

**MID-TERM EVALUATION
OF THE
ESPERANÇA CHILD SURVIVAL IX PROJECT
IN THE
CHACO OF BOLIVIA**

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LIST OF ABBREVIATIONS

ALRI	Acute Lower Respiratory Tract Infections
AR1	Acute Respiratory Infections
cs	Child Survival
DDC	Diarrheal Disease Control
DIP	Detailed Implementation Plan
DPT	Diphtheria Pertussis Tetanus
EPI	Expanded Program in Immunizations
HCW	Health Care Workers
MOH	Ministry of Health
MTE	Mid-term Evaluation
NGO	Non-governmental Organization
OPV	Oral Polio Vaccine
ORS	Oral Rehydration Salts
ORT	Oral Rehydration Therapy
PHC	Primary Health Care
TBA	Traditional Birth Attendant
TT2	Tetanus Toxoid, 2 Doses

EXECUTIVE S-Y

Esperanca has been active in the Chaco area of Bolivia in child survival activities since an original USAID Child Survival II Grant began in August of 1986. This mid-term evaluation of the Child Survival IX Project that began in August of 1993, thus afforded the opportunity to not only assess the progress of this particular project, but to evaluate the impact of nine continuous years of child survival activities. This third child survival project is unique in two ways from the previous projects: (1) A totally new geographic area has been selected as the primary focus of child survival activities, and project activities in the other two districts are being phased out. (2) The strategic focus of this new project is more in the area of social marketing, based on gaps in knowledge, attitudes and practices identified in the final evaluation of Child Survival V that was completed in July of 1993.

The two previous child survival projects have attained an incredibly high percentage of their original objectives, and this current project is following in the same tradition. This Child Survival IX project will undoubtedly achieve most of the original project objectives; many of the end-of-project objectives have already been met in ~~some key areas like~~ EPI, growth monitoring and DDC coverage. ~~The project~~ strategies have changed as a result of the previous evaluations and stress social marketing and communication interventions in key child survival activities. These marketing and communication interventions are creative and appropriate to the local culture. They deserve publication and dissemination so other child survival projects could benefit by using these approaches earlier in program development.

The sustainability analysis has shown that the two older project zones of Villa Montes and Yacuiba are from 70% to 100% self-sustaining in key child survival activities. However, this evaluation has shown that the sustainability of training programs is lower than most other activities.

The counterpart institution, the Secretary of Health, seems quite capable of carrying on project activities, including supervision, management information systems, supplies, logistics and evaluation. However, training in new program activities is fairly labor-intensive and requires a high degree of skill. Re-training in new programs, or training of new personnel entirely, remains an Achilles heel of child survival activities, that up to now, Esperanca has had to cover.

An epidemiologic surveillance system **has been implemented in** project zones, and is beginning to function. Coverage for estimated episodes of diarrhea is excellent in all project zones, around 30-35%. The coverage for the EPI program in children under one continues at fairly high levels, and approaches the 90% objective for DPT1, OPV3 and measles in all project zones. The new project zone in Entre Rios, however, lags behind the older ones. Coverage of estimated pneumonias by the health services in Villa Montes and Yacuiba is going well, averaging approximately 60% at the mid-term evaluation. Growth monitoring services continue well at an average of three weights per year per child, which is a suggested objective for the project. This number of weighings has demonstrated a decline in the percentage of malnourished children, which cannot necessarily be directly related to project activities. The coverage of pre-natal services in pregnant women is good, and is already achieving project objectives. However, those receiving four or more pre-natal visits, which is the Secretary of Health norm, is woefully inadequate and will never achieve project objectives. We suggest that this objective of the project be changed to two pre-natal visits, one prior to five months of gestation, and one just prior to delivery.

All project zones have trained an extensive number of health promoters. Entre Rios has increased the number of active promoters by 350%. However, experience in the older project zones is not very encouraging in the ability to maintain promoters in an active functional state. Villa Montes shows a 50% functional status of promoters, and Yacuiba a 70% activity rate. However, it's clear that providing regular services and reporting on them is not an accurate indication of the number of promoters who do provide services. For example, there have been periodic epidemics of cholera in this predominantly rural area, but the mortality rate is less than 1%. This, undoubtedly, reflects the fact that many community promoters who may not actively provide services on a daily or weekly basis will swing into action during time of need and provide active oral rehydration services.

Creative ideas using mass media for health education within the project area are very exciting. The use of radio and TV social marketing approaches allows multiple creative interventions, including planned visits to villages to video their health behaviors and use this as the focus of a community meeting. The

daily radio program, "Let's Talk About Health," and the radio and TV spots are also very influential in changing health behaviors. An adult literacy training program, using health themes to raise the consciousness of the participants, while teaching them to read and write, is now in place, and is a viable approach to changing health behaviors. An additional component includes a rural teacher training program in a primary health care curriculum. This program has received the blessing of the Ministry of Education and is being incorporated into the curriculum reform agenda in the Tarija Region.

Some of the most significant lessons learned include the fact that a significant number of years needs to pass before child survival development activities can become institutionalized. The sustainability of child survival activities in Villa Montes is almost 100% after eight years of effort. After four years in Yacuiba, the level of sustainability is averaging only 70%. One of the major contributors to achieving project activities and long-term sustainability is continuity of project personnel. Three of the original five trainer supervisors in the Esperanca project are still actively functioning after eight years. The integration of new personnel has helped stimulate them to develop creative approaches and adopt new ideas. Close coordination with Secretary of Health personnel at all levels (regional, district and local) is essential for overall project success. Officials at each level highlighted the fact that there's no separation between Esperanca, Secretary of Health and other NGO personnel. Working together as a team has been an important management concept introduced into the region.

A number of suggestions are given for some mid-course corrections, including adjusting some of the original DIP objectives to more realistic parameters, focusing attention on supervision of community health promoters, and linking up with other health programs that have developed materials for teaching training, adult literacy and radio and TV communication. USAID could assist in this effort by establishing an information center where child survival projects could link into a worldwide network of previous experience and materials.

I. INTRODUCTION

A. GOALS AND OBJECTIVES OF THE MID-TERM EVALUATION

Esperanca has been active in the Chaco area of Bolivia in child survival (CS) activities since an original USAID Child Survival II Grant began in August of 1986. A final evaluation of that project was completed in February of 1989. The follow-on Child Survival V Project began in August of 1989, and the final evaluation was completed in July of 1993. The follow-on Child Survival IX Project began in August of 1993, and this mid-term evaluation (MTE) was completed in the period April 27 - May 6, 1995. This third CS project is unique in two ways from the previous projects: (1) A totally new geographic area has been selected as the primary focus of CS activities. Project activities in the other two districts are being phased out. (2) The strategic focus of this project is more in the area of social marketing, based on gaps in knowledge, attitudes and practices identified in the final evaluation of CS-V, completed in July of 1993. Thus, this evaluation, although officially a "mid-term" evaluation, offers a unique perspective to evaluate the impact of continuing CS services over an eight-year period in older project zones, as well as to document the progress made in social marketing strategies that have been based on gaps identified in the previous CS projects.

The main goal of this MTE is to allow mid-course corrections in the current CS project prior to its termination in 1996. Because it is an MTE, we did not focus on the impact of the project in terms of changes in health status as measured by morbidity and mortality. The end-of-project population-based health survey in 1996 will provide better measures of impact. Nonetheless, some data does exist through the health information system used for project monitoring and evaluation activities that will allow us to assess some changes in health services that, hopefully, will produce changes in morbidity and mortality over time. The main focus of this evaluation is to document the activities involved in implementation of the current project and to determine to what degree the objectives outlined in the Detailed Implementation Plan (DIP) have been achieved to date.

The specific activities of this evaluation are:

(1) To document the activities involved in the process of developing CS activities in the undeveloped Chaco Region Of Bolivia.

(2) To evaluate program effectiveness through the types of services being offered, their coverage within the population, and any impact that may have been achieved to date. As noted **above**, we will not measure changes in morbidity and mortality.

(3) To document differences between districts within the project area of influence that have had program services for periods of time, ranging from one year to eight years.

(4) To offer suggestions for improvement in the project, and to offer guidance for future activities.

The basis of this evaluation of the Esperanca CS Project in the Chaco is the DIP prepared in November 1993 and approved by USAID in June 1994. The final evaluation of CS-V, completed in July of 1993 by Dr. Hartman, will also be used as a basis to evaluate how well the recommendations included therein have been incorporated into this follow-on project.

B. EVALUATION TEAM

1. External Evaluator - **A. Frederick Hartman, M.D., MPH**, President of New England Family Health Associates, and visiting professor of Tufts University School of Nutrition. Dr. Hartman has spent the last 20 years working in CS and primary health care programs in lesser-developed countries (LDCs), having lived in India, Brazil and Honduras, and worked in 27 different countries as a consultant and advisor. Currently, Dr. Hartman is based in Laconia, New Hampshire, working in rural health services in the state of New Hampshire. He also teaches at Tufts University School of Nutrition in courses on PHC in LDCs for graduate students from all schools at Tufts University.

2. Esperanca Staff:

Kurt Henne, MPH, Director of Child Survival Project
Palmira Villaroel, RN, Health Coordinator/Villa Montes
Ruth Crespo, RN, Health Coordinator/Yacuiba
Maria Luisa Rojas, RN, Health Educator/Entre Rios
Leah Murillo, RN, Health Educator/Entre Rios
Filamena Ibanez, RN, Health Educator/Entre Rios
Doris Alvarado Ruiz, RN, Health Educator in Literacy
 Program/Tarija
Wilma Llanos Segovia, RN, Health Educator in Literacy
 Program/Tarija
Trinidad Camacho, RN, Director of Radio Education Program/
 Tarija

C. ACTIVITIES COMPLETED

Prior to arrival in Tarija, Dr. Hartman reviewed all pertinent project documents, including previous evaluations, the original CS-IX proposal and the DIP. Dr. Hartman had participated in the previous final evaluations of CS-II in **August** 1989, and CS-V in July 1993. Both Esperanca and this evaluator consider this continuity of evaluation activities to be of valuable support to the project. The annual meeting of field staff for Esperanca occurred at the end of March 1995. Dr. Hartman participated in several days of that meeting. During this meeting, the field activities of all Esperanca projects were summarized, and he also participated in the appreciative analysis of Esperanca activities funded by USAID and managed by Case Western Reserve University. This offered valuable insight into the Esperanca organization that greatly facilitated this evaluation.

The evaluation team assembled in Tarija on July 28, 1995, and spent some time reviewing the terms of reference of the evaluation. July 29 and 30 were spent in a thorough review of continuing activities in Villa Montes and Yacuiba and their impact on health status. Due to long travel distances and the fact that Dr. Hartman had visited these project sites in 1993, no site visits were done in these zones. The team then moved to Entre Rios, the new project area, and spent May 1 and 2 evaluating the activities in the new project area. Field visits were made to Tarupayo and Yuquimbia, communities with functioning health posts. Yuquimbia is a Guarani community, a group of indigenous Indians that comprises 10% of the target population in the Entre Rios area. The trip to Yuquimbia was arduous and consumed an entire day, often traveling in four-wheel drive up river courses that were drying up. During the rainy season, the trip would be impassible. Difficult transportation through rugged terrain to isolated villages is a daily fact of life for project personnel. The team then returned to Tarija, and May 3 and 4 were spent reviewing the activities in Tarija, including the Radio Education Program and the Adult Literacy Program. Meetings were held with regional health staff in the Secretary of Health's office in Tarija. Friday, May 5, was spent in wrap-up, **discussing** the conclusions and recommendations for the future. This, then, produced an exciting discussion about future projects and directions for Esperanca in Bolivia. The evaluation ended with Dr. Hartman's return to Santa Cruz and the USA on Saturday, May 6, 1995.

Below is a list of MOH personnel visited during this evaluation.

City of Entre Rios

Dr. Justino Mollo
Alicia Aleman, R.N.
Martin Maire

Director - Health District of Entre Rios
Head of Public Health - District of E.R.
Auxiliary nurse, rural health post of
Yucuimbia

Israel Barrientos

Auxiliary nurse, rural health post of
Tarupayo

City of Tarija

Dr. Justiniano

Director - Regional Secretary of Health
State of Tarija

Lit. Lourdes Parcel

Head of Communications Department
Regional Secretary of Health

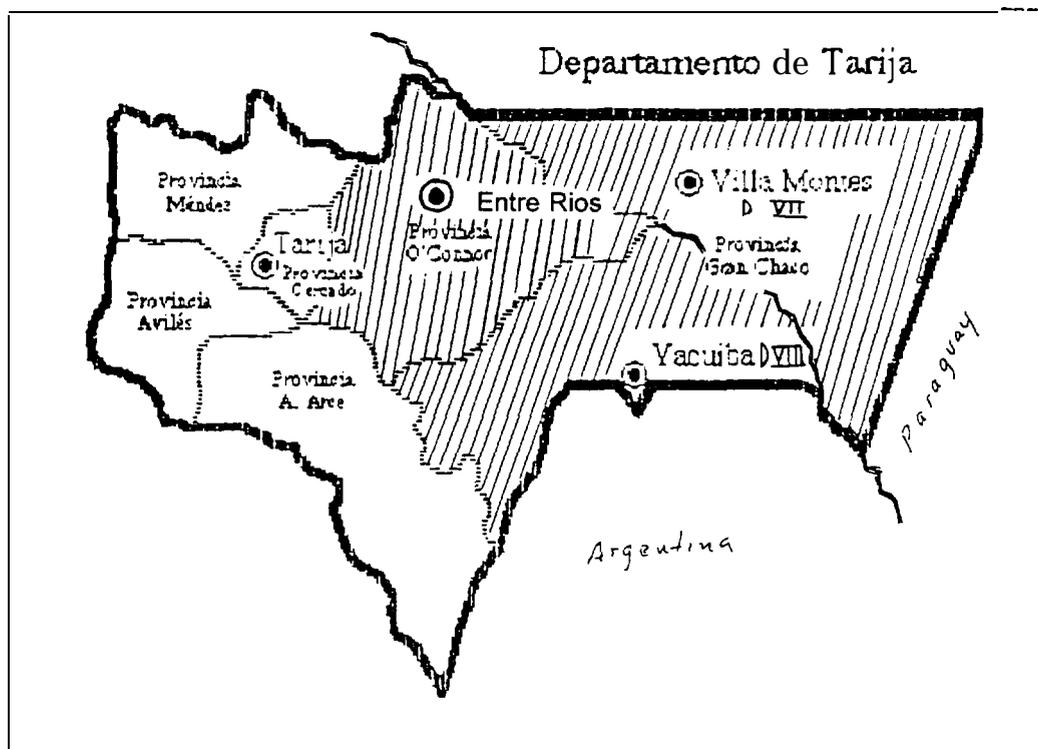
II. BACKGROUND

A. BOLIVIA AND THE CHACO

Bolivia is an incredibly beautiful and diverse land-locked country which ranges from high plains at approximately 13,000 feet around La Paz, extending upwards to mountains ranging to 24,000 feet in altitude. The eastern slope then cascades precipitously down into the "Oriente" in the eastern section of Bolivia. In this area, the economic capital of Bolivia, Santa Cruz, is located and where Esperanca maintains its country headquarters.

The geographically-isolated area of the Chaco represents a forgotten part of Bolivia. Figure 1 is a map which shows the geographical relationships of the project in the Chaco. This area is a frontier area more closely linked to Argentina and Paraguay than it is to the rest of the country. Transportation is difficult, and it frequently takes a day to get in or out of the project area from Santa Cruz. There are flights from Santa Cruz to Tarija three times a week.

FIGURE 1



The Chaco is essentially a desert, with temperatures ranging over 110 degrees daily during the dry season. However, in the winter, it can be quite cold and even below freezing for days at a time. Over the last number of years, there's been a general drought, which has severely affected agriculture in the area. A number of indigenous Indian populations live in this area and are a very important part of the target population of the **CS** project. Both Mataco and Guarani Indian villages are serviced through project activities. The main capital city of the Chaco area is Tarija, and the headquarters for the CS project is located there. Tarija is linked to the district capitals of Villa Montes, Yacuiba and Entre Rios by dirt roads which frequently are impassable in the rainy season. In the rural areas of each district, roads are improvised, very poor, and are often interrupted by flooding. Many of the rural communities are accessible only on foot or on horseback. The new project zone, Entre Rios, extends into the foothills of the Andes with lushly-forested, rugged, mountainous terrain.

Given the geographical isolation and harsh environmental conditions, it is not surprising that the infant mortality rate for this region at project start-up in 1986 was approximately 106 per thousand. The main causes of death remain diarrhea, trauma, acute respiratory infections (ARI) and febrile illness. Malaria is highly endemic in the Chaco area. However, the prolonged drought has decreased the prevalence of malaria. The prevalence of goiter is quite variable, but has ranged upwards of 20-50% in rural areas. Recent estimates of infant mortality in the area place it at somewhat below 100 per thousand, indicating some progress over the last nine years. Nonetheless, given the geographic dispersion and difficulties in transportation, there are pockets where the infant mortality will be considerably higher than average.

Esperança began working in the Villa Montes district of the Chaco in 1986 and expanded activities into Yacuiba in 1990. The new area of Entre Rios in the province of O'Connor was added at the initiation of CS-IX activities in 1993.

thrust of the initial CS project was to develop a network of health posts with trained auxiliaries in place to provide the CS activities in Machareti, Villa Montes and Yacuiba. The end-of-project evaluation in July 1993 showed that extensive successes were achieved in improving delivery of health services and the overall health status of the population. Nonetheless, the evaluation also identified some gaps, especially in the knowledge, attitudes and practices related to some common CS activities, such as oral rehydration therapy (ORT) and pre-natal care.

The decision to maintain CS project activities in existing areas of Villa Montes and Yacuiba was made for several important reasons. The District and Regional Secretary of Health offices requested that Esperanca continue working in these areas. Despite the excellent progress towards the achievement of CS objectives in these areas, the evaluation showed that CS educational activities with mothers were deficient. Thus, this new CS-IX project stresses communication sciences, social marketing and health education to improve this aspect of the program in the older project zones. Epidemiological surveillance and maternal health were not adequately addressed in the previous project. Acute lower respiratory tract infections (ALRI) was included as an incidental program in CS-V and was not given sufficient emphasis.

The district of Entre Rios was chosen as a new area for several important reasons. First, the regional Secretary of Health requested that Esperanca work there. Entre Rios is in the same department as Villa Montes and Yacuiba; thus, this would facilitate coordination with the Secretary of Health in Tarija. Despite the fact that the Entre Rios area has 11 functional health posts with trained auxiliaries and a number of trained community health promoters, CS interventions in that area have poor coverage rates, and Esperanca was requested to assist in improving this. Thus, the new project area will attempt to replicate the successes achieved in improved coverage of CS activities in the older zones, as well as incorporating aspects of the new communication strategies, the emphasis on pre-natal care, and improved treatment of ALRI. Underlying all of this will be an improvement in epidemiological surveillance to allow rapid assessment of program activities.

In the original proposal, Esperanca offered the following activities to improve CS in the project area:

◆ In EPI, improvement of the epidemiological surveillance system by training both district personnel and community health workers in supervision and education, thereby ensuring better coverage and control of diseases preventable by immunizations.

◆ For the control of pneumonia, district personnel and community health workers will be trained to recognize danger signs of ALRI and provide prompt effective treatment, as well as to develop a supervision and evaluation system.

◆ For the control of diarrheal diseases, the project will improve dietary management and treatment of dehydration in health facilities by community health workers and auxiliary personnel.

◆ In the area of maternal health, the project intends to increase the ability to identify high-risk pregnancies and improve their management. Iron supplementation will be promoted, and the percentage of deliveries by trained personnel will be increased.

