training and personal experience.

Personal experience was particularly important. Whereas at the outset only a few of the women on the project staff were mothers, by the second year, almost all of them had had babies, and had become breastfeeding mothers. This experience heightened their understanding of breastfeeding problems, and gave them increased confidence in their interactions with mothers and health professionals.

Several different kinds of skills, all of them essential to breast-feeding promotion, emerged over the course of the project. Some members of the project staff and their counterparts became adept at individual problem solving and counselling; others developed skill in leading group discussions, which is crucial to the development of mother support groups. Some of the regular hospital staff acquired skills in breastfeeding education. As they did, they began assuming more of the responsibility for routine group instruction, but continued to refer problem cases to the PROALMA staff.

Continued study also contributed to the staff's growing expertise. After the initial CALMA course, project staff took a course in problem management given under INCAP auspices in 1984; a course on breastmilk bank management given in Costa Rica; and prepared instructional materials for hospital staff training courses.

The project director participated in the Lactation Management Program offered by the University of California in San Diego. This course enabled her to develop training modules for physicians; these physicians in turn have begun to develop their own breastfeeding support activities in the hospitals and health centers to which they have been assigned.

What Remains to be Done

In general, the evaluation shows the project was most successful in affecting mothers' attitudes and practices during the immediate post-partum

period, a critical time and one of major emphasis in training courses. However, there are other areas that need work.

Little attention was paid to the processes of supplementing and weaning older infants. The evaluation showed that there were significant gaps in health professionals' knowledge in these areas, and that while there had been some change in their recommendations about feeding older infants, a great deal of confusion was still apparent. This confusion was mirrored in mothers' weaning practices, as evidenced by the results of the community survey. The survey showed that while juices tended to be introduced later, soups, vegetables and fruits were still being introduced earlier than the recommended 4-6 months.

There was also a gap in the area of family planning. Mothers had little knowledge of effective child-spacing methods and often believed that any kind of breastfeeding would offer contraceptive protection. Physicians also displayed little understanding of how to communicate options to parents.

Mother support groups that begin during pregnancy provide an appropriate forum for discussing many of these issues, and are also an effective means of providing the long-term support that breastfeeding mothers need. Traditional birth attendants, because of their own interest in these matters, can play a critical role in the development of a network of mother support groups in smaller towns.

In order to be able to accomplish all of these goals, new training strategies must be developed, appropriate for the education of both medical and non-medical support personnel. The PROALMA experience shows that both professional education and practical experience have an important role to play.

Recommendations

The PROALMA experience shows that both practical experience and professional education for both medical students and practicing physicians are important to the success of the project. Such training helps them to give support both to mothers and to other health personnel who will be in closest contact with mothers.

Breastfeeding projects ought to include at least three kinds of activities:

a. Breastfeeding promotion, which can be carried out by anyone with a basic knowledge of the subject (including the advantages of breastfeeding for the growth and development of both sick and healthy newborns). This person should be trained in the basic strategies of primary maternal-infant health care and the relationship of these issues to breastfeeding.

b. Mother support, which should be carried out by someone who has breastfeeding experiences of her own. In addition, women who lead mother support groups should know how to deal with common breastfeeding problems, how to lead small group discussions, and have some basic counseling skills. Such groups play an important role, and as more women return to breast-

feeding, the need for them becomes more apparent.

c. Breastfeeding consultations, which should be carried out by trained medical personnel or by lay experts who have in-depth knowledge and experience of breastfeeding problems. These individuals should have knowledge of the medical aspects of breastfeeding and lactation, as well as the interpersonal skills required to promote and support it.

At the present time, PROALMA has had more experience in carrying out breastfeeding promotion and breastfeeding consultations, and only limited experience developing mother support groups. However, the power of these groups in helping mothers to maintain breastfeeding past the immediate post-partum period has already become evident in the few experimental groups that have been developed. In PROALMA II, it will be important to study the efficacy of different kinds of support groups.

The PROALMA experience has indicated the need for a "vertical" program within the health facility. Successful breastfeeding promotion requires substantial retraining of health professionals, and the development of new hospital procedures. Without a specific coordinator for breastfeeding activities with a separate budget, it would be difficult to sustain the level of effort required to ensure proper staff training.

In summary, PROALMA has demonstrated the effectiveness of a vertical, "top-down" strategy in the development of breastfeeding support. Through the use of this strategy, staff members were able to generate changes in knowledge, attitudes and practices of both hospital personnel and mothers within a relatively short period of time. Although the major focus was on training, PROALMA had enough experience with both mother-support groups and mass media communications to indicate that these also have an important role to play.

Ideally, of course, a breastfeeding promotion program will contain the three elements of training, communications, and mother support. However, PROALMA's experience suggests that "top-down" training is probably the most basic and important of the three.

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THE CARE/CONGO NUTRITION EDUCATION PROJECT

By
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Project Planning

The CARE/Congo Nutrition Education Project, designed to train field personnel from various government services in nutrition and health education, to purchase and produce educational materials to support existing educational efforts, and to create a nutrition/health education documentation center in Brazzaville, was begun in 1980. The conception of the Project has its origins in two separate sources: first, CARE's long history of involvement in nutrition education, particularly in comprehensive programs comprised of both mass-media and interpersonal means of communications; and, second, CARE/Congo's conviction, based on preliminary nutrition data available from the field, that the Congo's nutritional problems, relatively moderate by comparison with those of many other countries, could be addressed successfully through well planned and intensive educational efforts.

The first CARE/Congo director was in India at the time of CARE's first multi-media nutrition education effort and was instrumental in applying the results of that effort to his State--the Punjab. Lessons learned from that experience--largely that exclusively focused mass media interventions serve only to increase awareness and understanding, but do little to change attitudes or habits--and further experience in interpersonal education led CARE administrators to consider a broad-based nutrition education intervention design for the Congo.

At the same time, initial research, based on information collected by WHO in Brazzaville, and others, indicated that the predominant nutritional problem in the Congo was protein energy malnutrition (PEM)--experienced largely as a significant percentage of children 0-5 between 60-80% weight-for-age (34%). The incidence of children under 60% weight-for-age was apparently low (estimated to be of the order of 2%). Furthermore, related research suggested that both protein and caloric intakes for the population as a whole approached normal values. Finally, consumption study data showed that the Congolese diet was reasonably well balanced in terms of animal protein and calories (a mix of fish, manioc, and tomatoes). Breastfeeding patterns were also found to be good, with most mothers breastfeeding their children for an average of 15 months.

It was felt, therefore, that an educational campaign would be ideally suited to the Congolese situation; information could be provided concerning: the modification of diet for infants and young children, the importance of continuing breastfeeding, the importance of good pre-natal and post-natal nutrition, and the relationship of nutrition to disease control. An

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arrangement was made to have the International Nutrition Communication Service (INCS provide technical assistance to help CARE and the Ministry of Health design and implement the campaign.

It was therefore decided to launch an educational program, based on both media and training, which would involve field-level educational agents from various services of government including: functional literacy programs, Social Affairs' programs of community organization and action, Rural Radio's programs of community listening groups, women's political organizations, and the MCH Service of the Ministry of Health. It was felt that such an interdisciplinary, multi-sector approach, although difficult to execute, was necessary to achieve maximum village-level impact.

Once agreements had been negotiated among CARE, USAID, and the Government of the Congo (the three contributors to the Project), an extensive field survey was designed and executed to determine knowledge, attitudes, and practices concerning nutrition-related behavior. Five to six hundred interviews in four areas (three rural and one metropolitan--Brazzaville) were completed in October 1981. The findings largely corroborated the data collected during the initial research period; that is, that the Congo enjoys a relatively good nutritional status, with dietary and other nutritional practices which evidently promote it. However, it was determined that not only are weaning foods introduced either too early or too late, but that there was an increasing tendency to substitute imported weaning foods for local ones.

A program of training and materials development was then begun, based on research findings. The training program was set up to train 300 town- and village-level field workers and their supervisors in nutrition/health education. Materials development was to focus on: a) teaching materials (flannelgraph) for group discussions led by the above-mentioned field personnel; b) mass media (posters and radio) to be used to support community education; and c) demonstration equipment (cooking utensils) to be used in the preparation of nutritious meals. Ancillary activities were: the production of "reminder" media, such as coloring books, ink stamps, and tote bags (projected); the distribution of weighing scales to SMI centers; and the development of a documentary resource center to serve the needs of both national and field-level professionals and students.

Field personnel were selected from the ranks of government service--the majority coming from MCH, the remainder from Functional Literacy, Social Affairs, the Revolutionary Union of Congolese Women, and Rural Radio. Personnel from these services and organizations were to continue their previous duties and add to them the education of town and village women in matters of health and nutrition (for personnel from MCH, an increased effort in health and nutrition education). Such education would include the introduction of health and nutrition matters in functional literacy classes, in village and community women's groups, and in radio listening clubs in those areas where Rural Radio was active.

Group education was to be based on a Field Manual (Cahier d'Animation) which presented information to be taught on a theme-by-theme and lesson-by-lesson basis. Teaching materials and demonstration equipment were to support these group education sessions. The mass media (posters and radio)

programs were based on the themes, messages, and lessons developed for the Field Manual. In essence, the development of the Field Manual represented the message development phase of the Project. Development of the Manual--and overall development of program strategies, priorities, and messages--was done by CARE/Congo staff assisted by International Nutrition Communication Service consultants. Technical advice and consent were given by members of the respective government services represented in the Project (i.e., Social Affairs, Rural Radio, etc.).

As noted, themes and specific messages focused primarily on the introduction of solid foods to supplement breastfeeding. Aspects of weaning that were discussed included: the importance and economic logic of local weaning foods; the importance of a varied supplementary diet, rich in all nutrients; proper hygiene during supplementary feeding; proper nutrition during child illness; the importance of continuing breastfeeding after the introduction of solid foods. In addition, themes were developed concerning the nutrition of pregnant and lactating women.

Once the program had been developed conceptually (largely through the development of the Field Guide, as mentioned above), manuals were developed for the training of field personnel, and for the training of trainers. A nine-day training session for trainers was held in Brazzaville; the trainers at these sessions were CARE/Congo personnel. A shorter, five-day training course for field-level personnel (animateurs--the majority of the 300 field personnel to be trained) was given regionally. Again, the services of both trainers and CARE staff were used, as they served as teaching advisors.

Posters were designed to support the animateurs' group education activities, and a series of posters were to be distributed to each animateur. They, in turn, were expected to place them conveniently where they could be seen by participating mothers. Radio program ideas were to be developed by CARE/Congo staff, then given to Rural Radio to be produced and aired on a regular basis. Such programs were to be an integral part of Rural Radio's village listening group program, where groups of participants listen to, then comment upon radio information.

A flannelgraph kit (consisting of a box, felt, and cut-out figures) was developed to be used in group education sessions. The figures were designed to portray characters in the stories used in the Field Manual, as well as to represent foods, health personnel, etc. Auxiliary, "reminder" media, such as coloring books, ink stamps, and tote bags, were to be produced and distributed. Complete demonstration sets of cooking utensils were to be purchased and distributed to all animateurs.

All media were pretested. An INCS consultant, invited to the Congo to participate in message and media development, also was responsible for the design of a pre-test methodology and implementation plan.

The Project was to be administered by CARE/Congo. The professional administrative staff consisted of a CARE employee who served as Project Director and a local Congolese counterpart who served as Project Coordinator. This staff was responsible for maintaining functional links among all the services involved in the Project and for the overall management of the Project.

