Mass Media and Health Practices

IMPLEMENTATION

PROJECT DESCRIPTION

ACADEMY FOR EDUCATIONAL DEVELOPMENT, INC.
[illegible] WASHINGTON, D.C. 20037
TELEPHONE [illegible]

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PROJECT DESCRIPTION

Project Director

Dr. William A. Smith

HONDURAS FIELD PERSONNEL

Reynaldo Pareja
Elizabeth Booth

THE GAMBIA FIELD PERSONNEL

Mark Rasmuson

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MASS MEDIA & HEALTH PRACTICES

PROJECT IMPLEMENTATION

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Academy for Educational Development, Inc.

BACKGROUND

On September 30, 1978, the Academy for Educational Development was contracted by the Offices of Health and Education of the Science and Technology Bureau (ST/H, ST/ED) of the United States Agency for International Development (AID) to implement a five-year project for the prevention and treatment of acute infant diarrhea in the rural areas of two developing countries. Simultaneously, Stanford University was contracted by AID to evaluate the project.

Project Agreements were signed in September of 1979 with the Government of Honduras and in December of 1980 with the Government of The Gambia. These agreements define the terms of collaboration between project personnel and the respective Ministries of Health (MOH) in both countries, and emphasize the dual goals of the program:

1) to strengthen the health education capacity of the cooperating countries through the systematic application of mass communication; and

2) to contribute significantly toward the prevention and treatment of acute infant diarrhea in isolated rural areas of both countries.

In January of 1980, work began on the 36-month program in Honduras. The program provides resources for materials production, broadcast time, developmental research, and six person/years of long-term technical assistance. The program in The Gambia began in May of 1981, and is scheduled for 24 months, including resources for materials production, developmental research, and two person/years of long-term technical assistance.

In both countries, project personnel will assist national health personnel in developing a public education campaign which combines radio, specialized print materials, and health worker training to deliver information on home treatment of infant diarrhea, including the proper preparation and administration of oral rehydration therapy (ORT). Other critical messages include water use, breast-feeding, weaning food preparation, personal hygiene and sanitation practices.

THE PROBLEM

About 5 million children die each year from diarrhea related causes. As much as 30 percent of all infant death in the world today is due to diarrhea. Diarrhea kills through dehydration and malnutrition. Intense bouts of rapidly dehydrating diarrhea cause a loss of as much as 10 percent of body weight and can kill in a matter of hours, while prolonged bouts of diarrhea interact with general malnutrition to produce wasting and finally death.

There are virtually no effective drugs to combat the bacterial or viral organisms which are responsible for most diarrhea. Effective prevention must interrupt a complex transmission chain involving faeces, hands, water, vector transmission, and food. Each link in the chain represents a need for significant, often unrealistic, changes in environmental conditions and personal habits. Any one change by itself is unlikely to measurably reduce diarrhea morbidity.

There is, however, an effective weapon against diarrheal dehydration. Independent of the causal agent, oral rehydration therapy represents a practical means of saving thousands of lives each year. ORT focuses on three aspects of the diarrheal syndrome. First, ORT can replace the water and salts lost by a child in 95 percent of the cases of dehydration caused by acute diarrhea, restoring the child's capacity to absorb liquids and replacing lost body fluid. Secondly, it does this through a low-cost oral method, rather than the costly intravenous route, opening up the possibility for widespread administration by non-professional and even illiterate personnel. Thirdly, ORT promotes a series of related behaviors which, if properly applied, reduce the impact of diarrhea on malnutrition and wasting. The clinical significance of ORT has been demonstrated in numerous studies throughout the world, and it now represents the world health community's primary weapon against diarrheal death.

The key to effective ORT is the correct preparation and administration of an oral glucose-electrolyte solution, often referred to as ORS solution or simply ORS. ORS in its simplest form is a combination of water, salt and sugar and can be mixed using home ingredients. A slightly more complex formula including sodium, glucose, potassium and bicarbonate is available in a pre-packaged envelope and is designed to be added to a standard volume of locally available water. It is now recommended that countries consider a two tier approach; simple sugar and salt in the home during early stages of diarrhea, and complete formula in the home and rural clinics for most moderate and severe dehydration. In all cases ORS should be supported with additional feeding and childcare information.

