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**PROJECT CONCERN INTERNATIONAL**

**CHILD SURVIVAL**

**YUNGAS, BOLIVIA**

**FINAL EVALUATION**

**REPORT FOR THE PERIOD AUGUST 1986-JULY 1989**

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## PCI YUNGAS--FINAL EVALUATION

### I. BACKGROUND

#### Project Description

##### A. Purpose

The purpose of the Project Concern International (PCI) project in Yungas was to strengthen the capacity of the Chulamani Regional Health Office of the MOH to provide health services in the Chulamani, Yanacachi, Coripata, and Irupano areas.

The means by which this strengthening was to occur was through training of RHO personnel and community volunteers in the five Child Survival interventions emphasized by the RHO: immunizations (EPI), oral rehydration therapy (ORT), acute respiratory infections (ARIs) and tuberculosis (TB), growth monitoring/nutrition, safe birthing practices, and adequate screening and referral of high-risk pregnancies.

The strengthening of capacity had as its purpose:

1. To develop within the host country organization the capacity to assume complete responsibility for carrying out health programs at the community level as measured by the demonstrated capacity of the RHO to manage the established program.
2. To increase participation at the community level, through the creation and support of community health committees.
3. To provide training for local people, specifically through the training and supervision of community health workers (CHWs) as a basis for project sustainability.

The project depended to a great extent upon establishing and maintaining effective relationships between RHO personnel and PCI/Yungas and the willingness of both parties to cooperate both at the regional and local levels. PCI/Yungas works within the existing RHO structure to develop an understanding of primary health care (PHC) among those staff responsible for child survival interventions.

##### B. Goals

1. To reduce morbidity and mortality rates among under-fives caused by diarrhea and dehydration through the use of ORT.

2. To reduce morbidity and mortality caused by vaccine-preventable diseases by increasing coverage rates through the Expanded Program of Immunizations (EPI) of the MOH.
3. To reduce morbidity and mortality caused by malnutrition through increasing nutrition education, growth monitoring, breastfeeding, and provision of weaning foods.
4. To reduce morbidity and mortality among infants, children, and mothers through identification, referral, and follow-up of high-risk cases.

C. Organization

The headquarters of Project Concern International is located in San Diego, California. This office oversees the Project Concern program in Bolivia.

PCI/Bolivia has its main office in La Paz and has projects in the departments of Oruro, Potosi, Cochabamba, and Yungas.

PCI/Yungas works in the provinces of North and South Yungas of the Department of La Paz in coordination with the MOH.

The RHO is responsible to the La Paz Health Unit (LPHU), which is also the MOH regional office for the Department of La Paz.

Human Resources: The original design of the PCI/Yungas project included a local office staff composed of a director, an administrator, a health educator, secretary, and part-time driver.

D. Relations with the Ministry of Health

PCI has a country program agreement with the Ministry of Foreign Relations and with the Ministry of Health to carry out health projects in Yungas. Activities are coordinated and authorized by the La Paz Health Unit. Field supervision is carried out by the LPHU personnel assigned to work with PCI. At the local level, the MOH utilizes as ancillary personnel students who are carrying out their rural service obligation in fulfillment of their requirements for professional degrees.

## II. CONSULTANCY AND EVALUATION METHODOLOGY

### A. Framework of the Final Evaluation Consultancy

The framework of the evaluation was included in the work plan submitted by the consultants at the request of the PCI office in La Paz. This plan established the general objectives, the geographic and institutional scope, the methods to be employed, the content, and the timetable of activities for the evaluation.

The initial plan was accepted in principle with two modifications: a) the scope was reduced to the local level of the RHO, and b) the content was adjusted to meet the specifications of the USAID guidelines for final evaluations.

The consultants who conducted the final project evaluation were: a) Dr. Guillermo Seoane, M.Sc., M.P.H. (postgraduate studies at the Public Health School of Mexico), currently coordinator of the MPH program at the Universidad Mayor de San Andres, and b) Dr. Fernando Finot, M.Sc., with M.S. in Maternal-Child Health obtained at the Childrens Health Institute of London University, currently professor of MCH at the School of Public Health in La Paz. (C. Vitae attached)

### B. Objectives of the Evaluation

The objectives of the evaluation were to ascertain whether the child survival (CS) activities developed over the period of the grant have been integrated into the regular services of the MOH at the local community level, and at the Coripata and Yanacachi health district levels under the RHO. The end result was to ensure sustainability and continued development of activities once PCI activities end.

### C. Methods

#### 1. Information Gathering

Project documents were reviewed, the most important of which were: Detailed Implementation Plan 86-87 and Annual reports for activities over the periods 86-87, 87-88. This review was to define program objectives and goals of PCI/Yungas.

The information obtained from the above documents, the monthly reports from field workers, the original evaluation plan and the USAID guidelines was assembled. With these documents, a model of results expected and indicators of achievement was developed.

This task was made particularly difficult due to the inconsistency between program goals and the activities reported by field staff.

The results expected per the USAID CS final evaluation guidelines could be only partially achieved due to two factors: a) the insufficient information provided by the baseline study carried out at the time the project was initiated as it related to program goals, and b) the absence of program adjustments to the project objectives which should have occurred as a consequence of the recommendations of the mid-term evaluation. The same constraints which were observed in the two prior annual reports remain valid in this evaluation.

An effort has been made by quantitative statistical inference to develop relative percentage values based upon available information as shown by the quantitative cumulative values. The process consisted of establishing an ideal model of project achievements and adjusting these to reflect global coverage data as a theoretical distribution considered to be an approximation to reality.

The evaluation provided particularly useful information in the area of qualitative data, due to the fact that the interviews were conducted with workers in the field during their daily routines, which allowed a close approximation to reality.

The instruments used in the field work were: a) systematic evaluation of documentation at the local level, b) structured interviews to meet the evaluation guidelines, c) adherence to the critical path in the completion of activities, and d) a case study at the local community level.

## 2. Information Processing

The quantitative information was processed by means of the structural model of relative indicators mentioned above. The qualitative information was processed using comparison between the observed reality and the requirements of the evaluation guidelines.

It is important to emphasize that, in the procedure, an attempt was made to adhere to the original project plan and objectives, and it is for that reason that much of the information dealing with activities is included in the category of outside activities. This is particularly important in the processing of information

dealing with training as described in the following sections.

### 3. Information Analysis

Analysis of the information provides adequate data to establish the degree of accomplishment of programmed activities for the last year against the programmed objectives.

The data available for the last year of the program plan, coupled with the previous evaluations, gives an adequate basis to decide to expand the rural health care system and provision of additional expenditures for technical and financial assistance by donor agencies. The data can also be used as a reference by local health authorities to develop similar programs in the future.

## III. RESULTS OF THE EVALUATION

The results of this final evaluation initially cover 21 communities corresponding to two health areas, 11 in the Coripata area and 10 in the Yanacachi area, both located in North/South Yungas within the jurisdiction of the Yanacachi health district under the RHO.

Since 1988, the area covered by the project in the Yanacachi Sector was reduced to five local zones because five of the trained CHWs have moved out of the area.

The target population covered is not constant, and the coverage percentages refer to the corresponding target population of each project year.

### A. Quantitative Analysis of Objectives and Goals

#### 1. Immunizations

- a. Goal: To reduce morbidity and mortality rates among children under five years of age caused by vaccine-preventable diseases through more effective and sustained use of the MOH expanded program on immunization.
- b. Objective: 1) to reach an immunization coverage of 90% for children under two years old as registered on the vaccination cards; 2) to reach 40% coverage for TT vaccination of pregnant women as registered in immunization records; and 3) to participate in three annual vaccination campaigns organized by the MOH in the area.

c. Objectives: Level of Accomplishment

1987 No data in annual report

1988 Coverage data for children under 5 years are:

Polio	71.9%
DPT 3	80.2%
Measles	54.0%

vaccination campaigns--100% participation

1989 Coverage data analyzed from January through July. From the total number of immunizations (n=1,144), the following coverage percentages for children under five and women of reproductive age were obtained:

Polio	48.8%
DPT 3	48.7%
Measles	48.5%
TT	46.5%

100% participation in vaccination campaigns

2. ORT and Control of Intestinal Parasites

a. Goal: 1) To reduce morbidity and mortality rates attributed to dehydration caused by diarrheal disease among children under five years through increased use of ORT; 2) To reduce morbidity due to intestinal parasites.

b. Objectives: (1) To increase by 40% correct use of homemade ORT solution for children under five years of age with diarrhea, and (2) support the MOH antiparasite treatment campaigns (three annually) and ensure that 90% of children two to nine years of age receive three doses of Mebendazol each year.

c. Objectives: Level of accomplishment:

1987 No data in annual report

1988 Insufficient information in initial baseline study; did not permit measurement.

1989 From a total of 781 cases projected from January to July per MOH target, 36 cases

were treated (used ORT), representing 4.6% coverage; of these, 24 (66.7%) received homemade ORT, 12 (33.3%) used ORS packets.