A supervisory system was set up, consisting of regional supervisors, selected from the participating services, and animateurs principaux, selected from animateurs ranks. Their responsibilities were largely administrative, checking on the progress of the scheme and reporting on the quantitative and, to some degree, qualitative aspects of the program.

The Project was funded partly by an AID OPG grant, partly through CARE funds, and partly through the in-kind contributions of the Government of the Congo. These latter contributions consisted largely of office space and the provision of a full-time Project Coordinator.



Poster developed by the CARE/Congo Project which reads: "Mother's milk is the best food." (Photo compliments of CARE.)

Activity description and analysis

All major activities were executed according to plan: field research was designed and implemented, training modules and materials were produced, media were utilized, training courses were run, materials were distributed, and small-scale evaluations of Project activities were begun.

A summary sheet of the Project's activities indicates that, as of September 15, 1983 (approximately one month before the scheduled close of the Project), the following progress had been made:

- Flannelgraphs: 64 sets distributed out of the 350 produced
- Field Guides: 70/350 distributed
- Ink Stamps: 12/525 distributed
- Coloring Books: 509/509 distributed
- Crayola Crayons: 210/210 boxes distributed
- Posters (6 sets, 1000 each): 1500 distributed plus 225 ready for distribution
- Cooking Utensils: 23/200 distributed
- Scales: 19/100 distributed

No information was available concerning the number of radio programs/spots produced and/or aired. Out of 300 animateurs and supervisors to be trained, the Project has trained 266.

An Evaluation Team spent eight days in the Congo evaluating the project and found that on the whole the project was well conceived, planned, and managed, incorporating both mass media and interpersonal communication. It was inter-ministerial in approach, focusing on both training and materials production, and had developed an extensive supervisory system. However, a number of critical comments also were made concerning ways in which the project could have been improved:

Training: In general, training was too short and took little advantage of local professional resources to give it both breadth and depth. Moreover, too little emphasis was placed on the socioeconomic and cultural context within which nutritional problems occur. Finally, the training program was conceived too narrowly, having no provisions for continued in-service training of animateurs and no consideration for training of higher-level government officials who were important to the administration, management, and eventual financing of the program.

Personnel: Although the Project goal of recruiting field personnel from all services was considered an important one and represented a major step towards a truly integrated nutrition/health education project, few active steps were taken to define carefully the educational roles of non-health personnel and to ensure regular participation of these field agents. Furthermore, too little attention was paid to the administrative aspects of inter-ministerial Project execution.

Campaign design: Although the campaign was clearly based on the results of the field research, that research itself was inconclusive concerning reasons why certain behavioral patterns had been established. Although, for example, the types of weaning foods used in the Congo and the ways in which they are prepared and given are known, little is understood concerning the economic, social, and cultural variables influencing nutritional behavior. The degree to which imported, prepared baby food and bottle preparations (both imported and locally prepared) serve actual felt needs is not known. The development of both training strategies and media was obviously hampered by such informational gaps.

Materials: The choice of media did not appear to be based on a well defined strategy. That is, there was no apparent analytical basis for the media mix of radio, posters, flannelgraph, coloring books, etc. For example, although a number of posters treating different themes were

planned, little thought was given to their role in the communication process. Could they really be supportive of other mass media when the radio was given so little priority? How long was their effective life to be, and what was to follow? Were they meant to be used as part of group discussions? And if they were, why were not many more planned? Was the estimated \$2.00 a copy justified in view of the static role they are presently playing?

Radio, a medium with significant potential in the Congo, was not well utilized. This lack of utilization seemed to be more a problem of management than conception--the project had originally intended to use radio but did not follow through on the administrative procedures necessary to exploit fully the time available on both Radio Rurale and the regular broadcasts of SMI.

The flannelgraph, although long a fixture in nutrition education, may detract from the potential of dynamic, participatory group discussions based on a strong oral African tradition. Women may be more limited and constrained, rather than stimulated by the strictly defined images and by the recommended stories to be told. Little creative research was done to determine the maximum utility of the flannelgraph and its ultimate appropriateness in the Congolese setting.

Similarly, the role of cooking utensils in education was not explored--that is, given the expense of such items and the familiarity of most Congolese women with the techniques and methods of cooking, was demonstration equipment really necessary? Furthermore, the problem of a lack of individual food contributions for cooking demonstrations had not been addressed.

No real rationale was given for the use of coloring books, ink stamps, and the proposed tote bags. They were included as a part of a package, modeled after an apparently American commercial marketing methodology; yet no justification of this methodology and its applicability to the Congo was given nor was a detailed rationale presented.

Technical innovations: It was felt that although the Project was based on a sound concept of an interdisciplinary and interministerial approach to nutrition education, it appeared that little exploratory work had been done on the various possible ways of introducing such education into institutional settings. Nutrition education in the SMIs, for example, was limited to group discussions--seances d'education--when considerable exploration could have been done concerning the use of weight charts, individualized educational contacts, and the use of existing child patient records as a means of getting important feedback. Similarly, it was felt that little had been done to energize community education, largely through the efforts of Social Affairs and URFC agents, by developing more innovative techniques for group action.

Supervision: Although a good system of supervision has been put in place by the Project, involving both supervisors and sub-supervisors (animateurs principaux), it was felt that the system did not address important problems such as: formative evaluation, in-service training,

administrative modifications to support nutrition education, and development of technical innovations.

Administration: Although it was clearly understood that the Project's autonomy, vis-à-vis the established Government administrative structure, was valuable in terms of efficiency and financial management, it was felt that greater efforts should have been made to prepare for the ultimate incorporation of the Project into the bureaucracy. It was further felt that this incorporation would have salutary effects on other nutrition and health education programs within various ministries, would serve as a catalyst for more positive government action, and would help to provide a coherence and cohesiveness that government education programs presently lack.

Library: Although the project has collected a good and growing supply of relevant professional documents, it was felt that no adequate provision had been made for the utilization of these documents. As presently conceived, the library can serve neither as a reading room for professionals (lack of space and insufficient publicity), nor as a clearinghouse (no editorial staff), nor a resource center which excerpts and photocopies materials (no budget).

Evaluation: Initially Project staff felt that they could evaluate, after three years, the impact of Project activities on nutritional status. They quickly realized the impossibility of doing this and wisely revised their expectations. Recently, they have begun a series of formative evaluations, in which small samples were taken of the target population, and questionnaires given concerning the comprehensibility of messages, and attitudes towards them. It was felt that too little emphasis was placed on an analysis of the media and thematic treatment. Information concerning these two aspects would be important for media package design and overall media strategy.

Lessons to be learned

1. The amount of professional time and effort required to plan sufficiently a mixed media and mixed approach educational campaign is frequently underestimated. Careful attention has to be given to the justification for and rationale of each and every programming step taken. Considerable thought also must be given to the functional relationships among project components.
2. The amount of effort required to manage a complex project such as this one is also frequently underestimated. Particularly, significant attention must be paid to the roles of various players in the overall campaign, definition of terms of reference, delineation of lines of authority and coordination, and expectations in terms of performance.
3. The amount of time and effort invested in materials production at the expense of training is disproportionate to the need and importance of subtle, comprehensive, and continued training of personnel. This, too, appears characteristic of many education projects.
4. Many projects are carried out in isolation, largely because of a desire to remain unencumbered by government bureaucracies and because of

pressures from sponsoring agencies to show results. As a result, although projects themselves may be a success, they have done little to have a real impact on the way government institutions do business. This project appears to be no different.

Conclusion

The CARE/Congo Nutrition Education Project, despite its limitations and problems, represents an important effort to institute a multi-dimensional approach to health education in the country. It has included the all important elements of research, training, materials development, and supervision as well as other related activities. It has been well managed from a procedural point of view and has accomplished--in terms of output--what it set out to do. It is valued by the Government of the Congo both for its educational importance and for its ability to involve American private voluntary organizations in national health programs. It is valued by USAID because it represents a professionally managed American technical assistance effort.

It was the recommendation of the Evaluation Team that the project be extended for a second phase, on the condition that it be modified and strengthened rather than enlarged in scope.

CARE/Congo Nutrition Education
Vital Statistics Summary

Target Group: mothers of young children, particularly those aged 0-5

Size Target Group: 60,000 families, nationwide

Major Nutrition Problem: PEM among infants and young children

Major Behavioral Problem: Use of imported weaning foods; introduction of solid foods either too early or too late

Major Nutritional Messages:

- Food supplementation from 4 months;
- Continued breastfeeding;
- Preparation of local weaning foods;
- Preparation of local weaning foods enriched with meat, fish, eggs, fruit, and vegetables;
- Nutrition during child illness;
- Nutrition for pregnant and lactating women;
- Nutrition and hygiene.

Project Location: national

Total Project Budget: \$640,000

Length of Project: 3 years (1980-83)

Project Staff (Professional): 2 paid

Media/Equipment Used: posters, flannelgraph, field manual, cooking utensils, scales, coloring books, crayons, ink stamps, radio

Major Project Activities: training field workers; production of materials; creation of a documentation center

Project Outcomes: not yet evaluated

"SMALL TALKS"
A SUCCESSFUL HEALTH/NUTRITION EDUCATION PROJECT IN SIERRA LEONE

By
Nancy Minett

I. Summary

A two-year project whose objectives were to develop health/nutrition education materials for use in the rural villages of Sierra Leone and to demonstrate positive health and nutritional behavior change as a result of their use was undertaken from July 1977 through June 1979, by CARE/Sierra Leone.

A base-line survey was conducted in August and September, 1977, using five field test sites as bases, to identify community health and nutrition practices in the surrounding villages. Single topic "small talks" were created to address the unsatisfactory practices identified in the survey. Black and white photographs were taken in the villages to illustrate the "small talks" and a flip chart was produced incorporating the talks and pictures. The charts were used by health teams during their regular activities, both with mobile health vans in the villages and in hospital-based clinic sessions. The team members were employed by existing health facilities, both governmental and non-governmental and they voluntarily contributed their time and efforts to the project.

In May and June, 1979, after the flip charts had been in use for sixteen months, a second survey was undertaken. The same villages were visited for interviews as had been visited in 1977 in order to make an evaluation of the impact of the health education "small talks." Some positive behavior change was shown to have occurred.

II. Sierra Leone: The Country and its People

Sierra Leone is a country about the size of Scotland, lying just at the bulge of the west coast of Africa between Liberia and Guinea, with a coast line of about 210 miles along the Atlantic Ocean. Population at the time of this project was estimated to be about three million. Subsistence farming is practiced throughout the country. Only a few paved roads exist outside the capital city of Freetown. Health facilities are limited and about 85% of the village women have had no formal schooling.

Close to 100% of the girls living in villages are initiated into a secret society at the age of puberty. This is an acculturation process during which the girls learn sewing and singing, cooking, how to be good wives and mothers and other aspects of their responsibilities and roles as

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village women. Things that are learned "in the bush" are sacrosanct and may not be discussed with non-initiates. These teachings clearly define the socially approved responses to pregnancy, labor and childbirth as well as the care of infants and children. Independent behavior or decision-making on the part of females is neither required nor encouraged by the community.

Most men have more than one wife, from two to four, and the women share the household tasks with their mates. Women are responsible for growing the vegetables for family consumption, but there is a sharing with the men of the rice farm work. A woman's day begins before dawn and does not end until after dark.

A strong and supportive family structure exists in almost all rural families. Not only does this structure provide support for group actions within the approved mode, but it also provides each of the group members with very precise ideas about acceptable and non-acceptable behavior. Added to this structure is that of the Islamic religion to which the majority of the people belong. A woman or man wanting to do something different from what everybody else has always done, that is, change their behavior, faces a formidable number of people committed to maintaining the old and established ways and customs.