While ORT represents a major improvement over intravenous therapy in the treatment of diarrheal dehydration, it does require certain minimum criteria in order to be effective. The ingredients for ORS must be easily available to isolated populations. If packets are to be used then an effective distribution system must be in place. If a simple sugar and salt mixture is to be advocated then these ingredients must be widely available. In both cases, mothers must be taught how to mix the ingredients in exactly the right proportion to avoid ineffective and even potentially dangerous concentrations of sodium. They must also learn to give the solution correctly, i.e., slowly, over a 24-hour period, and continue to do so even if a child vomits or refuses the liquid.

These requirements, coupled with advice on breast-feeding, feeding during diarrhea, and the advisability of other medications, creates a complex set of educational tasks. ORT is now at a stage of development in which attention has turned away from the clinical effectiveness of the electrolyte solution towards the effective development and administration of delivery systems for ORS and the related educational messages on preparation, administration, and childcare.

PROJECT ELEMENTS

The Mass Media and Health Practices Project (MM&HP) has three principal components: the specific health problem; a defined set of instructional tools; and a systematic instructional development process. Each of these elements contributes to the overall organization of the health campaign and is consequently reflected in the project implementation plans.

The health problem requires the project to address both prevention and treatment behaviors associated with acute infant diarrhea in primarily rural areas. The range of appropriate treatment behaviors is relatively small, and there remains a significant controversy among medical experts as to the exact way in which these few treatment alternatives should be promoted at the rural community level. The MM&HP Project will seek to reduce infant mortality by promoting oral rehydration therapy through existing health facilities, primary health care workers, and home administration.

Selecting salient prevention behaviors presents a special problem because the number of potential contamination points in a rural village is very large. Consequently, prevention behaviors which represent areas of special interest to the health community--breast-feeding, food preparation, and personal hygiene--have been targeted. We believe that if the MM&HP Project is able to demonstrate that critical behaviors in each of these clusters have been positively changed by the program, even in the absence of any demonstrated reduction in diarrheal morbidity, the project will have made an important contribution to health education.

The basic instructional tools as defined in the project contract include radio combined with graphic materials and some face-to-face support of health workers and local opinion leaders. Radio will be emphasized because of its capacity to reach large audiences effectively. In both countries this emphasis is consistent with the existing rural communication system and the MOH's own health education priorities.

The instructional development process relies upon past experience in mass communication and combines systematic pre-program research with experience drawn from such fields as social marketing and behavioral analysis. This process rests upon a clear understanding of three principal areas: the behaviors to be promoted; the personal, family, and community context in which these behaviors are elicited; and the ability of the instructional tools to promote the widespread adoption of the selected behaviors.

The working premise which makes these principles relevant is that prevention and treatment of infant diarrhea can be positively affected by altering the way in which rural people now behave. Improvement does not neccessarily require significant new investments in health infrastructures such as water systems, latrines, or new health centers. This project is not attempting to install new mechanical technologies, nor promote sophisticated cognitive conceptualizations. Our task is to alter the likelihood of people doing things which are well within their capacities, but currently unlikely. The emphasis is on behavior. Attitudes, even those which may contribute to what people do, are of secondary interest.

From a behaviorialist point of view, there are five circumstances which singly or in combination account for absent behavior. First, necessary materials or implements like ORT packets may be unavailable. Second, prerequisite skills, discriminations, or knowledge may be lacking. For example, rural mothers may know that boiling water is good but not understand that it actually kills the parasites they fear. Third, there may

be no incentives such as immediate improvment in their child's health to engage in the behavior. Fourth, there may be incentives to engage in compatible but inappropriate behaviors like giving kaolin or purges. And fifth, there may be punishing consequences which discourage the desired pattern. A child may vomit, for example, or his diarrhea may actually appear to increase. An understanding of these factors is absolutely critical in the development of an effective instructional intervention.

