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F I N A L R E P O R T

**MID-TERM EVALUATION
OF THE ARHC
CHILD SURVIVAL VI PROJECT
IN BOLIVIA**

Submitted to:

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JNB

ABBREVIATIONS AND ACRONYMS

AID	U.S. Agency for International Development
ALRI	Acute lower respiratory infection
APSAR	Asociación de Proyectos de Salud en Areas Rurales (Association of Rural Health Projects)
ARHC	Andean Rural Health Care
ARI	Acute respiratory infection
ASONGS	Asociación de Organizaciones No-Gubernamentales en Salud (Association of Non-Governmental Organiza- tions in Health)
BCG	Bacille Calmette-Guerin (tuberculosis vaccine)
CAI	Comité de Analisis de Information (Information Analysis Committee)
CHW	Community health worker
CS	Child survival
CSRA	Consejo de Salud Rural Andino (Andean Rural Health Care)
DDC	Diarrheal disease control
DIP	Detailed Implementation Plan
DPT	Diphtheria-tetanus-pertussis vaccine
EBF	Exclusive breastfeeding
EPI	Expanded Program on Immunization
FIS	Fondo de Inversión Social (Social Investment Fund)
GM/P	Growth monitoring and promotion
GOB	Government of Bolivia
HIS	Health information system

HOR	High obstetric risk
LOP	Life of project
MOH	Ministry of Health
NGO	Non-governmental organization
ORS	Oral rehydration salts
ORT	Oral rehydration therapy
PAHO	Pan American Health Organization
PHC	Primary health care
PROCOSI	Programa de Coordinación en Supervivencia Infantil (NGO Child Survival Network)
PVO	Private Voluntary Organization
RHT	Rural health technician
SNIS	Sistema Nacional de Información en Salud (National Health Information System)
SVEN	Sistema de Vigilancia Epidemiológica Nutricional (Nutritional Surveillance System)
TBA	Traditional birth attendant (parteros empíricos)
TT	Tetanus toxoid
URI	Upper respiratory infection
USAID	AID Mission to Bolivia
VE	Volunteer educator
WHO	World Health Organization

ANDEAN RURAL HEALTH CARE (BOLIVIA)
CHILD SURVIVAL VI PROJECT MID-TERM EVALUATION

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EXECUTIVE SUMMARY

Andean Rural Health Care (ARHC) received its second Child Survival grant from AID in October 1990. Approximately \$1.25 million -- 56.1% from AID and 43.9% from ARHC-- are projected to be spent during the three-year life of project (LOP). The Project covers four sites, two in the northern Altiplano region of La Paz and two in the western valley region of Cochabamba. ARHC has been working continuously in the Carabuco Health Area on the Altiplano, the site of the first Child Survival grant (CS-III), since 1985. The Mallco Rancho Health Area in Cochabamba was initiated at the start of the current (CS-VI) grant and the other two sites, Ancoraimes in the Altiplano and Sipe Sipe in Cochabamba, were incorporated in 1992.

The Project serves a population of about 42,000 inhabitants in a total of 109 communities. The two regions vary considerably both geographically and culturally. High levels of poverty and migration affect both regions. The Altiplano region is more remote and has a higher dependency ratio. Regional activities in Mallco Rancho and Sipe Sipe are managed as an independent project of the local counterpart organization APSAR (Association of Rural Health Projects). ARHC/APSAR maintain a high degree of cross-fertilization of ideas and experiences between the valley and Altiplano programs. Existing, but limited, Ministry of Health (MOH) personnel have been seconded to APSAR.

The Child Survival grant directly supports four interventions: immunizations (EPI) for children and women; diarrheal disease control (DDC) and oral rehydration therapy (ORT); nutrition improvement through education and growth monitoring (GM/P); and the control of acute respiratory infections (ARI). While not emphasized under the grant, ARHC/APSAR also manages and supports the MOH area hospitals and health posts within each Health Area for acute medical care and is providing some maternal health services to detect and manage high obstetric risk (HOR) cases. Project interventions conform to MOH technical norms.

ARHC calls its strategy a "census-based primary health care" approach. The model has five central elements: a family census and service record for all community households; home visitation by auxiliary nurses and/or "volunteer educators" (VE) on a regular schedule; the training and incorporation of community health "educators" on a volunteer basis; an integrated system of community health posts (attended by the auxiliary nurses) and area referral

hospital; and supervision of outreach activities by a rural health technician (RHT).

Without question, this evaluation has found the ARHC approach to be very effective in delivering key child survival interventions, through an integrated primary health care (PHC) system, at reasonable costs. The practice of regular and personalized contact with mothers through home visitation has produced very favorable rates of early child immunization coverage, frequency of growth monitoring and adequate weight gain, oral rehydration use in cases of diarrhea, breastfeeding practices, mothers seeking attention for ARIs and knowledge of home remedies, and staff attending home deliveries.

However, persistent deficiencies in achieving optimum health levels include inadequate knowledge and family resources for appropriate weaning practices and foods, inadequate knowledge of criteria for the diagnosis of pneumonia, low recognition of the signs of high obstetric risks, high levels of illiteracy among women, and low coverage of tetanus toxoid (TT) in women. This latter issue may not be a significant problem in the Altiplano or valley environments, but given the high levels of migration between ecological zones in Bolivia, women and newborns are still at high risk.

The ARHC health information system is exceptional in several respects. Project interventions are based on a sound demographic and epidemiological base, in large part due to the prompt detection and analysis of all births and deaths. Project staff maintain up-to-date child growth and immunization records on essentially all families with children under two years. The family data base, maintained at the corresponding health post, provides the input for the Area reporting to both the MOH and ARHC, and more important, is regularly analyzed and utilized by the project field staff for operational decisions and actions. Finally, the HIS has proven to be manageable in terms of the time and effort of the field staff. Thus far, however, HIS data has been used sparingly in problem analysis and decision-making with and by community leaders. The HIS has been more fully developed in the Carabuco Health Area and needs to be consolidated in Mallco Rancho.

Another highlight of the Project is the high level of competence, dedication and teamwork demonstrated by the ARHC/APSAR personnel. This is reinforced through monthly meetings for analysis and planning and periodic technical workshops and seminars. Project activities are sensitive to the cultural context of the respective regions. Auxiliary nurses and volunteer educators have been selected from the communities where they work, and the Project works through existing community organizations rather than forming ad hoc groups for specific project purposes. Also, the use of rural health technicians --experienced auxiliary nurses who have received additional training in supervision and basic management functions-- as field supervisors is culturally, technically, and

economically appropriate.

In addition to the prevailing positive aspects of ARHC's efforts, the Project also faces some important areas which need to be strengthened. First, project staff must set realistic objectives and strategies toward the goal of eventual sustainability. The key is to be pragmatic yet focused to the same degree with which the Project pursues its objectives of impact on health status. Community leader awareness of resource requirements and continuous participation in planning is deficient, in no small part due to the annual rotation of the local leadership function. A modular "course" in leadership training based on project-related needs should be considered.

The sustainability of project benefits and services, however, is unquestionably and severely limited by two factors which are outside of the control of ARHC. At the community level, families in the project area do not have sufficient income to afford adequate food, health care, basic living conditions, and educational opportunities. At the government level, the Ministry of Health does not have the resources or motivation to provide the necessary support services, let alone take over the activities of private organizations. The primary burden rests with governments - -Bolivia and its more wealthy allies-- to create and maintain more equitable social and economic policies and practices, on a national and inter-national scale.

The second issue concerns the effectiveness of the educational activities with mothers and community members. Most of the programmatic deficiencies mentioned previously indicate that certain messages are not being translated into appropriate behavior. Multiple, non-focused messages are being provided, the result being overload and inaction. Staff need to select the most important messages based on priority behavior changes. Also, educational methods, even during home visitation, appear to be didactic and non-participatory. ARHC should provide its staff with training and technical assistance in the methods and techniques of nonformal, adult education.

Third, the Project has had difficulty in retaining health education volunteers and in general maintaining a minimum level of reliability or consistency in their activities. Part of the problem lies in their selection and motivation; in addition, project expectations as to the level of performance (number of activities) may have been too optimistic, and the training program too long and comprehensive to permit the necessary training and follow-up of replacements. Volunteer community health workers are important and feasible elements, with limitations. The problem should be discussed and resolved with community leaders. Staff should consider increasing the numbers of the volunteer educators, reducing their functions (to perhaps supplying oral rehydration salts (ORS), informing of vital events, pregnancies and illnesses, and assisting the

auxiliary nurse in immunizations, GM/P and the annual census), and implementing a modular and more flexible training approach.

Fourth, in general the Project has developed good practices in supervision and quality control at the field level. However, supervision largely focuses on the completion of programmed activities and does not include indicators for quality control. Neither have been incorporated into a reporting system, which lends itself to follow-up actions and corrective training. ARHC should review and systematize the supervisory function and link this to the information and continuing education systems.

Fifth, the tendency of most PVO projects is to try to address a multitude of important problems and ARHC is no exception, because the community needs are often so overwhelming. The recurrent project costs at present, in terms of outreach and support staff to population, are not prohibitive. The issue is primarily in how the staff devote their time and energies. Activities, as with educational messages, should be prioritized in terms of their potential and relative impact on health conditions and their potential for sustainability.

As of June 1992 --month 21 of project implementation-- ARHC had spent only 51% of its proposed field budget for the first two years. In particular, the expenses charged to AID funds were at 63% of budget while ARHC had fulfilled only 31% of its proposed 24-month matching fund commitment. Evaluation expenses, accrued during the fourth quarter of year two, will obviously raise the total. ARHC has significantly underspent in the areas of technical and administrative personnel and, from both funding sources, the purchase of supplies and equipment. No funds have been expended for consultant services, although some services have been provided at no cost to the Project. While some of the problem may relate to accounting practices, it appears that ARHC may be having difficulty in raising and providing sufficient matching funds. Another reason is that expansion into the two new project areas was delayed for about six months as a result of the recommendations from the DIP technical review. This situation does not seem to have hindered field operations to date but will likely become a significant problem very soon as ARHC is expected to assume more of the operating expenses and the two new project sites are being developed.

In sum, ARHC's census-based approach has proven to be an effective and feasible model for delivering child survival interventions, but with some notable room for improvement. In the Ancoraimes Health Area, due to limited staff, the majority of communities will be served by the more traditional "campaign" method, which will provide an opportunity to compare levels of impact. During the course of the evaluation, several areas of unmet need have become apparent. There is high interest among women for information and services regarding family planning, but education with men will be

important. Also, more efforts are needed in maternal health, particularly in safe home deliveries and the detection and referral of high obstetric risks.

In the "older" project sites --Carabuco and shortly in Mallco Rancho-- we recommend an increasingly more selective use of home visitation based on vaccination defaulters, GM/P results, and VE reports of vital events, pregnancies and illness. This should correspond with about a 25% shift of auxiliary nurses from Carabuco to Ancoraimes. Family-based census and reporting must be maintained, but with immunizations and growth monitoring being increasingly done through concentrations. In the "newer" sites -- Ancoraimes and Sipe Sipe-- ARHC should initiate universal and regular home visitation for census, service delivery and education purposes during the start-up phase (2-3 years) while VEs are being trained and the communities experience the value of project interventions. Sipe Sipe, as Ancoraimes, will require the addition of several outreach workers.

This evaluation also confirmed the frustrating paradox in trying to sustain child survival interventions and benefits. The "child survival" concept is based on the application of effective and simple technologies of disease prevention and risk reduction in selective population groups. The "art and science" of achieving sustainability under impoverished conditions, on the contrary, has neither simple technologies nor tried and true effective approaches, in anything approaching similar commitments of time and resources. Both AID and PVOs must recognize and reflect this unavoidable programmatic dilemma in their funding and project design commitments and expectations.

INTRODUCTION

2.1 Background

Andean Rural Health Care (ARHC) is a non-governmental organization which operates, in conjunction with the Ministry of Health, primary health care programs serving approximately 50,000 low-income people in three regions of Bolivia: the northern Altiplano in rural La Paz; the highland valleys of western Cochabamba, also a rural area; and a marginal urban area in Montero in northern Santa Cruz (see maps in **ANNEX E**). Support of this work comes from local Bolivian sources as well as from individual donors in the U.S., church groups, foundations, and the U.S. Agency for International Development (AID). ARHC works in association with and directly supports the activities of a local counterpart organization called APSAR (Association of Rural Health Projects). Andean Rural Health Care is also a co-founder and active member of PROCOSI, the AID-funded child survival PVO network organization.

ARHC has been working continuously in the Carabuco Health Area on the Altiplano since 1985 and received its first child survival grant in 1986 (CS-III) to support this effort. The current CS-VI project grant began in October 1990 and extends these interventions to the Cochabamba region. In accordance with AID requirements, the present mid-term evaluation is designed to assess progress to date, identify possible constraints to achieving project objectives, and recommend modifications in the implementation strategy in order to enhance the potential impact and sustainability of project activities.

2.2 Project Description

The child survival VI grant directly supports four interventions: immunizations (EPI) for children and women; diarrheal disease control (DDC) and oral rehydration therapy (ORT); nutrition improvement through education and growth monitoring (GM/P); and the control of acute respiratory infections (ARI). While not emphasized under the grant, ARHC/APSAR also manages and supports four MOH area hospitals and the health posts within each of the Health Areas for acute medical care and is providing some maternal health services to detect and manage high risk pregnancies.

The Carabuco Health Area encompasses 31 communities with a total population of 9,087 (July 1992). Twelve of the communities have

health posts, which are at present attended by ten auxiliary nurses. There are eleven communities in the Mallco Rancho Health Area, with a total population of 5,827 (July 1992), and one periphery health post. In May 1992, two new Health Areas were added to project coverage: Ancoraimes on the Altiplano has 46 communities, an estimated population of 15,000, and no periphery health posts; Sipe Sipe in the Cochabamba valley has 21 communities, an estimated population of 12,420, and one periphery health post. The sizes of specific target populations are as follows:

TARGET GROUP	CARABUCO	MALLCO RANCHO	ANCORAIMES	SIPE SIPE	TOTAL
Children:					
0-11 months	218	146	360	310	1,034
12-23 months	236	212	390	452	1,290
24-59 months	781	602	1,290	1,283	3,956
Women:					
15-49 years	1,758	1,240	2,900	2,645	8,543
Total	2,993	2,200	4,940	4,690	14,823

Note: Figures for Carabuco and Mallco Rancho are based on family census data for July 1992; Ancoraimes and Sipe Sipe figures are estimates based on percentage distribution.

ARHC calls its strategy a "census-based primary health care" approach. The model has five central elements: a family census and service record for all households in each community; home visitation by auxiliary nurses and/or "volunteer educators" (VE); on a regular schedule; the training and incorporation of community health "educators" on a volunteer basis; an integrated system of community health posts (attended by auxiliary nurses) and area referral hospital; and supervision of outreach activities by a rural health technician (RHT) --an auxiliary nurse who has had additional training in management and supervision.

2.3 Evaluation Methodology

The objectives and methods governing this evaluation are described in detail in the Scope of Work (**ANNEX A**), the AID "1992 Mid Term Evaluation Guidelines" (**ANNEX B**), and the Evaluation Methodology Outline and data collection instruments contained in **ANNEX C**. A list of reference documents used during the evaluation is found in **ANNEX D**.

The evaluation was designed and carried out by James N. Becht, an external consultant with extensive experience in conducting child survival evaluations. He was assisted in Cochabamba by Dr. Evaristo Maida, the local project director of Project Concern International, and in Carabuco by Dr. Juan Rocha, a technical advisor from PROCOSI. In both field areas, ARHC staff participated in and cooperated fully with the evaluation activities. The field portion of the evaluation also benefitted from the contributions of

the ARHC Executive Director, David Shanklin, the National Director in Bolivia, Nathan Robison, and Dr. John Wyon, continuing consultant to ARHC and Senior Lecturer Emeritus at the Harvard University School of Public Health.

Immediately preceding the evaluation the ARHC/APSAR field staff conducted cluster sample household surveys in each of the project areas to determine levels of knowledge and practices of mothers with children under two years of age. In Mallco Rancho (June 1992) and Carabuco (July), these were follow-up surveys to the baselines conducted in October and November 1990 respectively. In Ancoraimes (May 1992) and Sipe Sipe (June), the surveys provided initial baseline data for project expansion. The results of these surveys were available for analysis during the evaluation (see summaries in **ANNEX K**).

Field visits were conducted at the beginning of the evaluation in Mallco Rancho (10-12 August), Carabuco (13-15 August), and Ancoraimes (16 August). A total of 18 community leaders were interviewed in three communities in Mallco Rancho and two communities in Carabuco (**FORM 3**); the evaluators also interviewed 27 members of mothers' groups from one community in Mallco Rancho and two communities in Carabuco. Separate interviews were conducted with 20 volunteer educators from two communities in Mallco Rancho and seven communities in Carabuco (**FORM 4**). In addition to visits and discussions with staff at the three area hospitals, interviews and observations were done at one health post in Mallco Rancho and four health posts in Carabuco (**FORM 5**).

Several meetings were held with project staff in both Mallco Rancho and Carabuco. In addition to structured data collection (**FORM 1**), these opportunities were used to present and analyze the results of the recent household surveys, to ascertain staff perceptions of project implementation (**ANNEX I**), and to debrief staff on the tentative findings and recommendations of the evaluation. The evaluation team also met with staff of the new Ancoraimes Health Area to review the survey results and orient staff on the structure and findings of the evaluation process.

Two instruments were used to compile data from project and MOH records. Child health cards were reviewed from all eleven communities in Mallco Rancho and seven communities in Carabuco to determine child growth monitoring and immunization patterns (**FORM 2**); monthly reporting records for the MOH Nutrition Surveillance System (SVEN) were summarized for the months of June 1988, January and July 1990, and January and July 1992 (**FORM 6**).

3 IMMUNIZATIONS (EPI)

3.1 Problem Statement

According to the National Demographic and Health Survey conducted in 1989 (Bolivia ENDSA-89), the proportion of childhood deaths due to vaccine-preventable diseases appears relatively low, especially when compared with deaths associated with maternal health and diarrheal disease. However, tuberculosis, diphtheria, whooping cough and polio may also be included in the category of respiratory illnesses.

CAUSES OF CHILDHOOD DEATH AS REPORTED BY MOTHERS Percent distribution. (Bolivia ENDSA, 1989)

Main Cause	<1 month	1-11 months	12 + months	All deaths
Birth problems	32.9	3.8	0.5	13.3
Prematurity	7.7	0.0	0.0	2.7
Tetanus	5.7	2.0	1.9	3.3
Measles	0.2	2.1	1.2	1.2
Diarrhea	13.1	39.1	63.8	35.7
Respiratory	17.2	25.7	15.9	20.5
Accidents	7.9	8.4	4.8	7.4
Other	15.5	18.9	11.6	16.0

The practical problem in Bolivia, and the project areas, centers on achieving adequate vaccination coverage of the high risk groups with the appropriate doses of vaccines at the appropriate times. The Ministry of Health policy adheres to the standard PAHO/WHO norms of BCG by age 3 months, an initial polio doses at birth, 3 doses of polio and DPT by age 6 months at 6-8 week intervals, measles at 9 months, and 3-5 doses of TT for all women 15-49 months.

Because of very limited human and material resources, particularly in rural areas, in practice the MOH has utilized a strategy of 3 mass campaigns per year to vaccinate the population. This strategy has 3 major drawbacks: (i) the age at which a child is vaccinated often varies considerably from the norm; (ii) the intervals between doses is a minimum of 3 and often as much as 6 or more months; and (iii) due to irregular contact at the community level and faulty record keeping, there are high levels of drop-out on the one hand, and children who receive multiple doses on the other.

The AID technical review of the project DIP cited 3 concerns: the project definition of "high risk" children (a misinterpretation on the part of the reviewers); clarification of the plan to phase activities in year 3; and caution about lack of evidence of neonatal tetanus in the Altiplano. The DIP mentions recurring suspicions in the project areas that associate TT vaccine with birth control measures, and the serious negative effect that this could have on all program activities.

3.2 Proposed Objectives and Strategy

ARHC defines "high risk" as any child not appropriately vaccinated for age. The project goal is to provide the full schedule of vaccinations to children by one year of age. The specific objectives are to fully vaccinate 90% of the children in Carabuco and Mallco Rancho and 50% of the children in Ancoraimes and Sipe Sipe before one year of age by the end of the project. No specific objective was established for vaccinating women with tetanus toxoid.

Immunizations are given throughout the year during home visits or at prearranged group meetings (concentrations) by the auxiliary nurse responsible for the respective communities. Newborns are identified by the auxiliary nurse or volunteer educators and registered in the family census soon after birth. Vaccination of newborns with BCG and the initial polio dose either immediately or during the next home visit within one month. Tetanus toxoid is offered to women of child bearing age in those communities where this is acceptable. Vaccines are obtained from the MOH and stored at the area hospitals, from where they are transported to the communities as needed in cold boxes.

3.3 Findings

Interviews with community leaders and members of mothers clubs in Carabuco and Mallco Rancho revealed a good understanding of the disease prevention purpose of vaccines and the specific diseases being prevented. No resistance or confusion regarding TT vaccination of women was mentioned in these meetings.

The cold chain was operating well at the Area hospitals. Refrigerators had temperature control charts, frozen cold packs and adequate supplies of vaccines, and staff indicated appropriate procedures to take if the refrigerators malfunctioned. Staff indicated that supplies of vaccines, syringes, and necessary materials have been adequate to meet scheduled demands.

The results of the household surveys conducted in July 1992 indicated 85% of the children age 12-23 months in Carabuco and 73% of the same age group in Mallco Rancho had been fully vaccinated.

Seventy-seven percent of these children in Carabuco and 54% in Mallco Rancho had received the vaccines before one year of age. A review of child health cards in 7 communities in Carabuco revealed that 64% of the children age 12-23 months had been fully vaccinated prior to one year of age (**TABLE 3.1** and **FIGURE 3.1**). Regarding specific vaccines, the household surveys showed that current coverage of children 12-23 months ranged from 89%-97% in Carabuco and 75%-87% in Mallco Rancho. (**FIGURE 3.2**).

Among the mothers of children under two years of age in Carabuco (the 1992 household survey group), 19% had received 2 doses of TT and 7% had received 3. In Mallco Rancho, only 2% of the mothers had received at least 2 doses.

The Ancoraimes and Sipe Sipe Health Areas were not incorporated into the program until 1992. Baseline surveys conducted in May and June respectively of that year. The percentage of children age 12-23 months who had received the complete schedule of vaccinations prior to one year of age was 1.5% in Ancoraimes and 4.1% in Sipe Sipe.

3.4 Discussion and Conclusions

3.4.1 Effectiveness

According to the baseline surveys (1990), the percentage of children age 12-23 months with complete vaccinations was 86% in Carabuco (n=51) and 25% (n=92) in Mallco Rancho. Data in both sites was obtained through household cluster sample surveys. In addition, a 10% random sample of family records in Carabuco (n=18) showed that 72% of children 12-23 months had received the complete schedule prior to one year of age. The coverage rates of children 12-23 months for specific vaccines in Carabuco and Mallco Rancho respectively were: BCG, 92% and n/a; polio-3, 86% and 45%; DPT-3, 86% and 48%; and measles, 90% and n/a.

The vaccination coverage of children under two years in Carabuco has been maintained at very high levels since 1990 and are well above the national averages: 85% have received the complete schedule of vaccinations and coverage for specific vaccines has increased even more from the high levels in 1990. Coverage in Mallco Rancho is only slightly lower: polio-3 coverage increased from 45% to 79% and DPT-3 increased from 48% to 75% in two years and are approaching herd immunity levels. Almost three quarters of all children are fully vaccinated.

There are, however, two areas of concern. The first is that ARHC has fallen short of its objectives to fully vaccinate infants before one year of age. The current indicators are 83% of the end-of-project objective (90%) for Carabuco and 60% for Mallco Rancho. The second concern is with the persistent very low coverage of

women with TT. While resistance appears to be diminishing in Carabuco, it is obvious that much more effort is needed in convincing women and men in both project areas, and overcoming a perceived lack of need by local project leadership.

3.4.2 Relevance

Childhood immunizations are a continuing need in all program areas due to high levels of migration. Once the coverage of children under two has been established the focus must shift to the timely vaccination of all newborns on a permanent basis or a new cohort of children will become at risk. ARHC is well aware of this and, through the vital events registries and home visits, is able to respond to this need.

Until proven to the contrary, all women of childbearing age in the project areas are still a target group for TT vaccination (at least 3 doses) and should be vigorously pursued. Neonatal tetanus is difficult to diagnose and in Bolivia is underreported. ARHC must also consider that it is not uncommon for younger women in the project areas to migrate to tropical areas where tetanus is endemic and their lives and their newborns will be at great risk if they have not been vaccinated.

3.5 Specific Recommendations

- * In the future, an annual systematic review of child health cards of children 12-23 months, can provide reliable and cost-effective data for determining immunization data related to the stated objectives, i.e. prior to one year of age. Similarly, family records can provide data on TT vaccination status of all women of childbearing age. This will increase consistency for comparisons and reduce the burden for periodic household surveys.
- * ARHC should seek expert opinion on the susceptibility of newborns and delivering women to neonatal tetanus before diminishing any efforts to vaccinate women of childbearing age. The analysis should include not only reported cases but also home delivery practices, verbal autopsies, and the potential risk due to migration.

DIARRHEAL DISEASE CONTROL (DDC)

4.1 Problem Statement

A national study undertaken in 1989 (ENDSA) cites diarrheal disease as the highest cause of death in children under five. Mortality was highest in children age 12-23 months (41%) followed by infants age 1-11 months (39%) (See Chapter 3). The incidence of diarrhea in the two weeks preceding the study was 28% among children under five. The baseline survey undertaken by ARHC in 1990 in Carabuco revealed that 18% of children under five had diarrhea during the previous 2 weeks; the rate was 26% for infants 0-11 months and 22% for children 12-23 months. In Mallco Rancho the incidence was 51% of the children 0-23 months.

The incidence of diarrhea depends in large part on the availability and use of safe drinking water, the availability and use of latrines, and basic food and personal hygiene. These conditions are very deficient in the project areas but, with the exception of hygiene education and the boiling of water, are not a regular part of ARHC's program. However, in both Carabuco and Mallco Rancho ARHC has begun to work with other agencies in the area of potable water and sanitation.

The Ministry of Health conservatively estimates three episodes of diarrhea per child per year, with an average duration of three to six days. The greatest danger posed by diarrhea in children is with death due to dehydration and acute loss of weight and electrolytes. In rural Bolivia, the practices of women in treating diarrhea with oral rehydration therapy (ORT), increased amounts of food and liquids, and continued breastfeeding are very deficient.

4.2 Proposed Objectives and Strategy

Project objectives for diarrheal disease control (DDC) focus on the correct preparation of oral rehydration ORS packets and other "solutions". No indicator is proposed for the actual use of ORT in episodes of diarrhea. In Carabuco and Mallco Rancho, the percentage of mothers who can correctly prepare ORS is to increase by 15% by the end of the project (to 86% and 52% respectively), in Ancoraimes and Sipe Sipe the final rate will be 50%. As for correct preparation of the nebulous "solution", the respective rates are 50% and 25%.

The strategy for the treatment of diarrhea focuses on educating mothers to manage episodes with ORT and diet. For infants the response is oral rehydration and continued breastfeeding; for weaned children the response is oral rehydration and continued feeding. The education of mothers is done through group meetings, where organized groups exist, and during regular home visits by the auxiliary nurses and volunteer educators. Mothers are also taught basic hygiene and sanitation. The VEs detect and report cases of severe diarrhea to the auxiliary nurse who makes a prompt home visit if the mother does not seek attention at the health post.

ORS packets are supplied by the Ministry of Health and are available free of charge at the health posts and from the community volunteer educators.

The AID technical reviewers recommended tightening the definition of "at risk" children, determining the feasible number of home visits, prioritizing the volunteer's time (to reach high risk families), increasing the training time of volunteers, and evaluating the on-the-job performance of the volunteers.

4.3 Findings

Only about one half of the community leaders interviewed mentioned DDC and ORT among the health activities in their communities. The mothers' groups, however, were well-informed and correctly related the importance and purpose of the intervention.

The home-based solution proposed in the DIP ("2 heaping tablespoons of sugar and tablespoon of salt" per liter of water) is technically correct but inconsistent with MOH norm and what other NGOs are teaching, namely 8 level teaspoons of sugar and 1 level teaspoon of salt. Nevertheless, all of the auxiliary nurses and volunteer educators interviewed correctly described the MOH "recipe" and not that proposed in the DIP. ARHC has found that rural women have considerable difficulty in recalling the sugar and salt recipe, and have therefore de-emphasized this method.

Auxiliary nurses, and VEs in all but one community, reported having adequate supplies of ORS packets. The mothers interviewed, however, seemed to prefer and use home-based mixes such as cinnamon water, rice water and broths. According to the 1990 household survey, 53% of the mothers in Carabuco and 59% of the mothers in Mallco Rancho correctly indicated how to prepare ORS packet solutions.

In treating episodes of child diarrhea during the preceding two weeks, only 32% of the mothers in Carabuco reported using ORS or home-based ORT solutions, 49% gave "the same or more than usual" amount of liquids, only 33% gave the same or more food, and 62% gave the same or more breast milk. In Mallco Rancho, the compa-

rable results were 42% for ORT, 66% for liquids, 55% for food, and 81% for breastfeeding.

4.4 Discussion and Conclusions

4.4.1 Effectiveness

In Mallco Rancho, the percentage of mothers who can correctly prepare ORS packets has exceeded the end-of-project objective (by 64%). In Carabuco, however, the reported rate has actually gone down by 29% (see **FIGURE 4.1**). If these data are correct, the current proportion of knowledgeable mothers in both areas is still not optimum even though the project is promoting multiple oral rehydration solutions.

In the Carabuco 1990 baseline survey, 41% of the mothers used some kind of oral rehydration therapy (ORS and/or home-based) for children who had diarrhea; 98% provided "the same or more than usual" amount of liquids, 71% the same or more food, and 90% the same or more breast milk. In Mallco Rancho, the comparable data were 31% for ORT, 58% for liquids, 38% for food, and 57% for breastfeeding.

The response of the population to project DDC interventions to date has been mixed in terms of treatment of diarrheal episodes. In Carabuco, all of the above indicators have decreased substantially (see **FIGURE 4.2**). In Mallco Rancho, all the indicators have increased, though with room for continued improvement. It is apparent that the educational messages in Carabuco are not being translated into positive behaviors by the majority of mothers. In Mallco Rancho, problems persist, though not in the same degree, regarding the specific use of ORT and the dietary management of diarrhea.

There appear to be inconsistencies regarding the comparability of data from the various surveys --between sites and between baseline and follow-up. (Please see section 9.2, paragraph 9.) The data reported in the 1992 Carabuco survey may be significantly underreporting ORT preparation and use. Also, the responses regarding breastfeeding and continued feeding, for example, are not clear in cases of women who are exclusively breastfeeding or who are not at all breastfeeding.

