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FIELD NOTE

**"FOR HEALTHY CHILDREN WE WORK":
USING LONG DISTANCE EDUCATION**

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WHY AN INFANT HEALTH COURSE FOR MOTHERS?

One of the chief goals of Ecuador's Ministry of Health, as part of its PREMI program (Plan de Reduccion de Enfermedad y Muerte Infantil, or Plan to Reduce Childhood Disease and Mortality) was to undertake public health education efforts on a massive scale. Such efforts must rely heavily on mass communication, social marketing strategies, and various nonformal education techniques. Yet it is obvious that nonformal educational technologies, undertaken on a large scale, require imagination as well as efficient logistics and infrastructures. Public ministries--with the possible exception of a ministry of education--are usually unprepared to carry out programs of this nature, and certainly have little practice doing so.

It was with these realities in mind that Ecuador's PREMI planners examined options for using mass media to promote public health education. Ecuador has a relatively high literacy rate (85 percent nationwide according to 1984 statistics), and an even higher level of radio ownership (above 87 percent of households, according to PREMI surveys). Television ownership is about 74 percent and newspaper readership about 13 percent. Planners decided to use a range of media in various ways, but to concentrate on the most prevalent--radio.

One of the major activities was a radio course on infant health. One of the primary objectives of the course was to bring about changes in health-related behaviors practiced in the home. A second major objective was to produce graduates who would in turn become sources of valid, systematic information within their respective communities. The target audience, the subject matter, and the media and materials were carefully chosen. Communication planners focused on reaching an audience with three major characteristics. This audience included women who were:

sufficiently educated to comprehend an extensive amount of information on several child survival topics;

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personally committed to acquiring the information;

motivated and situated to share it with others who need it most.

The ideal audience consisted of literate mothers of children under five years of age, living in rural areas. This determination in turn dictated aspects of the course content, design, and promotion.

The goal was to involve mothers in all 20 provinces nationwide, aiming for a total of 7,200 enrolled participants in the first seven-week course (starting in 1987) and another 7,200 mothers for the second course in 1988. Broadcasting via 90 radio stations would provide the required "reach" of information.

Reaching participants was only the initial challenge to planners. Two other major considerations were the extensiveness of material to be covered in the course and the difficulty of motivating long-term, intensive participation by mothers--primarily from rural areas--who are already burdened with many tasks. These challenges were tackled through two basic strategies: 1) integrating several media--including radio, print, and weekly interpersonal meetings with local health workers--in order to reinforce information as effectively as possible; and 2) providing incentives to both mothers and health workers through a nationwide lottery for educational scholarships. In addition, the program was promoted widely to all levels involved--from the participants and their families and neighbors, to the general health care system, to the officials in the ministry itself.

COURSE CONTENT AND MATERIALS

Course materials consisted of three main components: a total of 36 radio programs broadcast over seven consecutive weeks; a series of printed booklets corresponding to the radio programs; and weekly group guidance at the health center by an auxiliary nurse. The process of integrating the three media--radio, print, and interpersonal--required extensive coordination of materials design, production, distribution, and health worker training.

The basic subjects covered in the course were as follows:

- **Diarrheal disease prevention and treatment**-- the dangers of diarrhea; the signs of dehydration; how to treat a child with diarrhea, including the importance of restoring water and salts; proper administration of oral

rehydration salts (ORS); and proper feeding during and after episodes of diarrhea.

- **Immunization**— how vaccines prevent diseases; against what diseases children can be protected by immunization; when and how often children must be vaccinated and the importance of receiving the complete cycle of doses; and possible contraindications to reactions.
- **Growth monitoring and proper nutrition**— the importance of systematic weight gain in healthy children; proper use of a growth monitoring card to register progress; the appropriate introduction of food for children at five months of age; the adequate food combinations according to an infant's age; the concept of appropriate quantity of food for small children; and the appropriate number of meals a child of a given age should receive during a day.

COURSE MATERIALS FOR MOTHERS

Radio programs provided the backbone of the course. Although they were designed to be "interactive" with the printed booklets, they were also designed to be interesting even to the casual listener, and to capture mothers not necessarily motivated to sign up formally.