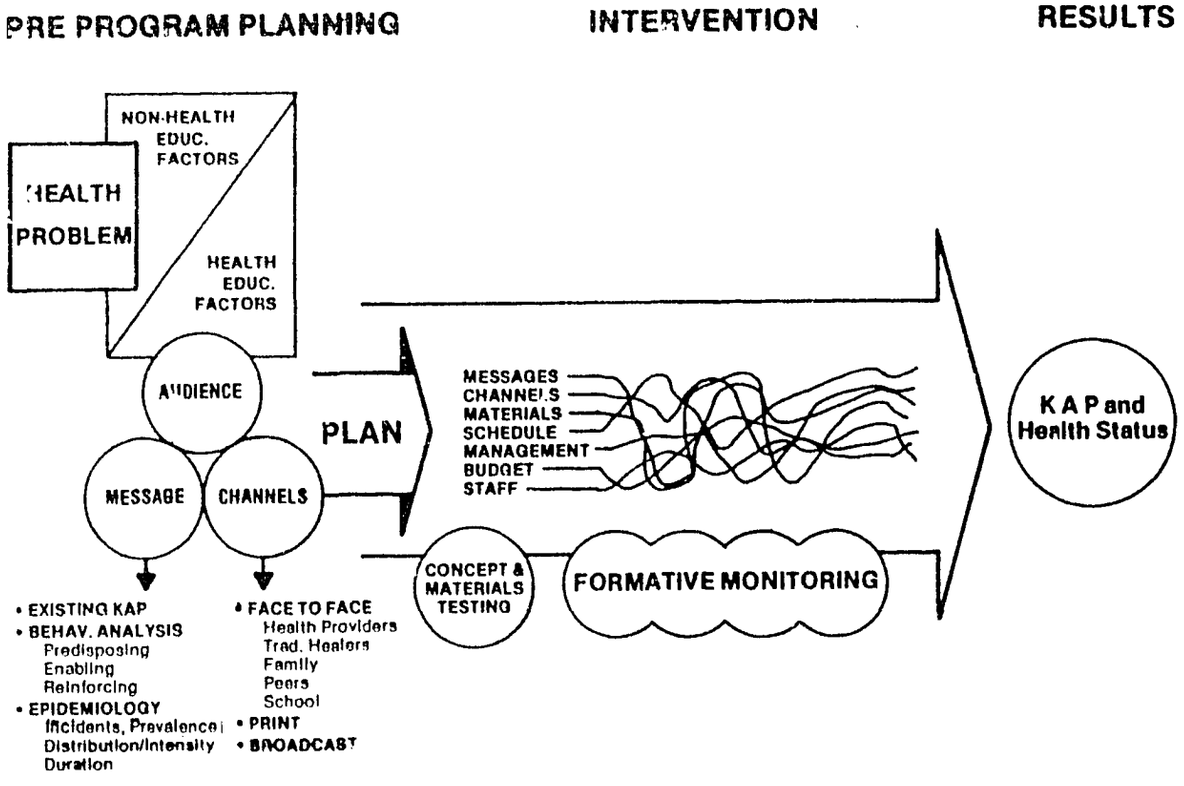
Behavioral analysis also makes an important contribution to our understanding of how to change behavior patterns, whether it be altering an existing pattern, or creating a new one. Many health messages, for example, carry an implicit or explicit threat. This approach has been shown to be less effective than providing rewards to approximations of the desired behavior. The use of approximations requires that we identify a relevant existing behavior to reinforce and may mean including a few behaviors in the instructional campaign which we know the audience is now doing correctly. For example, rather than telling mothers to stop bottle-feeding, we may want to praise mothers each time they do breast-feed.

Another important point to emphasize is effective delivery of positive consequences or rewards. Behavior does not change unless rewards are actually applied to the desired behavior pattern or some reasonable approximation. It is not sufficient, for example, for nurses to tell outsiders how important it is that rural mothers be praised for administering ORT. We must be certain that the nurses are in fact praising mothers, and that the mothers perceive the nurses' action as praise or support. The MM&HP Project may be one of the first efforts to use mass communication primarily to support positive existing behaviors rather than extinguishing negative patterns or creating entirely new ones.

Behavioral information in these areas was collected as part of an extensive pre-program effort we call a developmental investigation. Based upon an analysis of the medical problem (infant diarrhea) and the communication and instructional requirements of the media to be used, specific development investigation topics were established as follows: (1) rural understanding of and response to diarrheal episodes in children under five; (2) general rural child care practices; (3) infant feeding patterns with special emphasis on breast-feeding; (4) home-based mixing trials of oral therapy solution; (5) potential sources of bacterial contamination in rural homes; (6) existing distribution systems for commercial medicines; (7) health system outreach; (8) rural media habits and preferences; and (9) rural opinion leadership.

To collect information on each of these topics the investigation used five general strategies: (1) the collection and analysis of existing information (statistical, anthropological, and anecdotal); (2) individual and focus group interviews; (3) direct observation in rural homes; (4) visits to rural clinics; (5) interviews with pharmacy and rural store owners as well as leading physicians and nurses.