4.4.2 Relevance

The control of diarrheal diseases, oral rehydration therapy and the dietary management of diarrhea will continue to be a major concern in rural Bolivia until there is widespread access to safe water supplies, hygienic housing conditions and sanitary waste disposal systems. These are a long way off in the impoverished project

areas. There should be no question as to the importance of strengthening this component.

The question is not, as the technical reviewers anticipated, in the feasibility of project staff to make regular and frequent home visits, but rather in getting the educational messages across. The problems appear to be either in the multitude of messages being given, a lack of clarity or repetition, the educational methods, or any combination of the above.

4.5 Specific Recommendations

- * If the 1992 survey data are correct, ARHC should obtain technical assistance to determine why women in the Carabuco area are not adequately treating diarrhea episodes in children according to the proposed, simple and relatively economical, solutions. This analysis should include a series of focus groups with community women and a complete review of the educational messages, methods and materials.
- * ORT use rates in particular, with ORS packets and home-based solutions, remain relatively low in both project areas, in spite of the availability of packets and the fact that staff know their material. ARHC must determine if this is a cultural, educational, or technical problem or whether there is a problem with the survey data itself.
- * The survey data should be reviewed, and if necessary further processed, to produce comparable statistics. In some cases, the interpretations are not clear due to differences in the questions or the circumstances under which they are answered or not answered.

NUTRITION IMPROVEMENT (GM/P)**5.1 Problem Statement**

Malnutrition does not appear as a direct cause of childhood death in the National Demographic and Health Survey conducted in 1989 see **Chapter 3**). However, because of high rates of poverty, illiteracy and food scarcity, chronic and acute cases of malnutrition are very prevalent in rural and marginal urban areas of Bolivia, and are very important for the synergistic effects with other childhood diseases, particularly diarrheal diseases and acute respiratory infections.

In the DIP, ARHC reported rates of moderate and severe malnutrition (below -2 sd of mean weight-for-age) to be 10% and 11.2% in Carabuco and Mallco Rancho respectively in children under five years.

At the time of the 1990 survey in Carabuco, 100% of the infants under one and 76% of children 12-23 months were currently breast-feeding. In Mallco Rancho, the rate was 73% for children under two years. The practice of breastfeeding is well established in both project areas. Ninety-four percent of the mothers in Carabuco did not begin supplementary feeding until the fourth month or later and 68% of the mothers continued to breastfeed until the child was at least 18 months of age. Data from Carabuco, however, revealed that 23% of infants 0-11 months and 33% of children 12-23 months had at least occasionally been bottle fed. Comparable data were not available for Mallco Rancho.

Regular growth monitoring of children is part of the MOH strategy for nutrition surveillance and improvement. The Ministry has developed a standardized child health card and reporting form based on the NCHS/WHO reference population. The 1990 surveys showed that 14% of infants 0-11 months and 69% of children 12-23 months in Carabuco had been weighed 4 or more times during the previous 12 months. In Mallco Rancho, 54% of children 0-23 months had been weighed 2 or more times during the previous 6 months. While practices may vary from program to program, it is generally felt that 6 weighings per year is optimum for children under two years.

5.2 Proposed Objectives and Strategy

The stated objective for nutrition improvement is to reduce by 20%

the number of infants and weaning age children not gaining weight in all communities where ARHC has implemented censuses and home visits. This would include all communities in Carabuco and Mallco Rancho, but only 14 of 21 communities in Sipe Sipe and 15 of 51 communities in Ancoraimes. Unfortunately, no baseline data were collected to measure this objective. The AID technical reviewers suggested that a more appropriate objective would be annual checks of children actually gaining weight.

No objectives were set regarding breastfeeding, supplemental feeding, maternal nutrition, or vitamin A. The latter was to be determined after completion of an assessment of the problem during the first year of project implementation.

The project goal for growth monitoring is to weigh and measure every child under two years once every two months and each child age 24-59 months once every four months.

As with the other components, the primary strategy for providing nutrition education, conducting growth monitoring, and supplying vitamin A and iron supplements is through regular home visits and secondarily through group concentrations when necessary. The auxiliary nurses and volunteer educators are trained to conduct growth monitoring. Child health cards, provided by the MOH, are given to the mother of each child and used to inform the mother regarding the child's growth status. A duplicate card is kept in the family record at the health post.

5.3 Findings

Very few of the community leaders mentioned growth monitoring or nutrition education as a current health activity. Discussions with members of mothers' clubs, on the other hand, indicated a good understanding that weight gain was an indication of desired growth and development and that diseases, particularly diarrhea and ARI, and poor or insufficient eating caused weight loss.

All of the volunteer educators in the nine communities visited could correctly describe the growth monitoring procedure and knew how to record and interpret the child health card, but few actually were doing growth monitoring by themselves. The actions described for inadequate weight gain and weight loss were fairly general. The auxiliary nurses were more likely to identify and advise regarding specific causes. While several VEs and auxiliary nurses mentioned "more food" as an appropriate response, only one auxiliary nurse (of the five interviewed) and none of the VEs specifically indicated more frequent feeding. VEs and auxiliary nurses commonly indicated more frequent weighings and referral to the health post in cases of weight loss.

A review of MOH nutrition surveillance data for the Carabuco area

(TABLE 5.1 and FIGURE 5.1) between 1988 and 1992 shows that the prevalence of moderate/severe malnutrition in girls 0-11 months has decreased steadily during the post-harvest months (June-July), from 10% to 7% to 1%, as well as during the pre-growing season (December-January), from 5% to 0%. No clear pattern is observed in the other age-sex groups. The average prevalence for children 0-11 in 1992 was 4%, while the average prevalence for children 12-23 months was 17%. Overall, children 12-23 months have significantly more malnutrition than those under one year of age, and boys may be more susceptible than girls.

The growth records of children 12-23 months were reviewed in 11 of 31 communities in Carabuco and all 11 communities in Mallco Rancho (TABLES 5.2 and 5.3). The results indicate that three quarters of the children in both areas had adequate weight gain over the six months preceding the last weighing and that about 4% experienced weight loss (FIGURE 5.2). In Carabuco, 86% of the children had 4 or more weighings during the previous 12 months, an average of 5.2 per child; in Mallco Rancho the rate was 72% and the average 4.3 per child per year (FIGURE 5.3). Significantly, 87% of these children in Carabuco and 66% in Mallco Rancho had their first weighing before age six months, in other words prior to or at the beginning of weaning. In Carabuco, staff have succeeded in registering and weighing 96% of all children 12-23 months; in Mallco Rancho the rate is 76%. This rate, and the lower rates for age at first weighing and average weighings per year is due in part to migrations.

At the time of the 1992 survey, 99% of the children 0-11 months in Carabuco and 96% in Mallco Rancho were breastfeeding. Among children 12-23 months the rate drops to 85% and 39% respectively. However, 27% of the women in Carabuco and 60% of the women in Mallco Rancho said that supplementary feeding should begin before 4 months of age. Only 27% of the mothers in Carabuco and 22% of those in Mallco Rancho mentioned that they added cooking oil to the weaning diet. Also important is that 22% of the children in Carabuco and 34% of those in Mallco Rancho had at least occasionally been fed with a bottle.

5.4 Discussion and Conclusions

5.4.1 Effectiveness

No clear trends are seen regarding the prevalence of moderate and severe malnutrition in Carabuco. Rates of malnutrition in children under one year may be decreasing, but it is apparent that child malnutrition continues to be a significant problem, particularly in weaning age children. More-tracking of this data is needed in both project sites in order to determine eventual impact.

The Project has been very effective in monitoring the weights of

children under two years. This is manifest in the high percentage of children receiving 4 or more controls per year in both areas and the high percentage of children being weighed before the age of six months.

Weaning practices vary between the two project regions and there is no clear indication of progress toward desired behaviors. In part this can be attributed to the lack of specific objectives and clear priorities among the many perceived needs. Another concern is with the specificity and selectivity of educational messages and the methods of educating mothers. Important problems persist regarding when to start and the duration of (particularly Mallco Rancho) breastfeeding and weaning, the frequency of eating particularly during illness, the importance of adding oil to the weaning diet; and the use of bottles and their relation to diarrhea.

5.4.2 Relevance

Nutrition improvement in children remains an important and central problem. Growth monitoring and promotion and nutrition education are appropriate interventions but their impact is limited by other constraints. The prevalence of child malnutrition is a strong indicator of general community well-being because nutritional status is affected by a number of critical social and economic factors. For this reason, health interventions by themselves can have only limited impact on nutritional status. Further improvements in educational, income, food availability, and community sanitation are needed before malnutrition can be eliminated.

5.5 Specific Recommendations

- * ARHC should decide which of the many proposed and attempted nutrition improvement interventions deserve priority attention and establish appropriate objectives for each. If an intervention is worth doing, then objectives and indicators are worth setting. Only then can meaningful decisions on relative effectiveness and costs be made. Each objective should be measurable and measured with baseline and periodic data, preferably collected through the regular HIS or by simple and rapid surveys.
- * ARHC should undertake semi-annual review of SVEN data and an annual review of growth card data in all project sites in order to get a better picture of child growth patterns and nutritional status. The forms developed for the present evaluation offer relatively simple and rapid tools for compiling and analyzing this information.
- * If ARHC strives to eliminate, and not just control, malnutrition, then it must consider the incorporation of additional income generation, food production and other development

activities in the project areas. These can be provided either through an expanded direct role or by collaborative agreements with other organizations. Neither course will be easy and both will entail added organizational burdens and increased program resources.

ACUTE RESPIRATORY INFECTIONS (ARI)

6.1 Problem Statement

The national ENDSA study of 1989 cites respiratory illness as the second highest cause of death in children under five. Mortality was highest in children age 1-11 months (25.7%), followed by infants less than one month of age (17.2%). The prevalence of acute respiratory infections during the two weeks preceding the study was 20% among children under five and 25% among children under two.

The baseline survey in Carabuco of mothers with children age 12-59 months (November 1990) indicated that 20% of the children had a strong cough or difficulty breathing during the two weeks preceding the study. In July 1992, a follow-up survey of mothers with children under two years found that 33% of the children had both strong cough and difficulty in breathing during the previous two weeks. In Ancoraimes, the baseline survey conducted in May 1992 of mothers with children age 12-35 months reported a two-week incidence of 14% of children with both strong cough and difficulty in breathing.

In Mallco Rancho a baseline survey of mothers with children under two years of age, conducted in October 1990, reported that 48% of the children had (only) cough during the preceding two weeks. A follow-up survey in June 1992 of the same age-group children found that 28% of the children had only cough and 17% had both strong cough and difficulty in breathing. In Sipe Sipe, the baseline survey conducted in June 1992 of mothers with children under two years found these rates to be 37% and 24% respectively.

The project DIP states that ARI is "the most prevalent health problem among children in the Carabuco area, and the second most prevalent problem in Mallco Rancho." The majority of cases occur during the winter months of June through September. In summary, the various surveys indicate two-week incidence rates for ARIs in children 0-23 months to be 17%-33% during June and July, and 14%-20% for children 12-59 months in November and May.

6.2 Proposed Objectives and Strategy

The focus of the ARI intervention is to improve education and communication "regarding the causes, early identification and

treatment of ARI." The DIP mentions two strategies: the review and development of effective educational techniques and materials aimed at mothers; and, the training of volunteer and paid staff in ARI detection, treatment and education methods. The specific component objective is "to increase by 10 percent the number of mothers knowledgeable about the prevention and early treatment of ARI" in each of the three project years.

The AID technical review of the DIP concluded that this component was not well defined and that technical assistance was needed. The reviewers also noted the lack of distinction between acute lower respiratory infection (ALRI) and upper respiratory infection (URI).

6.3 Findings

The final evaluation of the CS-III project (Perry, 1991) estimated that less than 10% of ARI cases were being treated by project staff in Carabuco. No information was reported regarding mothers' knowledge and behavior. In 1992, slightly more than half (53%) of the mothers of children with ARI reported seeking treatment, mostly (83%) from a health center. In the contiguous area of Ancoraimes baseline survey (1992), the comparative rates were 36% seeking treatment with 33% of these going to a health center. (See **FIGURE 6.1**) The majority of mothers in both Carabuco (63%) and Ancoraimes (68%) recognize cough as one sign of pneumonia, but only 29% of mothers in Carabuco and 14% in Ancoraimes reported rapid breathing and 37% of mothers in Carabuco and 45% in Ancoraimes reported fever as signs associated with pneumonia in 1992. (See **FIGURE 6.2**)

In the Cochabamba region, patterns of behavioral change are less clear. In 1991, 57% of the mothers of children with ARI reported seeking treatment, only half of whom went to a health center or doctor. Fourteen months later, only 30% of the mothers reported seeking treatment, but 77% of them went to a health center or doctor, the net rate remained about the same (29%-23%). In the contiguous area of Sipe Sipe baseline survey (1992), 43% of the mothers sought treatment, but only 32% of these from a health center or doctor. (See **FIGURE 6.1**) As in the Altiplano, most of the mothers in Mallco Rancho (65%) recognize cough as a sign of pneumonia. This is up from 40% reported in the 1991 baseline survey, and more than the baseline survey in Sipe Sipe (48%). However, significantly fewer mothers in both areas recognize rapid breathing (7% and 9%) and fever (9% and 10%) as signs of pneumonia in 1992. (See **FIGURE 6.2**) Surprisingly, the rates for both of these signs in Mallco Rancho in 1992 are less than half of what they were in 1991.

Interviews with auxiliary nurses in five project health centers revealed that paid staff are taught to diagnose and treat four levels of ARI -- simple colds, ear and throat infections, moderate pneumonia, and severe pneumonia-- but that individual abilities

vary. All of the nurses mentioned a number of correct home-based treatments for colds and upper respiratory infections, correctly used frequency of respirations to diagnosis pneumonia, and referred cases of severe pneumonia immediately to the area hospital. There was some inconsistency and uncertainty in clearly distinguishing between signs of ear and throat infections, moderate pneumonia and severe pneumonia, and with corresponding treatments.

The volunteer educators are also taught to recognize the four levels of ARI but do not administer any medicines. Interviews with VEs in eight communities revealed greater variation in knowledge. In all but one community, moderate and severe ARIs were referred to the health post or hospital; in five communities the VEs mentioned two or more home-based treatments for mild ARIs; and in only half of the communities was respiration mentioned as a means to diagnose pneumonia.

In only one of five meetings with community leaders and in one of three meetings with mothers' clubs was the control of ARIs specifically mentioned as one of the health services being provided by the project.

6.4 Discussion and Conclusions

6.4.1 Effectiveness

The proportion of mothers who seek treatment for ARI from project health centers has definitely and significantly increased during the past two years in Carabuco. The rate, however, is still less than half. In Mallco Rancho, the percentage has decreased somewhat and is now less than one-fourth of the mothers. The rates of recognition of critical signs of pneumonia --rapid breathing and fever-- remain very low in both project areas.

Knowledge regarding home-based treatments for mild ARIs and URIs and the importance of immediate referrals for moderate and severe ALRIs is fairly good among both paid staff and volunteers. Most project auxiliary nurses, but few volunteers, report rapid respiration as a means to diagnose pneumonia. General awareness of the ARI component appears to be very low among community leaders and mothers' groups.

6.4.2 Relevance

As one of the most important causes of childhood mortality and morbidity, the control of ARIs remains a very necessary intervention, particularly in light of low community awareness and low level of knowledge of mothers regarding the signs of pneumonia. The diagnosis and treatment of ARIs is also the most complex of the

core child survival interventions. The effective education of mothers and training of health workers is critical to making progress in preventing life-threatening ALRIs.

ARHC has not been fully successful in its strategy to identify or develop effective educational techniques and materials for mothers. The project is using a culturally appropriate and technically correct manual produced by PROCOSI for the training of community health promoters. The manual provides "what" needs to be learned, in relatively simple terms, but very little regarding "how" to teach largely illiterate adults. Without effective techniques and methods of adult, nonformal education, learning by both volunteers and mothers will be minimal.

6.5 Specific Recommendations

- * ARHC should obtain technical assistance as soon as possible to determine the specific weaknesses of the ARI training and education program, and to develop appropriate materials, methods and techniques to overcome these weaknesses.
- * ARHC and APSAR staff need to receive training in the concept and methods of nonformal, adult education. The methods then need to be incorporated into the training of community volunteer educators.
- * The educational messages relating to the control of ARIs need to be simplified and prioritized in order to gain maximum effect.
- * The training of the volunteer educators should be based on specific desired competencies and not on general technical knowledge. Their role should be to promote home treatment of common colds and mild URIs, and to diagnose, refer and report all ALRIs and moderate and severe URIs.
- * An increased effort should be made to make community leaders more aware of the importance of the ARI intervention and to provide active support of the volunteer educators work.

PREVENTION OF HIGH RISK BIRTHS

7.1 Problem Statement

Maternal mortality is defined as deaths among women while pregnant or within 42 days of termination of pregnancy from any cause related to or aggravated by the pregnancy or its management (WHO 1979). Various studies cite a wide range of maternal mortality rates in Bolivia. The only national data available estimate 480 maternal deaths per 100,000 live births for the period 1973-1977. Almost half of the deaths were found to occur during pregnancy (46.6%), slightly over one-fourth during delivery (28%), and one-fourth during postpartum (25.4%). A study undertaken in Cochabamba cites maternal mortality at 250 per 100,000 live births (1979-1986), whereas another study done in Oruro reports 1,379 deaths per 100,000 live births. The ENDSA (1989) estimates maternal mortality at 33 per 100,000 live births for the period 1975-1988.

Even by most conservative estimates, maternal mortality in Bolivia is among the highest in Latin America. The utilization of prenatal care in Bolivia is extremely low. Over half (53%) of the women surveyed in the ENDSA study received no prenatal care, while only 40% of deliveries take place in health facilities.

Not only mothers but also infants are at risk due to a lack of adequate maternal health care. The Ministry of Health reports that neonatal mortality in Bolivia is 100 per 1,000 live births (MOH 1990) and that from 35%-50% of deaths among the 0-11 month age group occur during the neonatal period (0-28 days).

ARHC (DIP, 1991) reports that maternal mortality appears to be "low" in both project areas (one reported death in Mallco Rancho and three in Carabuco in recent one-year periods). Based on the national average birth rate of 44/1000 population, however, these numbers translate to rates of 390 and 750 per 100,000 live births respectively. While the absolute numbers are very small, there is sufficient cause for concern. ARHC acknowledges that it has been "relatively unsuccessful in the delivery of prenatal health care." Major problems have included a lack of maternal outcome data, difficulty in the early detection of pregnant women, maternal lack of understanding of the value of prenatal visits, and an unwillingness on the part of families to pay for prenatal care.

The final evaluation of the CS-III project (Perry, 1991) discussed the seriousness of the problems of perinatal and maternal mortality and morbidity. Perry also called attention to the "highly

sensitive" issues of minimum birth intervals and maternal and childhood deaths due to unwanted pregnancies. He recommended that ARHC give greater attention to the problems of maternal health and family planning.

7.2 Proposed Objectives and Strategy

Funding was not requested for this activity through the child survival grant and no specific objectives were stated. During the project period, ARHC proposed to strengthen its efforts in pregnancy identification, the delivery of prenatal health care, the identification and treatment of high risk pregnancies, and upgrading clinic facilities for deliveries.

In lieu of the high rates of illegal abortion in Bolivia, the AID technical review of the DIP suggested that ARHC use limited project funds to (i) hire an additional supervisor, (ii) study the extent of maternal morbidity and mortality, and (iii) initiate a birth-spacing education and referral activity on a couple-by-couple basis.

7.3 Findings

A number of maternal health indicators were included in the recent project household surveys. In Mallco Rancho, 39% of the women surveyed had received at least one prenatal control and 25% had three or more controls; the baseline in Sipe Sipe reported rates of 11% and 8% respectively. In Carabuco, 28% of the women reported receiving at least one control and 11% reported three or more; the baseline survey in Ancoraimas reported 7% of the women had received at least one prenatal control. (See **FIGURE 7.1**)

Likewise, women in Cochabamba also showed different patterns with regard to who attended the birth of their latest child. Most births were delivered by health personnel (Mallco Rancho, 58%; Sipe Sipe, 54%); while one-third in each area were attended by family members. In the Altiplano, the majority of births were attended by family members (Carabuco, 79%; Ancoraimas, 68%), with only 10% and 4% respectively being attended by health personnel. Women sought help from traditional birth attendants (TBAs) one fourth of the time in Ancoraimas. (See **FIGURE 7.2**)

The recent surveys also found that about one third of the women in all health areas (28%-36%) had incorrect or no knowledge about when to seek help for retained placenta. Between 65% and 76% of the women reported no knowledge of how to avoid or space pregnancies. Surprisingly, in Carabuco fully 95% of the women surveyed responded that they would like the Project to offer methods of family planning. The question was not asked elsewhere.

In discussions with community leaders, only one of the eight groups mentioned prenatal care or maternal health as one of the services being offered by the Project. In one group, representatives of mothers' clubs in Carabuco, family planning was mentioned as a priority for education and orientation. The women added that men were generally opposed, however.

Volunteer educators are taught to recognize signs of high obstetric risk (HOR) and to refer pregnant women to the health post for prenatal care. In five of the eight communities visited the VEs were able to give some, but not all of these signs; in another community, the VE mentioned referral only. Most mentioned the difficulty of detecting pregnancies early and, as young women and men, being able to counsel older women.

All of the auxiliary nurses in the five health posts visited listed prenatal care and counseling as one of their regular activities, both during home visitation and at the health post. The ANs mentioned an average of three signs of HOR (two gave five or more signs), and all referred HOR cases to the hospital for medical counseling. ARHC/APSAR staff provide counseling on family planning during home visitation, when necessary in Mallco Rancho but only when asked in Carabuco.

7.4 Discussion and Conclusions

7.4.1 Effectiveness

The effectiveness of the maternal health interventions is not readily determined because ARHC has not defined specific objectives or established focused strategies. Auxiliary nurses and volunteer educators are taught to promote prenatal care, to recognize signs of high obstetric risk, and to refer such cases for medical counseling. Staff and VE ability to repeat HOR signs is generally correct but only about 30% complete. The practice of seeking prenatal care appears to be better established in Cochabamba but quite lacking in the Altiplano. Both Mallco Rancho and Carabuco have 3 to 4 times higher rates of prenatal care than their contiguous areas of Sipe Sipe and Ancoraimas, which probably reflects the effect of home visitations and more accessible referral facilities, particularly in the Altiplano.

Trained health personnel attend more than half of the deliveries in Cochabamba but 10% or less in the Altiplano. Family members still attend a significant number of deliveries in the home, one third in Cochabamba and more than two-thirds in the Altiplano. Traditional birth attendants are particularly active in Ancoraimas, probably due in part to the relative remoteness of most of the villages. Progress appears to be very limited in promoting deliveries by trained health workers and ARHC/APSAR has not been involved in the training of TBAs or the distribution of safe birth kits to

families.

7.4.2 Relevance

The extent and importance of maternal mortality and morbidity has become increasingly clear to ARHC. While the populations of the project areas are small, the tentative rates for maternal mortality are among the highest in Bolivia. Staff are well aware that the health of the mother greatly affects the health and well-being of the child. The maternal health/high obstetric risk component, however, is only minimally organized to make an impact.

High-risk patterns of pregnancy --too early, too frequent, too late, and unwanted children-- appear to be common in the project area. Repressed demands for knowledge and methods of family planning are beginning to emerge, among women if not men, in all project areas. Since 1991, the Ministry of Health has an explicit policy for reproductive health which includes both the provision of family planning information and services through government facilities. Unfortunately, capability lags behind intention, even though international funding is supporting the MOH effort. The Catholic church officially opposes all but natural methods of family planning, but in light of widespread poverty, other measures of "responsible parenthood" are, for the most part, tolerated.

7.5 Specific Recommendations

- * ARHC must continue to monitor maternal mortality very closely in order to determine the real extent of the problem. All deaths of women of child-bearing age should be reported by auxiliary nurses, VEs and community leaders to the area hospitals and verbal autopsies performed.
- * ARHC should develop a program to train traditional birth attendants (TBAs) in Ancoraimes to recognize and refer high risk pregnancies and to perform safe, clean births in the home. TBAs can also be incorporated as additional sources of information regarding vital events, particularly neonatal and maternal deaths.
- * A strategy should be developed to train family members of pregnant women in the techniques of safe, clean births and to provide them with delivery kits.
- * ARHC/APSAR staff should be trained and encouraged to provide counseling and selected services in birth spacing and family planning. ARHC may wish to seek contract services from a specialized national organization to take the lead in the project areas.

8 IMPLEMENTATION ISSUES

8.1 Community Education and Social Promotion

Health education and promotion at the community level is carried out through direct contact with mothers and caregivers during home visitation and outpatient visits at the health posts or area hospitals, during group concentrations at which children are weighed and vaccinated, and at meetings of women's groups and the agrarian syndicates as well as general village assemblies.

The themes or purposes of these events fall generally into three categories: (a) specific health/medical counseling to deal with a particular family or individual problem; (b) basic health education regarding a general area of community concern (i.e. immunization, nutrition, etc.); and, (c) discussion of issues dealing with community organization and participation. The primary providers or facilitators of the educational and promotional messages are the staff auxiliary nurses; they are assisted to a lesser and varying degree by the community-based volunteer educators and project professional staff.

A review of the effectiveness of the project interventions in previous chapters indicates that most of the programmatic deficiencies are related to the fact that educational messages are not being translated into appropriate and desired behaviors. In particular, these include weaning practices, ORT use rates, recognition and treatment of pneumonia, detection and referral of high risk pregnancies, low rates of TT vaccination and basic literacy. Also, community leaders showed minimal awareness of project activities and resource requirements. ARHC/APSAR field staff mentioned educational activities as one of the most promising aspects of the project in 10% of their responses (see **ANNEX I**); at the same time, they cited education-related activities in 25% of their responses to the most difficult or problematic aspects of their work.

There seem to be three problems that limit the effectiveness of the educational and promotional activities. The first is the multiplicity of messages being delivered, and the corresponding lack of establishing limited educational priorities for each intervention. The second is a tendency to organize training and education around general technical knowledge rather than focusing on problem-oriented behavioral changes or "competencies". The third has to do with using didactic and apparently non-participatory approaches rather than the methods and techniques of non-formal, adult

education. The educational support materials being used by the staff are culturally and technically appropriate --having been developed by PROCOSI and the Ministry of Health for the most part-- but are in limited supply and tend to reinforce the didactic nature of the process (flip charts, manuals, etc.). Methods and materials are lacking in variety and reiteration.

8.2 Human Resources

Service delivery is patterned on a "pyramid" system which consists of community selected volunteer educators (VE) in each village, paid auxiliary nurses who staff government health posts and cover two to four villages each, and supervisory and referral personnel at the Ministry of Health area hospitals. The project proposal called for the training of 70 VEs in Carabuco, 145 VEs in Mallco Rancho/Sipe-Sipe, and an unspecified number of VEs in five villages in Ancoraimes by the second project year. As of July 1992 (month 22), the active VEs numbered 68 in Carabuco, 13 in Mallco Rancho, and one in Ancoraimes, or < 37% of the year-two target. Using an average of five persons per household, this translates to roughly one VE per 27 households in Carabuco and one per 90 in Mallco Rancho.

Currently, the project utilizes 19 auxiliary nurses for outreach activities and five rural health technicians for both outreach and supervisory functions: 17 are paid by ARHC and seven are provided by the MOH (see **TABLE 8.1**). The Ministry of Health estimates the need for non-supervisory personnel at 5-11 per 10,000 inhabitants; project ratios are 11.0 in Carabuco, 8.6 in Mallco Rancho, and 2.4 in Sipe Sipe. Periphery health posts do not exist in the Ancoraimes area. An innovative and very appropriate strategy of ARHC has been the use of rural health technicians as area supervisors of the health post-based auxiliary nurses. RHTs are auxiliary nurses who have received an equivalent of at least six months of additional training in basic administration and supervisory functions.

At the area level, the MOH suggests two professional and four support staff to provide supervisory and medical referral functions for 10,000 inhabitants. Current project ratios are 1.7 professional and 2.2 support in Carabuco, 5.1 professional and 3.4 support in Mallco Rancho, 1.7 professional and 1.3 support in Ancoraimes, and 3.2 professional and 3.2 support in Sipe Sipe. In general, area level professional and support personnel ratios are greater in the Cochabamba region and less than MOH norms on the Altiplano (see **FIGURES 8.1 A and B**). In all cases, service support staff at the area level are less than that recommended by the Ministry of Health. It should be mentioned that the MOH, in rural areas, rarely has been able to meet its own staffing requirements because of inadequate budgets. Concern for the sustainability of their actions has caused ARHC, and other NGOs, to keep levels of

recurrent personnel to a minimum.

In Carabuco, there is one supervisor for ten outreach auxiliary nurses and one AN per 6.8 volunteer educators; the supervisory ratios in Mallco Rancho are 1:5 and 1:2.6 respectively. Sipe Sipe and Ancoraimes are just getting under way and have not begun training volunteer educators. There is no clear programmatic rationale for the differences observed in staffing patterns. The differences appear to reflect the preferences of the regional directors, the high attrition of VEs in Mallco Rancho, the existence of periphery health posts (high in Carabuco, low or nil in the other three areas), and the delayed start-up in Ancoraimes and Sipe Sipe.

The training and retention of volunteer educators (non-paid community health promoters or CHWs) has not been as successful as anticipated, particularly in Mallco Rancho. Of the 101 VEs who entered training in Carabuco since March 1990, 33 (32.7%) were inactive at the time of the evaluation; in Mallco Rancho, 15 of 28 (53.6%) of the trainees were no longer active within a two-year period (see **TABLES 8.2 and 8.3**). Looking at the cumulative effect of training and dropout patterns during the CS-VI project period, 74% of the potential VE contribution has occurred while the VEs were in training and 23% has been lost to attrition; in Mallco Rancho, 46% of the potential contribution has occurred while the VEs were in training and 40% has been lost to attrition. Training times have been shorter in Mallco Rancho but more of the training effort has been "wasted" or inefficient because of the relatively high rate of attrition. This is shown graphically in **FIGURES 8.2 and 8.3**. (Person-month in this analysis refers to a VE who was in training, fully trained, or inactive during the month in question, but does not imply that the VE worked or trained during the entire month.)

The volunteer educators were selected during meetings with community leaders. ARHC/APSAR required certain criteria (literacy, stability, community authorization) and stressed the volunteer and educational character of the work and the need to assist the staff auxiliary nurses at the community level. Nevertheless, discussions with leaders and staff revealed that expectations regarding the VE functions and possible compensation varied and have effected their level of participation. In Mallco Rancho, many of the VEs were students who were often not in their communities. ARHC/APSAR has increasingly relied on staff auxiliary nurses to carry out home visitation and community education activities and has, to date, deferred dealing with the effectiveness and sustainability of VEs with community leaders.