◆ Nutrition will be improved by increasing coverage and practice of growth monitoring, promotion of exclusive breastfeeding by training community health workers and district health personnel to provide more effective promotion and support, complemented by better community education. Vitamin A consumption will be increased through supplementation and cooperating with community garden projects funded through other sources.

◆ For cholera, epidemiologic surveillance and prompt referral and treatment will be improved through training community health workers and district personnel and through community education.

◆ In all of the above CS areas, Esperanca will develop health education messages and activities through the use of current communication science, including social marketing, in order to increase the participation of mothers and other community personnel in control measures.

It is estimated that approximately 36,280 children under five and women of child-bearing age will directly benefit from the project. Total population coverage in the three districts now approaches 100,000.

3. Goals and Obiectives.

(a) Project Goals. The overall goal of the project is to improve the health of women of child-bearing age and children under 24 months of age in the proposed project areas by strengthening the ability of the local MOH counterpart to deliver basic primary health care interventions.

B. EXISTING HEALTH SYSTEM

The national health system is hierarchial in the traditional Latin model. The central level of the National Secretary of Health (Secretaria Nacional de Salud) sets the norms for each program area throughout the country. The country is divided into states called "Departments," and at this level, the Regional Secretary of Health (Secretaria Regional de Salud) is located in each of the capital cities of the department. Each department is divided into a number of districts, and each district has a Secretary of Health. As stated above, the project works in three districts that encompass the Chaco: Villa Montes, Yacuiba and Entre Rios. The districts are sub-divided with each level having the following infrastructure:

◆ District level - this includes the district hospital, with primary health care specialists in pediatrics, gynecology, internal medicine and general surgery. There are three hospitals in the project zone, but only Yacuiba has specialists. Villa Montes has general medical physicians who can provide caesarean sections. Entre Rios has a much smaller district hospital that has electricity only during the day and cannot provide any advanced obstetrical services, including caesarean sections.

◆ Areas - these are intermediate levels with micro-hospitals that usually have a physician, nurse and an auxiliary nurse. The physician and the nurse are usually completing their obligatory year of rural service and rotate each year. Many regions that would be areas have no micro-hospitals at all. Yacuiba has five and the new area of Entre Rios has none.

◆ Sectors - this is the most basic level with a health post and auxiliary nurse paid by the Ministry of Health (MOH). There are many rural parts of the districts, especially in Villa Montes and Entre Rios, that have no health post at all and only scattered populations. There are 17 health posts in the old project areas, and 10 in the new project area, all of which are staffed.

◆ Communities - this is the most basic level that involves volunteer community health workers (CHWs). These include health promoters, local "curanderos" or traditional healers, traditional birth attendants, and school teachers. Currently, there are 202 volunteer health workers actively providing services; 106 in the old zone, and 96 in the new zone. The community health workers are trained to provide health promotion in such activities as EPI and

maternal child health, and to provide simple treatment, such as oral rehydration, basic first aid and, sometimes, treatment of ARI. The promoters trained as oral rehydrators are designated as an oral rehydration unit (URO) . This level of service is usually found in communities of less than 500 people.

It's worth stating that the MOH presence in the Chaco was completely undeveloped at the start-up of the first CS project in 1986. Two district hospitals were present in Villa Montes and Yacuiba, and a much smaller hospital in Entre Rios. However, there was very little infrastructure beyond the district hospitals to serve the multiple isolated rural communities of the region. The initial CS grant in 1986 allowed Esperanca to assist the MOH to establish 33 health posts in the zones of Machareti, Villa Montes and Yacuiba. In 1988, project activities were withdrawn from Machareti, and the focus shifted south into Villa Montes and Yacuiba. Villa Montes remained the focus of much of the CS-V project activities until the MTE in November 1991. Since then, project resources and efforts were shifted to Yacuiba as the project gradually disengaged from Villa Montes. In 1993, project activities began in the new zone of Entre Rios. Entre Rios already has 11 functional health posts with auxiliaries in place. Therefore, this new project can focus on development and expansion of CS activities and not spend as many resources to develop the infrastructure.

C. ESPERANCA CHILD SURVIVAL PROJECT DESCRIPTION

1. The Organization. Esperanca, Inc. is a non-profit organization with headquarters in Phoenix, Arizona, that has the overall mission statement to alleviate human suffering by improving the health and nutritional conditions of low-income families throughout the world. Esperanca has extensive experience in delivery of primary health care programs in Third World countries, beginning with their initial program in the Central Amazon Basin of Brazil in 1970. Esperanca expanded its program from Brazil to the Chaco in 1983; and then from there, to other countries, including Guinea-Bissau, Mozambique, St. Lucia and Mexico.

2. Project Summary. CS activities in the Chaco for Esperanca began in 1986, with a program in Machareti. This gradually moved farther south to the district of Villa Montes, and then Yacuiba. In 1993, new project activities were started in Entre Rios. The

(b) Objectives.

(1) Immunizations

- 80% coverage of polio 3, DPT3, measles and BCG among children 12-23 months of age by the end of the project, and 60% coverage of TT2 among women of child-bearing age in all three project districts

- 80% of suspected cases of neonatal tetanus, measles and polio are reported regularly from health posts, and 90% follow-up of suspected cases, including case investigations and appropriate action

(2) ORT

- 60% of episodes of diarrhea will be treated with ORT (ORS or cereal-based ORT)

- In 60% of episodes, mothers will report an increase in the amount of liquids given

- Decrease the use of medications to below 35% of the episodes of diarrhea

(3) Cholera

- 80% of sentinel posts report regularly regarding polio, neonatal tetanus, measles and cholera

- 90% of suspected cases investigated and appropriate action taken by trained health care workers

(4) ALRI

- 50% of cases of pneumonia treated appropriately with antibiotics

- 60% of mothers recognize rapid breathing and/or indrawing as a danger sign on pneumonia

(5) Nutrition/Growth Monitorins/Breastfeeding

- 70% of children under 24 months weighed in the previous four months

- 30% of mothers report exclusive breastfeeding during first four months

(6) Maternal Health/Birth Soacing

- Increase deliveries attended by trained personnel to 60% of total deliveries

- 80% of women delivering had at least one pre-natal visit

(7) Vitamin A

- 80% of children 12-24 months have received two doses of a Vitamin A supplement

- 60% of mothers can name at least one Vitamin A rich food
- Breastfeeding prevalence rate of 75% at four months of age

(c) Project Outputs.

(1) Social marketing and communication of CS education messages. Educational messages and activities will be developed, tested and implemented by health workers following specific training in communication science and social marketing techniques. The target audience will be mothers of children under two years of age.

(2) Training of district personnel, nurse auxiliaries and community health workers in planning, implementation, supervision and evaluation of CS activities through workshops and on-the-job training. In the existing zones, these training activities will focus on epidemiologic surveillance, ALRI, cholera and maternal health. In the new area of Entre Rios, this will include expanded program in immunizations, control of diarrheal diseases, AR1 and nutrition monitoring. Maternal health, Vitamin A and cholera will appear in the second year, and epidemiologic surveillance in the third year.

Specific objectives and outputs per year for each project area are outlined in the DIP. These are presented as Appendix A. The reader is referred to these for reference in Section III (Project Accomplishments).

4. Project Strategies.

(a) Current CS Activities.

(1) EPI. Four rural and three urban vaccination campaigns are held each year. There is continuing vaccination in all district hospitals and the Social Security Clinic in Yacuiba, and in those health posts that have functional refrigerators, either through electricity or propane refrigerators. Sentinel posts report in the epidemiologic surveillance program, and these include all health posts, hospitals and Social Security Clinics. They are required to report all suspect cases and district health office personnel are required to go out to inspect each case. There is, however, poor case reporting and poor case recognition. Esperanca staff report that a recent case of paralytic polio produced complete confusion as to how to proceed to investigate the case. Since Latin America has been declared polio free since 1994,

this caused consternation within the Secretary of Health. With the arrival of Central Secretary of Health epidemiologists, this was classified as a case of Guillain-Barre.

(2) DDC. Treatment of diarrheal disease and dehydration occurs in all rural health posts, district hospitals and home ORT units in the homes of all health promoters. There is limited mass media campaigns through television spots and radio programs.

(3) Nutrition. The MOH norm is to hold weighing sessions every two months in rural health posts and through dispersed rural health promoters. In urban areas of Villa Montes, Yacuiba and Entre Rios, the project works through mother's clubs and health promoters. There is daily weighing in district hospitals through well child visits. There is an emphasis on identification and follow-up of high-risk children with specially-designed interventions, including more frequent weighing, treatment of concurrent illnesses and nutritional supplementation. Education to mothers on appropriate weaning foods occurs through community health workers, mother's clubs, weighing sessions, well child visits and a limited amount through the Esperanca Radio Program. There are rudimentary breastfeeding messages only through the mass media.

(4) Vitamin A. The objective is to supplement Vitamin A capsules two times per year for children aged two to five via promoters, rural health posts and mother's clubs. There are limited messages available through the Radio Program and a community garden project that stresses growing Vitamin A rich foods in home gardens.

(5) Maternal Health. Pre-natal care is offered in urban areas by district hospitals and by auxiliary nurses in rural areas. They are asked to seek out pregnant women and do frequent home visits in the afternoon to provide pre-natal care. There's a program underway to train traditional birth attendants (TBAs), so that all people in rural areas who cannot get to a health post or hospital have deliveries provided by trained personnel.

(6) ARI Antibiotics are available in all health posts and hospitals for-treatment of suspected cases of pneumonia. This program uses the WHO/PAHO guidelines for treatment. Promoters in dispersed rural areas also have antibiotics and have been trained in the protocols for light, moderate and severe ARI. There

has been some limited communication of messages to mothers via radio.

(b) New Approaches in Existing Project Areas. The CS-II project focused on training mid-level personnel, especially auxiliary nurses, for health posts in the Chaco Districts of Villa Montes and Yacuiba, and the development of the capacity for planning, supervision, support and evaluation of CS activities by district personnel. CS-V focused on training to support community-level workers, especially volunteer health promoters and mother's clubs, and developing the capacity of district personnel to support them. Evaluation of these projects have shown tremendous improvement in coverage of CS programs, especially those involving direct actions of the health care systems, such as immunizations, pre-natal care, ORT coverage and growth monitoring. Evaluations also showed excellent progress towards sustainability as district personnel have assumed increasing responsibility for management and oversight of the system. However, these same evaluations show that the weakest area of the project was in the learning of key CS messages by mothers. In addition, the previous CS projects did not include activities in epidemiologic surveillance or cholera, only lightly touched on ALRI, and did not specifically stress maternal care.

CS-IX proposes a number of new activities. These include filling in the "missing components" of the previous projects in the area of better health education through the use of social marketing and communication of key messages to mothers. The project proposes to do this through the development and testing of messages identifying barriers to adoption of appropriate health behaviors and channeling this information to the Radio Project for development of appropriate messages and broadcasts. The project also intends to develop and implement training modules for health care workers at all levels in communication of key messages to mothers.

A second area of emphasis in the existing project area is to train health care workers in previously-weak programs of epidemiologic surveillance, cholera, ALRI and maternal care.

(c) New Activities in Expansion Areas. Entre Rios is an area that has experience in CS activities, but these activities have not been as effective, nor has the coverage been as wide as experienced in the project zones of Villa Montes and Yacuiba. Therefore, the project proposes to replicate the experiences of

Villa Montes and Yacuiba in the new project area, and also include the expanded programs in social marketing and communication, epidemiologic surveillance, ALRI and maternal care. In order to achieve this, the project proposes the following strategies:

(1) Training community health workers and district personnel in CS programs in order to extend the outreach of the district hospitals.

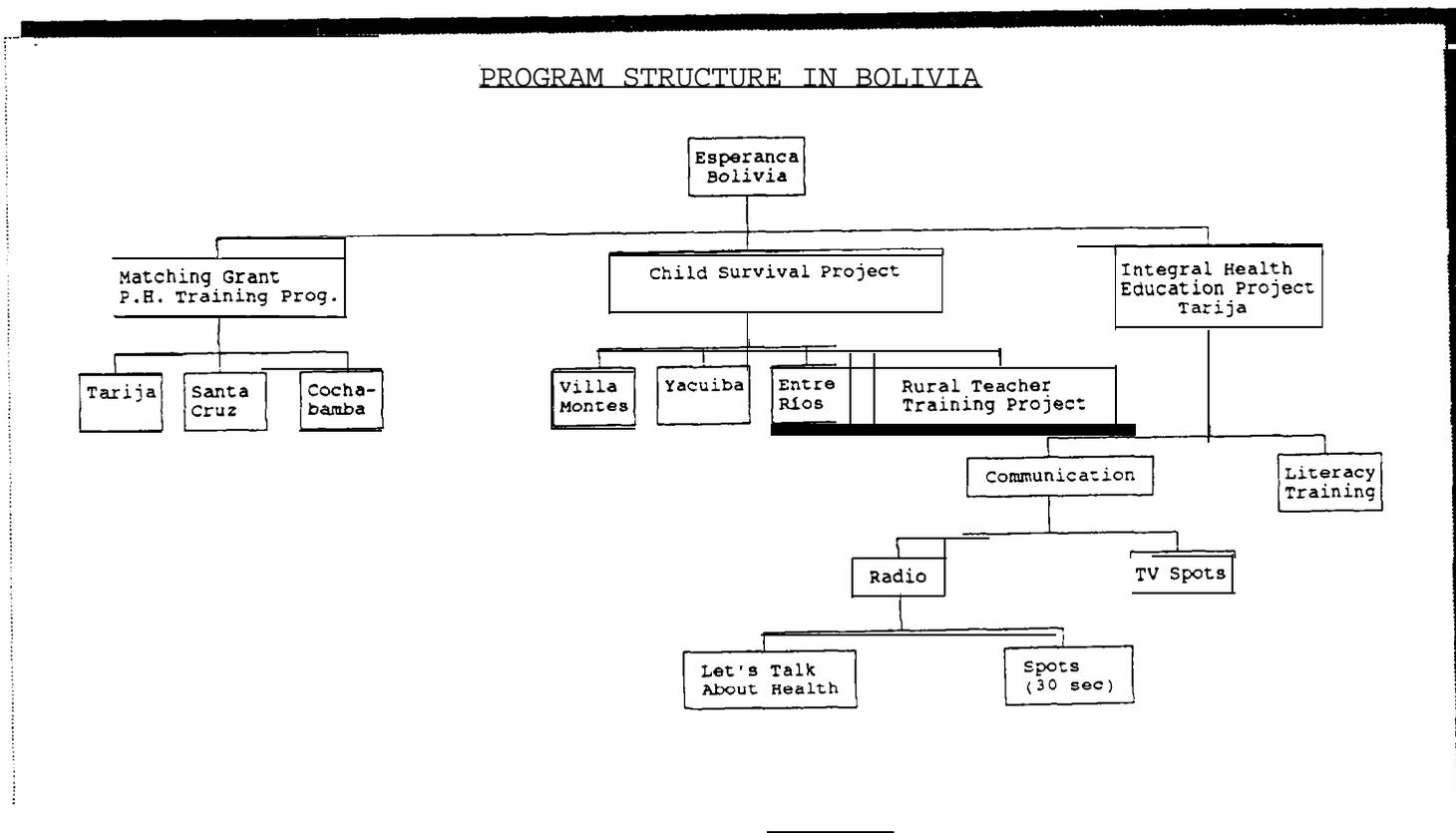
(2) Training district personnel in planning, supervision and evaluation of CS programs.

(3) Helping district personnel work with community groups, such as mother's clubs and community health committees wherever they exist.

(4) Extending the impact of CS interventions by communication of key CS messages to mothers utilizing the experience gained in the existing project areas.

Figure 2 represents the organizational structure of the Esperanca program in Bolivia. Each of these is analyzed in detail in the sections that follow.

FIGURE 2



III. PROJECT ACCOMPLISHMENTS AND LESSONS LEARNED

A. EXISTING PROJECT AREAS - VILLA MONTES AND YACUIBA

1. Description of Activities. Based on previous CS project evaluations and the analysis discussed above, the project decided to focus activities in the existing project areas of Villa Montes and Yacuiba in three priority CS programs: DDC, AR1 and maternal health. DDC was selected because the previous evaluations had shown that mothers' behaviors regarding ORT and feeding practices was not as good as the project would like to see. AR1 was selected because the project only recently introduced these services and more time was needed for development. Maternal health was selected because of the overall low utilization of pre-natal services and the tendency of women to arrive too late in the pregnancy for any pre-natal services to have made a difference. The expanded program in immunizations, nutrition, growth monitoring and Vitamin A supplementation have not been stressed in the existing project areas. Project staff felt very strongly that the MOH personnel were quite capable of maintaining these programs without any project support; i.e., these were sustainable enough to achieve high levels of coverage without any specific attention from the project. The analysis presented in Section A.2, below, will address these issues.

Project staff developed a standard methodology that they applied to each of the program areas. The first step was an epidemiologic investigation, or a quantitative analysis, of the morbidity, mortality and coverage in each of these priority program areas. The next step was the most important one, and involved the qualitative investigation of each priority program. The first step was to identify the groups that would be the subject of the investigation, including community members, health personnel and curanderos, or traditional healers. Subject of the investigation required a different approach for each phase of the study. Focus groups and household questionnaires were appropriate for the community. Structured observations were utilized for the curanderos and the health personnel, as well as personal interviews. A medical audit was developed for the health system where 60 randomly-selected charts from one quarter of the year were selected for review to see how well the treatments of the physicians, nurses and auxiliaries complied with the norms established for each program by the MOH. After all this data was collected, there was both a quantitative and qualitative analysis of the results that

led to the design of interventions to improve the utilization of the program services in question. These interventions could include re-training programs for physicians, nurses and auxiliaries; mass media educational programs for ARI, DDC and maternal health; design of print media for distribution at the community, health care, and hospital levels; community meetings by health care workers to explain the priority programs and help overcome barriers to utilization of the services.

The results of these activities are described in the section below.

2. Comparison of Accomplishments with Objectives.

(a) DDC- The rapid survey at the end of CS-V showed that mothers' recognition of dehydration was low, and therefore, they were not using ORT as often as they should. The program decided to place priority emphasis on DDC communication strategies, and their initial investigation is the most complete to date in the project. Utilizing a combination of household surveys, focus group studies, structured observations and the medical audit, the initial investigation produced a number of significant results.

Staff identified 14 different types of diarrhea. Mothers' perceptions of the type of diarrhea profoundly influenced the type of treatment they would use. Mothers tended to use a number of herbal teas or "aguas." The type of tea or agua used varied with their perception of the type of diarrhea. ORT is considered one type of water; and thus, is only used when certain types of diarrhea are diagnosed by the mother. These include diarrheas caused by infection, by intestinal parasites, or where the mother perceives definite signs of dehydration. However, other types of diarrhea will not use ORT at all. These tended to be diarrheas caused by changes in temperature, for example too hot or too cold, or by bad milk or bad food. In these cases, ORT would not be used; an attempt would be made to warm the child or cool the child, or breastmilk would be withheld, or the offending food would be removed. It was felt this would improve the child's health and no aguas would be needed. At least three of the types of diarrhea required consultation with a curandero. The curanderos tended to use both herbal teas, as well as incantations and prayers and cost considerably more than a trip to the health services. Yet, for cultural reasons, they were the preferred provider of services for approximately 34% of diarrheas. The mother did the treatment alone

in 43% of diarrheas, and the health services in about 23% of diarrheas. Thus, it was clear that educational services had to be focused on both mothers and curanderos to have any significant impact on coverage by ORT. The initial investigations identified a number of barriers that prevented the mothers from seeking care from the health services early in the course of diarrhea. Sixty percent of the mothers reported fear of being treated badly by health care workers, 20% reported economic difficulties, 15% reported various cultural factors, and only 5% showed lack of confidence in the services.