The project's overall methodology is illustrated in the following graph.



HEALTH EDUCATION MODEL

With this methodology, findings from the developmental investigation are used to design a detailed implementation plan, specific message themes, message tone, communication channels and campaign phases. Draft materials for radio, print, and face-to-face training components are produced, pre-tested, and revised. Final materials are produced and phased distribution begins. Formative evaluation techniques are used to monitor campaign elements at regular intervals in order to assess the effectiveness of each distribution channel and to determine if interim objectives are being met. Finally, the summative evaluation provides detailed information on changes in target audience attitudes, knowledge and behavior, as well as providing information on any resulting changes in health status.

THE CAMPAIGN IN HONDURAS

The field project in Honduras is a three-year portion of the overall project. It is subdivided into two distinct activities: the nine month pre-program research activity and the actual execution, monitoring, and revision of the public education campaign itself. The project has modest financial resources to develop and produce the radio, graphic, and in-service training materials, and to fund one-half of the radio broadcast costs. The Project is also providing two expatriate technical assistants to the Health Education Unit of the Ministry of Health (MOH) in Honduras, as well as supporting two local specialists assigned full-time to the MM&HP Project.

The Ministry of Health is funding three full-time counterparts, office space and the remaining broadcast costs. The project staff coordinates project activities with several other MOH offices, including the Director General, Maternal Child Care, Training and Human Resource Development, Epidemiology, and Environmental Sanitation. A coordinating committee has been established to review project activities and to ensure that the project is consistent with the overall health priorities of the MOH.

The project operates in Health Region No. I of Honduras. This region was selected after careful study and provides a representative population of approximately 400,000 individuals.

The Problem

Honduras reported that 1,030 infants died from diarrheal dehydration in 1977. This accounts for 24 percent of all infant deaths and represents the single greatest cause of infant mortality in Honduras. The most commonly available treatment for diarrheal dehydration in Honduras is intravenous (IV) therapy. Intravenous therapy is expensive, requires trained medical personnel and a relatively sterile environment, and is available only in fixed health facilities which serve a small portion of the country's rural population.

Communication Objectives

The mass media campaign in Honduras has the following main objectives:

- Substantially reduce the number of deaths from diarrheal dehydration among children below the age of five.
- Extend rehydration therapy to isolated rural areas where it is not now available.
- Substantially reduce the per-patient cost of rehydration therapy in Honduras.
- Introduce several diarrhea-related prevention behaviors to a significant number of rural people living in isolated areas.

Audience Definition

The audience in Honduras has been divided into two main groups:

- The primary audience is rural mothers/grandmothers with children under the age of five and primary health care workers called guardianes.

- The secondary audience includes physicians, nurses, auxiliary nurses, midwives, fathers of children under five, rural school teachers and school-children, and regional health promoters.

Communication Strategies

The project is designed to teach the primary audience:

- To properly prepare and administer pre-packaged oral rehydration salts to infants (less than one year), as soon as the child gets diarrhea, and to toddlers (older than one year), as soon as the child loses appetite or becomes listless.

- To seek outside assistance if the child does not improve after administering the above regimen.

- A cluster of behaviors associated with breast-feeding, infant food preparation, and personal hygiene.

The secondary audience is taught to support the primary audience through:

- Physicians and nurses using oral therapy in all fixed facilities.

- Fathers and midwives understanding and approving oral therapy.

- Rural schools teaching prevention measures.

- Regional health promoters distributing ORT packets.

Message Tone

The tone of the campaign is serious and straightforward. It seeks to promote a mother-craft concept which supports what mothers are already doing and adds several new components to "being a good mother." ORT is presented as the latest achievement of modern science: a remedy for lost appetite and an aid to recovery. ORT is not presented as a remedy for diarrhea.

