

**EXTENDING SUCCESSFUL HOSPITAL-BASED CHILD SURVIVAL
STRATEGIES INTO SURROUNDING URBAN, PERI-URBAN AND
RURAL COMMUNITIES OF BOACO, NICARAGUA**

MIDTERM EVALUATION OF PROJECT HOPE/NICARAGUA

Submitted to:

AID/FVA/PVC/CSH
Agency for **International** Development
Washington, D.C. 20523

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*Refers to the sections of the 1993 FHA/PVC CHILD SURVIVAL Midterm EVALUATION GUIDELINES which are covered in each chapter.

ACRONYMS

ARI	acute respiratory infection
BCG	vaccine for tuberculosis
BLS	baseline survey
<i>brigadista</i>	volunteer community health worker, trained by MINSA and/or Project HOPE
CBD	community-based distribution
CDD	control of diarrheal disease
<i>charla</i>	a short health talk
c s	Child Survival
CSSP	Child Survival Support Program
DIP	Detailed Implementation Plan
DPT	vaccine for diphtheria, pertussis and tetanus
EPI	Expanded Programme of Immunization
HIS	health information system
IRENA	<i>Instituto de Recursos Naturales</i> y del Ambiente (Natural Resources and Environment Institute)
IUD	intrauterine device
KPC	knowledge, practices and coverage
MINSA	Ministerio de <i>Salud</i> (Ministry of Health)
MTS	midterm survey
NGO	non-governmental organization
OPV	oral polio vaccine

ORS	oral rehydration salts
ORT	oral rehydration therapy
ORU	oral rehydration unit
PROFAMILIA	local family planning organization
PVO	private voluntary organization
SILAIS	<i>Sistema</i> Local de Atencibn Integral en <i>Salud</i> (Local System for Integrated Health Care)
TBA	traditional birth attendant
TOT	training of trainers
TT	tetanus toxoid vaccine
WFA	women of fertile age

EXECUTIVE SUMMARY

The midterm evaluation of "Extending Successful Hospital-Based Child Survival Strategies into Surrounding Urban, Peri-Urban and Rural Communities of Boaco, Nicaragua" took place in Nicaragua from August 15 - 27, 1993. This project is being implemented in the municipalities of Camoapa and Boaco in the Department of Boaco, by Project HOPE, with funds from the USAID Child Survival Program Cycle VII, in collaboration with the Ministry of Health (MINSa) of Nicaragua.

Members of the evaluation team were: Dr. Hugo Barquero, Project Coordinator; Ms. Marguerite Farrell, Sc.M., Assistant Director of MCH/Income Generation, representing the USA Headquarters of Project HOPE; and Dr. Mary Ruth Homer, external evaluator. Methods used to gather information included: visits to four participating communities in Camoapa and four in Boaco; interviews with counterparts, *brigadistas*, mothers and TBAs; review of the health information system (HIS) and a video of a workshop; comparison of data between the baseline and midterm surveys; and discussions with project staff.

Although the project was delayed seven months before starting, the staff has accomplished much in only 14 months of full field operations. They have undertaken baseline and midterm surveys, trained 150 community health workers (*brigadistas*), established 115 community-based Oral Rehydration Units, presented Basic Messages in five areas about preventive health and vaccinated children in 40 communities. Achievements to date include: a 94% increase in rate of children completely immunized (from 36.5% at baseline to 70.8% at midterm); a 254% increase (from 13% to 46%) in the rate of women immunized with tetanus toxoid; recognition by MINSa of contributing to the documented decrease in diarrheal morbidity and to the containment of cholera in the project area and to the improvement in referrals by *brigadistas* to local health facilities.

However, many of these achievements have been reached by the direct intervention of the project staff in the communities, providing vaccines, implementing health education sessions with mothers and working with the *brigadistas* and others who manage the Oral Rehydration Units. In order for the positive changes which have occurred in the communities to be sustained, the *brigadista* and other community leaders must be able to act independently of project staff vis-a-vis implementing messages about the five interventions. For those new health practices which require external input, such as vaccines for immunizations and ORS packages, the community health workers must know where to seek these resources and MINSa must be able to deliver them.

Recommendations address the need for project staff to improve their skills in non-formal adult education and TOT so that they can expand their work with *brigadistas* into developing community-based health teams. More community volunteers are needed to spread the basic health messages to more mothers, more often and with more efficiency and effectiveness in order to reach the project's three-year goals in all five interventions. With these recommendations in mind, the project design may need to be modified by decreasing the number of communities and/or increasing the number of staff. Other key recommendations include modifying the HIS, developing computer skills and revising a few of the basic health messages and the instrument for the Final Evaluation Survey.

Total costs of the midterm evaluation, including the survey and two non-project members of the evaluation team and excluding local staff time, are approximately \$1P,500. Authors of the midterm survey report are Dr. Hugo Barquero, Lit. Ritha Cabrera and Enf. Gabriela Aragón. Authors of this evaluation report are Ms. Marguerite Farrell and Dr. Mary Ruth Homer. The results of the evaluation were discussed with all project staff in Nicaragua. Further feedback will include a response by the staff to the evaluation and follow-up by Project HOPE.

I. BACKGROUND

This document presents the results of the Midterm Evaluation of: "Extending Successful Hospital-Based Child Survival Strategies into Surrounding Urban, Peri-Urban and Rural Communities of Boaco, Nicaragua" (September 1991 - August 1994). This project is being implemented by Project HOPE, with funds from the **USAID** Child Survival VII Program and Project HOPE, in collaboration with the Ministry of Health (MINSa) of Nicaragua.

This current project is the outgrowth of an earlier effort of Project HOPE which included four Regional Hospitals. Results achieved in the hospital in Boaco were particularly successful and it recently was named Nicaragua's first Baby Friendly Hospital. Given this background, and the health problems in the rural and urban areas around Boaco, Project HOPE and MINSa agreed to collaborate on a larger effort in primary health care.

The Project Director began his work in February 1992; the baseline survey was implemented in March & April of the same year; and then the Detailed Implementation Plan (DIP) was developed immediately thereafter. Training for staff and *brigadistas* followed and the first visits to communities for orientation to the project began in June 1992.

The project targets two municipalities - Boaco (pop. 43,700) and Camoapa (pop. 32,600) - in the Department of Boaco, located in south central Nicaragua. The Departmental seat of Boaco is the town of Boaco, where the project headquarters is located. A sub-office is located in the town of Camoapa.

In Boaco, 50 rural communities and 20 peri-urban neighborhoods were chosen for the project. In Camoapa, there are 50 rural communities and 8 peri-urban neighborhoods. The target population in the project area is 5,964 children under two years of age and 20,493 women.

The major economic activity of this area is cattle farming, for beef and for milk. Project participants in the rural areas are mostly small-scale subsistence farmers and/or employees of larger landowners. The major crops raised by the families participating in the project are corn and beans; some also have small plots of assorted vegetables. Almost all families have chickens. Fruit trees found in villages include banana, plantain, orange, lemon, guava, papaya and mango.

Ninety-five percent of the population lives in poverty with an average monthly income of US \$50.00. The baseline survey found that 39% of women with children under two years in Camoapa and Boaco are non-literate.

The town of Boaco has one 60-bed hospital, which serves all five municipalities in the Department. Other health services provided by MINSa for the municipality of Boaco include two health centers (in the town) and seven health posts, two of which are staffed

by physicians. The municipality of Camoapa has one health center (in the town) and two health posts.

The goal of the project is to reduce the morbidity and mortality of children under two years of age and of women of fertile age. The basic strategy of the project is to support MINSA in its efforts to:

1. develop skills of its own staff in the five interventions of the project;
2. support and develop the local community health workers, called *brigadistas*; and
3. extend its health services into underserved areas.

Project interventions include: presentation of Basic Health Messages related to the five project interventions (immunizations; control of diarrheal diseases; nutrition; maternal health; and acute respiratory diseases) delivery of immunizations to pre-school children and women of fertile age; creation of Oral Rehydration Units in selected houses in the communities; and training of *brigadistas* and follow-up of their work in preventive health.

II. METHODS

The midterm evaluation took place in the project areas of Boaco and Camoapa from August 15-27, 1993. The evaluation team was comprised of: Dr. Hugo Barquero, Project Coordinator; Ms. Marguerite Farrell, **Sc.M.**, Assistant Director of MCH/Income Generation, representing the USA Headquarters of Project HOPE; and Dr. Mary Ruth Homer, external evaluator.

During the two weeks in Nicaragua, the team undertook a variety of activities in Managua, in the towns of Boaco and Camoapa and in the communities covered by the project. The schedule for these two weeks, including persons interviewed, is presented in Appendix 1.

Sources of information which the team used for the evaluation are:

1. Field visits - The team divided into two parts and each visited one different community per day for four days. Two days were spent in Camoapa and two in Boaco. Time spent in the communities was devoted to observing the activities of the project team as well as talking to the local residents and visiting places such as wells, latrines, the school, houses and gardens.
2. Interviews • Interviews took place with *brigadistas*; mothers participating in the project; birth attendants; representatives of MINSA and the **SILAIS (Sistema Locale de Atención Integral en Salud)**, its local administrative section; PROFAMILJA (a local family planning agency) and Development Associates, the group contracted by USAID/Nicaragua to coordinate the work of all **NGOs** who are implementing Child Survival-funded projects in country.

3. Baseline and Midterm Surveys - The baseline survey was undertaken in March 1992. The midterm survey took place in August 1993, immediately prior to the arrival of the evaluation team. The questions used were the same as those in the baseline survey, which were developed by the Child Survival Support Program (CSSP) of Johns Hopkins University. A total of 300 mothers were interviewed in 15 participating communities in Camoapa and 15 in Boaco. Results from the midterm survey were compared to those from the baseline survey as one measure of project progress, and comments on these data are included in this evaluation report. The final report of the midterm survey is being prepared by the project team.
4. Project Health Information System - This system includes the daily field records, monthly activity reports (from staff and *brigadistas*), quarterly summaries of project activities and resulting reports.
5. Training of *brigadistas* from Boaco - This refresher course took place in Boaco on June 14, 1993, for 73 *brigadistas* who were already trained and also for other *brigadistas* who had missed the first course offered by Project HOPE. A video of this event was reviewed by the evaluation team.
6. Survey of Knowledge of Mothers in Camoapa - This activity was undertaken in Camoapa as an evaluation of the performance to date of *brigadistas* in that municipality. *Brigadistas* in 46 communities interviewed approximately 15 mothers each and then met with project staff to discuss the results. Highlights of this activity were shared with the evaluation team.
7. Discussions with members of Project HOPE - These took place with individuals or groups of two or three during the field visits. In addition, a meeting of the entire Project HOPE staff took place on August 21, 1993, to address questions in the CSSP Midterm Evaluation guidelines and to discuss the observations made by the evaluation during their field visits.
8. 1993 Guidelines for Midterm Evaluations of FHA/PVC Child Survival Projects. Selected questions from these guidelines were used in a guided discussion with all members of the project staff on August 21. Additional information was gathered during the evaluation to answer other questions in the guide. The Table of Contents for this midterm evaluation for Nicaragua does not follow the exact order as presented in the Guidelines. However, all parts of the Guidelines are covered, and cross-references to the sections of the Guidelines are noted in the Table of Contents.

III. ACCOMPLISHMENTS

A. Training

1. For Project Staff

Training in community organizing was given to the staff before any of the other trainings. This activity focused on how to communicate with peasants (*campesinos*), how to implement a community needs assessment and how to use some non-formal educational techniques, e.g., homemade puppets. Although this training was very appropriate in its timing and content, it has proved to be insufficient for the needs of the project staff. Besides additional training in non-formal adult education, the staff also could benefit from training of trainers (TOT) to assist them in their work in developing community leaders. The need for these two types of training is discussed in more detail in Section VIII.