III. Description of the Project

A. The Base-Line Survey

A four-page questionnaire for pregnant women and mothers of children between the ages of six and twenty-four months and a two-page questionnaire for the children were designed and field tested. The questions concerned demographic information, household characteristics, health and nutrition practices and a twenty-four hour dietary recall for both mother and child.

Five field test sites were identified that represented different kinds of health facilities. One was a small hospital far from Freetown that was established and directed by a physician from the same village. The second was a Methodist missionary hospital which has been functioning in an up-country town for many years. The third was a Catholic hospital run by the Sisters of the Holy Rosary that had just begun an extensive village outreach effort for a primary health care program. The fourth site was a government hospital in one of the District towns with a classic Under-Fives clinic. The fifth field test site was a small outpatient clinic in a very remote village run by a government dispenser and his wife, who was a midwife.

These sites also fit the following criteria:

1. There was an outreach activity in the villages by the health facility staff
2. The administrators were willing to assist their staff members in taking part in the project
3. The staff members were willing to undertake the small amount of extra work involved in participation in the project

4. In the case of the governmental facilities, the Ministry of Health gave its permission for health staff to participate.

From five to seven days were spent at each field test site. Each day a different village was visited with the mobile health teams on their regular schedule. A member of the health team served a translator in between her or his regular clinic duties. Women attending the ante-natal clinic or the Under-Fives clinics and having a child between the ages of six and twenty-four months were interviewed so that one set of data was obtained for the woman herself, and one for her child. Interviews were conducted in the Mende language while the women were waiting for one or another of the clinic services. It was usually possible to complete interviews with eight women and eight children each day. Although each of the two interviews only required about a half-hour's time, the clinic activities themselves and the distractions of village life around the place where the sessions were being held contributed to lengthening the total time it took to complete the interviews. From each of the field test sites, an additional village was identified that did not have access to any health care facilities and interviews were conducted in those villages to use as controls.

It is evident from the data collected that Sierra Leonians eat a nutritious diet, with rice as the usual staple. A sauce to go on the rice is generally made of palm oil, onions, peppers, green leaves and, very often, some form of fish--fresh, smoked or dried. The women living in the poorest areas have the most inadequate diet, but even in the better farming areas the custom is generally to eat one big meal in the afternoon or evening and eat some snack, i.e., rice from the night before, during the day. Table I shows the most common foods reported on the 24-hour dietary recall question.

B. Development and Implementation of the Education Program

Because of the large number of women who have never had any schooling, written materials alone were ruled out as a method of providing the health education. The survey had shown that many families did not own a radio, so the use of that medium was rejected. A number of villages had either an irregular supply or no electricity so slides and films were considered inappropriate as teaching tools.

Finally, a large flip chart was decided upon, for the following reasons:

1. The large size could be easily seen by numbers of people
2. A folded-back wooden cover could be used as an easel and serve as a protection when closed
3. Texts could be provided on one side of the chart while the other side with a photograph faced the audience. This would make it easy for the person conducting the session to maintain eye-to-eye contact with the audience while having easy access to the text.

The results of the survey provided information that was used to develop ten single topic "small talks" about good health and nutrition practices.

TABLE I

Most Common Foods Reported on 24-Hour Recall

		Rice	Fish ¹	Ground ² Nuts	Hot ³ Pepper	Onions	Cassava Leaves	Banana	Orange	Papaya
Aug. Sept.	1977 Mothers (N = 113)	113 (100)	90 (80)	29 (26)	99 (88)	54 (48)	73 (65)	4 (4)	0	0
May June	1979 Mothers (N = 101)	80 (79)	84 (83)	25 (24)	87 (86)	72 (71)	38 (38)	10 (10)	2 (2)	4 (4)
Aug. Sept.	1977 Children (N = 85)	45 (53)	61 (72)	34 (49)	17 (20)	8 (9)	15 (18)	2 (2)	0	0
May June	1979 Children (N = 85)	39 (46)	54 (64)	52 (62)	16 (19)	23 (27)	12 (14)	13 (15)	2 (2)	0

Numbers reporting (% of total group)

¹ Includes smoked and fresh fish.

² Includes groundnut paste (peanuts).

³ Capsicum pubescens - used in sauce on rice.

"Small Talk" topics included such examples as: diet during pregnancy and lactation, breastfeeding, weaning your baby. The use of the word "lesson" was avoided in order to keep a rigid school-like atmosphere out of the program. The text was written in straightforward English that the field testing proved was easy to translate into other languages.

Literature available at that time regarding the teaching of unschooled adults showed that photographs of situations familiar to the target group seemed to be the most effective visual aid. (Fugelsang, 1973). Therefore, photographs were taken in the villages to illustrate the flip chart. Three to four pictures were taken for each "small talk."

A study done in Ghana showed that black and white photos with background detail blocked out were most easily identified and understood. (Kwansa et al., 1972). Our photographs were blocked out after our own field testing corroborated the Ghana study. The photographs were processed and printed in Freetown and the Government Printing Office printed the flip charts and subsequently the booklets.

When the flip charts were ready for use, the health care teams--to become our field test teams--were all invited to a training session in Freetown. Very often people working at the village level do not see themselves in multiple roles and it was hoped that they might be helped to see themselves in the new roles of educators, communicators, and evaluators. Therefore, session topics included definitions and discussions about education, communication, and evaluation.

Instruction was given in the introduction of photographs to non-reading groups and the teams practiced using the flip chart and leading discussions among themselves. Scheduled speakers also provided up-to-date information regarding some of their professional activities and concerns. After this first training session, the teams returned to their sites and field tested the flip charts for four months during their regular village visits and clinic sessions.

A second workshop brought them all back to Freetown to discuss their field testing experience and provide feedback about their use. Evaluation had included cultural acceptability, relevance to the local situations, ease of translation, the wording of the talks, audience identification with the photographs, and the physical use of the flip chart itself. Revisions were made as a result of this valuable feedback and continued to be made as longer use uncovered additional need for changes.

C. Evaluation

During May and June, 1979, a second survey was undertaken in the same villages as those of the 1977 survey to see if it was possible to document any behavior change as a result of the use of the flip charts over the sixteen-month period. Due to the mobility of the population, we did not attempt to find the same women we had first interviewed. In Sierra Leone a pregnant woman usually returns to her mother's household (which is often in another village) to have her baby and remains there until the baby is walking. Then she returns to her husband's household. Women go to visit their families on other occasions as well so the time and effort to try to



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FEEDING WITH A CUP AND SPOON

It is important for the health of your baby to feed him with a clean spoon and cup when you give him extra food. If you feed your baby with your hand it may cause coughing or choking. This can make your baby very sick. Many people have been fed by hand when they were babies and nothing happened to them. But we all know that sometimes babies choke and suffocate and die when they are being fed by hand. We do not want to take a chance of choking your baby.

Feeding with a cup and spoon takes a little time. Baby is small and cannot eat as fast as an adult can. Hold your baby's head up when you feed him or her. Give the food before you give the breast milk at least 3 or 4 times each day.

This baby is 4 months old. Her mother has been breast feeding her since she was born. When a baby is 4 months old, it still needs just as much breast milk as always. But the baby also needs extra food. It does not need any other kind of milk - because mother's milk is always the best milk for the baby. Mother's milk is better for the baby than any kind of tinned or powdered milk.

Leçon 5

NOURRIR AVEC UNE TASSE ET UNE CUILLERE

C'est important pour la santé de votre bébé de le nourrir avec une cuillère et une tasse propre lorsque vous lui donnez de la nourriture en plus du sein. Si vous nourrissez votre bébé avec la main, cela peut le faire tousser ou l'étouffer et le rendre très malade. Bien des personnes ont été nourries avec la main quand elles étaient bébés et rien ne leur est arrivé. Mais nous savons tous que parfois les bébés s'étranglent, suffoquent et meurent quand ils sont nourris à la main. Il ne faut pas risquer d'étouffer votre bébé.

Nourrir le bébé avec une tasse et une cuillère prend un petit peu de temps. Le bébé est petit et ne peut manger aussi vite qu'un adulte. Maintenez la tête de votre bébé bien droite quand vous le nourrissez. Donnez-lui la nourriture avant de lui donner le sein, au moins 3 ou 4 fois par jour.

Ce bébé a quatre mois. Sa mère lui a donné le sein depuis sa naissance. Lorsque le bébé a 4 mois, il a toujours besoin du lait de sa mère mais il a aussi besoin d'autre nourriture. Le bébé n'a pas besoin d'autre sorte de lait parce que le lait de la maman est toujours le meilleur pour lui. Le lait maternel est meilleur pour le bébé que n'importe quel lait en boîte ou en poudre.

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DIARRHEA

A healthy baby who is being breast fed and who gets other food as well does not often get sick. But even a healthy baby can get diarrhea sometimes. When a child has diarrhea, it means that he or she is losing a lot of liquids from the body. The body needs these liquids to keep healthy. When a child loses too much liquid, we say that the child is "dehydrated". This means that:

1. There is a sudden loss of weight.
2. The mouth is dry and the eyes sink in.
3. The soft spot on a child's head sinks in.

Give the child with diarrhea soft cooked food to eat as often as he or she will eat it. Even if it seems to cause more frequent stools, the child should continue to breast feed and have other food as well. The child's body is being nourished by some of the food. If the child is vomiting, do not try to give any food for half a day. Then give food and plenty of boiled, cooled water to drink. The liquid from a coconut is very good for the child to drink also, especially if she is sick.

Leçon 14

LA DIARRHÉE

Un enfant en bonne santé, nourri au sein et avec d'autres aliments, n'est pas souvent malade. Cependant, même un enfant en bonne santé peut avoir de la diarrhée. Quand un enfant a de la diarrhée, cela veut dire que son corps perd beaucoup de liquides et le corps a besoin de ces liquides pour rester en bonne santé. Quand un enfant perd trop de liquide, on dit qu'il est "déshydraté". Ce qui veut dire que:

1. Il perd du poids tout d'un coup.
2. Sa bouche est sèche et ses yeux s'enfoncent dans les orbites.
3. La partie molle de la tête de l'enfant s'enfonce.

Donnez à manger à l'enfant atteint de diarrhée des aliments cuits et mous aussi longtemps qu'il voudra bien manger.

Même si cela lui fait faire encore plus souvent ses besoins, l'enfant doit continuer à être nourri au sein et à manger d'autres aliments. Le corps de l'enfant retiendra une partie de la nourriture. Si l'enfant vomit, ne lui donnez pas à manger pendant une demi-journée. Ensuite donnez lui à manger et faites lui boire de l'eau bouillies refroidie. Le jus de noix de coco est une très bonne boisson à donner à un enfant, surtout quand il est malade.

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The following illustrations are taken from Health Education: Small Talks, a publication of CARE/Sierra Leone. They are reproduced by permission of CARE.

track down individual women becomes prohibitive. We found that the demographic characteristics of the first and second survey groups were comparable. As we were interested in general community behavior rather than that of individual women, this decision proved to be a reasonable one. Table II shows some of the demographic characteristics of the two groups of women.