8.3 Supplies and Material Resources

Having assumed the responsibility for managing entire Health Areas

for the MOH, including the operation of four area hospitals and 14 health posts, has placed additional burdens of providing medical as well as preventive/child survival supplies and materials on ARHC. Initial stocks of medicines and supplies were funded through a grant from the Bolivian Social Investment Fund (FIS). With in-kind donations and fees from services, a revolving fund system has been established whereby each health post can purchase (and then charge for at minimum cost) needed supplies from the area hospital which, in turn, purchases in bulk. Given the low economic level of the service populations, ARHC currently must subsidize this system with its operating budget.

The Ministry of Health has recently determined that it will no longer supply any medicines for ARIs or other interventions to community promoters. Other items that have been discontinued by the MOH are iodized salt and anti-parasite medicine; syringes for vaccinations are always in short supply. Currently, the MOH is only committed to providing, without charge, ORS packets, iron sulfate, vaccines, medicines for tuberculosis, vitamin A capsules, health cards for women and children, and reporting forms for the SNIS, SVEN and nutrition programs. In the near future, the MOH will begin to charge for ORS packets.

8.4 Quality Assurance

Minimum criteria for assessing the status of quality assurance mechanisms include the use of clear and simple standards of service, protocols to monitor performance against these standards, the incorporation of the monitoring results into an information system which allows regular analysis, and a process for identifying recurring weaknesses and resolving problems. In addition, quality is enhanced to the degree that this process is based on a team approach to problem solving, that community members are educated on standards of care, and that staff disseminate and exchange information with other programs.

Project staff follow Ministry of Health norms for each of the child survival interventions. These are well-established for immunizations, diarrheal disease control and oral rehydration therapy, growth monitoring, and prenatal care. The MOH is less clear, from a practical point of view, in the areas of follow-up actions resulting from growth monitoring, the diagnosis and treatment of ARIs, and family planning.

ARHC/APSAR staff were given initial training and orientation to project interventions and participate in periodic seminars and refresher courses on specific topics given by external experts. Both regional offices (Mallco Rancho and Carabuco) regularly received technical reference materials which is actively gathered by the La Paz and U.S. support staff. Each month, the staff at both regional sites meet to review and discuss the project

statistics and operations; two to three times per year, morbidity and mortality data are also analyzed. In Carabuco, a list of follow-up actions is prepared for the area supervisor and medical director based on needs identified during the monthly review.

There are several areas in which ARHC could improve quality assurance. Supervisory activities are primarily based on reviewing the status of planned activities, but do not include criteria or indicators of the quality of services performed. Thus, weaknesses are not systematically documented and addressed. Also, it is not clear whether training or continuing education activities are specifically designed or modified to correct deficiencies in service delivery. The regional project directors have periodic contact with other health projects and the ARHC national coordinator is very active in PROCOSI, but operational field staff have had little opportunity, on a regular basis, to exchange ideas and experiences and discuss problems with the staffs of similar programs. Finally, community members have varying levels of awareness of project activities but seem to be quite removed from active participation in controlling the quality of the services being provided, except in the extreme case of general acceptance or rejection (of personnel).

8.5 Supervision and Monitoring

Supervision of the volunteer educators by the auxiliary nurses consists of observations during home visits and community education sessions, the review of activity registries, and control of ORS packets. In Carabuco, the ANs hold weekly meetings with the volunteers to resolve problems and provide training. In Mallco Rancho, direct supervision has been de-emphasized because of the high attrition and the minimum activity of the VEs who have remained.

Auxiliary nurses prepare monthly activity plans and reports. Supervision focuses primarily on the achievement of planned activities. Area supervisors make home visits with each AN one to three times per month. Spot checks are made to compare monthly reports with target group registries, activity wall charts which are displayed in the health posts, and the family information file. Team meetings are held weekly in Carabuco for training, coordinating activities, resupplying health post stocks, and resolving problems. Meetings are monthly in Mallco Rancho, but since the ANs are based at the area hospital they have almost daily contact with area supervisors.

Carabuco has developed a supervision guide which is used by the area supervisor but not all the criteria have been agreed on with the auxiliary nurses. The guide does not contain specific criteria for quality control. Data from the supervision system are not systematically incorporated into an information system which would

facilitate the identification, analysis and resolution of problems affecting staff performance and the programming of activities. Overall, however, the ARHC model provides constant contact between the various levels of personnel, clear lines of authority and open communication, and an excellent example of team cooperation.

8.6 Referral Relationships

The advantage of managing an entire Health Area for the Ministry of Health has not only unified the support systems for planning, information and supervision, but has strengthened the system for patient referrals as well. Interviews with community members and staff confirmed that ARHC/APSAR has increased access to and the utilization of the health posts and their respective area hospitals. To be sure, individuals, as is their choice, continue to seek assistance from traditional practitioners and at times seek medical attention directly in Cochabamba and La Paz. The system has not only improved referrals to primary and secondary levels of care, but provides for medical visits to the home by the auxiliary nurses and area nurses and physicians when these are required.

Each of the Health Areas are part of a larger Health District, Escoma in the case of Carabuco and Quillacollo in the case of Mallco Rancho. Referrals to these district hospitals is not very common. From Carabuco, Escoma is about an hour traveling in the opposite direction from La Paz; Quillacollo is on the paved road to and only about a half hour from Cochabamba. Patients and families usually prefer to go to the capital cities when the required care is not possible in the area hospitals. Both project sites have made arrangements for specialty care in the respective cities. These arrangements include reasonably prompt attention and reduced fees and/or payment schedules.

MANAGEMENT ISSUES

9.1 Project Design

ARHC and APSAR have accepted the responsibility to develop, manage and operate a basic but comprehensive primary health care (PHC) system in four Health Areas. As per their written agreements with the Ministry of Health (1983 with the La Paz Regional Health Office and 1990 with the Cochabamba Regional Health Office), PHC services are provided through MOH facilities, MOH personnel in each of the Health Areas are seconded to ARHC/APSAR, and ARHC is obligated to implement all of the basic programs of the MOH applicable to rural areas, including curative medicine.

The AID Child Survival VI grant provides resources to strengthen and implement the interventions related to immunizations, diarrheal disease control, growth monitoring and nutrition improvement, and control of acute respiratory infections. ARHC's program and management responsibilities go beyond these activities to encompass maternal health care and primary medical care for the entire population. These global responsibilities on the one hand place broad demands on staff time and organizational resources, but at the same time provide maximum opportunity to develop, test and ultimately influence MOH policy and practices regarding appropriate models of primary health care delivery, support systems, and financing.

ARHC has introduced a PHC model which is both an innovative and effective alternative, in at least two respects, to the way the MOH normally operates. First, it focuses service delivery in each community, rather than at a health post which services, often passively, a group of several communities. Second, interventions are planned (or targeted) and evaluated in terms of predominant demographic-disease patterns. These patterns are monitored through a family census and tracking of vital events.

The model also anticipates the active participation of volunteer educators in each community. This element has not been as successful as desired due to problems in selection and retention. The paid auxiliary nurses, however, have effectively compensated for these deficiencies through a system of periodic home visitation based on high-risk criteria, in all the communities under their control, while still being able to perform their health post responsibilities. Without a doubt, health promotion and the early detection of priority individuals would be increased with a

strengthened system of volunteer CHWs. Another important and efficient element of the ARHC model is the use of rural health technicians (RHT) --auxiliary nurses who have received supplementary training in administration and supervision-- as supervisors of the outreach auxiliary nurses.

9.2 Management and Use of Data

One of the strengths of the ARHC primary health care/child survival program is the development and utilization of a well thought out and functional health information system. The HIS can be visualized in four parts: the recording and maintenance of household data and community registries (6 items); hospital and health post records (6 items); periodic reporting forms for project management and analysis (13 items); and periodic cluster sample surveys (8 to date). The HIS is more fully developed and in operation in Carabuco where the program has been functioning for seven years; plans are to consolidate and formalize the system in Mallco Rancho in 1993. A detailed summary of the data collection and reporting instruments is provided in **ANNEX G**.

The HIS is commendable on several accounts. First of all it works; staff are able to keep family records and community registries current, although this requires one or two hours of diligent work every day. Second, and foremost, the information is being used for programming and analysis on a regular basis. One example, in Carabuco, is an action follow-up sheet for the area doctor and supervisor based on monthly reports and vital events. Wall charts are also on display at the health facilities to track immunizations and child nutritional status. Third, the HIS is centered on providing data on health outcomes which is used to identify, and adjust, program priorities and target interventions. ARHC is able to respond regularly with AID tier 2 indicators. Fourth, the program has benefitted from both experienced external technical assistance and a very competent HIS advisor in La Paz. This latter position, while full time, is only budgeted through February 1993.

There are several areas in which the health information system can be improved or further developed:

- Currently, very little information is provided to or used by community leaders in a systematic manner. More extensive use of wall charts --for vital events, maternal health, etc.-- placed in all villages and training for leaders in basic data analysis, are two possibilities.
- It is important that the HIS in Mallco Rancho be consolidated and standardized with the other program sites as soon as possible. Maximizing the consistency of data collection and reporting will enhance training, quality control, problem analysis and overall reporting.

- The reporting of field activities, demographic data, vital events, and morbidity data are currently not being adequately analyzed in the La Paz office. Considerable data is being reported but the lack of a computerized storage/processing/retrieval system makes it of minimum value.
- The information system does not as yet incorporate data from supervisory activities nor criteria and indicators on the quality of services provided. The collection and analysis of this kind of data can provide valuable insights for quality control, continuing education needs, and timely corrections in management systems.
- Only fifteen of the 46 communities in the Ancoraimes Health Area will be applying the census-based, home visitation model of service delivery during the remainder of the grant. The other communities will be assisted initially by the traditional concentration method. Until such time that the remaining communities can be fully incorporated, ARHC should strive to at least commit community leaders to undertake a household population census (age and sex counts) and maintain a registry of vital events. Wall charts can also be used in these villages to track vital events, immunizations and growth monitoring results.
- ARHC was possibly the first NGO in Bolivia to systematically use cluster sample surveys for planning and evaluation purposes. Two concerns, however, are apparent. The first is that there has been some inconsistencies among the surveys regarding the age-groups of the population surveyed and also in the comparability of certain indicators. These changes in design have, in part, been mandated by the AID PVO Support Project for central purposes, and unfortunately have been disadvantageous for local analysis and evaluation needs. The second concern is that the interval between surveys has been very short (20 months). This is probably too short to expect appreciable change; and it also places undue burdens on the project staff.

9.3 Use of Central Funding

The total project budget for three years is approximately \$1.25 million, of which AID is providing \$700,000 (56.1%) and ARHC has committed \$547,529 (43.9%). Fifty-seven percent of project funds are allocated to field programs, 25% to the La Paz support functions, and 18% to headquarters support functions (**TABLE 9.1** and **FIGURE 9.1**). While AID provides the majority of funds in the three basic functional areas --field programs, country support, and HQ support-- ARHC provides a greater portion of its funds (61%) at the field program level (see **TABLE 9.1** and **FIGURE 9.2**). Data on field expenditures was available through June 1992 (project

month 22) and for HQ expenditures through September 1991 (project month 12). Overall, ARHC has spent only half of the proposed field budget for the first two project years: 63% of the AID funds and 31% of its matching funds (**TABLE 9.2B**). Spending at headquarters was also less than projected for the first year of implementation: 70% of AID funds and 86% of ARHC funds (**TABLE 9.3B**). Field expenditures are particularly low for supplies and equipment and for ARHC-supported technical and administrative personnel (**FIGURE 9.3**).

Two reasons were given for the reduced expenditure level: entry into the new expansion areas (Ancoraimes and Sipe Sipe) was delayed approximately six months in response to the DIP technical review recommendations; also ARHC may be experiencing some difficulty in raising some of its matching funds, or at least maintaining cash flows in a timely manner. To date the lower expenditure levels have not been overly detrimental to project implementation, but it does mean that ARHC will have to provide and spend 80% of its field budget and more than half of the AID field budget during the third project year, unless a no-cost extension is requested and approved.

One area of concern is that ARHC has not been able to hire a permanent full time technical specialist in La Paz. The hiring of the HIS advisor has, in the interim, filled part of this need, but there are other technical support functions which require strengthening, such as the regular analysis of HIS and survey data, design and implementation of special studies, cost analysis and alternative financing studies, needs assessments and the design of complementary interventions, and the provision of continuous training and technical assistance to the regional programs.

9.4 Use of Technical Assistance

The AID technical review of the project DIP recommended that technical assistance be provided to review and modify the overall project design, particularly in prioritizing and focusing project activities and to further develop the ARI component.

During this grant period, has ARHC received external technical assistance on six occasions (see **ANNEX J**). During the first year of the project, Ms. Daisy Ferrufino, clinical nutritionist for the Gastroenterological Institute of Cochabamba, provided assistance on the development of a potential nutrition rehabilitation intervention in Mallco Rancho. In August-September 1991, Dr. John Wyon reviewed the health information system. In October 1991, Susana Barrera of PROCOSI provided training in the use of ARI and DDC educational materials. In May 1992, Drs. Victor Lara and Marcelo Castrillo provided assistance and training for the household surveys. From May through October 1992, David Patton, a Peace Corps volunteer, has been developing and implementing a computerized cost accounting system. In September 1992, Dr. Henry Perry

will be reviewing program needs regarding a possible vitamin A intervention.

The present evaluation found that technical assistance would be beneficial in the following areas: (1) the methods and techniques of nonformal adult education; (2) the design and analysis of focus groups to resolve the problem of CHW retention; (3) computer software and hardware needs to compile and analyze field activities, vital events and morbidity data; (4) operations research in community management and financing; (5) the relevance and necessity of tetanus toxoid vaccinations; (6) determining the reasons for low ORT use rate in Carabuco; and, (7) ARI training and education activities.

9.5 Budget Management

Each of the regional programs are managed independently and prepare and execute their own annual budgets. Dr. Orlando Taja directs the Mallco Rancho/Sipe Sipe program in Cochabamba and Dr. Carolina Hilari directs the Carabuco and Ancoraimes programs on the Altiplano. The La Paz office serves to coordinate financial and accounting functions, manage cash flow, and develop local fund raising efforts, in addition to its overall national representation, policy development, and support functions. Financial disbursements and reporting is done monthly. The La Paz office also does purchasing for the Altiplano program.

ARHC/La Paz has enlisted the assistance of a Peace Corps volunteer to develop, test and implement a computerized cost accounting system. This work began in March 1992 and will be completed in October 1992. To start, expenditures will be coded by program site, item of expenditure, source of funding, cost center (activity), and purpose (operations or investment). Accounting data for 1992 are being entered into the system. In the future, ARHC would like to relate service and population data to the accounting systems to facilitate additional cost analysis.

9.6 PVO/NGO Networking

Andean Rural Health Care was a founding member of PROCOSI, the PVO child survival network financed by USAID/Bolivia, and participates actively on its rotating executive committee. ARHC has received both funding and technical assistance from PROCOSI. ARHC is also a member of ASONGS, a local association of NGOs working in health in the Department of La Paz. APSAR is a member of ASONGS in Cochabamba. As with many of the NGOs, participation in PROCOSI and ASONGS has fostered cooperation and the exchange of information among the members. Recently, ARHC entered into an agreement with CARE in which the latter is designing and constructing potable water systems and latrines in five communities in the Carabuco

area. APSAR coordinates regularly with Project Concern in efforts to strengthen the Quillacollo Health District.

10 SUSTAINABILITY

10.1 Objectives and Strategies

The DIP technical review suggested that a more detailed plan for sustainability was needed and noted that the ARHC did not present any indicators for sustainability in the DIP. The evaluation confirmed that ARHC and APSAR have not clearly defined their expectations and specific objectives for sustainability. Staff have not given sufficient effort to considering and defining the conditions for sustainability and eventual ARHC/APSAR withdrawal. Certain criteria were expressed during staff meetings: community awareness of problems; greater value on health; greater confidence in health and medical services; adequate knowledge, attitudes and practices regarding positive health behavior; active community leadership and responsibility; the continuing presence of auxiliary nurses; and, improved income levels and economic support for health activities.

The future desired roles of the community and the Ministry of Health have not been thoroughly or systematically discussed with community leaders or MOH officials. As a result, the program has not established agreement with its counterparts on precise strategies and specific activities to reach these "goals". The program lacks measurable, time-limited objectives and specific indicators of progress in this area.

ARHC's integrated primary health care model, which includes a medical attention component through the health posts and area hospitals, is very appropriate and important to long term sustainability. It responds to priority felt needs and garners community support, it generates fees for services, and provides a vehicle for health promotion and prevention activities.

This evaluation confirmed the frustrating paradox in trying to sustain child survival interventions and benefits. The "child survival" concept is based on the application of effective and simple technologies of disease prevention and risk reduction in selective population groups. The "art and science" of achieving sustainability under impoverished conditions, on the contrary, has neither simple technologies nor tried and true effective approaches.

10.2 Community Participation

ARHC staff often attend community meetings to discuss community needs and implementation issues. Periodic meetings are also held with the leaders of all communities within the health service area. It is ARHC policy to work through existing groups --agrarian syndicates, mothers' clubs-- rather than form new special purpose organizations.

Interviews with community leaders showed that they have minimum awareness about specific project components and a general lack of understanding of component purposes and resource requirements. Their primary interest is in curative services, medicines, and infrastructure projects. There was no mention of the community's responsibility in the management, supervision and monitoring of health activities.

A significant limitation in developing conscientious and continuing leadership is that community leaders rotate annually. This provides little opportunity for orientation and preparation of leadership functions. The interest and capacity varies from community to community and year to year. The structure of the agrarian syndicates provides for a "welfare secretary" but their functions are not clearly defined and for the most part not oriented toward a continuous health system. The position does, however, provide an option to explore.

Community leaders gave the impression that they have not engaged in discussions with project staff regarding the duration of ARHC support or what will happen when that support is terminated. There is unanimous feeling that the project should continue indefinitely but that this depends on ARHC. All communities have, at one time or another, contributed with labor, materials, and money for specific projects of importance to them. Community responsibilities in securing health services, according to those interviewed, ranged from a fatalistic resignation of being "abandoned" to organizing themselves, defining priority needs and looking for help from other organizations.

ARHC/APSAR has not entered into written agreements with the participating communities which define goals (benefits), responsibilities, and commitments. This is particularly important as leadership changes each year. Information about health indicators, survey results and program activities is not regularly reported to communities. As a result, there appears to be very little discussion and analysis of problems and solutions in terms of long-term planning.

10.3 Counterpart Relationships

Health facilities and personnel of the Ministry of Health have been fully integrated with ARHC/APSAR within each Health Area. The Regional Health Units in La Paz and Cochabamba and the respective District Health Offices are kept regularly informed but there is minimum contact on an operational and supervisory level with the Districts and little in the way of structured strengthening or institutional development to enhance long-term sustainability.

Personnel of the health posts and hospitals in the project areas were asked for their opinions regarding the appropriate roles for the community, the Ministry of Health, and NGOs (ARHC/APSAR) in providing health services. Community responsibilities were generally viewed in terms of becoming informed, attending and accepting health services, and taking care of the health post. No one mentioned a role for the community in analyzing health needs, planning, managing and supervising health activities.

In the opinion of staff, the Ministry of Health was basically considered as a provider of salaries, medicines and vaccines, educational materials, and other supplies to support programs. No one mentioned a role for the MOH in supervision and continuing education, for example. NGOs were also considered as a source for materials and medicines, but also for a role in continuing education and technical assistance. For the most part, the responses left significant gaps in the functions required to develop and manage a sustainable health system, which showed that not enough attention has been given to defining and agreeing on ultimate and feasible roles of the various organizations or the best way of achieving the desired outcomes.

In early 1992, the Ministry of Health openly acknowledged that it will be able to provide only salary support, vaccines, vitamin A capsules, selected drugs for tuberculosis, and the information system for the rural health facilities. There will no longer be a central budget for facility maintenance, transportation, free medicines and medical supplies, and other recurrent costs. All these expenditures will have to be covered through the local generation of fees or other means. This is a realistic but not very encouraging determination by the MOH.

10.4 Recurrent Costs

Personnel are the most significant aspect in terms of recurrent costs and quality of services. **TABLE 8.1** and **FIGURES 10.1 and 10.2** compare project staffing ratios with Ministry of Health norms for rural areas. In terms of community level outreach staff (auxiliary nurses), the number of workers per 10,000 population in Carabuco is currently 65% higher than the MOH; Mallco Rancho is at the norm, and Ancoraimas and Sipe Sipe, which are just being started, are

well below the norm. The levels of professional personnel (doctors, dentists, and graduate nurses) and administrative support staff in Mallco Rancho are more than double the MOH standard, while support personnel in the other three project areas are less than the MOH norm.

The ARHC model does not require a higher level of staffing, as has been inferred by some reviewers, when compared with Ministry of Health norms for rural areas. MOH projected requirements for personnel are minimal but necessary, for example, to adequately attend a referral facility and provide preventive services. Even so, the MOH has considerable difficulty in staffing the rural health system and, therefore, looks to NGOs to cover the deficit whenever possible. ARHC is considering shifting some of its auxiliary personnel from Carabuco to Ancoraimes during the next year which could correct the present imbalance. In Mallco Rancho and Sipe Sipe, the current level of professional staff could adequately serve a greater population but it would be difficult to reduced staff and still maintain a basic service level.

Both Carabuco and Mallco Rancho/Sipe Sipe inherited situations which conditioned their options: in Carabuco their already existed an excess of health posts (12 for 31 communities) and the unenviable task of trying to convince some communities to relinquish their exclusive auxiliary nurse; the Cochabamba valley, being close to the city and very active politically, has also been able to secure dentists and graduate nurses for example. Ancoraimes, on the other hand, with no existing health posts, offers greater flexibility for rational planning.

The ARHC model requires that minimum staffing needs be met and that the field staff spend their time and efforts in a different way from the traditional MOH pattern --i.e in home visitation, data collection and analysis, training volunteer CHWs, etc. The sustainability of the system will also depend on the kind of support provided by MOH regional and district supervisors. Orientation, attitude and commitment are often more important than material resources and these don't necessarily take money but are harder to come by.

In recent years, the Ministry of Health contribution to salaries in Carabuco has amounted to \$5,700 (1989-90) and \$5,800 (1990-91). Patient visits to project health facilities totaled 2,400 in 1989-90 and generated an average of \$0.43 income per visit; in 1990-91 visits increased to 3,200 and generated \$0.65 per visit.

The DIP technical review stressed the need to cut back on recurrent costs, raise more local revenues, and test alternative means for income generation and community financing. The sustainability of project benefits and services, however, is unquestionably and severely limited by two factors which are outside of the control of ARHC. At the community level, families in the project area do not

have sufficient income to afford adequate food, health care, basic living conditions, and educational opportunities. At the government level, the Ministry of Health does not have the resources or often the motivation to provide the necessary support services, let alone take over the activities of private organizations.

ARHC recognizes that most communities place health care below the priorities of income generation, economic development, and infrastructure projects. The most difficult ongoing cost for communities to assume is salaries. ARHC has mentioned its intentions to increase the level and number of fees for service, which is feasible, as well as to establish a self-sustaining drug supply system, which is a very complex undertaking. The answer to resolving the issue of sustainability needs to be approached with the same level of planning and intensity which is afforded to technical interventions. The process is long and tedious but no less important, and will require the combined efforts of ARHC, community leaders and government officials.

11 RECOMMENDATIONS

11.1 Implementation Issues

- * The number of educational messages needs to be reduced and reinforced in order to achieve greater impact. They should be selected on the basis of priority problems and desired changes in behavior. They should be directed at and measured in terms of desired behavior. This activity must become more focused.
- * ARHC should provide training and technical assistance to all project staff in the methods and techniques of nonformal, adult education. This assistance could possibly be provided by PROCOSI or by MAP in Cochabamba. The community and family education activities should be revised to incorporate these methods.
- * The number of volunteer educators should be increased to cover all communities and reduce the ratio of families per VE. The minimum level of responsibilities, and training, should be reduced to (i) detecting and reporting vital events, pregnancies and illnesses, (ii) the provision of ORS packets and advice regarding ORT, (iii) advising mothers when to seek treatment for ARI, diarrheas, and high-risk pregnancy, (iv) assisting the auxiliary nurse in GM/P and EPI, and (v) assisting the AE in the annual census.
- * The problem of retention of volunteer educators should be presented and analyzed through structured focus groups of VEs and community leaders. Technical assistance in how to do focus groups and analyze the results would be advisable and valuable for the staff.
- * By the end of the project, a rural health technician with an MOH salary should be in place as the field supervisor in each of the project sites. The RHT is a valuable and appropriate member of the health team. (In Carabuco, this position could be filled with the current field supervisor with some minimum additional in-service training.)
- * The field directors should explore the possibility of incorporating traditional birth attendants (TBAs) and other healers as part of the volunteer network on a trial basis. Modular training could be provided in the areas of most interest to these traditional health workers.

- * The proposed position of a technical specialist in La Paz should be filled on a permanent basis. This person should have overall responsibility for program analysis and information management. Specific responsibilities could include regular analysis of HIS and survey data, design and conduct focus group and other special studies including operations research in community financing, developing and coordinating the sustainability strategy, undertaking periodic cost analyses, and other task. It is possible that this position could be funded in part by a series of small research grants.
- * ARHC should request the Ministry of Health to provide BCG vaccine in vials of 10cc in order to reduce waste. PROCOSI may be more persuasive by making the request for all its members.
- * Criteria for monitoring the quality of staff performance should be defined for selected and critical functions and incorporated into the supervision protocols. This data should be tabulated at least quarterly and applied to staff improvement seminars.
- * ARHC should systematize the supervisory functions, particularly of the field supervisor level, through the clarification of expectations, the development of protocols, the tabulation of critical indicators, etc. The focus of supervision should be to reinforce positive staff behavior and to identify and correct deficiencies in project implementation. The results of systematic supervision should be incorporated into the HIS, periodically analyzed and applied to training activities and the improvement of field and support operations.

11.2 Management Issues

- * Indicators for monitoring and evaluation should reflect the priorities of interventions and the way staff actually spend their time. Their purpose is not only to measure progress but to motivate staff in improving performance.
- * At the health area level, the director and field supervisor should consider ongoing tabulations and graphs of key indicators for programming, monitoring and evaluation purposes. These indicators could include selected data from the SVEN, SNIS and ARHC reports, i.e. data that is already being collected but not systematically analyzed.
- * The interval between complex and time-consuming household surveys could be lengthened to every 3 years. Staff should do more periodic analysis of HIS data, growth charts, time studies, focus groups, etc. on an annual basis. This will be less burdensome for mothers and staff, and will allow for more

rapid detection and resolution of problems.

- * Selected information from the HIS, surveys and special studies should systematically and regularly be provided to and discussed with community leaders and groups. Wall charts depicting vital events and immunization status, for example could be displayed in the health posts or common meeting place. This information should be used to stimulate discussion on important issues.
- * In communities to be served by concentration, rather than with home visitation and family census, ARHC should request that community leaders prepare an annual household census of basic demographic data: names, age, sex, relation to head. This will be useful to the community and essential to the project for planning activities and calculating coverage.
- * The La Paz office should begin to computerize selective data it regularly receives from the field projects. At a minimum, this should include population and vital events, selected activities, and part of the SVEN and SNIS reports. Computerized data banks will facilitate cost analyses, monitoring of key indicators, and periodic evaluation efforts. Technical assistance will be needed to design or adapt the appropriate software and determine if additional or more sophisticated hardware is needed.
- * ARHC needs to do a budget and expenditure analysis of its matching funds for field activities to determine if the significant underspending is due to unmet fundraising projections, accounting procedures, or program delays. The latter seems hardly likely. In any case, the budget will have to be revised to reprogram unspent projections.
- * If current rates of expenditure continue, ARHC should consider requesting a no-cost extension of the project in order to efficiently use the underspent portions of both the AID and ARHC portions of the budget.

11.3 Sustainability Issues

- * In order to achieve a degree of sustainability, ARHC must first agree on a vision (i.e. goal) of what sustainability ideally is, then set realistic objectives based on economic and time constraints, then determine strategies for reaching those objectives. As with technical intervention, a lack of planning will produce limited results and the inefficient use of resources.
- * Project staff must not underestimate the ability of community leaders to comprehend the issues of project implementation and

sustainability, and to fully contribute to the resolution of short and long-term problems. Staff will need to discuss these issues in each community on a continuing basis. The process and objectives of these discussions will need to be well planned.

- * ARHC should explore the possibility, with other NGOs, for conducting a study of relatively effective Health Districts which function primarily with MOH personnel to identify those factors which have permitted sustainability of delivery and support systems and those which are problematic. Incorporate these findings into a strategy for institutional development in the project areas. PROCOSI may be a source of funding for this study.
- * Program staff should consider conducting a series of meetings with small groups of community leaders in Carabuco and Mallco Rancho to examine in detail all aspects of system management and support requirements in order to identify possible mechanisms by which communities can begin to assume greater and more permanent responsibilities. This effort might include a systematic study to test the feasibility of several of these alternatives in selective communities or health post jurisdictions. Specialized technical assistance for this is advised and may be available through PRICOR.
- * ARHC should consider developing a modular course in leadership and management skills for community leaders. The focus should be based on project needs and sustainability issues, but cover the basics of need and resource analysis, setting priorities, monitoring and supervision, setting agendas and conducting meetings, and negotiating. Training must be adapted to the constraints of rotating leaders.

11.4 Project Focus and Design Issues

- * Every activity has a potential degree of benefit and a level of human and monetary cost. Every new activity will require an added burden. ARHC must continuously analyze the seriousness of identified needs, the relative impact of current and proposed activities, and their relative costs in order to prioritize current and proposed interventions, and then make pragmatic choices based on the realistic assessment of available resources, most importantly staff time.
- * The project should develop an appropriate response in terms of education and methods to meet the high demand of women for family planning services. This strategy must include the education of men and gaining the support of community leaders. The activity must also conform to MOH policies.

- * A second related area for future development is maternal health, particularly the promotion of safe home births and strengthening the detection and referral women with high obstetric risks. This activity should include the training of traditional birth attendants and family members and the provision, at cost, of clean birth kits.

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LESSONS LEARNED

- * A primary health care/child survival system based on family census and home visitation is not only feasible in rural areas but can be cost-effective. Regular, personalized and persistent contact with mothers does produce change; population-based data permits sound operational and strategic decisions; and the incorporation of trained but non-paid community collaborators greatly extends the system's "eyes and ears".
- * In traditional communities, it is often better in the long term to work with existing organized groups than to form special interest support groups for each new project.
- * Community leaders, no matter how "unsophisticated" in the outsider's view, should be made aware of health program and system requirements, resource needs and sources, and be given the opportunity to fully participate in planning and implementation decisions, particularly those dealing with sustainability issues.
- * The contributions of volunteer community health workers are both important and feasible, but their functions and training should be specific, limited, and tailored to the interests and abilities of the individual, as well as the expectations of community members.
- * Adults learn differently than we did as students in the health professions, and are more likely to retain and apply new knowledge based on personal interests and convictions and the support of their peers. Likewise, people in marginal economic conditions, and often illiterate, tend to be very conservative about changing traditional ways. Agents of change need to use participatory, nonformal methods and techniques in their educational programs.
- * The prevailing economic and social structures in Third World countries, supported by international financial and trade arrangements, severely constrain the capacities of impoverished communities and Ministries of Health to achieve sustainable health systems. The primary burden of sustainability rests with governments --of the South and North-- to create and maintain more equitable social and economic policies and practices, on both national and inter-national scales.