The medical audit, a review of 60 clinical cases in hospitals and health centers, produced a number of surprising results. Despite nearly six years of intensive efforts on training health care workers in ORT, and the impetus provided by a number of outbreaks of cholera, nearly 80% of the recorded treatments for diarrheal disease within the health system did not follow the norms established by the MOH. It did appear that ORT was extensively used; but in addition, heavy use of antibiotics and anti-diarrheal medication was recorded. One hundred percent of the medical records reviewed did not include any physical examination of the child showing the degree of dehydration estimated by the examiner. These surprising results show that the formal medical education process in Bolivia for physicians, nurses and even nurse auxiliaries does not completely reflect the norms established by the MOH. It appears that frequent personnel turn-over contributes to this. Most of the physicians and nurses working in the rural health system are serving one year of obligatory social service after graduation from medical school prior to entering their residency training. Although they do receive a short training program that does stress MOH norms prior to entering their service, it's clear that biases established during their formal medical training remain the operative factor in the field. This is beyond the project's control and has been brought to the attention of both regional and central authorities for correction. However, this project is not the first project to cite these deficiencies.

Investigation of the curanderos, which, as noted above, treat approximately 34% of the cases of diarrhea, show that they were willing to learn ORT since it is common practice for them to stress taking some form of liquid and food during diarrhea. However, it was noted that the main concern of the curanderos is that they

tended to see the child very late in their illness when there was already an advanced degree of dehydration. This also was a concern expressed by many of the health care workers and shows the need to educate mothers to intervene at an earlier level.

As a result of this investigation, the program embarked on a training program for health care workers within the health system, community promoters and curanderos. They also developed a marketing plan that included distribution of fliers, house-to-house visits in each community, training-of-trainers, education to food dispensers within communities, education of students in schools, development of radio and TV spots, and, finally, an evaluation of the impact of all these interventions and educational efforts. It's interesting to note the stress placed on street vendors of food, because they have been shown to be a vector of spread of cholera. During cholera outbreaks, the selling of food on the street is prohibited. Between cholera outbreaks, it's common practice and a common source of alimentation for much of the population. The results of all of these efforts are described below and compared to the objectives established in the DIP.

◆ Objective: One workshop about the technical norms in DDC for 53 health care workers in Yacuiba and Villa Montes. These include physicians, nurses and nurse auxiliaries. Figure 3 shows the results.

FIGURE 3

TRAINING OF HEALTH CARE WORKERS IN DDC

DISTRICT	# OF WORKSHOPS			# OF PARTICIPANTS		
	PROG.	EXEC.	%	PROG.	PART.	%
VILLA MONTES	1	3	300	17	100	588
YACUIBA	1	3	300	36	97	269

Esperança's staff was astonished at the spontaneous demand for additional training in DDC. They had originally programmed only one workshop in each district and found the demand so high that they had to do three workshops. Originally they intended to train 53 health care workers and ended up training 197. Thus, their

achievement of this objective ranged anywhere from 269% to 588% of what was originally established. Project staff attribute this to the interest generated by periodic cholera outbreaks in the area, as well as a re-definition of the health care team that has occurred as a result of both project efforts and the regionalization of health services. These workshops were attended by many people who normally would not be considered direct health care providers, such as cooks in the hospitals and administrative support personnel. However, participation of these people was encouraged because of the need to promote the use of ORT through a wide range of services, and it was felt that the more members of the health care team were actively involved in the recognition of early signs of dehydration and the various types of ORT, the better the outcomes.

◆ Objective: One round of supervision for 53 health care workers. Figure 4 shows the results of this.

FIGURE 4

SUPERVISION OF HEALTH CARE WORKERS IN DDC

DISTRICT	# OF SUPERVISIONS			# OF PARTICIPANTS		
	PROG.	EXEC.	%	PROG.	PART.	%
VILLA MONTES	1	1	100	17	15	88
YACUIBA	1	1	100	36	26	72

One round was achieved as a follow-up on the training to make sure the health care workers were putting into practice what they learned. The number of participants in this supervision ranged from 72% in Yacuiba to 88% in Villa Montes. The previous CS project had developed a guide for supervision in the various CS program areas. The supervision takes place during an on-site visit and includes record review, discussion with the health care worker and discussions with community personnel. Direct feedback is given to the person being supervised, and a copy of the complete evaluation that cites all positives and negatives is left behind. The results are not 100% due to difficulties in transportation during the rainy season, as well as absent personnel. In Yacuiba,

a number of the nurses had been on maternity leave after the training and were not available for supervision.

◆ Objective: One workshop about the management of diarrhea in the home for 70 volunteer health promoters. Figure 5 shows the results of this activity.

FIGURE 5

TRAINING OF COMMUNITY HEALTH PROMOTERS IN DDC

DISTRICT	# OF WORKSHOPS			# OF PARTICIPANTS		
	PROG.	EXEC.	%	PROG.	PART.	%
VILLA MONTES	1	1	100	20	25	125
YACUIBA	1	1	100	50	83	166

As in training of health care workers, the staff was surprised by the response. They had programmed training for a number of active promoters in the two districts. However, when the training was announced, a number of previously inactive promoters arrived for the training, and this proved to be significant motivation for re-establishing activities. It was also noted in previous evaluations that although the desertion rate of community promoters is very high in the project, the definition of "active" promoter; i.e., one who provides regular service, does not address the fact that many promoters who are inactive during normal times will spring into action during a crisis, such as a cholera epidemic. They then tend to become active promoters of ORT in the community and in the home, and this has contributed to significantly reduced mortality rate of less than 1% in the major cholera outbreaks that have swept through the Chaco. Esperanca also linked up with other NGOs (non-governmental organizations) that used promoters in the area, so that these community volunteers could promote ORT usage in the home.

◆ Objective: One round of supervision for 70 promoters in both project zones. Figure 6 shows the results of this analysis.

FIGURE 6

SUPERVISION OF COMMUNITY HEALTH PROMOTERS IN DDC

DISTRICT	# OF SUPERVISIONS			# OF PARTICIPANTS		
	PROG.	EXEC.	%	PROG.	PART.	%
VILLA MONTES	1	1	100	25	22	88
YACUIBA	1	1	100	83	83	100

One round in each zone of supervision was completed, using previously developed supervision guides for community health promoters described above. The number of participants were much higher than originally programmed, and included almost all of those who had participated in the training described above. Yacuiba is a designated hot zone for cholera, since it's also located right on the frontier with Argentina. The government has placed emphasis on the use of home ORT as promoted through the village health workers; and thus, has provided extensive support. That is why both Figures 5 and 6 show Yacuiba with better participation by health promoters than Villa Montes.

◆ Objective: The utilization of curanderos is not specified in the DIP. However, after finding almost one-third of diarrheal diseases are treated by curanderos, the project decided to include them in the training. The results are presented in Figure 7. One workshop was held in each district, and a total of 21 curanderos were identified and trained. Clearly, a lot more existed in the project area, but it proved difficult to identify them, as well as to motivate them to come to the training programs. One round of follow-up supervisions was completed on almost all the curanderos that were trained; that is to say, 20 out of the 21.

FIGURE 7

TRAINING OF CURANDEROS IN DDC

DISTRICT	# OF WORKSHOPS			# OF PARTICIPANTS		
	PROG.	EXEC.	%	PROG.	PART.	%
VILLA MONTES		1			9	
YACUIBA		1			12	

SUPERVISION OF CURANDEROS IN DDC

DISTRICT	# OF SUPERVISIONS			# OF PARTICIPANTS		
	PROG.	EXEC.	%	PROG.	PART.	%
VILLA MONTES	1	1	100	9	8	89
YACUIBA	1	1	100	12	12	100

However, Figure 8 shows that the impact on the use of ORT on the curanderos was very limited in Yacuiba, but quite high in Villa Montes. An investigation into reasons why, staff found out that the curanderos in Yacuiba tend to be Shamans who use incantations and prayers rather than aguas or herbal teas. Therefore, the curandero training program can only be called moderately successful. **Small** numbers of curanderos were trained and supervised in the use of ORT and did put it into practice. However, a significant percentage of the trained curanderos in Yacuiba did not implement ORT, as well as a larger number of curanderos in the two districts did not participate in the training programs. It's unclear how many there are, so we cannot quantify that.

FIGURE 8IMPACT ON CURANDEROS USE OF ORT

DISTRICT	TRAINED	USE ORT	%
VILLA MONTES	9	8	89
YACUIBA	12	2	17

The following table shows the activities and results of the marketing plan implemented by Esperanca staff for the DDC program.

A C T I V I T I E S	R E S U L T S	
	YACUIBA	VILLAMONTES
(a) Distribution of flyers	3792	2400
(b) Mobilization house-to-house	3042	2615
(c) Training rural teachers	61	
(d) Education to street vendors of food	1381	
(e) Education to rural students	3000	
(f) Diffusion of TV spots	5	4
(g) Diffusion of radio spots	6	6
(h) Raffle participants		252
(i) Evaluations of impact (household survey)	1	2

Figure 9 shows the results of all these educational campaigns on knowledge, attitudes and practices (KAP) related to DDC. The final evaluation in Villa Montes was completed just prior to the mid-term evaluation. There **was** not enough time in Yacuiba to do a second evaluation six months after the educational campaign. The baseline reflects results of surveys done prior to the educational campaign.

FIGURE 9
RESULTS OF THE EDUCATIONAL CAMPAIGN
ON KAP DURING DIARRHEA/DEHYDRATION

	Baseline	VM 1 mo	VM 6 mos	YAC 1 mo
During Diarrhea				
Maintain/increase breast-feeding	67%	99%	94%	90%
Increase liquids	21%	78%	75%	65%
Maintain/increase food	41%	70%	87%	74%
Signs of Severity				
Recognition of dehydration	15%	81%	80%	61%
Diarrhea for three days		21%	25%	9%
Diarrhea with blood	1%	12%	5%	4%
ORS				
Recognition of ORS		95%	98%	93%
Prepared correctly		86%	85%	67%
After the Diarrhea				
Increase feeding		49%	60%	33%
Barriers to Treatment				
Decrease/suspend liquids		22%	10%	18%
Decrease/suspend food		30%	18%	20%

Significant improvements can be seen in all aspects of the recognition and treatment of diarrheal disease. Significant improvements were most noteworthy in increase in the amount of liquids and increasing the amount of feeding. The recognition of dehydration improved dramatically from 15% of the population to 81%. However, the definition of significant diarrhea of more than three days, or diarrhea with blood requiring intervention of a physician, increased only a moderate amount. Knowledge of ORT remained high, and correct preparation of ORT was high in Villa Montes, but not quite so high in Yacuiba, and the project needs to focus on that. Interestingly enough, the need to increase the amount of feeding after diarrhea has risen only a moderate amount. However, the decrease in the cultural practice of suspending liquids and foods is fairly significant. All of these gains seem to carry through over a six-month period, indicating the immediate impact of the educational program tends to be retained. The project has continued to reinforce these messages through radio and television spots in the radio program that runs daily from Tarija called "Let's Talk About Health." All of these are discussed later on in this report.

One note of interest is that the project has chosen to evaluate the recognition of diarrhea more than three days as a serious sign, because their initial investigation showed that after three days, the mother tends to seek help, either from a curandero or a health care worker. Unfortunately, the Johns Hopkins rapid survey for final evaluation only covers less than or greater than 14 days. Because that is required by USAID, they will continue to follow that as an indicator; however, they are also going to include the three-day mark as an indicator of the success of their program. In other words, the program objective is to stimulate mothers to improve feeding and ORT practices prior to the three days and to seek help earlier whenever there are signs of dehydration.

◆ Objective: Seventy percent of cases of diarrheal disease presenting to the health services will be treated according to the norms established by the MOH. Figure 10 shows the results of this.

FIGURE 10MANAGEMENT OF CASES OF DIARRHEA BY HCW'S (MD, RN, AUX)

MANAGEMENT OF CASES	VILLA MONTES		YACUIBA	
	BASE	ACTUAL	BASE	ACTUAL
PE Recorded	0%	80%	40%	70%
Correct Treatment	20%	67%	40%	70%

Prior to the educational interventions, the medical audit showed that none of the charts had recorded the signs of dehydration in Villa Montes, and only 40% in Yacuiba. After the educational program, this increased to 80% in Villa Montes and 70% in Yacuiba. Treatment according to the norms increased from 20% at baseline in Villa Montes to 67%, and 40% at baseline to 70% in Yacuiba. Principally, this occurred by the utilization of ORT as the only approach, with minimal use of antibiotics and anti-diarrheal agents. This was felt by project staff to be a significant accomplishment.

◆ Objective: Seventy percent of expected cases of diarrhea with dehydration will have sought help at a health facility. Figure 11 shows the capture of estimated episodes of diarrheal disease by the MOH personnel and community health promoters. The source of this information is the health information system in place in the two districts. Thus, some of the coverage data may be affected by reporting artifacts. This is felt to be true in the Yacuiba area by the time of the MTE.

FIGURE 11

COVERAGE OF ESTIMATED CASES OF DIARRHEA
BY THE HEALTH SERVICE SYSTEM

DISTRICT	C O V E R A G E		
	INITIAL 1990	BASE 1993	MID-TERM 1995
VILLA MONTES	21.7%	28.5%	35.0%
YACUIBA	14.0%	22.3%	19.0%

This shows a continued rise in the coverage of estimated episodes of diarrhea through the health services. These include oral rehydration treatments reported by community health promoters, as well as auxiliary nurses and physicians through health centers and hospitals. The objective described in the DIP is a vague one and probably not attainable. Given that most episodes of diarrhea are treated in the home, it's unlikely that 70% of all diarrhea cases will seek help through the health services. Likewise, it will be difficult to quantitate the percentage of cases with dehydration that are treated through the health services since the definition of dehydration may differ within each family. Also, it's not clear that this high percentage of cases with dehydration do need to present to a health center, since the heavily-rural areas of Entre Rios and the older health projects are so far from formal health services that many of them may never get there. A well-trained mother with support from a community promoter could rehydrate the majority of dehydrated infants. Given this discussion, my feeling is that 35% coverage of estimated diarrheal cases by the health services is quite good, and probably captures the majority of the potentially-lethal diarrheal cases. The fact that cholera has shown a less than 1% mortality rate in the periodic outbreaks that occur in the Chaco indicate that this is probably the case. Experience suggests that capturing 35% of the estimated cases of diarrhea is a good objective, and this has already been met in Villa Montes. Efforts should be focused on maintaining that level in Villa Montes and significantly increasing the coverage in Yacuiba, which is significantly below this. The objective that 70% of mothers will use ORT in the last episode of diarrhea should be the same, and this will be measured by the final survey for the final evaluation in 1996. A combination of 35% coverage by the health services and 70% use of ORT will then capture 100% of the cases of diarrhea, although there will be some overlap between cases. Nonetheless, this should significantly reduce mortality due to dehydration.

(b) **ARI-** The ARI program based on PAHO/WHO norms was introduced into the project areas in 1993. Esperanca attended training-of-trainers programs in La Paz and then came back to the zone and trained health care personnel in project areas. Antibiotics have been supplied to all hospitals, health centers and health posts, and to some selected promoters who live in isolated **areas** where access to health posts is not readily available. There have

been some radio programs oriented towards educating families about recognition of AR1 and the need to seek care, but these fledgling efforts are only beginning to show some results. Project staff and MOH officials together agree that treatment of AR1 in project areas are still in their infancy and need a lot more development. Because of this, AR1 educational programs are a top priority of the current CS program.

The initial investigation into AR1 followed the same methodology outlined above for DDC, and included focus groups, household survey, structured observations and medical audits of various levels of health care personnel. The results show that mothers typically identified two types of ARI. One is pneumonia, also known as bronchitis, and "resfrio," which we would generally refer to as "a cold." Colds are classified according to their cause, such as changes in temperature (hot or cold), by infection, or even by other aspects, such as dust or pollen. Colds can also be classified as being with or without cough, as well as having an inflamed throat or with rhonchi. Figure 12 shows that the sources of treatment for AR1 depend highly on the mother's perception of type of AR1 the child is having.

FIGURE 12

SOURCES OF CARE FOR ARI

CLASS OF ARI	HCW's	MOTHERS	CURANDEROS
ARI without Pneumonia			
Resfrio without cough	10%	80%	10%
Resfrio with cough	30%	60%	10%
Pharyngo-tonsillitis	100%		
Laryngitis	50%	20%	30%
ARI with Pneumonia	100%		

In a mild AR1 without cough, 80% of the cases are treated in the home, with equal distribution of the remainder between health care workers and curanderos. However, once cough appears, a smaller percentage is treated in the home, and a larger percentage go to the health center. Curanderos are not perceived as being appropriate for treatment of a cough. Of interest is that 100% of perceived cases of pharyngitis or tonsillitis are treated by health

care workers. People's perceptions of an inflamed throat with temperature is that antibiotics are needed, and so they have to seek assistance from trained health care workers. Laryngitis appears to be an area in which curanderos play a major role, and they tend to use vapor or steam with eucalyptus oil that, in fact, may be of some benefit. Once again, however, mothers tend to have heavy utilization of health care workers, feeling that antibiotics are needed. One hundred percent of the perceived cases of pneumonia are taken to health care workers, and even curanderos when contacted said they refer cases that they believe are pneumonia to health care workers. They recognize the seriousness of it, and do not wish to deal with that situation. However, given the high incidence of pneumonia in children under five and the high mortality from this disease, it's clear that a number of cases that are perceived as not being pneumonia are treated either in the home or by curanderos, and that a significant number of the **cases** of pneumonia treated by health care workers are treated very late in the illness. The main treatment in the home, and by curanderos, is the use of herbal teas and of syrups, especially one made out of a combination of honey and onion. The project has chosen to continue recommending this treatment for mild URIs in the home, but educating mothers to recognize the early signs of pneumonia and to get their children to the health care worker much earlier in the illness.

Figure 13 shows the results of the medical audit of health care personnel, and they are very surprising. In Villa Montes, a very low percentage of auxiliaries, and none of the physicians, recorded the physical for AR1 and followed the treatments according to the norms. The percentage was somewhat higher in Yacuiba, but still far below expectations.

FIGURE 13

**RESULTS OF INVESTIGATION OF TREATMENT
OF ARI BY HCW'S**

CATEGORY OF HCW	VILLA MONTES	YACUIBA
MD's		
Rx according to norms	0%	40%
Correct PE	0%	40%
Correct Dx	33%	40%
AUXILIARIES		
Rx according to norms	10%	30%
Correct PE	40%	30%
Correct Dx	100%	30%

This shows that the initial round of training of health care personnel did not really improve the treatment of ARI as significantly as wished. This has had significant impact on the design of continuing education programs for health care personnel, as well as for the orientation of new personnel. Villa Montes had a high turn-over in medical and nursing personnel, and the newer ones coming in for their year of social service did not have any training in the norms of the ARI program. The same observation was made in DDC that new graduates of the health professions have not been adequately trained in the norms of CS programs. Project staff are working with the Regional Secretary of Health to design an orientation training program for all newly-entering physicians and nurses who will do their year of obligatory social service.

The low results in the auxiliaries were more surprising, since all of them received training and supervision in the treatment of ARI. This simply shows that two years of effort is not enough to assure a good "take" of program norms, and that constant re-training and supervision is necessary. District health personnel in Yacuiba and Villa Montes have agreed to continue the medical audits on a yearly basis to monitor compliance with the norms of treatment. This shows good institutionalization of monitoring techniques that should, over **time**, produce significant improvements in treatment patterns.