If the total population of 1,024 children (available population data) aged one to ten years old were to be treated with three doses of Mebendazol per year, a total of 3,072 doses would be given per year. For a half-year, this would be 1,536 doses. According to the available data, 1,052 doses were provided, resulting in a coverage percentage of 68.5%. This percentage will increase if we exclude children between the ages of one and two and between nine and ten, who did not participate in this program.

3. Growth Monitoring and Nutrition

a. Goal: To decrease the morbidity and mortality rates among young children caused by malnutrition through nutrition education and growth monitoring.

b. Objective: To reach a coverage of 50% of children under five years of age in the growth surveillance program with the use of growth monitoring cards.

c. Objectives: Level of accomplishment:

1987 No data available in annual report

1988 Insufficient information in initial baseline survey did not permit measurement.

1989 521 children under five years of age participated in the program. Growth measurements were recorded at intervals of two months from January to July, with an average of three measurements being taken. Total participant/measurement was 860, or 55% coverage.

4. Training Health Staff

a. Goal: To train the health department personnel of Chulumani health district in operational and administrative techniques to continue the Child Survival programs of the MOH.

b. Objectives: (1987) To train:

- (1) 50 CHWs in vaccination techniques; (2) 20-30 RANs in treatment and prevention of diarrhea, emphasizing homemade ORS; (3) 100 CHWs to recognize signs and symptoms of diarrhea and dehydration and its treatment, emphasizing homemade ORS and ORS packets.
- 20-30 RANs and 100 CHWs in growth monitoring, appropriate nutrition, breastfeeding and weaning-practices, child feeding techniques, food preparation and storage, greenhouse promotion, and pisciculture.
- 50% of the members of mothers' clubs in growth monitoring and group education activities through RANs and CHWs.
- 20 RANs in prevention and treatment of acute respiratory infections among children under five years of age and in the prevention and treatment of TB in coordination with the Pulmon Sano project, an NGO working in the area
- 20 RANS and 50 CHWs in prenatal care, with emphasis on adequate care and referral of high-risk cases.
- 30 TBAs in management of aseptic delivery techniques and referral of high-risk pregnancies.
- To provide three courses and visits to 30 communities on latrine construction and environmental hygiene in cooperation with the program of environmental sanitation of the MOH.
- To start radio programs in the communities to better understand health, nutrition and health services in addition to community input strategies.
- To teach CS techniques to communities through CHWs.
- Other health personnel in Child Survival.

c. Objectives: Level of accomplishment (1987):

<u>Objective</u>	<u>Accomplishment</u>
Train 50 CHWs in vaccination techniques	100%
Train 13 CHWs in prevention and treatment of diarrhea and dehydration through the use of ORS	13%
Train 53 RANs in growth monitoring, nutrition, breastfeeding, weaning, proper feeding, preparation and storage of food, promotion of greenhouses and pisciculture	176-265%
Train 78 CHWs in growth monitoring, nutrition, breastfeeding, and weaning techniques, preparation and storage of food, promotion of greenhouses and horticulture, and pisciculture	78%
Train 23 RANs in prevention, treatment, and referral of acute respiratory infections and TB in coordination with the Pulmon Sano Project	115%
Train 111 CHWs in prevention, treatment, and referral of acute respiratory infections and TB in coordination with the Pulmon Sano Project	111%
Train 30 RANs in prenatal care, with emphasis on adequate care and referral of high-risk cases	150%
Train 13 CHWs in prenatal care, with emphasis on adequate care and referral of high-risk cases	26%

Train 4 members of the  
Unidad Sanitaria in Child  
Survival techniques No data available

One course for construction  
of latrines and adequate  
hygiene practices in coordin-  
ation with Environmental  
Sanitation Program of the MOH 33%

Train communities on Child  
Survival techniques through  
radio programs No data available

Other training courses completed which were not  
initially programmed:

- Traditional medicine (58 CHWs)
- Dental hygiene and fluoridation (13 CHWs)
- First aid (31 CHWs)
- Pre-test according to MOH guidelines (23  
RANs, 37 CHWs, and 4 other health  
personnel)
- Community participation (23 RANs, 52 CHWs,  
and 4 other health personnel)
- Methods of communication (23 RANs, 52 CHWs,  
and 4 other health personnel)
- Methods of conducting baseline survey and  
collection of other family information  
(23 RANs, 98 CHWs, and 4 other health  
personnel)
- Hygiene and environmental sanitation (15  
CHWs)
- Parasitosis (13 CHWs)
- Venereal diseases (13 CHWs)
- Dispensing medicines (26 CHWs)

Level of Accomplishment (1988)

<u>Objective</u>	<u>Accomplishment</u>
Train 33 CHWs in vaccination techniques	166%
Train 32 CHWs in prevention and treatment of diarrhea, with particular emphasis on rehydration treatment at home through the use of ORS	45%

Train 7 RANs in child growth monitoring, nutrition education, breastfeeding, preparation and storage of food, promotion of green-houses and pisciculture	300%
Train 57 CHWs in growth monitoring, nutrition education, breastfeeding and weaning techniques, preparation and storage of food, promotion of green-houses and fish-farming (pisciculture)	135%
Train 26 CHWs in prevention, treatment, and referral of acute respiratory infections and TB in children under 5 years of age in coordination with the Pulmon Sano project	137%
Train 48 CHWs in prenatal care with emphasis on adequate care and referral of high-risk cases	122%
Train communities in child survival techniques through radio programs	No data available
Train 11 members of the community in child survival techniques	No data available
Other training courses completed which were not initially programmed:	
-Traditional medicine (8 CHWs)	
-Improved training methods (34 CHWs and 3 volunteers)	
-Fluoridation campaign and dental hygiene 25 CHWs and 4 volunteers	
-First aid (51 CHWs and 7 others)	
-National reality (25 CHWs and 4 others)	

Level of Accomplishment (Through May 1989)

<u>Objective</u>	<u>Accomplishment</u>
Train 22 CHWs in vaccination techniques	210%
Train 29 CHWs in prevention, treatment, and referral of acute respiratory infections and TB in children under 5 years of age in coordination with the Pulmon Sano Project	166%
Train 7 CHWs in prenatal care, with emphasis on adequate care and referral of high-risk cases	136%
Train communities through radio programs in child survival techniques	No data available
Other courses completed which were not initially programmed:	
-Environmental sanitation (29 CHWs)	
-Skin diseases (22 CHWs)	
-Collection of information about family and community	

**B. Analytic Results of the Critical Path Study**

**1. Project Monitoring**

**a. Vaccination and Cold Chain Monitoring/Maintenance**

The vaccines used in the vaccination campaigns are provided by UNICEF and arrive in Bolivia on special flights under adequate conditions.

Personnel from the epidemiology department of the MOH are responsible for clearing the vaccines at the airport and storing them under adequate refrigeration (in La Paz office of the MOH), as well as for transportation to the field sites. When the vaccines are transported, the required temperature is monitored. The vaccines are picked up by the Director of the Chulumani RHO from La Paz in thermos flasks which maintain the required minimum temperature. The vaccines are kept in

plastic containers containing a slowly defrosting liquid. The vaccines are transported from La Paz to Chulumani in a special vehicle belonging to Chulumani Health District. It is a three to four-hour trip from La Paz to Chulumani. In Yungas the vaccines are stored in refrigerators at the Unidad Sanitaria. However, the center does not have a generator in case of power outage. In Chulumani the vaccines are being kept temporarily in a school refrigerator, pending the completion of construction of the district hospital.

A critical weak point in the cold chain is the lack of thermometers to check the temperature during the trip or when they are refrigerated in the district stores. Fluctuation in the electrical voltage may affect the functioning of the refrigerator, although the personnel administering the vaccine monitor quality without thermometers, it is not possible to guarantee the quality of vaccine.

During the vaccination campaigns, the vaccines are transported in thermos flasks and stored either at the Chulumani hospital or at a local convent in Yanacachi. The RAN said that there were not adequate numbers of thermos flasks for use by the CHWs. In the Yanacachi area, the vaccination is done by the Rural Auxiliary Nurse who visits the local areas within her jurisdiction. She has five trained CHWs working with her. The vaccination coverage can be increased if more CHWs are trained to help administer the vaccine.

Conclusion: The cold chain is functioning adequately, though it is not possible to determine whether the vaccines' quality is appropriate in the absence of temperature checks at various transit points.

#### Information System and Supervision

After the vaccine has been administered, it is recorded on a report form by the RAN. It was not verified whether the registration is simultaneously recorded on the growth card or on the mother's information chart when the CHW is filling out the growth monitoring card. In the field study in Yanacachi, a parallel registration on the vaccination cards and growth cards was observed.

The vaccination reports compiled in the area are given directly to the La Paz RHO. But there are no registration records at the Chulumani Sanitary District, which makes it impossible for the director to have complete control of vaccinations at the district level. The control is limited to the Chulumani area where the district hospital is situated. This anomaly was observed at the beginning of the project, and no corrective measures were implemented.