- * The frustrating irony of trying to sustain child survival interventions is that while the child survival concept is based on the application of effective and simple technologies of disease prevention and risk reduction, the "art and science" of achieving sustainability has neither simple technologies nor tried and true approaches, given the constraints of time and resources in short-term projects.



ANDEAN RURAL HEALTH CARE

Promoting Hope Through Health For the Rural Poor of Bolivia

**ARHC health programs
in Bolivia:**

Carabuco Health Area
on Lake Titicaca
30 villages
9,500 people

Mallco Rancho Health Area
near Cochabamba
11 villages
5,600 people

Montero near Santa Cruz
Villa Cochabamba
8 barrios
9,000 people

New health programs
ARHC will be adding
in 1991, 1992:

Altiplano Health Area
42 villages
18,100 people

Sipe Sipe Health Area
near Cochabamba
14 villages
9,400 people

Chair, Board of Directors
Frank Houser, M. D.

Executive Director, USA
Martha M. Edens, CFRE

Program Director, USA
David S. Shanklin, M.S.

Founder & Program Advisor For
Quality Assurance, Evaluation &
Planning

Henry B. Perry, III, M. D.,
Ph.D., M.P.H.

Director of Interpretation
Bonnie Jones Gehweiler

Field Representatives
The Rev. Carl & Bette Shafer

National Director of Projects,
Bolivia
Nathan C. Robison

Project Coordinators, Bolivia
Dardo Chavez, M. D.
Carolina Hilari, M. D.
Orlando Taja, M.D., D.D.S., M.P.H.

TO: James N. Becht, MPH

**FROM: David Shanklin, MS DSS
Executive Director and
International Program Director**

DATE: June 8, 1992

**SUBJECT: Proposed Scope of Work for the
ARHC CS VI Mid-Term Evaluation**

This document describes the proposed scope of work for a mid-term evaluation of the Andean Rural Health Care's AID-funded Child Survival VI grant, for which you will serve as independent consultant, team leader and report author. The purposes of this evaluation are to (a) review the progress achieved and constraints encountered to date in project operation, (b) assess the potential for reaching stated objectives, for achieving sustainability, and of strategies for overcoming problems, and (c) determine priority actions for possible mid-course corrections and enhancing the prospects for sustainability.

1. The questions and issues to be addressed by the evaluation team will conform to the mid-term evaluation guidelines released by the AID Office of Child Survival and Health in May 1992 (see relevant attachment for more detail), and will include the following (While all topics are considered important, I **highlight** topics of particular concern to ARHC):

a. determining accomplishments, including relevant inputs, outputs, and outcomes;

b. assessing relevance to CS problems; of particular importance to ARHC will be

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assessment of need in the areas of reproductive health, maternal health, and vitamin A;

c. evaluating effectiveness, by stated objectives and annual targets;

d. promoting community participation and related development activities and skills;

e. reviewing technical and administrative competence, including: project design; date use/management; community education and social promotion; human resources (number, mix); local supplies and materials; **quality assurance; supervision and monitoring;** use of central funding; use of technical support; counterpart relationships; referral relationships; PVO/NGO networking; and, budget management;

f. sustainability, particularly the outlook for long term local community planning and support;

g. recurrent costs and cost recovery mechanisms;

h. recommendations; and,

i. summary.

2. The evaluation team will use the Detailed Implementation Plan (DIP) as their basic project design document and source of project objectives, target population, etc. In addition, the following documents and information are offered by ARHC before and during the evaluation effort (* indicates included as an attachment to this document, and ** indicates that the data will be available in the field during the evaluation):

- * a. AID guidelines of the CS VI mid-term evaluation;
- * b. DIP and copy of review panel comments;
- * c. revised project budget;
- * d. first annual report and pipeline analysis;
- ** e. Fiscal Years 1990-91 and 1991-92 annual plans (goals and objectives) and activity schedules (activities and time frame) for: the La Paz Office, Carabuco and Mallco Rancho;
- ** f. Fiscal Year 1991-92 activity schedules (activities and time frame) for Ancoraimes and Sipe-Sipe;

- ** g. itemized listing of responsibilities, roles, and in-kind contributions by collaborating agencies, including MOH, APSAR (Mallco Rancho/Sipe-Sipe), and Bolivian Methodist Church (Ancoraimes);
- ** h. complete listing of all staff (direct hire and volunteers) with position, initial and termination dates, percent time allocated to CS componenets, annual compensation (1991 in US\$);
- ** i. job descriptions of current staff, including community health workers related to the project;
- ** j. special reports, including relevant PROCOSI final reports, and agreements with APSAR and the Bolivian Methodist Church;
- ** k. survey and evaluation results, including descriptions of methodology and outcomes of baseline and followup surveys conducted in 1992;
- * l. 1992 survey instrumentation for the baseline and followup surveys;
- * m. previously conducted mid-term and final evaluations of the CS III grant;
- ** n. maps of project areas with relative locations of target communities, roads, health facilities, and major geographical features;
- ** o. population (total and target) and services delivered by community and year;
- ** p. chronology of major/significant events during the life of project which have affected progress;
- ** q. technical protocols developed for service delivery, community education, and management systems; and,
- ** r. training plans by type of worker, including objectives, content outline, methods, total hours, dates, trainers, number of initiated and completed courses, and evaluations.

3. The proposed itinerary, work schedule and your days to be charged are as follows:

<u>Dates</u>	<u>Activities</u>	<u>Days</u>
Prior to August 10th	Review all written materials received	5
August 8th-9th	Travel to Bolivia	2
August 10th-15th	Conduct field site	6

	visits/original data collection	
August 17th-22nd	Conduct interviews, data analysis and report writing, and debriefing	6
August 23rd-24th	Return to US	2
Prior to Sept. 14th	Revise mid-term report and submit final copy	2
		—
Total days service		23

4. The recommended composition of the mid-term evaluation team is as follows:

James N. Becht, MPH	Independent Consultant, Team Leader
David Shanklin, MS	ARHC/Executive Director/International Program Director
Nathan Robison	ARHC/Bolivia Program Director
John Wyon, MB, MRCP, MPH	International Community Health Expert, Public Health Physician
Caroline de Hilari, MD	ARHC/Carabuco and Ancoraimes Project Director
Orlando Krueger-Taja, MD, DDS, MPH	ARHC/Mallco Rancho and Sipe-Sipe Project Director
TBA	MOH Representatives (two, one for each locale - Carabuco/Ancoraimes, and Mallco Rancho/Sipe-Sipe)
TBA	PVO Representatives (two, one for each locale)

5. Baseline (Ancoraimes and Sipe-Sipe) and followup (Carabuco and Mallco Rancho) survey descriptions and results will be available from ARHC/Bolivia for the evaluation team members prior to conducting field site visits (see attached data collection instruments for these surveys). A description of the evaluation team's proposed activities, methods and schedule, as well as a proposed outline of the mid-term evaluation report is to be submitted by Mr. Becht to Mr. Shanklin (in Bolivia), no later than July 31st.

6. A formal debriefing will be conducted with project staff, USAID and collaborating agency officials prior to departing from Bolivia. A written summary of findings and recommendations will be left with ARHC/Bolivia. Mr. Becht will submit a complete draft of the final report to Mr. Shanklin by August 26th for his review. The final report, inclusive of offered comments, is due to Mr. Shanklin no later than September 14th, 1992.

**1992 MID TERM EVALUATION GUIDELINES FOR CSV FIVE YEAR PROJECTS
AND CSVI THREE YEAR PROJECTS**

1. Assessment of Accomplishments - As of the time of the midterm evaluation, how many months has this project been operating? What has the project achieved to date in terms of measurable inputs (e.g. training sessions held), outputs (e.g. persons trained, mothers educated), and outcomes (e.g. immunization coverage, change in mothers' use of ORT)? How many infants, children under five, and mothers have been reached by CS interventions to date? What proportion is that of the total potential beneficiary population of infants, children under five, and women of child bearing age?

2. Assessment of Relevance to Child Survival Problems - What are the major causes of child mortality and morbidity in the project service area? What are the child survival interventions and health promotion activities initiated by the project? Are the mix of project interventions appropriate to address the key problems, given the human, financial and material resources available to the project and the community? Is the focus or prioritization of interventions appropriate?

3. Assessment of Effectiveness - Has there been sufficient progress in meeting stated objectives and yearly targets? Are targeted high risk groups being reached effectively? If not, what are the constraints to meeting objectives and reaching high risk groups?

4. Assessment of Relevance to Development - What are the main community barriers to meeting the basic needs of children? What has the PVO project done to date to increase the ability of families to participate and benefit from child survival activities and services? Is the PVO fostering an environment which increases community self-reliance, and enables women to better address the health and nutrition needs of their families?

5. Assessment of Competence in Carrying Out Project - Are there any particular aspects of project design or implementation which may be having a positive or negative effect on meeting project objectives? Please take into account the following points:

- 5.1 Assessment of Design - Has the project limited its project area or size of impact population? Has there been a careful expansion of project service activities? Has the PVO set measurable objectives of outputs and outcomes? Has the project management been willing to make changes when appropriate, and can the PVO justify or give a reasonable explanation of the directions and strategies the project has undertaken?
- 5.2 Assessment of Management and Use of Data - Is the project collecting simple and useful data? Do the indicators need refinement? What is the balance between qualitative and quantitative methods of data collection? Is the project using surveys for monitoring and evaluation? How were baseline data used for project development? Are data being used for decision making? (Please give examples). Is the project's routine health information system fully functional? Do the local staff have the management and technical capacity required to maintain the health information system? Have the results of the information collected been shared with data collectors, project staff, counterparts, and community members? Is the PVO headquarters or project level making any attempt to maximize lessons learned by documenting, sharing, or institutionalizing their lessons?
- 5.3 Assessment of Community Education and Social Promotion - What is the balance between health promotion/social mobilization and service provision in this project? Is the balance appropriate? Is education linked to available services? Has the project carried out any community information, education, or communication activities? Was there any attempt to utilize knowledge and practice data, or data from focus groups, in-depth interviews, etc. in developing the messages? Have the messages been tested and refined? How does the PVO ensure that messages to mothers are consistent? Does the project distribute any printed materials? Did the PVO pre-test printed materials? Do members of the community regard these materials as simple, useful, and of value? Has the project been creative in its approach to community education, such as incorporating any non-traditional or participatory education activities? Has the project assessed the level of learning that has occurred with these methods, or is the evidence for effectiveness anecdotal?
- 5.4 Assessment of Human Resources for Child Survival - How many persons are working in this child survival project? Does the project have adequate numbers and mix of staff to meet the technical, managerial and operational needs of the project? Do these staff have local counterparts? Are community volunteers taking part in this project? How many are in place?

Are they multi-purpose workers or do they concentrate on a single intervention? Is their workload reasonable? How many days of initial training and how many days of refresher training have they received since the start of the project? Is there evidence the PVO carried out a needs assessment before embarking on initial and refresher training? Was the training methodology appropriate for the nature of the health workers jobs? Was the length of training sufficient to prepare the health workers to carry out assigned tasks?

- 5.5 Assessment of Supplies and Materials for Local Staff - What educational or other materials have been distributed to workers? Do these materials or supplies give any evidence of being used? Are they valued by the health worker? Are they appropriate to the health worker's job? Do the local staff volunteers have the necessary materials, supplies, and equipment to carry out their current responsibilities?
- 5.6 Assessment of Quality - Do the local project staff currently have the technical knowledge and skills to carry out their current child survival responsibilities? Do the local staff counsel and support mothers in an appropriate manner?
- 5.7 Assessment of Supervision and Monitoring - What is the nature of supervision and monitoring carried out in this project? Is it field-based supervision? Has supervision of each level of health worker been adequate for assuring quality of services? From the viewpoint of the health worker, how much of the supervision is counseling/support, performance evaluation, on-the-job education, or administration? What are the monitoring and supervision requirements for the remainder of the project?
- 5.8 Assessment of Use of Central Funding - Has administrative monitoring and technical support from the PVO regional or central offices been appropriate in terms of timing, frequency and needs of the field staff? If not, what constraints does the project face in obtaining adequate monitoring and technical support from PVO regional or central offices? How much central funding has A.I.D. given the child survival grant for administrative monitoring and technical support of the project? Do these funds serve a critical function? Do those functions appear to be underfunded or overfunded? Are there any particular aspects of A.I.D. funding to the central office of the PVO that may have a positive or negative effect on meeting child survival objectives?

- 5.9 Assessment of PVO Use of Technical Support - What are the types of external technical assistance the project has needed to date, and what technical assistance has the project obtained? Was the level of technical support obtained by the project adequate, straight-forward and worthwhile? Are there any particular aspects of the technical support (from all sources) which may have had a positive or negative effect on meeting project objectives? (For example, consultant visits, evaluations, workshops, conferences, exchange field visits). Is there a need for technical support in the next six months? If so, what are the constraints to obtaining the necessary support?
- 5.10 Assessment of Counterpart Relationships - What are the chief counterpart organizations of this project and what collaborative activities have taken place to date? Is there any exchange of money, materials, or human resources between the project and counterparts? Does the counterpart staff have the managerial and technical capacity to eventually take on the functions necessary to operate effective child survival activities? Is there an open dialogue between the PVO project and counterparts?
- 5.11 Assessment of Referral Relationships - Identify the potential referral care sites and comment on access and service quality. Has the project made appropriate use of these referral sites? What is the continuity of relationships between the referral site and the community project? Is the dialogue between project and referral site adequate? Is the project taking any steps to strengthen the services of the referral site or increase community access to the referral site?
- 5.12 Assessment of PVO/NGO Networking - What is the evidence for good networking with other PVOs and NGOs working in health and child survival? Are there any particular aspects of the situation which may have had a positive or negative effect on networking? Can the project cite at least one lesson learned from other PVOs, or other child survival projects?
- 5.13 Assessment of Budget Management - How does the rate of expenditures to date compare with the project budget? Is the budget being managed in a flexible but responsible manner, and can the PVO justify budget shifts that may have occurred? Can the project achieve its objectives with the remaining funding? Is there a possibility that the budget will be underspent at the end of the project?

6. **Sustainability** - Are the incentives received by community volunteers, project staff, and counterparts meaningful for project commitment? Would those incentives continue once A.I.D. project funding ends? What are the steps the project has undertaken to promote sustainability of effective child survival activities once project funding ends? How is the community involved in planning and implementation of project activities? Do community members see this project as effective? Is there a demand in the community for the project activities to be sustained? Is the MOH involved in the project? Does the MOH see this project as effective? Are there any concrete plans for the MOH to continue particular project activities after funding ends? Do local organizations see the project as effective? Are there any concrete plans for project activities to be institutionalized by local NGOs?

7. **Recurrent Costs and Cost Recovery Mechanisms** - Do the project managers have a good understanding of the human, material, and financial inputs required to sustain effective child survival activities? What is the amount of money the project calculates will be needed to cover recurrent costs? Does the community agree to pay for any part of the costs of preventive and promotive health activities? Is the Government prepared to assume any part of the recurrent costs? What strategies is the PVO implementing to reduce costs and make the project more efficient? What specific cost-recovery mechanisms are being implemented to offset project expenditures? Are the costs reasonable given the environment in which the project operates; is the cost per potential beneficiary appropriate? Identify costs which are not likely to be sustainable.

8. **Recommendations** - What steps should be taken by PVO field staff and headquarters for the project to achieve its output and outcome objectives by the end of the project? Are there any steps the project and PVO headquarters can take to make the project activities more sustainable? Are there any steps the project and PVO headquarters should take to make the project activities more applicable, the staff more competent, or the services of higher quality? Are there any steps the project and PVO headquarters should take to make the lessons learned by this project more widely known by other child survival or development projects sponsored by A.I.D., or by the PVO? Finally, are there any issues or actions that A.I.D. should consider as a result of this evaluation?

9. **Summary** - Write a brief summary, no more than one page, of the highlights of the midterm evaluation covering: composition of the evaluation team; time spent; total costs; field visits; quantitative/qualitative methods; main project accomplishments and measurable outcomes; assessment of applicability and quality of child survival programming; relevance of lessons learned to other child survival and community development programs; key recommendations; planned or actual feedback of evaluation results; author(s) of the midterm evaluation report.

ANNEX C

ANDEAN RURAL HEALTH CARE Child Survival VI Project Mid-Term Evaluation August 1992

EVALUATION METHODOLOGY OUTLINE

1 OBJECTIVES OF THE EVALUATION

- 1.1 Review progress achieved and constraints encountered to date in project operation.
- 1.2 Assess the potential for reaching stated objectives, for achieving sustainability, and of strategies for overcoming problems.
- 1.3 Determine priority actions for possible mid-course corrections and enhancing the prospects for sustainability.

2 SPECIAL ISSUES TO BE ADDRESSED

- 2.1 Technical appropriateness; management competence; sustainability; and health information systems.
(A.I.D. Mid-term Evaluation Guidelines)
- 2.2 Technical review of the Detailed Implementation Plan.
- 2.3 Specific concerns of ARHC, including: assessment of need in the areas of reproductive health, maternal health, and vitamin A; quality assurance, supervision and monitoring; and, the outlook for long-term local community planning and support.

3 OUTLINE OF THE EVALUATION REPORT (attached)

4 METHODS AND TECHNIQUES

- 4.1 Review of relevant documents and reports, including baseline and interim survey results and HIS summaries.
- 4.2 Structured interviews with project staff, Ministry of Health and NGO participants, and community health workers.
- 4.3 Field visits and observations in eight (8) project communities (four in each site), nearby ORT/ARI centers and referral health facilities.

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- 4.4 Group interviews with community leaders.
- 4.5 Structured review of growth monitoring and immunization records of children 12-23 months of age.
- 4.6 Orientation/planning and debriefing meetings with Carabuco, Mallco Ranch and La Paz staff.

5 SOFTWARE

- 5.1 The report narrative will be produced in WordPerfect, version 5.1.
- 5.2 Tables and figures will be produced using Lotus 1-2-3, version 2.01 and Harvard Graphics, version 2.12.

6 SCHEDULE OF EVENTS: FIELD ACTIVITIES

- August 7 Travel to La Paz
- August 8-9 Altitude adjustment and document review.
- August 9 PM Travel to Cochabamba; team planning meeting.
- August 10-12 Field visits and interviews: Mallco Rancho
 - Day 1 - AM: meeting with regional director
 - PM: visit 2 communities
 - staff meeting
 - Day 2 - AM: visit 2 communities
 - PM: staff meeting
 - analysis of survey data, reports
 - Day 3 - AM: tabulate child health card data
 - PM: visit Mallco Rancho hospital
 - staff debriefing
- August 13-15 Field visits and interviews: Carabuco
 - Day 1 - AM: travel to La Paz and Carabuco
 - PM: meeting with regional director
 - visit 2 communities
 - Day 2 - AM: visit 2 communities
 - PM: analysis of survey data
 - team meeting
 - Day 3 - AM: data tabulation
 - staff debriefing
 - PM: staff debriefing
 - meeting with 2 mothers' groups

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- August 16 Visit to Ancoraimes area hospital and meeting with project staff; return to La Paz
- August 17-21 Central level interviews, data analysis and writing of report; debriefing with USAID/B.
- August 22-23 Finalize draft report.
- August 24 Submit draft report to ARHC/La Paz.
- September 14 Review comments on draft report with Nat Robison in La Paz.
- September 15 Travel to Davis, California.
- September 28 Submit (FEDEX) final report to D. Shanklin.

7 PARTICIPANTS

- 7.1 Contract consultant: James N. Becht, Davis, CA (USA)
- 7.2 Agency observers: Mallco Ranch, August 10-12
Dr. Evaristo Maida T., Project Concern International

Agency observers: Carabuco, August 13-15
Dr. Juan Rocha S., PROCOSI
- 7.3 Andean Rural Health Care - Bolivia:
Nathan Robison, National Director
Caroline de Hilari, Carabuco/Ancoraimes Reg. Director
Orlando Taja, Mallco Rancho/Sipe Sipe Regional Director
- 7.4 Andean Rural Health Care - USA:
David Shanklin, Executive Director
John Wyon, International Health Consultant

Criteria for Assessing Quality Assurance *

1. Has the program developed clear and simple standards of care for important and commonly occurring health services?

Are these standards incorporated into training programs, field operations manuals, and refresher courses?
2. Do supervisors follow a set protocol to monitor performance against these standards?

What is the process for identifying common or recurring weaknesses and resolving problems?

Are training programs and refresher courses continuously modified to address persistent weaknesses and unresolved problems?
3. Does the management information system incorporate and process statistics on quality assurance from routine supervision?

Has the program undertaken operations research to clarify issues and/or identify and test alternative solutions?
4. Has the program demonstrated continuous, incremental improvement through the analysis of data on a regular basis?

Have district-level managers participated in workshops to improve their analytic skills and problem solving techniques?
5. Are successful problem-solving techniques and solutions disseminated to and exchanged with other programs?
6. To what extent is a team approach, including Ministry of Health district personnel, used to achieve improvements in the quality of services?
7. To what extent are community members educated on the standards of care and generate a demand for quality?

Are community members satisfied with the outcomes of the health services being delivered?

To what extent are community members involved in identifying and resolving issues of quality care?

* Adapted from materials produced by the Quality Assurance Project, Center for Human Services, Bethesda, MD, 1991.

ANDEAN RURAL HEALTH CARE
Proyecto de Supervivencia Infantil
Evaluación de Medio Tiempo

FORMULARIO 1: REUNION INFORMATIVA CON PERSONAL DE CSRA

Fecha: ____/____/1992

Programa: _____

Participantes:

1. Orientación al Proyecto.

Enfoque y estructura
actual de CSRA:

Proceso de planificación y
organización en la comunidad:

Descripción de intervenciones -
Control Enfermedades Diarréicas:

Infecciones Respiratorias Agudas:

Programa Ampliado de
Inmunizaciones:

VFC y Nutrición:

Otras: _____

Sistema y criterios de supervisión:

Sistema y uso de información:

Mecanismos y acciones para
garantizar calidad de servicios:

2. Aspectos Prometedores.

IMPACTO	CONTINUIDAD

3. Inquietudes y Preocupaciones Principales.

Claridad de Objetivos	
Relaciones con Ministerio Salud	
Relaciones con otras ONGs	
Interacción con las comunidades	
Autogestión y continuidad de actividades	
Organización y recursos humanos de CSRA	
Capacitación y asistencia técnica al personal	
Necesidades no previstas	

4. Estrategia de Autogestión

¿Cuales serían las condiciones bajo las cuales el CSRA podría retirarse de proveer su apoyo directo a las comunidades? (sueldos, supervisión, suministros, etc.)

¿Se ha establecido un marco de tiempo para la permanencia del CSRA en la zona de trabajo? Hasta cuando está comprometida la actual provisión de recursos?

¿Han sido definidas y acordadas las futuras atribuciones y responsabilidades con la comunidad, el Ministerio de Salud, u otras instituciones que las deberían asumir?

¿Han sido fijados los pasos intermediarios o estrategias por los cuales se lograrán las condiciones precedentes de retiro o traspaso?

ANDEAN RURAL HEALTH CARE
 Proyecto de Supervivencia Infantil
 Evaluación de Medio Tiempo

FORMULARIO 2: CONSOLIDACION DE DATOS DE LOS CARNET DE SALUD INFANTIL

Programa: _____ Area: _____

Sector: _____ Comunidad: _____

Responsable: _____ Fecha: ____/____/1992

NIÑOS DE 12 A 23 MESES DE EDAD **FECHA DE NACIMIENTO:** entre 8/90 y 7/91

Total población de niños de 12 a 23 meses de edad = _____

A. RECOPIACION DE DATOS: VACUNACION

TIPO DE VACUNA	RECIBIDO ENTRE 0 Y 11 MESES	RECIBIDO ENTRE 12 Y 23 MESES	TODAVIA NO LO HA RECIBIDO	TOTAL NIÑOS
BCG				
FOLIO-3				
DPT-3				
SARAMPION				
COMPLETO				

B. ANALISIS DE DATOS: VACUNACION

PORCENTAJE DE NIÑOS REGISTRADOS:

$$\frac{\text{Número de niños de 12 a 23 meses registrados}}{\text{Total población de niños de 12 a 23 meses}} = \text{-----} \times 100 = \text{-----}\%$$

TASA DE CUMPLIMIENTO SEGUN LA NORMA:

$$\frac{\text{Número de niños vacunados antes de cumplir un año}}{\text{Número de niños de 12 a 23 meses registrados}} \times 100$$

BCG: ----- x 100 = _____%

Polio-3: ----- x 100 = _____%

DPT-3: ----- x 100 = _____%

Sarampión: ----- x 100 = _____%

Esquema Completo: ----- x 100 = _____%

TASA DE PROTECCION ACTUAL:

$$\frac{\text{Número de niños vacunados entre 0 y 23 meses}}{\text{Número de niños de 12 a 23 meses registrados}} \times 100$$

BCG: ----- x 100 = _____%

Polio-3: ----- x 100 = _____%

DPT-3: ----- x 100 = _____%

Sarampión: ----- x 100 = _____%

Esquema Completo: ----- x 100 = _____%

COBERTURA GENERAL DE VACUNACION:

$$\frac{\text{Número de niños vacunados entre 0 y 23 meses}}{\text{Total población de niños de 12 a 23 meses}} \times 100$$

BCG: ----- x 100 = _____%

Polio-3: ----- x 100 = _____%

DPT-3: ----- x 100 = _____%

Sarampión: ----- x 100 = _____%

Esquema Completo: ----- x 100 = _____%

C. RECOMPILACION DE DATOS: VIGILANCIA Y PROMOCION DEL CRECIMIENTO

PATRONES DE CRECIMIENTO DURANTE LOS ULTIMOS SEIS MESES

ESTADO NUTRICIONAL AL COMIENZO	GANANCIA ADECUADA DE PESO	SIN GANANCIA DE PESO	PERDIDA DE PESO	UN SOLO CONTROL DE PESO	TOTAL NINOS
NORMAL					
DESNUTRIDO					
TOTAL NINOS					
PORCENTAJE					100.0

PATRONES DE CONTROL DURANTE LOS ULTIMOS DOCE MESES

NUMERO DE CONTROLES	PRIMER CONTROL 0 - 5 MESES	PRIMER CONTROL 6 - 23 MESES	TOTAL NINOS	POR-CENTAJE
1				
2				
3				
4				
5				
6				
TOTAL				100.0
PORCENTAJE			100.0	

D. ANALISIS DE DATOS: PATRONES DE CRECIMIENTO

PORCENTAJE DE NIÑOS REGISTRADOS:

$$\frac{\text{Número de niños de 12 a 23 meses registrados}}{\text{Total población de niños de 12 a 23 meses}} = \text{-----} \times 100 = \text{-----}\%$$

PATRON DE CRECIMIENTO DE LOS NIÑOS NORMALES:

$$\frac{\text{No. de niños normales con ganancia adecuada}}{\text{Total niños normales con 2 ó más controles}} = \text{-----} \times 100 = \text{-----}\%$$

$$\frac{\text{No. de niños normales sin ganancia de peso}}{\text{Total niños normales con 2 ó más controles}} = \text{-----} \times 100 = \text{-----}\%$$

$$\frac{\text{No. de niños normales con pérdida de peso}}{\text{Total niños normales con 2 ó más controles}} = \text{-----} \times 100 = \text{-----}\%$$

PATRON DE CRECIMIENTO DE LOS NIÑOS DESNUTRIDOS:

$$\frac{\text{No. de niños desnutridos con ganancia adecuada}}{\text{Total niños desnutridos con 2 ó más controles}} = \text{-----} \times 100 = \text{-----}\%$$

$$\frac{\text{No. de niños desnutridos sin ganancia de peso}}{\text{Total niños desnutridos con 2 ó más controles}} = \text{-----} \times 100 = \text{-----}\%$$

$$\frac{\text{No. de niños desnutridos con pérdida de peso}}{\text{Total niños desnutridos con 2 ó más controles}} = \text{-----} \times 100 = \text{-----}\%$$

PROMEDIO DE CONTROLES POR NIÑO DURANTE LOS ÚLTIMOS DOCE MESES:

$$\frac{(N_1 \cdot 1) + (N_2 \cdot 2) + (N_3 \cdot 3) + (N_4 \cdot 4) + (N_5 \cdot 5) + (N_6 \cdot 6)}{\text{Número total de niños controlados}} = \text{-----} = \text{-----}$$

$$\text{Porcentaje de niños controlados con 4 ó más controles} = \text{-----}\%$$

ANDEAN RURAL HEALTH CARE
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FORMULARIO 3: CUESTIONARIO PARA LOS LIDERES COMUNALES

1. Nombre de la comunidad: _____

2. Fecha: _____/_____/1992

3. Participantes Numero

 Dirigente Sindical _____

 Club de Madres _____

 Educadores Voluntarios _____

 Otros: _____

4. ¿Qué actividades de salud hay en su comunidad?

PROGRAMA	PROPOSITO	INICIO	MANEJO	SUPERVISION
PAI				
CED/TRO				
IRA				
VPC				

CLAVE: **PROPOSITO** - Conoce la comunidad el propósito de los programas?
 INICIO - Quién inició los programas de salud?
 MANEJO - Quién administra y controla los programas?
 SUPERVISION - Quién provee la supervisión técnica?

5. ¿Han recibido ustedes capacitación en funciones de liderazgo y manejo de proyectos? Con que frecuencia?

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6. ¿Alguien da informes en reuniones de la comunidad sobre las actividades de salud realizadas? Con que frecuencia?
7. ¿Con que frecuencia se reúnen los dirigentes con el personal de salud? ¿De que hablan cuando se reúnen?

¿La comunidad tiene voz en la organización y prestación de los servicios? ¿Están satisfechos con la calidad de atenciones prestadas?

8. ¿Quién se encarga de la educación en salud en la comunidad? ¿Ha dado buenos resultados esta educación?

Hay algún tema educativo que se requiere tocar, ampliar o dar más prioridad para los comunarios?

9. Resuma brevemente las actividades de salud en la comunidad. Luego pregunte: (marcar "no sabe" donde responden así)

PROGRAMA	CUAL TIENE MAS IMPORTANCIA	QUE PROVEE LA COMUNIDAD?	QUE PROVEE EL CSRA?	QUE PROVEE EL MIN. DE SALUD?
PAI				
CED/TRO				
IRA				
VPC				

10. ¿Hasta cuando continuará proveyendo recursos y servicios de salud el Consejo Salud Rural Andino?

¿Cuando el CSRA deja de proveer recursos o servicios a la comunidad, que haría la comunidad para mantener estos servicios?

¿Los comunarios pagarían o aportarían algo por los servicios de salud?

11. En su opinión, ¿cuál debería ser la responsabilidad o función de la comunidad para mejorar y resguardar la salud de la población?

12. ¿Qué sugerencias tienen Uds. para mejorar los servicios de salud? ¿Hay alguna actividad, servicio de salud o tema educativa que actualmente no se realiza pero que se requiere en la comunidad?