The correct PE (physical examination) meant that the state of hydration, the respiratory rate, and any other significant findings were recorded. The correct diagnosis means that the severity of

the pneumonia was recorded. The norms used to divide AR1 into light, moderate and severe, with treatment accordingly. Now, the diagnosis is AR1 with or without pneumonia, and the pneumonia is divided into moderate or severe. It's interesting to note that auxiliaries in Villa Montes tended to have better physical exams and were accurate diagnoses than the physicians. This was the reverse in Yacuiba and is due to the presence of a pediatrician in the district hospital who has had significant influence on the other physicians. Nonetheless, there is still room for significant improvement in both areas. The project has designed continuing education programs and also has distributed watches to all health care personnel to ensure that the respiratory rate can be recorded. Treatment depends a great deal on the respiratory rate, so the accurate counting of the rate and the recording on the chart is considered to be a measure of quality. The rest of this analysis will look at how well the objectives in the DIP have been met.

◆ Objective: Two workshops about the technical norms and communication strategies in AR1 for 53 health care workers, 36 in Yacuiba and 17 in Villa Montes. Figure 14 shows the results.

FIGURE 14

HCW TRAINING IN AR1 NORMS

DISTRICT	# OF WORKSHOPS			# OF PARTICIPANTS		
	PROG.	EXEC.	%	PROG.	PART.	%
VILLA MONTES	2	2	100	34	34	100
YACUIBA	2	2	100	72	72	100

The two workshops have been held, and 100% of the program participants have received the training.

◆ Objective: Two rounds of supervision for the 53 health care workers in Yacuiba and Villa Montes. Figure 15 shows the results of this supervision.

FIGURE 15

<u>SUPERVISION OF HCW'S IN AR1</u>						
DISTRICT	# OF SUPERVISIONS			# OF PARTICIPANTS		
	PROG.	EXEC.	%	PROG.	PART.	%
VILLA MONTES	2	2	100	34	30	88
YACUIBA	2	1	50	72	36	50

Villa Montes has achieved 100% of the objectives in supervision, with 88% participation of personnel. Yacuiba had only completed one round of supervision because the district health officer had requested that the project wait until winter to complete the second round. This is just starting, and the incidence of AR1 generally rises in the wintertime. The district health officer feels that supervision done at the time the program is most needed will have the best effect.

◆ Objective: One workshop about the signs of pneumonia and the management of "resfriados" for 70 promoters, 50 in Yacuiba and 20 in Villa Montes. Figure 16 shows that this objective has been over-achieved -- one workshop has been held in each district, and the response of the promoters has been quite gratifying. In Yacuiba, a significantly higher percentage of promoters arrived for the training than was expected.

FIGURE 16

<u>TRAINING OF PROMOTERS IN AR1</u>						
DISTRICT	# OF WORKSHOPS			# OF PARTICIPANTS		
	PROG.	EXEC.	%	PROG.	PART.	%
VILLA MONTES	1	1	100	20	19	95
YACUIBA	1	1	100	50	83	166

This round of training was designed simply to assist the promoters to provide support of treatment in the home with aspirin, syrups and teas (described above) to keep the child hydrated, and to recognize any pneumonia and refer to another level of health care worker.

◆ Objective: Train promoters in dispersed rural areas in the management of cotrimoxazole in treatment of pneumonia. No specific quantifiable number of promoters was stated in the DIP because it depended on identifying already-trained promoters in rural areas who were willing to do this. A total of 15 were trained, three in Villa Montes and 12 in Yacuiba.

◆ Objective: One round of supervision for 70 promoters, 50 in Yacuiba and 20 in Villa Montes. Figure 17 shows the results of this.

FIGURE 17

<u>SUPERVISION OF PROMOTERS IN ARI</u>							
<u>DISTRICT</u>	<u># OF SUPERVISIONS</u>			<u># OF PARTICIPANTS</u>			
	<u>PROG.</u>	<u>EXEC.</u>	<u>%</u>	<u>PROG.</u>	<u>PART.</u>	<u>%</u>	
VILLA MONTES	1	1	100	20	17	85	
YACUIBA	1	1	100	50	77	154	

Supervision has occurred for all promoters, but participation in Yacuiba has been much higher than expected. This reflects the higher number of promoters who were trained. World Vision, another NGO active in health in the Yacuiba area, sent a number of their promoters to the training, and has also agreed to participate in supervision. In addition, given the role curanderos play in treating ARI, the project held one training program for eight curanderos in Villa Montes to assist them in recognition of pneumonia and referral to health care workers. No specific objective was outlined in the DIP for this.

As in DDC, the initial investigation also produced a social marketing plan to educate people about ARI. This includes production of flyers and posters, mobilization house-to-house, education of community members and groups, education of rural students, production of radio and TV spots, raffles and evaluation of impact. Because ARI was the second program to undergo this

process after DDC, they have only had time to complete the cycle in Villa Montes. Many of the activities in Yacuiba in AR1 will take place after this MTE. Figure 18 shows the results of the implementation of this marketing plan.

FIGURE 18

ACTIVITIES IN THE SOCIAL MARKETING PLAN FOR AR1

A C T I V I T I E S	R E S U L T S	
	YACUIBA	VILLA MONTES
(a) Production of flyers/posters	Done/Distribution in process	Done/Distributed
(b) Mobilization house-to-house		2040
(c) Education of community groups	Pending May and June	386
(d) Education to rural students	Pending June	
(e) Production of TV spots	4	4
(f) Diffusion of radio and TV spots	Done	Done
(g) Raffles		166
(h) Evaluation of impact	Pending	1

◆ Objective: Fifty percent of the mothers will correctly describe signs of pneumonia. The baseline survey showed that 31% of mothers could recognize one or more signs of pneumonia, and one month after the implementation of the marketing plan described above, 71% of mothers could correctly identify one or more signs of pneumonia. This study was done only in Villa Montes, the six-month study will be done within the appropriate time period. Since many of the activities in the marketing plan in Yacuiba are still pending, there's no opportunity to evaluate that district. Clearly, however, the initial results in Villa Montes are promising and show a high degree of recognition of pneumonia on the part of mothers.

◆ Objective: Eighty percent of mothers will seek professional assistance in cases of pneumonia. This includes any health care worker trained in utilization of antibiotics. Figure 19 shows the results of coverage of estimated pneumonias in the project zones.

FIGURE 19

ESTIMATED COVERAGE OF PNFJMONIAS BY HEALTH SERVICES

DISTRICT	C O V E R A G E		
	INITIAL 1990	BASE 1993	MID-TERM 1995
VILLA MONTES	42.7%	94.0%	57.0%
YACUIBA	15.3%	69.2%	60.0%

This data is taken from the health information system and is based on an estimate that 15% of the children under the age of five will have pneumonias requiring treatment during the course of the year. Both in Villa Montes and Yacuiba, there appears to have been a dramatic rise in coverage for pneumonia between 1990 and 1993, and a drop-off between 1993 and the MTE in 1995. In actual fact, this represents more accurate diagnosis of pneumonia and recording of this diagnosis appropriately. At the final evaluation of CS-V in 1993, I expressed concern that the very high coverage rates for pneumonia were an artifact of over-treatment of antibiotics and recording of probable URIs as LRIs. The investigation done at the start of this CS project confirmed that, and a lot of effort was put into training health care workers to make the appropriate distinction between URI and LRI, and to only record treatment of pneumonia where there is a true lower respiratory tract infection. I believe the data presented for the mid-term is more accurate for estimated coverage of pneumonia, and does show a steady and significant rise since the baseline in 1990. Since the marketing plan has not been fully implemented, we can expect further rises in coverage of pneumonia by the final evaluation next year.

◆ Objective: Eighty percent of cases of pneumonia presenting for treatment in the health services will be treated with antibiotics according to the Secretary of Health norms. Figure 13 had shown surprisingly low compliance with treatment norms for AR1 by both physicians and auxiliaries. Figure 20 presents the results of

the training program and shows dramatic improvement in the treatment of physicians and auxiliaries according to the norms. They are better at recording the physical examination, including respiratory rates, and show marked improvement in the accurate diagnosis and treatment according to the norms.

FIGURE 20

MANAGEMENT OF PNEUMONIAS BY HCW'S

ACTIVITY	VILLA MONTES		YACUIBA	
	BASE	ACTUAL	BASE	ACTUAL
Rx according to norms	5%	87%	35%	90%
Correct PE	20%	87%	35%	90%
Correct Dx	67%	87%	35%	90%

As in DDC, the medical audit has now been institutionalized as an annual evaluation in the districts of Villa Montes and Yacuiba, and it is hoped that a regular review of the medical records of a random number of cases will ensure a high level of compliance with norms for the AR1 program. The results reported above reflect the outcomes of a medical audit completed six months after the initial training.

(c) Epidemiologic Surveillance. The final evaluation of CS-V showed the need for improved epidemiologic surveillance. This has also been emphasized by the periodic outbreaks of cholera in the Chaco that require immediate notification to prevent further spread of the disease. The original DIP set as the objectives to have one workshop in epidemiologic surveillance for health personnel of the district, one workshop in epidemiologic surveillance for health promoters, one round of supervision for all health care workers in epidemiologic surveillance, and four annual meetings for analysis and planning of the data collected through this surveillance system.

After the initial meetings with district health personnel in Villa Montes and Yacuiba, it was decided to modify the objectives because an epidemiologic surveillance system was really not effectively in place. At the first planning and analysis meeting, Esperanza and Secretary of Health officials developed a surveillance system that had three levels: (1) simplified level repre-

sents the volunteer health promoters; (2) regular surveillance in all health posts and health centers through the monthly health information system; (3) specialized sentinel centers in high-risk areas, for example, in the hot zones for cholera, or where malaria is common, will send in regular reports on the specific diseases, including significant negatives. Therefore, the objectives were modified as follows:

◆ Objective: One epidemiologic surveillance system will be established in each district with three levels of notification -- simplified, regular and specialized.

This has been achieved and information is flowing. However, Esperanca staff indicate that a lot more training needs to occur at the district and even regional level on what to do with the information.

◆ Objective: One workshop about notification for promoters responsible at the simplified level.

This has been completed for 50 promoters in Yacuiba and 20 in Villa Montes.

◆ Objective: One workshop about notification for the auxiliaries responsible at the health post level for regular notification.

This has been completed for 13 health posts in Yacuiba and six in Villa Montes.

◆ Objective: One workshop about notification for the specialized centers.

This has been completed for four health centers in Yacuiba and nine in Villa Montes. Both Yacuiba and Villa Montes have cholera, although Yacuiba is considered the hot zone, given its frontier nature. Villa Montes has much more malaria and that's why a larger number of specialized sentinel surveillance centers are included there.

◆ Objective: One annual round of supervision in epidemiologic surveillance for each of the levels in the system.

In Yacuiba, this has not yet been done, since the system has recently been established there. In Villa Montes, it's only been done at the hospital level and not at the health post and health center level.

◆ Objective: Four annual meetings on analysis and planning for epidemiologic surveillance.

Two have been completed so far. The first was to plan the system, the second has been to analyze the results. This has shown

the need to assist MOH personnel in responding to the information that flows through this. For example, there was special notification of a case of flaccid paralysis in a two year-old child. Since polio has been declared eradicated from the Western Hemisphere, any case of flaccid paralysis has to be investigated immediately, and two feces samples collected on different days to be sent for polio virus isolation and typing. Esperanca staff report that this notification created a state of emergency within the local health system, but nobody seemed to be able to react appropriately. It was not clear if two samples were ever collected, and the results were never obtained. Eventually, people from the central MOH in La Paz came and visited and diagnosed the case as one of Guillain-Barre because, apparently, the child began to improve. Had this been a true case of paralytic polio, there would have been no improvement at all in the child. Unfortunately, the staff report the child is lost to follow-up and moved to another area, and so there's no opportunity to fully diagnosis this case. This illustrates the fact that information will flow, but the use of the information is the most critical aspect of epidemiologic surveillance. Esperanca staff needs to work closely with Regional Secretary of Health people and develop a workshop on epidemiologic investigation. Perhaps someone from CDC or a Bolivian epidemiologist trained in CDC methodology could be available for such a workshop.

(d) EPI- The CS-II and CS-V projects focused a tremendous amount of attention on the EPI program and all aspects of its implementation, supervision and evaluation. Project staff felt that in the zones of Villa Montes and Yacuiba MOH staff was entirely capable of managing EPI without any additional supports from the CS staff, except for logistics assistance during vaccination campaigns. The DIP has specified specific objectives for EPI that they anticipate will be maintained.

◆ Objective: Ninety percent coverage for polio 3, DPT1 and measles in children 12-23 months of age by the end of the first year of the project, and maintain this coverage throughout the project.

Since the coverage figures for DPT and polio are almost identical because they are given at the same time, the objective is written to follow DPT1 as a surrogate for polio 1, and polio 3 as a surrogate for DPT3, and the two of them are set at identical

levels to make sure that there's no drop-off in coverage between two and six months of age.

◆ Objective: Sixty percent coverage of TT2 in women 15-44 years of age in all districts.

Figure 21 shows the results of EPI efforts in Villa Montes and Yacuiba. Clearly, there was significant rise between 1990 and 1993 in both zones as a result of CS-V efforts. There has been some drop-off in coverage in Villa Montes once project staff no longer worked actively in EPI programs and coverage does not reach the 90% level, as is stated in the objective. Yacuiba has been able to maintain their EPI coverage at about the same level as '93. There has been no significant change, and it still remains below the 90% level established in the objective.

FIGURE 21

EPI COVERAGE

DISTRICT	VACCINE	C O V E R A G E		
		Initial 1990	Base 1993	Mid-term 1995
VILLA MONTES	BCG	48.0%	127.0%	95.2%
	POLIO 3	72.0%	102.0%	84.1%
	DPT3	72.0%	101.6%	83.6%
	MEASLES	61.6%	90.0%	76.6%
	TT2	77.5%	92.0%	36.0%
YACUIBA	BCG	44.9%	92.2%	91.0%
	POLIO 3	60.4%	74.4%	76.0%
	DPT3	53.3%	74.2%	74.0%
	MEASLES	51.3%	74.0%	79.9%
	TT2	83.8%	96.0%	50.0%

TT2 in women of child-bearing age has shown a significant drop-off. Maternal health is a priority of this new project, but has not yet been addressed, given the emphasis on DDC and AR1 in the first 18 months. The Esperanca staff are just beginning the social marketing investigation of maternal care, and they have targeted the two doses of tetanus toxoid as a major indicator for success of their maternal care project. They anticipate these levels will rise by the end-of-project evaluation.

Overall, the immunization coverage levels are reasonable, given that no additional project supports have been provided. However, they do not approach the 90% level established in the objective, and considered important for maintaining overall "herd immunity." Project staff need to identify ways in which the district health office staff can be motivated and supported to improve coverage.

(e) Growth Monitoring. As in EPI, the project withdrew any specific support for growth monitoring, feeling this had been essentially institutionalized into the regular health services system. However, given the importance of this to the overall success of CS strategies, the DIP continues to show growth monitoring objectives.

◆ Objective: Ninety percent of children less than two are enrolled in the growth monitoring program.

Figure 22 shows the results of this program.

FIGURE 22

COVERAGE OF GROWTH MONITORING SERVICES

DISTRICT	C O V E R A G E		
	Initial 1990	Base 1993	Mid-term 1995
VILLA MONTES	31.0%	92.9%	85.7%
YACUIBA	28.0%	80.6%	100.0%

From an initial base of approximately 30% in both zones, coverage increased to 93% in Villa Montes and 81% in Yacuiba in 1993. By the time of this MTE, there is still a very high level of enrollment in growth monitoring of children under two -- 86% in Villa Montes and 100% in Yacuiba. Thus, it looks like this objective has been achieved.

◆ Objective: Seventy percent of children less than two years will have been weighed during the past four months.

The project health information system is not able to capture this information, and this is something that can only be measured by the household survey that will be completed as part of the final evaluation in 1996. In the final evaluation of CS-V in 1993, the

project was able to maintain an average of three weights per child per year. With this level, there was a significant decline in the rates of inadequate growth and also malnutrition. Although MOH norms require six weighings per year in children under two, or an average of every two months, it was clear that the Secretary of Health personnel could not maintain that level. In the final evaluation in 1993, I suggested the project establish an objective for maintaining an average of three weights per year.

◆ Objective: An average of three weights per year for children under two in the growth monitoring program.

Figure 23 shows that this has been maintained, with only minimal amounts of project support. Thus, this objective has been achieved.

FIGURE 23

AVERAGE NUMBER OF WEIGHINGS PER YEAR IN CHILDREN UNDER TWO

DISTRICT	AVERAGE NUMBER OF WEIGHINGS PER YEAR					
	Initial 1990		Base 1993		Mid-term 1995	
	<u>Chldn</u>	<u>#</u>	<u>Chldn</u>	<u>#</u>	<u>Chldn</u>	<u>#</u>
VILLA MONTES	254	1.2	814	2.2	1063	3.0
YACUIBA			2166	3.0	3114	2.8

It appears as if growth monitoring has been a very sustainable program by Secretary of Health personnel, even after project supports have been withdrawn.

(f) Nutritional Improvement. The DIP provides estimates of malnutrition, as well as for the rates of inadequate growth of children. However, the nutrition objectives are all objectives that can only be measured through household survey. These include that 20% of infants receive exclusive breastfeeding to six months, 50% of women begin breastfeeding within the first eight hours of life, 90% of mothers have introduced animal and vegetable proteins, foods with Vitamin A, oils and iodized salt by 9-11 months, and 90% of mothers continue breastfeeding until 13 months.

Nonetheless, the final evaluation of CS-V had highlighted the fact that this program could show significant improvements in the rates of malnutrition and inadequate growth, even though no specific program had been targeted towards this. We suggested that they continue to follow these indicators and to do an operations research investigation to try and identify the factors responsible for this improvement.

Figure 24 shows the rates for inadequate growth in children under the age of two, as measured through the growth monitoring health information system.

FIGURE 24

RATES OF INADEQUATE GROWTH IN CHILDREN UNDER TWO

DISTRICT	INADEQUATE GROWTH		
	Initial 1990	Base 1993	Mid-term 1995
VILLA MONTES	21.7%	15.8%	13.8%
YACUIBA	25.0%	15.6%	16.0%

As you can see, both in Villa Montes and Yacuiba, there's been good declines in the inadequate rate of growth since the initial data were collected in 1990. There has been modest decline in Villa Montes from 1993 to 1995, with no decline in Yacuiba in that same time period. Thus, the project continues to be able to show significant improvement in the rates of inadequate growth.

Likewise, the rates of malnutrition in children under the age of two had declined during the course of CS-V. Figure 25 shows current rates of malnutrition as reported through the growth monitoring component of the health information system.

FIGURE 25

RATES OF MALNUTRITION IN CHILDREN UNDER TWO

DISTRICT	PREVALENCE OF MALNUTRITION		
	Initial 1990	Base 1993	Mid-term 1995
VILLA MONTES	39.0%	23.9%	23.5%
YACUIBA	37.5%	26.7%	35.8%

There have been no further improvements in the rates of malnutrition in the last 18 months. In fact, in Yacuiba, there's been a rise back to almost baseline levels. Project staff had spent a considerable amount of time investigating the multiple variables involved in malnutrition to try and identify which project interventions seemed to have made a difference during CS-V. They report they were unable to identify any particular factors that could have led to the nutritional improvements seen between 1990 and 1993. In Villa Montes, that level of malnutrition has stayed stable; therefore, the '93 results are probably real, and do show a significant decline from data in 1990. However, in Yacuiba, the rates of malnutrition found in 1995 are just about back to the level in 1990, and suggests that the rates of malnutrition reported in 1993 were probably artificially low and may represent a reporting artifact. Although there has been a continuing drought for almost five years in the Chaco, there's not been any significant change in the food supply in the last 18 months that could produce such a dramatic rise in malnutrition.