HONDURAS ACTIVITIES

EVALUATION LEGEND
- B = Baseline
- A = Anthropometry
- M = Morbidity
- C = Communication
- N = Nutrition & Breastfeeding

RAINY SEASON — RAINY SEASON

PHASE I									PHASE II				PHASE III						PHASE IV						PHASE V				
OCT 1980	NOV	DEC	JAN 1981	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN 1982	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN 1983	FEB	MAR

MESSAGE SEQUENCE

- Dehydration
- Infant Special Care
- Breast is Best
- Reheat Foods
- Wash Hands

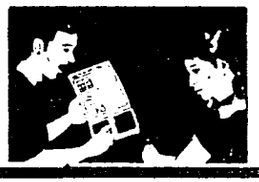
LITROSOL
- For Dehydration
- Available at Center Flag
- Give to Infants For All Diarrhea
- 3.8oz Bottle Makes a Liter
- Litrosol For All Children's Diarrhea
- Give During Future Episodes

- Feeding during Diarrhea
- Instruction on Packet
- Breastfeeding
- Litrosol

- Litrosol for all episodes
- Signs of dehydration
- Mix all of packet
- Give with other medicines

- Breastfeeding

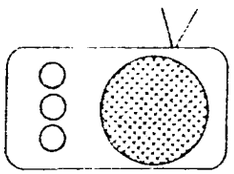
INTERPERSONAL



1,200

DIRECT						73	23	195	26								15 Phy.	90	50	80							100		
INDIRECT							160	200	200	200	200							900 Retraining											

RADIO



43,696

SPOTS						6,450			5,424				8,577				2,801	Local Sta. Only	9,611						10,833				
VOZ De SALUD																	3 Per week								4 per wk.		5 per wk.		
OTHER																		Sports - Game Show TV											

PRINT/GRAPHIC

93,000

POSTERS/ DISTRIBUTION						37,000				18,600			17,400					5,000							Breastfeeding 15,000				
FLYERS									80,000										75,000										
WITH LABELS									160,000										150,000										
WITHOUT LABELS																													

PACKETS

300,000

EVALUATION — B A M C N A M C

THE CAMPAIGN IN THE GAMBIA

The field project in The Gambia is a two-year portion of the overall Mass Media and Health Practices Project. The Gambia activity is divided into a six-month pre-program development investigation and the actual execution, monitoring, and revision of the public education program. The project has modest financial resources to develop and produce the radio, graphic, and in-service training materials required. The MM&HP project also provides one expatriate technical assistant to the Health Education Unit of the Medical and Health Department.

The Gambian Ministry of Health (MOH) provides one full-time counterpart and office space, and the national radio system is providing all radio broadcast time. As in Honduras, a coordinating committee has been established by the Ministry to review project activities and to ensure that the project is consistent with the Government's overall health priorities.

The Problem

The Gambia reports that gastroenteritis and malnutrition account for 21.3 percent of all deaths in children under five years old in Banjul where health statistics are most reliable. It is estimated that rural areas of the country experience comparable or more serious mortality rates due to the same two causes. This represents the most significant cause of death for children of this age group. Existing prevention and treatment methods vary widely within the country and are generally considered inadequate to meet the problem.

Communication Objectives

The main objectives of the mass media campaign in The Gambia are the following:

- Substantially reduce the number of deaths among children below the age of five from diarrheal dehydration.
- Establish one sugar/salt (S/S) rehydration regimen as a standard for village-based prevention of dehydration.
- Differentiate the village level management of diarrheal disease to meet the seasonal characteristics of the wet and dry season diarrhea/malnutrition complex.
- Establish a regular faeces clean-up campaign within a significant number of rural family compounds.

Audience Definition

The audience in The Gambia has been divided into three main groups:

- The primary audience is rural mothers, grandmothers and older female siblings of children under five.

- The secondary audience includes Rural Health Inspectors, Community Health Nurses, Health Peace Corps Volunteers, Leprosy Inspectors, Material Child Health teams, and Primary Health Care Workers.

- A tertiary audience includes general physicians, dresser/dispensers, local leaders (alkalos), and rural fathers of children under five.

Communication Strategies

The campaign is designed to teach the primary audience:

- To properly mix the simple sugar/salt rehydration solution.

- To administer the solution along with breast milk and adult foods during episodes of wet season diarrhea.

- To administer the solution intensively along with breast milk during episodes of dry season diarrhea.

- To seek outside assistance if the child shows signs of listlessness and/or dark sunken eyes.

- To identify one member of the family to regularly clean up human, primarily infant, faeces from the family compound floor.

The campaign hopes to teach the secondary audience:

- To properly mix and administer S/S rehydration solution.

- To properly manage moderate and severe dehydration in the health centers using ORT packets.

The tertiary audience will be motivated to support and praise mothers who properly use the S/S solution for diarrhea.

