

A.I.D. EVALUATION SUMMARY - PART I

PD-ABC-617  
70920

1. BEFORE FILLING OUT THIS FORM, READ THE ATTACHED INSTRUCTIONS.  
2. USE LETTER QUALITY TYPE, NOT "DOT MATRIX"!

IDENTIFICATION DATA

A. Reporting A.I.D. Unit:	B. Was Evaluation Scheduled in Current FY Annual Evaluation Plan?	C. Evaluation Timing
Mission or AID/WY Office <u>USAID/El Salvador, HPN</u> (ES# _____)	Yes <input checked="" type="checkbox"/> Slipped <input type="checkbox"/> Ad Hoc <input type="checkbox"/> Evaluation Plan Submission Date: FY ____ Q ____	Interim <input type="checkbox"/> Final <input type="checkbox"/> Ex Post <input type="checkbox"/> Other <input type="checkbox"/>
D. Activity or Activities Evaluated (List the following information for project(s) or program(s) evaluated; if not applicable, list title and date of the evaluation report.)		

Project No.	Project /Program Title	First PHOAG or Equivalent (FY)	Most Recent PACD (Mo/Yr)	Planned LOF Cost (000)	Amount Obligated to Date (000)
519-0346	Strengthening REhabilitation Services - Teletón Foundation Pro-Rehabilitation (FUNTER)	87	3/91	3,350	3,350

ACTIONS

E. Action Decisions Approved By Mission or AID/WY Office Director	Name of Officer Responsible for Action	Date Action to be Completed
Action(s) Required		
1. FUNTER should identify specific goals and objectives with regard to growth, funding strategies, internal coordination	Toledo/FUNTER	May/92
2. FUNTER should continue and expand services in areas where it has been successful	Toledo /FUNTER	June/92
3. FUNTER should not get involved in other areas such as mental retardation, speech and hearing impairments, etc.	Toledo/FUNTER	June/91
4. FUNTER should offer vocational orientation only to amputees	Toledo/FUNTER	June/91
5. FUNTER should undertake more aggressive fundraising initiatives	Toledo/FUNTER	April/92
6. FUNTER should concentrate all of its personnel and offices in one single space to improve communication	Toledo/FUNTER	Dec/92
7. USAID support to FUNTER should be extended	USAID	April 91

(Attach extra sheet if necessary)

APPROVALS

F. Date Of Mission Or AID/W Office Review Of Evaluation: (Month) (Day) (Year)  
February 13 1991

G. Approvals of Evaluation Summary And Action Decisions:				
Name (Typed)	Project/Program Officer	Representative of Borrower/Grantor	Evaluation Officer	Mission or AID/W Office Director
Signature	RGToledo/RLThornton	HPN LEAngulo/FUNTER	KFreeman/DPP	Henry Bassford/DIR
Date	3-6-91			

**ABSTRACT**

**H. Evaluation Abstract (Do not exceed the space provided)**

The purpose of the evaluation was to measure the progress in the improvement of rehabilitation services through FUNTER-established programs that provide timely and appropriate services to the disabled, their families and professionals serving the disabled and to assess the level of institutional development of FUNTER since the USAID/FUNTER Project began in 1987. There are four project components (Patient Support Services, Prosthetic Workshop, Community Education, awareness and networking program, and Promotion of Rehabilitation Services) that were evaluated.

The project has demonstrated its strongest performance by a series of activities which could be summarized in the following: (1) it planned, laid out and set up the prosthetic laboratory and delivered its first prostheses in a period of nine months; (2) it has provided 1,110 artificial limbs of U.S. quality, exceeding project goal of 1,000 for a 2-year period; (3) eleven national prosthetists were trained to a level equivalent to U.S. standards; (4) it has developed and maintained a detailed and accurate national amputee registry; (5) it normally fits patients with artificial limbs in less than 15 days; (6) it has produced high quality patient support services, including housing, transportation and home follow-up. Problems and weaknesses detected inside the FUNTER organization include: (1) lack of strategic planning and failure to identify and prioritize the needs which should be addressed by the project; (2) insufficient attention to fundraising to ensure longterm viability of the institution; (3) insufficient space for patient support; (4) lack of program integration. Major specific recommendations to address the problems and constraints detected are outlined in Section J of this paper. However, considering the positive experience the USAID has had with FUNTER in implementing the project, and the success FUNTER has demonstrated, the USAID will extend the project for at least a two-year period adding three million dollars. Emphasis will be given in the extension period to advise FUNTER technically to develop fundraising capabilities so FUNTER can continue providing these services in the future when the US support eventually is withdrawn.