A total of 36 radio programs each 20 minutes in length were broadcast Monday through Friday of seven consecutive weeks. Each program was made up of five distinct parts. The brief introduction helps mothers identify the correct printed learning module corresponding to the day's lesson. This is followed by an eight-minute soap opera. The daily dramas take place in a fictional town, Santa Ana de la Cañada, where children experience the various health problems targeted by the PREMI program. The town's adventures are narrated by Don Sebastián, an old carpenter and church attendant, who is also the town's collective memory. The purpose of these dramas is to capture the imagination of any mother listening and to entice her into hearing a more thorough description of the children's health problems and what she could do to alleviate these.

Three fictitious characters then lead listeners through the day's course. The characters include Miguel, a health educator; Rosita, an intelligent PREMI mother who follows the course; and El Motas, a humorous fellow who also appears in the printed

learning modules, guides mothers through each section, explains concepts, and assists them with the exercises. Course content was divided as follows:

Overview	2 radio programs
Diarrhea control	7 programs
Immunization	6 programs
Growth monitoring	9 programs
Infant feeding	8 programs
Exams	4 programs (one after each unit)

An eight-page booklet corresponds to each weekly program. Mothers would receive a new booklet each week after attending the guided learning session at their health center. Every module opens with the soap opera, converted into a two-page comic strip. The technical content of the program is then presented in two pages in graphic format. Fictional nurses, physicians, auxiliary nurses, and mothers corresponding to the voices on the radio programs outline the concepts listeners should remember. This section is recited verbatim over the radio so mothers can follow along; then the various characters explain the points in more detail. El Motas has a special role. He is full of quips--sometimes humorous rhymes, sometimes straightforward pithy summaries of child survival principles. A few examples of his sayings illustrate how rhymes were used as reminders:

La deshidratación deja al niño fuera de acción.

(Dehydration puts a child out of action. [ORS])

El pinchazo salvador para todos los niños del Ecuador.

(The saving prick [vaccination] for all the children of Ecuador.)

A calzón quitado, niño vacunado.

(Pants down, child vaccinated.)

Hay que controlarle mes a mes, para que crezca sano, cada vez.

(If healthy you want to see him grow, to monthly growth control you must go.)

Seno y puré, excelente para el bebé.
(Breast and puree, excellent for the baby.)

A comer, se aprende, comiendo.
(One learns to eat by eating.)

Sin el espeso, no hay buen peso.
(Without solid food, there is no weight gain.)

Yo como soy listo, repaso las cartillas y no me despisto.
(Because I am smart, I review my homework, and will not lose track of myself.)

The next section consists of a list of summary recommendations. Following this is a section of exercises, designed as much to be fun as to be informative. The mothers are asked to find key phrases among a jumble of words, fill in crossword puzzles, cut out figures, answer true/false questions, fill in missing words, and so forth. Over the radio, Miguel assists Rosita, the FREMI mother, who in turn gives hints to the listeners about how to obtain the correct answers.

The last section of each learning module suggests related community activities. It provides various support materials including puzzles, menus, discussion group guides, drawings, and so forth. The mothers are asked to organize a group of from two to five women (relatives or neighbors) with whom she can do the suggested activities. These, too, are designed to instruct as well as to entertain.

Finally, four separate booklets contain the exams for the four different child survival themes. These exams are also taken interactively with radio programs, in the presence of an auxiliary nurse at the local health center.

THE ROLE OF THE AUXILIARY NURSES

The success of the radio course depended heavily upon the involvement of 900 auxiliary nurses in the 20 participating provinces. Mothers who were officially enrolled in the course--and would receive a graduation certificate and a ticket for the educational lottery--were required to attend five out of seven weekly meetings at their local health center. Each group selected a day of the week convenient to all of the participants. At the meetings, the designated auxiliary nurse reinforced the week's lessons, answered

questions, and reviewed the exercises. Mothers also handed in the weekly test and the nurse reviewed these with the participants. The sessions were designed not only to add an element of formality to the course necessary for verifying participation, but also to provide a support mechanism for the mothers. Although participants were required to be literate, most of them had not gone beyond elementary school and benefited from the extra motivation of meeting with others and receiving personal guidance. Similarly, the written exercises and tests were designed to create as little tension and fear as possible, while reinforcing in simple ways the most important concepts of the various child survival topics.

The auxiliary nurses had numerous administrative responsibilities including recruiting participants and completing six specific monitoring checks during the course. Only by performing these various checks could a nurse prove her own successful completion of duties and become eligible for a scholarship lottery ticket. Each nurse was required to sign up at least eight mothers and graduate at least four. For each mother, she had a "control" sheet to fill out. The mother signed the control sheet when she received her bag of materials, including an inscription i.d. card and her first learning modules. In the second week, the mother signed again and received her second installment of learning modules, and so forth. The nurse also recorded the results of the various exams. Finally, the mother signed the sheet when she received her diploma. The nurse handed in the completed control sheets to the PREMI provincial communication coordinator and then received her lottery ticket.