(g) Maternal Care. This current CS project has highlighted maternal care as a priority, but has not yet completed the initial social marketing investigation that would assist them in the design of interventions. Maternal care was also a priority in the CS-V project, and a lot of training of health care workers and community promoters, as well as the production of radio spots and programs to promote early use of pre-natal services and delivery in a safe environment have continued.

◆ Objective: By end of year one, 60% of pregnant women enrolled in pre-natal services. This would increase to 70% by year two, and 80% by end-of-project.

Figure 26 shows current results.

FIGURE 26

COVERAGE OF PREGNANT WOMEN BY PRE-NATAL SERVICES

DISTRICT	% ENROLLED		
	Initial 1990	Base 1993	Mid-term 1995
VILLA MONTES	57.0%	64.9%	80.0%
YACUIBA	20.0%	53.4%	53.6%

Coverage of pregnant women has achieved the end-of-project status in Villa Montes by mid-term, but is below the level established for the end of year one in Yacuiba. This probably reflects the fact that initial coverage in Villa Montes in 1990 was much higher than Yacuiba. However, Yacuiba has shown no growth in coverage of pre-natal services from 1993 to 1995. Overall, it can be said that the project has met its objectives for the first year-and-a-half of the project for the number of pregnant women enrolled in pre-natal services. It is hoped that with the additional emphasis on maternal care in the last half of the project, that the end-of-project levels will achieve the 80% mark in both project zones.

◆ Objective: Forty percent of pregnant women will have greater than three pre-natal visits by the end of year one, 50% by end of year two, and 60% by end-of-project.

Figure 27 shows the results of this analysis.

FIGURE 27

COVERAGE OF WOMEN WITH MORE THAN THREE PRE-NATAL VISITS

DISTRICT	% OF PREGNANT WOMEN		
	Initial 1990	Base 1993	Mid-term 1995
VILLA MONTES	24.7%	30.0%	36.1%
YACUIBA	--	16.6%	18.3%

In Villa Montes, the data shows steady and significant improvement in the number of women who obtained four pre-natal visits prior to delivery and approaches the 40% level for the mid-term. However, the percentage of women receiving greater than three pre-natal visits in Yacuiba is abysmally low, and I doubt they will ever be able to achieve the project objective in this area.

The MOH norm calls for four pre-natal visits for all pregnant women. However, in an area like the Chaco, this is probably not an attainable objective, given the dispersion of the rural population and the long distances that the people have to travel. It may be more appropriate to establish an objective for two pre-natal visits, one before five months to identify high risks early on and refer, and one before the delivery to talk about the delivery and identify any additional high-risk patients for referral prior to delivery. The project may wish to follow the indicator of two or more visits (as opposed to four or more visits) and set an objective that 70% of the first pre-natal visits will be prior to the fifth month.

♦ Objective: Fifty percent of deliveries will be attended by qualified personnel by the end of the first year. This will increase to 60% by the end of year two, and 70% by the end of year three.

Figure 28 shows the results of this analysis.

FIGURE 28

DELIVERIES ACCORDING TO TYPE OF TRAINED PERSONNEL

DISTRICT	C O V E R A G E					
	Initial 1990		Base 1993		Mid-term 1995	
	<u>HCW'S</u>	<u>TBA'S</u>	<u>HCW'S</u>	<u>TBA'S</u>	<u>HCW'S</u>	<u>TBA'S</u>
VILLA MONTES	36.0%	--	60.0%	12.0%	72.0%	16.0%
YACUIBA	16.0%	5.0%	44.0%	5.5%	48.0%	4.5%

TOTAL DELIVERIES ATTENDED BY TRAINED PERSONNEL

DISTRICT	C O V E R A G E		
	Initial 1990	Base 1993	Mid-term 1995
VILLA MONTES	36.0%	72.0%	88.0%
YACUIBA	21.0%	49.5%	52.5%

The training of TBAs is assuming increasing importance in the dispersed rural areas of the Chaco. This program, combined with increased social marketing efforts, have produced significant improvements in percent of deliveries attended by trained personnel.

Overall, the Esperanca CS project appears to be on track for achieving most of the program objectives set for maternal care. Since the emphasis on maternal care will not occur until the second half of the project, there's every anticipation that the main objectives will be achieved. However, as noted above, I doubt they will ever achieve the objective of having the majority of women with more than three pre-natal visits, and adjustments in this objective should be made.

(h) Prevention of Vitamin A Deficiency. The project has approached the prevention of Vitamin A deficiency through two parallel tracts. One is following the MOH norms of providing Vitamin A supplementation -- 100,000 units once only between the ages of 9 and 11 months; and between the ages of one and five years, 200,000 international units every six months. The second approach is through a community garden project, which has proved highly successful in stimulating families to develop their own gardens growing vegetables rich in Vitamin A. The CS-V project had a parallel grant through VITAL that funded their Vitamin A community garden project. Funds ran out on that program the year after the CS project ended. This has been picked up as a Peace Corps project, and several Peace Corps volunteers in Villa Montes and Yacuiba are continuing to promote this through mother's clubs.

◆ Objective: Eighty percent of children between the ages of one to five years will receive Vitamin A capsules two times per year during campaigns.

Figure 29 shows the results of this analysis.

FIGURE 29

ADMINISTRATION OF VITAMIN A

DISTRICT	% OF POPULATION AGED 1-5 1st DOSE	RCVG A DOSE 2nd DOSE
VILLA MONTES	60.0%	48.0%
YACUIBA	40.0%	20.0%

As in the EPI program, distribution of the initial dose is considerably easier than maintenance doses. This finding reinforces the Vitamin A home garden project, since, obviously, it is far better to provide this micronutrient through a regular diet.

B. EXPANSION PROJECT AREA - ENTRE RIOS

1. Description of Activities. The main difference between Entre Rios and the previously-existing project zones is it is 87% rural. Communities are very dispersed; for example, a community may encompass 50 kilometers and there's not a lot of population density. It's not unusual for CS staff to travel 200 kilometers a day to vaccinate and/or supervise health workers. In rainy weather, it's impossible to move, since many of the roads become impassible, and a lot of previously-dry rivers that need to be crossed become flooded. Ten percent of the population is Guarani, which are indigenous Indians to this ecosystem. Entre Rios was selected as the new project zone because the Secretary of Health requested that Esperanca move there because coverage of services was somewhat limited. The district is divided into a number of sectors, each supposed to have a health post and trained auxiliary. Approximately, a third of the sectors in the Entre Rios area do not have health auxiliaries, but the majority of them do. A number of promoters have already been trained in the area by a religious NGO called "APG (Support to the Guarani Pueblo)." This is an NGO that is comprised of a number of volunteer workers, including a physician, nurse and a number of educators. The Secretary of

Health in Tarija has started a nurse auxiliary training program based on the curriculum developed in the CS-II project. The remaining sectors that do not have an auxiliary now have people in training in Tarija, and it is hoped within the next two years, there will be a full complement of auxiliaries in the zone.

The first stage of the work involved developing a technical team within the district health office comprised of the district medical director, the district nursing director, members of APG and Esperanca staff. This technical team is managed by the district health officer. Conversations with him during this evaluation indicated that he was incredibly pleased with the way Esperanca has integrated into the district, and the fact that he does not perceive any separation at all between MOH personnel and Esperanca. They develop joint work plans, they do joint technical activities, and all their evaluations are done together. He feels this is the single most important element for successful implementation of the CS strategy. This technical team has completed a needs assessment, and most of the activities that will be reported here were designed as a result of the analysis of this technical team.

Most of the work has occurred within the existing structure and has involved re-training of auxiliaries and promoters already in place. As mentioned above, there is a small number of auxiliaries receiving training in Tarija to fill the vacant health posts within the next two years. At the start of the project, population coverage was based on estimations of growth from a census done over ten years ago. One of the top priorities of the project was to complete a census in each community, and after a year-and-a-half of work through auxiliaries, promoters and community meetings, they have now completed a more accurate census. This has increased the population coverage of the area by 5% to almost 18,500. This has also had some impact on analyzing coverage data, because in some of the data that follow, it appears that the percent of the population covered has gone down; when in fact, what has really increased is the denominator; i.e., a larger number of people in the population than originally reported.

One of the main achievements that project staff cite is the development of a simplified information system that allows direct feedback to the communities. This is a simple sheet of indicators and data that serves as a focus for regular community meetings to review progress, to stimulate activities and design interventions. Staff feels this has already produced enormous changes at the

community level and has stimulated a much wider community involvement. Community development has been greatly stimulated by the Law for Popular Participation. This went into effect last year, and essentially, mandated that each level of government out to the community level will form civic committees. Where before, government funds had been channeled through central ministries, funding now occurs as block grants to local communities to be managed by these civic committees. Because of this, many communities have taken more active interest in their activities, especially in the area of health, and this health information system data feedback has proven enormously helpful for the civic committees in planning their approaches.

Because the Entre Rios district is a new project zone, the priorities established involve traditional CS activities in EPI, DDC, ARI, growth monitoring, nutrition, Vitamin A and maternal health. Since the district is active in all of these program areas, no attempt was made to prioritize between them in these initial efforts.

2. Comparison of Accomplishments with Objectives.

(a) Training and Supervision of Health Care Workers.

◆ Objective:

- Develop and implement workshops for physicians, nurses and nurse auxiliaries in each of the key CS areas.
- Develop and implement workshops for community health promoters in each of the key CS areas.
- Complete supervision to all health care workers, both within the health system and at the community level in the key CS areas.

Figure 30 is a compilation of all the activities in training and supervision completed in the key CS program areas. They are reported here as year one, and then six months of year two. Because all the programming occurs on a yearly basis, staff did not feel they could accurately combine 18 months; to do so, would create an inaccurate picture of the achievements.

FIGURE 30

**TRAINING AND SUPERVISION OF HCW'S
IN KEY CHILD SURVIVAL ACTIVITIES**

PROGRAM & PERSONNEL		YEAR 1				6 MONTHS			
EPI		Train- ing	%	Super- vision	%	Train- ing	%	Super- vision	%
1	MD	0	0	0	0	0	0	0	0
4	RN	4	100	3	75	3	75	0	0
14	Aux's	11	79	7	50	8	57	0	0
60	Promoters	69	115	24	40	0	0	0	0

PROGRAM & PERSONNEL		YEAR 1				6 MONTHS			
MATERNAL HEALTH		Train- ing	%	Super- vision	%	Train- ing	%	Super- vision	%
1	MD	1	100	0	0	1	100	0	0
4	RN	2	50	1	25	3	75	0	0
12	Aux's	11	92	11	92	8	67	3	25
96	Promoters	61	76	0	0	0	0	0	0

PROGRAM & PERSONNEL		YEAR 1				6 MONTHS			
DDC		Train- ing	%	Super- vision	%	Train- ing	%	Super- vision	%
1	MD	0	0	0	0	0	0	0	0
4	RN	2	50	1	25	3	75	3	75
14	Aux's	8	57	11	79	10	71	9	64
96	Promoters	69	72	50	52	51	53	45	47

PROGRAM & PERSONNEL		YEAR 1				6 MONTHS			
		Train- ing	%	Super- vision	%	Train- ing	%	Super- vision	%
AR1									
1	MD	1	100	0	0	0	0	0	0
4	R.N	2	50	1	25	0	0	0	0
12	Aux's	11	92	8	67	0	0	0	0
80	Promoters	61	76	50	63	0	0	0	0

PROGRAM & PERSONNEL		YEAR 1				6 MONTHS			
		Train- ing	%	Super- vision	%	Train- ing	%	Super- vision	%
GROWTH MONITORING1									
1	MD	1	100	0	0	1	100	0	0
4	RN	4	100	3	75	3	75	2	50
12	Aux's	11	92	10	83	10	83	3	25

PROGRAM & PERSONNEL		YEAR 1				6 MONTHS			
		Train- ing	%	Super- vision	%	Train- ing	%	Super- vision	%
NUTRITION									
1	MD	0	0	0	0	0	0	0	0
4	RN	2	50	1	25	3	75	3	75
12	Aux's	8	67	11	92	10	83	9	75
60	Promoters	69	115	50	83	51	85	45	75

PROGRAM & PERSONNEL		YEAR 1				6 MONTHS			
		Train- ing	%	Super- vision	%	Train- ing	%	Super- vision	%
VITAMIN A									
1	MD	1	100	0	0	1	100	0	0
4	RN	4	100	3	75	3	75	2	50
12	Aux's	11	92	10	83	10	83	3	25

It's clear that during the first year of the project, staff were able to train a significant number of nurses, auxiliaries and health promoters. These were people already in place; i.e., a re-education of each category of personnel in the main CS activities. For nurses and nurse auxiliaries, the workshops were provided in Entre Rios. For the health promoters, workshops were given in each CS program in nine different zones, and the promoters had to travel from their villages to the town in which the workshop was given. Each workshop lasted one day and focused only on specific CS programs. There was a round of workshops every two months for each category of personnel. This strategy has produced a significant increase in the number of active promoters in the area.

Supervision is the responsibility of a team effort -- one staff person from Esperanca and one staff person from the district. This has worked reasonably well for the auxiliaries who, in general, received a high level of supervision; but it didn't work at all for the promoters. Entre Rios, as mentioned above, is an area with a very dispersed population, and it is very difficult for this team to get out and visit all the health promoters. Clearly, another strategy has to be found -- perhaps working together with the NGO APG. Once the community health worker receives their initial continuing education, then follow-up supervision could be the responsibility of that NGO. Experience in Yacuiba and Villa Montes has shown that the more supports are provided to promoters, the better they function. It's clear that current strategies for supervision are not going to provide those supports, and the local NGO may be able to assist in these efforts. The project should initiate discussions with APG about this. Both training and supervision used the programs, materials and supervision guides developed in Villa Montes and Yacuiba, and these were well accepted by both the technical team and the participants.

(b) Health Information System.

◆ Objective: To ensure that the nurse auxiliaries and community health workers deliver their reports monthly.

Figure 31 shows the results for both nurse auxiliaries and health promoters.

FIGURE 31

REPORTING ACTIVITY BY NURSE AUXILIARIES
AND COMMUNITY HEALTH PROMOTERS - ENTRE RIOS

REPORTS FROM AUXILIARIES	IA--	INITIAL 3	# YEAR 2	# 6 MONTHS 3
Reports Anticipated	129		132	66
Reports Received	121	94	127	96
PROMOTERS				
Active Promoters	21	100	96	357
				93
				97

The project uses reporting as a measure of activity. As can be seen, the nurse auxiliaries have continued to function at a very high rate within the information system. In terms of community health promoters, at the start of the project, the district only registered 21 active promoters. Esperanca staff, in the first number of months of the project, visited each small community that previously had a trained promoter in place, and found that many of them were continuing to provide sporadic activities but not sending reports. The project was able to stimulate them to actively participate in the training; and as the data shows, the functional status of promoters has increased 350%. The trick will now be to maintain them in actual functional status, given the problems encountered in supervision described previously. For promoters to be registered as "active," they do not have to send in monthly reports, but just report at regular intervals to show they are providing some activities. Many of these reports can be obtained during the supervision visits.

Thus, in summary, we can say the initial half of the project has seen significant progress in training all categories of health care workers from district hospital staff to community health promoters, and in stimulating nurse auxiliaries and promoters to remain active and send in regular reports. Supervision seems to be a major problem for promoters, but is going well at the health posts and nurse auxiliary level. The project has dramatically increased by 357% the number of active promoters. The need to

improve supervision so that they maintain their functional status is very real and it is suggested that the project develop a joint supervision effort with a local NGO (APG) that does train and provide support to other types of promoters in the project region.

(c) EPI.

◆ Objective:

- Vaccination coverage at 90% level for DPT1, polio 3 and measles in children less than one year.

- Increase the coverage for TT2 in women of child-bearing age to 60%.

Figure 32 shows the results of this analysis.

FIGURE 32

VACCINE	<u>IMMUNIZATION COVERAGE</u>					
	COVERAGE OF CHILDREN UNDER ONE YEAR					
	INITIAL		YEAR 1		6 MONTHS	
	#	%	#	%	#	%
DPT1	576	102	518	87	308	51
Polio 3	518	91	386	64	473	79
Measles	501	89	419	70	474	79

<u>COVERAGE OF WOMEN OF CHILD-BEARING AGE (15-45)</u>						
	#	%	#	%	#	%
TT2	1051	26	1404	32	1895	44

Data is reported by project year. The MTE occurred after six months of the second year of the project; therefore, reporting only six months of activity. Theoretically, in order to achieve 100% coverage in one year, there should be a minimum of 50% coverage at six months. Therefore, anything above 50% indicates good progress towards 100% coverage.

The first project year for the EPI program was not a good one, showing a drop-off in coverage for both DPT1 and polio 3 from the baseline to the end of year one evaluation. There also is a

significant drop-off between the first and third doses, indicating that some children were lost to follow-up. Project staff attribute these declines in coverage to several factors:

(1) Accurate population census that increased the denominator for coverage, and thus, by its very nature, would tend to decrease the percent covered;

(2) heavy rains that prevented travel and delivery of EPI supplies and vaccinations to health posts;

(3) personnel changes within the district.

Recognizing at the end of year one that there was a considerable decline in coverage, the technical team focused energy on improving immunization coverage, and the next six months has shown considerable increases. Each of the vaccinations covered in EPI are showing greater than 50% coverage in the first six-month period, and should achieve coverage at the 90% level by the end of year two. A better response has been seen in two doses of TT for women aged 15-45. The baseline coverage was only 26%, and this increased to 32% by the end of year one, and will probably over-achieve the 60% objective by the end of year two. The reason for this is a change in strategy. Rather than attempting to immunize women when they were pregnant, the district technical team decided to immunize a mother every time her child was immunized with DPT and polio. It is anticipated that this strategy will be a viable one for increasing the coverage of women for TT2 and should be adopted by Villa Montes and Yacuiba, both of which have shown a drop-off in coverage of TT2 for women of child-bearing age.

(d) DDC.

♦ Objective: Seventy percent of anticipated episodes of diarrhea with dehydration in children less than five years will be treated by the health services.

Figure 33 shows the results of this analysis.

FIGURE 33
COVERAGE OF ESTIMATED CASES OF DIARRHEA
BY THE HEALTH SERVICES

CAPTURE OF EPISODES OF DIARRHEA					
INITIAL		YEAR ONE		SIX MONTHS	
#	%	#	%	#	%
917	32	845	33	366	15

The district already had good coverage for treatment of estimated episodes of diarrhea, and this has been maintained throughout the first 18 months of project activities. The definition of this objective has been discussed previously in Villa Montes and Yacuiba. I suggest this objective be changed to state that 35% of all episodes of diarrhea will be treated through the health services. Combining this with 70% coverage of some form of ORT by mothers in a previous episode of diarrhea will give close to 100% coverage for all types of diarrhea.

(e) ARI.

◆ Objective:

- Health services will treat 50% of the anticipated pneumonias.

- Assure that 80% of the cases of pneumonia that present to the health service will be treated appropriately with antibiotics according to the norms.

Figure 34 shows the results of this analysis.