There was no technical supervision on vaccination techniques and maintenance of appropriate quality of the vaccines. Nor was there a system in place to determine coverage rates. They have only partial coverage indicators to monitor the number of doses provided, but no system for monitoring immunization status of each child. Thus, the reliability and use of the collected data is compromised. The exceptional effort by field personnel under adverse conditions is worth mentioning. The coverage rates are not as high as targets; this is mainly due to the limited resources of the MOH.

#### PCI/Yungas Support for the Vaccination Campaigns

PCI trained CHWs in the promotion and mobilization of community support for the vaccination campaigns. They are also in charge of the vaccine distribution throughout the villages. PCI vehicles are used to transport the vaccine to the Coripata and Yanacachi areas.

#### b. Oral Rehydration Therapy (ORT)

ORS packets are provided by UNICEF, stored by the Ministry of Health and distributed to the Unidades Sanitarias periodically in accordance with the national program of ORS distribution. The district and the area personnel replenish the stocks on an as-needed basis. ORS packets are stored in Yanacachi by the RANs who distribute them to the CHWs on request.

#### Information System and Supervision

There is no system developed to register the incidence of diarrheal diseases. Occurrence is estimated through theoretical rules established by the MOH. The cases treated by CHWs are reported by RANs to the RHO/La Paz.

The field personnel appear to understand how to prepare ORS according to the instructions which they have memorized during the course. However, the application of the knowledge, in actual practice, was not found to be satisfactory, primarily because the CHWs were not called upon to treat children and more often than not the treatment was carried out by the mothers who, for lack of time and a proper measuring device, were unable to treat the child properly.

Parents find it difficult to understand that diarrhea is abnormal, because it is so common that it is viewed as normal. It is also difficult for them to understand that ORS is not an immediate cure for diarrhea, but rather that it is to be given to reverse the dehydration caused by diarrhea and has to be continued until the symptoms of dehydration and diarrhea subside.

#### PCI/Yungas Support for ORT

##### Training of field personnel

#### c. Growth and nutrition monitoring; availability of growth cards and equipment for measurement

The MOH supplies an adequate quantity of growth cards and instructions for their use. These are distributed to Coripata and Yanacachi by personnel at the Chulumani Health District. The RAN there is responsible for giving these to the CHWs. Proper scales are available only at the area health office. CHWs of the Yanacachi area are using fulcrum scales which they have acquired locally using proceeds from the sale of medicines.

#### Reports and supervision

In Yanacachi, the CHWs have been using growth cards since 1988 to record weight by age, vaccination, weaning date, and number of diarrhea episodes.

The supervision of the CHWs is carried out by the RAN, who is not supervised in the field. Thus, she applies the rules and techniques acquired in the training courses.

The available data reports only the number of children registered. Thus, it is not possible to

determine the nutritional status of children living in the region. There is no nutritional rehabilitation program to follow up children who are found to be malnourished.

If a child is found to be malnourished, the treatment the child gets is limited by what the parents can do for the child.

PCI/Yungas support to growth monitoring and nutrition includes training in adequate use of the growth monitoring charts and recipes for better use of locally available food.

d. Respiratory Disease and Tuberculosis

Medicine supply

The medicines for treatment of acute respiratory infections are provided by the MOH to the district director, who supplies the medicine to the CHWs through the health posts.

For treatment of TB, half the medicines are supplied by the MOH and the other half are supplied by the Pulmon Sano project. The treatment and supervision of patients is provided by the CHWs, who follow the same guidelines given by the Pulmon Sano project.

Information and supervision

There is no established record-keeping system to register treated cases of acute respiratory infections. The treatment is given according to what has been taught to the CHWs in the training courses, without supervision at the field level. The Pulmon Sano project carries out constant supervision and keeps regular records of the TB cases. The records are under the control of the district authorities and are used in developing their general reports.

PCI/Yungas supports control of acute respiratory diseases and tuberculosis by offering training courses to CHWs working for the Pulmon Sano project.

e. Training of health personnel

PCI/Yungas provided 25 training courses to health department personnel, including RANs. It was

verified that these courses were beneficial to the RANs in the health areas of Chulumani, Irupana, Yanacachi and Coripata. The same training was given to the CHWs and the volunteers of Pulmon Sano.

The content of the training courses was reviewed and found to be adequate. Supplementary educational materials were developed and distributed to the participants in the courses.

## 2. Administrative Monitoring System

### a. Personnel

The district director, who is responsible for the district health program, is appointed by the La Paz RHO. The project had been instituted before the current incumbent had taken charge of the district. The director did not participate in the planning of the program. His participation is limited to deciding which health personnel are to take part in the courses. The director is skeptical about the project's direct impact on his district.

PCI/Yungas personnel were recruited and assigned directly by the director of PCI without consulting the local health authorities. The relations between PCI/Yungas and Chulumani Health District are not good.

The majority of the health department trainees are graduate students who are obligated to complete one year of community service as a prerequisite to obtain their professional diplomas; they have little interest in the continuity of the program.

A rural RAN works permanently in Yanacachi. She has been living there for the last six years; she knows the community well and takes a keen interest in the project activities.

### b. Essential supplies provided by the program

During the life of the project, a rotating pharmaceutical fund was not created because of the extreme poverty of the people living in this isolated region. The people cannot afford to pay the price of even the most basic medicines.

c. Financial administration

PCI/Yungas funds are managed by its personnel independent of the health authorities. Salaries for the health department personnel are paid by Unidad Sanitaria, La Paz. Currently there are no financial resources to continue the program without PCI's financial and technical support.

C. Analytical Results of the Interviews

Interviews were conducted with the following personnel according to the FODA methodology frequently used in USAID evaluations:

- Director of the Chulumani Sanitary District
- The PCI Project Administrator
- The RAN in charge of the Yanacachi Health Area
- CHWs in Santa Rosa

1. Supervision and Quality Control of Field Activities

a. Strengths in Training:

Adequate quality in CHW training content in Child Survival strategies, especially in growth monitoring techniques

Acceptance of the CHWs by the community is good, and the linkages between the project personnel, CHWs, and the community leadership and members are excellent.

There is good follow-up of the training given to the community.

Coordination at the field level between PCI and Pulmon Sano project: training of CHWs is provided by PCI and treatment is provided by the Pulmon Sano project.

Refresher training is done in a rational and systematic manner. Follow-up with educational materials supporting the teaching done in the courses is consistently carried out.

Development of the nurses' aide in reinforcing the knowledge and techniques of Child Survival and communication with the communities has been satisfactory. This has been made possible by the fact that the PCI/Yungas nurse speaks Aymara and serves as the health educator.

Direct provision of high quality training materials to course participants permits the individuals to continue studying on their own after the course ends.

Training in the management of TB patients in coordination with Pulmon Sano is good.

Cold chain is functioning adequately; the vaccine supply system was adapted well to the difficult field conditions. Awareness of the need to conserve the vaccines at the right temperature is widespread among the people responsible for the transportation, storage and distribution of vaccines.

Data entered on the health cards allow for follow-up of the non-vaccinated or partially vaccinated cases.

Use of growth cards has become an established routine in the CHWs' work.

Theoretical knowledge of the technique of ORT is excellent.

b. Weaknesses

Training: Since the CHWs do not receive any remuneration for their work, they find it difficult to find the time to attend the lengthy courses which disrupt their normal occupations.

CHWs' use of immunization training is limited because the opportunity to put this into practice is limited due to resource limitation.

Practical application of ORT is limited. A moderate attrition rate is created by a few CHWs' moving to other regions.

Functioning of the cold chain: There is an insufficient quantity and quality of thermos flasks for the transportation of vaccines to distant communities.

Lack of temperature control devices throughout the cold chain makes it difficult to guarantee the end quality of the vaccines. There is no established system to follow-up children.

Growth cards and their use in follow-up of malnourished children: There are no programs for improved or supplementary nutrition. Therefore, monitoring and detection of malnourished children do little to benefit the community.

Competence in ORT use: The knowledge acquired is not fully utilized because of late detection of cases and the family's lack of knowledge about preventive approaches.

c. Opportunities

Training: PCI's work with Pulmon Sano has established a viable institutional relationship in the field of TB treatment.

The technical qualifications of the PCI Project Director in agriculture and the expertise of a foreign volunteer have been utilized to provide training in and testing of new horticultural techniques.

The radio Yungas health education programs helped in supporting and sustaining the training activities.

The RAN in Yanacachi is a Roman Catholic nun, and the church building was used as a training center, making community participation more effective.

Cold chain operation: The regular supply of vaccines by the MOH/UNICEF for the vaccination campaign was used very efficiently by the project.

Follow-up of the non-vaccinated or partially vaccinated cases: The field work carried out by PCI and Pulmen Sano has provided a model system for the follow-up and recording of immunizations which can serve as a reference point during the national immunization campaigns.

Use of the growth charts and their nutritional applications: Two sets of cards are maintained, one by the family and the other one usually by the CHW. The MOH's distribution of the cards and supplies has been adequate.