**COSTS**

**I. Evaluation Costs**

1. Evaluation Team		Contract Number OR TDY Person Days	Contract Cost OR TDY Cost (U.S. \$)	Source of Funds
Name	Affiliation			
Manuel Carbajal Martin Carrillo Luisa Montero-Díaz Edmond Ayyappa	Medical Service Corporation International (MSCI)	74	32,134	519-0346

**2. Mission/Office Professional Staff**

Person-Days (Estimate) \_\_\_\_\_

**3. Borrower/Grantee Professional**

Staff Person-Days (Estimate) \_\_\_\_\_

b

## A.I.D. EVALUATION SUMMARY - PART II

### SUMMARY

J. Summary of Evaluation Findings, Conclusions and Recommendations (Try not to exceed the three (3) pages provided)

Address the following items:

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>• Purpose of evaluation and methodology used</li> <li>• Purpose of activity(ies) evaluated</li> <li>• Findings and conclusions (relate to questions)</li> </ul> | <ul style="list-style-type: none"> <li>• Principal recommendations</li> <li>• Lessons learned</li> </ul> |
|--|--|

Mission or Office:

Date This Summary Prepared:

Title And Date Of Full Evaluation Report:

**Purpose of Evaluation:** The purpose of this evaluation was to measure the progress in the improvement of rehabilitation services through FUNTER-established programs that provide timely and appropriate services to the disabled, their families, and professionals serving the disabled and to assess the level of institutional development of FUNTER since the USAID/FUNTER Project began in 1987.

**Evaluation Methodology:** Data for this evaluation were collected through a variety of means: individual interviews of key personnel, review of consultant reports, review of FUNTER records, review of USAID records (expenditures reports, semi-annual reports, etc), review of actual materials produced under the project such as educational materials, training curricula, etc., field visits to FUNTER's different offices, program and production data from the prosthetics workshop. Patients and their families were observed while interfacing with FUNTER's staff and interviewed by team members.

**Purpose of Activities evaluated:** The activities evaluated correspond to the four project components which are as follows:

- Patient Support Services (PAP): Pre and post-prosthetic direct services to amputees.
- Prosthetic Workshop: This workshop produces and repairs permanent and temporary prostheses for upper and lower extremities. It has trained 11 prosthetists.
- Community Education, Awareness and Networking Program (CEC): CEC compiles, delivers, and exchanges information about handicapping conditions and their treatment and prevention. It is designed to raise awareness about the plight of persons of persons with disabilities, especially in rural areas.
- Promotion of Rehabilitation Services (PROMOSER): Supports institutions serving persons with disabilities by providing training to their staff to upgrade professional skills and by procuring and maintaining equipment and procuring materials on their behalf.

**Findings and Conclusions:** Over the last three years FUNTER has grown substantially both in size and scope. This growth has been possible, to a large extent, because of the cooperative agreement signed with the USAID. Some weakness, however, have been detected. Physical separation of the three offices is a problem. Another weakness is that FUNTER does not promote itself as a comprehensive entity serving different populations. In spite of these two major weaknesses, the project has proven to be a successful one. The project has demonstrated its strongest performance by the following activities:

1. It planned, laid out and set up the prosthetic workshop and delivered its first prostheses in a period of nine months;
2. It has provided 1100 artificial limbs (upper and lower extremities) of US quality, exceeding the project goal of 1000 during a two-year period;

c'

3. It has produced quality prosthetic products at about one-tenth of production costs in the US by manufacturing materials at the workshop rather than importing them;
4. Eleven national prosthetists were trained to a level equivalent to US standards;
5. It has developed and maintained a detailed and accurate national amputee registry;
6. It has raised the awareness of Salvadoran about the existence of disabling conditions and provided a variety of rural health workers and civic groups with training and information on how to prevent and treat these conditions;
7. It has developed a series of practical courses that can be used by other interested organizations and has organized training seminars for professionals in other institutions;
8. It has produced high-quality patient support services including housing, transportation and home follow-up;
9. It normally fits patients with artificial limbs in less than 15 days;
10. It has collected materials on disability and rehabilitation suitable for a specialized library;
11. It has produced and distributed over 50,000 copies of health education materials;
12. It has identified which agencies serve the disabled in El Salvador.