FIGURE 34

**COVERAGE AND TREATMENT OF
ANTICIPATED CASES OF PNEUMONIA**

CASES ATTENDED	INITIAL		YEAR 1		6 MONTHS	
	#	%	#	%	#	%
% of Estimated Pneumonias Captured	94	26	48	10	12	3
% of Pneumonias Treated Appropriately	94	51	48	100	12	100

Between the start-up of project in the end of year one, there was a dramatic drop-off in the coverage of pneumonia due to the training described above and a change in classification. A number of health workers were treating ARI with antibiotics and classifying it as pneumonia. Even by doing this, coverage was still very low at baseline, and has gotten even lower once the appropriate classification has been made. Experience in the first six months is not very good, indicating that coverage for the ARI with pneumonia program is not going very well. This is most likely due

to the dispersed rural nature of the communities and the difficulties that the campesino has in getting to the health services. Villa Montes and Yacuiba have begun experimenting with training promoters in the delivery of antibiotics to ARI with pneumonia, and it appears as if Entre Rios would benefit from that experience. They should explore the possibility of training promoters to provide antibiotics in the last half of this project.

In terms of treatment according to the norms established by the MOH for antibiotics, only half of the original pneumonia cases were treated according to the norms because they, in fact, were not pneumonia, but ARI. Once the training occurred and the reclassification took place, then the staff reports that 100% of the cases presenting for treatment were treated appropriately. Thus, the training seems to have had an affect providing appropriate treatment, even though overall coverage of estimated pneumonias is very low.

(f) Nutrition and Growth Monitoring.

◆ Objective:

- Register 90% of children less than two years in the growth monitoring program.
- Monitor the average weights per year, the rate of inadequate growth, and the prevalence of malnutrition in children less than two years.

Figure 35 shows the results of this analysis.

FIGURE 35
COVERAGE FOR GROWTH MONITORING AND
ASSESSMENT OF NUTRITIONAL STATUS

WEIGHINGS	# INITIAL %	# YEAR 1 %	# 6 MONTHS %
Children under two covered by the program	428 41	479 46	639 54
Average weights per child	3.2 --	3.0 --	2.3 --
Inadequate rate of growth	198 24	194 19	203 24
Prevalence of malnutrition	-- 33	-- 29	-- 28

At the beginning of the project, many of the auxiliaries did not have portable scales. They were able to weigh children who presented to the health post, but since much of their work is done in home visits and community meetings, they could not take advantage of these outreach programs to enroll children in the growth monitoring program. The project has provided salter scales to each auxiliary, and they are now weighing children during each community visit and during vaccination campaigns. Because of this, the number of children enrolled in the growth monitoring program has increased fairly significantly from 41% at the initiation of the project to 54% at the MTE. There's still a long way to go, however, to reach the 90% enrollment figure.

At the final evaluation of CS-V, we suggested that the project monitor the average weighing per child per year as an indicator with the objective to maintain this around three. This level, as discussed previously, was attainable in Villa Montes and Yacuiba, and was sufficient to show declines in the rates of inadequate growth and malnutrition. Figure 35 shows a significant decline in the average number of weighings per child, as the number of children has increased. Staff needs to focus attention on health care workers and appropriate follow-up of children registered. They need to reinforce the idea that the objective is not just to enroll children, but to ensure that they get follow-up throughout the year and get at least three weighings. It's fairly common for project staff to focus on enrolling new children and not necessarily to focus on follow-up weighings. The rate of inadequate growth seemed to go down after year one, but has increased in the first six months of year two. The rate of malnutrition has shown a small but steady decline. It's not clear that either of these are related to project activities. A feeding program has been started through the district health office that's paid for by the Chagas Control Program, but that's only been in effect a number of months and is not enough to make a difference in these data. There is a strong nutritional education component, especially during the community visits, and Esperanca staff thinks this will definitely make a difference. It's interesting to note that a decline in malnutrition was observed over a five-year period in Villa Montes and Yacuiba, even though there was no specific variable that could be identified that produced this. It will be interesting to follow this indicator over time and see if the results here are the same as the older project zones.

◆ Objective: Eighty percent of children between the ages of one and five years will receive two doses of Vitamin A per year.

Figure 36 shows that at the project initiation children were only receiving one dose, and a less-than-50% rate at that.

FIGURE 36
ADMINISTRATION OF VITAMIN A (1-5 YEARS)

INITIAL				ONE YEAR				SIX MONTHS			
DOSE				DOSE				DOSE			
1st	%	2nd	%	1st	%	2nd	%	1st	%	2nd	%
827	43	-	-	1325	62	-	-	1022	47	311	14

The project has been able to significantly increase the coverage of children for the first dose at the end of year one, and was able to add a second dose by the end of year two. However, it's interesting to note that as the second dose was added in year two, coverage for the first dose declined. Initial attempts were made to distribute the Vitamin A capsules during immunization campaigns. Lately, project efforts have focused on a variety of approaches to increase coverage, including fixed EPI services, maternal child health visits, growth monitoring, as well as the EPI campaign. This program component is showing good growth, but is still far below the objective established for it, and special attention will need to be directed to achieve the levels found in other project areas.

(g) Maternal Care.

◆ Objective:

- Coverage of all pregnancies for the first pre-natal visit will be 40% at end of year one, 50% year two, and 60% year three.

- Stimulate women who obtain their first pre-natal visit before the fifth month at the 30% level at end of year one, 40% year two, and 60% year three.

- Stimulate women to obtain more than three pre-natal visits at the 30% level at end of year one, 35% year two, and 40% year three.

Figure 37 shows the results of this analysis.

FIGURE 37

COVERAGE FOR PRE-NATAL CARE OF PREGNANT WOMEN

PRE-NATAL SERVICES	INITIAL		YEAR 1		6 MONTHS	
	#	%	#	%	#	%
Coverage first visit	212	30	217	24	227	25
Visit before month five	75	35	92	42	265	29
More than three visits	68	32	59	25	52	23

There was a slight drop-off in coverage for the first visit in the first year; however, it appears as if this should dramatically rise by the end of the second year. The project has been successful in stimulating women to obtain their first visit before the fifth month of their pregnancy, rising from 35% to 42% at the end of year one, and may be over 50% by the end of year two. The number of women showing more than three pre-natal visits dropped off from 32% to 25% by the end of year one, and may increase significantly by the end of year two; but it is unlikely that it will get much higher than that, given the dispersion of the population. In the previous section on maternal care in Villa Montes and Yacuiba, I discussed the fact that two pre-natal visits -- one before the fifth month and one before delivery -- would seem an appropriate objective for 60% or more of pregnant women, with 60% achieving their first visit before five months. Therefore, I suggest this objective should change so that everyone adopts a more realistic approach to pre-natal care.

◆ Objective: Ensure that the deliveries will be attended by trained personnel at the level of 30% at end of year one, 40% year two, and 60% year three.

Figure 38 shows the results of this analysis.

FIGURE 38BIRTHS ATTENDED BY TRAINED PERSONNEL

BIRTHS ATTENDED	INITIAL		YEAR $\frac{1}{2}$		6 MONTHS	
	#	%	#	%	#	%
Total	159	23	281	31	108	12
Hospital	59	8.4	45	5	38	4
Auxiliaries	57	8	100	11	39	4
Trained TBAs	43	6	136	15	31	3.4

The total percent of births attended by trained personnel increased from 23% at baseline to 31% by year one; thus, achieving the objective established for it. There appears to have been a drop-off in the first six months of year two, returning more towards the levels achieved at baseline. Project staff is aware of this, and with the advent of radio programs stimulating women to both seek pre-natal care and have the deliveries with trained personnel, they anticipate this will increase. In analyzing where the births took place, it's interesting to note that the percentage of deliveries in the hospital has declined, while the percentage of deliveries by trained auxiliaries and trained TBAs has increased. The apparent drop-off in deliveries done by TBAs in the first six months of year two is felt by project personnel to be an artifact of reporting. There frequently is a delay between doing the delivery and reporting it, and they feel the last six months of the year will see a dramatic increase in the number of deliveries by trained TBAs.

◆ Objective: Eighty percent of pregnant women receiving iron sulfate and folic acid by fifth month of pregnancy.

Figure 39 shows the results of this analysis.

FIGURE 39IRON SUPPLEMENTATION

PREGNANCIES THAT RECEIVED IRON					
INITIAL		ONE YEAR		SIX MONTHS	
<u>#</u>	<u>%</u>	<u>#</u>	<u>%</u>	<u>#</u>	<u>%</u>
66	9	89	10	189	21

At baseline, only 9% of pregnant women were receiving iron supplementation; by the end of year one, this had remained stable at 10%. Within the first six months of year two, however, with efforts put forth at all levels, 21% of women have received it, so this may well jump to 40% or 50% by end of year two. It looks like the project in Entre Rios is well on its way to achieving this objective.

In summary, the project in Entre Rios is off to an excellent start. They've achieved all their objectives in terms of workshops and training of health personnel at all levels, ranging from physicians through nurses, nurse auxiliaries and health promoters in the key CS strategies. Supervision activities are taking place according to previously-developed supervision guides and have been well received. However, a major gap exists in supervision at the community level, and this needs to be addressed. Immunization coverage dropped off a bit in the first year, due to a variety of circumstances, but has picked up again in the second year and should achieve end-of-project objectives by end of year two. Coverage for ORT and growth monitoring services, as well as pregnant women, seems to be proceeding well. Major problems are in coverage of anticipated cases of pneumonia, principally because the children cannot get to the health post due to the dispersion of the community. The project may want to pay attention to training promoters in rural areas for this activity.

C. TARIJA - CHILD SURVIVAL PROJECT HEADQUARTERS

Project headquarters for the first two CS projects was Villa Montes, with a second office established in Yacuiba. With the onset of this CS-IX project, it was decided to move project headquarters to Entre Rios and maintain much smaller offices in Villa Montes and Yacuiba for the continuing activities there. The project functioned for a year in Entre Rios as the focus of new activities. However, a number of limitations became apparent:

1. Transportation and communication was very difficult from the isolated O'Connor province.

2. A number of complementary projects were being developed that seem better located in Tarija. This included the mass media and education project, which would benefit from using Radio Tarija, a very powerful transmitter with a 200 kilometer radius. Likewise, the rural teacher training program is better suited for that area, at least in the development stage, as was an adult literacy program.

One of the project personnel has a special interest in literacy training of adults, especially women, and felt that adoption of the Paulo Freire techniques of conscientization of women regarding health conditions would be an excellent approach to complement the CS activities. Esperanca applied to PROCOSI, an umbrella CS organization in Bolivia for PVOs, and received additional funding for the mass media and communication and literacy training programs, which were combined into the integrated health education project. Since Entre Rios is so dispersed and it takes hours to get to individual communities, it was felt that it would not be good to start literacy training in Entre Rios. Thus, it was felt that these two programs would do-better in Tarija.

As part of the initial needs assessment, the technical team felt that training of rural elementary school teachers in CS strategies would be helpful to stimulate young children to be change agents in the family. This would help them adopt healthier habits, as well as the children could be trained to be oral rehydrators and to recognize the signs of serious pneumonias. Since the curriculum development needed for this program would depend so much on the efforts of other team members working in mass media and communication and literacy training, it was felt this program, too, should be located in Tarija.

For these reasons, project headquarters was moved to Tarija in September of 1994. The following analysis will highlight the achievements in each of these complementary projects. Since none of these were included in the DIP, except for the production of radio and TV spots, there are no specific objectives to compare with project achievements, as there were in the previous two zones.

1. Mass Media and Communication Project. The Mass Media and Communication Project has two major activities -- radio and television. The Radio Program has two approaches. One is a 15-minute program called "Let's Speak About Health" (Hablemos de Salud). This is a daily program on Radio Tarija, which goes out in a 200 kilometer radius. It always starts at 6:45 in the morning and ends at 7:00. This time period was selected because that's the time when most of the mothers are up and about, getting breakfast ready to start the day. The program incorporates local characteristics of language and culture, as well as music from each district served by the project. Each day there's a different CS health theme. The program closes with five minutes of "noticias," which is a mixture of news and communications; for example, notices to communities about an immunization campaign, or a community meeting. The noticias are also used to highlight the activities of auxiliary nurses, and especially community health promoters. The idea is to lend prestige to their efforts by mentioning them publicly. The next round of activities in this radio program will focus on additional health themes, such as chagas disease and reproductive health. Their social marketing investigations have shown that reproductive health programs are those most desired by female listeners.

As part of the field visits in this evaluation, we went to a Guarani village 195 kilometers from Tarija. The women in that village indicated they listen to this program every day. The nurse in charge of this program was both surprised and delighted that the women heard this daily so far away from Tarija. The programs are developed in Tarija, and then they're sent to local radio stations in Villa Montes and Yacuiba, so that they are repeated there. These stations have a coverage area of about 50 kilometers. Combining this with Radio Tarija, the majority of the province of Tarija is covered, which is approximately 300,000 people. Project surveys have shown that 80% of the population has a radio; 40% of those that have radios listen every day to the program, and 40% listen every now and again. Thus, "Let's Talk About Health"

appears to be a very popular program and has tremendous potential for influencing behavior. The local radio stations are also encouraged to add their own special noticias to the program, so that each of them can respond to their local needs.

Radio spots are 30 seconds long, and are developed as part of a master plan with the Regional Secretary of Health. There appears to be excellent coordination with the Secretary of Health, and they provide personnel and resources, as well as enter into other organizations. For example, there is a local college of music that specializes in regional music, and the Secretary of Health was instrumental in gaining cooperation from this music college to provide students for background music. The problem with using pre-recorded music is that since so much of it involves singing, it's difficult to have voice-over radio spots. While I was in the Esperanca headquarters, a recording session was in progress from one of the students who played four different instruments to lay down a musical track for background in a program on cholera. The themes are the traditional CS themes, as well as cholera and reproductive health.

There's heavy promotion of these programs through community meetings at all levels, local fairs, flyers, flags and even floating balloons into the air with the titles and times of the programs on them.

The project intends to evaluate this program intensively to measure its impact. They did a baseline survey, dividing the audience into urban, peri-urban and rural areas, and will repeat the survey this year to measure impact trying to separate the effect of radio, TV and community or personal meetings. As part of this evaluation, I think it would be useful to evaluate the impact of the noticias on a desertion rate of promoters. In other words, do those promoters who receive recognition continue to provide more services than those who do not.

The program is just beginning to develop TV spots. They have a complete TV studio and portable equipment for field work. They have started with AR1 and ORT and are experimenting with various approaches with the assistance of a library of video materials produced by UNICEF, PAHO and WHO. The equipment is brand new and has only been there for several months. Since this component is just starting, there has been no opportunity to evaluate it. By its very nature, television will have most impact in urban and

peri-urban areas, since many rural areas don't have electricity for television.

The project is talking about initiating a community education program using portable video equipment. The plan is to have mobile teams visit villages and tape record their practices regarding use of water, disposal of feces, hand-washing, and the like. These unedited tapes would then be played in the evening at a community meeting to serve as a focal point of discussion about healthy behaviors. This sounds like a very creative approach to community health education, and I encourage the project to pursue this. Some materials produced by this program are included in Appendix B.

2. Adult Literacy Program. One of the needs identified early in the CS project was to increase the literacy levels of women, since this is so directly related to health status of their children. As described above, a fledgling project was developed in Entre Rios, but due to the rural character and distance between communities, this proved impossible to effectively implement. It seemed better suited for the urban and peri-urban areas of Tarija, and was funded by PROCOSI in 1994.

The methods used are based on Paulo Freire's conscientization of the people to their problems and needs, and uses basic health themes. It works in poor barrios in Tarija, peri-urban areas around Tarija and seven rural communities. Many of these rural communities and peri-urban areas are made up of recent immigrants from highland areas after closing of the mines.

The original objective was to have 300 participants in the first year. The actual number of participants is 534 -- or 175% of the original objective. Fifty-four literacy groups exist in 33 different barrios and communities, with an average of ten participants per group. The project has found that if they have more than 12 or 13, it gets very difficult for the teacher to give individual attention to the students. Seventy volunteer literacy trainers were trained by the project, and 55 of them remain active. Those who left did so mostly to obtain other work. The literacy trainers must be from the same area, have completed the sixth grade, be married, and thus, stable, and also have prestige, and as near as possible, be members of the same group or similar peer group to the people who want to participate in the literacy training. If there is no trainer available, either due to no good candidates or abandonment by the trainer, project staff fills in until someone is trained. The literacy trainers receive re-training every two

months in a one-day seminar. Each session in the literacy training program lasts approximately two hours. Most of the groups meet once a week, but some meet two or even three times a week. The program for basic literacy is designed to last six months in urban areas, and eight months in rural areas; and this ensures the ability to read basic books and to sign your name.

Using this strategy, the abandonment rate of the participants in the literacy program has only been 5% over the last year. The demand has been tremendous, and the drop-out rate very low. One of the reasons is that project supervisors try to visit each person who is in danger of dropping out to identify the reasons and stimulate them to return. However, the need to do this is not very great, since the desire to attain basic literacy in these poor barrios seems to be overwhelming, especially among the women.

The program has developed two sets of training materials -- basic literacy, which focuses on health themes, such as breast-feeding, DDC and family love. The second set is called post-literacy training, and it stresses improved writing skills; for example, being able to write a letter or to write a paragraph on how to prevent cholera. The post-literacy training also includes basic mathematics using health themes; for example, what constitutes a good diet and how much it costs to buy food for that diet, or the cost savings of exclusive breastfeeding versus buying formula, or the cost of treating a case of diarrhea by going directly to a pharmacy that would dispense expensive antibiotics instead of utilizing ORT from the health center. The project provides inexpensive prizes to both trainers and students who complete the courses, or are punctual, and have good attendance records. Notebooks and small plastic briefcases are given to teachers, pencils and erasers to students. Project staff have found this dramatically increases attendance and timeliness.

Naturally, the program intends to expand its coverage over time, and much of this depends on securing future funding, since this is funded separately from the CS project.

A copy of the basic and post-literacy training program materials are included in Appendix C.

3. Rural Teacher Training Program. In Entre Rios, the project perceived that children could be a powerful force for change in the family's adoption of healthy health habits, as well as be able to provide specific therapy, such as ORT, or early recognition of pneumonia in a younger sibling **and** referral to a

health center. The project has employed two nurses and an educator to develop a teacher training program with appropriate curricula materials for elementary school children. The development process is occurring at Esperanca headquarters in Tarija with field testing in peri-urban barrios. However, they hope to implement it in the Entre Rios area in the last year of the CS project.

The first set of materials seem very well developed and are found in Appendix D. The regional Secretary of Education has agreed to incorporate these materials into the educational reform curriculum that is taking place. Unfortunately, teachers have been on strike for two months because of the changes mandated by the educational reform process, but they are expected to return to work this week. It is hoped by the final year of the project that these curricula changes will be in place in Entre Rios, and the program intends to evaluate their impact on families.

The project has essentially developed their materials de novo, using some examples of materials available in Bolivia. There has been a lot of work done in this type of program worldwide, especially with support of the Academy for Educational Development (AED). It would be useful for the project to touch base with the AED and obtain copies of these materials. I have some of them in my files and will FAX them down to the program.

This brings up the general observation that so many of the programs this project is developing have a body of experience worldwide, but there is no central contact point to obtain copies of these materials. Frequently, CS programs work in rural, isolated areas and is so overwhelmed with the pressures of daily work that there is limited time available to spend researching out other projects. It would be very useful for USAID or the Johns Hopkins Child Survival Support Program to establish a central information center where projects like this could FAX their request for information and have somebody do a literature review to assist in identifying appropriate materials that could be adapted for use in the local context. This would have the overall effect of saving a significant amount of resources in the project and avoid "re-inventing the wheel."