Availability of ORS: The adequate availability of ORS packets should have a positive impact on frequency of usage.

d. Constraints

Training: Training in child survival techniques was sufficient and quite competent, but these techniques were not applied adequately in practice.

The lack of MOH personnel to continue training and supervision places the continuity of training activities at risk.

The periodic migration and subsequent attrition in the ranks of CHWs is an obstacle to reaching project objectives and creates motivation problems in the communities.

The MOH personnel's expectation that they would receive scholarships and didactic material created some animosity against the project.

Functioning of the cold chain: Deficiencies in temperature control and supply of thermos flasks may affect the quality of the vaccines supplied to the community for distribution. The capacity of the district refrigerator is too small to store the required quantity of vaccines during the vaccination campaigns. The lack of time and regular personnel available to carry out the registration and verification of immunizations is another factor limiting adequate follow-up.

Use of growth charts: The lack of an adequate food supply of sufficient quantity and quality to satisfy the nutritional requirements of the population, plus the absence of facilities for distribution of supplementary feeding exacerbates their inability to properly treat malnourished children.

Correct use of ORT: The low level of general education in the population limits community understanding of diarrhea as an illness and consequently limits the correct use of ORT.

2. Coordination of Joint Work and Areas of Influence Between PCI/Yungas, MOH, and NGOs

a. Strengths

Design, planning, and execution of the project: The project has adjusted its objectives and goals

to conform to the policies of the MOH. The norms stipulated by the MOH for the control and treatment of TB establish common criteria for local programming, and the norms are observed both by PCI and Pulmon Sano.

In designing the project, the existing facilities in the area have been put to good use, especially Radio Yungas, which has been used extensively for dissemination of health information.

Personnel: From the onset, contracting of local personnel to carry out the project was seen as a strong point. This avoided the initial friction which was likely to have occurred as this is a traditional coca-growing area where all foreign personnel are seen as being associated with the coca eradication program and are resented.

Joint cooperative work with the personnel of the Pulmon Sano project was of great help to the training in TB monitoring primarily and in child survival techniques secondarily.

The work of the CHWs has created an environment which can be described as one in which teamwork, dedication, and the desire to both learn and impart knowledge are predominant. This is the case despite the absence of remuneration and the scarcity of time to carry out work which needs to be done. The work of the RAN is also a key element in increasing community participation as well as in the supervision of the CHW.

Financing: The financial support provided by PCI to the training gave great impetus to the project. Community people recognize PCI's support in supplying the educational material, food, and accommodation to the trainees.

Future sustainability of project activities: The prestige the CHW commands in the community and the way the community looks up to him are motivating factors contributing to the continuity of the program.

b. Weaknesses

Design, planning and project execution: The original goal of the project (anticipated at the time of project conceptualization) and the goals presented in the project's implementation plan

were excessive in relation to the actual activities planned for execution in the project.

One quantitative measure of success was service coverage. However, this was an incorrect method of evaluating success because the actual activities programmed were mainly training and supervision of the application of the skills learned in the training course.

There is a clear incongruity between the evaluation indicators and the actual activity indicators developed by PCI/Yungas. This fact was observed in the first annual report. It was noted by PCI staff that two factors contributed to the fact that activity indicators were never brought into line with the evaluation indicators. Firstly, the project was months late in being initiated. Secondly was the series of problems surrounding the leadership of the Yungas project. The expatriate project director was forced to leave due to the adverse reaction of local people to outsiders in this coca-growing region. There were long delays in finding a replacement for the expatriate director, which resulted in an inexperienced administrator managing the projects for a long period of time during which the adjustments were not made.

If the project were to be evaluated against the original project objectives, we would not have any data which show fulfillment of the objectives, and the results would appear to reflect negatively on the performance of PCI/Yungas. This would not give a clear picture of the achievements in Yungas. The reader will see from the following analysis that such an inference would be erroneous since, in reality, significant advances were made by the local personnel regarding child survival techniques.

The modest level of MOH expenditures is a sign of the MOH's inability to supply the resources necessary to reach those goals, and the resources were not considered to be part of PCI's contribution.

Unfortunately, the support personnel from PCI's central office for the baseline study arrived late; as a result, all the evaluations and the project follow-up actions must contend with the problem of inadequate baseline data.

Supervision from PCI/La Paz and from headquarters was insufficient; no attempts were made to correct the above anomaly.

Personnel: At the time of the commencement of the project, a problem surfaced when the community refused to accept the new director of the project. They saw him as connected with the coca eradication program. The administrator took over the additional responsibilities of the director. This made the accomplishment of all the programmed activities difficult.

No director was recruited. With only two personnel to cover the entire gamut of the program, the project's coverage potential was reduced from covering the entire district to covering only two health areas.

Financing: The financing of the project covered only the training activities. The budget normally should be prepared in relation to the activities programmed. That never happened and the programmed activities were constantly reduced, which, when translated into actual practice, meant 1) sufficient personnel were not hired for the project, 2) educational materials were insufficient, 3) there was a lack of service equipment, 4) insufficient resources for the maintenance of personnel during the training courses resulted in the reduction of course length, and 5) startup funding for installation of the revolving fund for the medicine supply system was unavailable.

Future sustainability of the project activities: The project was not fully integrated as part of the regular program of the Chulumani Sanitary District.

c. Opportunities

Planning of design and project execution: The integration of the objectives and goals of PCI/Yungas with that of the overall plan of the MOH enhanced the knowledge of the local health authorities about the application of the child survival program and contributed to having smooth relations between PCI and the health department hierarchy.

The experience gained in other regional PCI programs facilitated the functioning of the Yungas program because Yungas used those other projects as models for setting up the program.

The cordial relationship developed with Pulmon Sano and Radio Yungas helped the PCI activities in the rural areas considerably.

Personnel: Partial training already done by other projects, such as Pulmon Sano, made the task of training the RANs and CHWs easier for the PCI project. With the exception of the director and the Yanacachi RAN, most of the other health staff were transients, and this reduced the impact of the training.

Financing: Where joint programming was done with Pulmon Sano, the expenditures for course material development and training were divided between the two organizations, which resulted in the expansion of coverage. Educational materials supplied by the MOH were utilized in the project, reducing the expenditures of the project in this area.

Future continuance of the project: The Catholic church and the local community organizations could help in the continuity of the project if resources were available.

d. Constraints

Planning, design, and project execution: Ongoing friction and strained communication existed between the MOH district director and PCI/Yungas, affecting to some extent the continuation of the health activities of the district in the rural areas. Apparently, this type of misunderstanding existed not only with PCI, but with all the other NGOs and the district director.

There were two likely reasons why the health director was uncooperative: a) PCI did not make a vehicle available for use of the director and b) PCI did not provide scholarship aid to department staff for outside education. Neither of these was provided for in the program plan and budget.

The execution of the project was seriously hampered by the peasants' identification of the PCI's Child Survival program with the coca eradication program. This obstacle was overcome

by the local director's use of Radio Yungas to clarify the nature of the PCI Child Survival program and disassociating it completely from the U.S. government-backed coca eradication scheme.

The extremely difficult financial situation of the health department throughout the country remains a major obstacle to the continuation of child survival activities. Health services in the rural areas are entirely dependent upon the availability of voluntary personnel, who, because of lack of financial support, must undertake other activities for their own survival. They receive no payment for services rendered, yet they are expected to be accountable for the tasks they perform and are expected to have adequate health knowledge; they also have to contend with the entire health department bureaucracy.

The situation of the RANs is only slightly better than that of the CHW; their training is a bit more extensive, and they receive a salary which is barely sufficient to meet his/her basic needs. The case of the RAN at Yanacachi is a typical example. She has to cover 14 communities without roads. Even if roads existed, she would have no vehicle to traverse them.

The situation can be corrected only by a better realization at the national level of these deficiencies and by finding the finances to support the activities.

Personnel: Health department support personnel at the area level are hired for a period of one year. This means that each year a new group begins training. The result is that the support team is always lacking experienced workers. Even if a person does not like the work, he/she is compelled to continue with it because the one-year internship is a prerequisite for the trainees to obtain their degrees.

Financing: The MOH pays only for the expenditures of regular contracted professionals, one in Yanacachi and four in Coripata. They do not have an assigned budget by the MOH. They have to rely on money coming from a few patients who can afford to pay for services.

Sustainability of future project activities: The extreme poverty present in the region constitutes

a limiting factor for providing adequate health care which is dependent on direct income from services rendered at the local hospital. They do not see the child survival activity as envisaged in this project--as one of the essential priorities--and, therefore, unless external funding is forthcoming or there is a massive economic advancement, project activities might not continue as planned.

D. Analytical Results from Santa Rosa's Case Study

Local area: Santa Rosa  
Health area: Yanacachi  
Sanitary district: Chulumani  
Unidad Sanitaria: La Paz  
Population: 75 inhabitants

Quantitative Evaluation:

1. Entries in the growth card
  - a. Age
  - b. Sex
  - c. Weight
  - d. Weaning age
  - e. Diarrhea episodes
  - f. Vaccines
  - g. Number of controls
  
2. Personal files on the subject of:
  - a. Immunizations
  - b. ORT
  - c. Growth monitoring
  - d. ARI, TB
  - e. Other

Results:

- Twenty-three children under 5 years of age were included in the study. All of them were registered by the CHWs of the local areas on their respective growth cards provided by the MOH/UNICEF.
  