During the first months of the project, a number of different seminars were implemented for project staff, based on the five interventions:

Breastfeeding - 1 week; given by a consultant from Honduras (see Section X)

Nutrition - 2 days; given by MINSA staff from Managua

Diarrhea and ARI - given in three stages, for a total of 8 days, by various members of MINSA (Boaco and Camoapa) and HOPE

EPI and the cold chain - given in two stages, for a total of 3 days, in Boaco and Camoapa, by one member of the HOPE staff

Maternal health and family planning - 2 days; given by PROFAMILIA

The above training focused on providing the participants with information about the causes, treatment and prevention of diseases (e.g., diarrhea, ARI, malnutrition), information and techniques about giving vaccinations and breastfeeding and information about family planning.

2. For Community Health Workers

Brigadistas are a fundamental component in the project's strategy, as they are a critical link between the community and the formal health system, which may be located miles away. Before the project, MMSA had trained the *brigadistas*, but in recent years it has been impossible to continue this activity. Therefore, the project team assumed that they needed to start from a very basic level in providing information about the five interventions. Given the long lapse in *brigadista* training which occurred before the

project, a series of seminars were designed for *brigadistas* from the communities where the project was going to be implemented.

In 1992, there were three seminars for the *brigadistas* from the first group of 20 communities. Each seminar lasted two days, and each one covered two of the interventions. Breastfeeding was treated separately from nutrition, giving a total of six interventions for the training. This training schedule was implemented first in Boaco and then in Camoapa. In 1993, the same overall schedule was implemented for *brigadistas* from the second group of 20 communities to enter the project.

This training primarily focused on providing information about the five interventions and how to fill out the various forms required for the project. Very little training was given to assist the brigadistas in non-formal education techniques. The project staff recognize this weakness and plan to address it. More information about this aspect of training is presented in Section VIII.

Then, in June of 1993, the project teams in Boaco and Camoapa designed activities for refresher training for the *brigadistas* in their respective project areas. In Boaco, 42 "principal *brigadistas*" were invited to participate in a review of the five interventions. Educational talks (called "*charlas*") were given by a small group, while the rest of the group served as the audience and asked questions and offered comments. Collaborating counterparts from MINSA served as resources.

A different technique was used in Camoapa. There, brigadistas in 10 communities interviewed approximately 18 mothers each, using a standard questionnaire which covered major points about the five interventions. Then, using these data, a meeting was held with all principal brigadistas in Camoapa to review the results and discuss how they might improve their performance.

*** * *RECOMMENDATIONS * . .**

Recommendations related to training of project staff and *brigadistas* are found in Section VIII, Health Communications.

B. Specific Outcomes

1. DIARRHEA

a. Comments on **process, activities and field observations:**

One of the most successful accomplishments of the project within the diarrheal component has been to extend the supply of ORS to the community level. Before the project began, the Department of Boaco had no functioning oral rehydration units (ORUs) and the supply of Oral Rehydration Salt (ORS) packets was sporadic. To

obtain ORS packets, community members had to travel long distances to health posts which had very limited supplies and were often closed due to absenteeism.

The project has established 114 functioning **ORUs** (58 in Boaco and 56 in Camoapa). Each ORU is equipped with a pitcher measuring one liter, a spoon, a pan for boiling water, and a supply of 20 ORS packets. The community decides the location of their **ORU(s)**. Communities that are sparsely populated may have several **ORUs**. Sometimes the **TBA**s or other volunteers who are not *brigadistas* maintain the ORU. The community member responsible for the ORU gets special training from the project staff and fills out monthly forms reporting cases attended. Referrals are also made to health posts and centers when two or more signs of dehydration are observed. These cases are sent with mixed ORS to be administered en route to the health post.

Upon questioning the project volunteers in charge of the **ORUs** about the method for preparing ORS, without exception all answered with the correct preparation of the solution, beginning with “first one must wash their hands with soap and water”. Community women who had attended health talks and some who had not, also recited the correct procedure for preparing ORS. They also correctly indicated what one should do if the child rejects the solution. Many of the **ORUs** that were visited during the field visits to both municipalities had assisted more than five cases of diarrhea.

During an interview with the evaluation team, the Director in charge of one of the health centers in the city of Boaco stated that diarrheal diseases had dropped to the ninth most important cause of morbidity in the six months, whereas previously it had been one of the most important causes of morbidity. He attributed this change to Project HOPE’s establishment of **ORUs**. The Director of the Health Center in Camoapa commented that the decrease in morbidity due to diarrhea and the absence of any cholera cases in Camoapa was in large part due to the work of Project HOPE in diarrheal disease prevention and the establishment of **ORUs**.

The three Health Center Directors interviewed stated that many patients present at health center facilities with referral slips with detailed notes from *brigadistas* saying that ORS has been administered and that dehydration signs are present. Hospital admissions for acute dehydration have also drastically declined since the project secured the supply of ORS packets to the community level. Some of this decrease is probably due to the strong cholera campaign implemented by the MINSA SILAIS and Project HOPE.

One of the Health Center Directors was told by hospital physicians that all referrals made by *brigadistas* to the hospital had been serious enough to warrant admission and had come with more detailed information than was received from auxiliary nurse referrals from health posts.

The health education component of the diarrheal disease intervention emphasizes simple messages from UNICEFS FACTS FOR LIFE. Emphasis is placed on prevention through basic personal and environmental hygiene, recognizing diarrhea and the signs of

dehydration, Oral Rehydration Therapy and referral. Project staff include education to prevent and recognize cholera in their diarrheal disease talks.

b. Comparison of results from the baseline survey (B) and those from the midterm survey (M):

Comparing the midterm survey with the baseline, one notes that, not unexpectedly, more children (41%) had diarrhea in the two weeks preceding the midterm survey (in the rainy season) than had diarrhea (36.5%) during the survey for the baseline (dry season). A comparison of the results indicates that more mothers with children under two years of age reported that they sought advice or help from the *brigadista* than had previously (B-5.6%; M-22.9%) when their child had diarrhea.

Unfortunately, problems with the survey instrument design make it difficult to measure with any certainty how much actual ORS use has increased. To be specific, in the baseline survey, when mothers with children under two years of age who had had diarrhea in the two weeks preceding the survey were questioned about what they did when their child had diarrhea, 47% answered that they gave home fluids, ORS, or home mixed solution. While on the same survey, when all mothers of children under two years of age (those whose children had and had not had diarrhea in the preceding two weeks) were asked what one should do if their child has diarrhea, 30.6% responded to give more fluids, breastfeed, or ORS. For the midterm, these figures were 46% and **64%**, respectively. These findings are difficult to interpret because there is a greater frequency of correct responses for practice (what the mother & J) than for knowledge (what one should) .

• • *RECOMMENDATIONS* * *

1. Continue with the simple messages of: a. what is diarrhea; b. prevention through personal and food hygiene; c. dehydration; d. how to **mix** and administer ORS; and, e. referral.
2. Continue with the establishment and supervision of **ORUs**. Make sure that *brigadistas* are mixing and administering ORS to the children and teaching the mothers to mix it instead of simply giving the mothers packets to take home. Ensure that when dehydrated children are referred to health centers or posts with mixed solution to carry with them en route to the health facility, that the children are first administered a given amount of solution before leaving the ORU.

2. IMMUNIZATION

a. Comments on process, activities and field observations:

For a discussion on tetanus toxoid immunization for women, please refer to Section III.B.5, Maternal Health.

MINSAs current strategy for vaccination is implemented through three campaigns per year. For these campaigns, local government offices, private companies and NGOs contribute their vehicles to support the effort. Immunization coverage is understandably less through this strategy, which reaches each community approximately once every four months, than that achieved through the project's schedule of monthly visits to the communities. In Nicaragua, one complicating factor for EPI is that MINSAs norms call for 12 doses of polio in preschool children, at the rate of three per year.

The project has deliberately extended its reach into difficult-to-access communities which are not regularly covered by the MINSAs vaccination campaigns. In fact, the project team is working in 'virgin' zones, especially in Camoapa, which have not had any visits of MINSAs EPI teams for three-four years and for sometimes as many as 10-15 years.

On almost every community visit, the project team takes vaccines in order to immunize any child who is present who needs a given vaccination. In order to minimize 'missed opportunities', the project team opens vials of vaccine for one child, even though that may mean having to discard the rest of the vaccine at the end of the day if it is not used.

This was the routine until recently, when supplies of BCG became scarce, especially in Camoapa. There, the team has been instructed not to open a BCG vial unless there are sufficient children to warrant it. When there are too few children to open a BCG vial, the project staff in Camoapa refer the child to the health center. Unfortunately, given the distances involved in Camoapa, this referral is not a practical solution. This problem with BCG should be discussed by project staff and their respective MINSAs counterparts in order to reach agreement on how to proceed.

As for the *charla* about immunizations, there is emphasis on the reasons for them, the names of the vaccines and the diseases they prevent, and the schedule for giving each. Although mothers should hear this information as part of the *charla*, perhaps the project team need not focus so much attention on having the mothers memorize the names and schedules for the vaccines. The evaluation team observed that several mothers interviewed immediately after having their children vaccinated could not remember the name(s) of the vaccine nor the specific disease it (they) protected against. However, by virtue of the mother's presence, she understood that vaccination was important. Therefore, perhaps the project team can just focus on mothers being able to grasp the minimum information necessary which will motivate them to take each child for vaccination until the schedule is finished.

MINSAs staff, at many levels, are well aware that the project has assisted greatly in improving coverage rates. MINSAs staff participate in this aspect of the project's work by accompanying them to the field and also in the baseline and midterm surveys. Part of the project's success in raising coverage rates is attributed to the community "immunological memory" chart which monitors vaccinations given for each child. Project staff use this form as a backup to the growth card which the mother keeps. Also, at the beginning of each vaccination session, project staff can review the chart and send for any child who is not present but who is due for a vaccination. MINSAs staff appreciate the value of the project's "immunological memory" system and would like to adapt it for their own EPI monitoring. Given the interest that MINSAs has shown in this aspect of the project, perhaps the project staff can encourage MINSAs to do its own cluster surveys, starting with the MINSAs-sponsored national vaccination campaigns.

b. Comoarine data from the baseline survey (B) to those from the more recent midterm survey (M):

1. Frequency of being vaccinated at least once: 85%(B) vs 92%(M).
2. Mothers who know that the measles vaccine should be given at nine months: 29.5%(B) vs 51.3%(M).
3. Percentage of children who have vaccination cards: 72.9%(B) vs 85.0%(M)
4. Change in vaccination coverage, for children 12-23 months old:

	<u>Baseline</u> vs	<u>Midterm</u>	<u>% Increase</u>
BCG:	68.3	80.8	18.3
OPV3:	58.7	85.8	46.2
DPT3:	50.8	84.2	65.7
Measles:	50.0	85.0	70.0
Complete:	36.5	70.8	94.0

The immunization activity is obviously a popular one in the communities and much appreciated by the mothers. They seem to understand well the importance of immunization and are eager to make sure that their children are protected.

Immunization coverage has increased considerably for **all** vaccines, after slightly more than one year of field operations. The improvement in complete coverage -- almost double -- is even more impressive, since many children at the beginning of the project had one vaccination complete, but not all. The careful attention given to filling in the missing vaccinations for these children and to monitoring the schedule for newborns has resulted in a doubling of the complete coverage rate.

The goal for EPI in the DIP is: raise rates of fully immunized children from 36.5% at baseline to 65% at Midterm Evaluation and 70% by Final Evaluation. Since the project staff have now met this goal, they need to not only maintain it, but to focus their efforts in EPI on developing strategies for MINSA to achieve the same level in the future.