Message Tone

The tone of the campaign is serious and straightforward. It seeks to promote a remedy, the basis of which builds upon existing widespread recognition and concern over "dryness" in small children, which offers mothers a powerful new diet for "dryness." The S/S solution will be presented as part of this "diet for dryness" which includes specialized feeding and continued breast-feeding.

Execution

Radio, print, and health worker training will be combined to provide the same messages over multiple channels. Radio spots, mini-programs and magazine format radio programming will deliver a seasonally structured series of messages. A national rural lottery which uses radio to teach the audience how to use a color-coded mixing flyer will be the central element in a program to teach S/S mixing to rural women. This will be strengthened by trained Traditional Birth Attendants (TBA) identified by a special "happy baby flag" in a significant percentage of rural villages. These TBA's will provide back-up support to mothers in remembering how to mix S/S solution. Simultaneously, packet rehydration will be introduced at the rural health center level as the preferred treatment

for moderate and severe rehydration. A faeces clean-up campaign relying heavily on radio will be conducted to link the concept of cleanliness during prayer, advocated by Islamic principles, to the need to maintain the floor of the family compound as a clean place upon which to pray.

COMPARING HONDURAS AND THE GAMBIA

The original conception of the project included two sites so that comparisons could be made between a single methodology applied to two different environmental and cultural settings. The Gambia and Honduras were chosen largely because of their differences. In essence, the question is: does a systematic, mediated campaign work effectively in both an African and a Latin American setting?

The chart below illustrates the most relevant differences between the two sites.

SOME DIFFERENCES BETWEEN THE TWO SITES

		The Gambia	Honduras
EXISTING ENVIRONMENT	The Health Problem	Striking seasonal variation between short dry season of watery diarrhea, and longer wet season of prolonged diarrhea interacting with malnutrition.	Seasonally prominent watery diarrhea.
	Target Audience	Striking linguistic and cultural differences between major sub-groups.	Homogeneous cultural groups
	Health System	Limited central resources, with significant potential for rural coverage	Significant central resources with relatively limited rural outreach.
	Radio	Single , centralized government broadcast channel. Limited potential coverage.	Multi-channel commercial broadcast system. Excellent potential for coverage.
	Print Media	Practically unknown at village level	Limited availability, but some exposure.
PROPOSED INTERVENTION	Rehydration Regimen	S/S in the home-Packet and IV in the health center.	Packet in the home. Packet and IV in the health center.
	Treatment Strategy	Reinforce significance of dryness. S/S means to prevent dryness. Teach signs of mild dehydration as point to seek help.	Teach significance of dehydration. Teach signs of mild dehydration as point to seek help.
	Principle Treament Ojective	Standarize and popularize proper mixing and use of S/S solution in the home.	Popularize appropriate application of the packet in the home.
PROPOSED INTERVENTION	Principle Prevention Objective	Regular eces campaign within compound.	Cluster of prevention behaviors.
	Campaign Structure	High impact radio lottery targeted at rural women with print and health worker support.	Multiple, intensively repeated short radio messages, broad print material and health worker focus.
	Time	24 months total/12 month broadcast cycle.	36 months total/24 month broadcast cycle.

To understand the MM&HP program it is also important to note the commonalities, not of setting, but of approach, which characterize the project in both countries. In both countries:

- A significant pre-planning investigation of the medical problem, the social context, and the instructional tools was conducted.
- Focused instructional goals were established around a narrow health objective avoiding a superficial treatment of a broad development goal.
- The ultimate criteria against which specific messages were selected was the feasibility, practicality and reliability of audience adoption.
- Behavioral design principles were used to select target behaviors, develop the training design, and orient the campaign structure.
- Radio, print, and face-to-face support were designed as integrated, mutually supportive, and interactive components.
- Significant use was made of radio for direct instruction as well as information dissemination and popular mobilization.
- Systematic materials testing and on-going component monitoring were included as fundamental elements.

EVALUATION FINDINGS

The MM&HP project is being formally evaluated by Stanford University's Institute for Communication Research. The evaluation includes resident experts in both Honduras and The Gambia. The research design relies on a variety of studies including a panel study of some 800 families, a health worker, nutrition and mortality study. In Honduras a special behavioral study is also underway to determine how women actually use the program's advice in their homes.