A broadcast monitoring aspect was built into this record-keeping system as well. The back of each mother's control sheet consisted of a radio listening questionnaire, with nine questions relating to the particular station which broadcast that lesson. The nurse asked a different mother each week to fill out the questionnaire, so that the maximum possible radio stations and listening times could be checked.

TRAINING

A hierarchical training system made it possible to reach the 900 auxiliary nurses efficiently. Each participating province initially sent two participants to a trainer of trainers retreat near the capital. The PREMI communication coordinator from the provincial Ministry of Education attended, along with the provincial health educator. These 40 participants received a week-long detailed seminar on the radio course. Instruction was divided into six units corresponding to different learning modules. Teaching techniques included role playing, sociodramas, question and answer contests,

groups discussions, and lectures.

These 40 trainers returned to their provinces and each held a two-day seminar for approximately 40 auxiliary nurses. The nurses were selected by their provincial nurse from designated health posts and subcenters in rural and semi-urban areas. At the training seminars, the auxiliary nurses received their special radio course teacher's guide and learned both how to conduct the course and motivate participating mothers as well as how to fulfill the various monitoring duties which would assure them of an educational lottery ticket. They also received packages of learning modules and other materials for mothers. Later, they would turn in the completed course control sheets to their respective trainers, the PREMI communication coordinators, who would then convey these to the Ecuadorian Institute of Educational Credit and Scholarships (IESS).

COURSE PROMOTION AND PARTICIPANT MOTIVATION

For mothers as well as nurse-teachers, one of the prime motivators for participation, of course, was the educational scholarship lottery. Two-part lotteries were held after both of the radio courses. One drawing distributed to each 170 winning mothers a prize of 10,000 sucres (U.S. \$45) for their children to use for tuition, books and other school materials. (This amount paid for over a year's tuition at the time.) The other drawing gave 34 nurses each a prize of 100,000 sucres (\$450) as scholarships toward continuing education. The Ecuadorian Institute of Educational Credit and Scholarships organized the lotteries and administered the scholarships. Funds were provided from the National Institute for the Child and the Family (INNFA).

The radio courses and associated lotteries were widely publicized over the radio during the week previous to course start-up. Three different spots were aired ten times daily over 225 radio stations. In addition, one television spot was aired five days before the campaign over seven stations, eight times daily. Program planners decided to announce the course over television in spite of the fact that the course was originally designed for rural mothers, most of whom did not have access to television. Television promotion gave the educational effort status that it might not otherwise have had and also focused greater public attention upon the importance of child survival and the role of individual mothers. Moreover, it enhanced the image of the Ministry of Health. In fact, the television spots were so successful, and inspired so many telephone calls in Quito, that planners had to arrange an emergency last-minute training for 20 auxiliary and professional nurses who then signed up mothers at their local health centers.

Although enthusiasm for the courses was no doubt partly assured by the "gimmick"

of a lottery, planners had designed motivating elements of various kinds into the entire program. The course format, as mentioned previously, was geared to be as entertaining as possible--beginning with the dramatic enticement of the soap opera, and continuing on through the rhymes of El Motas, the games and puzzles, and the suggestions for community activities. In addition, mothers received an assortment of official materials to identify them as knowledgeable community leaders. Upon graduating, each mother received a door sticker announcing that she was a volunteer-PREMI promoter who could offer information to other mothers regarding diarrhea, vaccinations, growth monitoring, and infant feeding. She received a supply of ORS packets to aid her in teaching other mothers how to prepare the solution. And she received a printed diploma certifying her successful completion of the course.

The elaborate and emotional graduation ceremonies organized by the local listening groups reflected the intensity of interest and commitment felt by almost all of the mothers who participated in the courses. Although no formal instructions had been provided on the need for a ceremony, groups independently organized formal presentations complete with speeches by officials, testimonials by graduates and their family members, food, and group photos. For many mothers, this was the first graduation ceremony they had ever attended.