D. UNINTENDED POSITIVE AND NEGATIVE EFFECTS

1. Law for Popular Participation. This is an exciting new law that took effect last year. It is difficult for a foreigner like myself to fully understand the complexities of this law and all its ramifications. As near as I can understand, the law has strengthened the process of regionalization of services. It creates what's called a Basic Territorial Organization (BTO) at each level of the country, extending all the way out to the smallest village. While many of the larger cities had a municipal form of government with a mayor and a community council, many of the smaller towns and villages had nothing in place. The government was highly centralized; for example, the MOH based in La Paz provided the budget for all health services extending all the way out to the smallest village.

The Law for Popular Participation has now given each of these BTOs its own budget and the authority to oversee government services, such as health, education and roads. Since each community now has a specific budget and the authority to oversee the services it provides, this has created both tremendous opportunities for positive change and overwhelming confusion.

The Secretary of Health continues to set the norms for program activities and provides basic services, such as epidemiologic surveillance, distribution of vaccines, etc. However, much of its budget has been delegated to the local government BTOs, who are then to pay for the services provided through what amount to block grants. However, as is common with block grants, even in the United States, the local priorities may be quite different from the priorities of the regional or even national government. I saw a classic example of this in my meeting with district health personnel in Entre Rios. The district health officer, a physician, was quite excited that the local municipal government had granted him additional funds to upgrade his operating room, so that he could begin providing basic surgical services, including caesarean sections. Since this is one of the priorities of the CS project, it seemed appropriate that his priority matched project priorities. However, the district nurse complained that she couldn't field vaccination teams for immunization campaigns because her budget for gasoline had been cut from the Regional Secretary of Health, and she was supposed to recoup this budget from the local municipal government. However, the government had already promised funds for the surgical suite, and there were none available for gasoline.

Thus, immunization coverage could well suffer in the next year if she cannot provide transport to her immunization teams. This is a classic example of the types of confusion that may produce unintended positive and negative effects.

Some areas, such as Yacuiba, have shown a much higher level of functional status in their community health promoters. This is because many of the local BTOs have used their funds to provide some compensation to the promoters, because they share the priority emphasis on CS activities. However, in other communities, such as Entre Rios, this process has yet to happen; and, therefore, performance of the promoters may well be spotty in the future. This is also true in Villa Montes. Thus, some communities may provide incentives to their community health workers to provide additional services, and others may not; thus, we may find uneven performance throughout the project areas.

Most people I talked to feel the evolution of the Law for Popular Participation will take a number of years, and both positive and negative effects can be anticipated along the way.

2. Administrative Reorganization of the Government. At the time of design of this CS project, the MOH was an independent ministry with its own budget and authority for implementation of health programs. Around the time this project took effect, a new government came in and reorganized the cabinet. A Ministry of Human Resources was created to combine health and education, both of which became Secretariats. That is why in the body of this report you'll see me occasionally refer to it as the Secretary of Health, and occasionally as the Ministry of Health. The unexpected benefit of this is a marriage between health and education that has really accelerated the communication and education processes in this CS project. A concrete example of this is the development by the project of training materials for rural elementary school teachers in health that have been immediately adopted by the Secretary of Education as a part of the basic curriculum, consistent with their concepts of educational reform. The project also hopes the same spirit of cooperation will carry over into the basic training of physicians and nurses. As pointed out several times in this report, so many of the young doctors and nurses coming into the health system to serve their obligatory year of social service don't have the foggiest idea of the MOH norms for treating diarrheal disease or ARI. Medical audits done on these people

consistently show inability to diagnosis and treat appropriately these two rather common diseases.

3. Complementary Projects. The CS projects over the last eight years have provided a stable base for Esperanca to generate additional funding for complementary projects. These projects assist in the attainment of CS goals and generally use creative approaches. In this report, I've highlighted the mass media communication and adult literacy training programs, both of which are financed separately from the CS project. Nonetheless, they enrich the CS project and assist in attaining the overall goals outlined in the DIP. A previous Vitamin A garden project funded by VITAL proved to be a very sustainable project in the Villa Montes and Yacuiba areas and was picked up by the Peace Corps. I was quite surprised in visiting the Guarani village to see a community garden with Vitamin A rich vegetables not indigenous to the area that was identical to the gardens developed in Villa Montes and Yacuiba. To my surprise, the local NGO APG that provides support to the pueblo Guarani had instituted this project. The agronomist advising APG is the same agronomist that Esperanca had hired and used in their Vitamin A project. This small separately-funded project has shown incredible vitality and sustainability, and is slowly spreading over the Chaco. Thus, one of the major unintended benefits of the CS strategies is the ability to spin-off additional projects with other sources of funding that complement CS objectives and have proven sustainable over time.

4. Management Improvements in a Number of Cooperating Organizations. One of the intended benefits of this project is the improvement in management capabilities in the District and Regional Secretary of Health offices. Esperanca developed a technique for a monthly chronogram of activities, using sticky paper so that personnel can change the month, the year, and the activity of the day. This is prominent in all Esperanca field offices. I saw the same chronogram of activities in each district health office, as well as in each health post and health center that I visited. However, what was not intended is that a number of other organizations would adopt the same approach. In Yacuiba, the **InterAmerican** Development Bank (IDB) had financed tremendous investment in the district health office because of its location on the frontier and the fact that it's a hot zone for cholera. Esperanca staff feel that their presence and the adoption of the IDB staff of their management approaches has helped make that program much more

efficient, and thus, effective. The same can be said for two NGOs which are collaborating in the Entre Rios area, World Vision and APG. Both of these are small NGOs that have been active at the village level in the area with somewhat limited impact. Esperanca has been able to work with these programs to, for example, re-activate a number of promoters that had stopped providing services, and also to improve their management approaches to community development. Thus, there seems to be a lot of adoption of management approaches in health services by a number of other programs and NGOs in the area that has benefitted everybody.

E. PROJECT EXPENDITURES

While in the Esperanca CS headquarters in Tarija, I spent several hours with the director, Kurt Henne, reviewing project expenditures. The results of that **analysis are** presented here in the field budget of Child Survival IX.

Field Budget of CS-IX -- January 1995

I.	Personnel	<u>Percent Remaining</u>
	AID	55%
	Esperanca	21%
	Total	51%
II.	Travel	
	AID	22%
	Esperanca	(1.1%)
	Total	15%
III.	Consultants	
	AID	No field budget
	Esperanca	No field budget
IV.	Purchases	
	AID	72%
	Esperanca	46%
	Total	37%
V.	Other Direct Costs	
	AID	68%
	Esperanca	86%
	Total	74%
Total USAID budget remaining:		57%
Total Esperanca budget remaining:		47%
Total Budget Remaining for CS-IX:		54%

At the time of the MTE, we were a little over half-way through the project, but the total budget remaining was 54%. The Esperanca staff have been fairly careful in their budget management, and has obtained a number of savings along the way that they have used to hire additional personnel. For example, the two nurses that work in the rural teacher training program are paid out of CS funds, but they were not an originally-budgeted expense. It appears that if the current rate of expenditures continues, there will be sufficient funds available to finish all project activities at the designated end-of-project. No major problems are seen in this budget analysis.

F. LESSONS LEARNED

◆ 1. A significant number of years needs to pass before CS development activities become institutionalized. After almost eight years of effort in Villa Montes, the sustainability of CS project activities in that zone is almost 100%. After four years in Yacuiba, this level of sustainability has not yet been achieved, averaging around 70%. The Esperanca CS experience in the very undeveloped area of the Chaco suggests a minimum of five to up to ten years of continuing project activities is necessary to ensure institutional development and sustainability.

◆ 2. The desertion rate of village health workers used in the project, in this case, volunteer health promoters, has been much higher than originally anticipated, and appears to be directly related to the supports provided to them. The promoters need a lot of attention to continue to function. The highest functional rates have been found in Yacuiba -- around 70% of the promoters originally trained are still functioning. Yacuiba is a "hot zone" for cholera and receives a lot of attention not only from the Esperanca CS project, but from the MOH and an IDB-supported primary health care project. Villa Montes is more typical of the normal resources available, and the desertion rate is around 50% from regular activities. This 50% level is probably more characteristic of programs with a "normal" resource availability. However, it's worth noting that although 50% of the promoters trained in the project do not provide regular activities, they will swing into action during cholera outbreaks, providing ORT services within their village. The Chaco now suffers periodic outbreaks of cholera, but the mortality rate has been less than 1%. In Peru three years ago, when cholera first broke out, the mortality rate

in inland areas in the first few months of the outbreak approached 20% until oral rehydration services could be instituted in that area. The Chaco already has a network and has not suffered through that high mortality phase that Peru did. This does show that the true desertion rate is not really known, and indicators of regular activity by village health promoters do not necessarily give us the true picture of what happens in times of need.

Entre Rios has shown an impressive increase in the number of active promoters through a program of extensive re-training of promoters in place. The number of active promoters has risen 350% over the last year. However, supervision of these promoters by MOH and Esperanca personnel in the isolated rural areas of Entre Rios with communities dispersed over 50-100 kilometers has proven very difficult. It is also doubtful that the Secretary of Health could maintain the intensity of training activities this project has provided in the future. For these two reasons, we can expect a drop-off in activity of the village health promoters, unless alternative supervision activities take place.

◆ 3. One of the major program activities through the years has been training of new personnel, especially nurse auxiliaries and village health promoters. The project is now embarking on several rounds of continuing education to upgrade the skills of these health workers and to motivate them to provide more services and expand coverage. The training of new personnel is very difficult to institutionalize in counterpart organizations. Frequent personnel changes, changes in policies and changes in resource allocations within the Secretary of Health have led to diminished institutional memory in the capability to train new categories of personnel. Management improvement systems may be institutionalized through systems development, the use of computers, the development of information, financial accounting, evaluation systems, etc. that will remain over time. However, training is a much more personalized activity, and with personnel and policy changes, a lot of those skills are lost. Frequently the resources are not available, since a long period of time is required to produce new categories of personnel.

Therefore, experience suggests that training of personnel is not a highly-sustainable activity at the district level. This project has seen the development of a nurse auxiliary training program in Tarija at the Regional Secretary of Health. This program did not exist when the first Esperanca CS project was

started in 1986. Esperanca staff did all the training. Therefore, it appears as if the initial efforts in CS-II did stimulate the development of counterpart institutions at the regional level, which will continue to produce new nurse auxiliaries. About one-third of the sectors in the new project zone of Entre Rios do not have trained auxiliaries, but it is hoped within the next year or two the Secretary of Health in Tarija will be able to fill those vacant slots with graduates of this new training program. The real challenge will be to institutionalize continuing education programs so that every year auxiliaries and village health promoters in place receive some training to upgrade their skills.

◆ 4. The Secretary of Health has proven capable of sustaining high levels of immunization for children under one once project supports are withdrawn. Project supports were necessary when there was a much larger population of children that needed to be immunized; in other words, playing "catch-up baseball." Once the larger population of children have been immunized, then the Secretary of Health can focus on a much smaller population of newborns, and the data provided in this project have borne that out. There has been some drop-off in coverage in the two project zones where Esperanca no longer provides substantial support to the EPI campaign, but immunization levels approach the 80% level, slightly below the 90% objective established in the DIP. The current practice is to offer immunizations through fixed health centers trying to contact each pregnant woman to motivate her to bring her child in for immunizations as soon as it is born. This is supplemented by three vaccination campaigns per year where mobile teams in the district health office go out. This strategy has proven very effective and sustainable within the current level of resources of the Secretary of Health.

◆ 5. Growth monitoring has continued at a high level without project supports. Growth monitoring occurs through a variety of sources -- fixed health posts and health centers, during home visits, and during meetings of mother's clubs. The data collected through the growth monitoring process has continued to show a decrease in the percentage of children with an inadequate rate of growth, as well as a decrease in the prevalence of malnutrition in some project areas. Project staff have analyzed these declines in rates of malnutrition and have been unable to attribute them to any direct project interventions. Nonetheless, the health information system implemented early in the project continues to function well,

and basic CS indicators collected through growth monitoring continue to be used by the district health office team to monitor program development.

◆ 6. The project placed considerable emphasis in earlier years on development of mother's clubs through a variety of techniques -- community gardens, handcrafts, well-child clinics. The project staff felt that once mother's clubs were started, they would be self-sustaining with minimal supports, primarily through the motivation of the mothers themselves and the central focus of gardens or handcraft development. However, project experience does not bear this out. The number of functional mother's clubs has decreased approximately 33% over the last 18 months of project activity, since the strategy has shifted to one of social marketing, mass media and communication. The Secretary of Health has not been able to provide any support to mother's clubs, and a significant number of them has ceased functioning. Thus, in the cultural setting of the Chaco, two-thirds of the mother's clubs appear to be self-sustaining, but a significant number, approaching one-third, have stopped functioning. The mother's clubs do not appear to be as self-sustaining as originally thought. The reasons for this are worth investigating through their social marketing approach. With further investigation, the project might be able to identify the minimal supports necessary to ensure a high level of functional status of mother's clubs. These supports might be able to be provided by Secretary of Health personnel or other local NGOs.

◆ 7. Close coordination with Secretary of Health personnel at all levels -- regional, district and local -- is essential for overall project success. Officials I talked to at each level highlighted the fact there is no apparent separation between Esperanca, Secretary of Health and NGO personnel. They all work together as a team, and this has been an important concept of work to introduce into the health system. One of the Regional Secretary of Health staff told me the single most important contribution of Esperanca was their participative methodologies, both in terms of working as a team and in terms of involving community members in their own health activities. Esperanca has proven remarkably successful at stimulating a team effort that guarantees a high level of sustainability, as this evaluation has shown.

◆ 8. Continuity of project personnel is a critical factor for overall success. Three of the original nurse trainers are still active as coordinators in the three CS project zones. This ensures

that "lessons learned" are carried through into new areas and provides valuable institutional memory. The integration of new staff into this institutional memory can be a creative stimulus that builds new activities on a solid foundation. For example, the integration of social marketing personnel and their concepts has allowed one of the original nurse trainers to move into a whole new field of social marketing, investigation and development of communication strategies. She is then able to integrate these strategies into Secretary of Health operations, because she knows them intimately, having worked with them for seven years.

◆ 9. Six years of previous efforts in DDC, supported through two CS project, have produced tremendous gains in ORT coverage. However, close examination of the results of the final evaluation of CS-V showed some major gaps in mothers' recognition of signs of dehydration, the correct preparation of ORS packets and feeding practices during and after diarrhea. The project embarked on a thorough quantitative and qualitative investigation of the knowledge, attitudes and practices of mothers in diarrheal disease, working through focus groups, structured observations, household surveys and medical audits. This led to the development of a concentrated educational campaign involving both health care workers and the general public through mass media, print media, house-to-house contacts and several other creative approaches. Evaluation of these efforts have shown significant improvement in the KAPs that have lasted over a six-month period. Much can be learned from this experience. Other CS projects should not assume that they "know" how to improve DDC, KAPs in mothers. This social marketing approach used in the third stage of the Esperanca project should be an initial step in any DDC program. If an ORT program is already in place, the Esperanca experience shows it is never too late to integrate social marketing techniques and improve ORT practices.

◆ 10. All too often, CS projects work in isolated areas, and end up re-inventing the wheel. They spend a lot of time developing training and educational materials de novo, when there are a lot of examples of similar materials available from other projects around the world. The most common question from CS project staff is how do we find out about these, or how do we get copies of these materials? There really is no central area that project personnel can access to request educational and training materials. Evaluators can help out, and I have pointed them in several

directions to contact people for materials; but all agree during this evaluation, that it would be much more useful if there were a central office through USAID or the Johns Hopkins Child Survival Support Program. That way, the project staff could FAX up a brief summary of what they are doing and the types of materials they're looking for, and request assistance in sending them copies from all over the world. This would save scarce resources in CS projects, since staff could focus their energies on adapting these materials to their local needs, as opposed to the resource-intensive "developing from scratch" approach.

◆ 11. Creative educational approaches are a vital part of this CS project. The Mass Media Communication Program uses radio and TV in creative ways to deliver CS messages in a 200 kilometer radius. The Adult Literacy Training Program for Women uses health themes to raise their consciousness about CS problems, as well as to teach them to read and write. A Rural Teacher Training Program is in process to incorporate CS health themes into elementary education. The idea is to stimulate children to be change agents within the family, as well as to provide direct services, such as oral rehydration, or to recognize the signs of pneumonia very early in a younger sibling and stimulate the mother to take him/her to a health center. Other CS projects would benefit by incorporating these experiences into their programs.

◆ 12. Curanderos, or traditional healers, provide a significant amount of services in the project zones, treating 34% of diarrhea and 10-30% of ARI, depending on the type. Project attempts to train, supervise and improve the CS practices of curanderos have met with only limited success. Recruitment of curanderos has proven difficult, and only small numbers have shown up for the training. Of those that did participate, a significant percentage did not adopt the desired behavior; for example, of 21 curanderos trained and then provided supervision in the use of ORT, only 10 actually adopted ORT as a treatment modality -- a success rate of only 47%. While the idea of training curanderos has tremendous appeal on a theoretical basis, it does not appear to be a viable strategy that will have significant impact in the Chaco of Bolivia.

IV. PROJECT SUSTAINABILITY

A. COMMUNITY PARTICIPATION

1. Village Health Workers. The first two CS projects had focused on training three different categories of village health workers, all of whom work either as volunteers or on a fee-for-service basis. This new project is embarking on a re-training and supervision program to ensure higher levels of functional status. These are:

(a) Village Health Promoters -- These health workers are selected by the village themselves, and trained by the project in concepts to be promoters of various programs, such as EPI and growth monitoring, as well as to provide direct services; for example, ORT. The project is beginning to experiment with training promoters in dispersed rural areas to also provide antibiotics in cases of ARI with pneumonia. Entre Rios has increased the number of active promoters by 350% through this process of re-training. However, a major disappointment in the training of village health promoters is the high rate of desertion, which appears to be directly related to the amount of attention, supervision and resources that the promoters receive. In Villa Montes, which has the "standard" level of resources for a CS program, the desertion rate is around 50%. In Yacuiba, 70% of the promoters continue to function; however, Yacuiba has been a hot zone for cholera and has received an incredible amount of resource investments through the InterAmerican Development Bank, the Secretary of Health, as well as the Esperanca project. There's been a lot of intense political activity in that area in terms of the local civic groups, and this has stimulated the promoters to continue functioning. This is described in more detail further down.

(b) Traditional Birth Attendants (TBAs) -- In the CS-V project, the project trained some TBAs in Villa Montes, in areas where women did not have ready access to a health post with a trained auxiliary to do deliveries. The results of that approach are reported in the previous section and has proved reasonably successful. TBAs tend to be self-sustaining, since they will continue to provide services on a fee-for-service basis even after trained. In Entre Rios, which is a very rural dispersed area, they are just beginning to train this category of personnel, and it appears to be a viable strategy for that district.

(c) Curanderos (Traditional Healers) -- The project has tried to recruit curanderos to train them in ORT and ARI, since they tend

to provide a high number of services for those diseases. However, as noted above in "Lessons Learned," the experience has not been terribly successful. It's been difficult to recruit curanderos, and even those who attend the training, only about 50% have adopted the behavior. This strategy has tremendous appeal, but has had limited success. Nonetheless, in certain zones where the curanderos tend to use mattes, or herbal teas, there has been some success in training them as oral rehydrators, and this will continue in the new project zones.