TABLE II
Some Characteristics of the Women Interviewed

		1977	1979
Age	-20	31 (28)	49 (49)
	21-30	61 (54)	41 (41)
	31-40	16 (14)	9 (9)
	41+	5 (4)	2 (2)
Tribal Group	Mende	104 (92)	95 (94)
	Sherbro	3 (3)	2 (2)
	Other	6 (5)	4 (4)
Religion	Muslim	84 (74)	76 (75)
	Christian	25 (22)	20 (20)
	Other	4 (4)	5 (5)

Numbers reporting (% of total group)

Establishing realistic goals to measure behavior change is a problem that usually baffles educators of all kinds. In addition, when the behavior is supported by all the pressures of a traditional society, changing it is extremely difficult. Measuring change, if it does occur, is almost impos-

sible unless one plans to do it over a long period of time. Undaunted by these difficulties, however, we established three criteria after the first survey which were to be the goals for measuring behavior change among the women.

The following outline shows the survey findings, our criteria and the actual behavior change reported during the evaluation survey.

1. a) Survey finding:

Women reported consuming almost no fruit and usually eating only one meal in a 24-hour period.

b) Behavior change anticipated as a result of the project:

Increase by 30% the number of lactating women eating 2 fruits, 2 vegetables, and 2 protein foods in a 24-hour period.

c) Actual behavior change reported:

11% increase

2. a) Survey finding:

Children (6 - 24 months old) were eating almost no fruit and not much protein.

b) Behavior change anticipated as a result of the project:

Increase by 20% the numbers of children (6 - 24 months) eating 1 fruit, 1 vegetable and 1 protein food in a 24-hour period.

c) Actual behavior change reported:

8% increase

It can be seen that at the end of the project it was impossible to substantiate a claim for real behavior change. The figures do indicate movement in the right direction, however, and it is my own belief that were we to go back again now and survey we might well be able to document larger numbers of mothers and children showing the changes. It should be noted that the mobile team may visit villages only once or twice a month. Women may visit a hospital-based clinic only once in several months. As the only exposure that women have to the flip chart messages is when they are present at one of these health care sessions, it can be seen that the number of times an individual woman hears the "small talks" is varied and unpredictable.

IV. Comments and Suggestions

Many people working in the rural area are aware of the need for nutrition education but have little opportunity to develop their own materials or access to materials from other sources. The flip chart provides a tool with which to work and has revived the interest of many in

the provision of health education. People using the flip chart report eager audience participation in the discussion sessions initiated by the questions at the end of each "small talk." During the final evaluation interviews, many women could quote almost verbatim several of the "small talks" and they all reported having shared the information with others.

Men and children were often present at a "small talks" session and were very interested and enthusiastic. A program was started using the flip chart in a secondary school but the project ended before evaluation of that process could be undertaken. One woman we interviewed had memorized several of the "small talks" and told us she repeated them to groups of women and children in her own village whenever they met together.

Although no specific monitoring is presently taking place, we continue to get reports that the flip charts are still in use without further supervision.

Subsequently, a booklet was printed, with the same messages and photographs. It has now been re-printed in a bilingual, English/French edition for use in other countries and has also been translated into several other languages.

This two-year project was a learning experience for us all. As a result of it, there are certain observations to share with others who may want to implement a similar project.

1. There are many community resources that one can utilize for a project such as this. Statistical assistance can be found in the government statistics offices, for example, or in college geography departments, banks, or big businesses.
2. Local libraries and international voluntary agencies often have quite extensive reference resources.
3. Many people already working in the countryside are willing to give their time and efforts to a project that will provide them with support and encouragement in fulfilling their jobs.
4. It is possible to conduct a simple village survey that will provide valid information for program planning using only a few people and without spending a lot of money.
5. Interviewees are truthful and will answer questions to the best of their ability if the credibility of the interviewer is well established. This can be done by following the accepted rules of village etiquette and by working with people who are familiar to and with the villagers.
6. We found that 18% of women in the control villages--those far away from any health facilities--reported having seen the flip chart. Perhaps this means that project planners need not plan a "saturation" effort but can conduct a successful program from fewer strategically located sites and count on an educational "spin-off."

7. Criteria for future evaluation should be identified that are easily measurable and realistically achievable given the projected time frame, the personal characteristics of the population involved, and the resources available.

8. Evaluation surveys should be conducted during the same month of the year as the base-line survey. We were not able to do that, so our pre- and post-food consumption data are not really comparable.

9. Before starting a project it is a good idea to first determine if the project proposed has already been done by someone else and the product is lying around gathering dust somewhere. And if so, why?

V. Summary

This project was designed to develop health education materials for use in the villages and to attempt to document behavior change as a result of their use. Sixteen villages were surveyed at the beginning of the project and again at the end. The second survey did not show gross behavior change but provided indications that change was taking place. A longer period of time than sixteen months should be allowed between surveys to show greater impact. The flip chart and booklet that were developed as a result of this project have met with enthusiasm, both among the villagers and with the field workers using them.

The stimulation and encouragement that the products of this kind of project provide for village level workers and their audiences should not be discounted as a valid project goal.

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THE ROLE OF EDUCATION/COMMUNICATIONS IN VOLUNTARY AGENCY FEEDING PROGRAMS

By
Star Campbell-Lindzey

Voluntary agencies have the potential of playing a unique role in the development of a community or country. Although a basic function of many voluntary agencies overseas is distribution of donated foods, it has been exciting to learn that participants in voluntary agency feeding programs often praise the educational component more than the food package itself (Cook and Csete, 1983; Israel and Campbell-Lindzey, 1982).

A review of the education/communications components in various PL-480 programs, over the past few years, indicates that nutrition and health information dissemination has been the major form of education offered. Lessons offered at the feeding centers have been usually didactic in nature and include little or no participation by the program participants or community members (Capparelli, Griffiths, and Horner, 1982). Other nutrition education activities, usually consisting of food demonstrations, have occurred in an ad hoc fashion and rarely have been supported by a specific budget for nutrition/health education (Israel and Campbell-Lindzey, 1982).

Recently, USAID and the voluntary agencies have seen the need for a systematic approach to the use of nutrition education/communications in feeding programs and have requested technical expertise from INCS in these areas. In the past two years, consultants have visited feeding programs in the Dominican Republic, Honduras, Madagascar, Sudan, and Burkina Faso to work in collaboration with host country nationals in the design, assessment, and evaluation of their nutrition/health program components.

A close look at these programs indicates that there are several areas in which a bona fide nutrition/health education component can strengthen the entire feeding program. These areas are: growth monitoring and surveillance, training, and other developmental activities. Appropriate education methodologies can unite these three independent functions and thereby help program participants and staff understand the importance of the interventions being offered in each of these three areas.

Growth Monitoring

All voluntary agency feeding programs include a growth monitoring component, usually consisting of monthly weighing, charting, and surveillance of program participants. The degree to which these activities are performed vary from country to country and from center to center within

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the same country. In some programs, growth monitoring may be viewed as an administrative record-keeping task required by either the voluntary agency or Ministry of Health. Completion of individual and master growth charts tend to be time-consuming, confusing, and have little meaning in regards to the health make-up or needs of the community being monitored.

For instance, Cook and Csete noted in Rwanda that "the weighing period . . . is the least pleasant part of the program, accompanied in some cases by public criticism of parents and even animosity between parents and monitors." Their observations were supported by the findings of a survey which indicated that many parents saw the weight chart as a means of "singling out certain negligent parents . . . [however], an analogous understanding of the positive aspects of the individual weight chart does not . . . seem to be present." (Cook and Csete, 1983, pp. 31, 26)

An assessment of the CRS program in Burkina Faso revealed yet another dimension to the growth monitoring dilemma. Participants in the preschool feeding program do not appear to see a relationship between weight gain and good health (Israel and Campbell-Lindzey, 1982). This cause and effect relationship, which some voluntary agencies use as the basic theme of their programs, does not seem to be understood by program participants. Cook discovered that Rwandans believe poor feeding may lead to poor growth but poor growth is not necessarily proof of poor feeding (Cook and Csete, 1983).

An effective education program has the potential for correcting some of these misconceptions about the growth monitoring process and, in addition, add more dimension and meaning to this administrative/ educational component. Monitors and supervisors at the feeding centers or in the communities should approach weight gain or weight loss from a holistic view, taking into consideration other health/disease factors which affect the nutritional status of the child. Monitors should see their roles as "helpers," not as police who single out negligent parents. Capparelli, Griffiths, and Horner (1982) have suggested to CARE/Honduras that staff who are responsible for growth monitoring give advice focused on what the family can do with their own resources to improve the status of their child. Staff who have received training in helping skills and in participatory education methodology will be more effective in offering appropriate advice and in referring families to other health and social services which can help in meeting the developmental and growth needs of the child.

A growth monitoring component should offer each family an age- and monitoring-result-specific message. The following example was suggested for the CARE program in Honduras: If a child is nine months old and has not gained weight for one month, the monitor will recommend that the child be given two more tortillas and three extra spoons of beans per day (Capparelli, Griffiths, and Horner, 1982). In addition to specific messages, voluntary agencies are finding ways to add new dimensions to the actual weight charts so that they are more meaningful to families. One nutrition supervisor in the CRS/Burkina Faso program took the innovative step of marking the individual growth charts with a red pen when a child loses weight, thereby signaling danger to the family (Israel and Campbell-Lindzey, 1982).

In Sudan and Madagascar, SAWS is considering adding another dimension to the growth monitoring component. A simple tally system will be devised whereby month-to-month weight gains, losses, and stabilized weight patterns can be recorded and analyzed. This simple technique will give accurate and immediate feedback to the monitoring staff and program participants regarding the progress of the community at large, as well as of each individual participant. The technique, coupled with the active contribution and participation of the program participants, will enable the communities to look at certain morbidity trends which might occur during a year's time and to address these trends with specific preventive measures and behavioral responses (Campbell-Lindzey, 1983).

In addition to message development and adding a third dimension to individual weight charts, some agencies are considering providing educational materials that can be used both in the center and by families in their communities. These materials should be designed to address the perennial health and nutrition problems of the community. Communities should be involved in the creation of these materials. CARE/Honduras is considering a take-home arm-tape card which would show the results of the monthly arm circumference measure. This card could be kept by families and thereby serve as a community education tool. CRS/Burkina Faso has designed a pagne (colored piece of cloth) which depicts a nutrition education message. This material has been extremely popular, and most of the participants in the preschool feeding program have purchased it and have had skirts and tops made. This pagne has served as a vehicle for transmitting the educational messages given at the centers back to the communities. Participants have also suggested emblazoning soup ladles (gourds) with a message (Israel and Campbell-Lindzey, 1982).

Voluntary agencies should consider developing educational components in areas where there are complementary programs and services being offered. Impact from the educational materials will be increased if they are used in areas where public education on the same topic is an ongoing process. CARE/honduras is exploring how it can coordinate and complement breastfeeding activities and water and sanitation education by working with the Mass Media Child Health Project (PROCOMSI) and the Rural Water and Sanitation Project (PRASAR). An integrated education/communications program which coordinates the efforts of the various health and social services can have a direct impact on the development of community organization targeted toward adequate nutrition and health care.

Training

Time and time again, nutrition supervisors, monitors, and community health workers have expressed the need for more training. International Nutrition Communication Service reports from Honduras, the Sudan, Madagascar, Rwanda, and Burkina Faso indicate that the typical didactic, top-down approach to community education and training have not been the most effective methodology for use in the voluntary agencies' feeding programs. Part of this ineffectiveness is due to the type of training the professionals and paraprofessionals receive. In Honduras, training for the community worker is general and oriented towards nutrition and health facts; "it is not focused on any particular community problem or task that the health worker must complete" (Capparellie, Griffiths, and Horner, 1982, p. 63).