**** *RECOMMENDATIONS* . ***

1. Address the problem about BCG which results in missed opportunities by the team in Camoapa.
2. Consider a simplification of the EPI message to something like "Have your child immunized from birth until the card is full". For the majority of mothers who can not read, that may be all they need to know in order to take the desired steps.
3. Encourage MINSA to begin implementing its own cluster surveys to improve their data quality about EPI coverage.
4. Begin to develop and test explicit strategies for MINSA to be able to maintain the EPI coverage rates which the project has obtained.

3. ACUTE RESPIRATORY INFECTIONS

a. Comments on process, activities and field observations:

In recent years, acute respiratory infections have been recognized as a major cause of morbidity and mortality in preschool children worldwide, especially those under two years of age. The dual focus of the Child Survival program on immunization and diarrhea is yielding more and more positive results, therefore health authorities and NGOs are now turning their attention to the prevention and treatment of **ARIs**. When the evaluation team interviewed one of the Directors of the two health centers in Boaco, he presented data from the first six months of 1993 which show ARIs as the major cause of infant morbidity in Boaco, accounting for 54% of all morbidity.

The project team has found that it is difficult to help mothers and *brigadistas* understand the signs of **ARIs**, how to treat them and when to seek help. The topic of ARIs is more difficult to teach than diarrhea and general immunization because there are no concrete 'props' such as ORS, vaccines and immunization cards.

The project team has developed and then modified its presentation on ARIs to emphasize the recognition of danger signs and at what point the mother should seek help. The current protocol from MINSA includes three classifications of **ARIs**: cough, pneumonia and serious pneumonia. Based on observations made by the evaluation team, it seems **difficult** for mothers to understand the difference between pneumonia and serious pneumonia. The team should consider simplifying the MINSA norms by using

just two categories: cough (treated at home) and pneumonia (dangerous and needs referral). Once mothers understand this difference and take the appropriate actions, then, if necessary, they can be taught the more subtle differences between two different levels of pneumonia.

b. Comparisons of results of the baseline survey (B) with those of the midterm survey (M):

1. Frequency of respiratory problems in the two weeks preceding the survey: 45.8%(B) vs 61.3%(M). One explanation for this increase is that the baseline survey took place in the dry season and the midterm took place in the rainy season, when **ARIs** are more prevalent.

2. Knowledge of danger signs of respiratory illness (not all listed):

rapid breathing	•	27.8% (B) vs 54.0% (M)
fever		27.8% (B) vs 37.3% (M)
cough		21.0% (B) vs 32.7% (M)
don't know any		10.8% (B) vs 4.3% (M)

3. Of those with respiratory problems, what percentage sought help: 66.2%(B) vs 77.9%(M).

4. Of those with respiratory problems, where did the mother seek help? The four most frequently cited sources:

	<u>Baseline</u>	vs	<u>Midterm</u>	<u>% Change</u>
Health center	56.8		61.9	9.0
Private doctor	12.5		5.3	-57.6
Brigadista	2.3		15.0	552.1
Relatives	21.6		14.2	-34.2

In summary, while the prevalence of AR1 remains high, the data suggest that more mothers are now aware of the danger signs of AFU and are seeking appropriate help when their children manifest these symptoms. They continue to use the health center and by the time of the midterm, are more likely to seek the **brigadista** instead of a private doctor or relatives.

The indicator for the **ARI** intervention, as stated in the DIP is: at end of the project, 50% of mothers **will** recognize the signs and danger symptoms of AR1 in children under five and take them for appropriate help. While the results from the midterm suggest that this overall goal has been reached, project staff may wish to set more specific goals which distinguish between the desired behaviors for minor coughs versus pneumonia.

RECOMMENDATIONS

1. Consider a simplification of the community norms for **ARIs** from three categories into two (combine pneumonia and severe pneumonia). Focus on the desired behavior of the mother and what information she needs to understand in order to take the appropriate action.
2. Consider refining the indicator as currently stated in the DIP to include one or more statements which will measure:
 - a. the mother's ability to distinguish between minor ARIs and pneumonia, and
 - b. her resulting behavior.

4. NUTRITION

a. Comments on process, activities and field observations:

Although the families which are participating in the project live in an area which is famous for its cattle ranches and milk, for the most part, their own diets do not reflect the nutritional quality of those who have greater access to animal products. Most participating families are supported by their subsistence farming and some minor cash-generating activities. Women are involved in typical homemaking chores such as food preparation, child care and helping with the crops.

The baseline survey showed that breastfeeding is almost universal, that foods and other liquids are introduced often before the infant is four months of age and that the family diet in general tends to be limited in diversity, particularly in fruits and vegetables. Beans and corn are the staples of the diet.

Health education information presented by the project staff covers a variety of topics in nutrition: the advantages of breastfeeding, exclusive breastfeeding, proper weaning diets, the three food groups, diets for pregnant and lactating women, causes of malnutrition and sources of vitamin A. The staff commented that this topic is one of the most difficult to present, perhaps because of the variety of messages and the very poor economic conditions of the families.

The breastfeeding training given by the consultant from Honduras was considered very useful and project staff appear very comfortable discussing breastfeeding. In fact, male staff members were observed providing appropriate counselling to a new mother in Camoapa about the correct position for breastfeeding.

The Basic Messages in **FACTS FOR LIFE** for this intervention include those for the chapters on breastfeeding and infant development. Comments about specific messages follow:

Breastfeeding:

1. Given that breastfeeding is practically a universal phenomenon, the charfa should put less emphasis on advantages and disadvantages and more on the specific messages of breastfeeding immediately after birth, exclusively and then on proper supplementation.
2. Length of exclusive breastfeeding: Project staff should consider coming to consensus and using just the message of 'six months', instead of 'four-six months'. One number would be easier for mothers to understand and 'six' is the number given in the *brigadista's* manual on nutrition.
3. Given breastfeeding's role not only in nutrition per se, but in protecting against diarrhea, ARIs and other infections and in family planning, this topic should continue to be given emphasis from whatever angle available, regardless of the specific charfa which is the topic of the day.

Vitamin A: Project staff make the point that vitamin A protects against nightblindness, as this is one of the questions on the CSSP baseline survey. However, nightblindness is not common in this area and therefore this message is not relevant. The role of vitamin A in overall development and in protecting against diarrhea and ARIs is a more appropriate message to give.

Frequency of feeding: Although the team does emphasize the need to give the child more food (six times a day) after an illness, they do not emphasize frequent feeding, giving a specific number of meals, as desired behavior for the child when well. This point needs to be brought out in the *charlas*.

Food groups: The objective for talking about the food groups, the foods found in each one, is to encourage mothers to diversify the diets of their preschool children, especially by including fruits and vegetables. Project staff should be careful not to fall into the trap of overemphasizing which food goes into which group and why, and expecting mothers to remember the details. In doing so, they lose sight of the ultimate objective which is diversification.

Gardens: Project has recently received a shipment of 13 different varieties of vegetable seeds. These include many vegetables which are already grown in this area and some which are new, such as okra and spinach. *Brigadistas* and community members are quite interested in **beginning** gardens and **IRENA** has agreed to collaborate. Project staff have already found that food demonstrations for promoting vitamin A are popular and this is a strategy which they can continue when the gardens are ready to harvest. One school teacher interviewed mentioned that his school garden had failed several

years ago due to pests and other persons have also mentioned this problem. Project staff need to be prepared to call in assistance in this area.

Growth monitoring: The message in FACTS FOR LIFE is that each child between six months and three years should be weighed every month. Currently, project staff encourage mothers to take their babies to the health center for this activity. During one community visit, project staff weighed some children rapidly at the end of the vaccination session. However, given the complexity of growth monitoring and the very low probability that health posts can provide counselling, the project staff should reconsider this message. It seems to be of low priority, since it cannot be done effectively. If other messages about breastfeeding, feeding during illness and dietary diversity can be understood, the need to have the child weighed is less important and can be undertaken when conditions are adequate to do it correctly.

b. Comparison of results from the baseline survey (B) and those from the midterm survey (M):

1. Time of initiating breastfeeding: within the first eight hours after birth - 63.8%(B) vs 71.3%(M).
2. Exclusive breastfeeding: Unfortunately, neither the baseline nor the midterm survey is designed to directly address this question. Although there are 11 items to which a mother can respond if she gives them or not to her infant under three months of age, there is no response for “BREASTFEEDING ONLY”.
3. Supplementation of infants under four months:

The foods items used in the baseline survey are somewhat different from those listed in the midterm survey. For those which are comparable, the following are frequencies of consumption for infants under four months of age:

	<u>Baseline</u>	vs	<u>Midterm</u>
Water	76		55
Juice	22		16
Meat	6		10
Beans	12		9
sugar	67		51

4. For infants in their first month of life, 46% of mothers in the baseline gave water, compared to 22% at the midterm.

5. For all infants under two years of age, only 4% were consuming green leafy vegetables at the time of the baseline, while 14% were consuming them at midterm.
6. As for the use of bottles for this age group, the baseline survey reported a frequency of 72%, but unfortunately the midterm survey did not include the same question.

In summary, the percentage of mothers who breastfeed within the first eight hours of birth has increased. Unfortunately, there are no explicit data to reflect exclusive breastfeeding. Breastfeeding is almost universal, but early introduction of other liquids and foods is almost as universal.

However, since the baseline survey, the percentage of mothers who give various liquids (other than breastmilk) and foods to their infants under four months of age has decreased considerably for water, somewhat less for juice and sugar, and stayed about the same for meat and beans.

The indicator in the DIP for exclusive breastfeeding is derived from an indirect calculation based on the prevalence of mothers who were giving water to infants under four months of age at the baseline. Another statement from the DIP is : at end of the project, 50% of women with children under two years of age and pregnant women will be familiar with the importance of exclusive breastfeeding to 4-6 months of age and appropriate weaning practices. Based on the results of the midterm, the project is making progress in improving nutritional practices. However, before the Final Evaluation, project staff should specify the indicators they will use for this section (perhaps using those from the CSSP list of 17) and determine the levels of achievement (i.e., % prevalence) expected in each.

• ****RECOMMENDATIONS* ****

1. Change the message about exclusive breastfeeding from 'four to six' months to just 'six'.
2. Put exclusive breastfeeding and use of bottles on the Final Evaluation Survey. Take out the long **list** of foods and ask only what is needed in order to measure the indicators of specific interest to the project.
3. Discontinue mentioning 'nightblindness' in the charfa about vitamin A and take this question out of the survey for the Final Evaluation. Develop and include one question about the role of vitamin A in the prevention of disease and another on sources of vitamin A in the food supply.
4. Stress the need for young children to eat 5-6 times per day, after recovering from illness and when they are well.

5. Emphasize diversity in the diet and organize the community-level presentations around this concept, without expecting mothers to learn the three food groups and names of foods in them.
6. Be prepared to help participating families with their gardens, especially in the area of pest control.
7. Reconsider the growth monitoring activity as only desirable when it can be done correctly - either by project staff (not recommended, as they are involved in too many other higher priority activities) or by MINSA staff.
8. Develop one or more specific indicators for weaning, test them before the Final Evaluation and include them in the Final Evaluation Survey.

5. MATERNAL HEALTH

a. Comments on process, activities and field observations

Maternal health was the next-to-last intervention phased into the project. The maternal health component includes education about reproduction, the importance of prenatal care, and family planning. Maternal nutrition and immunization with tetanus toxoid are also included in the maternal health component.

The project has worked in collaboration with the non-governmental family planning organization, **PROFAMILIA**. This group recently opened a family planning clinic in Boaco and has a full time educator on staff. When the PROFAMILIA vehicle is not available, three days of each week, the educator travels to communities with the Project HOPE staff and establishes posts for community-based distribution (CBD) of contraceptives, with the assistance of *brigadistas*, **TBAs**, and other volunteers. Currently she has established 13 such posts in HOPE-assisted communities.