Results of the first year evaluation in Honduras are very encouraging. The population has good access to the main channels of communication used by MM&HP. Roughly 80 percent of families own radios, of which about 90 percent are functioning at any given time. Some listen to the radio throughout the day, but most of the audience tunes in between six and seven in the morning and at noon, with virtually no one listening in the evening. On any given day, roughly two-thirds of the mothers will listen to the radio. People have frequent contact with members of the health care community, either through community based workers (21.3 percent of families in the last six months) or staff of fixed health care facilities (32.6 percent of families in the last six months). There is a strong preference for care from modern medicine sources over folk medicine sources (82.5 percent of contacts over the last six months were with representatives of the Ministry of Health system rather than healers, spiritualists, etc.). More than half the mothers can read and, if they can't, usually there is someone else in the family who can. The household literacy rate is 86.8 percent. Therefore it is clear that the MM&HP messages can be received by the target audience through all three channels.

Exposure to MM&HP materials through these channels is also very high. Mothers who listened to the radio on the preceding day remembered having heard a MM&HP radio spot about 70 percent of the time. An average of more than three spots was remembered by mothers who listened to the radio on the previous day. Mothers also have the potential to learn through instruction that takes place during contacts with health care workers. Instruction took place in an average of 42.4 percent of contacts with staff of fixed health care facilities and in an average of 37.9 percent of contacts with community level health care workers. Exposure to the print materials was also very high. Roughly half the sample reported having seen a health poster, usually at a health center. About 80 percent of these recalling seeing a poster could describe it well enough that it could be identified as a particular MM&HP poster. There is no doubt that the campaign messages are actually reaching and being remembered by the target audience.

Learning of the content of the messages is quite successful. After five months of broadcasting mothers successfully supplied 28.9 percent of all possible answers to the questions, most of which were unaided recall items with multiple responses, a particularly demanding test of knowledge. By the thirteenth month of broadcasting, this rate had risen to 33.8 percent, a statistically significant increase. This result is particularly impressive because it includes mothers who never listened to the radio or who reported never having heard one of the spots. If one looks at the learning scores for particular items, the percentages are even higher. For example, nearly two-thirds of all mothers could complete the campaign jingles when prompted with the opening lines. An average of roughly half the mothers named at least one correct answer in each learning category. An average of almost 90 percent of the sample who heard Dr. Salustiano spots could identify Litrosol as the medicine he was recommending. There is thus a pattern of initial fast learning to a very respectable level when the campaign begins, followed by slower gains in learning as time goes by.

Diarrhea prevalence is high. Estimates at different points vary: the maximum point prevalence observed was 14.6 percent of children less than 60 months of age sick with diarrhea on the day of the interview. A minimum of almost half the children experience an episode of diarrhea during a six month period. Use of Litrosol in cases occurring within two weeks prior to the interview rises from 9 percent of cases after four months of the campaign to 26.1 percent after 12 months. Higher percentages of cases (up to 45.3 percent) are reported to have been treated with Litrosol over periods of six months prior to the interview, but it seems likely that mothers are forgetting more of the less severe cases. Half of the entire sample says they have tried Litrosol after thirteen months of the campaign. About two-thirds of the women get their Litrosol from people in their own community; the rest tend to get it from clinics or the hospital. Learning of the method for preparing Litrosol is primarily from the packet (58 percent at the end of the first year), secondarily from interpersonal sources (43.4 percent) and relatively little from the radio (14.0%). Knowledge levels about mixing of the Litrosol packets were good for the most important aspects--using a liter of water and putting in all the packet both received about 95 percent correct responses. Evidence indicates that more severe cases of diarrhea are more likely to receive treatment with Litrosol. Breastfeeding levels are high (over 90 percent of children are breastfed at some time) but bottlefeeding is often carried out in combination with breastfeeding. At the end of a year 87.5 percent of mothers knew to continue breastfeeding during diarrhea bouts, and 58.7 percent knew to keep feeding the same or increased amounts to children during diarrhea episodes. Mortality monitoring is not yet completed. Preliminary analysis shows a drop in percentage of deaths attributed to diarrhea, but the decline is not statistically significant. Honduran children show intermediate levels of malnutrition, wasting, and stunting. Data for assessing change in nutritional status during the intervention are not yet completed.

The overall picture that emerges of the impact of the MM&HP project is one of an intensive, well integrated campaign that is achieving impressive successes in teaching people health information and getting them to change specific behaviors related to response to infant diarrhea. Subsequent analyses on the health effects over time will reveal the impact that the behavioral changes have on health status.