Since an integral part of feeding programs is growth monitoring, training should be oriented towards the task of nutritional status screening. The educational module for this task must be tailored to the possible outcomes of the screening. Culturally appropriate educational messages will need to be developed through a participatory methodology which includes the active participation of community members in the message development.

The key to adequate training lies in not covering all topics or tasks in one training session. Training sessions, including the educational manuals, should be presented in a modular form and implemented incrementally to allow time for modifications and improvement. Appropriate training enables the staff, as well as the participants, to understand the various goals and objectives for activities such as growth monitoring. Most PL-480 program reviews indicate numerous problems with growth monitoring procedures. An assessment of the CRS program in Burkina Faso and the MOH's programs in the Sudan and Madagascar show a lack of scale calibration, lack of consistent individual counseling, and an inability to analyze and understand monthly morbidity trends (Campbell-Lindzey, 1982, 1983). Good training can change this.

A training program which is designed in modular form allows time for practical "hands-on" experience in operating clinics and also is less draining on financial resources and space availability at the training site. Costs can also be cut by coordinating educational activities, such as CARE/Honduras will be doing with PROCOMSI and PRASAR, and SAWS/Sudan will do, it is hoped, with UNICEF.

Training sessions which address one task at a time should include some basic methodology in participatory education and helping skills. These techniques are the vehicle for performing the task, i.e., growth monitoring, community development. Without these basic skills, paraprofessionals will be unable to elicit the type of community involvement which is required to change nutrition and health behaviors. The goal of the training sessions and of the feeding programs is behavior change, not the ability to mark the weight of a child on a chart. This type of behavior-oriented program, as is being planned with SAWS in Sudan and Madagascar, should lead to less dependency of the participants, as well as of the staff, on the voluntary agency's food program (Campbell-Lindzey, 1983).

During the training program, staff and participants (e.g., volunteer community workers) should discuss their roles and the responsibilities attached to those roles. Some voluntary agencies introduce a feeding program into a community as a contractual agreement between the agency and the community. Community members and staff need to have the same idea of what that contract is; otherwise, either party may not feel the same commitment to the program goals. In Rwanda, Cook and Csete discovered that the feeding program participants viewed their contract with CRS as a list of program rules and, therefore, the major goal of the program (weight gain among enrolled children) was lost from view. Part of this misunderstanding evolved from the fact that in Rwanda, contracts involve a public declaration of reciprocal obligations and a celebratory feast. The feeding program does not include this type of activity. This indicates, therefore, that training

programs need to be culturally based and include adequate participation from community members to prevent overlooking strong cultural belief systems.

When training programs are conducted in a modular fashion, instead of addressing every known topic in nutrition and health, adequate time and resources are available to examine every facet of the problem or task. A carefully planned, systematic approach to the educational component, highlighting the perennial problems, can form the guidelines for effective training sessions. A comprehensive training program would also include educational materials development and training in the use of these materials. In the past, audio-visual materials, such as flannelgraphs and flipcharts, have been distributed to field staff without instructions on the best way to use these education tools (Israel and Campbell-Lindzey, 1982). Professionals in Burkina Faso, the Sudan, and Madagascar are crying out for more materials to use in their centers; however, with adequate training, effective materials can be developed inexpensively within each of these countries (Campbell-Lindzey, 1983). It has been suggested that CRS/Burkina Faso sponsor a workshop whereby community members and technical experts would develop a nutrition education film, to be shown throughout Burkina Faso. That film would look at community perceptions of nutrition and health-related problems and promote practical behavioral change solutions acceptable to the target community. This type of activity would serve as a community education tool as well as a visual training tool on the use and effectiveness of participatory techniques.

Development Activities

Voluntary agencies have the opportunity to incorporate development activities into their education programs, thereby contributing to the social and economic development of the participating communities. Projects such as sewing classes help families learn basic skills in clothing management. Although these classes do not directly affect the nutritional status of children, the classes are extremely well liked and are often asked for (Campbell-Lindzey, 1982, 1983). Kitchen gardens can be grown with success even in the hottest and driest climate of Sudan when communities are taught how to protect the seedlings against drought. In Madagascar, there is the potential of producing oil, a rare and much needed commodity, from local seeds. These projects indirectly lessen the dependency of the community on donated foods, contribute to community pride, and offer a source of economic and nutritional assistance to families.

Nutrition education, in its truest meaning, will occur much more rapidly and be more readily adapted when it is conveyed through the normal, daily activities of the family. Open discussions of child care during an informal sewing class in Sudan, where women felt at ease and talked freely with one another, appeared to generate appropriate solutions/suggestions to the problems families face (Campbell-Lindzey, 1983).

The educational component of feeding programs should address the entire lifestyle of the family in order to have the greatest impact. If efforts are made to coordinate the various activities of a feeding program, beginning with program interventions such as growth monitoring and ending with development projects at the community level, there is the likelihood that the program will have a greater impact on the health status of the

community. There is an important role for effective education and communication strategies in feeding programs, and program participants are voicing their desire to learn how to take better care of their families. Voluntary agencies are in a unique position to meet that challenge.

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INTRODUCING NUTRITION EDUCATION INTO THE CLASSROOM:
LESSONS LEARNED FROM LATIN AMERICA

By
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I. The Case for Nutrition Education as Part of the Primary School Curriculum.

Educators and parents alike know that bad habits are more easily formed than broken. Most children acquire food habits early in life. Food preferences, eating patterns and related hygiene practices become incorporated into the child's repertoire of behavior during the primary school years.

In developing countries, older children often assume the role of care-provider to their younger siblings. Many nutrition interventions are based on the assumption that it is the mother who prepares and gives food to weaned infants. However, as "modernization" increases in many Third World societies, women, both rural and urban, are becoming engaged in activities outside the home. The growth of day care facilities has not kept pace with increases in female labor force participation rates. Consequently, growing numbers of mothers delegate to their older children basic child care responsibilities for younger offspring, often with nutritionally damaging consequences. Several studies have now demonstrated that young children of working mothers are more likely to be malnourished than those of nonworking women (Kennedy and Pinstrup-Andersen, 1983). This is due, in large measure, to the quality of child care and food provided by the mother substitute, typically an older sibling.

Another reason to include nutrition education in primary school curricula in developing countries concerns the importance of peers in influencing behavior of children and adolescents. Simply put, the "trickle down" theory of change is probably no more valid for nutrition-related behaviors than for other kinds of development activities. Instructing a mother in nutrition will not automatically produce a trickling down of change in nutritional status for school-aged children if the behaviors the mother attempts to inculcate are not reinforced or practiced by peers. Educating the mother does not result necessarily in an accrual of benefits to school-aged children who lead lives of their own beyond the confines of home. Whether children drink water from a contaminated source, wash their hands before eating or accept certain foods offered in a school-feeding program is determined to a large degree by peers rather than parents. Consequently, primary school-based nutrition education programs are important in improving the nutritional status of school-aged children because they help create a climate of acceptance for change.

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A school-based program of nutrition education cannot contribute to substantial nutritional status gains among children if what is learned in school is not reinforced at home. However, for the school-aged child, the converse proposition holds equally true: what is taught at home must be reinforced by peers if behavioral change is to result. Schools are the most logical place to create this needed peer acceptance of good nutritional practices. In summary, the incorporation of nutrition education in the primary school curriculum offers potential benefits to three distinct population groups: to primary school students who may use the knowledge gained either in the short- or long-run to improve their own nutritional status; to the future children of primary school students receiving nutrition education; and to family members, particularly younger siblings, of students currently in primary school.

In recent years nutrition education has been given ever broadening scope within the primary school curriculum. Its topical range is reflective of the multiple determinants of malnutrition and often includes the following themes:

- o good techniques for growing, storing and marketing food crops;
- o the proper use of water systems;
- o home production of needed food items;
- o storage and preservation of foods;
- o selection, preparation and consumption of available foods;
- o control of diseases and hygienic conditions that aggravate nutritional deficiencies;
- o advantages of breast feeding;
- o recommended daily allowances and best nutrient buys;
- o community nutrition surveillance and growth monitoring
- o organization of cooperatives for purchasing or marketing food products;
- o special dietary needs of children, as well as those of pregnant and lactating women; and
- o special dietary needs of individuals suffering from common ailments (e.g., diarrhea and colds).

II. Introducing Nutrition Education into the Primary School Curriculum: Some Critical Issues that Emerged in Bolivia and Colombia.

Based on an analysis of the process followed in introducing nutrition education into the primary school curricula of Bolivia and Colombia, it appears that three broad categories of issues must be addressed. The first

centers around the identification of an appropriate strategy for curricular reform, given a particular country's political, economic and educational realities. A second group of issues deals with the identification of those nutritional needs to which the curriculum should attempt to respond. The third category concerns the identification of instructional strategies to meet these needs. Each issue's category has a profound bearing on how successful an attempt to introduce, extend or modify nutrition education will be; therefore, some additional observations follow.

A. Category One: Strategizing Curricular Reform. In order to plan any natural education reform, some fundamental questions must be addressed. These are listed below along with some pertinent observations culled from the Bolivia and Colombia experiences.

- (a) What are the structural, political and legal constraints to curricular reform? In many Third World countries, including Bolivia and Colombia, curricula are established by law, and only through government decree can they be changed. This is especially true in those countries where educational programs are developed centrally and a national curriculum is followed throughout the system. In such cases, it is difficult to pilot an innovation on a local basis without obtaining ministerial approval. Departure from the standard curriculum may also place students at a competitive disadvantage if admission to secondary schools is based on standardized examination scores that reflect mastery of the prevailing curriculum. Introducing educational reform in a country where curriculum is legislatively mandated calls for an alliance among development planners, political leaders and educators.
- (b) Who must be reached within the educational system in order to guarantee the success of a particular educational reform? Many reform efforts focus on upgrading the skills of classroom teachers. In-service training programs offer teachers new methods and materials for classroom instruction or community outreach. However, such efforts are doomed to failure or limited success if the teacher's supervisor has not likewise been inculcated with the new ideas. Systematic educational change also implies the need to work with training school students and faculty. If the innovation is to be adopted on a wide scale, all relevant actors and decision-makers within the educational system must both understand and support it.
- (c) What linkages to other sectors must be built for the reform to succeed? A curricular change designed to improve nutritional status has little chance of achieving its goal unless professionals and policy-makers from outside the education sector can complement the proposed school-based activities. In Bolivia and Colombia nutrition education, critical complements to nutrition education that were identified included the following: agricultural extension services provided by the Ministry of Agriculture; construction of potable water systems sponsored by the Ministry of Health or Community Development; preventive health programs offered by the Ministry of Health; and nonformal education programs in health and nutrition organized under the auspices of the Ministry

of Education. Before a new nutrition education curriculum is designed and piloted, linkages to these complementary sectors must be forged so that the curriculum can reflect the important contributions other sectors make toward achievement of the proposed educational goals.

- (d) What incentives must be offered to teachers to assure the adoption of a curricular innovation? Regardless of the field of endeavor, most people will try something new only if they perceive a potential payoff to themselves. Payoffs need not be a financial reward. In the case of teachers, meaningful payoffs might include the increased job satisfaction that will result in helping pupils acquire important new skills; a sense of accomplishment stemming from being in the forefront of a new educational trend; and the rewards of greater access to in-service training and increased attention from supervisors. No curriculum innovation can be introduced successfully if the reformers do not have a clear understanding of what will genuinely motivate teachers to give the new materials a fair try. Likewise, the curriculum group must be able to identify those factors likely to act as potential disincentives to adoption. Planners need to create a strategy that will optimize the meaningful incentives present while minimizing disincentives. Typically, disincentives include increased expenditures of effort and time to use the new materials; parental traditionalism; supervisory and collegial hostility or indifference to the new materials; and inadequate self-confidence or skills.