Community members decide who will be in charge of the post and the distributor charges a small fee for the contraceptive methods from which she is allowed to keep 50% of the total received. The educator equips each PROFAMILIA distributor with oral contraceptives and barrier methods such as foams, gels, vaginal suppositories, and condoms. Each CB distributor receives two days training in Juigalpa at the PROFAMILIA regional training center. The distributors learn about method use, effectiveness, and contraindications for hormonal use. The CB distributors also make referrals to PROFAMILIA clinics for female and male sterilization and IUD insertion.

b. Comparison of results of the baseline survey (B) with those of the midterm survey
0 :

A comparison between the baseline survey and the midterm survey highlights some of the gains that have been made by the project during the last year and a half. A major documented change is that 27.1% of the women reported having a prenatal card during the baseline survey while 57.7% reported having a prenatal card or vaccination card during the midterm. Due to the shortage of maternal health cards at the national level, Project HOPE began giving immunization cards to women who were vaccinated with tetanus toxoid.

In less than two years, the project has increased the tetanus toxoid coverage from 13% in the baseline survey to 46% in the midterm survey, achieving a coverage rate of more than the goal set forth in the DIP (i.e., 30% coverage). Project staff suspect that the coverage rate for tetanus toxoid is actually higher because all women who give birth in the hospital must surrender their maternal health card. At the time of the midterm evaluation, all tetanus toxoid immunization had temporarily stopped due to a nationwide shortage of the vaccine. Available information from MINSA suggested that new shipments were anticipated in the near future.

Women seem to have improved their knowledge about the importance of prenatal care, as 77% of them interviewed in the midterm survey stated that a pregnant woman should seek prenatal care during the first trimester. Unfortunately, this question was not asked on the baseline questionnaire. The Director of the Camoapa Health Center also mentioned that increased numbers of women were seeking prenatal care due to project staff and *brigadista* referrals. A very poor, exemplary *brigadista* from Mombachito, a remote community in Camoapa which is only accessible by horseback, brought his wife to the health center in Camoapa for complete prenatal care and to deliver. He waited for the project vehicle to pass one morning to give him a ride back to his community as he had no money to pay for transportation.

Gains in other areas of maternal health will take more time. Most women in Camoapa live in areas that are very inaccessible to roads. With only one health center and three health posts, it is extremely difficult for community women, especially those with small children, to seek prenatal care and present at the health center for delivery. In the midterm survey, 31% of women had at least one prenatal care visit, as compared to the baseline prevalence of 25% (as verified by prenatal cards). The small change in self-reported attendance at pre-natal care was 69.3%(M) versus 67.4%(B).

In the midterm survey, 32% of the women reported that health personnel cut the umbilical cord, versus 47.9% for the baseline. The apparent change in the last indicator may be due to the fact that more urban areas were included in the baseline survey while the midterm only covered rural communities in which the project was working. The percentage of women assisted at birth by a TBA increased to 49.3%(M) over the baseline finding of 35.8%.

The baseline survey found that 48% of the women reported using contraceptive methods, compared to 45% at the midterm. It is difficult to say if this signifies any real change because, as mentioned above, more urban neighborhoods were included in the original sample. In general, acceptance of family planning methods takes a longer time than the acceptance of other child survival strategies.

Although there does not seem to be much organized resistance from the Catholic Church, the educator at PROFAMILIA mentioned resistance from Evangelical religious leaders. One Project HOPE auxiliary broke his excellent relations with members of a community and their evangelical leader when he gave a talk on family planning methods. The PROFAMILIA educator and the Director of the Health Center in Camoapa commented that rural men in Nicaragua were very “machista” and did not want their partners to use family planning methods because they believed their manhood was proven by the number of children they sired. The educator and a TBA in charge of a PROFAMILIA CBD post also mentioned that many women wanted to use family planning methods, but their husbands would not allow them to do so. The TBA further stated that many people in the community feared oral contraceptives, believing them to be a cause of cancer.

The MINSA health centers have a sporadic supply of oral contraceptives, condoms and IUDs. Sterilizations are given free of charge in the hospital to women who are at high reproductive risk, i.e., those with many children, advanced age, or other health risks.

• *RECOMMENDATIONS* • •

1. Continue working with PROFAMILIA.
2. Continue making referrals to MINSA facilities and the PROFAMILIA clinic for maternal health concerns.
3. Include TBA training in the next project proposal.

Iv. DESIGN

k Choice of Project Interventions

The five project interventions were chosen in collaboration with MINSA and relate directly to the principal causes of morbidity and mortality in children under two years of age at the beginning of the project, i.e., diarrhea, acute respiratory infections, malnutrition and perinatal problems. Attention to prenatal care is directed to reducing associated morbidity in women and to protecting both mother and child with tetanus toxoid. Based on the disease profile of young children and pregnant women in the target area, and on discussions with counterparts and community leaders and residents, the project is addressing the principal health problems for these two target groups.

B. Size of Target Population

In each municipality, there are plans for the project to work in approximately 60 communities, 15 of which are peri-urban neighborhoods around the towns of Camoapa and Boaco. As of the midterm, the project had worked in 20 each in Camoapa and Boaco (started in January 1992) and an additional 20 more in each municipality from January 1993. The plan is to expand to the remaining 40 communities in September 1993 and to keep up the schedule of visiting each community once per month.

The results of the midterm survey provide excellent information about progress-to-date which will allow the project team to evaluate if it is possible to achieve the project's objectives, at the levels stated in the indicators, for each intervention in each community by the end of the project. The information already presented in Section III shows that the project has undertaken a heavy workload and in only 14 months of full field operations, has produced many positive results.

Now, the double challenge to the team is to continue to expand its current activities and simultaneously train others in the community to support and maintain the positive behaviors which have already been manifested. In order to do so, the project team should reconsider the total number of communities, the frequency of visits (increased, decreased or no change) and the nature of the visits (balance between direct provision of services and training others to take on these services).

Even in such a short period of time that the project has been operating, there are some motivated communities whose health leaders and families will soon be able to maintain the new activities on their own, with little outside input. The project needs to develop "exit criteria" which will help them and the communities to recognize when any given community can move into a different phase and different relationship with the project. Having a process for "graduating" communities will help project staff reach their objectives overall by allowing them to focus attention where it is needed most.

Even with "exit criteria" in place, the projected number of communities for the three years presents a great challenge to the staff. Possible options to consider, separately or in combination, for achieving a viable balance between the project's resources and its objectives include, in random order: add one or more field staff; increase the efficiency of project activities (discussed in more detail in Section IX); decrease the number of communities to be reached; and decrease the frequency which project staff visit each community. Consideration of any option which changes the number of project staff and/or the number of communities to be visited should be discussed as soon as possible with HOPE Center and AID.

C. Indicators for Objectives

For the most part, the DIP provides explicit and measurable indicators for each of the interventions. However, for several key exceptions, such as the prevalence of exclusive

breastfeeding and the use of bottles, the baseline and midterm surveys do not provide the appropriate information to measure these indicators. These and other exceptions are identified in Section III in the discussion of each intervention.

D. Changes in Project Design

There have been few changes in the project design since the development of the DIP. One modification has been to delay the work in peri-urban areas because the project team found that the strategies used in the rural communities have not produced the same positive response as that in these more concentrated areas. As it gains experience, the team hopes to be able to better design its strategies for work in peri-urban areas.

Another slight change has developed as a result of the first experience in assigning nurses from MINSA to the project. Instead of assigning just one person in Camoapa, the new system is a rotational one, where three different nurses take turns working with the project, one week at a time.

* * *RECOMMENDATIONS* * *

1. Develop “exit criteria” which will help staff and communities to recognize when a community is ready to move into a phase of having less contact with the project.
2. Considering the total number of communities in the target area, the team should evaluate how many can be worked in effectively in order to:
 - a. reach the project’s objectives in all interventions, and also
 - b. reach the point where others (i.e., the community health workers; MINSA) can help mothers maintain their new positive behaviors at an acceptable level.

Then, the team should develop and analyze options for modifying the project design, if necessary.

V. IMPLEMENTATION STRATEGY

The project has pursued a strategy of community-based education. Brigadistas, TBAs, and other community volunteers have been trained in the five child survival interventions. Each community has several *brigadistas* -- one that serves as the leader and several that serve as support volunteers. Teachers often serve as support *brigadistas* and help to mobilize the community in addition to giving health education talks to school age children. ORUs have been established in all communities. Some *brigadistas* are religious leaders and give their health education talks during religious meetings on Sundays. Project staff and brigadistas give health talks on the five interventions to mothers and other community members and administer vaccines. *Brigadistas* and staff

conduct home visits. References are made to the health centers and posts by *brigadistas*, **TBA**s, and project field staff.

The interventions and the communities have been phased in. The project began in 1992 by addressing diarrhea, working in 40 communities (20 in each municipality). After covering diarrhea in these communities, the team began to teach immunization education in the same 40 communities. After completing this, information about acute respiratory infections was phased in, followed by maternal health and nutrition. In January 1993, 40 more communities were then phased in, following the same schedule. The project plans to add the remaining 40 more communities in September.

The staff person who visits the community most consistently is the auxiliary nurse. Typically, the two nurses on each team visit two different communities each day. The educator will accompany one of the auxiliaries to a community and the nurse supervisors accompany their teams on average three times per week. The original 40 communities were visited twice every month. When **40** more communities were added, visits to each community occurred with monthly frequency. When the final 40 communities join the project in September, the staff plans to continue monthly visits to all communities by splitting up and having each team member visit one community per day.

Both teams have a nurse seconded to the project from MINSA. The Camoapa team has a different nurse every day from the health center. Until this time, Boaco has had an assigned nurse training with the project. The team collaborates with local NGOs and the operational units of MINSA, the health centers and health posts. The project often uses the school and support of the teachers to gather the mothers and **community** members for the health education talks and vaccination sessions.

In Camoapa, where many communities are geographically inaccessible by road, the staff often ride horses to reach communities in the mountains and remain working there for one week. In Boaco, most communities have better road access, permitting the team to enter and leave the communities on a daily basis. Both teams face very difficult transportation conditions, especially during the rainy season. During the four days the evaluators devoted to field visits, they hiked sometimes for 45 minutes with the team over steep and very muddy trails into communities, forged seasonal rivers, and rode horses to some of the “nearby” communities.

Families participating in the project often live great distances from their neighbors. The Boaco team arrived back one evening after crossing a chest-deep river that had surged with heavy rains. These are daily conditions faced by the teams at both sites. In Camoapa, bellicose activities of armed insurgents have sometimes made it impossible or dangerous for the field team to access communities.

These factors create difficult conditions with teams often working long hard hours. Yet, field staff do not always see large numbers of different people or actually spend much time working directly with the community because of the travel time and the

organization of field activities. During the limited four-day field visit, large crowds of people attended some talks, while at others, small groups of women or only *brigadistas* turned out. Some of this was due to adverse weather conditions and poor communication and/or the absence of the teacher or *brigadista* to gather the group. The evaluators observed that often time is wasted waiting for women to gather. The paperwork involved with immunizations and administering the actual immunizations involved considerable time. Often *brigadistas* and mothers sat idle, waiting for the group to reach a 'viable' size before the group educational activities began.

As the project adds new communities, the challenge is to find more efficient ways, i.e., using less time, to transmit the messages, more frequently and more effectively, to greater numbers of people (not necessarily all at once), by training more bearers of the message to interact with more members of the community.

***RECOMMENDATIONS* . *

1. Evaluate the capacity of the current project to reach more people with greater frequency, efficiency, and more effective messages. Possible ways to address these needs are through: reducing the number of communities to be served; increasing the efficiency and effectiveness of each contact with community members; increasing the numbers of community-level volunteers who spread the educational messages; and/or by increasing the number of project staff.