- Seven of 23 were male and 16 were female.
  
- Six cases (26%) were below the third percentile on the growth table, meaning that they were definitely underweight. There were four who were classified with a red ribbon, showing their graph in a descending position, indicating clearly that they needed extra nourishment to increase their weight. There were two others in the high-risk category, marked with yellow

ribbons. According to established norms, all of those in the risk category should have been identified with red ribbons. This showed that even the CHWs in charge of the cards were not sure of the correct classification system. It is a pity that none of these cases was in nutritional rehabilitation treatment. Intervention is limited to communicating the monitored state of the children to the mothers, with advice on changing or improving the diet of children.

- There were 11 cases (48%) within the normal weight curve according to international standards. There were four cases showing no weight gain or were going down the curve; they were classified by the yellow ribbons. This shows good understanding of the system.
- Four children (17%) were shown to be overweight, with no mention of pathologic condition associated with obesity.
- In two cases (19%), the child was registered but the weight not recorded.
- The majority of the children (19 cases--83%) had three or more checks; one had just one check.
- Of fifteen children under two years of age, 9 (60%) were weaned before two years; three were weaned before one year, and three were weaned after two years.
- Six children had diarrhea during the period when they were being monitored; four had only one diarrheal episode, and two had two diarrheal episodes. The rest (17 or 74%) did not have diarrhea.

#### **E. Results of the Project Financial Analysis**

The financial analysis of the project is restricted in this evaluation to the expenditures at the local level. These expenditures were registered in the accounting reports that the administrator of the project sends to PCI/La Paz and is codified according to established PCI rules. The report includes data of 10 months, from August 1988 to May 1989, which were available for the evaluation study; the details are shown in Table 3.

During the above period, a total of US\$ 21,827 was spent. US\$ 16,918 (77.5%) was spent locally; US\$ 4,908 (22.5%) was spent in PCI/La Paz.

**TABLA 3**

**CUADRO CONSOLIDADO DEL GASTO LOCAL DEL PROYECTO DE AGOSTO DE 1988 A MAYO DE 1989.  
POR PARTIDAS DE ACUERDO A CODIGO Y POR MESES**

**EVALUACION FINAL PCI/Yungas**

CODIGO	AÑO	MESES										TOTAL
		SEP	OCT	NOV	DIC	ENE	FEB	MAR	ABR	MAY		
412 LOCAL	0.00	0.00	0.00	0.00	0.00	0.00	11.84	0.00	353.72	0.00	70.16	435.72
EN LA PAZ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	0.00	0.00	0.00	0.00	0.00	11.84	0.00	353.72	0.00	70.16	435.72	
428 LOCAL	0.00	0.00	0.00	0.00	0.00	36.38	14.17	35.00	0.00	2.94	98.49	
EN LA PAZ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	0.00	0.00	0.00	0.00	0.00	36.38	14.17	35.00	0.00	2.94	98.49	
439 LOCAL	70.22	59.59	97.53	62.22	142.93	15.98	0.00	45.74	20.22	23.55	538.68	
EN LA PAZ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	70.22	59.59	97.53	62.22	142.93	15.98	0.00	45.74	20.22	23.55	538.68	
452 LOCAL	0.00	0.00	0.00	14.12	0.00	3.67	0.00	2.40	0.00	0.39	21.38	
EN LA PAZ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	0.00	0.00	0.00	14.12	0.00	3.67	0.00	2.40	0.00	0.39	21.38	
462 LOCAL	34.15	50.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	84.57	
EN LA PAZ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	34.15	50.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	84.57	
534 LOCAL	0.00	18.71	116.84	321.43	11.20	22.86	72.34	183.84	-7.94	4.72	743.60	
EN LA PAZ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	0.00	18.71	116.84	321.43	11.20	22.86	72.34	183.84	-7.94	4.72	743.60	
570 LOCAL	99.57	84.65	75.23	173.12	54.25	66.25	37.26	144.60	91.67	101.31	1188.65	
EN LA PAZ	21.25	42.10	61.30	89.26	26.82	0.00	0.00	0.00	0.00	0.00	260.73	
TOTAL	120.82	126.76	136.53	262.38	81.07	66.25	37.26	144.60	91.67	101.31	1448.38	
574 LOCAL	363.17	454.81	127.73	676.46	416.62	108.53	90.69	408.40	133.36	157.65	2937.42	
EN LA PAZ	67.68	89.30	53.91	111.49	109.23	0.00	0.00	0.00	0.00	0.00	431.01	
TOTAL	430.85	544.11	181.64	787.95	525.85	108.53	90.69	408.40	133.36	157.65	3368.43	
659 LOCAL	0.00	17.65	57.01	0.00	1.99	0.00	0.00	0.00	0.00	0.00	76.65	
EN LA PAZ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	0.00	17.65	57.01	0.00	1.99	0.00	0.00	0.00	0.00	0.00	76.65	
685 LOCAL	52.52	14.45	6.05	22.22	32.07	37.64	1.01	16.00	29.07	4.45	214.70	
EN LA PAZ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	52.52	14.45	6.05	22.22	32.07	37.64	1.01	16.00	29.07	4.45	214.70	
740 LOCAL	25.10	25.21	25.21	25.21	24.89	12.24	24.29	24.00	63.33	72.16	341.64	
EN LA PAZ	300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	300.00	
TOTAL	325.10	25.21	25.21	25.21	24.89	12.24	24.29	24.00	63.33	72.16	641.64	
742 LOCAL	0.00	16.60	6.09	1.26	7.05	4.70	0.00	5.40	0.00	0.00	41.10	
EN LA PAZ	126.23	24.21	153.67	119.62	31.90	0.00	0.00	0.00	0.00	0.00	502.73	
TOTAL	126.23	40.91	159.76	120.88	38.95	4.70	0.00	5.40	0.00	0.00	543.83	
801 LOCAL	1200.83	690.76	690.75	611.22	860.57	646.54	868.02	857.60	850.79	840.79	8517.87	
EN LA PAZ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	1200.83	690.76	690.75	611.22	860.57	646.54	868.02	857.60	850.79	840.79	8517.87	
805 LOCAL	167.27	0.00	0.00	0.00	682.16	46.53	24.29	49.00	0.00	47.06	1015.41	
EN LA PAZ	226.22	0.00	382.14	191.07	211.30	234.53	234.53	234.53	234.53	234.53	2332.15	
TOTAL	465.59	0.00	382.14	191.07	893.46	287.93	258.82	283.53	234.53	281.59	3347.56	
900 LOCAL	0.00	41.59	199.37	6.31	29.21	-75.50	0.00	16.60	10.21	13.73	301.62	
EN LA PAZ	0.00	577.57	324.33	159.69	0.00	0.00	0.00	0.00	0.00	0.00	1027.50	
TOTAL	0.00	619.16	523.70	165.91	69.21	-75.50	0.00	16.60	10.21	13.73	1329.12	
948 LOCAL	16.94	14.60	13.45	21.74	12.28	11.84	9.63	29.40	12.00	10.33	152.43	
EN LA PAZ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.80	0.00	0.00	44.80	
TOTAL	16.94	14.60	13.45	21.74	12.28	11.84	9.63	74.20	12.00	10.33	197.23	
950 LOCAL	0.00	1.27	0.00	4.20	2.07	0.00	0.00	0.00	0.00	1.97	9.51	
EN LA PAZ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	0.00	1.27	0.00	4.20	2.07	0.00	0.00	0.00	0.00	1.97	9.51	
987 LOCAL	-5.03	-0.00	9.75	-12.57	-16.29	-7.18	-0.43	0.00	-5.60	-5.16	-44.22	
EN LA PAZ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	-5.03	-0.00	9.75	-12.57	-16.29	-7.18	-0.43	0.00	-5.60	-5.16	-44.22	
806 LOCAL	0.00	0.00	437.68	420.17	342.98	-662.00	0.00	0.00	0.00	0.00	538.80	
EN LA PAZ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	0.00	0.00	437.68	420.17	342.98	-662.00	0.00	0.00	0.00	0.00	538.80	
TOTAL	2837.72	2296.78	2836.69	3217.15	3092.29	689.91	1375.80	2449.45	1451.64	1580.58	21627.21	

Fuentes: Evaluación Final. Secem. G. G. S. F. "El Tratado de los informes mensuales de ejecuciones de presupuesto" La Paz, Julio 1989.

Considering that the majority of activities were in training, which was of common benefit for the entire community, it is not necessary to obtain the data per head and analysis derived from the number of beneficiaries of the local area.