B. Category Two: Identifying the Nutritional Needs to Which a Curriculum Should Respond. Once a general strategy for curricular reform and innovation has been identified, it is feasible to begin focusing on specific nutritional problems that should be addressed by the new curriculum. Fundamental questions related to this "honing in on the issues" are listed and discussed below.

- (a) What are the country's major nutritional problems? No nutrition curriculum can be both general and meaningful. For the curriculum to have value it must be highly relevant to the country's most prevalent and pressing nutritional problems. Inclusion of such nutrition topics as obesity and arteriosclerosis makes no sense in countries where these conditions are uncommon or relatively unimportant compared to such problems as protein-calorie malnutrition, vitamin A deficiency or substitution of formula for breast milk. Results of nutritional status surveys must be reviewed and, where no reliable data exists, studies must be conducted to identify those problems that are most widespread, serious and susceptible to change. Where possible, regional variations of national curriculum should be developed to reflect local habits, needs and food availability.
- (b) What nutritional problems can be most appropriately addressed through school programs? It may well be the case that not all the problems identified as widespread, serious and susceptible to change are usefully approached through a curriculum innovation. For example, if goiter is widespread, as in the case of Bolivia,

sharing with pupils the importance of purchasing iodized salt would be irrelevant if none is produced in the country. Likewise, if salt production is not too dispersed, it would probably be more effective to legislate the iodization of salt than to instruct pupils in the need to purchase it. Some nutritional problems are more effectively solved outside the classroom than others and there are a few nutrition-related problems that are not responsive to classroom activities at all, such as land tenure. The curriculum should principally focus on those problems that can be influenced most directly and profoundly by school activities.

- (c) To what extent are children actors on the nutrition stage? In many communities throughout the developing world, children play important roles related to nutrition. They may be food preparers or feeders of younger siblings. Their practices may contribute to such serious problems as the high incidence of diarrhea among infants and toddlers. The most immediate benefits from a nutrition education curriculum can be derived by focusing on those areas where children, rather than parents, play a decisive role. Anthropological and nutritional surveys may be needed to identify these areas.
- (d) What is the relationship between ongoing school feeding programs and good nutritional practices? A nutrition education curriculum cannot advocate practices that are daily contradicted within the school. People of all ages learn more by what they see than what they hear. A curriculum that stresses the importance, for example, of good nutrition through the consumption of a variety of foods will be rendered useless if pupils are served the same meal everyday as part of their school feeding program. Likewise, advocacy of such hygiene practices as the washing of hands before preparing food does no good if pupils observe that school lunch preparers do not adhere to this practice. The proposed curriculum and existing feeding programs must be designed to reinforce one another. For this to happen, a thorough understanding is required of the prevalent practices related to school feeding programs already in place.
- (e) What should be the central purpose(s) of nutrition education for primary school pupils? There are three fundamental reasons why a nutrition education curriculum might be introduced at the primary school level. These purposes are not mutually exclusive. First, the curriculum team may wish to reach some members of the pupil's family via the child in order to stimulate behavioral changes related to selected practices. For example, if it is the father who does the marketing, the purpose of the curriculum may be to motivate and equip the child to provide his father with information concerning best nutrient buys. The child is seen as an emissary to other family members, armed with a message that can influence the family's nutritional status if heeded. A second purpose may be to change some aspects of the child's behavior in the immediate present or near-term future. For example, the curriculum may seek to encourage children to practice good hygiene habits every day as part of a regular routine. A third curriculum purpose may be to

create a propensity for change in the student that will result in new behaviors when adulthood and a greater degree of autonomy are reached. Teaching pupils about the advantages of breast milk exemplifies this type of approach since few primary students are also likely to be nursing mothers. Priorities among these purposes must be established; each implies a different thrust and approach to curriculum development.

C. Category Three: Identifying Appropriate Instructional Strategies to Meet Targeted Nutritional Objectives. Once specific nutritional needs and priorities have been identified, the development of instructional strategies to meet these needs can be addressed. Because nutrition education, more than most subject matter, is so intimately concerned with changing behaviors that are difficult to modify, two general principles related to instructional approaches should be observed. First, the curriculum must rely exclusively on an active learning approach that emphasizes both cognitive and affective development. Motivation and knowledge must be offered to learners. In concrete terms, the student should have ample opportunity to arrive at independent judgments, exercise creativity and initiative, and relate curricular content to daily realities. Observation, experimentation, practicums, inductive learning and project-oriented classes are among the hallmarks of a good curriculum.

Second, the curriculum needs to minimize its emphasis on lower order cognitive skills (i.e., recall and comprehension) and stress instead such higher order skills as application of content to the solution of problems; problem analysis; synthesis; and evaluation. It is unlikely that instructional programs heavily dependent on lower order skills can bring about the behavioral changes deemed desirable. Some other fundamental concerns related to the development of specific instructional strategies include the following:

- (a) Is nutrition included in the present curriculum? If so, how adequately is it treated? A related question concerns the placement of nutrition education within the total curriculum. Is it taught as a separate subject or integrated into one or more subject areas? Is the content appropriate in light of students' age, sociocultural context, parental expectations, teacher expectations, teacher capabilities and available resources? To answer these and related questions, it will be necessary to conduct a needs assessment that will include data drawn from classroom observations, teacher and parent interviews and student evaluations.
- (b) How should nutrition education be integrated into the total curriculum? In most educational settings it will be more appropriate to treat nutrition education as a series of discrete modules to be included in such subject areas as science, home economics, agriculture, social studies and health or hygiene. In these cases, nutrition education curriculum workers would design the modules (or units) to be used as part of the course of study in one or more subject areas already included in the curriculum. This approach might be particularly desirable when curriculum decisions are centralized and numerous courses are already required for entry

to the next educational level. This approach would also be recommendable when nutrition education is already being offered in one or more subject areas and the intent of the curriculum worker is to improve the quality of that instruction. In other educational settings it will be desirable to offer nutrition education as a separate subject area. Where nutritional problems are severe, little nutrition is currently taught in the schools and curriculum reform is not overly cumbersome, this approach will usually be the advisable one.

- (c) What teacher limitations must be overcome in order to introduce nutrition education into the school curriculum? Professional limitations frequently include an overdependence on rote instructional techniques, unfamiliarity with the content area, and little knowledge of appropriate resources or teaching strategies for inducing nutrition-related behavioral changes. In-service training, materials packages, supervisory support and peer assistance groups are all effective techniques for overcoming such limitations. The design of these interventions is a useful area for technical assistance.
- (d) What resources are needed and available to support nutrition education in the classroom? The fewer the material aids provided a teacher, the less likely it is that the teacher will offer nutrition education to the pupils. A teacher receiving only a curriculum guide is thus less apt to offer nutrition education than one who has received, in addition to the guide, a set of student texts. Similarly, the teacher who has received only the guide is not as likely to use it as one who has also received some in-service training in its use. Inventories of available resources need to be compiled so that they can be incorporated into instructional programs. Resources that are needed but unavailable must also be identified so that plans for their acquisition can be developed.
- (e) Which students should be exposed to the new nutrition education curriculum? In some instances, culture may dictate that only boys or only girls should receive nutrition instruction. In most cases, however, it will be desirable for both boys and girls to participate in nutrition education classes although curricular content may be differentiated on the basis of pupil gender, with girls receiving instruction in some topics not taught to boys (and vice versa). If one of the purposes of the curriculum is to promote changes in the behaviors of targeted individuals in students' families, then additional thought must be given as to how a school-child-family chain can be created and nurtured. The selection of priority groups of students to be reached may reflect the curriculum workers' views on how best to link the school and family.
- (f) How should formative and summative evaluations of nutrition education curricula be conducted? Basic issues for formative evaluators include the following: relevance of the curriculum to priority nutrition problems, local realities and resources; ease of

use by teachers; degree of mastery of objectives by students; quality of activities; degree to which active learning, affective development and higher level cognitive skills are present; teacher and parent satisfaction; and technical quality of the curriculum's objectives, sequencing and scope. Summative evaluation should focus primarily on the degree to which the curriculum has been effective in bringing about behavioral and nutritional status changes among students, and, in those cases where it is stipulated as a goal, their parents.

Conclusions

The successful introduction of nutrition education into the primary school curriculum depends on many factors, including an overall understanding of how curricular reform occurs within a given country, what nutritional needs are addressed best in the school setting, and what inter-sectoral linkages should be developed to complement curricular objectives. Insights into these areas are the province of nutritionists, anthropologists, teacher trainers, curriculum developers, school system administrators and teacher supervisors. Therefore, multidisciplinary teams of curriculum designers and teacher trainers as well as inter-ministerial collaboration are essential if nutrition education is to enter the primary school classroom. Since curriculum reform is fundamentally an educational matter, however, coordination and final control of nutrition education programs should remain in the hands of Ministry of Education workers.

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THE JAMAICA PRIMARY NUTRITION EDUCATION PROJECT:
AN INNOVATIVE METHOD FOR INCORPORATING NUTRITION
INTO THE PRIMARY SCHOOL CURRICULUM

By
Christine Hollis

In Jamaica, an interesting curricular innovation is taking place. A project is underway to incorporate basic nutrition concepts into the current language arts curriculum. The overall purpose is to determine whether primary school students will increase their nutritional knowledge and understanding at the same time they are improving their reading skills. This project, named the Jamaica Primary Education Nutrition Project, is a joint effort of the Jamaican Ministry of Education (MOE), International Nutrition Communication Service (INCS), UNDP, Unesco, the target community, local technical resource specialists, and U.S.AID. It incorporates the educational principle of integration of subjects to be taught; for instance, teaching math concepts at the same time as nutrition, as in measures used in recipes. The project will operate in the target area of Clarendon parish. If successful, it can be adapted for use island-wide.

As the project strategy was being designed, it was noted that there are several social, structural, and educational factors present in Jamaica that favored its implementation in that country. The Ministry of Education is concerned about and supportive of student nutrition education. It has also, in recent years, placed greater emphasis on primary school reading and the development of exemplary materials for this purpose, since recent surveys have shown approximately 50% of primary school leavers are not reading up to minimum levels. Nutritional studies carried out in Jamaica over the past ten years also provide planners with a clear idea of several important problems affecting school age children and their families--including below average weight-for-age, improper eating practices, and anemia. These identified problems serve as a basis for the nutritional messages to be delivered in the curriculum and educational materials. Finally, the Jamaica educational system has an active parent-teacher association network, well trained teachers, and parents interested in improving their children's growth and development.

Despite these positive indicators, some constraints do exist, and project planners and materials designers have had to grapple with these factors. At the present time, Jamaica is having serious economic troubles; this means that in the educational sector fewer personnel, both teachers and Ministry staff, will be available. This places a greater burden upon the remaining teachers, who have even less time to adapt to and utilize new, unfamiliar materials and lessons. Also, although the teachers themselves

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agree that nutrition education should be stressed, they also note that it is a subject not included in their own college-level curricula, thus they feel somewhat unprepared to teach it without training or resources. For this reason the project's educational materials are designed to be as self-contained and self-explanatory as possible, minimizing the teachers' need for highly specialized technical knowledge in nutrition. The self-contained design structure is possible given the focus on very basic concepts and messages that use a limited vocabulary.