VI. HUMAN RESOURCES

A. Project Staff

There are 14 Project HOPE staff working on this Child Survival-funded project, divided among three offices in Managua, Camoapa and Boaco. In addition, MINSA is providing one auxiliary nurse per day to each team for field work. At the community level, there are 83 brigadistas working with the project in Camoapa and 73 in Boaco. In addition to these 'principal *brigadistas*', there are usually one to two additional 'support brigadistas' in each community.

Two major areas where staff skills are currently weak are non-formal adult education and training of trainers (discussed in more detail in Section VIII). Another weak area is in human resources management, i.e., supervision and performance appraisal (discussed in section XI). Finally, the team as a whole is weak in computer skills. There are currently only two staff members, both in Boaco, who take care of all computer-related tasks for wordprocessing, financial reports and data analysis. The workload of the entire project could be streamlined if additional members of the staff, in Camoapa and Boaco, learned wordprocessing. In order to facilitate this, one laptop is needed for each office in addition to basic training in wordprocessing.

B. Community Volunteers

The *brigadistas* are responsible for collaborating with project staff in implementing activities related to the five interventions in their communities. This includes managing the local Oral Rehydration Unit (in their houses), referring people to the health post for additional health care, calling people together for group meetings, assisting with the immunization campaigns, participating in training sponsored by the project and filling out forms related to their work with Project HOPE. While the *brigadistas* do not complain about the type of work asked of them or the volume, they consistently ask for drugs to distribute and for boots and raincoats to protect them during the rainy season. See Section III.A for a description of the training events which have been implemented for the *brigadistas*.

***RECOMMENDATIONS* • *

1. Seek training in wordprocessing for at least one member of each team and the purchase of one laptop each for Camoapa and Boaco.
2. For Recommendations concerning *brigadistas*, refer to Chapter VIII., Health Communications.

VII. MATERIAL RESOURCES

Staff have a library of educational and technical materials. They have audio-visual equipment and are sent relevant technical materials from HOPE Center on a regular basis. Field staff were provided with backpacks and bags, thermoses and rain coats. Materials developed by HOPE projects in other countries have added to their library of educational materials.

The *brigadistas* received educational training materials during their training sessions. Individual manuals designed for *brigadistas* in each of the Child Survival interventions -- **ARIs**, Nutrition, Diarrhea, Maternal Health and Nutrition -- were adopted from those used by HOPE in Honduras and have recently been printed. Distribution of these to the *brigadistas* began during the midterm evaluation. The evaluation team observed that *brigadistas* valued these materials and referred to them often.

Every ORU has been equipped with a liter pitcher, a spoon, a pan to boil water, and 20 packets of ORS. *Brigadistas* have received Project HOPE bags to carry their materials in and Project HOPE hats. One *brigadista* had all his educational materials organized in a small room where his Project HOPE hat hung on the wall. He proudly displayed the copy of David Werner's book Where There Is No Doctor that he had been awarded for earning the highest grade on the post-test at the *brigadista* training.

VIII. HEALTH COMMUNICATIONS

The current strategy used most often for communicating the basic health messages to mothers is through a short talk, called the charfa. Team members use flipcharts to help illustrate their talks and to reinforce the messages. The two educators on the team were formerly primary school teachers and are more experienced in making these *charlas* active and interesting for the mixture of mothers, children and other adults present. One of these educators is skilled in using puppets effectively.

The comments below pertain mainly to the charfas given by the nurses on the team:

Strengths: They start with a review of last visit; they do a verbal evaluation immediately at the end of the charfa; they use different audio-visual materials, but could use more; some brought the men into the discussion; they are very comfortable with the community members - women, children, and men; *brigadistas* attend the charfas and support the field team; and they give the date of their next visit.

Weaknesses: In general, charfas given by the project team are given in a formal lecture style; the project team member stands in front of the mothers who are seated as in a classroom (many meetings are actually held in schools and use the students' chairs; there are some, but not enough, ice-breakers; one or a few people are allowed to dominate, while the timid ones stay silent; many mothers are not given a chance to, nor encouraged to, participate; charfas are often too long; the team tends to equate 'attendance' with 'participation'; and sometimes all of the participants cannot see the audio-visual materials nor hear.

The project is promoting the brigadistas to be the persons who will give the charfas in the future, and some work has been done in this regard. Four principal brigadistas are also lay preachers and four are primary school teachers. One reported that he includes health information at the end of his sermon every Sunday, reaching 40-70 people each week, about 20 of whom are men.

However, for the most part, it is the project personnel who are the direct presenters of the health education sessions in the communities in combination with their vaccination sessions. In **both** Camoapa and Boaco, the average number of mothers who attends a given session is 12-20, while total attendance, including older children, men and older women, is 20-30 persons. Project personnel visit each community approximately once per month.

Data from the baseline survey show that the team is making progress in its health education efforts. The behaviors which are changing most rapidly are in immunization and control of diarrhea. There has been less progress in all the other interventions.

In conclusion, the current strategy for health communications does not reach enough mothers with sufficient frequency of repetition of the messages, nor is each contact with

each mother as effective as it could be. Thus, the financial value of the contact of project personnel per mother per month is high, and the effectiveness of each contact is quite variable.

In order to improve this situation, the project staff can address it from a number of different angles, aimed at improving the effectiveness of their educational strategies and increasing the numbers of mothers reached and the frequency they are reached with the health messages of the project.

Effectiveness: Although there is a health educator on each team, there is no current explicit strategy for them to work with other members to improve the educational techniques of the nurses. In addition, although members of the team are familiar with the book, Helping Health Workers Learn, they are not using it to any great extent.

All members of the team agree that one of the health educators, Sra. Corina Duarte, is particularly skillful at encouraging mothers to participate in the health education session. A video should be made while Sra. Duarte is giving a charfa and then analyzed by the rest of the team for individual techniques she uses. Once analyzed, the other team members should practice these techniques - perhaps one new one per week.

For example, in one charfa, Sra. Duarte did a short role play by taking a baby from the audience into her arms and called on the *brigadista* to ask what to do since 'her' baby had diarrhea. This is not a difficult role play to implement, even for novices, as the *brigadistas* are quite knowledgeable about the correct answers. After doing this once, the team member could then take another baby and have the *brigadista* and mother swap places. Whatever new techniques the team members use, they should make sure they then have the *brigadista* imitate them.

Another simple and informal way to include health education into the discussion is to start the session by identifying the mother in the room with the youngest baby. Then, once this mother is introduced, each other person in the room can introduce herself or himself by providing one basic message learned from the project which they offer to the mother about her own health or the baby's health.

Team members should be careful not to use words which the community members do not understand, such as mammary glands, oxytocin, prolactin, and immunoglobulins, which the evaluation team heard during field visits. In addition, the team should use key words which are used in rural communities, such as "combiotico" (for antibiotic), even though they are not the correct words.

Frequency of contact and coverage:- Both of these factors can be increased by increasing the number of people who help the team and *brigadista* to give the health messages. The team has been working closely with the *brigadista* and less intensely with other community leaders (school teachers, lay preachers, TBAs). Now is the time to bring these people together and work with them to form a health team within the community.

In order to do this effectively, project personnel will need training in how to train others. In effect, to maximize the multiplication of the health messages to more people with more frequency, members of the community health team need to know how to effectively communicate these messages through non-formal educational techniques.

One community visited, Las Lagunas, has a theater group. This group could be approached to see if it would be part of the health team by developing theatrical presentations for the messages.

In addition, in order to multiply the spread of the messages, each person who is the 'recipient' of the message needs to be encouraged to pass the information along to others. For example, team members should develop explicit expectations of each person (mothers, fathers, older children) who attend a charfa, saying, "Name five people who you can take this message to after this charfa". Afterwards, team members can go with a few of the attendees to see how this strategy works. Two members could plan a mini-sociodrama to do in church the following Sunday. Also, children in the group should be asked to spread the messages and then report to the schoolteacher or *brigadista* the next day about their findings.

Project staff already understand the concept of having the *brigadista* as someone to help multiply the message. However, now they need to work more explicitly to add more people to this role and form a team, with the *brigadista's* agreement and support.

Another group of people who can help the team reinforce the concept of spreading the messages in the team's absence are those health professionals who, by sharing transportation with the team, are quite familiar with its efforts. For example, the field workers in **PROFAMILIA**, rabies and malaria all visit communities in the project area. These people need not be asked to actually give charfas, but they could visit the *brigadista* and find out if members of the health team have been promoting the health messages and how. These collaborators could also help form a link in the communication between the *brigadista* and the project team -- and eventually MINSA -- for ORS supply.

One means of communication to consider is the radio, especially as it may help to fill in for the project team during the rainy season when transportation is particularly difficult and attendance is low. The communities in Boaco and Camoapa are reached by radio stations in Managua and Juigalpa, respectively. Since the number of NGOs becoming involved in the Child Survival program is increasing, the project team could discuss this strategy with them and AID and try to have the stations give free time, in exchange for some appropriate service from the **NGOs**.

Finally, the five manuals which the team provides to the *brigadistas* have caught the attention of other interested people, such as one of the MINSA nurses who works with the team in Camoapa on a seconded basis. Another means for spreading the messages about the project would be to give sets of the books to selected individuals who are

interested in the topics, under the condition that they will use them to “spread the word”. Have these people report back on how they have used the books and with whom.

* . *RECOMMENDATIONS* **

1. Make a video of the project’s health educator for Boaco as she gives a *charla* and analyze it for techniques which other team members can use and teach to *brigadistas*. Consider some of the other suggestions mentioned above and develop others in the monthly group meetings of the project staff.
2. Consider hiring a consultant to give the team training in non-formal adult education techniques.
3. Develop strategies for teaching the brigadistas and other members of the community health team how to use non-formal adult education techniques to spread the health messages.
4. Consider hiring a consultant to help the team develop skills in TOT which they can use in their work in building the community health teams.
5. Approach other NGOs and AID to assess interest in using the radio for health education messages.

IX. HEALTH **INFORMATION** SYSTEM

At the initial implementation stage of the project, the staff worked together to decide what information would be needed. A Project HOPE computer programmer was sent from Ecuador to Nicaragua to assist the project with the design of a computerized system. He received explicit instructions from HOPE Center not to replicate the HIS nor to necessarily use the same programming software or language used in Ecuador. Due to the inexperience of the Nicaraguan staff about determining their information needs, the disregard of the Ecuadoran programmer of explicit instructions, the confusion about what information is needed by HOPE Center and AID, and visits from other HOPE consultants who favor inventorying staff activities, the HIS which was created needs to be pared down and modified.

More specifically, the evaluation team observed that staff spend considerable time filling out routine forms. During interviews with various members of the field staff, complaints about excessive **paperwork** were voiced. Staff also seemed to fear “losing credit for their hard work” if all of their daily activities were not documented in detail. The evaluation team heard that a form for family registration (which would be new) was being considered seriously, without real understanding about how the additional information would be used.

Finally, although the staff know which *brigadistas* have trouble with reading and writing, all of the forms for *brigadistas* (including those for the ORUs) require literacy skills for filling them out correctly. Non-literate *brigadistas* must solicit help in order to comply. The evaluation team observed that in two cases during the four-day field visits, *brigadistas* who were not literate had not kept their ORU forms up to date. Staff should consider changing the *brigadista* forms so that the required minimum amount of information can be provided by all *brigadistas* with space for extra information from those who wish to include it.

The project has implemented two Knowledge, Practice, and Coverage (KPC) quantitative surveys. The baseline was used for project design and the midterm is being used for this midterm evaluation. In Camoapa, before the midterm, *brigadistas* conducted another quantitative survey in their communities with groups of mothers to determine whether progress had been made in mothers' knowledge and practices and to identify where reinforcement was necessary. In Boaco and Camoapa, 20 focus groups have been conducted exploring breastfeeding, nutrition, and diarrhea practices.