ANDEAN RURAL HEALTH CARE
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FORMULARIO 4: ENTREVISTA A LOS EDUCADORES VOLUNTARIOS

Comunidad: _____ Fecha: ____/____/1992

Nombre del Educador Voluntario: _____

1. Desde cuando trabaja en función de educador voluntario? _____ años/meses

2.Cuál es la condición física del local de atención?

Organización:	Buena	Regular	Mala
Equipamiento:	Buena	Regular	Mala
Limpieza:	Buena	Regular	Mala
Mantenimiento:	Buena	Regular	Mala

3. Abastecimiento de medicamentos y suministros.

MATERIAL	CUANTAS VECES FALTO' ÚLTIMOS SEIS MESES?	DE DONDE Y COMO CONSIGUE EL MATERIAL?	QUIÉN PAGA EL COSTO DEL MATERIAL?
Sobres de Suero Oral			
Azúcar y Sal			
Gas licuado			
Bactrin/Bacterol (jarabe)			
Aspirinetas			
Formularios de censo, etc.			
Carnet de Salud Infantil			

Nota: Indicar solamente lo que el entrevistado le dice. En el caso que el no sabe quién paga el costo del material, por ejemplo, escribe "no sabe" en el casillero.

4. Cuales son sus funciones y responsabilidades principales?
(marcar solo lo que dice)
Otras:

IRA ___ Visitas ___
CED ___ Charlas ___
PAI ___ Censo ___
VPC ___ AROs ___
Primeros Auxilios ___
Eventos Vitales ___

5. Sabe preparar el suero oral?
(marcar sola lo que le indica correctamente)

Agua hervida ___
Litro limpio ___
Sobre ___
Sal/azucar ___

6. Diagnóstico y tratamiento de los grados de IRA?

GRADO DE IRA	DIAGNOSTICO	TRATAMIENTO
No neumonía		
Neumonía moderada		
Neumonía severa/grave		

7. ¿Cuáles son los pasos a seguir en una sesión de pesaje?
(para conocimiento, marcar "adecuado" o inadecuado")

ACTIVIDAD	CONOCIMIENTO	PROBLEMATICA
Calibración y Pesaje		
Llenar el Carnet		
Definir la Lana		
Informar/Aconsejar		
Visitas de Seguimiento		
Otras Actividades		

8. ¿Como explican el significado de los distintos colores de lana a las madres? (marcar "adecuado" o "inadecuado")

COLOR	SIGNIFICADO	ACCION
Verde		
Amarillo		
Rojo		

9. ¿Sobre que temas dan consejos a las madres y cuales son los mensajes básicos para cada tema?

TEMA	CORRECTO	INCORRECTO	INCOMPLETO
Inmunizaciones			
Lactancia Materna			
Alimentación Complementaria			
IRA			
CED y TRO			
Higiene			
Tuberculosis			
Signos ARO			
Planificación Familiar			

10. Recibe Ud. alguna compensación por su trabajo?

___ CSRA:

___ Comunidad:

___ Satisfacción personal:

11. Cree Ud. que la comunidad valora y aprecia lo que Ud. hace?

Porque cree así?

12. Supervisión técnica y administrativa.

ENTIDAD	QUIEN	FRECUENCIA	ACTIVIDAD
Comunidad			
Institución			

13. Cuantas veces participó Ud. en reuniones de los educadores voluntarios durante los últimos seis meses?

Reuniones ____ Reciclajes/cursillos ____

Que beneficio tienen las reuniones para Ud.?

14. Sistema de información:
(observar los formularios y registros)

Está completo y al día? _____

Sabe escribir? ____ Si no, quién lo hace? _____

A quién entrega los informes y con que frecuencia?

Cual es el propósito o el uso de la información que Ud. recolecta?

15. Cuales son las mayores limitaciones o problemas que encuentra en realizar su trabajo?

16. Que sugiere Ud. para mejorar el trabajo de los educadores?
Habrán algunas cosas que necesitan ser modificados para que puedan brindar mejor las atenciones?

ANDEAN RURAL HEALTH CARE
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FORMULARIO 5: CUESTIONARIO PARA LOS SERVICIOS DE SALUD

1. Comunidad: _____ Fecha: ____/____/1992

2. Tipo de Servicio: Puesto Sanitario Hospital de Area

3. Nombre: _____ Cargo: _____

4. ¿Desde cuando trabaja aquí? _____ años/meses

5. ¿Cuál es la condición física del servicio de salud?

Organización:	Buena	Regular	Mala
Equipamiento:	Buena	Regular	Mala
Limpieza:	Buena	Regular	Mala
Mantenimiento:	Buena	Regular	Mala

6. ¿Tiene Ud. un cronograma de trabajo para el mes de agosto 1992?

Marcar que actividades se realiza en las comunidades, con que frecuencia y si participa otra persona o institución en la actividad.

ACTIVIDAD	SI/NO	FRECUENCIA	PARTICIPACION/COMENTARIOS
Club de Madres			
Reunión Comunal			
Inmunizaciones			
Control Crecimiento			
Alto Riesgo Obstetri.			
Supervisión al RPS			
Recibió Supervisión			
Dió Capacitación			
Recibió Capacitación			
Reunión Evaluativa			
Visitas Domiciliarias			
Otras:			

7. Manejo de la Cadena de Frío.

ACTIVIDAD	ADECUADA	INADECUADA
Mantenimiento del Refrigerador		
Registro Control de Temperatura		
Procedimiento de Emergencia		
Suficiencia de Gas		
Suficiencia de Vacunas		
Suficiencia de Carnets		
Otras		

8. Manejo de Programas de Supervivencia Infantil.

ACTIVIDAD	SUMINISTROS	MATERIAL EDUCATIVO
PAI		
VPC		
CED		
IRA		

9. Sabe preparar el suero oral?
 (marcar sola lo que le indica correctamente)

Agua hervida _____
 Litro limpio _____
 Sobre _____
 Sal/azucar _____

10. Diagnóstico y tratamiento de los grados de IRA?

GRADO DE IRA	DIAGNOSTICO	TRATAMIENTO
No neumonía		
Neumonía moderada		
Neumonía severa/grave		

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11. ¿Cuáles son los pasos a seguir en una sesión de pesaje?
(para conocimiento, marcar "adecuado" o inadecuado")

ACTIVIDAD	CONOCIMIENTO	PROBLEMATICA
Calibración y Pesaje		
Llenar el Carnet		
Definir la Lana		
Informar/Aconsejar		
Visitas de Seguimiento		
Otras Actividades		

12. ¿Como explican el significado de los distintos colores de lana a las madres? (marcar "adecuado" o "inadecuado")

COLOR	SIGNIFICADO	ACCION
Verde		
Amarillo		
Rojo		

13. ¿Sobre que temas dan consejos a las madres y cuales son los mensajes básicos para cada tema?

TEMA	CORRECTO	INCORRECTO	INCOMPLETO
Inmunizaciones			
Lactancia Materna			
Alimentación Complementaria			
IRA			
CED y TRO			
Higiene			
Tuberculosis			
Signos ARO			
Planificación Familiar			

14. ¿Qué problemas o dificultades ha tenido en la realización de su trabajo?
15. ¿Qué opina del trabajo y las estrategias de CSRA?
16. ¿Qué sugerencias tiene Ud. para mejorar la prestación de servicios de salud?
17. En su opinión, ¿cuál debería ser la función y responsabilidad de LA COMUNIDAD/EL MINISTERIO/CSRA y ONGs para mejorar y velar por la salud de la población?

La Comunidad:

El Ministerio:

CSRA y Otras ONGs:

ANNEX D

LIST OF REFERENCE DOCUMENTS

Andean Rural Health Care.

FVA/PVC Child Survival Program. Annual Report FY1991. Lake Junaluska, NC, 1991.

Detailed Implementation Plan: Child Survival Project: Implementation and Evaluation of Census-Based Primary Health Care in Carabuco, Ancoraimes, Mallco Rancho, Sipe Sipe Bolivia. Lake Junaluska, NC, no date.

Centro Interdisciplinario de Estudios Comunitarios.

Evaluación del Proyecto de Supervivencia Infantil. Proyecto de Salud Rural Andino. La Paz: CIEC, 1989.

Ministerio de Previsión Social y Salud Pública.

Guía para el Manejo del Subsistema Nacional de Información en Salud (SNIS). La Paz: Oficina Sectorial de Planificación y Proyectos, sin fecha.

Manual Popular para el Control de las Infecciones Respiratorias Agudas (IRA). La Paz: Dirección Nacional de Salud Materno Infantil, sin fecha.

Cuidado! La Diarrea Produce Deshidratación. Manual de Capacitación para la Comunidad (3a Edición). La Paz: Dirección Nacional de Atención a las Personas, 1991.

Proyecto: Bases de Organización y Desarrollo de los Distritos de Salud. La Paz: 1991.

Plan Nacional de Supervivencia, Desarrollo Infantil y Salud Materna. La Paz: 1989.

Sistema de Prestación de Servicios de Salud: Bases Conceptuales y Criterios de Acción. La Paz: 1985.-

Perry, Henry B. and Irene Sandavold.

Routine Systematic Home Visitations as a Strategy for Improving Access to Services and Program Effectiveness: Lessons from Bolivia and the U.S. Submitted for publication, 1992.

Perry, Henry B.

Final Evaluation Report. Andean Rural Health Care's Child Survival III Project Carabuco, Bolivia. Lake Junaluska, NC, 1991.

Programa de Coordinación en Supervivencia Infantil (PROCOSI).

La Diarrea Infantil. Serie Guías de Capacitación para Promotores, No. 4. La Paz: 1992.

Las Vacunas. Serie Guías de Capacitación para Promotores, No. 2. La Paz: 1991.

Infecciones Respiratorias Agudas: Las Pulmonías. Serie Guías de Capacitación para Promotores, No. 1. La Paz: 1990.

Saavedra, Simon et al.

The Application of A Census-Based, Impact-Oriented Approach to Community-Oriented Public Health on the Northern Altiplano of Bolivia. Presented to the APHA Meeting in New York City, October 1990.

Sommerfelt, AE, JT Boerma, LH Ochoa and SO Rutstein.

Maternal and Child Health in Bolivia: Report on the In-depth DHS Survey in Bolivia 1989 (Bolivia ENDSA-89). Institute for Resource Development/Macro Systems, Inc. Columbia, Maryland USA, April 1991.

Tam, Luis and Jorge Velasco.

Report on the Mid-Term Evaluation of the Andean Rural Health Care's Child Survival III Project in Bolivia. Washington, DC: PRITECH, 1989.

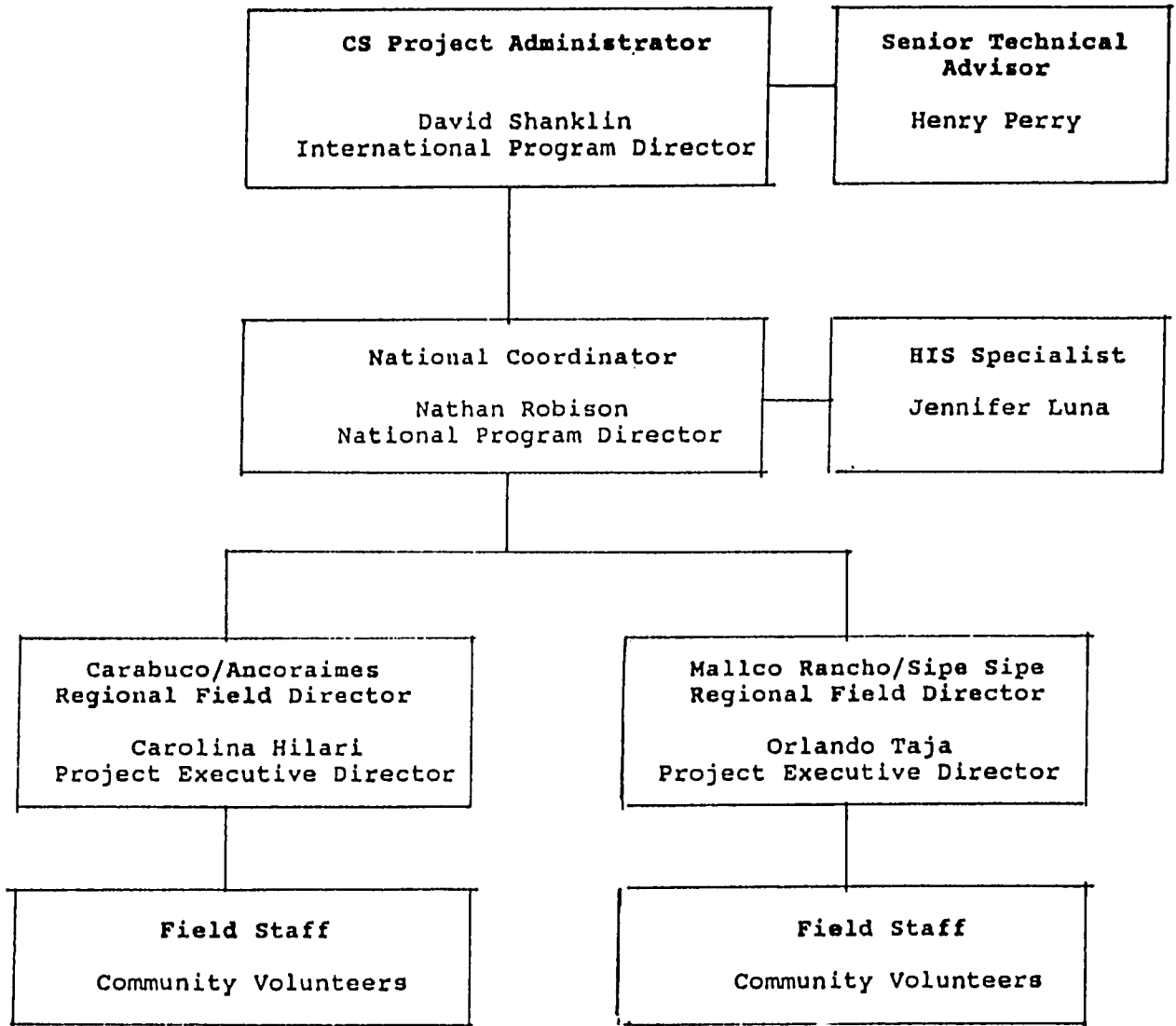
ANNEX E

Sites of District Involvement



ANNEX F

ORGANIZATION CHART



1) All positions are full-time paid positions, except the Senior Technical Advisor (33 1/3 per cent), the HIS Specialist (70 per cent), and the community volunteers, who work part-time and do not receive salary.

ANNEX G

LISTA DE INSTRUMENTOS PARA EL SISTEMA DE INFORMACION - CSRA - CARABUCO
(Jennifer Luna - 24 de abril de 1992)

Instrumento	Programas	Llenado Por	Utilizado Por	Entregado		Copias Archivadas Dónde
				A Quién	Con Qué Frecuencia	
Informe Mensual del Auxiliar de Salud al Hospital de Area - CSRA - Carabuco (3 hojas) [Form: C101]	1) Eventos Vitales 2) PAI 3) Cont. Crec. 4) EDA 5) IRA 6) Atención a mujeres en edad fértil 7) Vac. T.T. 8) Tuberculosis 9) Enfermería 10) Consultas en los puestos 11) Actividades de educadores 12) Actividades de los Aux. 13) Visitas Dom. del Aux.	Aux.	Aux. Pers. Hosp.	<u>Pers. Hosp.</u> Se entrega al Supervisor de Campo, después al médico del hospital.	Cada Mes	Puesto de Salud
Camet de Salud Infantil (M.P.S.S.P)	1) Cont. Crec. 2) EDA 3) IRA 4) PAI 5) Vitamina A	Aux. Educ.	Aux. Educ. Madre	Madre	Cada Control del Niño	1) Con la Madre 2) Niños <5 en el folder de la familia 3) De niños >5 años, en el Archivo Permanente de Información de Familias
Registro de Atención a la Familia - CSRA - Carabuco (2 lados de una hoja) [Form: C102]	1) Visitas Dom. del Aux. 2) Consultas en los puestos 3) Actividades durante concentraciones 3) Cont. Crec. 4) EDA 5) IRA 6) PAI 7) Tuberculosis	Aux. Educ.	Aux.			1) De la gestión actual, en el folder de la familia 2) Anteriores en archivador en el Puesto de Salud

Instrumento	Programas	Llenado Por	Utilizado Por	Entregado		Copias Archivadas Dónde
				A Quién	Con Qué Frecuencia	
Tarjeta Familiar - CSRA - Carabuco (1 hoja) [Form: C103]	1) Censo de todos los participantes en el proyecto 2) Eventos Vitales 3) Agua 4) Letrines	Aux.	Aux. Educ.			1) De la gestión actual, en el folder de la familia 2) Anteriores en archivador en el Puesto de Salud
Registro de Control de Vacunas Aplicadas en Niños Menores de 24 Meses - CSRA - Carabuco (1 hoja) [Form: C104]	PAI	Aux.	Aux.			Puesto de Salud
Cuaderno de Eventos Vitales	Eventos Vitales (Nacimientos, Muertes, Migraciones)	Aux.	Aux.			Puesto de Salud
SVEN (gráfico del M.P.S.S.P.)	Cont. Crec.	Aux.	Un. Sanit.	Un. Sanit. Se entrega al Supervisor de Campo, después al médico del hospital.	Cada Mes	Oficina L.P.
Tabla de Peso/Talla	Cont. Crec.		Aux.			
Cuaderno de Actividades		Aux.	Aux.			Con el Aux.
Libro de Consultas (Puesto de Salud)	Consultas, Salud Primaria, EDA, IRA	Aux.	Aux.			Puesto de Salud
Formulario del Educador (1)	Educadores	Aux.	Aux.			Puesto de Salud
Formulario del Educador (2)	Educadores	Aux.	Aux.			Puesto de Salud
Carnet de la Mujer Embarazada (M.P.S.S.P.)	Salud Materna	Aux. Pers. Hosp.	Aux. Pers. Hosp.			Folder de la familia en el Puesto de Salud.
Libro de Consultas (Hospital)	Consultas, Salud Primaria, EDA, IRA	Pers. Hosp.	Pers. Hosp.			Hospital
Informe Mensual del Hospital de Area de Carabuco - CSRA - Eventos Vitales [Form: C201]	Eventos Vitales (Nacimientos, Muertes)	Pers. Hosp.	Pers. Hosp. Oficina L.P. Junaluska	Oficina L.P.	Cada Mes	Hospital Oficina L.P.
Informe Mensual del Hospital de Area de Carabuco - CSRA - Programa Ampliado de Inmunizaciones (PAI) [Form: C202]	PAI	Pers. Hosp.	Pers. Hosp. Oficina L.P. Junaluska	Oficina L.P.	Cada Mes	Hospital Oficina L.P.

Instrumento	Programas	Llenado Por	Utilizado Por	Entregado		Copias Archivadas Dónde
				A Quién	Con Qué Frecuencia	
Informe Mensual del Hospital de Area de Carabuco - CSRA - Visitas Domiciliarias y Reuniones con la Comunidad [Form: C203]	Visit Dom. Reuniones con la Comunidad	Pers. Hosp.	Pers. Hosp. Oficina L.P. Junaluska	Oficina L.P.	Cada Mes	Hospital Oficina L.P.
Informe Mensual del Hospital de Area de Carabuco - CSRA - Control de Crecimiento - Peso/Talla de Niños <5 Años: [Form: C204]	Control de Crecimiento.	Pers. Hosp.	Pers. Hosp. Oficina L.P. Junaluska	Oficina L.P.	Cada Mes	Hospital Oficina L.P.
Informe Mensual del Hospital de Area de Carabuco - CSRA - Estado Nutricional Según Peso/Edad (SVEN) - Sexo Masculino [Form: C205]	Control de Crecimiento.	Pers. Hosp.	Pers. Hosp. Oficina L.P. Junaluska	Oficina L.P.	Cada Mes	Hospital Oficina L.P.
Informe Mensual del Hospital de Area de Carabuco - CSRA - Estado Nutricional Según Peso/Edad (SVEN) - Sexo Femenino [Form: C206]	Control de Crecimiento.	Pers. Hosp.	Pers. Hosp. Oficina L.P. Junaluska	Oficina L.P.	Cada Mes	Hospital Oficina L.P.
Informe Mensual del Hospital de Area de Carabuco a la Oficina Nacional en La Paz- CSRA - Actividades de los Auxiliares de Enfermería [Form: C207]	Consultas Enfermería	Pers. Hosp.	Pers. Hosp. Oficina L.P. Junaluska	Oficina L.P.	Cada Mes	Hospital Oficina L.P.
Informe Mensual del Hospital de Area de Carabuco a la Oficina Nacional en La Paz- CSRA - Actividades de los Educadores de cada Auxiliar de Enfermería [Form: C208]	Educadores	Pers. Hosp.	Pers. Hosp. Oficina L.P. Junaluska	Oficina L.P.	Cada Mes	Hospital Oficina L.P.
Ficha Clínica - CSRA - Hospital de Area de Carabuco [Form: C220]	Atención en el Hospital	Pers. Hosp.	Pers. Hosp.			Hospital
Atención al Parto - CSRA - Hospital de Area de Carabuco	Partos en el Hospital	Pers. Hosp.	Pers. Hosp.			Hospital
SNIS	EDA, IRA, PAI, Tuberculosis, Consultas, Vacunación T.T., Enfermería, Visitas Dom., Partos en el Hospital	Pers. Hosp.	M.P.S.S.P. Pers. Hosp. Oficina L.P. Junaluska	M.P.S.S.P. Pers. Hosp. Oficina L.P. Junaluska	Cada Mes	M.P.S.S.P. Hospital Oficina L.P. Junaluska

Instrumento	Programas	Llenado Por	Utilizado Por	Entregado		Copias Archivadas Dónde
				A Quién	Con Qué Frecuencia	
Informe Qualitativa	Todos	Pers. Hosp.	Pers. Hosp. Oficina L.P.	Oficina L.P.	Bimensual	Hospital Oficina L.P.
Autopsia Verbal		Pers. Hosp.	Pers. Hosp. Oficina L.P.			Hospital
Archivo Permanente de Información de Familias	Todos	Aux.	Aux.			Puesto de Salud

ANNEX H

ANDEAN RURAL HEALTH CARE
Child Survival VI Project
Mid-Term Evaluation

FORM 2: CONSOLIDATION OF DATA FROM CHILD HEALTH CARDS

Program: CARABUCO Area: CARABUCOSector: _____ Community: EPI = 7; GM/P = 11Compiled by: J. Becht Date: 14 / 08 / 1992CHILDREN 12 TO 23 MONTHS OF AGE DATE OF BIRTH: between 8/90 and 7/91Total population of children 12 to 23 months of age = EPI = 65; GM/P = 112

TABLE 3.1A - SUMMARY OF VACCINATIONS BY TIME AND TYPE

TYPE OR VACCINE	RECEIVED 0 - 11 MONTHS	RECEIVED 12 - 23 MONTHS	NOT YET RECEIVED	TOTAL
BCG	62	2	0	64
POLIO-3	44	13	7	64
DPT-3	44	13	7	64
MEASLES	50	11	3	64
COMPLETE	41	16	7	64

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TABLE 3.1B - ANALYSIS OF VACCINATION DATA

PERCENTAGE OF CHILDREN REGISTERED:

$$\frac{\text{Number of children 12-23 months registered}}{\text{Total population of children 12-23 months}} \times 100 = \frac{64}{65} \times 100 = \underline{98.5\%}$$

RATE OF COMPLIANCE AS PER THE NORM:

$$\frac{\text{Number of children vaccinated prior to one year of age}}{\text{Number of children 12-23 months registered}} \times 100$$

BCG:	$\frac{62}{64} \times 100 = \underline{96.9\%}$	Polio-3:	$\frac{44}{64} \times 100 = \underline{68.8\%}$
DPT-3:	$\frac{44}{64} \times 100 = \underline{68.8\%}$	Measles:	$\frac{50}{64} \times 100 = \underline{78.1\%}$
		Complete Series:	$\frac{41}{64} \times 100 = \underline{64.1\%}$

RATE OF CURRENT PROTECTION:

$$\frac{\text{Number of children vaccinated between 0 and 23 months}}{\text{Number of children 12-23 months registered}} \times 100$$

BCG:	$\frac{64}{64} \times 100 = \underline{100\%}$	Polio-3:	$\frac{57}{64} \times 100 = \underline{89.1\%}$
DPT-3:	$\frac{57}{64} \times 100 = \underline{89.1\%}$	Measles:	$\frac{61}{64} \times 100 = \underline{95.3\%}$
		Complete Series:	$\frac{57}{64} \times 100 = \underline{89.1\%}$

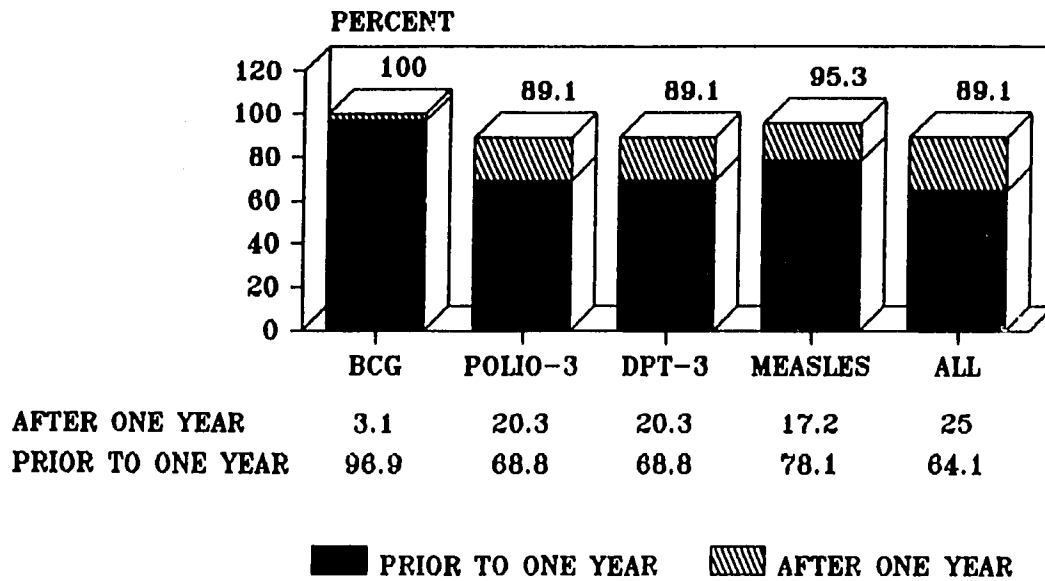
OVERALL VACCINATION COVERAGE:

$$\frac{\text{Number of children vaccinated between 0 and 23 months}}{\text{Total population of children 12-23 months}} \times 100$$

BCG:	$\frac{64}{65} \times 100 = \underline{98.5\%}$	Polio-3:	$\frac{57}{65} \times 100 = \underline{87.7\%}$
DPT-3:	$\frac{57}{65} \times 100 = \underline{87.7\%}$	Measles:	$\frac{61}{65} \times 100 = \underline{93.8\%}$
		Complete Series:	$\frac{57}{65} \times 100 = \underline{87.7\%}$

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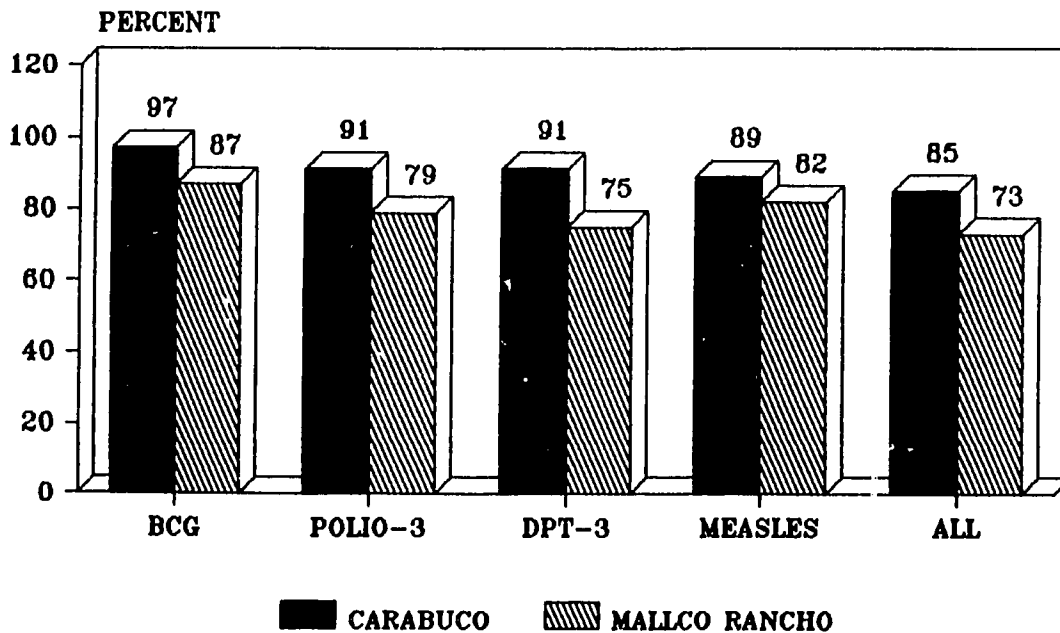
FIGURE 3.1
VACCINATIONS OF CHILDREN 12-23
MONTHS, CARABUCO HEALTH AREA



REVIEW CHILD HEALTH CARDS, AUGUST 1992
 N = 64 CHILDREN IN 7 OF 31 COMMUNITIES

Source: Table 3.1

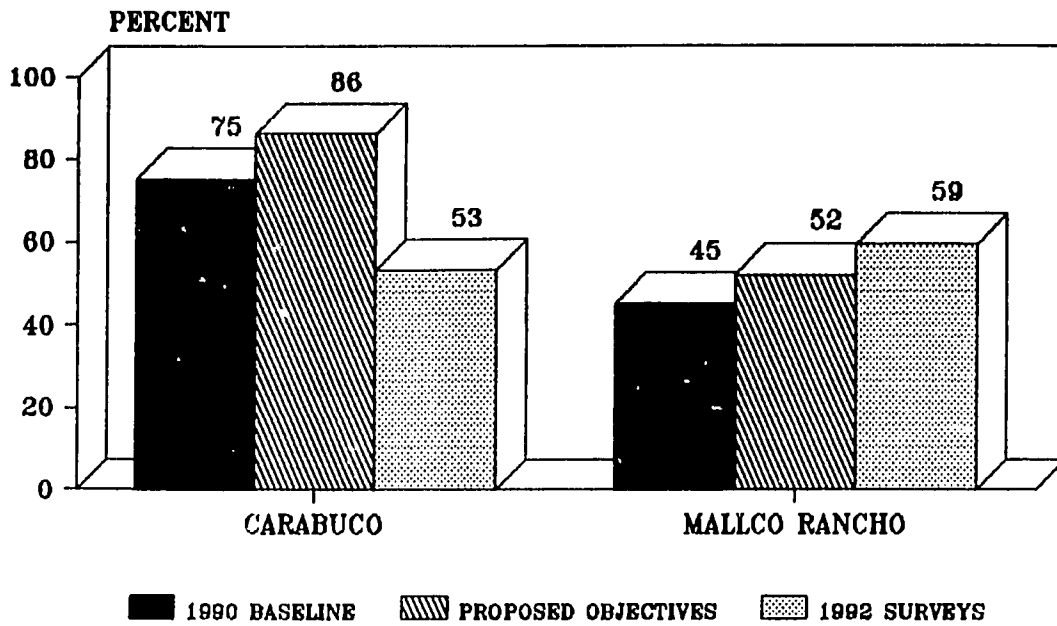
FIGURE 3.2
VACCINATION COVERAGE IN 1992
CHILDREN 12-23 MONTHS



Source: Household Surveys, July 1992

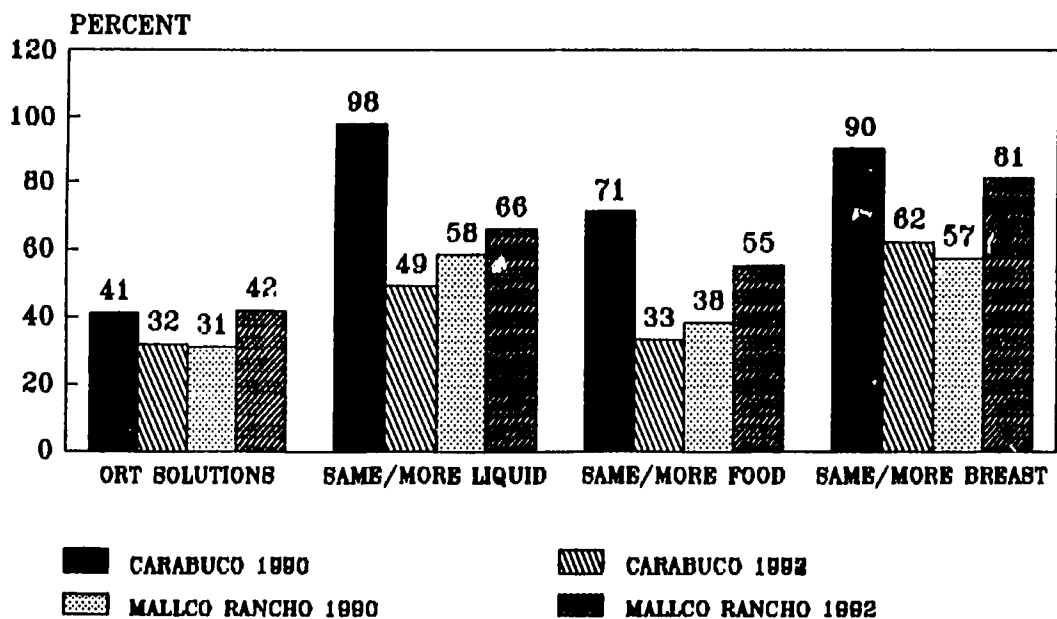
76

PREPARATION OF ORS SOLUTION REPORTED KNOWLEDGE OF MOTHERS



Source: Household Surveys, 1990 & 1992

FIGURE 4.2 TREATMENT OF DIARRHEA EPISODES CHILDREN UNDER TWO YEARS



Source: Household Surveys, 1990 & 1992

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TABLE 5.1 - NUTRITIONAL STATUS OF CHILDREN UNDER TWO YEARS OF AGE
BY SEX AND AGE GROUP, CARABUCO HEALTH AREA, 1988-1992.