#### IV. ANALYSIS OF RESULTS, CONCLUSIONS, AND RECOMMENDATIONS

In general, the project has achieved its goal to contribute to reducing the mortality and morbidity rates in children under five. It has not been possible to demonstrate this in a quantitative manner with the available data. In the succeeding paragraph, an analysis of the available information is presented, accentuating the impact of the project on the accomplishment of the goals and specific activities.

##### A. Analysis of Project Accomplishments

###### 1. Immunizations

In 1987 the project was very close to accomplishing its established goals in the number of vaccinations for poliomyelitis and DPT (goal=90%; Polio coverage=71%, DPT=80%, Measles=54%). In 1988 this coverage came down to 48% average for all vaccines, but since the evaluation was carried out in the middle of the year, it is probable that the goal will be reached. There was also a 57% coverage of BCG vaccine. For TT vaccine, a coverage of 46% was achieved (the goal was 40%).

PCI/Yungas' contribution to achieving these targets was the training of the local personnel and transportation support. Local people now are aware and fully support the need to have their children vaccinated.

Conclusion: In immunization, the accomplishment was very close to targeted goals.

###### 2. ORT and Control of Diarrheal Disease

Even though a very high level of theoretical knowledge of ORT was achieved through the training courses conducted by PCI/Yungas. Actual practical use was limited because the community does not yet identify diarrhea as a potentially fatal disease and considers it as a natural occurrence which just happens occasionally. This is the primary reason for the coverage being a low 4.6%. In treatment of intestinal parasitoses, a target achievement of 68.5% (against 90% goal) was recorded.

Conclusion: It is necessary to do much more work in the field of ORT utilization, developing a system to educate families about diarrhea and the importance of its early detection, treatment, and referral, emphasizing that its occurrence should not be taken as a fact of life and that its control is simple, inexpensive, and readily available.

3. Growth Monitoring and Nutrition

This is one of the important achievements of the project. In 1988, a 55 percent achievement level was recorded (the target was 50%). The level of motivation was so high that the CHWs purchased the scales locally using their own funds when the MOH could not supply them. Growth charting has reached 83%, according to the case study conducted. In the area visited, the growth record error margin was 26%. The comparative national error percentage is in excess of 50%. Breastfeeding in the area was in excess of 40%, and 70% of the babies are weaned after the first year.

The main limitation in the nutrition program is that nutrition education alone is not going to solve the problem of nutritional deficiencies. The lack of adequate quantity and quality of food is the primary reason for malnutrition.

4. Acute Respiratory Infections and Tuberculosis

The monitoring and treatment of ARI is not possible to quantify with respect to specific achievements. PCI supported the adequate distribution of medicines throughout the region. In the monitoring/treatment of TB, the active cooperation of Pulmon Sano and PCI achieved good results. PCI training of CHWs was invaluable to the success of the TB control program. The recorded achievement of 40% cure, 9% abandonment, and 9% of deaths can be qualified as a great achievement, considering the difficult conditions and the long term of treatment required.

5. Training of Health Personnel

Training was the main activity carried out by PCI/Yungas. A total of 1,308 persons were trained; 521 (40% were CHWs who were trained in CS activities; 356 CHWS (27%) were trained in other activities, as well. 67% of the training activities were focused on community people, which will be reflected in the improvement in the basic health service in the community.

Of the 521 CHWs who were trained in CS, 166 (33%) were also trained in ARI/TB, 135 (26%) in growth monitoring, and 107 (20%) in vaccination techniques.

The program of training was a success, surpassing the global goal and established objectives--in some instances more than double. This is the contribution which is recognized as of major benefit to the population.

**B. Project Sustainability Estimate and Lessons Learned**

It is evident that with the functional structure of the MOH, continuation of activities will be feasible only with external support for training and transport services.

A true impact on the problem of malnutrition and self-financing in health services will be possible only if there is an improvement in local production capacity, giving priority to consumption of adequate nutrition, selling only excess produce after the local needs are satisfied. This process would have been accomplished with a continuation of PCI activities in the area.

Unfortunately, policy-makers of the Ministry of Health do not tackle the problem of malnutrition at its root cause, which is insufficient availability of food in the rural areas. The MOH carries on with the health and prevention campaigns, when the most crucial problem to be addressed is the chronic hunger in the majority of the population in almost all the regions of Bolivia.

**BIBLIOGRAPHY AND TABULATED DATA**

**TABLE 1**

**GROWTH CHART REGISTRATION:** Children under five years of age; information arranged by age groups according to sex, weight, age weaned, and incidence of diarrhea.

Santa Rosa community, Yanachi health region, Health District of Chulumani, Yungas

Age in Months	Sex		Weight					Weaned			Diarrhea		
	M	F	T	L	N	H	W/D	Yes	No	W/D	Yes 1 2	No	
0-11	1	1	2	0	2	0	0	3	2	0	0	0	2
12-23	2	3	5	2	3	0	0	6	4	0	0	1	4
24-35	3	3	6	2	2	2	0	1	0	3	1	1	3
36-47	1	6	7	1	2	2	1	0	0	2	3	0	4
48-70	0	3	3	1	2	0	1	0	0	2	0	0	4
TOTAL	7	16	23	6	11	4	2	10	6	7	4		2

(Report from May 1989. n=23.)

M=male; F=female; T=total; L=low (less and 3rd percentile); n=normal (between percentiles 3 and 95); h=high (over 95 percentile); W/D=without data; if "yes", 1-one episode; if "yes", 2=2 episodes.

Source: Scone, G., Finot, F.: "Final Evaluation PCI/Yungas." Tabulated from original data registered by Santa Rosa Community Health Workers. July-August 1989. La Paz, Bolivia.

With regard to vaccines, 13 cases (57%) were immunized with BCG (all of these were over one year of age), 10 cases (43%) did not receive BCG vaccine. DPT and polio vaccines were not administered to seven children (30%), of which one was under one year of age. Of those vaccinated, six had one dose (26%) and ten (43%) had the three doses recommended by the MOH. More than half (12 children or 52%) received the measles vaccine and eleven children (48%) were not immunized, two of whom were under one year of age.

**TABLE 2**

**GROWTH CHART REGISTRATION:** Children under five years of age; information arranged by age group according to type of vaccine.

Santa Rosa community, Yanachi health region, Health District of Chulumani, Yungas

Age in Months	Number	BCG		DPT/Polio				Measles	
		yes	no	# of doses	0	1	2	3	yes
0-11	2	0	2	1	1	0	0	0	2
12-23	5	3	2	2	2	0	1	2	3
24-35	6	5	1	0	3	0	3	4	2
36-47	7	3	2	3	0	0	3	3	3
48-70	3	2	3	1	0	0	3	3	1
<b>TOTAL</b>	<b>23</b>	<b>13</b>	<b>10</b>	<b>7</b>	<b>6</b>	<b>0</b>	<b>10</b>	<b>12</b>	<b>11</b>

(Report from May 1989. n=23.)

Source: Seone, G., Finot, F.: "Final Evaluation PCI/Yungas." Tabulated from original data registered by community health workers from Santa Rosa. July-August 1989. La Paz, Bolivia.

#### PERSONAL FILE OF TRAINING MATERIAL CURRICULUM

Sixty-three documents were found in the CHW portfolio and were classified as follows:

a. Immunization	2	3%
b. TRO	2	3%
c. Growth monitoring	17	27%
d. IRA-TB	1	2%
e. Others	41	65%

This shows that the major emphasis was given to training in growth monitoring.

FORM A: TOTAL PROGRAM EXPENDITURES (8/1/86-7/31/89)

FVO/COUNTRY PROJECT BOLIVIA

CATEGORY	ACTUAL EXPENDITURES 8/1/86-9/30/87	ACTUAL EXPENDITURES 10/1/87-7/31/88	ACTUAL EXPENDITURES 8/1/88-7/31/89	TOTAL EXPENDITURES 8/1/86-7/31/89
PROJECT PERSONNEL	45,462	67,749	61,479	174,690
CONSULTANTS	1,348	1,214	4,275	6,837
SUPPLIES	31,243	47,044	79,389	157,676
EQUIPMENT	15,455	2,709	1,590	19,754
TRAINING	8,032	6,919	5,968	20,919
TRANSPORTATION	7,721	10,260	9,821	27,802
PROJECT REPORTING AND EVALUATION	419	1,793	2,158	4,370
OTHER DIRECT COSTS	24,682	41,699	17,954	84,335
SUBTOTAL DIRECT COSTS	134,362	179,387	182,634	496,383
INDIRECT COSTS	46,490	62,067	63,191	171,748
TOTALS	180,852	241,454	245,825	668,131
AID SHARE	135,571	181,000	183,429	500,000
PCI SHARE	45,281	60,454	62,396	168,131

UNIVERSIDAD MAYOR DE SAN ANDRES  
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CURRICULUM VITAE

DATOS PERSONALES

Nombre : LUIS GUILLERMO SEOANE FLORES  
Edad : 35 Años  
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Lugar de Nac. : Cochabamba-Bolivia  
Dirección : Los Pinos, calle Carlos Flores B.180  
Tel. 793024, La Paz-Bolivia.