The project's routine health information system is fully functional but needs refinement. The staffs computer technician inputs data and maintains the system. Results have been shared with counterparts at **SILAIS**, the local AID Mission, HOPE Center and with community members. During the midterm evaluation, the HOPE Center representative clarified with the project staff the information needs and requirements of AID and HOPE Center. Discussions took place with key staff to clarify the indicators being collected by the KPC survey. This latter activity facilitated the analysis of how the existing routine HIS could be altered.

The computer technician/administrator and the Project Coordinator attended a "Lessons Learned in HIS" workshop at HOPE Center in June 1993 where many HIS issues were discussed and lessons learned were shared.

RECOMMENDATIONS

1. Staff should closely examine their minimum data needs for management and program decision-making, monitoring, and evaluation. Based on this analysis, the HIS should be simplified to lessen the burden of paperwork, keep staff and volunteers focused on the project's objectives and promote timely feedback of pertinent information.
2. Once step #1 is taken, the new HIS technician for Project HOPE in Manabi, Ecuador, should be sent to assist the project's computer technician to redesign the computerized system to make the necessary adjustments.

3. Project staff should not introduce the family registration form unless they can show how each piece of information to be collected relates to:
 - a. measuring a specific indicator of one of the objectives or
 - b. providing information needed to make a specific management or programmatic decision.
4. Consider developing a simple form for *brigadistas* who cannot read or who have trouble reading and/or writing.

X. TJXHNICAL ASSISTANCE

Technical assistance was provided to the project to implement the baseline survey, to develop the Detailed Implementation Plan, for general management planning, programming, and systems implementation, to computerize the HIS, and to learn the focus group technique. In general, the technical assistance received was useful. In addition, the nurse supervisors attended a staff training with the Project HOPE Honduras staff in Tegucigalpa and also travelled to Bolivia to take part in a PVO-CSSP Workshop. Finally, as mentioned in the above section, the Project Coordinator and the Computer Technician/Administrator attended a workshop on HIS at HOPE Center.

As described previously, the visit of the Ecuadoran computer technician who transferred the Ecuadoran HIS system to Nicaragua with minimal adaptations created problems which have led to excessive information collection. Another consultant's overemphasis on monitoring field staff activities also contributed to this over-collection of information. Technical assistance is needed to modify the HIS system. The Ecuadoran computer technician is busy with two projects in Manabi so that scheduling his visit to Nicaragua might be difficult.

In addition, technical assistance has been received in the programming area of family planning. Project HOPE has coordinated activities with PROFAMILLA in Boaco. The clinic educator accompanies the Boaco field staff to communities three times per week.

Boaco has also coordinated their activities with IRENA (Natural Resources and Environment Institute), a group which is involved in educating communities about reforestation. IRENA will assist Project HOPE to create demonstration family vegetable gardens produced from carrot, spinach, onion, cauliflower, lettuce and cabbage seeds donated by **Asgrow** Incorporated. The Camoapa staff has also tried to coordinate with PROFAMILLA and **IRENA**, but has had less success as there are no NGO offices in Camoapa.

Nationally, Project HOPE has coordinated with World Relief in the production and revision of educational manuals. This collaboration minimized the price of manuals for both PVOs by enabling them to order a large quantity, thereby reducing the price per

unit. Project staff also meet regularly with other US-based PVOs with Child Survival grants, including Save the Children, Catholic Relief Services, Adventist Relief Agency and Project Concern International. These meetings are organized by the Project Management Unit of Development Associates for the exchange of information and experiences about Child Survival-funded projects.

* * *RECOMMENDATIONS * * .

All recommendations for technical assistance are identified and listed in the chapters where the content area for the technical assistance, e.g., health communications, is discussed.

XI. MONITORING AND SUPERVISION

A. Of Field Staff

Each project team has a nurse supervisor, who spends three-four days in the field with the rest of her team. In Camoapa, the field team numbers four with the supervisor; in Boaco, this total is five. The two supervisors have had extensive experience in the health interventions included in the project and are well acquainted with the logistical difficulties of hard-to-reach communities.

The two supervisors use the management methods with which they are familiar, and these tend to be formal, concentrating on negative feedback. They both take notes during field visits and use these notes in their feedback sessions with the team. In addition, a supervision form is used (not daily) to rate the performance of individual field staff. The design of this form is very rigid, does not allow for much commentary and requires the signature of the supervisee. One supervisor does not find this form useful, while the other does.

Based on the discussions with the two nurse supervisors, it appears that their supervisory function could benefit from greater emphasis on positive feedback, given more often, and in a more informal manner.

B. Of *Brigadistas*

Supervision of *brigadistas* takes place in various places, at different intervals. The most comprehensive supervision occurs when the project team visits the *brigadista's* community, approximately once per month. At that time, one member of the team is responsible for talking to the *brigadista* about what has happened since the last visit, discussing any problems which are happening and reviewing the records about the use of ORS.

Also, depending on the *brigadista's* level of training, he or she may give the *charfa* for the mother's meeting or be asked to participate in the educational sessions in some other way. When team members are talking to mothers who come to the session, they can assess to what extent the mothers call upon the *brigadista* to help them when their young children have any health problems. If time allows, team members can also make home visits to talk to additional mothers and find out what contact they have had with *brigadistas*.

Brigadistas also come on their own to the project offices in Camoapa and Boaco, to collect more ORS, hand in report forms, and discuss their on-going activities. Although these visits are sporadic and often short, they help to nurture the communications between and among the project, the *brigadista* and the community. Finally, the performance of *brigadistas* is monitored when they attend more formal training sessions sponsored by the project.

RECOMMENDATIONS

1. Seek training in participatory human resources management, especially supervision, performance appraisal and counselling, for senior staff with supervisory responsibilities.
2. Discontinue use of the current form for supervision of project field staff and develop one -- with the staffs input -- which has a few open-ended questions, no ratings and no signature required.

XII. RELATIONS WITH **COUNTERPARTS**

The chief counterpart of the project is the Ministry of Health (MINSA). The project collaborates with the administrative arm of MJNSA for the Department of Boaco, called SILAIS, through its Director, Dr. Claudio Sequera. In addition, there is collaboration at the operative levels of MINSA in the two municipalities, including the health centers in the towns of Camoapa and Boaco and the more distant medical posts (staffed with a doctor and an auxiliary nurse) and health posts (staffed only with an auxiliary nurse).

There have been minor disagreements with counterparts in both Camoapa and Boaco, but both project staff and the counterparts interviewed said that these had been worked out to mutual satisfaction. However, in order to promote even closer collaboration, the **two** nurse supervisors expressed their desire to attend the monthly meetings of the SILAS Boaco Technical Committee, in addition to the Project Coordinator. Given the nurses' intimate familiarity with the project's operations in the field, this suggestion appears quite relevant and useful.

In general, project staff are quite satisfied with the contributions which MINSA has already made to the project and the on-going collaboration between MINSA and Project HOPE. MINSA is providing assistance to the project in the following forms:

A. Office Space

Space for the Project HOPE offices in Managua, Camoapa and Boaco was donated from office and/or storage space originally occupied by MINSA. In Managua, where Project HOPE's staff consists of one person (the Information Coordinator), the size of the office and its furniture are quite adequate. In Boaco, Project HOPE was originally given a small space which they were allowed to increase and renovate with their own funds. This office is now adequate for the number of staff which use it.

In Camoapa, MINSA provided Project HOPE with a tiny office (approximately 10' x 10') which can only accommodate about five to six chairs (no table) and storage around the edges of the room. Despite repeated requests to MINSA for more space, the project team accepts the conclusion that there is no more available space for Project HOPE in the health center where it is currently located. Given the minimum need for even one table where the project team can work productively, the evaluation team recommends that Project HOPE be prepared to pay rent for an office in Camoapa and to seek an appropriate space as soon as possible.

B. Utility Bills

In addition to office space, MINSA pays the bills for Project HOPE's telephones (for domestic and international phone calls), light and water in the project offices in Managua and Boaco. The current office in Camoapa has no telephone or water, but the team has access to these services through the Health Center. The office in Boaco also has a fax machine.

C. Seconded Staff

In accordance with the project design, MINSA was to name two auxiliary nurses to work with Project HOPE's two field teams at the beginning of Year 2, for two years. In Camoapa, after an unsatisfactory experience with the first nurse who was assigned to the project, the system was changed to one of rotation. Now, three MINSA nurses in Camoapa each spend one week with the project and then the cycle begins again.

In Boaco, the seconded nurse began working in May 18, 1993. Although her performance has been acceptable, she has requested reassignment, complaining about the difficult work and long hours. The project staff and MINSA are now looking at various alternatives for resolving the situation.

D. Immunization

At the beginning of the project, the cold chain was in very poor condition in Boaco and Camoapa. Project funds were contributed to MINSA to buy a new refrigerator and to repair another one.

On an on-going basis, MINSA has the responsibility for providing vaccines (BCG, **DPT**, polio, measles and tetanus toxoid) and the equipment for giving them. For the most part, the supply of vaccines has been sufficient, with the exceptions of the current nationwide shortage of tetanus toxoid and the growing shortage of BCG in Camoapa. The vaccines are kept in the MINSA health centers in Camoapa and Boaco and are picked up by the project team every morning before leaving for the field.

E. Forms

MINSA also has the responsibility of providing the health cards for preschool children and pregnant women. The cards for children are of two types -- one is a standard road-to-health card and the other is only for vaccinations. Recently, there have been shortages of the road-to-health cards and the ones for pregnant women (not available for eight months). In the latter case, one reason for the shortage is that when the women have their babies in a health facility, their cards are not returned to them after the birth.

F. Referrals

Project staff and *brigadistas* refer mothers to the closest health post or center for all problems which require treatment which cannot be taken care of at home. A referral slip is filled out by the project staff and *brigadista* which goes with the mother to the health post. There, the bottom of the slip is torn off and returned with the mother to the *brigadista*, informing her or him about the action taken at the post and any follow-up necessary. Project staff, *brigadistas* and the MINSA health personnel at these facilities are pleased with this system.

G. Contributions from HOPE to Counterparts

The directors of MINSA health centers in Camoapa and Boaco all mentioned that the project has been a major contributor to improvements in health statistics of young children in the two municipalities, especially in the reduction of diarrhea, increase in immunization rates (including tetanus toxoid for women) and the prevention and treatment of cholera. **In** Camoapa, the Director of the health center considers the project's efforts to be a major factor in the absence of cholera in her municipality. Counterparts and project staff appear aware of each others' limitations, especially with regard to material resources, and take these into account when evaluating mutual expectations for collaboration.

H. Other MINSA Health Services

In both Camoapa and Boaco, the project team offers transportation to MINSA staff who are working with malaria and rabies control. The person dealing with malaria attends the mother's meeting and then takes samples from all volunteers who wish to have their blood analyzed for malaria.

I. PROFAMILIA

PROFAMILIA is a local family planning organization, supported by USAID, which has a clinic in Boaco. Several times per week, the PROFAMILIA staff person who is responsible for rural areas travels with the HOPE team as they visit communities. The PROFAMILIA representative gives her talk to the mothers after the Project HOPE staff have finished with their part of the meeting. Since the PROFAMILIA office in Boaco only has access to a vehicle two days per week, the transportation provided by Project HOPE is a significant contribution to PROFAMILIA'S work.

• **RECOMMENDATIONS * * *

1. Seek a larger office in Camoapa and rent it if necessary.
2. Request permission from SILAIS Boaco for the project's nurse supervisors to attend the monthly meetings of the Technical Committee.

XII. RELATIONS WITH HEADQUARTERS

Administrative monitoring and technical support from HOPE Center has been frequent and has adequately served the needs of the field staff. HOPE Center representatives assisted the staff with the design and implementation of management systems, the baseline survey, the DIP, general program planning, the midterm survey and with all other reporting requirements. HOPE Center has negotiated an indirect cost rate, based on 55% of selected direct costs, including specific salary costs. In the case of this Nicaragua Child Survival budget, indirect costs represents 18% of field and headquarters costs.