SEX AND AGE GROUP	JUNE 1988				JANUARY 1990				JULY 1990				JANUARY 1992				JULY 1992			
	N	ABC	D	EF	N	ABC	D	EF	N	ABC	D	EF	N	ABC	D	EF	N	ABC	D	EF
	#	%	%	%	#	%	%	%	#	%	%	%	#	%	%	%	#	%	%	%

MASCULINE																				

0-11 months	40	70.0	22.5	7.5	25	84.0	12.0	4.0	28	75.0	10.7	14.3	70	77.1	15.7	7.1	76	73.7	21.1	5.3
12-23 months	58	36.2	51.7	12.1	30	40.0	36.7	23.3	19	31.6	15.8	52.6	77	50.6	33.8	15.6	57	38.6	43.9	17.5
FEMININE																				

0-11 months	49	75.5	14.3	10.2	20	65.0	30.0	5.0	29	65.5	27.6	6.9	66	74.2	25.8	0.0	70	84.3	14.3	1.4
12-23 months	51	49.0	33.3	17.6	32	53.1	25.0	21.9	30	36.7	43.3	20.0	48	54.2	22.9	22.9	62	51.6	35.5	12.9

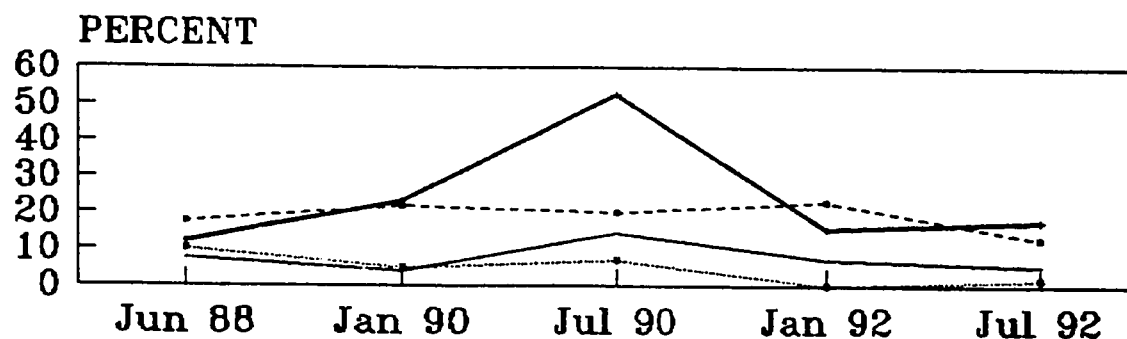
Classification according to SVEN (Nutrition Surveillance System) reporting requirements of the Ministry of Health:

Based on mean weight for age, NCHS/WHO standard population.

N = number of children; ABC = normal (percent of children above -1 sd);

D = mild malnutrition (percent between -1 sd and -2 sd); EF = moderate/severe malnutrition (percent below -2 sd).

FIGURE 5.1
MALNUTRITION IN CHILDREN UNDER TWO
CARABUCO HEALTH AREA, 1988-1992



Boys, 0-11 months	7.5	4	14.3	7.1	5.3
Boys, 12-23 months	12.1	23.3	52.6	15.5	17.5
Girls, 0-11 months	10.2	5	6.9	0	1.4
Girls, 12-23 months	17.6	21.9	20	22.9	12.9

— Boys, 0-11 months	— Boys, 12-23 months
- - - Girls, 0-11 months	- - - Girls, 12-23 months

Below -2 sd of the mean weight-for-age
 NCHS/WHO Reference Population

Source: Table 5.1

TABLE 5.2 - SUMMARY OF GROWTH MONITORING DATA: CARABUCO

A. PATTERNS OF GROWTH DURING THE LAST SIX MONTHS

INITIAL NUTRITIONAL STATUS	ADEQUATE WEIGHT GAIN	INADEQUATE OR NO WEIGHT GAIN	LOSS OF WEIGHT	ONLY 1 WEIGHT CONTROL	TOTAL
NORMAL	63	13	5	1	82
MALNOURISHED	20	6	0	0	26
TOTAL	83	19	5	1	108
PERCENTAGE	76.9	17.6	4.6	0.9	100.0

B. PATTERNS OF CONTROL DURING THE PREVIOUS TWELVE MONTHS

NUMBER OF CONTROLS	FIRST CONTROL 0 - 5 MONTHS	FIRST CONTROL 6 - 23 MONTHS	TOTAL CHILDREN	PERCENT
1	2	1	3	2.8
2	1	1	2	1.9
3	7	3	10	9.3
4	8	4	12	11.1
5	9	2	11	10.2
6 y más	67	3	70	64.8
TOTAL	94	14	108	100.0
PERCENT	87.0	13.0	100.0	

C. ANALYSIS OF GROWTH MONITORING DATA

PERCENTAGE OF CHILDREN REGISTERED:

Number of children 12-23 months registered 108
----- = ----- x 100 = 96.4 %
Total population of children 12-23 months 112

PATTERNS OF GROWTH IN CHILDREN OF NORMAL WEIGHT:

No. normal children with adequate weight gain 63
----- = ----- x 100 = 77.8 %
Total normal children with 2 or more controls 81

No. normal children with inadequate weight gain 13
----- = ----- x 100 = 16.0 %
Total normal children with 2 or more controls 81

No. normal children with weight loss 5
----- = ----- x 100 = 6.2 %
Total normal children with 2 or more controls 81

PATTERNS OF GROWTH IN MALNOURISHED CHILDREN:

No. malnourished children with adequate weight gain 20
----- = ----- x 100 = 76.9 %
Total malnourished children with 2 or more controls 26

No. malnourished children with inadequate weight gain 6
----- = ----- x 100 = 23.1 %
Total malnourished children with 2 or more controls 26

No. malnourished children with weight loss 0
----- = ----- x 100 = 0.0 %
Total malnourished children with 2 or more controls 26

AVERAGE NUMBER OF CONTROLS PER CHILD DURING THE PREVIOUS TWELVE MONTHS:

$(N_1 \cdot 1) + (N_2 \cdot 2) + (N_3 \cdot 3) + (N_4 \cdot 4) + (N_5 \cdot 5) + (N_6 \cdot 6)$ 560
----- = ----- = 5.2
Total number of children under control 108

Percentage of children with 4 or more controls = 86.1 %

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TABLE 5.3 - SUMMARY OF GROWTH MONITORING DATA: MALLCO RANCHO

A. PATTERNS OF GROWTH DURING THE LAST SIX MONTHS

INITIAL NUTRITIONAL STATUS	ADEQUATE WEIGHT GAIN	INADEQUATE OR NO WEIGHT GAIN	LOSS OF WEIGHT	ONLY 1 WEIGHT CONTROL	TOTAL
NORMAL	105	27	3	5	140
MALNOURISHED	15	4	2	0	21
TOTAL	120	31	5	5	161
PERCENTAGE	74.5	19.3	3.1	3.1	100.0

B. PATTERNS OF CONTROL DURING THE PREVIOUS TWELVE MONTHS

NUMBER OF CONTROLS	FIRST CONTROL 0 - 5 MONTHS	FIRST CONTROL 6 - 23 MONTHS	TOTAL CHILDREN	PERCENT
1	0	5	5	3.1
2	4	9	13	8.1
3	13	14	27	16.8
4	18	14	34	21.1
5	30	10	40	24.8
6 +	41	1	42	26.1
TOTAL	106	55	161	100.0
PERCENT	65.8	34.2	100.0	

C. ANALYSIS OF GROWTH MONITORING DATA

PERCENTAGE OF CHILDREN REGISTERED:

Number of children 12-23 months registered	161	
-----	=	----- x 100 = <u>75.9</u> %
Total population of children 12-23 months	212	

PATTERNS OF GROWTH IN CHILDREN OF NORMAL WEIGHT:

No. normal children with adequate weight gain	105	
-----	=	----- x 100 = <u>77.8</u> %
Total normal children with 2 or more controls	135	

No. normal children with inadequate weight gain	27	
-----	=	----- x 100 = <u>20.0</u> %
Total normal children with 2 or more controls	135	

No. normal children with weight loss	3	
-----	=	----- x 100 = <u>2.2</u> %
Total normal children with 2 or more controls	135	

PATTERNS OF GROWTH IN MALNOURISHED CHILDREN:

No. malnourished children with adequate weight gain	15	
-----	=	----- x 100 = <u>71.4</u> %
Total malnourished children with 2 or more controls	21	

No. malnourished children with inadequate weight gain	4	
-----	=	----- x 100 = <u>19.0</u> %
Total malnourished children with 2 or more controls	21	

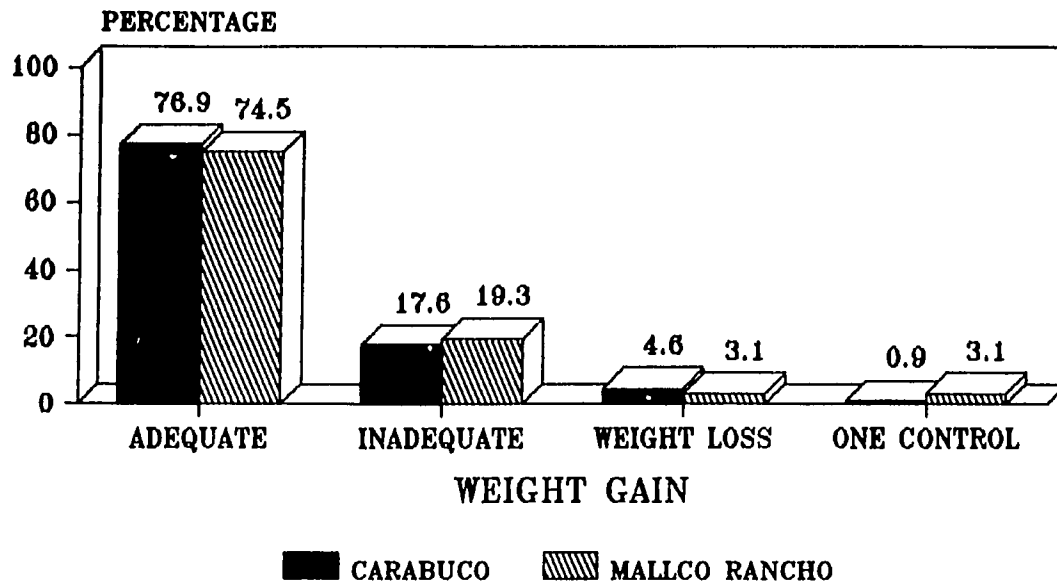
No. malnourished children with weight loss	2	
-----	=	----- x 100 = <u>9.5</u> %
Total malnourished children with 2 or more controls	21	

AVERAGE NUMBER OF CONTROLS PER CHILD DURING THE PREVIOUS TWELVE MONTHS:

$(N_1 \cdot 1) + (N_2 \cdot 2) + (N_3 \cdot 3) + (N_4 \cdot 4) + (N_5 \cdot 5) + (N_6 \cdot 6)$	700	
-----	=	----- = <u>4.3</u>
Total number of children under control	161	

Percentage of children with 4 or more controls = 72.0 %

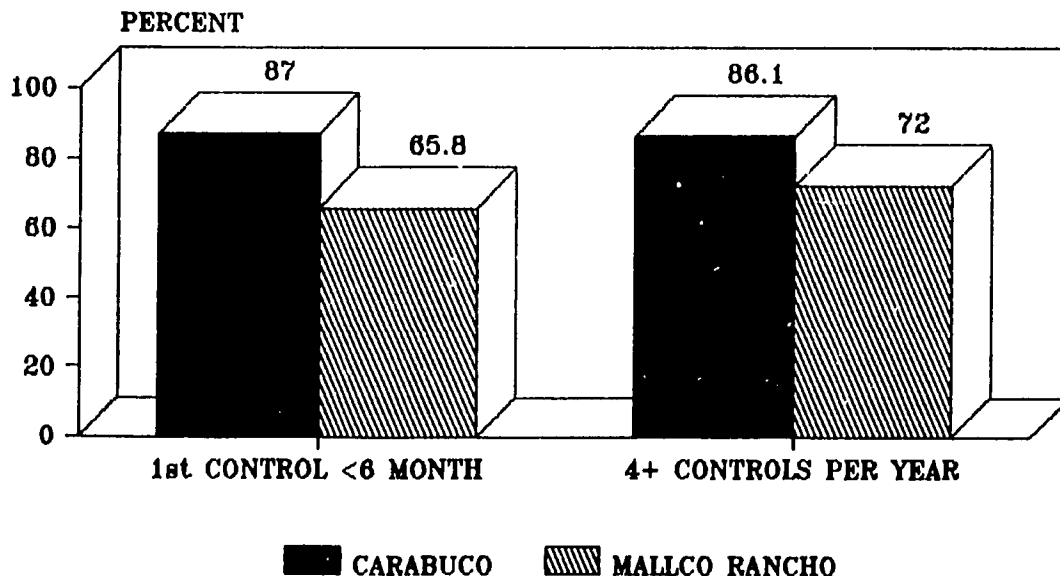
FIGURE 5.2
GROWTH PATTERNS IN CHILDREN
12 to 23 MONTHS OF AGE



Review Child Health Cards, August 1982
 N = 108 (Carabuco); 161 (Mallco Rancho)

Source: Tables 5.2 and 5.3

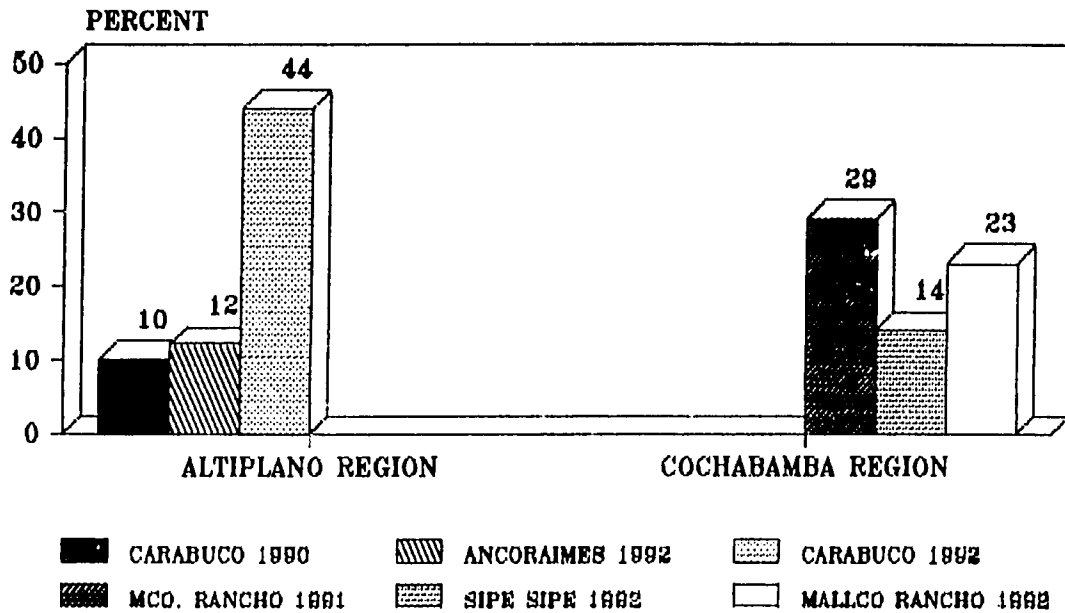
FIGURE 5.3
PATTERNS OF WEIGHT CONTROL
CHILDREN 12-23 MONTHS



Review Child Health Cards, August 1982
 N = 108 (Carabuco); 161 (Mallco Rancho)

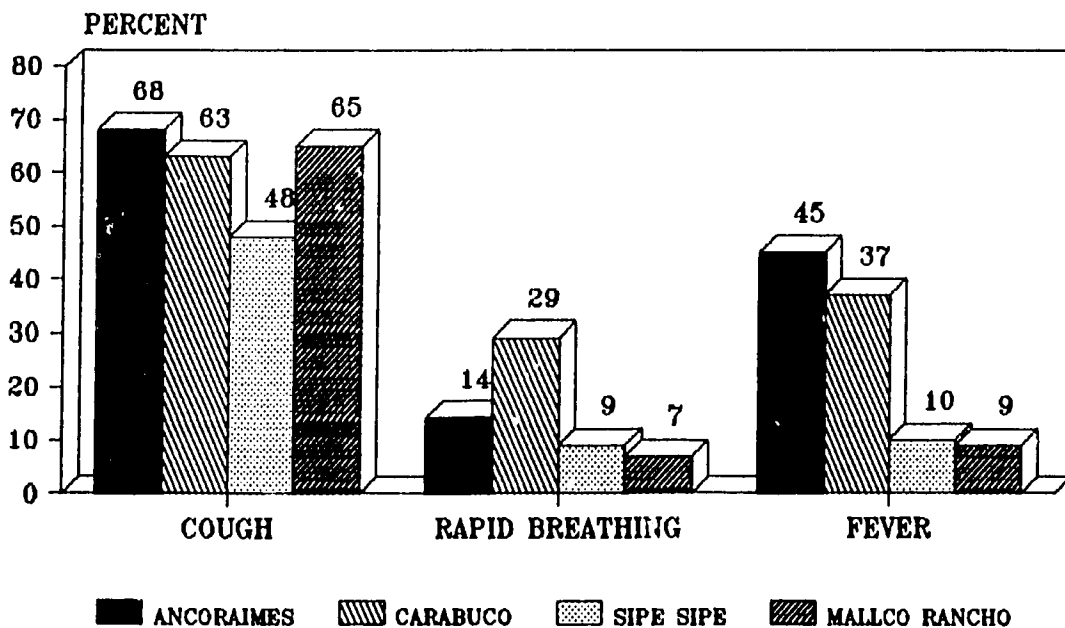
Source: Tables 5.2 and 5.3

**FIGURE 6.1
TREATMENT SOUGHT FOR ARI
FROM HEALTH CENTERS OR DOCTORS**



Source: ARHC Household Surveys

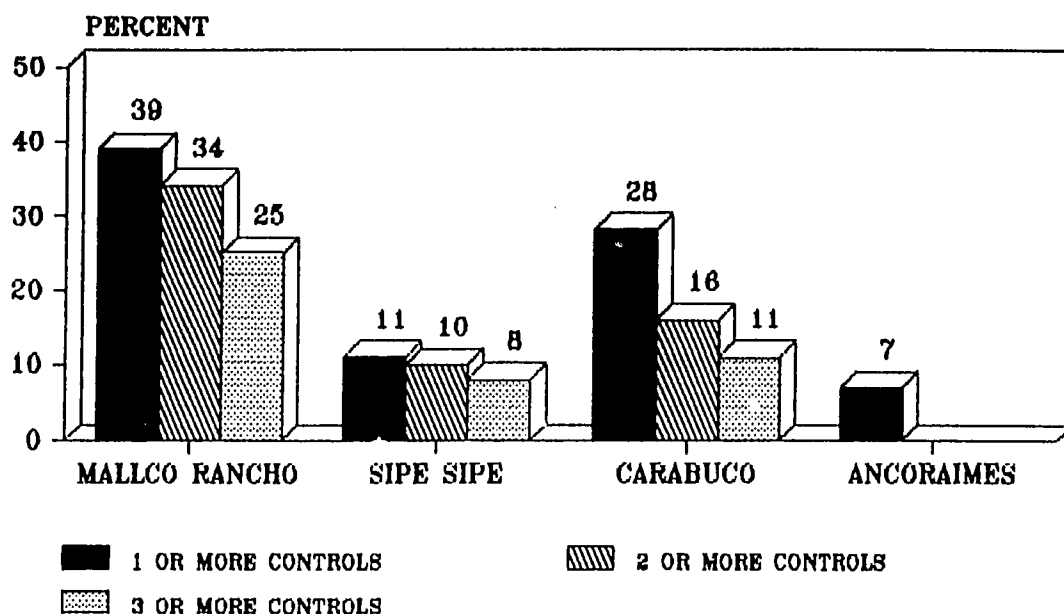
**FIGURE 6.2
MOTHERS RECOGNITION OF SIGNS
OF PNEUMONIA - 1992**



Source: ARHC Household Surveys 1992

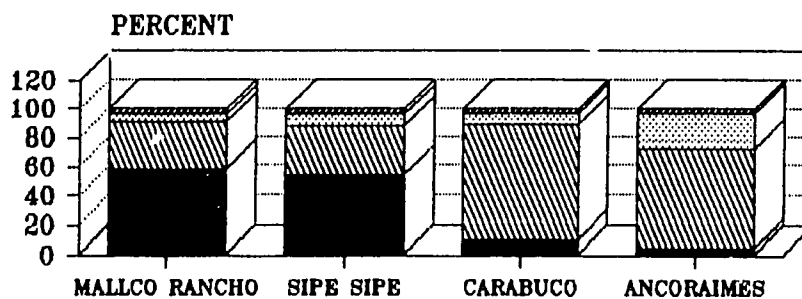
105

**FIGURE 7.1
NUMBER OF PRENATAL CONTROLS
BY PROJECT AREA - 1992**



Source: ARHC Household Surveys, 1992

**FIGURE 7.2
ASSISTANCE AT BIRTH
BY PROJECT AREA - 1992**



OTHER	4	4	3	3
TRAD. BIRTH ATTEND.	5	8	8	25
FAMILY MEMBER	33	34	79	68
HEALTH PERSONNEL	58	54	10	4

HEALTH PERSONNEL
 FAMILY MEMBER
 TRAD. BIRTH ATTEND.
 OTHER

Source: ARHC Household Surveys, 1992

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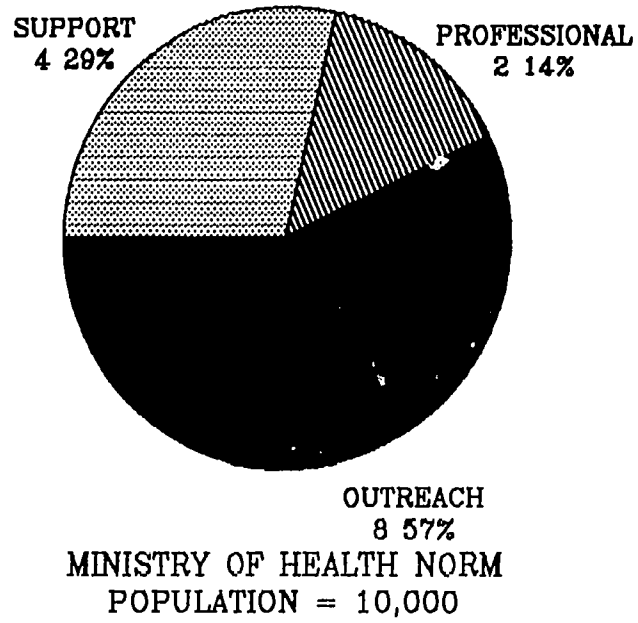
TABLE 2.1 - COMPARISON OF PROJECT AREA CHARACTERISTICS WITH MINISTRY OF HEALTH NORMS

CRITERIA	MOH NORM *	CARABUCO	ANCORAIMES	MALLCO RANCHO	SIPE SIPE
Total Population	10,000	9,087	(15,000)	5,827	12,420
Number Communities	(25)	31	46	11	21
Area Hospital	1	1	1	1	1
Health Posts	3 - 8	12	0	1	1
Health Promoters	30 - 90	60	1	13	0
Auxiliary Nurses	5 - 11	11 (A) + 1 (M)	1 (A)	2 (A) + 1 (M)	1 (A) + 2 (M)
Rural Nurse Technicians	0	0	2 (M)	1 (A) + 1 (M)	1 (A)
Graduate Nurses	0	0	1 (M)	.5 (A)	.5 (A) + 1 (M)
Dentists	0 - 1	0	0	1 (L)	1 (M)
Physician Interns	1	1 (M)	1 (M)	1 (M)	1 (M)
Medical Director	0 - 1	.5 (A)	.5 (A)	.5 (A)	.5 (A)
Administrators	1	0	.5 (A)	1 (A)	1 (A)
Drivers	0	1 (A)	.5 (A)	1 (A)	1 (A)
Other Support Staff	3	1 (M)	1 (A)	3 (L)	1 (M) + 1 (L)

* Adapted from: Sistema de Prestación de Servicios de Salud. Bases Conceptuales y Criterios de Acción.
La Paz: Ministerio de Previsión Social y Salud Pública, 1985.

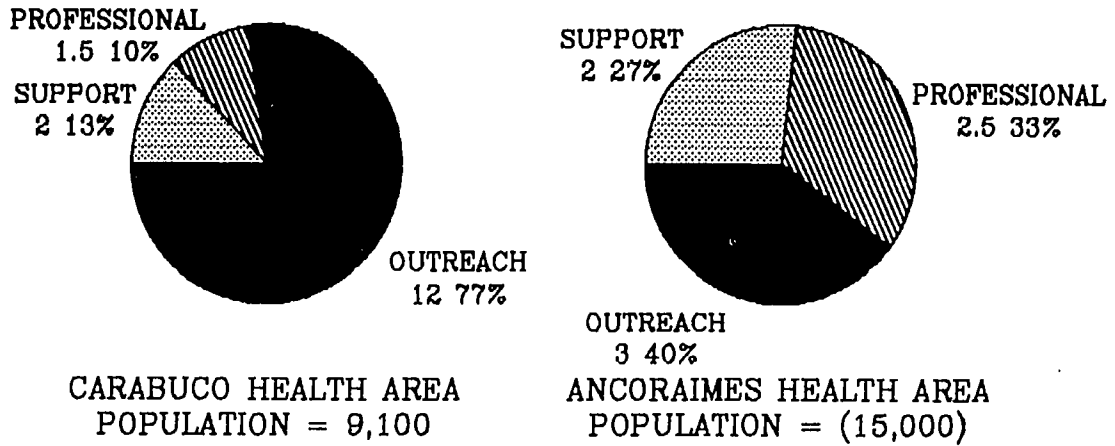
Key: A = Andean Rural Health Care; M = Ministry of Health; L = Local income.