ESTUDIOS REALIZADOS

Primarios : Escuela Ismael Montes, Corocoro, La Paz  
Secundarios : Colegio Libertad, La Paz.

ESTUDIOS UNIVERSITARIOS

Médico Cirujano: Universidad Mayor de San Andrés (La Paz  
(1974-1980)  
Universidad Nacional Autónoma de México  
(1981-1983)

POST-GRADO

Maestro en Salud Pública- Escuela de Salud Pública de México  
(1984)

TRABAJOS PUBLICADOS

BOSQUEJO DE POLITICA UNIVERSITARIA SOBRE COMUNICACION. Primera  
reunión sectorial de extensión universitaria. Publicación CEUB  
pag: 97-103. La Paz-Bolivia Sept. 1979

ESTUDIO DE COMUNIDAD DE LA COLONIA LAS AGUILAS. Universidad  
autónoma de México MHEO 1983. México.

DIAGNOSTICO DE SALUD DE LA DELEGACION IZTAPALAPA. 1984. Mexico  
DF, México

ACEPTACION Y USOS DEL PROGRAMA DE DETECCION OPORTUNA DEL  
CANCER Y MORTALIDAD POR CANCER GERVICO UTERINO EN LA  
DELEGACION DE IZTAPALAPA. 1984. México DF, México.

POLITICA Y ESTRUCTURA DEL SISTEMA NACIONAL DE RECURSOS HUMANOS  
DEL MINISTERIO DE PREVISION SOCIAL Y SALUD PUBLICA. Cuaderno de  
actualización en Salud Pública vol.1 1<sup>o</sup> pag. 37-51 PROPECE, LA  
PAZ, Bolivia 1985.

UNIVERSIDAD MAYOR DE SAN ANDRES  
FACULTAD DE MEDICINA  
CURSO DE POST GRADO EN SALUD PUBLICA

La Paz - Bolivia

PARTICIPACION POPULAR. curso del PIAAS, Vol.3 n 1. pag:83-87. PROPECS, La Paz Bolivia 1985.

BOLETIN DE LA ASOCIACION DE DOCENTES DE MEDICINA .n 1,2 Enero y Febrero 1987 La Paz - Bolivia .

BASES DE LA POLITICA UNIVERSITARIA. Seoane G, Finot F, et al Departamento de Planificacion Universitaria (UMSA). Agosto 1986 La Paz Bolivia

EVALUACION DE LOS SERVICIOS MEDICOS DE TELEFONOS AUTOMATICOS (TASA). Seoane G, Urioste F. 1987, La Paz - Bolivia.

PRESENTACION DE RELATOS, CORELATOS Y PONENCIAS

LA VENTAS DE LAS RESERVAS DE ESTANO UNA NUEVA AGRESION CONTRA LA NACION. Foro-debate UMSA. oct. 1979. La Paz-Bolivia.

EL PAPEL CIENTIFICO DE LA UNIVERSIDAD. Ponencia presentada en la primera Sectorial de investigacion y extension Universitaria, Nov. 1979. La Paz-Bolivia.

POLITICAS DE SALUD. Ponencia presentada en el Segundo Curso-Taller de administracion de suministro de Medicamentos. INASME, Abril, 1985 Santa Cruz-Bolivia.

LA INTEGRACION DOCENTE ASISTENCIAL. Relato en la reunion de Facultades de Medicina. Abril 1985. Cochabamba-Bolivia.

POLITICA DE SALUD. Ponencia en el primer seminario de implementacion del Area de Salud. Mayo 1985. La Paz-Bolivia.

PROTOCOLO DE INVESTIGACION. Ponencia en cursillo sobre Metodologia basica para la investigacion dictado a Medicos residentes Mayo, 1985. La Paz - Bolivia .

LOS MODOS DEL TRABAJO PEDAGOGICO. Centro para la formacion permanente. Junio 1985. La Paz, Bolivia.

POLITICAS DE SALUD Y LA MUJER. Ponencia en el primer encuentro Mujer y Salud. Centro de informacion y desarrollo de la mujer (CIDEM). Junio 1985 .La Paz, Bolivia.

EL PROCESO SALUD ENFERMEDAD EN BOLIVIA. Ponencia en curso del PIAAS. Julio 1985. La Paz, Bolivia.

EL PAPEL DEL RESIDENTE MEDICO EN LAS POLITICAS DE SALUD. Panelista en la primera jornada nacional de Residencia Médica. Julio 1985. La Paz, Bolivia.

UNIVERSIDAD MAYOR DE SAN ANDRES  
FACULTAD DE MEDICINA  
CURSO DE POST GRADO EN SALUD PUBLICA

La Paz — Bolivia

3

EDUCACION, MOVILIZACION Y COGESTION POPULAR EN SALUD. Ponencia presentada en el primer seminario regional de maestros rurales Julio, 1985. Ucareña, Bolivia.

PLANIFICACION PROSPECTIVA. Participación en el primer seminario de Universidades. Abril, 1986. Beni, Bolivia.

REUNION DE EXPERTOS SOBRE TECNOLOGIA DEL ESPACIO Y SU APLICACION EN EL SISTEMA EDUCATIVO. Representante oficial de la UMSA, a dicha reunión organizada por UNU. Oct. 1986. México, DF. México.

TERCERA REUNION ACADEMICA NACIONAL. Representante docente de la Universidad Mayor de San Andrés (UMSA). Feb. 1986. Cochabamba, Bolivia.

INVESTIGACION CIENTIFICA EN SALUD. Curso del Comité Ejecutivo de la Universidad Boliviana dictado por el Dr. Edmundo Grandá. Nov. 1986. La Paz, Bolivia.

LA CIUDAD DEL ALTO : REALIDAD SOCIOECONOMICA Y SU IMPACTO EN LAS CONDICIONES DE SALUD. Ponencia presentada en el Seminario de concertación institucional. Mayo 1989. Santa Cruz, Bolivia.

CARGOS OCUPADOS

COORDINADOR NACIONAL DE CAMPO DEL PROGRAMA INTEGRAL DE ACTIVIDADES EN AREAS DE SALUD Enero 1985. La Paz, Bolivia.

PROFESOR TITULAR DE EL DEPARTAMENTO DE SALUD PUBLICA. UMSA DESDE ENERO DE 1985 AL PRESENTE. La Paz, Bolivia.

JEFE DEL DEPARTAMENTO DE RECURSOS HUMANOS DEL MINISTERIO DE SALUD. 1985. La Paz, Bolivia.

ASESOR DE LA COMISION DE SALUD PUBLICA, MEDICINA PREVENTIVA Y POLITICA NUTRICIONAL. Cámara de Diputados. Sep. 1986 a Sep. 1987. La Paz, Bolivia.

PRESIDENTE DE LA ASOCIACION DE DOCENTES DE LA FACULTAD DE MEDICINA. UMSA, 1987. La Paz, Bolivia.

JEFE DEL DEPARTAMENTO DE PLANIFICACION DE LA UNIVERSIDAD MAYOR DE SAN ANDRES. 1987. La Paz, Bolivia.

SECRETARIO EJECUTIVO DE LA FEDERACION DE DOCENTES DE LA UMSA. 1988. La Paz, Bolivia.

COORDINADOR ACADEMICO DEL CURSO DE POSTGRADO EN SALUD PUBLICA. Universidad Mayor de San Andrés. 1989. La Paz, Bolivia.

UNIVERSIDAD MAYOR DE SAN ANDRES  
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La Paz — Bolivia  
" 4 "

CONSULTORIA CORTA: Proyecto de prefactibilidad de servicios autofinanciados de Atención primaria en Salud. En la ciudad de El Alto. 1989. La Paz, Bolivia.

## CURRÍCULO VITAL

Dr. Fernando Finau, MSc.

Casilla 21015  
La Paz, Bolivia

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341954 (of).

Cédula de Identidad No 752143 LP.  
Fecha de Nacimiento: 10.02.53.

**OBJETIVO:** Prestar servicios de docencia universitaria a nivel de post grado en programas académicos y de investigación referidos a la formulación, control de ejecución y evaluación de programas y proyectos de atención primaria de salud, especialmente referidos a los entornos multisectoriales e integrales de nutrición, atención médica y saneamiento ambiental, dirigidos al mejoramiento de las condiciones de salud de los grupos materno e infantil como los más vulnerables.

**RESUMEN:** De los ocho años de experiencia de trabajo: (a) dos estuvieron dedicados a la práctica médica hospitalaria de emergencia y a la formulación de proyectos rurales de salud, (b) uno a la formulación e implementación de reformas administrativas a los hospitales urbanos y provinciales, (c) tres a la planificación, formulación y evaluación de proyectos, gestión del financiamiento y aplicación experimental del Plan de Integral de Actividades en Áreas de Salud para la aplicación en Bolivia de la estrategia de Atención Primaria de Salud, y a la docencia universitaria a nivel de post grado, (d) uno a la investigación en predicción del riesgo nutricional en Chile e Inglaterra y finalmente, (e) el último año a la implementación de un proyecto integral de educación, agropecuaria y salud en área rural de La Paz-Bolivia.