Although there have been frequent communications with and support from HOPE Center for the project, the majority of this effort has been dedicated to administrative matters, to the potential detriment of programming. Since the Nicaraguan project staff do not produce their reports in English, all of the Child Survival- required documents are (or will be) translated at HOPE Center: baseline survey report, DIP, midterm and final evaluations, CSSP annual HIS questionnaires, annual reports and other requests for information. Translating documents and otherwise managing the Child Survival reporting requirements consumes the majority of the time of the project's contact person

at HOPE Center. Project funds are not sufficient to support translation as a separate activity by HOPE Center.

At the field level, funds are also devoted to translation of reporting guidelines and the final versions of some documents. More funding should be allocated to headquarters and field projects in countries where English is not the official language to offset these additional costs. Otherwise, funding for the project has been adequate to date to achieve program goals.

Currently, there are concerns about the level of attention that the Nicaragua project will receive from HOPE Center in the future, due to the following: the resignation and departure (just after the midterm) of the **Assistant** Director of Maternal Child Health at HOPE Center, who provided support to the Nicaragua project; at the time of the midterm evaluation, it was unclear who at HOPE Center would be responsible for direct technical management of the project; and the fact that there are only two HOPE Center MCH staff who manage a large portfolio of projects.

***RECOMMENDATIONS* * *

1. HOPE Center's newly appointed contact person for this project could read this evaluation as a top priority document.
2. This person should then request the project staff to respond to the midterm evaluation, including an assessment of the process undertaken, overall comments on its usefulness and specific comments related to each recommendation.
3. HOPE Center should follow-up with project staff on items which are mutually agreed upon, including plans for an orientation trip to the project, perhaps dovetailed with preparation of the new proposal in December.

XIV. SUSTAINABILITY

The discussion of sustainability below is organized into two sections which relate directly to services and activities which the project is implementing in order to support positive changes in health behavior in the communities.

A. Immunization and ORS

Currently, MINSA provides the vaccines and supplies necessary for the project's immunization activities and, starting in the second year, has seconded an auxiliary nurse to each team. The crucial component which the project provides is transportation to communities so that children can be immunized at every visit, thereby exploiting the opportunity provided by being present in the community. The project teams reach 80

communities approximately once every month, whereas MINSA reaches only the more accessible ones at the rate of once every four months.

In order to fill in the gap once the project is over, the team and its counterparts can consider at least two complementary strategies, and preferably a combination and possibly others to be developed in the next year.

One is for MINSA to take advantage of every visit to a community and take vaccines along. Currently, MINSA is visiting many communities in its campaign against cholera and the staff could easily pack vaccines in a thermos, just the way that the project staff does. During these visits, MINSA could also restock the supply of ORS in the Oral Rehydration Unit.

The second is for MINSA to provide vaccination services more frequently and reliably from its health centers and posts in the rural areas. This strategy depends on the motivation of rural residents to reach the health facility and the collaboration of MINSA staff at the facility. The health post could also become a supplier of ORS for the *brigadistas*. Currently, both of these strategies are feasible, as members of the project communities are becoming very sensitized to the need for immunization and bring their children for vaccination.

For both of these strategies, MINSA can be more proactive to look for transportation opportunities to rural communities. Already it does this for the regular vaccination campaigns. Besides Project HOPE, there are a few other NGOs operating in the rural areas, such as PROFAMILIA (which will have a new jeep soon) and MINSA could endeavor to plan its outreach trips with these other organizations.

B. Support and Training of *Brigadistas*

Currently, Project HOPE is making a major contribution to the training of *brigadistas* in preventive health care. In the past, MINSA has trained *brigudistus* in curative care, on an irregular basis. Project staff are very careful to promote their efforts as taking place in coordination with MINSA, and signs of the excellent relationship are quite evident. In order for MINSA to continue when the project ends, it will have to maintain the confidence of the *brigudistus*, and be much more careful about promises made to them.

Results from the midterm show that the *brigadistas* are increasingly recognized by their communities as health agents, especially regarding the treatment of diarrhea. Communities often provide transportation (horses) and food to the project team during their visits, which reflects the community's appreciation for the work done. This type of support does not seem an undue burden for the residents.

MINSA does have a small budget for its work with *brigadistas* and this could be used more efficiently and effectively with them. Instead of spending the annual budget all at once, as it did recently in a one-day seminar for 400 *brigadistas* and TBAs, MINSA could

divide this budget and support much smaller training events, at the local health post, for the *brigadistas* in that area.

One mechanism for supporting the relationship between *brigadistas* and the formal health system is for the project to help MINSA to develop teams of *brigadistas* who would relate to their nearest health post or center. This could be started on an experimental basis with communities which have had the most HOPE involvement and which relate to a health post which is interested in participating. MINSA staff from Boaco do visit these posts, even if not regularly, and they could plan to call the *brigadistas* to the post for in-service training (with or without MINSA staff from Boaco), to distribute ORS, to schedule immunization activities and to discuss issues related to providing health care in the rural communities.

Now that the project is well into its second full year of field work, the word about it is spreading to neighboring communities who are not included in the project area. Leaders from these communities have approached project staff for assistance in preventive health activities. This is a positive sign, and should be exploited for the purposes of extending the project's reach. *Brigadistas* from project communities, if properly trained to be trainers, could help develop the *brigadistas* in neighboring communities, without adding a significant burden to the project's work load.

* • *RECOMMENDATIONS* • *

1. Project staff and counterparts should develop and experiment with alternative options for addressing the activities and services which need sustaining. These experiments, no matter how small -- for example, with just one health post and the *brigadistas* which live near it -- should begin to provide crucial data for more intense efforts in this area in the near future.
2. The more skilled *brigadistas* should be trained to be trainers and help to develop *brigadistas* in neighboring communities which are not currently included in the project's target area.

XV. FINANCES

The rate of expenditures to date is lower than that which was budgeted for the period. This is primarily due to the fact that the project began seven months late. Due to limitations with the budget and cost information systems at HOPE Center, it is often difficult to have precise, timely expenditure information by line item to ensure maximum financial control both at headquarters and at the field level. Within these limitations, the project budget has been flexible in responding to changing needs. For example, although only one vehicle and many motorcycles were initially budgeted for transportation for field staff, because of reluctance by female staff to ride motorcycles and because of road conditions during the rainy season, it became necessary to purchase

two vehicles for field activities. At the beginning of project implementation, funds were shifted to create an educator position for each municipal field team.

There are a number of potential expenditures that have been identified during the midterm evaluation and presented in this document, that would make the project better able to reach its goals, cover the geographic territory planned, and would generally help the project to become more efficient in the transmission of health messages. The Pipeline Analysis for the project, covering expenditures to date, is presented in Appendix II.

• *RECOMMENDATIONS . . .

1. Project staff will identify the expenditures necessary to improve project progress. In collaboration with HOPE Center staff, they will decide if sufficient funds exist for potential additions to the project, e.g., one additional field educator for each municipality, laptop computers and for training in various areas (e.g., wordprocessing; non-formal adult education; TOT, etc.).

XVI. CONCLUSIONS

STRENGTHS

1. Project Staff

The majority of the nurses on the staff have many years of experience with MINSA; the educators have experience in primary school education; and the Project Coordinator has experience in primary health care in Honduras. Due to their prior employment in Nicaragua, the majority of the staff know the key players in health, various counterparts, the health problems in the rural areas and the geography of the region.

Field staff have experience working under difficult conditions in difficult-to-access communities. Most project staff go to the field everyday, with the exception of one day/month for in-service training and one for the staff meeting.

2. Project HOPE's Reputation

Project HOPE began working in the Boaco Department several years before the current Child Survival project. The former project focused on regional hospitals and the one in Boaco was considered the best of the four with which Project HOPE worked. The Director of the Boaco Hospital at that time and Project HOPE's counterpart was Dr. Claudio **Sequera**, who has remained the counterpart in his new position as the current Director of the Boaco SILAIS. The strong relationship developed in the hospital project provided a sound foundation for the current project.

3. Relationship with Counterparts

In general, project staff have developed very good working relationships with their MINSA and SILAIS counterparts. There is mutual understanding and sharing of resources between and among these entities. The interventions chosen for the project are high on the MINSA priority list and senior staff of MINSA and SILAIS publicly recognize Project HOPE for its contribution to addressing some of the key health problems of the region.

Specific activities which have captured the attention of the counterparts: creation and implementation of **ORUs**; objective data which show considerable decrease in the prevalence of diarrheal disease and increase in immunization coverage rates; appropriate referrals of patients to the health posts, centers and hospital by **brzgardistas**, accompanied with written information about symptoms, initial diagnosis and treatment; and the project's 'immunological memory' form for tracking immunization data at the community level.

Providing vaccinations on a regular basis in hard-to-reach communities is particularly attractive to and appreciated by MINSA. However, the very fact that the majority of resources devoted to this effort are the project's, and not MINSA's, also makes this intervention a weakness because of the eventual necessity of addressing its sustainability by the counterpart.

The strategy of basing ORT on the use of packaged ORS, through **ORUs**, is a strength because the packages were already part of MINSA's resources. Efforts to develop sustainability of this intervention can therefore focus on keeping the supply of ORS available for appropriate use at the community level.

4. Project Design

The project is working in very underserved areas of the Department of Boaco, with no other NGOs except PROFAMILIA actually working in the two targeted municipalities. This selection is a major contributing factor to the very positive relationships between project staff and the **brigudistas** and participating families. Appreciation by project staff and families of the valuable work of the **brigadista** is key to the **brigadistas'** being willing to work as volunteers.

Despite the very **difficult** challenges posed by the terrain and the weather, the staff has been able to organize the transportation to the target areas by using only one four-wheel drive vehicle per team to visit approximately two neighboring communities/day.

Regarding the educational sessions, the use of UNICEF's FACTS FOR LIFE has greatly facilitated the design of the content of the health messages for the nurses as well as for the health educators. Counterparts are also pleased with this approach.

5. Materials

The staff has accumulated a variety of health educational materials, including ones they have made themselves, adapted from others, reproduced and bought. The new manuals for the *brigadistas*, adapted from Project HOPE in Honduras and covering all five interventions, are a key feature of these resources.

6. Survey Data

The baseline and midterm surveys were implemented using rigorous survey methods. The data produced provide the team and counterparts with critical information which they can use for decision-making, evaluation and modification of project strategies.

WEAKNESSES

1. Project Design

The project design did not include direct work with **TBAs**, although they are key health providers in rural communities. Project staff recognize this weakness and will address it in the next proposal.

2. Health Communications

In general, the staff are not particularly skilled in giving *charlas* and secondly, they tend to rely on these *charlas* as their major technique for delivering health messages in the community. In addition, staff rely on group meetings with mothers as the major forum for health communications, due to the efficiency gained by providing vaccinations in a group context.

3. Health Information System

The HIS is very laborious, relies on much handwritten material and much information contained in it is not directly related to measuring indicators for the five project interventions.

4. Sustainability

Staff are not skilled in TOT. As a result, they are not adequately focused on developing a team of skilled trainers at the community level who can effectively continue to deliver health education messages and address problems in primary health care.

The project's great success in increasing immunization coverage rates needs to be channeled into efforts to help MINSA to do the same thing, by bringing together resources other than those of Project HOPE.

5. CSSP Survey Instrument

One of the requirements of Child Survival-funded projects is to implement the CSSP survey instrument for the baseline and final surveys. Project HOPE has already used this instrument twice in Nicaragua, for the baseline and midterm surveys and has discovered a number of difficulties:

- a. Some of the questions in this instrument are irrelevant to the project (e.g., nightblindness);
- b. Some of the questions changed from the baseline to the midterm, creating difficulties in evaluating project progress; and
- c. Project staff have diverted some of emphasis of their health education to promoting messages which relate to the specific questions on the CSSP survey, in anticipation of the next application of the survey, even though some of these messages are not ones which the project wants to emphasize.