FIGURE 8.1A
PERSONNEL BY FUNCION



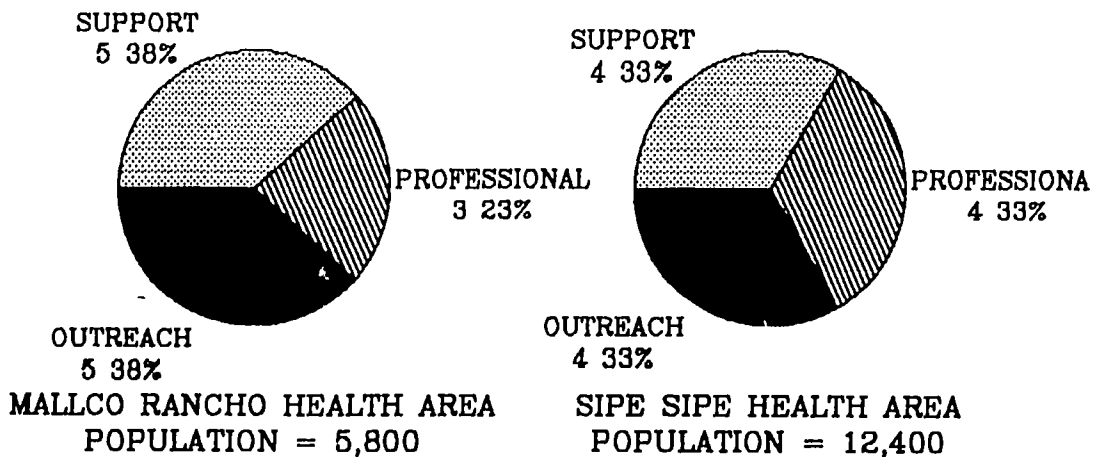
Reference: Table 8.1

**FIGURE 8.1B
PERSONNEL BY FUNCTION
ALTIPLANO**



Reference: Table 8.1

**FIGURE 8.1C
PERSONNEL BY FUNCTION
COCHABAMBA**



Reference: Table 8.1

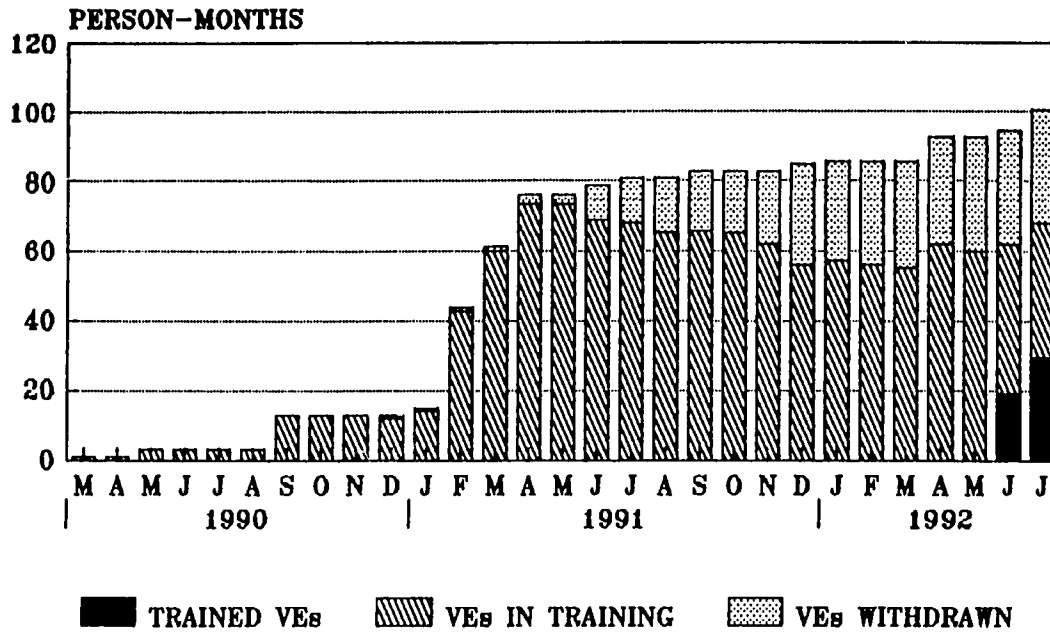
TABLE 8.2 - CUMULATIVE EXPERIENCE OF VOLUNTEER EDUCATOR TRAINING AND RETENTION
CARABUCO HEALTH AREA, MARCH 1990 - JULY 1992

MONTH/YEAR	NUMBER INITIATING TRAINING	TOTAL CUMULATIVE P/M	NUMBER WITH-DRAWING	CUMULATIVE LOSS IN P/M	NUMBER COMPLETING TRAINING	CUMULATIVE TRAINED P/M	NET P/M CUMULATIVE IN TRAINING
March 1990	1	1	-	-	-	-	1
April	-	1	-	-	-	-	1
May	2	3	-	-	-	-	3
June	-	3	-	-	-	-	3
July	-	3	-	-	-	-	3
August	-	3	-	-	-	-	3
September	10	13	-	-	-	-	13
October	-	13	-	-	-	-	13
November	-	13	-	-	-	-	13
December	-	13	1	1	-	-	12
January 1991	2	15	-	1	-	-	14
February	29	44	-	1	-	-	43
March	17	61	-	1	-	-	60
April	15	76	1	2	-	-	74
May	-	76	-	2	-	-	74
June	3	79	8	10	-	-	69
July	2	81	3	13	-	-	68
August	-	81	3	16	-	-	65
September	2	83	1	17	-	-	66
October	-	83	1	18	-	-	65
November	-	83	3	21	-	-	62
December	2	85	8	29	-	-	56
January 1992	1	86	-	29	-	-	57
February	-	86	1	30	-	-	56
March	-	86	1	31	-	-	55
April	7	93	-	31	-	-	62
May	-	93	2	33	-	-	60
June	2	95	-	33	19	19	43
July	6	101	-	33	10	29	39
TOTAL	101	1553	33	352	29	48	1153
PERCENT P/M		100.0		22.7		3.1	74.2

**TABLE 2.3 - CUMULATIVE EXPERIENCE OF VOLUNTEER EDUCATOR TRAINING AND RETENTION
MALLCO RANCHO HEALTH AREA, SEPTEMBER 1990 - JULY 1992**

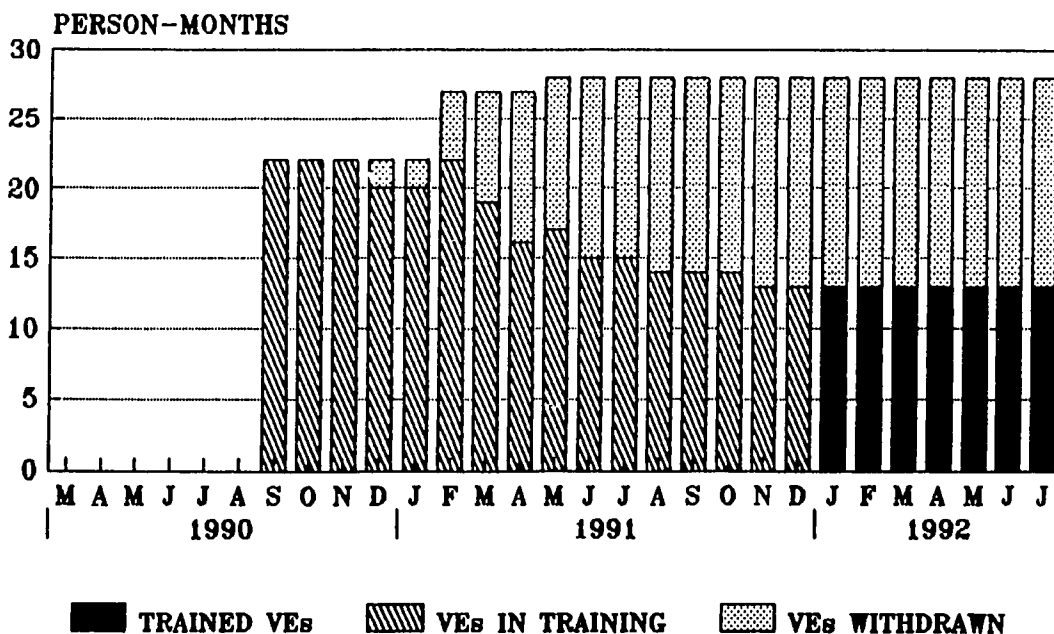
MONTH/YEAR	NUMBER INITIATING TRAINING	TOTAL CUMULATIVE P/M	NUMBER WITH-DRAWING	CUMULATIVE LOSS IN P/M	NUMBER COMPLETING TRAINING	CUMULATIVE TRAINED P/M	NET P/M CUMULATIVE IN TRAINING
September 90	22	22	-	-	-	-	22
October	-	22	-	-	-	-	22
November	-	22	-	-	-	-	22
December	-	22	2	2	-	-	20
January 1991	-	22	-	2	-	-	20
February	5	27	3	5	-	-	22
March	-	27	3	8	-	-	13
April	-	27	3	11	-	-	16
May	1	28	-	11	-	-	17
June	-	28	2	13	-	-	15
July	-	28	-	13	-	-	15
August	-	28	1	14	-	-	14
September	-	28	-	14	-	-	14
October	-	28	-	14	-	-	14
November	-	28	1	15	-	-	13
December	-	28	-	15	-	-	13
January 1992	-	28	-	15	13	13	-
February	-	28	-	15	-	13	-
March	-	28	-	15	-	13	-
April	-	28	-	15	-	13	-
May	-	28	-	15	-	13	-
June	-	28	-	15	-	13	-
July	-	28	-	15	-	13	-
TOTAL	28	611	15	242	13	91	278
PERCENT P/M		100.0		39.6		14.9	45.5

FIGURE 8.2
VOLUNTEER EDUCATOR TRAINING & RETENTION
CARABUCO HEALTH AREA



Reference: Table 8.2

FIGURE 8.3
VOLUNTEER EDUCATOR TRAINING & RETENTION
MALLCO RANCHO HEALTH AREA



Reference: Table 8.3

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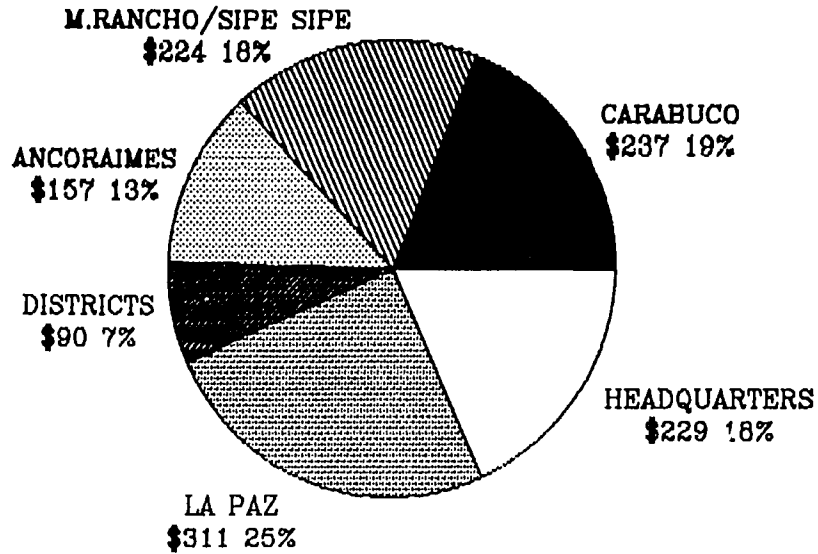
**TABLE 9.1 - LIFE OF PROJECT BUDGET (LOP) BY PROGRAM AND SUPPORT SITE
OCTOBER 1990 - SEPTEMBER 1993, IN USA DOLLARS**

SITE	TOTAL	PERCENT	AID	PERCENT	ARHC	PERCENT
Carabuco	236,600	19.0	110,633	15.0	126,047	23.0
Mallco Rancho & Sipe Sipe	223,562	17.9	132,913	19.0	90,649	16.6
Ancoraimes	156,622	12.6	88,068	12.3	68,554	12.5
District Support	90,420	7.2	42,900	6.1	47,520	8.7
La Paz Office	311,491	25.0	188,582	26.9	122,909	22.4
Headquarters	228,754	18.3	136,904	19.6	91,850	16.8
TOTAL	1,247,529	100.0	700,000	100.0	547,529	100.0

Note: Amounts include overhead @ 10%.

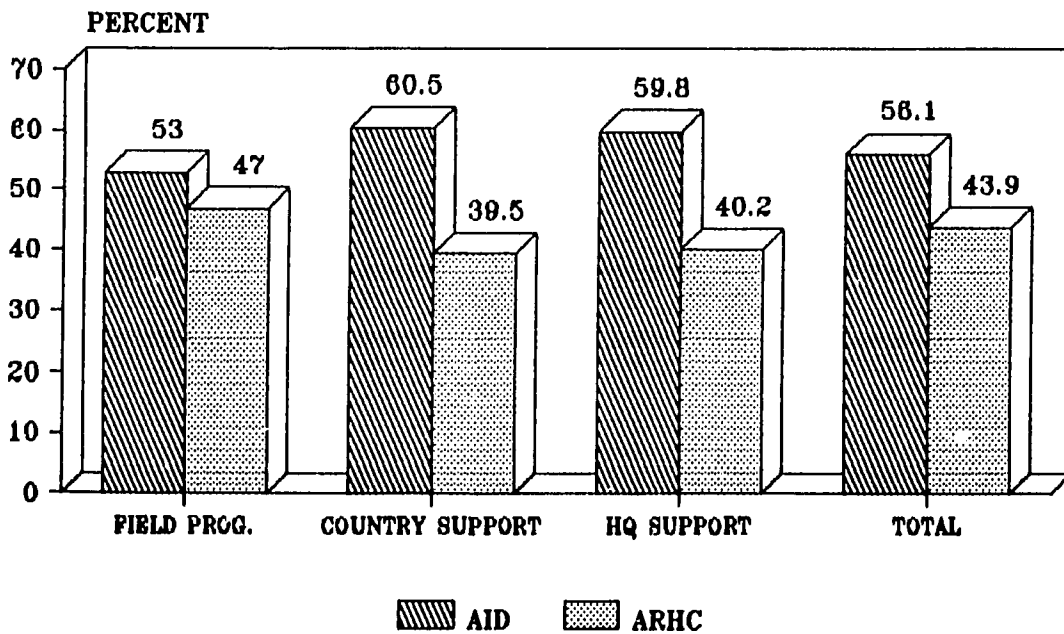
FUNCTION	TOTAL	PERCENT	AID	PERCENT	ARHC	PERCENT
Field Programs	707,284	56.7	374,514	53.0	332,770	47.0
Country Support	311,491	25.0	188,582	60.5	122,909	39.5
HQ Support	228,754	18.3	136,904	59.8	91,850	40.2
TOTAL	1,247,529	100.0	700,000	56.1	547,529	43.9

FIGURE 9.1
TOTAL PROJECT BUDGET BY SITE
 (in 000s US Dollars)



Reference: Table 9.1

FIGURE 9.2
PROGRAM FUNCTIONS BY SOURCE
OF LOP BUDGET



Reference: Table 9.1

TABLE 9.2 - ANALYSIS OF FIELD EXPENDITURES THROUGH MONTH TWENTY-ONE
OCTOBER 1990 - JUNE 1992, IN US DOLLARS

A. LIFE OF PROJECT (LOP) BUDGET: FIELD

COST ELEMENT	PROPOSED BUDGET *		EXPENDED THRU 6/92		PERCENT EXPENDED		BUDGET REMAINING	
	AID	ARHC	AID	ARHC	AID	ARHC	AID	ARHC
Supplies and Equipment	41,452	89,500	3,696	9,563	8.9	10.7	37,756	79,937
Consultants	500	3,500	0	0	0.0	0.0	500	3,500
Evaluation	23,800	18,500	2,400	230	10.1	1.2	21,400	18,270
Personnel: Technical	171,680	139,152	84,495	23,459	49.2	16.9	87,185	115,693
Personnel: Administrat.	162,043	113,547	81,992	22,813	50.6	20.1	80,051	90,734
Travel	28,150	6,000	6,064	976	21.5	16.3	22,086	5,024
Transportat. & Other Dir.	84,280	44,055	44,220	16,148	52.5	36.7	40,060	27,907
Overhead	51,191	41,425	22,286	7,319	43.5	17.7	28,905	34,106
SUB-TOTAL	563,096	455,679	245,153	80,508	43.5	17.7	317,943	375,171
PERCENT	55.3	44.7	75.3	24.7	-	-	45.9	54.1
TOTAL	1,018,775		325,661		26.1		693,114	

* 1991 Project Pipeline Analysis, November 1991.

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 B. PROJECT YEARS ONE AND TWO (PY1 + PY2) BUDGET: FIELD

COST ELEMENT	PROPOSED BUDGET #		EXPENDED THRU 6/92		PERCENT EXPENDED		BUDGET REMAINING	
	AID	ARHC	AID	ARHC	AID	ARHC	AID	ARHC
Supplies and Equipment	23,202	56,500	3,696	9,563	15.9	16.9	19,506	46,937
Consultants	3,000	3,500	0	0	0.0	0.0	3,000	3,500
Evaluation	19,800	12,000	2,400	230	12.1	1.9	17,400	11,770
Personnel: Technical	116,300	72,500	84,495	23,459	72.7	32.4	31,805	49,041
Personnel: Administrat.	110,499	60,587	81,992	22,013	74.2	37.7	28,507	37,774
Travel	18,850	3,000	6,064	976	32.2	32.5	12,786	2,024
Transportat. & Other Dir.	60,340	25,555	44,220	16,148	73.3	63.2	16,120	9,407
Overhead	35,200	23,364	22,286	7,319	63.3	31.3	12,914	16,045
SUB-TOTAL	387,191	257,006	245,153	80,508	63.3	31.3	142,038	176,498
PERCENT	60.1	39.9	75.3	24.7	-	-	44.6	55.4
TOTAL	644,197		325,661		50.6		318,536	

Revised Detailed Project Budget by Site, October 1991.

**TABLE 9.3 - ANALYSIS OF HEADQUARTERS EXPENDITURES THROUGH YEAR ONE
OCTOBER 1990 - SEPTEMBER 1991, IN USA DOLLARS**

A. LIFE OF PROJECT (LOP) BUDGET: HEADQUARTERS

COST ELEMENT	PROPOSED BUDGET *		EXPENDED THRU 9/91		PERCENT EXPENDED		BUDGET REMAINING	
	AID	ARHC	AID	ARHC	AID	ARHC	AID	ARHC
Consultants	12,500	4,000	0	0	0.0	0.0	12,500	4,000
Personnel	102,959	70,500	39,206	9,462	38.1	13.4	63,753	61,038
Travel	9,000	9,000	3,674	1,233	40.8	13.7	5,326	7,767
Overhead	12,445	8,350	4,288	1,070	34.5	12.8	8,157	7,280
Sub-Total	136,904	91,850	47,168	11,765	34.5	12.8	89,736	80,085
Percent	59.8	40.2	80.0	20.0	-	-	52.8	47.2
Total	228,754		58,933		25.8		169,821	

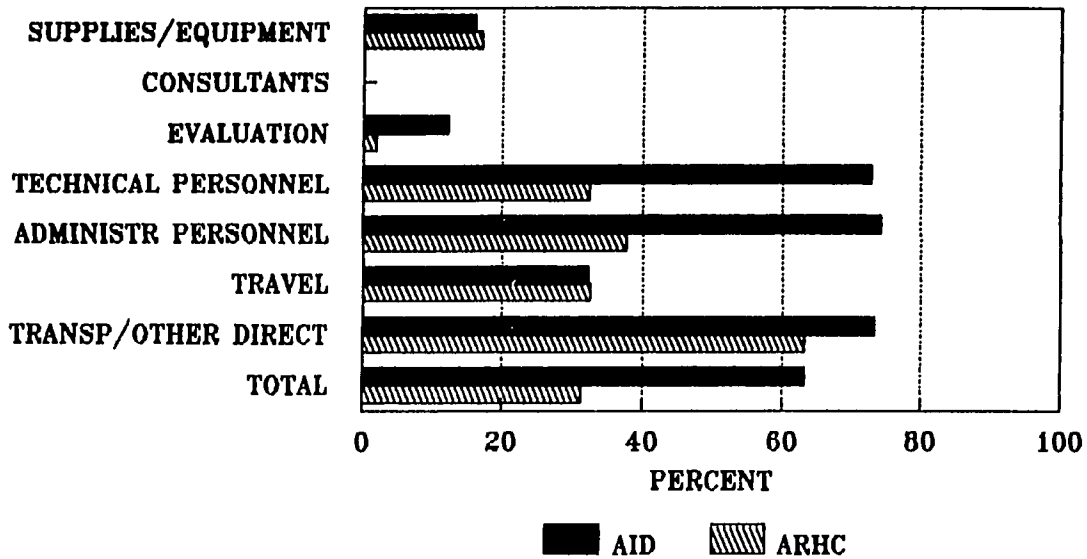
* 1991 Project Pipeline Analysis, November 1991.

B. PROJECT YEAR ONE (PY1) BUDGET: HEADQUARTERS

COST ELEMENT	PROPOSED BUDGET #		EXPENDED THRU 9/91		PERCENT EXPENDED		YEAR ONE SURPLUS	
	AID	ARHC	AID	ARHC	AID	ARHC	AID	ARHC
Consultants	2,500	0	0	0	0.0	-	2,500	0
Personnel	54,600	11,000	39,206	9,462	71.8	86.0	15,394	1,538
Travel	4,500	1,500	3,674	1,233	81.6	82.2	826	267
Overhead	6,160	1,250	4,288	1,070	69.6	85.6	1,872	100
Sub-Total	67,760	13,750	47,168	11,765	69.6	85.6	20,592	1,985
Percent	83.1	16.9	80.0	20.0	-	-	91.2	8.8
Total	81,510		58,933		72.3		22,577	

Revised Detailed Project Budget by Site, October 1991.

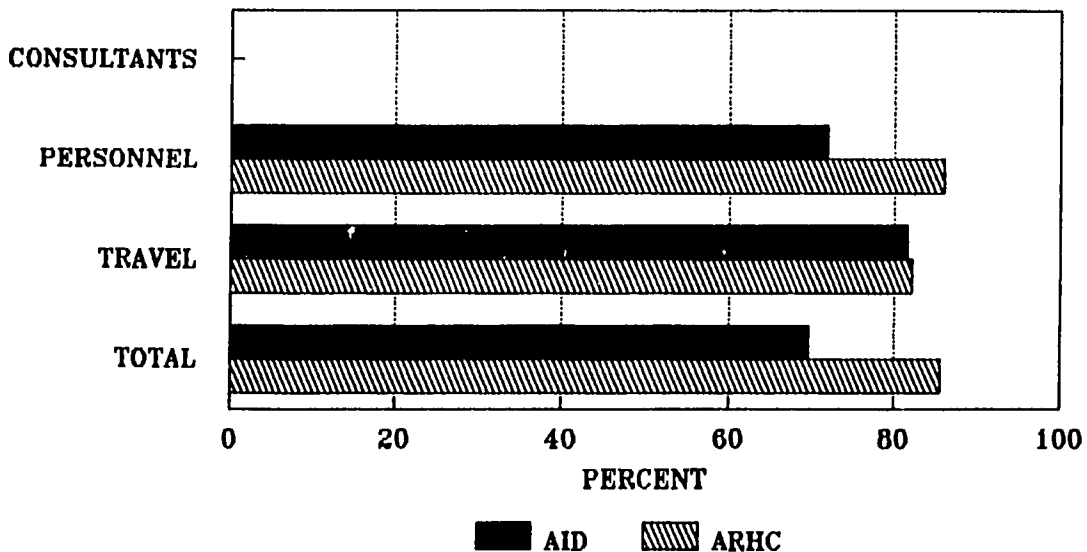
FIGURE 9.3
PY1-2 RATES OF EXPENDITURE
FIELD ACTIVITIES



PY: Project Year (Oct 80 - Sep 82)
 Expenditures as of June 1992 (Month 21)

Reference: Table 9.2B

FIGURE 9.4
PY1 RATES OF EXPENDITURE
HEADQUARTERS

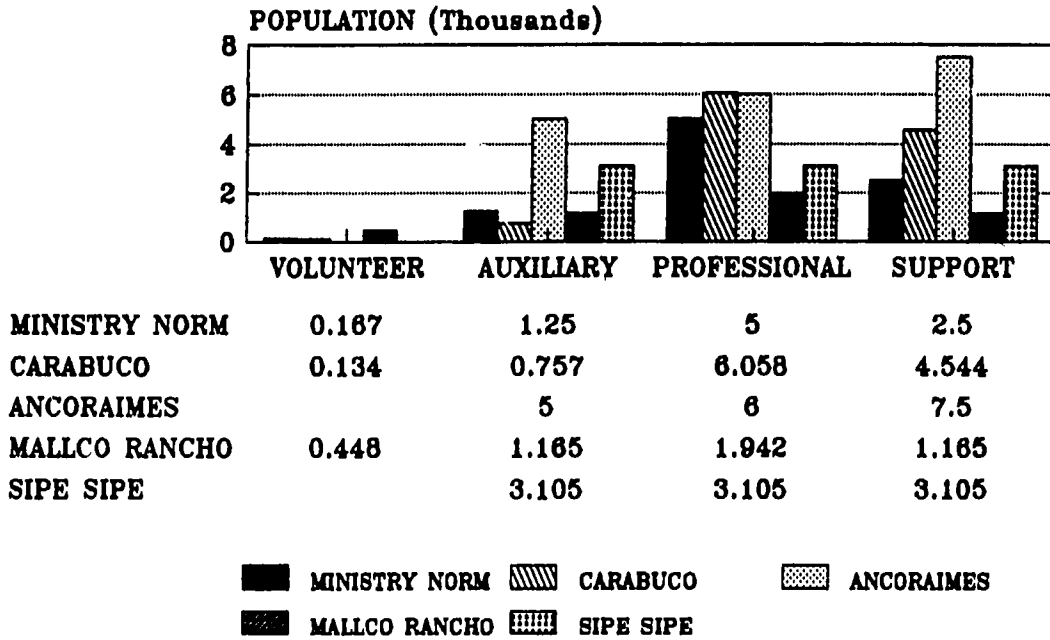


PY1: Project Year 1 (Oct 80 - Sep 81)
 Expenditures as of September 1981

Reference: Table 9.3B

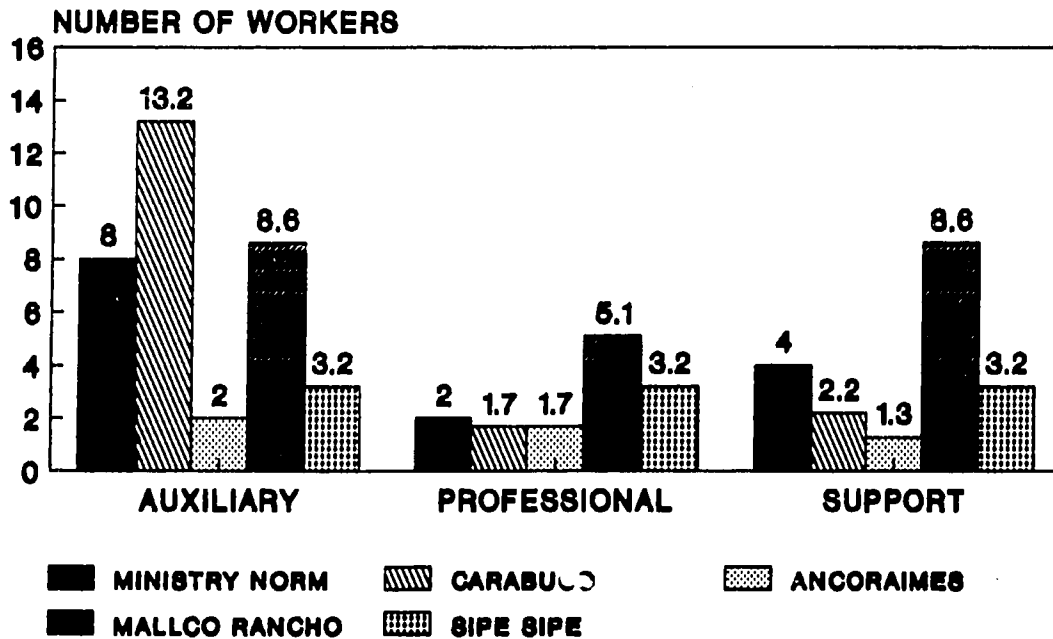
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**FIGURE 10.1
POPULATION PER HEALTH WORKER**



Source: Table 8.1
August 1992

**FIGURE 10.2
HEALTH WORKERS PER 10,000 POPULATION**



Source: Table 8.1
August 1992

ANNEX I

STAFF PERCEPTIONS OF PROJECT

11 August 1992, Mallco Rancho, 6 participants

15 August 1992, Carabuco, 14 participants

MOST PROMISING ASPECTS: MALLCO RANCHO

- * System based on family/community census (3)
- * Delivery of services by means of home visitation
- * Nutritional surveillance of children

- * Community participation - collaboration & organization (3)
- * Community organization as a first step
- * Seeking unity within and among communities

- * The objectives being pursued

- * Aware, committed staff and working in a team

MOST PROMISING ASPECTS: CARABUCO

- * Training of volunteer educators (5)
- * Collaboration of volunteer educators

- * Immunizations (4)
- * Improvement of nutritional status
- * Growth monitoring
- * Reduction in the level of malnutrition

- * Educational talks during home visitation (2)
- * Home visitation (2)

- * Medical obstetrical care
- * Follow-up of patients
- * Follow-up of children with pneumonia
- * Patient care in the health posts

- * Activities with mothers
- * Orientations to mothers
- * Management of child health card with each mother

- * Family census as the basis of work
- * Maintaining registries up to date

- * Health education with different groups

- * Community participation

- * Process of generating new ideas with staff

MOST DIFFICULT OR PROBLEMATIC ASPECTS: MALLCO RANCHO

- * Formation of volunteer educators (2)
- * Organization of the "pyramid" system (with volunteers)

- * Population instability - families which temporarily enter and leave the community (2)

- * Participation of families in appropriate feeding of malnourished children
- * Families which refuse services
- * Inability to educate families regarding their situation - economic factors
- * Difficulty in getting responses to educational messages

- * Achieving community unity in basic sanitation

- * "Narrow" approach through health interventions alone

- * Possible lack of resources in the future

- * Compiling of data immediately - can't be postponed

MOST DIFFICULT OR PROBLEMATIC ASPECTS: CARABUCO

- * Families which refuse services (3)
- * Families without children contradict the auxiliary
- * Difficulty in attending deliveries due to costumes
- * Adverse reactions to vaccines
- * Oral rehydration salts don't cure diarrhea
- * Making mothers aware of growth monitoring
- * Mothers don't seek pre-natal care
- * Construction of latrines

- * Educators don't collaborate for lack of compensation (3)

- * Annual rotation of community authorities (2)
- * Little community interest in health
- * Conflicts and divisions within the community

- * Lower coverage because of changing staff work areas
- * Disciplinary problems in staff attendance
- * Disagreements between field and support staff
- * Lack of a permanent physicians
- * Traveling long distances in bicycle

- * Lack of income to pay electric bills
- * Lack of running water in the health post

- * Single mothers with unwanted children
- * Unwanted pregnancies

- * Lack of economic and educational resources in the population

ANNEX J

ANDEAN RURAL HEALTH CARE

SUMMARY OF EXTERNAL T.A. RECEIVED

AID CS-VI Related

<u>Name of Consultant</u>	<u>Dates & Presence</u>	<u>Activities</u>
John Wyon	26/08 - 17/09/91	Reviewed and assessed progress on Census Based methodologies and made recommendations to improve them. Reviewed and assessed progress on Health Information Systems and made recommendations for improvements.
Victor Lara	May 10-15/1992	Assistance provided by John Hopkins University in supervision and training of staff in input, tabulation and analysis of Cluster Sample Survey data. Training in use of Epi Info for uses in Hopkins standard survey.
Marcelo Castrillo	May 14	Assistance in refining cluster sample methodology according to J . H . U n i v . guidelines.
David Patton	May 1,-Oct 31/1992	Provided by the Peace Corps to help devise and implement a cost accounting system for monitoring cost

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o f A R H C
interventions.

Susana Barrera

October, 1991

Provided by PROCOSI
for training
Carabuco field
staff in use of
ARI, and Diarrhea
management
educational
materials developed
by PROCOSI.