PLANNING, PRETESTING, AND PRODUCTION

An ambitious project such as this required extensive planning and pretesting. The process of creating the radio course took approximately one year from conception to broadcast. It began with a one-week planning workshop organized by the communication and social marketing department of INNFA and held at CIESPAL (International Center for Higher Education for Latin America) Participants were primarily health educators belonging to an interministerial committee called OTIDES (created by agreement between the Ministries of Health and Education). Attendees were also invited from the Department of Educational Texts Production, the Departments of Educational Technology and Long Distance Education from the Ministry of Education, from various departments of the Ministry of Health, from CIESPAL, Radio Netherlands, Educational Radio (IRFEYAL) and the Academy for Educational Development. Seventeen participants attended.

During the seminar, these experts offered perspectives from diverse fields in outlining the basic course strategy, the content to be covered, the media to be emphasized, the extent of health worker involvement, the community outreach plan, and

aspects of the broadcast plan. This initial meeting was important not only because it brought varied expertise to bear in the creative stage, but also because it established a necessary collaborative atmosphere. Cooperation in the planning stages is the best assurance that cooperation will be forthcoming during later implementation activities.

The target audience--mothers of children under five--were also consulted very early in the process. The course designers originally proposed the radio programs would be reinforced through a single educational poster. After draft materials had been developed, these were pretested with mothers in semi-urban areas. Afterwards, planners held a second interinstitutional workshop to discuss results and plan other details of the course. Significant changes were made in the materials, including replacement of the poster with individual program-related booklets. The second draft also incorporated the soap opera episodes, the various actors, and a learning module approach. Planners also settled on the requisites for participating mothers, the recruiting mechanism, the supervision mechanism, the training process for the auxiliary nurses, the incentives, and the prizes.

The revised materials then went through two more pretesting stages. The character of El Motas was further developed, the time allowed for exercises was lengthened, the ordering of pages and figures in the printed materials were refined, and so on. Classic pretest procedures were followed. Mothers from the target audience were invited to listen to a tape recording of a pilot radio program which included as many elements of the final version as possible (professional actors, musical background, and so forth). They followed along with prototype, photocopied graphic materials. Mothers were then asked to complete the exercises belonging to that particular radio program. Afterwards, each mother was interviewed regarding her enjoyment and comprehension of the materials. The only element of the program which seemed to remain a challenge even after revisions was the section on community activities. Mothers were enthusiastic about the idea, but the likelihood of their carrying these out with neighbors was perceived to be low. The final program therefore suggested that mothers try these activities out with relatives as a possible alternative to friends or neighbors.

Actual production required the services of two script writers, 12 professional actors, and 80 hours of taping. Once taped, the material required 60 hours of editing. The music for the soap opera was composed by a professional musician hired on a free lance basis. Production and editing were contracted to a professional group. The learning modules and teaching guide for auxiliary nurses were written by PREMI staff who also designed plastic bags for the modules, plastic i.d. cards, and other items.

Program planners contracted 90 radio stations to broadcast the course during optimal listening times. Although the government does not require radio stations to donate times for public service programs such as this, many stations gave their time to the course at nominal fees. Planners made personal visits to the Radio Association of each province to discuss the course and gain their support. The Associations' support laid the basis for productive negotiations with individual radio stations.

RESULTS AND OUTREACH

During both airings of the radio course, approximately 80 percent of mothers (7,625) who signed up for the course actually graduated and participated in the lottery. Although many more mothers heard the course than were actually signed up and graduated, planners still felt the materials could receive wider use. After taping the radio programs, therefore, they also made records which could be distributed to interested institutions and associations such as mothers' clubs, for group listening. In addition to the 90 sets which were distributed to radio stations, the program distributed sets of 36 records each to PREMI provincial coordinators (40 sets); public institutions (60 sets); and organizations involved in educational or health activities (89 sets). The records have also been shared with other Spanish-speaking countries, and variations of the course have been developed elsewhere.

While the success of the program--both objectively, in terms of mothers graduated, and subjectively, in terms of enthusiasm generated across many provinces--has been impressive, the complexity of organizing a program such as the Ecuador mothers' radio course should not be underestimated. The course was more than just a radio program, more than just a textbook, more than just a classroom experience, and far more than just a lottery. The process of planning and creating the program was also more than just the sum of designing these different elements. A learning experience which relies upon interactive media requires consistency of messages and careful coordination among many writers and producers. It requires collaboration with those who have technical expertise in the field of health, with those familiar with the target audience, and with the target audience itself. Promotion must be geared to the correct audience and must create a level of demand appropriate to the level of services available. Incentives must be culturally appropriate. And health workers must be properly trained and rewarded for their help.