Some of the concepts being taught represent innovative ways of communicating nutritional values to students. Central to the course is the notion that people at different stages of life need different foods to keep them healthy. The emphasis is on how foods affect the body and why people need to eat different foods. Those foods are presented in the context of "go foods," "grow foods," and "health helper" foods, and the emphasis is placed on eating a mixture of these foods in order to maintain a healthy body.

Each nutritional concept is illustrated by a series of concrete real-life messages geared to Jamaican circumstance. For example, the concept of food substitution is illustrated by a story, "No Fish for Dinner," that demonstrates how peas and rice can be substituted for fish.

In the first stage of the pilot project, an INCS consultant worked with the Ministry in formulating and carrying out a baseline survey instrument to measure primary school students' reading ability and knowledge of nutrition. The baseline was to serve as (a) a means of formative research, providing clues to the messages and information that should be included in the curriculum design and (b) a pre-test against which a change in knowledge and reading ability could be measured against a post-test after a year's time. In the first survey, the instrument was used to assess 3rd, 4th, and 5th grade students in 17 schools in the Clarendon parish. The 3rd and 4th graders would then become the target "audience" for the program, using the new educational materials. They would be measured by the same instrument at the end of the school year (when they were 4th and 5th graders).

The reading section of the test focused on word recognition, structural analysis (synonym/word definition), and comprehension at grade levels 2-5. The test's nutrition section looked at students' awareness of general food-related issues and concepts as well as specific knowledge of the value and function of particular foods, their source and storage. The data were computer-analyzed and the results provided to Jamaican officials, teachers, INCS staff, and funders. Those results indicated that, in terms of nutritional messages, stress in the curriculum should be placed on:

- how and why different foods affect the body (particularly protein foods)
- the concept of "mixing" a variety of foods (proteins, carbohydrates, vegetables) to get proper and balanced nourishment
- the concept of food substitution (such as using plant proteins [plus grains] to replace unavailable animal ones).

The next step in the materials development process was to organize a community-level workshop to which teachers, parents, and other technical assistance persons (nutritionists and reading specialists) were invited. These participants were gathered to help develop the 4th-5th grade educational materials by providing their insights, ideas, and suggestions for the format, message content, and other factors affecting the design. They were also to help formulate a series of activities that the children could carry out to improve their understanding of and practice of better nutrition. During the week-long session, many of these objectives were realized. The participants, working with technical specialists, revised two preliminary stories, inserting nutritional messages into the story-line; produced several posters, games, and rhymes to be used in the classroom teaching sessions; provided recommendations for classroom-oriented nutrition activities and materials, activities to do in the home, and methods for promoting the project and integrating parents and community members into its progress.

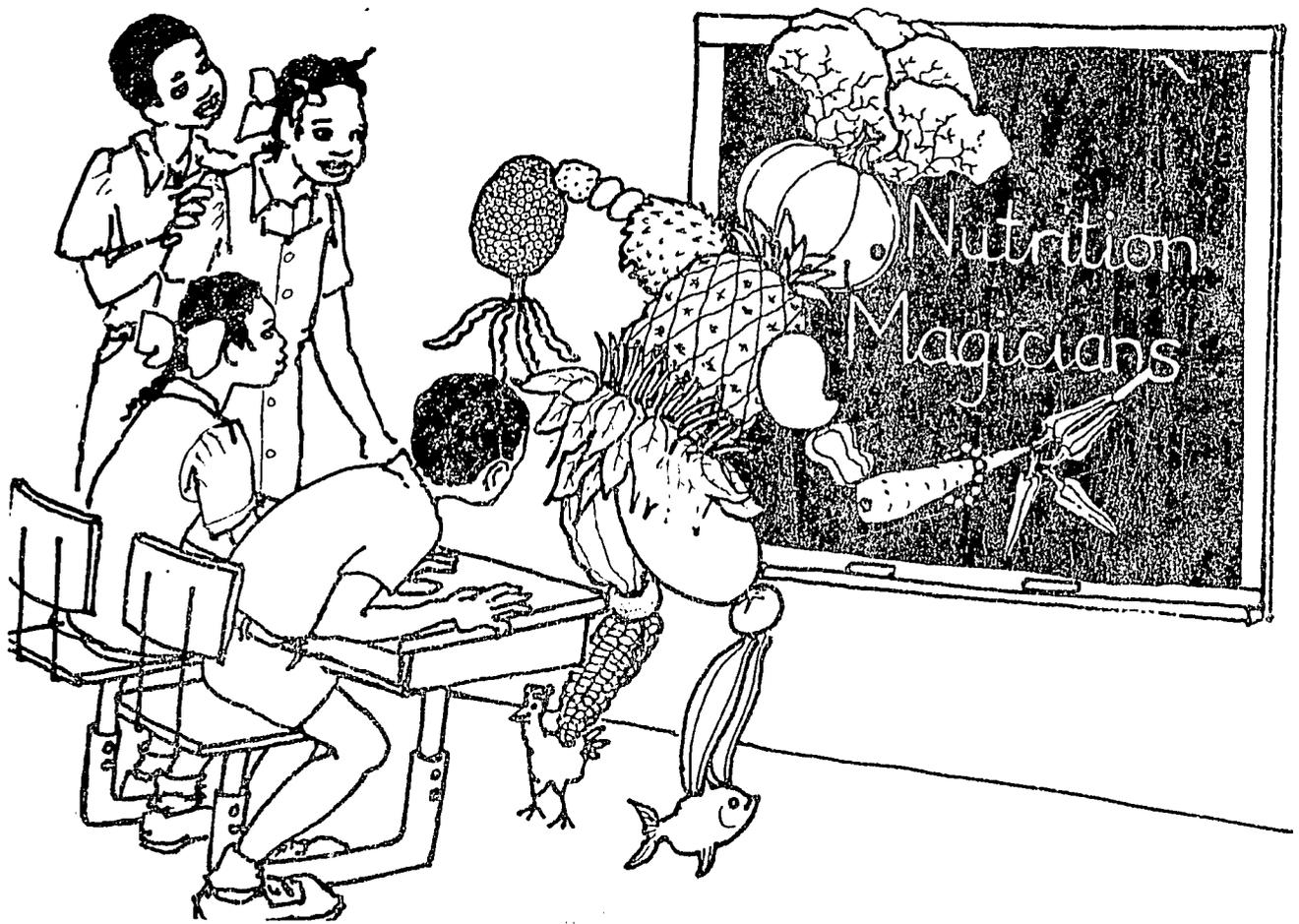
It should be noted that one other objective of this workshop was to involve teachers and parents directly in the design of materials that teachers and students would be using. This minimized the "top-down" aspect of providing new curricular materials to teachers, as well as increasing their familiarity with both the project and the lessons. All participants were extremely enthusiastic about their constructive, active role in the process and pledged to share their experiences with other teachers, principals, and parents.

After the workshop input and preliminary materials had been gathered and analyzed, the MOE curriculum developers, writers, and artists, along with an INCS specialist in educational materials design, spent two more weeks refining, revising, and adding to the prototype materials. These prototypes were then subjected to further adaptations based upon the comments of reading and education specialists, nutrition educators, and children's book designers. A prototype student workbook was designed.

In 1986, final drafts of the student manual, teachers' guide, and supplementary materials were produced. A theme was chosen for the educational package, that the children could become "nutrition magicians" who could improve their own health by following the nutritional behaviors emphasized in the manual. (See Figure 1 for an illustration of the proposed cover for the student manual.) The manual itself incorporates both relatively simple, highly visual reading materials as well as more abstract, print-centered stories, poems, and essays. Each section introduces nutrition-related vocabulary, and includes a series of questions and student-centered exercises. It is anticipated that students with a broad range of reading abilities will utilize the workbook, and the project's evaluation will assess the degree to which different reading formats were comprehended.

A pre-testing session was carried out with fourth and fifth graders. Approximately 1 1/2 hours were spent with the children, having them read the stories out loud, look at illustrations, and answer open-ended questions related to the stories. The main points checked were:

Figure 1: Proposed Cover for Students' Manual



- comprehension (did they understand the story's "message"?)
- clarity (were the stories and illustrations easily understood?)
- interest (how did they like the pictures and stories?)
- likes/dislikes (did something disturb them?)
- ease of reading (was the reading level appropriate?)
- relevance (were the nutrition-related behaviors appropriate for the students?)

The results of this pre-testing session indicated that, overall, the children enjoyed the format and style of the materials, and that they were usually able to grasp the "message" in the reading materials. Their feedback led to some adjustments in the illustrations, in sequencing the cartoon sections, and in rewording several passages to make the information clear. It was also apparent, from the students' reactions, that more information needed to be provided to the teachers in the teachers' guide, so that they would be aware of and could handle particular nutrition-related questions and beliefs.

After production and printing, the final educational nutrition/reading skills package will be disseminated to the Clarendon teachers in the schools participating in the pilot program. Monitoring of the project's progress will take place to determine how well teachers are adapting to the lessons, how the children are reacting, and what improvements can be made. At the end of the pilot school year, an evaluation specialist will return to assist the project staff in carrying out a summative evaluation looking at the extent to which students' reading abilities and nutritional knowledge have increased. It is intended that a conference will be held to discuss the lessons learned, to receive teachers' feedback and recommendations, and to promote plans for island-wide expansion of the project. That conference will involve project staff, technical specialists, teachers, parents, government officials, as well as invited observers involved in nutrition curriculum development in other countries. The basic objective is to further the dissemination of information regarding the incorporation of nutrition education into primary school programs.

One lesson has already been learned from this project that is of import to any other curriculum development project. Social marketing nutrition-oriented projects have already noted the necessity of gathering qualitative information regarding dietary perceptions, attitudes, and practices of target audiences. This was deemed an essential component of the Jamaica nutrition education project; an INCS qualitative researcher was scheduled to carry out focus group interviews with students and their families, as well as teachers, to ascertain information about family health problems; food availability, procurement, and preparation; attitudes about education, food, and health; and motivation factors affecting nutritional habits. Unfortunately, due to a general strike on the island at a critical time, as well as tight scheduling and resource constraints, it was impossible to carry out this audience-oriented research. It is felt that the information that could have been gathered would have served as a basis for developing clearer, more relevant educational and motivational messages in the education package. As it is, some group interviews did take place during the workshop, and the insight obtained was used to guide the participants' design of materials.

Although small-scale in nature, the Jamaica Primary Education Nutrition Project should serve as an example of a method in which nutrition education is included in formal school programs. Integrating simple but important nutrition concepts and messages into primary school readers represents a potentially highly effective format for formal school nutrition education. It is an alternative to more highly structured, resource-intensive syllabi that have been tried elsewhere but have generally failed to live up to expectations.

DESIGNING AND FIELD-TESTING A NUTRITION CURRICULUM
FOR AGRICULTURAL EXTENSION WORKERS

By
Laura Jane Harper

Food production in most of the developing world is increasing. Per caput food production in many of these same areas also shows some gains, even though each year the gap widens between total and per caput production (FAO, 1982). In spite of larger overall harvests, the number of people in underdeveloped countries who do not have enough to eat to maintain reasonable health and activity is increasing. In 1975, the Food and Agricultural Organization of the United Nations (FAO) estimated that in developing countries (but excluding China) 435 million people suffered from "severe undernutrition" (FAO, 1977). If present population and food production/distribution patterns continue, the undernourished segment of the population in these same countries could easily rise to 510 and 590 million by the years 1990 and 2000, respectively (FAO, 1981). Generally the population groups without enough to eat are those who traditionally have suffered from undernutrition and most especially the vulnerable groups among the landless rural poor. With the pattern of population growth that exists in many developing countries, average farm size is smaller than in former years, and the number of rural people who do not have access to land on which to grow food for home consumption is larger. Therefore, in regard to nutritional well-being, year by year the situation worsens.