2. Village Health Committees. Early on in CS-V, when the project embarked on intensive training of community promoters, they worked together with a local NGO, FUNDESIB, to train village health committees. The concept is that the health committee would assume responsibility for the health activities in their community and would help support the promoter. The promoter, in turn, would help train the village health committees in the various technical aspects of the programs, and the symbiosis would, hopefully, produce significant change at the community level. However, initial experience in maintaining these health committees in functional status is about the same as the promoters -- somewhere around 50% of them continue to function independently. In the last year, there's been a new impetus provided by the Law for Popular Participation. This basically mandates that each level of government must establish a Basic Territorial Organization; or in essence, a town council or civic committee, that has the responsibility for supervising government services that were previously provided by centralized ministries. This includes health and education. These BTOs also receive block grants from the government in a redistribution of wealth scheme. In other words, what previously went to centralized ministries now flows out to the local level. With the passage of the law giving the community groups autonomy, as well as actual resources, there's been a resurgence of activity in what would normally be a health committee, which now has been incorporated into these BTOs. Figure 40 shows the results in both Villa Montes and Yacuiba.

FIGURE 40**FUNCTIONAL STATUS OF VILLAGE HEALTH COMMITTEES**

DISTRICT	PERMANENT FUNCTION	
	BASELINE	MID-TERM
VILLA MONTES	7	10
YACUIBA	13	50

Yacuiba has been the zone that has most benefitted from this law early on, and the number of functional health committees has increased 285% in the first half of this project. This has been one of the unintended benefits described previously.

3. Mother's Clubs. CS-V embarked on an intensive program of training and development of mother's clubs in Villa Montes and Yacuiba. The project developed Vitamin A community gardens in key communities and trained mother's clubs in how to maintain them and how to spin-off small home gardens. In addition, some of the mother's clubs were trained in other income-generating projects. Since the ending of CS-V and shifting the project headquarters to Entre Rios and Tarija, the mother's club component in those areas as responsibility has transferred to the Peace Corps, and they are now being serviced by two Peace Corps volunteers. Figure 41 shows the results of this activity.

FIGURE 41**FUNCTIONAL STATUS OF MOTHER'S CLUBS**

DISTRICT	ACTIVE	
	BASELINE	MID-TERM
VILLA MONTES	14	8
YACUIBA	19	15

Unfortunately, the number of active mother's clubs during the course of the CS-IX has dropped from 33 to 23, a 30% drop. It has been suggested, above, that the project may want to do a social marketing investigation of mother's clubs to identify factors responsible for this decline in independent functioning and to identify the minimal amount of resources they need to continue functioning. The strategy has a lot of appeal, but appears to need a bit more analysis and work to keep them functioning.

B. ABILITY AND WILLINGNESS OF COUNTERPART INSTITUTIONS TO SUSTAIN ACTIVITIES

The main counterpart institution of the CS project is the Secretary of Health at the regional and district levels. One of the main success as cited above in "Lessons Learned" has been the ability of Esperanca staff to integrate in with regional and district health office staff and work together with them on a daily basis. These participative methodologies have ensured a transfer of technology to their counterparts, and this process has reflected in the results analysis above. The district health office staff in Villa Montes and Yacuiba have proven quite willing to carry on the CS activities even after project supports have been withdrawn. Figure 42 shows in tabular format in Villa Montes and Yacuiba exactly how much of the activities have been assumed by district health office counterparts.

FIGURE 42

**PERCENTAGE OF CHILD SURVIVAL ACTIVITY
NOW COMPLETED BY DISTRICT HEALTH OFFICE PERSONNEL**

ACTIVITY	RESULTS BY DISTRICT	
	VILLA MONTES	YACUIBA
1. ANNUAL OPERATIONAL PLANS	90%	60%
2. HEALTH INFORMATION SYSTEM		
A. COLLECTION	100%	100%
B. ANALYSIS	70%	60%
C. PRESENTATION	100%	60%
3. IMMUNIZATION CAMPAIGNS		
A. PLANNING	100%	80%
B. EXECUTION	90%	50%
C. EVALUATION	100%	80%
D. PRESENTATION RESULTS	100%	60%
4. SUPERVISION OF PERSONNEL	75%	70%
5. NEW TRAINING OF PERSONNEL	30%	70%
6. MEETINGS WITH AUXILIARIES	100%	70%
7. PROMOTERS - CURANDEROS		
A. TRAINING	90%	70%
B. FOLLOW-UP	40%	70%
C. MEETINGS	30%	70%
8. MOTHER'S CLUBS	100%	80%

As pointed out in the "Lessons Learned," one of the major limitations in counterpart activities is in the training of new personnel. There may always be the need for an NGO like Esperanca to assist in training of personnel. Of interest, is the fact that Villa Montes is averaging around 90% sustainability by district health office personnel, and Yacuiba approximately 70%. This evaluation has shown that this most likely is related to the time the project has existed in each area; i.e., eight years in Villa Montes and four years in Yacuiba. This leads me to conclude CS activities need a minimum of five years, and probably at least eight years, to assure sustainability as counterpart institutions

assume functions that were previously done by project personnel. Sometimes even when functions are assumed by district health office personnel, it doesn't mean they are well done. Nearly all the responsibility for supporting mother's clubs has been assumed by the district health office, but the analysis above in the "Community Participation" section shows a 30% drop-off in functional status. Clearly, district health office staff are not able to provide the same level of supports that the project did to mother's clubs.

Nonetheless, overall, conclusion of this MTE is that the counterpart institutions are willing and able to carry on the majority of the CS activities once project supports are withdrawn. The main areas of need that will continue are in training of personnel, supervision of community health personnel and mother's clubs.

C. **SUSTAINABILITY PLAN, OBJECTIVES, STEPS TAKEN AND OUTCOMES**

The following sustainability plan was developed in conjunction with project staff during this MTE.

Esperanza/Bolivia

Child Survival IX Midterm Evaluation

Sustainability Goals in DIP

- Goal 1:** 80% of activities transferred to MOH personnel in final year
- Objective: MOH will be able to collect and analyze data through the National HIS, develop strategic activity plans according to the results.
- Steps taken to date:
- a) Provided assistance in monthly analysis of data and formulation of goals
- Present level of sustainability:
VM 90% Yac 70% ER 60%
- Objective: MOH will be able to plan and execute EPI program
- Steps taken to date:
- a) Provided assistance in planning logistics
 - b) Analyzed and helped improve cold chain
- Present level of sustainability in EPI:
VM 100% Yac 70% ER 60%
- Objective: MOH will supervise auxiliary nurses in rural health posts
- Steps taken to date:
- a) Implemented system of supervision utilizing well tested instrument
 - b) Supervised personnel with MOH
- Present level of sustainability:
VM 75% Yac 70% ER 40%
- Objective: MOH will provide training for new personnel
- Steps taken to date:
- a) Assisted in identifying training needs of new personnel
 - b) Initiated plans for future training
- Present level of sustainability in training:
VM 30% Yac 70% ER 20%

Objective: MOH will provide continuous education to physicians, nurses and auxiliary nurses

Steps taken to date:

- a) Assisted in class plans, setting of goals, and logistics
- b) Helped carry out workshops

Present level of sustainability:

VM 70% Yac 70% ER 20%

Objective: MOH will provide training and supervision to volunteer community health workers

Steps taken to date:

- a) Assisted in curriculum development
- b) Assisted in workshops

Present level of sustainability:

VM 70% Yac 70% ER 60%

Objective: MOH will work with existing mothers clubs on a regular basis

Steps taken to date:

- a) Oriented new MOH staff in how to work with clubs
- b) Motivated reactivation of clubs

Present level of sustainability:

VM 100% Yac 80% ER 60%

Goal 2. 80% of MOH personnel giving social marketing messages by 3rd year

Objective: MOH will provide education in the health services and through mass media

Steps taken to date:

- a) Carried out qualitative investigations to identify barriers, motivations, and health terminology of local people
- b) Provided workshops on communication
- c) Designed and created health education materials for the zone
- d) Gave library of materials to MOH to use at their discretion

Present level of sustainability:

VM 60% YAC 60% ER 30%

Indicators: Number of key messages at disposition of MOH

Outcome:

VM 2 posters, 2 fliers, 6 radio spots, 9 TV spots, 1 communication module

Yac 2 posters, 2 fliers, 6 radio spots, 9 TV spots, 1 communication module

ER 2 posters, 2 fliers, flip charts, communication module

Goal 3.

MOH personnel capable of preparing proposals for additional projects

Objective: MOH will be able to formulate ideas, gather data, write and present the information for financing

Steps taken to date:

a) Developed proposal for financing which has been later used to write additional proposals

Present level of sustainability:

VM 70% **YAC** 60% **ER** 30%

Indicator: Number of proposals prepared and approved for financing by midterm evaluation

Outcome: VM 2 Yac 2 ER 0

Other Indicators of Sustainability:

1. Number of local organizations collaborating with MOH

Steps taken to date:

- a) Initiated meetings with local organizations to analyze strengths and weaknesses in MOH
- b) Improved skills of these organizations through planning sessions and executing work together

Outcome: VM 4 collaborating groups
Yac 3
ER 3

2. Level of auto-financing of rotating fund of medications

Outcome: VM/Yac These funds were high functioning in last project, and are now being assisted by the Interamerican Development Bank

V. CONCLUSIONS AND RECOMMENDATIONS

A. PROGRESS IN PROJECT TO DATE

The two previous CS projects have attained an incredibly high percentage of their original objectives, and this current program is following in the same tradition. This CS-IX project will, undoubtedly, achieve most of the original project objectives; many of the end-of-project objectives have already been met in some key areas like EPI, growth monitoring and DDC coverage. Project strategies have changed as a result of previous evaluations to stress social marketing and communication interventions in key CS programs. This is appropriate, since the two older project zones of Villa Montes and Yacuiba are from 70% to 100% self-sustaining in key CS activities (see sustainability analysis above). In the new project of Entre Rios, there is still an emphasis on training, supervision and management improvements within the health services to improve coverage; while at the same time, integrating into the services the marketing approaches being developed. These marketing and communication interventions are creative and appropriate to the local culture. They deserve publication and dissemination so other CS projects could benefit by using these approaches earlier in program development. However, any project could benefit by using them as Esperanca experience has shown.

B. TRAINING AND CONTINUING EDUCATION PROGRAMS

This evaluation has shown the sustainability of training programs to be lower than other activities. This is a common finding in CS projects around the world. The counterpart institutions, in this case Secretary of Health personnel, seem quite capable of carrying on project activities, including supervision, management of information system, supplies, logistics and evaluation. However, training in new program activities are fairly labor-intensive and requires a high degree of skill. Re-training in new programs or training of new personnel entirely remains an Achilles heel of CS activities that, up to now, Esperanca has had to pick up. Attention should be paid to strengthening the required human resource development capacity, including transfer of materials, development of a library, training-of-trainers and a mechanism for continuing education to counterpart institutions. If the Secretary of Health personnel cannot serve this role, then perhaps a local NGO can be identified that could continue to provide this service once CS project funds end.

C. EPIDEMIOLOGICAL SURVEILLANCE

The epidemiological surveillance system has been implemented in project zones and was a priority objective of this CS project. At this stage, Esperanca staff needs to focus on the use of the information collected. Earlier project efforts focused on ensuring that information was collected and analyzed at the district level. Each of the districts now has computer capability and can produce excellent reports with good graphics and summaries. However, significant gaps still exist in design and implementation of interventions based on the information -- especially where an extraordinary case occurs. An example of this was a case of flaccid paralysis in a two year-old in one of the project zones; district health office staff were not able to respond adequately to the investigation. By the time Central and Regional Secretary of Health staff arrived the patient had changed residence and was lost to follow-up. This case was ultimately diagnosed as Guillain-Barre and not paralytic polio, because apparently, the child did begin to improve its functional status and had much less paralysis. Esperanca might be able to organize one or two workshops, utilizing CDC-trained epidemiologists for regional and district personnel in investigation and control of outbreaks. These workshops could also develop user-friendly continuing education programs, either through printed media or by using computer software. That way, as personnel turn over in the districts, there would be some materials available that would assist them to learn these key concepts.

D. DIARRHEAL DISEASE CONTROL

Coverage for estimated episodes of diarrhea is excellent in all project zones and is around 30-35%. The use of ORT by the mother in the previous episode of diarrhea has already been well above 50% in most project zones, and is approaching the 70% level, which is the end-of-project objective. Combining 35% coverage by the health services and 70% coverage by mothers of ORT, the project will have captured the vast majority of diarrheal disease. The objective in the DIP states that 70% of cases of diarrhea with dehydration will be treated through the health services. This is an unattainable objective that will be impossible to measure. I suggest this objective be changed to state that the health services will capture 35% of the estimated cases of diarrhea, maintaining the objective that 70% of mothers will use ORT in the last episode of diarrhea.

E. IMMUNIZATIONS

The coverage for the EPI program in children under one continues at fairly high levels and is approaching the 90% objective for DPT1, OPV3 and measles. There's been some drop-off in Villa Montes in coverage with the withdrawal of project supports in this program in the first half of this year. This has been recognized by district health office staff, and they are putting forth a greater effort. It's anticipated this will improve by the end of project. However, special emphasis needs to be given to two doses of tetanus toxoid in women of reproductive age, which showed considerable declines in this MTE, going from 92% to 36% in Villa Montes, and 96% to 50% in Yacuiba. The objective established for this component is 60% coverage. Entre Rios, on the other hand, has shown a significant improvement in coverage of TT2 in women of child-bearing age by adopting the strategy of immunizing the mother every time her child is immunized, either through fixed health centers or during immunization campaigns. Villa Montes and Yacuiba may wish to adopt this strategy in order to increase coverage to the appropriate levels.

F. ACUTE RESPIRATORY INFECTIONS

Coverage of estimated pneumonias by the health services in Villa Montes and Yacuiba is going well, averaging 60% at the MTE. The objective in the DIP is 80% coverage, and this may well be achieved. However, in Entre Rios, coverage of estimated pneumonias is abysmally low, and shows little chance of improvement. It was only 10% at end of year one, and three percent in the first six months of year two. The difference appears to be due to the dispersed rural nature of Entre Rios, and the fact that some communities may be 50 kilometers away and cannot get to a health post, especially in the rainy season. The health posts all have antibiotics and trained auxiliaries, and my field visits confirmed this; but it appears that utilization by the community is very low for the reasons cited. Villa Montes and Yacuiba have begun to train promoters in dispersed rural areas to provide antibiotics in AR1 with pneumonia. The Entre Rios zone could benefit from this experience and might introduce this strategy to see if it improves coverage.

G. GROWTH MONITORING

Growth monitoring services have gone very well in the older project zones where almost all the project supports in this program have been withdrawn. Experience in Villa Montes and Yacuiba has shown that an average of three weighings per year per child is sufficient to monitor growth to show an improvement in the rates of inadequate growth and some mild declines in malnutrition. Entre Rios has shown excellent growth in the percentage of children enrolled in the growth monitoring program, but has shown a drop-off in the average number of weighings from over three to 2.3 by the mid-term. Project staff in Entre Rios need to focus attention on maintaining an average of three weighings per child. As they enroll new people, staff has to pay attention to follow-up of continuing children in the program.

H. MATERNAL CARE

Data show that coverage of pre-natal services in pregnant women is good and is already achieving project objectives. However, those receiving four or more pre-natal visits, which is the Secretary of Health norm, is woefully inadequate and will probably never achieve project objectives. In the setting of the Chaco with dispersed rural populations that have to travel long distances to receive pre-natal care from trained personnel, it appears more appropriate to establish an objective of a minimum of two pre-natal visits. The first visit should be before five months to identify high-risk females and refer early; the second visit should occur prior to delivery to identify any new high risks that have occurred and to plan for delivery services. I would recommend the project adjust their objectives to state that 60% of pregnant women will have two or more pre-natal visits, with 70% of the first visits occurring prior to the fifth month. Educational efforts should stress these objectives. I recognize this is contrary to the MOH norm, but it just seems to be a more reasonable approach to pre-natal care in the Chaco.

Referral services for obstetrical complications in Entre Rios are weak. The hospital there does not do any caesarean sections or complicated deliveries. High-risk women in labor have to travel a minimum of three, and sometimes five or six, hours to Tarija. Since it sometimes takes 3-4 hours to get from a village to Entre Rios, that means a 10-12 hour trip for anyone who develops an

obstetrical complication, which almost guarantees high levels of maternal and early neonatal mortality. The project could address this situation in several ways. The district health officer has just received some funds from the municipal government to improve the surgical suite. It might be useful to bring in a gynecological consultant familiar with the Secretary of Health system to do an assessment of what would be needed to improve the hospital facility to take care of high-risk pregnancies. The second approach being considered would be the establishment of a maternity house in Entre Rios. That way, women with known high risks could travel to Entre Rios and stay in this house prior to the onset of labor, and this would considerably shorten the distance to high-risk referral services. A local NGO, APG, which is run by an order of nuns, has expressed an interest in running this maternity house. Prior to embarking this program, it's suggested that Esperanca use their social marketing approach to complete a thorough investigation of whether or not this strategy makes sense and if it would be utilized by the community.

I. VILLAGE HEALTH PROMOTERS

All project zones have trained an extensive number of health promoters. Entre Rios has increased the number of promoters by 350%. However, experience in other project zones is not very encouraging in the ability to maintain promoters in an active functional state. Villa Montes is only able to show a 50% functional status of promoters who actively provide services. Yacuiba is showing a 70% rate, much higher than the other zone, because an incredible amount of attention and supervision is focused on these promoters through a variety of sources; not only the Esperanca CS project, but there is an International Development Bank primary health care project with District Secretary of Health staff. This shows that functional status of promoters is intimately linked to supervision and provision of support. In Entre Rios, supervision of promoters using the current strategy has been a failure. The supervision of promoters needs to dramatically improve, and new strategies need to be developed. Conversations with the regional health office indicate willingness to put additional public health nurses into the Entre Rios area, and this should considerably facilitate supervision. Staff may wish to spend more time in rural areas providing supervision. An alternative would be that Esperanca initiate discussions with the local

NGO, APG, about ways in which CS activities could be integrated into the NGO's community promoter program. This would also have the advantage of promoting good interaction between the public and private sectors.

J. MASS MEDIA COMMUNICATION PROJECT

Creative ideas using mass media for health education within the project area are exciting and should be encouraged. The use of radio and TV and social marketing approaches allows multiple creative interventions. I especially like the plan to visit villages to video their health behaviors; for example, the use of water, disposal of feces, hand-washing, etc. The project intends to play these videos back at an evening community meeting to serve as a focal point for discussion on adopting healthy behaviors. This program may need additional funding to have a significant geographic impact, but it is definitely worth pursuing. The program already in existence, "Let's Talk About Health," in the radio and TV spots are also incredibly exciting and will need to continue with outside support from PROCOSI.

K. ADULT LITERACY TRAINING PROGRAM

The Adult Literacy Program is another creative approach to improve health status through a different form of community education. The Literacy Program uses health themes to raise the consciousness of the participants, as well as to teach them to read and write. Since literacy of women is directly related to the health status of their children, the program deserves to continue. Additional funding will be needed, and the results of this evaluation support the need.

L. RURAL TEACHER TRAINING PROGRAM

The Rural Teacher Training Program in a PHC curriculum is an excellent idea that deserves further support. The Academy for Educational Development in Washington, D.C. has developed a number of training materials for similar programs that could prove useful in this project. Esperanca may wish to contact the AED and establish a dialogue over these issues. This is also true for TBA training programs, as well. Since Esperanca is embarking on that, it would be wise to collect a number of the training materials that exist from other projects around the world and adapt them to local needs. Esperanca needs to have a central contact who can assist

them in investigating materials development for specific programs. In the "Lessons Learned" section, we suggested that USAID may wish to support a central information center, perhaps through the Johns Hopkins Child Survival Support Program, that would allow interaction with programs working in isolated rural areas who have limited access to training materials.