For example, the CSSP survey includes questions about nightblindness, the correct age for giving measles vaccination and about having infants and preschool children weighed in the four-month period prior to the survey. Focus on the content of these questions creates unnecessary work, frustration and confusion on the parts of the staff as well as the participating mothers, as their attention is diverted from more action-oriented and relevant questions based on FACTS FOR LIFE.

XVII. RECOMMENDATIONS

The recommendations listed below are those which have appeared in each chapter. In most cases, only recommendations for modifying project activities are listed. Otherwise, the evaluation team supports the project's directions as currently being implemented. In addition, some other modifications are underway in the project and since the evaluation team supports these, they are not presented below.

III. ACCOMPLISHMENTS

A. Training (Recommendations addressed in Section VIII).

B. Specific Outcomes

1. DIARRHEA

1. Continue with the simple messages of: a. what is diarrhea; b. prevention through personal and food hygiene; c. dehydration; d. how to **mix** and administer ORS; and e. referral.
2. Continue with the establishment and supervision of **ORUs**. Make sure that *brigadistas* are mixing and administering ORS to the children and teaching the mothers to mix it instead of simply giving the mothers packets to take home. Ensure that when dehydrated children are referred to health centers or posts with mixed solution to carry with them en route to the health facility, that the children are first administered a given amount of solution before leaving the ORU.

2. IMMUNIZATION

1. Address the problem about BCG which results in missed opportunities by the team in Camoapa.
2. Consider a simplification of the EPI message to something like "Have your child immunized from birth until the card is full". For the majority of mothers who can not read, that may be all they need to know in order to take the desired steps.
3. Encourage MINSA to begin implementing its own cluster surveys to improve their data quality about EPI coverage.
4. Begin to develop and test explicit strategies for MINSA to be able to maintain the EPI coverage rates which the project has obtained.

3. ACUTE RESPIRATORY INFECTIONS

1. Consider a simplification of the community norms for ARIs from three categories into two (combine pneumonia and severe pneumonia). Focus on the desired behavior of the mother and what information she needs to understand in order to take the appropriate action.
2. Consider refining the indicator as currently stated in the DIP to include one or more statements which will measure:
 - a. the mother's ability to distinguish between minor ARIs and pneumonia,
 - b. and her resulting behavior.

4. NUTRITION

1. Change the message about exclusive breastfeeding for 'four to six' months to just 'six'.
2. Put exclusive breastfeeding and use of bottles on the Final Evaluation Survey. Take out the long list of foods and ask only what is needed in order to measure the indicators of specific interest to the project.
3. Discontinue mentioning 'nightblindness' in the *charla* about vitamin A and take this question out of the survey for the Final Evaluation. Develop and include one question about the role of vitamin A in the prevention of disease and another on sources of vitamin A in the food supply.
4. Stress the need for young children to eat 5-6 times per day, after recovering from illness and when they are well.
5. Emphasize diversity in the diet and organize the community-level presentations around this concept, without expecting mothers to learn the three food groups and names of foods in them.
6. Be prepared to help participating families with their gardens, especially in the area of pest control.
7. Reconsider the growth monitoring activity as only desirable when it can be done correctly - either by project staff (not recommended, as they are involved in too many other higher priority activities) or by MINSA staff.
8. Develop one or more specific indicators for weaning, test them before the Final Evaluation and include them in the Final Evaluation Survey.

5. MATERNAL HEALTH

1. Continue working with PROFAMILIA.
2. Continue making referrals to MINSA facilities and the PROFAMILIA clinic for maternal health concerns.
3. Include TBA training in the next project proposal.

IV. DESIGN

1. Develop “exit criteria” which will help staff and communities to recognize when a community is ready to move into a phase of having less contact with the project.
1. Considering the total number of communities in the target area, the team should evaluate how many can be worked in effectively in order to:
 - a. reach the project’s objectives in all interventions, and also
 - b. reach the point where others (i.e., the community health workers; MINSA) can help mothers maintain their new positive behaviors at an acceptable level.

Then, the team should develop and analyze options for modifying the project design, if necessary.

V. IMPLEMENTATION STRATEGY

1. Evaluate the capacity of the current project to reach more people with greater frequency, efficiency, and more effective messages. Possible ways to address these needs are through: reducing the number of communities to be served; increasing the efficiency and effectiveness of each contact with community members; increasing the numbers of community-level volunteers who spread the educational messages; and/or by increasing the number of project staff.

VI. HUMAN RESOURCES

1. Seek training in wordprocessing for at least one member of each team and the purchase of one laptop each for Camoapa and Boaco.
2. For Recommendations concerning *brigadistas*, refer to Chapter VIII., Health Communications.

VIII. HEALTH COMMUNICATIONS

1. Make a video of the project's health educator for Boaco as she gives a *charla* and analyze it for techniques which other team members can use and teach to *brigadistas*. Consider some of the other suggestions mentioned above and develop others in the monthly group meetings of the project staff.
2. Consider hiring a consultant to give the team training in non-formal adult education techniques.
3. Develop strategies for teaching *brigadistas* and other members of the community health team how to use non-formal adult education techniques to spread the health messages.
4. Consider hiring a consultant to help the team develop skills in TOT which they can use in their work in building the community health teams.
5. Approach other NGOs and AID to assess interest in using the radio for health education messages.

IX. HEALTH INFORMATION SYSTEM

1. Staff should closely examine their minimum data needs for management and program decision-making, monitoring, and evaluation. Based on this analysis, the HIS should be simplified to lessen the burden of paperwork, keep staff and volunteers focused on the project's objectives and promote timely feedback of pertinent information,
2. Once step #1 is taken, the new HIS technician for Project HOPE in Manabi, Ecuador, should be sent to assist the computer technician to redesign the computerized system to make the necessary adjustments.
3. Do not introduce the **family** registration form unless the staff can show how each piece of information to be collected relates to:
 - a. measuring a specific indicator of one of the objectives or
 - b. providing information needed to make a specific management or programmatic decision.
4. Consider developing a simple form for *brigadistas* who cannot read or who have trouble reading and/or writing.

X. TECHNICAL ASSISTANCE

Recommendations for technical assistance appear in the sections where specific content areas are discussed and therefore are not repeated here.

XI. MONITORING AND SUPERVISION

1. Seek training in participatory human resources management, especially supervision, performance appraisal and counselling, for senior staff with supervisory responsibilities.
2. Discontinue use of the current form for supervision of project field staff and develop one -- with the staff's input -- which has a few open-ended questions, no ratings and no signature required.

XII. RELATIONS WITH COUNTERPARTS

1. Seek a larger office in Camoapa and rent it if necessary.
2. Request permission from SILAIS Bocao for the project's nurse supervisors to attend the montly meetings of the Technical Committee.

XIII. RELATIONS WITH HEADQUARTERS

1. HOPE Center's newly appointed contact person for this project should read this evaluation as a top priority document.
2. This person should then request the project staff to respond to the midterm evaluation, and to include an assessment of the process undertaken, overall comments on its usefulness and specific comments related to each recommendation.
3. HOPE Center should follow-up with project staff on items which are mutually agreed upon, including plans for an orientation trip to the project, perhaps dovetailed with preparation of the new proposal in December.

XIV. SUSTAINABILITY

1. Project staff and counterparts should develop and experiment with alternative options for addressing the activities and services which need sustaining. These experiments, no matter how small -- for example, with just one health post and the *brigadistas* which live near it -- should begin to provide crucial data for more intense efforts in this area in the near future.

2. The more skilled *brigadistas* should be trained to be trainers and help to develop *brigadistas* in neighboring communities which are not currently included in the project's target area.

XV. FINANCES

1. Project staff will identify the expenditures necessary to improve project progress. In collaboration with HOPE Center staff, they will decide if sufficient funds exist for potential additions to the project, e.g., one additional field educator for each municipality, laptop computers and for training in various areas (e.g., wordprocessing; non-formal adult education: TOT, etc.).

XVI. CONCLUSIONS

With regard to the CSSP Survey instrument, recommendations for project staff are to:

1. Delete those questions on the CSSP survey which are not directly useful for promoting those behaviors they wish to influence, i.e., they do not promote the Basic Messages in FACTS FOR LIFE nor address the indicators which the project is trying to measure; and
2. Add necessary questions which are still needed to address the project's Basic Messages.

Specifically, taking the above two items into account:

- a. The CSSP survey asks about nightblindness, even though it is not a problem in the project area. The importance of vitamin A needs to be addressed in terms of increasing the diversity of the diet.
- b. The version of the CSSP survey used for the baseline asks about the use of bottles, but the version used for the midterm had changed this question to one about the use of milk. The two questions, while related, are not equal. The project staff need to reinstate the direct question about use of bottles.
- c. Neither the baseline nor the midterm surveys tackled the question about exclusive breastfeeding. Project staff need to develop one or more questions to assess this behavior for the final evaluation. Exclusive breastfeeding is one of the standard indicators of the project and of the Child Survival Program.

APPENDIX 1
SCHEDULE OF MIDTERM EVALUATION ACTIVITIES

August 15	Travel to Nicaragua
August 16	<u>Boaco: Meeting with project team:</u> Dr. Hugo Barquero, Project Coordinator Lit. Ritha Cabrera, Nurse Supervisor Sra. Odylli Alvarado, Auxiliary Nurse Sra. Corina Duarte, Health Educator Sra. Rosa A. Rivas, Auxiliary Nurse Srta. Isaura Urbina Valles, Auxiliary Nurse <u>Managua: Meeting with:</u> Lit. Olga I. Viluce, Project Mgt. Unit, Development Associates Lit. Julia Olbina , Maternal Child Health, MINSA Sra. Daisy Downs, Information Coordinator, Project HOPE
August 17	<u>Community Visits in Boaco</u> Las Lagunas - Pedro Rodriguez, <i>brzgodistu</i> Las Pitas - Maria Coronado, <i>brzgodistu</i>
August 18	<u>Camoana: Meeting with project team:</u> Enf. Gabriela Aragón , Nurse Supervisor Sr. Vicente Blandón , Auxiliary Nurse Sr. Carlos Bodan, Health Educator Sr. Mario Cerda, Auxiliary Nurse <u>Community Visits in Camoana</u> Monbachito I - Ramón Paz, <i>brigadista</i> Tierra Amarilla - Juan Jose Sanchez, <i>brigadista</i>
August 19	<u>Community Visits in Camoapa</u> Masigue - Don Abel Soteho, <i>brigadista</i> Masiguito - Wilfredo Mendez, <i>brigadista</i>
August 20	<u>Community Visits in Boaco</u> Lomas de Cáfén - Francisco Hemandez Zamorra, <i>brigadista</i> Sofía Hemandez, <i>brigadista</i> and TBA Peñas de Cáfén - Agustina Perez, <i>brigadista</i> and TBA

APPENDIX 1 (cont.)

August 21	Discussion of preliminary results with team and also questions from the FHV/PVC Midterm Evaluation Guidelines
August 22	I Meeting of Brigadistas, TBAs and Volunteer Collaborators in the Department of Boaco, sponsored by MINSA and SILAIS
August 23	Meeting with Dr. Mario Icasa, Director of Health Center, Boaco Report writing
August 24	Meeting with Dr. Sandra Perera, Director of Health Center, Camoapa Meeting with Lit. Nimia Chaverry, PROFAMILIA Meeting with Dr. Jose Luis Borje, Director of Health Center, Boaco Report writing
August 25	Report writing
August 26	Discussion of HIS, Midterm Survey Results and Midterm Evaluation findings with Project HOPE management team Report writing
August 27	Report writing
August 28	Return to USA

APPENDIX 2
PIPELINE ANALYSIS