Malnutrition has often been viewed as a health problem only and considered the sole responsibility of ministries of health. Problems related to food and nutrition can no longer be considered exclusively from one viewpoint. Thus, nutrition education should not be limited to concepts taught in public health clinics, primary and secondary schools, and to only those university students preparing for positions as nutritionists or public health workers. The need for understanding and applying basic nutrition principles in everyday life and work is universal. An interdisciplinary approach must be applied to the entire complex of economic, social, and cultural conditions that affect the food chain and the nutritional status of people. Agriculturalists, especially agricultural extension officers and teachers of agriculture in secondary and university level schools, can make significant contributions to an interdisciplinary approach to this problem.

Recognizing agriculture's dual responsibility to both the nutrition and economic well-being of people in developing countries, post-secondary institutions of agriculture in a number of developing countries have shown an increasing interest in introducing the study of human nutrition into their agricultural curricula. The hope is that, from the study of nutrition concepts as they relate to food production and agricultural development

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planning, students of agriculture will become interested in applying this information to agricultural development programs. With this approach to food production, agriculturalists can help implement intervention measures that should insure the availability of enough food in the amounts and variety needed for all people living in farming communities to be well fed.

Ministries of agriculture and education in several of these same countries have indicated that agriculturalists, most of whom work at farm and village levels, would benefit from a better understanding of the principles of human nutrition as they apply to food production, processing, and distribution.

In order to support the concept of adding human nutrition to post-secondary agricultural curricula in developing countries, the FAO Food Policy and Nutrition Division initiated a plan in the late 1970s to help underdeveloped regions establish general guidelines for an introductory course in human nutrition appropriate for use in post-secondary agricultural training programs. At FAO a preliminary version of an outline for use in English speaking African countries was prepared and circulated for comments to agricultural training institutions in Africa, Asia, Latin America, and the Near East. It was also sent to other international agencies such as the ILO and UNESCO, and to national agencies involved in international development programs, one of which was the United States Agency for International Development (USAID). Based on the comments received, the guidelines were revised. Again, the revision focused on human nutrition as it can be applied to systems of agriculture in Africa.

In 1980, FAO's Food Policy and Nutrition division, with both financial and technical assistance from the USAID, set out to help adapt the framework of this outline for Africa to several different regions of the world. Also, in order to meet the teaching/learning needs of instructors and students, an effort to prepare and field test teaching materials to accompany the course outline was made (FAO, no date). This paper is a description of the development of the Southeast Asian guidelines and the auxiliary teaching aids, including the field testing procedures carried out in a university level course taught in Indonesia.

At a regional Southeast Asia workshop held at the University of the Philippines at Los Banos (UPLB), January 12-16, 1981, recommendations were made for adapting the guidelines for curriculum content in nutrition to agricultural training in Southeast Asia. Ten delegates from Indonesia, Malaysia, the Philippines, and Thailand participated in the UPLB workshop and helped plan and adapt the guidelines for Southeast Asia. FAO and UPLB furnished supporting subject-matter and curriculum consultants as well as the workshop director.* USAID provided a coordinator for developing the guidelines to meet regional needs.

Prior to the Los Banos meeting the coordinator met with appropriate leaders in the ministries of agriculture, education, and health, and with

*Dr. Josepha Eusebio, Dean, Institute of Human Ecology, University of the Philippines at Los Banos, served as Workshop Director and supervised the printing of the guidelines for Southeast Asia.

administrators and faculty members of nutrition and agriculture in at least one agricultural university in each of the four participating countries. Their advice and cooperation were solicited. This provided a valuable communication network that was nourished throughout the period of curriculum planning and pretesting. All those contacted were enthusiastic about the idea of integrating nutrition into agricultural training and volunteered to help launch the program in their respective countries. Leaders of the Asian Association of Agricultural Colleges and Universities and several additional international organizations with regional offices in Southeast Asia also provided helpful strategy advice, publicity, and introductions to Southeast Asian administrators in agriculture and education.

After all recommendations agreed upon by the Los Banos workshop participants were compiled into a set of tentative curriculum guidelines, the delegates returned home and reviewed the guidelines with their colleagues. As a result, many worthwhile ideas were added to the Los Banos draft before it was finalized. Food, Nutrition and Agriculture: Guidelines for Curriculum Content for Agriculture Training in Southeast Asia was published at the University of the Philippines at Los Banos in 1981.*

The guidelines are developed around five areas of study, which the Los Banos workshop participants thought agriculturalists could use to advantage as they help farmers plan for nutritionally balanced food production and distribution. The five areas of concentration include:

- Agriculture, food, nutrition, and health
- Food values, nutritional requirements, and nutritional status
- Food and agricultural systems: their impact on nutrition
- Food and nutrition programs at community and national levels, and
- Program planning, implementation, and evaluation.

However, in addition to a course outline that meets an educational need and has administrative approval and support, additional preparation is necessary before a new course can be taught successfully. A qualified teacher must be appointed; appropriate reading materials for both teacher and student must be collected; supporting materials in the form of visuals, laboratory assignments, and other types of teaching/learning experiences must be planned, evaluated, adapted, and made ready for student use; methods for evaluating student performance, both theoretical and applied, must be established; budget requirements must be approved.

At the Los Banos workshop and later when workshop delegates reviewed the guidelines with their colleagues at home, ways of overcoming these and other constraints to successful implementation of the course outline were

*Food, Nutrition and Agriculture: Guidelines for Curriculum content for Agriculture Training in Southeast Asia is available from the Nutrition Programs Service, Food Policy and Nutrition Division, Food and Agriculture Organization of the United Nations, 00100 Rome, Italy.

discussed. Lack of appropriate teaching materials, available library resources, and qualified teachers were considered to be the greatest barriers. Therefore, a decision was made to develop three comprehensive teaching aids (a text, teacher's manual, and student handbook) following and expanding on the course outline presented in the guidelines, and centered around the interests, background, and professional activities of agriculturalists in relation to food production and nutritional status in Southeast Asia. With advice from FAO and USAID nutrition advisors, a team of four persons planned and developed the three teaching aids: two nutritionists (one of whom had coordinated preparation of the guidelines for Southeast Asia), an agricultural economist, and a graphic artist (Harper et al., 1984). The purpose of developing these teaching aids was to present the course outline in such a way that it can:

- be used successfully by a teacher who is either a nutritionist with an interest in agriculture, or an agriculturalist with interest in nutrition
- be used effectively even when supporting library and auxiliary teaching/learning resources are limited, and
- help students develop methods of study and self-evaluation beneficial to them in developing an understanding of and competence in applying agriculture/nutrition information.

The topics presented in the subject-matter outline of the teaching aids approach the study of nutrition and its application to the improvement of nutritional status of farm families with situations and ideas that relate to diversified food production and effective preservation and distribution patterns. They focus on a problem identification/solution approach to teaching/learning and provide agricultural students with the opportunity to:

- learn to identify nutritional and other environmental associated needs of farm workers and their families
- become involved in farm and village fieldwork experiences in which they can relate and apply the principles of human nutrition to food production, storage, and distribution
- understand the roles agriculturalists should assume in rural communities in order to help farm families improve their nutritional status to a level conducive to health and productive physical activity
- learn to use audio-visual media appropriate to village level communications, and
- learn more about planning and implementing local food and nutrition programs in agriculture and how to involve and work with other community agencies and groups also interested in rural development and farm family health.

When the first draft of the three teaching aids was completed, including bibliography, visuals, appropriate practical activities, charts,

tables, and other data needed to support problem-solving activities, they were reviewed and critiqued by editorial specialists, agriculturalists, and nutritionists who had successful international experience. After their recommended changes were incorporated into the manuscripts, they were ready to be tested by teachers and students in a Southeast Asian agricultural university. This, of course, was the critical component of the review. Institut Pertanian Bogor (IPB), Bogor, Indonesia offered to include the course in their schedule of classes for the 1983 February-June semester. This university provided an excellent field test center where students became involved in course-related field experiences, since adjacent to the university are seven villages of small farms. Some of these farms are owner operated and others are worked by tenant farmers and farm labourers. Three communities are also engaged in small-scale food processing, distribution, and sales activities. In preparation for teaching the course, three teaching aids and all other written materials used in the course were translated into Bahasa Indonesia, the language in which teaching is conducted in that country. The course, taught by three community nutrition faculty members* to 52 fourth-semester (second year) undergraduate students, was evaluated by both students and faculty. Faculty and student reactions to the course and student achievements were monitored and recorded weekly. Both qualitative and quantitative schedules were used to evaluate effectiveness of the guidelines and teaching aids:

By students:

- a. A pre-test and post-test of elementary nutrition knowledge administered on the first and last day of classes, respectively
- b. A weekly self-evaluation questionnaire included in the student handbook, and
- c. An end-of-term evaluation of the course outline, teaching materials, practical learning experiences, general attitude toward the course, and its predicted value in agricultural education.

By faculty and student assistants:

- a. Diaries that included evaluations of the subject-matter coverage, development of student problem-solving ability in regard to rural conditions, apparent reactions and enthusiasm of students to the materials and situations presented, and ease/difficulty encountered by faculty and students in using the teaching aids to master materials included in the course outline, and
- b. Weekly discussions of the teaching materials, their shortcomings and effectiveness.

*Professor IR. Amini Nasoetion, Department of Community Nutrition and Family Resources, was in charge of the course. She was assisted by Dr. C. Kusharto and IR. Hardinsyah. Overall Indonesian administrator of the field-test was IR. Soehardjo, head of the Department of Community Nutrition and Family Resources, Faculty of Agriculture, Institut Pertanian Bogor.

The overall evaluation by faculty and students was positive. Student test scores on elementary nutrition knowledge improved by 60 percentage points. Both the faculty and students that were involved in the field test liked the style and subject matter content of the text, teacher's manual, and student handbook. The practical learning experiences and the visuals also received compliments.

When the evaluation data were summarized, a seminar was held to present an overview of the Food, Nutrition and Agriculture Guidelines and field test results to representatives from Indonesian ministries of agriculture, education, and health and Institut Pertanian Bogor administrators and agriculture faculty. This seminar was held to obtain a university and national perspective on the potential contribution to be made to agricultural education in Indonesia through the study of human nutrition. Comments and suggestions from this group were helpful. They recommended the inclusion of the Food, Nutrition, and Agriculture Guidelines into Indonesian and Southeast Asian post-secondary agricultural training programs. There are, however, two deterrents that must be overcome before this can be accomplished:

- the course of study in most agricultural training programs in Indonesia and throughout Southeast Asia is completely subscribed, without leeway for adding new courses, and
- educational funds are so limited that little, if any, money is available to provide the added cost for conducting and supervising field experiences.

The report of the seminar has been published (Jurusan, GMSK, 1983) and is being circulated widely throughout Indonesia.

The suggestions and recommendations of all those who have been involved in planning, developing, or field testing the guidelines have been considered and, as far as possible have been incorporated into the final draft of the three teaching aids (Harper et al, 1984).

This project was a cooperative endeavor from its inception. It was designed to use both horizontal and two-way vertical interaction at international, regional, and national levels and within academic educational units in agriculture. This approach to introducing the study of food, nutrition and agriculture into agricultural education was made so that individuals, agencies, and groups interested or involved in agriculture, education, health, and nutrition policy or programs could have input into planning, implementing, and helping secure the study of nutrition in post-secondary agricultural curricula in Southeast Asia.

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