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ENCUESTAS POR MUESTREO 1992
CUADRO COMPARATIVO DE RESULTADOS

DESCRIPCION	ANCORAIMES	CARABUCO 1990	CARABUCO 1992
CARACTERISTICAS DE LAS MADRES			
Porcentaje de Madres < 18 años de edad.	0.4		0.4
Porcentaje de Madres > 35 años de edad.	33		38
Porcentaje de Madres analfabetas.			47
Porcentaje de Madres con educación básica y leen.			45
Porcentaje de Madres que hicieron estudios secundarios o profesionales.			6
LACTANCIA MATERNA			
Porcentaje de niños entre 0 y 23 meses que actualmente están recibiendo pecho.			92
Porcentaje de niños entre 0 y 11 meses que actualmente están recibiendo pecho.		100	99
Porcentaje de niños entre 12 y 23 meses que están recibiendo pecho.	70	76	84
Porcentaje de niños entre 24 y 35 meses que actualmente reciben pecho.	30	26	
Porcentaje de Madres que nunca dieron pecho.	1		0.4
De los niños destetados, la edad promedio de destete en meses.	19		
Porcentaje de las madres que dieron de lactar dentro de las 24 horas después del parto.	71		82
Porcentaje de madres que dan mamera algunas veces a su hijo.	29	33	22
ALIMENTACION COMPLEMENTARIA			
Porcentaje de Madres que indican que hay que iniciar la alimentación complementaria antes de los 4 meses.			27
Porcentaje de madres que indican que hay que iniciar la alimentación entre los 4 y 6 meses.			46
Porcentaje de madres que no saben cuando o indican que se debe iniciar la alimentación después de los 6 meses.			28
La edad promedio en meses de inicio de la alimentación complementaria en sus hijos fue de.	7		

CONSEJO DE SALUD RURAL ANDINO/APSAR

ENCUESTAS POR MUESTREO 1992

CUADRO COMPARATIVO DE RESULTADOS

DESCRIPCION	ANCORAIMES	CARABUCO 1990	CARABUCO 1992
Porcentaje de mujeres que indicaron haber iniciado la alimentaci3n despues de los 6 meses.	39	34	
Porcentaje de los ni3os por grupo etareo que reciben comida:			
- Menores de 4 meses			2
- Menores de 6 meses			8
- entre 7 y 11 meses			98
- Mayores de 12 meses			99
Porcentaje de Madres que dicen cocinar con sal yodada.	28		
Porcentaje de madres que dicen a3adir aceite al plato del ni3o.	18		27
CONTROL DE CRECIMIENTO			
Porcentaje de ni3os que tienen CSI en su casa.	21		78
Porcentaje de ni3os que tienen CSI en su casa o en el Centro de Salud.			92.5
Porcentaje de ni3os que tienen carnet de vacunaci3n en su casa.	3		6
Porcentaje de ni3os cuya madre indica haber perdido el carnet.	14		8
Porcentaje de ni3os sin documento.	62		1
Porcentaje de ni3os 12-23 meses de edad con CSI con 4 o m3s pesajes en el 3ltimo a3o.		69	88
Porcentaje de ni3os 12-23 meses con CSI con por lo menos 2 pesajes en los 3ltimos 6 meses.	32		
Numero promedio de controles entre ni3os 12-23 meses con CSI en el 3ltimo a3o.		4	6.2
Porcentaje de madres de ni3os con CSI que interpretaron correctamente el estado nutricional del ni3o.	44		62
INMUNIZACIONES			
Porcentaje de ni3os de 12-23 meses con esquema de vacunaci3n completa.	1.5	86	85
Porcentaje de ni3os de 12-23 meses con esquema de vacunaci3n completa antes de cumplir 12 meses de edad.		72	74
Porcentaje de ni3os 12-23 meses con			

CONSEJO DE SALUD RURAL ANDINO/APSAR

ENCUESTAS POR MUESTREO 1992
CUADRO COMPARATIVO DE RESULTADOS

DESCRIPCION	ANCORAJMES	CARABUCO 1990	CARABUCO 1992
Polio 3.	2.2	86	89
*Porcentaje de niños 12-23 meses con DPT 3.	8.7	86	91
*Porcentaje de niños 12-23 meses con vacuna antisarapionosa.	7.5	98	91
*Porcentaje de niños 12-23 meses con vacuna BCG.	11.9	92	97
*Porcentaje de niños 0-11 meses con vacuna BCG.			83
*Porcentaje de madres que indicaron que la vacuna TT sirve para:			
- Proteger a la madre y al R/N.			17
- Proteger a la madre o al R/N.			12
- Otro o no sabe.			71
*Porcentaje de madres:			
- Con tarjeta de vacunación.	7		27
- Tenía pero perdió tarjeta.	23		16
- Sin tarjeta de vacunación.	70		57
*Porcentaje de Madres con por lo menos 2 dosis de TT.	2.1		19
*Porcentaje de Madres con por lo menos 3 dosis de TT.	8.9		6.7
ENFERMEDADES DIARREICAS			
*Porcentaje de niños con diarrea en las últimas dos semanas.	18	26/22	33
*Porcentaje de niños que recibieron:			
- Pecho igual o más que de costumbre.	65	98	66
- Líquidos igual o más que de costumbre.	67	98	35
- Comida igual o más que de costumbre.		71	18
*Porcentaje de madres de niños con diarrea en las últimas dos semanas que:			
- Usaron sobre de R.O. o suero casero o los dos.		12	32
- Usaron otros líquidos en el tratamiento de la diarrea.	57		
*Porcentaje de Madres de niños con diarrea que pidieron ayuda:			48
*Porcentaje de madres que pidieron ayuda que la solicitaron de(1).			
- Centro de Salud			87
- Médico particular			8
- Pariente			3
- Otros			13

CONSEJO DE SALUD RURAL ANDINO/APSAR

ENCUESTAS POR MUESTREO 1992

CUADRO COMPARATIVO DE RESULTADOS

DESCRIPCION	ANCORAINES	CARABUCO 1990	CARABUCO 1992
Porcentaje de madres de niño con diarrea que indicaron haber hecho el siguiente tratamiento:			
- Sobre			30
- Suero casero			1
- Soluciones a base de cereales			18
- Líquidos en abundancia			28
- Medicinas			10
- Otros			37
- Nada			11
Porcentaje de Madres que reconocieron los siguientes signos de peligro de la diarrea.			
- Deshidratación			29
- Boca seca	21		
- Ojos hundidos	24		
- Diarrea continúa.	3.5		32
- Sangre en la heces.	4		12
- Fiebre.	18		30
- Vomitos.	7		7
- Otros.	42		28
- No sabe	3.5		22
Porcentaje de madres que indicaron que la acción más importante en caso de que su hijo tuviera diarrea es:			
- Dar más líquido de lo normal	52		
- Alimentar más frecuentemente	16		
- Llevar al Centro de Salud	11		
- Otros	51		
- No sabe o nada	16		
Porcentaje del total de madres que conocen o han oído hablar del sobre de rehidratación oral.	66	89	79
Porcentaje de las madres que conocen o han oído del sobre de R.O. que saben para que sirve.	81	86	91
Porcentaje del total de madres que saben para que sirve el sobre de R.O.	53		72
Porcentaje de las madres que han oído hablar del sobre y que lo han utilizado.	49	64	68
Porcentaje del total de las madres que han utilizado el sobre de R.O.	32		52
Porcentaje de las madres que han oído hablar del sobre de R.O. que saben como prepararlo.	26.5	75	66
Porcentaje del total de las madres que saben como preparar el sobre de R.O.	17		53

CONSEJO DE SALUD RURAL ANDINO/APSAR

ENCUESTAS POR MUESTREO 1992
CUADRO COMPARATIVO DE RESULTADOS

DESCRIPCION	ANCORAIMES	CARABUCO 1990	CARABUCO 1992
INFECCIONES RESPIRATORIAS AGUDAS			
Porcentaje de niños con tos fuerte en las últimas dos semanas.	31		41
Porcentaje de niños con tos fuerte que tenían además, dificultad para respirar.	48		81
Porcentaje del total de niños con tos fuerte y dificultad para respirar en las últimas dos semanas.	14		33
Porcentaje de los niños con tos fuerte y dificultad para respirar que pidieron ayuda	36		53
Porcentaje de los niños que pidieron ayuda que acudieron a (e):			
- Centro de Salud	33		83
- Médico particular	8		8
- Pariente	66		8
- Otros	33		17
Porcentaje de Madres que reconocieron los siguientes signos de peligro de la "pneumonía".			
- Respiración rápida	14		29
- Retracción intercostal	1		4
- Fiebre	45		37
- Cianosis			5
- Tos	68		63
- Otros	36		33
- No saben	16		28
SALUD MATERNA			
Porcentaje de las Madres que hicieron por lo menos un control prenatal.	7		28
Porcentaje de las madres con:			
- Con un solo control			12
- Con dos controles			5
- Con tres o más controles			11
Porcentaje de niños cuyo cordón umbilical fué cortado por:			
- Familiar femenino o vecina	41		41
- Esposo	24		34
- Partera empírica	24.5		8
- Personal de salud	3.5		18
- Otros	7		6
Porcentaje de madres que indicaron que buscarían ayuda en caso de retención			

CONSEJO DE SALUD RURAL ANDINO/APSAR

ENCUESTAS POR MUESTREO 1992
CUADRO COMPARATIVO DE RESULTADOS

DESCRIPCION	ANCORAINES	CARABUCO 1990	CARABUCO 1992
- Despues de 1 hora del parto	23		37
- Despues de entre 6 y 12 horas del parto	36		
- Despues de entre 12 y 24 horas del parto	10		
- Entre 1 y 24 horas			34
- Despues de las 24 horas del parto	13		7
- No sabe	17		21
*Porcentaje de madres que han oido hablar de alguna manera de evitar el embarazo.			24
*Porcentaje del total de madres que conocen las siguientes maneras de evitar el embarazo.			
- No conocen ninguna manera			40
- Ligadura			2
- Inyecciones			17
- Pastillas Anticonceptivas			31
- Dispositivo Intrauterino			7
- Diafragma			0
- Gondón			3
- Lactancia Materna			0
- Ritmo			17
- Abstinencia			7
- Otros			9
*Porcentaje de madres que afirmaron el deseo de que el proyecto ofrezca algún método de planificación familiar.			94.6
*La edad (en años) promedio de las mujeres de la encuesta.	31		32
*El número promedio de embarazos por mujer.	4.8		
*El número promedio de hijos vivos.	3.9		
*Porcentaje de madres que indicaron haber tenido por lo menos un fracaso.	2.2		
*Porcentaje de mujeres que indicaron haber tenido por lo menos un hijo que falleció.	46		
IMAGEN DEL CENTRO DE SALUD			
*Porcentaje de madres que indicaron que alguien en la familia habia recibido alguna atención de parte del personal.	35		99
*Porcentaje de mujeres que indicaron que alguien de su familia habia recibido el siguiente servicio:			
- Consulta médica en el Puesto.			44
- Consulta médica en el Hospital.			32

CONSEJO DE SALUD RURAL ANDINO/APSAR

ENCUESTAS POR MUESTREO 1992
CUADRO COMPARATIVO DE RESULTADOS

DESCRIPCION	ANCORAIMES	CARABUCO 1990	CARABUCO 1992
- Consulta médica en el domicilio.			43
- Visita domiciliaria para vacunas y control de peso y talla.			98
- Vacunas o control de peso y talla en concentraciones.			69.5
Porcentaje de madres que calificaron el servicio como:			
- Excelente	1	4	8
- Bueno	61	90	80
- Regular	23	3	10
- Malo	14	3	2
SUGERENCIAS DE LAS MADRES PARA MEJORAR LA SALUD			
- Orientación y servicios de Planificación familiar.	1		23
- Atención curativa permanente y mejorada.	32	30	29
- Medicamentos	37		
- Medicamentos gratuitos y precios rebajados.			5
- Agua potable, letrinización, Saneamiento básico e higiene.		31	12
- Atención de salud de los niños.	25		16
- Nutrición		12	
- Educación en salud.	17	12	13
- Auxiliares en las comunidades y más personal.			5
- Formación de voluntarios/parteras.	10		
- Equipamiento y mantenimiento de los puestos, construcción de puestos, mejoramiento del hospital.	22		6
- Visitas Domiciliarias.	3		2

CONSEJO DE SALUD RURAL ANDINO/APSAR

ENCUESTAS POR MUESTREO 1992
CUADRO COMPARATIVO DE RESULTADOS

DESCRIPCION	ANCORAIMES	CARABUCO 1990	CARABUCO 1992
- Servicios preventivos y domiciliarios.		9	
- Asistencia en agricultura y ganadería y artesanía.	8	37	10
- Energía eléctrica.			2
- Alfabetización y Educación.			14
- Alimentos y ayuda.	11		
- Otros	4		6
INFORMACION OBTENIDA EN LOS PUESTOS			
*Porcentaje de casas:			
- Con numeración a la vista		81	72.5
- Con placa			50.5
- Pintado			22
- Sin numeración a la vista			27.5
*Porcentaje de familias con carpeta familiar.		87	96
*Porcentaje de familias con hoja de censo.			90
*Porcentaje de familias con por lo menos dos visitas domiciliarias en los últimos 12 meses.			90
*Porcentaje de familias con por lo menos 6 visitas en los últimos 12 meses.			45
*Número promedio de visitas domiciliarias en los últimos 12 meses.		3.2	4

c: CUACOMP1.WR1
21/08/92

CONSEJO DE SALUD RURAL ANDINO/APSAR

ENCUESTAS POR MUESTREO 1992
CUADRO COMPARATIVO DE RESULTADOS

DESCRIPCION			
CARACTERISTICAS DE LAS MADRES	SIPE SIPE	MALLCO R. 1990	MALLCO R. 1992
*Porcentaje de Madres < 18 años de edad.	1		2
*Porcentaje de Madres > 35 años de edad.	23		19
*Porcentaje de Madres analfabetas.	34	27	21
*Porcentaje de Madres con educación básica y leen.	52	52	65
*Porcentaje de Madres que hicieron estudios secundarios o profesionales.	14	20	13
*Porcentaje de niños principalmente al cuidado de la propia madre.	95	83	98
LACTANCIA MATERNA			
*Porcentaje de niños entre 0 y 23 meses que actualmente están recibiendo pecho.	71.5	73	67
*Porcentaje de niños entre 0 y 11 meses que actualmente están recibiendo pecho.	92		96
*Porcentaje de niños entre 12 y 23 meses que están recibiendo pecho.	47		39
*Porcentaje de Madres que nunca dieron pecho.	2	1	1
*Porcentaje de las madres que dieron de lactar dentro de las 8 horas después del parto.	56		61
*Porcentaje de madres que dan mamadera algunas veces a su hijo.	28		34
ALIMENTACION COMPLEMENTARIA			
*Porcentaje de Madres que indican que hay que iniciar la alimentación complementaria antes de los 4 meses.	51		60
*Porcentaje de madres que indican que hay que iniciar la alimentación entre los 4 y 6 meses.	25.5		29
*Porcentaje de madres que no saben cuando o indican que se debe iniciar la alimentación después de los 6 meses.	24		10
*Porcentaje de niños menores de 4 meses que reciben:			
Agua	18		16

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ANNEX K

CONSEJO DE SALUD RURAL ANDINO/APSAR

ENCUESTAS POR MUESTREO 1992
CUADRO COMPARATIVO DE RESULTADOS

DESCRIPCION			
CARACTERISTICAS DE LAS MADRES	SIPE SIPE	MALLCO R. 1990	MALLCO R. 1992
Fruta	8		3
Verduras	2		0
Papa	2		0
Carne	2		0
*Porcentaje de niños menores de 6 meses que reciben:			
Agua	35		40
Fruta	19		19
Verduras	12.5		12.5
Papa	14		12.5
Carne	6		6
*Porcentaje de niños de 6 a 12 meses que reciben:			
Agua	94		99
Fruta	95		97
Verduras	87.5		90
Papa	97		96
Carne	86		86
*Porcentaje de niños de 12-23 meses que reciben:			
Agua	97		100
Fruta	97.5		100
Verduras	99		99
Papa	99		99
Carne	97.5		98
*Porcentaje de Madres que dicen añadir sal yodada al alimento del niño.	79		78.5
*Porcentaje de madres que dicen añadir aceite al plato del niño.	34.5		21.5
CONTROL DE CRECIMIENTO			
*Porcentaje de niños que tienen CSI en su casa.	34	74	80
*Porcentaje de niños que tienen CSI en su casa o en el Centro de Salud.			87
*Porcentaje de niños que tienen carnet de vacunación en su casa.	0.9		0
*Porcentaje de niños cuya madre indica haber perdido el carnet.	27	24	4.5
*Porcentaje de niños sin documento.	39	2	9

ANNEX K

CONSEJO DE SALUD RURAL ANDINO/APSAR

ENCUESTAS POR MUESTREO 1992
CUADRO COMPARATIVO DE RESULTADOS

DESCRIPCION			
CARACTERISTICAS DE LAS MADRES	SIPE SIPE	MALLCO R. 1990	MALLCO R. 1992
*Porcentaje de niños 12-23 meses de edad con CSI con 4 o más pesajes en el último año.			63
*Porcentaje de niños con CSI con por lo menos 1 pesaje en los últimos 4 meses.	31		
*Porcentaje de niños 0-23 meses que fueron controlados en 2 o más veces los pasados 6 meses.		54	
*Número promedio de controles entre niños de 12 a 23 meses con CSI en los últimos 4 meses.	0.8		
*Número promedio de controles entre niños 12-23 meses con CSI en el último año.			4.5
INMUNIZACIONES			
*Porcentaje de niños de 12-23 meses con esquema de vacunación completa.	11.6	25	73
*Porcentaje de niños de 12-23 meses con esquema de vacunación completa antes de cumplir 12 meses de edad.	4.1		54
*Porcentaje de niños 12-23 meses con Polio 3.	17.5	45	79
*Porcentaje de niños 12-23 meses con DPT 3.	15.8	48	75
*Porcentaje de niños 12-23 meses con vacuna antisarampionosa.	21.7		82
*Porcentaje de niños 12-23 meses con vacuna BCG.	19.2		87
*Porcentaje de niños 0-11 meses con vacuna BCG.	20.4		77
*Porcentajes de madres que indicaron que el niño debe recibir la vacuna antisarampionosa:			
- a los 9 meses	9		21
- antes de los 9 meses	24	56	19
- después de los 9 meses	3	7	4
- no saben cuando	64	36	56
*Porcentaje de madres que indicaron que la vacuna TT sirve para:			
- Proteger a la madre y al R/N.	15		17
- Proteger a la madre o al R/N.	10	39	15

ANNEX K

CONSEJO DE SALUD RURAL ANDINO/APSAR

ENCUESTAS POR MUESTREO 1992
CUADRO COMPARATIVO DE RESULTADOS

DESCRIPCION			
CARACTERISTICAS DE LAS MADRES	SIPE SIPE	MALLCO R. 1990	MALLCO R. 1992
- Otro o no sabe.	75	61	69
*Porcentaje de madres:			
- Con tarjeta de vacunación.	4.5		6
- Tenía pero perdió tarjeta.	21		25
- Sin tarjeta de vacunación.	74.5		69
*Porcentaje de Madres con por lo menos 2 dosis de TT.	2.6		2
*Porcentaje de Madres con por lo menos 3 dosis de TT.	2.2		2
ENFERMEDADES DIARREICAS			
*Porcentaje de niños con diarrea en las últimas dos semanas.	33	51	33
*Porcentaje de niños que recibieron:			
- Pecho igual o más que de costumbre.	78	56.5	81
- Líquidos igual o más que de costumbre.	62	58	66
- Comida igual o más que de costumbre.	57	38	55
*Porcentaje de madres de niños con diarrea en las últimas dos semanas que:			
- Usaron sobre de R.O. o suero casero o los dos.	28	31	42
- Usaron otros líquidos en el tratamiento de la diarrea.	50		58
*Porcentaje de Madres de niños con diarrea que pidieron ayuda:	31	60	43
*Porcentaje de madres que pidieron ayuda que la solicitaron de(1).			
- Centro de Salud	15	49.5	29
- Médico particular	26	6.5	20
- Pariente	48	9	17
- Otros	11	35	34
*Porcentaje de Madres que reconocieron los siguientes signos de peligro de la diarrea.			
- Deshidratación	12	10	13
- Diarrea continua.	22.5	27	23
- Sangre en la heces.	3	8	4
- Fiebre.	15	25	12
- Vómitos.	16	11	11
- Otros.	27	14	34

ANNEX K

CONSEJO DE SALUD RURAL ANDINO/APSAR

ENCUESTAS POR MUESTREO 1992
CUADRO COMPARATIVO DE RESULTADOS

DESCRIPCION			
CARACTERISTICAS DE LAS MADRES	SIPE SIPE	MALLCO R. 1990	MALLCO R. 1992
- No sabe	29	5	27
*Porcentaje de madres que indicaron que la acción más importante en caso de que su hijo tuviera diarrea es:			
- Dar más líquido de lo normal	28.5	14	26
- Alimentar más frecuentemente	4.5	3.5	3
- Llevar al Centro de Salud	34	57	43
- Otros	47	24	45
- No sabe o nada	8	2	5
*Porcentaje del total de madres que conocen o han oído hablar del sobre de rehidratación oral.	59		72
*Porcentaje de las madres que conocen o han oído del sobre de R.O. que saben para que sirve.	90		93
*Porcentaje del total de madres que saben para que sirve el sobre de R.O.	53		67
*Porcentaje de las madres que saben para que sirve el sobre y que lo han utilizado.	78		90
*Porcentaje del total de las madres que han utilizado el sobre de R.O.	46		65
*Porcentaje de las madres que saben para que sirve el sobre de R.O. que saben como prepararlo.	76		82
*Porcentaje del total de las madres que saben como preparar el sobre de R.O.	45		59
*Porcentaje de las madres que indicaron que pueden defender a sus niños de la diarrea:			
- Usando correctamente la letrina.	3		1
- Haciendo hervir el agua para tomar.	18		16
- Lavándose las manos antes de comer.	21		9
- Evitando comer alimentos crudos.	23		24
- Eliminando basuras y moscas.	19.5		27
- Otros.	55		59
*Frecuencia de madres que mencionaba usar letrina, hervir agua, lavar manos, evitar alimentos crudos, eliminar basura y moscas para prevenir la diarrea, el porcentaje que:			
- No mencionó ninguna.	42.5		
- Mencionó 1 de las actividades.	35		
- Mencionó 2 de las actividades.	17		

ANNEX K

CONSEJO DE SALUD RURAL ANDINO/APSAR

ENCUESTAS POR MUESTREO 1992
CUADRO COMPARATIVO DE RESULTADOS

DESCRIPCION			
CARACTERISTICAS DE LAS MADRES	SIPE SIPE	MALLCO R. 1990	MALLCO R. 1992
- Menciona 3 de las actividades.	4.5		
- Mencionó las 4 actividades.	0.4		
INFECCIONES RESPIRATORIAS AGUDAS			
*Porcentaje de niños con tos fuerte en las últimas dos semanas.	37	48	28
*Porcentaje de niños con tos fuerte que tenían además, dificultad para respirar.	66		60
*Porcentaje del total de niños con tos fuerte y dificultad para respirar en las últimas dos semanas.	24		17
*Porcentaje de los niños con tos fuerte y dificultad para respirar que pidieron ayuda	43	57	30
*Porcentaje de los niños que pidieron ayuda que acudieron a:			
- Centro de Salud	11	49	61.5
- Médico particular	21	1	15
- Pariente	32	19	8
- Otros	36	38.5	13.5
*Porcentaje de Madres que reconocieron los siguientes signos de peligro de la "pulmonía".			
- Respiración rápida	9	15	7
- Retracción intercostal	0	0	0
- Fiebre	10	19	8.5
- Cianosis	3		2
- Tos	48	40	65
- Otros	10	19	10
- No saben	40	7	28
SALUD MATERNA			
*Porcentaje de Madres:			
- Con carnet de Control Prenatal	12		39
- Perdió el carnet	19		15
*Porcentaje de las madres con Carnet de Control Prenatal con:			
- Por lo menos un control	93.5		100
- Con un solo control	13		13
- Con dos controles	16		21
- Con tres o más controles	64.5		65

ANNEX K

CONSEJO DE SALUD RURAL ANDINO/APSAR

ENCUESTAS POR MUESTREO 1992
CUADRO COMPARATIVO DE RESULTADOS

DESCRIPCION			
CARACTERISTICAS DE LAS MADRES	SIPE SIPE	MALLCO R. 1990	MALLCO R. 1992
*Porcentaje de mujeres que mencionaron alimentos ricos en hierro.			
- Mencionó o vegetales o proteínas	38		
- Mencionó vegetales y proteínas	28		
- No mencionaron ni vegetales ni proteínas	33		
*Porcentaje de niños cuyo cordón umbilical fué cortado por:			
- Un miembro de la familia	33	36	32.5
- Partera empírica	8	8.5	5
- Personal de salud	54	50	58
- Otros	5	5.5	4.5
*Porcentaje de madres que indicaron que buscarían ayuda en caso de retención placentaria:			
- Despues de 1 hora del parto	58		59
- Despues de entre 6 y 12 horas del parto	3		2
- Despues de entre 12 y 24 horas del parto	1.5		2
- Despues de las 24 horas del parto	1.5		3
- No sabe	35		33
*Porcentaje del total de madres que conocen las siguientes maneras de evitar el embarazo.			
- No conocen ninguna manera	71.5		65
- Ligadura	3		4
- Inyecciones	6		8
- Pastillas Anticonceptivas	14		14
- Dispositivo Intrauterino	11		15
- Diafragma	1		0.4
- Gondón	3		3
- Lactancia Materna	1.5		1
- Ritmo	13		10
- Abstinencia	3		2
*La edad (en años) promedio de las mujeres de la encuesta.	28.5	27	28
*El número promedio de embarazos por mujer.	4.2		3.8
*El número promedio de hijos vivos.	3.2		3.1
*Porcentaje de madres que indicaron haber tenido por lo menos un fracaso.	17		16
*Porcentaje de mujeres que indicaron haber tenido por lo menos un hijo que falleció.	33		28
IMAGEN DEL CENTRO DE SALUD			

ANNEX K

CONSEJO DE SALUD RURAL ANDINO/APSAR

ENCUESTAS POR MUESTREO 1992

CUADRO COMPARATIVO DE RESULTADOS

DESCRIPCION			
CARACTERISTICAS DE LAS MADRES	SIPE SIPE	MALLCO R. 1990	MALLCO R. 1992
*Porcentaje de madres que indicaron que alguien en la familia habia recibido alguna atención de parte del personal.	56		77
*Porcentaje de madres que calificaron el servicio como:			
- Excelente	0.7		1
- Bueno	61		86
- Regular	26.5		13
- Malo	12		0

c: CUACOMP.WR1
21/08/92



PROYECTO CONCERN BOLIVIA

PROGRAMAS DE ATENCION PRIMARIA DE SALUD

CASILLA 2192
COCHABAMBA - BOLIVIA

ANNEX L

AV. ANICETO ARC
UNIDAD SANITARI
TELF. 33674

Cochabamba, 17 de agosto, 1992

Señor

Lic. James Beach

La Paz

Estimado James,

Te comento mis apreciaciones por participar en la evaluación de medio término del Proyecto de Supervivencia Infantil, área Mallco Rancho, realizado del 10 al 12 de agosto de 1992.

Del Recurso Humano.

1. Existe personal técnico de salud suficientemente capacitado para las metas del Proyecto, motivado para el logro de las metas, con sensibilidad social necesario para el trabajo en área rural, disciplinados para realizar las tareas asignadas, especialmente la metodología de visita domiciliaria para implementar las intervenciones del plan de supervivencia infantil.
2. Los trabajadores de salud voluntarios, capacitados continúan en forma parcial, no existe en el número como se menciona en el plan, los pocos voluntarios que continúan no realizan el total de tareas del plan, es necesario reformular todo el plan relacionado con este rec^o curso; se sugiere lo siguiente:
 - a) Orientar a la comunidad, dando criterios para la elección del voluntario; de parte de los mismos comunarios hay consenso para capacitar a las madres.
 - b) Revisar el contenido educativo, el número de horas de la capacitación, la supervisión y el reciclaje.

De la Organización Comunitaria.

Mantener lo realizado, como ser:

- 1º Educación a la comunidad.
- 2º Capacitación en Liderazgo.
- 3º Participación de ellos en la ejecución de los programas de salud.
- 4º Participación del personal de salud en las reuniones comunales.

Se sugiere ampliar las actividades con:

- a) Capacitación a líderes comunales con temas de gerencia de salud y administración.
- b) Participación de ellos en la administración de los servicios, para que conozcan el costo de las operaciones.
- c) Sistematizar la participación y responsabilidades, a través de convenios escritos.

De las Intervenciones de Supervivencia Infantil.

Observando el sistema de información, se concluye lo siguiente:

1. Hay un fuerte énfasis de las intervenciones al grupo infantil, especialmente del P.A.I., control de crecimiento y desarrollo, recuperación nutricional, detección y control de EDA, IRA. Las coberturas están según el plan de implementación gracias a la metodología del censo, visitas domiciliarias, seguimiento de todos los niños.

De la Sostenibilidad del Proyecto.

1. Continuar con las actividades ya iniciadas en el Proyecto, los mencionados en Organización Comunitaria.
2. Se sugiere ampliar, continuar motivando y reflexionando con el personal de salud hacia este objetivo en las reuniones con el personal y en la comunidad.
3. Tomar en cuenta las iniciativas de la comunidad, como ser: ampliar el programa educativo con temas de medicina tradicional, que las madres se capaciten como voluntarias.
4. A iniciativa de los comunarios, mantener tarifas de atención a costos mínimos, que participen en la administración para cuando tengan que pagar, como lo manifestaron, tengan amplio conocimiento de los costos.

De la Supervisión.

Se hace necesario sistematizar el procedimiento con sus respectivos protocolos de supervisión, guías y normas, por escrito.

De la Educación.

Se hace necesario revisar los contenidos educativos y los mensajes, tomando en cuenta el contexto socio-cultural.

De la replicabilidad del Proyecto.

Para ver la posibilidad de su replicabilidad en área rural, dado el modelo de la metodología, se hace necesario incluir análisis de costo-beneficio.

Conclusión.

1. En general el Proyecto camina hacia sus objetivos y fines del plan detallado de implementación.
2. Felicitar al personal de campo, directivos y asesores por la dedicación a la ejecución del Proyecto.
3. Dedicar hasta el fin del Proyecto a implementar detalles de los diferentes componentes del Proyecto.

James, me despido con agradecimientos; espero te ayude los comentarios resumidos que me solicitaste.

Fraternalmente,



Dr. Evaristo Matda C.
DIRECTOR REGIONAL
PROYECTO CONCERN Int.

c.c.: Dudley Conneely
DIRECTOR NACIONAL - PCI BOLIVIA

Arch.



Mallco Rancho - Community Health Worker placing a house number



Mallco Rancho - Community Health Worker weighing baby during home visit



Mallco Rancho - Community Health Worker vaccinating child at clinic



Mallco Rancho - Community Health Worker with patient during home visit

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Ancoraimes - Community Health Worker recording information on a home visit



Carabuco - measuring baby at a clinic



Carabuco - weighing baby at a clinic