ÁREAS EN LAS QUE SE HA EXPERTO Y SE TIENE EXPERIENCIA DE TRABAJO.

Proyectos de salud y afines:

Formulación de proyectos de salud que incluyan una matriz programática integral y multisectorial; orientada en la estructura de organización social de la comunidad para su plena participación.

Preparación de documentos para la gestión de financiamiento de proyectos de salud, actividades de población e infraestructura (hasta diez millones de dólares americanos) en cooperación con Naciones Unidas, bilateral documental privada europea.

Análisis funcional y administrativo para proyectos de infraestructura de atención médica, educación para la salud y servicios complementarios.

Monitoreo y supervisión de la ejecución de proyectos de servicios de integrales y multisectoriales de salud.

Evaluación participativa del grado de cumplimiento de objetivos y programas de proyectos de salud, en las áreas de atención médica, alimentación y nutrición, saneamiento ambiental, educación para la salud y participación de la comunidad.

Análisis de la información contable, para la evaluación del grado de ejecución presupuestaria en relación al cumplimiento de metas programáticas.

### Educación para la salud

Formulación de programas de contenido curricular y ejecución de cursos, talleres y seminarios, para la capacitación en servicio, del personal de planta de los servicios de salud.

Formulación del contenido programático y ejecución de asambleas, seminarios y talleres para la capacitación de la población en temas específicos de salud y organización para la salud.

Formulación conjunta con maestros rurales de material escolar para la educación para la salud y validación científica de este material, incluyendo las prácticas curativas y preventivas tradicionales de las culturas autóctonas.

Formulación de contenido curricular y docencia universitaria en materia de administración sanitaria, en los temas de administración de hospitales, planificación de servicios de salud y aplicación a nivel local de la estrategia de Atención Primaria de Salud.

Docencia de pre y post grado en medicina y cirugía de emergencias.

### Investigación Científica

Desarrollo de trabajos de investigación biomédica pura y comparada con cruzamiento de variables sociales, económicas, antropológicas, de abastecimiento de servicios esenciales y de satisfacción de necesidades básicas. En estos trabajos de equipo multidisciplinario, se utilizan las técnicas de análisis del factor de riesgo, regresión logística y árboles de probabilidad.

### Práctica Médica

Atención médica y quirúrgica a pacientes de emergencia, atención de pacientes hospitalizados en sala de emergencia.

Consulta privada de medicina general.

#### TITULOS ACADÉMICOS

Maestría en Ciencias de la Salud Materno Infantil  
Instituto de Salud del Niño,  
Hospital de Niños Enfermos "Great Ormond",  
Universidad de Londres,  
Londres - Inglaterra. 1986 - 1987.

Licenciatura en Medicina y Cirugía  
Facultad de Medicina  
Hospital de Clínicas  
Universidad Mayor de "San Andrés"  
La Paz - Bolivia. 1975 - 1981.

#### CURSOS CORTOS EN MEDICINA Y SALUD PÚBLICA

Curso Organización de Campañas de Vacunación  
Organización Mundial de la Salud  
Ginebra - Suiza. Diciembre 1987.

Curso de Predicción del Daño Nutricional y Factores Sociales  
Asociados.  
Instituto de Nutrición y Tecnología Alimentaria  
Universidad de Chile  
Santiago - Chile. Julio 1987.

Cursos varios en: Estadísticas de uso Médico, Emergencias en  
Cardiología y Neumología, Actualización en Ginecología y  
Obstetricia, etc.

#### ESTUDIOS AUTODIDACTAS

Planificación de Servicios de Salud, Administración Sanitaria  
y Administración de Hospitales.  
Representación de la Organización Panamericana de la Salud y  
de la Organización Mundial de la Salud en Bolivia.  
Ministerio de Previsión Social y Salud Pública.  
La Paz - Bolivia. 1982-1985.

Clínica Médica y Quirúrgica de Emergencias.  
Hospital de Clínicas  
La Paz - Bolivia. 1981 - 1982.

#### CARGOS EJERCIDOS

1. En Salud Pública:

Consultor en el Proyecto de Salud de "Fracción un Maestro Más"  
por la agencia de Cooperación Inglesa "Health Unlimited"

La Paz - Bolivia, 1989.

Consultor invitado en el proyecto de "Evaluación del Riesgo Nutricional" invitado por el Instituto de Salud del Reino de la Universidad de Londres - Inglaterra.

Instituto de Nutrición y Tecnología Alimentaria  
Universidad de Chile

Santiago de Chile Julio a Octubre de 1987.

Consultor invitado para la formulación del programa de arranque del Centro de Bajas y Servicios Educativos "CEMSE" Fe y Alegría

La Paz - Bolivia, Marzo 1986.

Jefe del Departamento de Proyectos  
Ministerio de Previsión Social y Salud Pública  
La Paz - Bolivia, 1985 - 1986.

Coordinador del "Plan Integral de Actividades en Áreas de Salud".

Ministerio de Previsión Social y Salud Pública.

La Paz - Bolivia, 1983 - 1985.

Miembro de la Comisión de Organización de Hospitales y encargado de la implementación de los Modelos Normativos de Organización Hospitalaria.

Ministerio de Previsión Social y Salud Pública.

Organización Panamericana de la Salud.

La Paz - Bolivia, 1982 - 1983.

Consultor en Salud para la formulación del Proyecto de Desarrollo Integrado del Morle de Potosí.

CONNAL - AGRODEC.

La Paz - Bolivia, 1982.

## 2. En Servicios Médicos y Quirúrgicos.

Médico del servicio de Emergencias.

Hospital de Clínicas

La Paz - Bolivia, 1981 - 1982.

Jefe Interino del Servicio Broncopulmonar

Hospital de Clínicas

La Paz - Bolivia, febrero 1982.

## 3. En Docencia

### a) Cursos de Post-gradó

Profesor Invitado en Planificación de Servicios de Atención Primaria de Salud.

Curso de Maestría en Salud Pública.

Universidad Mayor de "San Andrés"

Ministerio de Previsión Social y Salud Pública.

OPS/OMS. La Paz - Bolivia 1984 - 1985 y 1986 - 1987.

Profesor de Medicina y Cirugía de Emergencias

Residencias en Medicina Interna y en Cirugía General.

Hospital de Clínicas

La Paz - Bolivia. 1981 - 1983.

Profesor en Administración de Hospitales.

Taller Nacional de Organización Hospitalaria para Directores de Hospitales Públicos y Universitarios.

Ministerio de Previsión Social y Salud Pública.

OPS/OMS. Cochabamba - Bolivia. Febrero 1984.

b) Cursos de Pre - grado.

Profesor de Medicina y Cirugía de Emergencias.

Internado Rotatorio.

Facultad de Medicina Universidad Mayor de "San Andrés"

La Paz - Bolivia. 1981 - 1983.

c) Cursos de Educación Comunitaria para la Salud.

Profesor invitado para los Cursos de Capacitación de los Comités Populares de Salud, en la aplicación de la estrategia de Atención Primaria de Salud.

Ministerio de Previsión Social y Salud Pública.

Bolivia, 1983 - 1985.

#### PUBLICACIONES

"Predicción del Riesgo Nutricional: Una Herramienta Contra la Inevidencia de los Servicios de Salud"

Instituto de Salud del Niño.

Universidad de Londres.

Londres - Inglaterra. Enero 1988.

"Manual de Organización Hospitalaria"

Ministerio de Previsión Social y Salud Pública.

La Paz - Bolivia. 1982. (coautor)

"Situación Actual de la Administración Hospitalaria y Criterios para su Mejoramiento"

Ministerio de Previsión Social y Salud Pública.

La Paz - Bolivia. 1982. (coautor).

"Métodos de Educación para la Salud en Escuelas Rurales"

Acción Un Maestro Más.

La Paz - Bolivia. 1ª edición 1989

Numerosos documentos de trabajo impresos en mimeógrafo para circulación interna de las instituciones con las que se

trabajo.

#### INSTITUCIONES A LAS QUE PERTENECE

Colegio Médico de Bolivia  
 Asociación de ex-alumnos de la Universidad de Londres  
 Fundación Salud y Sociedad. La Paz Bolivia.  
 Instituto de Desarrollo Boliviano. La Paz Bolivia.

#### IDIOMAS

Español: Lengua materna.  
 Inglés: Segunda lengua.  
 Portugués: Solo lectura y comprensión limitada del lenguaje hablado.

#### REFERENCIAS

Profesor David Morley  
 Institute of Child Health  
 30 Guilford Street.  
 London - England

Profesor Francisco Mardones - Restat  
 Instituto de Nutrición y Tecnología Alimentaria INTA.  
 Universidad de Chile  
 Santiago - Chile.

Profesor Enrique Pinto  
 Instituto Nacional de Torax  
 La Paz - Bolivia.

Dr. Francisco de Urioste  
 Curso de Maestría en Salud Pública  
 Facultad de Medicina  
 Universidad Mayor de San Andrés  
 La Paz - Bolivia.