Principal Recommendations: Major specific recommendations in order of importance are as follows:

1. FUNTER should identify and pursue specific goals and objectives with regard to growth, funding strategies, internal coordination, and image projected to the outside world.
2. FUNTER should continue to provide and expand services in areas where it has been successful.
3. FUNTER should not initiate activities in the areas of mental retardation, learning disabilities, speech and hearing, or visual impairments; and vocational orientation should be offered to amputees only;
4. FUNTER should undertake more aggressive fundraising and develop realistic plans and activities conducive to sustaining its level of operation when USAID funds are no longer available.
5. All FUNTER programs and personnel should be concentrated in a single location with sufficient space to reduce lost time and resources and improve communication within the project and the Foundation. FUNTER needs its own building, preferably built with non-USAID funds.

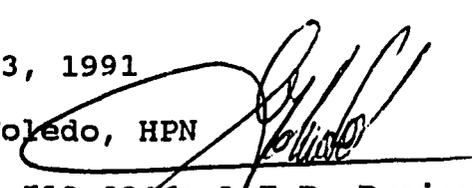
Lessons Learned: The evaluation has identified two major lessons learned from this project:

1. Rivalry between the public and private sector has made inter-institutional coordination in this project difficult.
2. The project should not be expected to become self-sustainable in three years, especially in areas dealing with changes of attitudes and perceptions which inevitably take a long time.

*2*

# memorandum

DATE: March 13, 1991

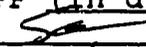
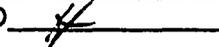
REPLY TO  
ATTN OF: Dr. RGTolledo, HPN 

SUBJECT: Project 519-0346: A.I.D. Project Evaluation Summary

TO: Mission Evaluation Committee (See below)

Please find attached for your perusal and clearance the subject document.

Attachments.

Cleared by: RLThornton, DIR/HPN (In draft)  
KFreeman, DPP (In draft)  
SLaFoy, PRJ   
JHeard, AMDO 

**XD-ABC-617-A**  
**70924**



**STRENGTHENING REHABILITATION SERVICES:  
FIRST PROJECT EVALUATION  
USAID/El Salvador Funter  
Project No. 519-0346**

**NO. PDC-1406-I-00-7114-00  
DELIVERY ORDER NO. 4**

**Submitted to:**

**Dr. Guillermo Toledo  
Office of Health/Population/Nutrition  
U.S. Agency for International Development  
San Salvador, El Salvador**

**Submitted by:**

**MEDICAL SERVICE CORPORATION INTERNATIONAL  
1716 Wilson Boulevard  
Arlington, Virginia 22209**

**January 31, 1991**

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## ABBREVIATIONS AND INSTITUTIONS

ACOGIPRI	Cooperative Association of Independent Groups for Comprehensive Rehabilitation ( <u>Asociación Cooperativa para Grupos Independientes para Rehabilitación Integral</u> )
ACOPRA	Association of Central American Professional Orthotists and Prosthesisists Working in Rehabilitation and Related Fields ( <u>Asociación Centroamericana de Ortesistas y Protesistas Profesionales en Rehabilitación y Afines</u> )
BAO	Orthopedic Appliance Bank ( <u>Banco de Aparatos Ortopédicos</u> )
CERPROFA	Professional Rehabilitation Center of the Armed Forces ( <u>Centro de Rehabilitación Profesional de las Fuerzas Armadas</u> )
CEC	Community, Education, Awareness, and Networking Program ( <u>Campaña de Educación y Concientización de la Comunidad</u> )
CEE	Special Education Center ( <u>Centro de Educación Especial</u> ), part of ISRI
CIM	Multiple Disabilities Center ( <u>Centro de Invalideces Múltiples</u> ), part of ISRI
CPC	Cerebral Palsy Center ( <u>Centro de Parálisis Cerebral</u> ), part of ISRI
CRI	Comprehensive Rehabilitation Center ( <u>Centro de Rehabilitación Integral</u> )
CROC	Western Rehabilitation Center ( <u>Centro de Rehabilitación de Occidente</u> ), part of ISRI
CROR	Eastern Rehabilitation Center ( <u>Centro de Rehabilitación de Oriente</u> ), part of ISRI
FAP	Patient Assistant Fund ( <u>Fondo de Ayuda a Pacientes</u> )
FAPRO	Prosthetic Workshop ( <u>Fábrica de Prótesis</u> )
FUNTER	Teleton Pro-Rehabilitation Foundation ( <u>Fundación Teletón Pro-Rehabilitación</u> )
ISRI	Salvadoran Rehabilitation Institute ( <u>Instituto Salvadoreño de Rehabilitación Integral</u> )
ISSS	Salvadoran Social Security Institute ( <u>Instituto Salvadoreño del Seguro Social</u> )

PAP Patient Support Program (Programa de Ayuda a Pacientes)  
PONI Let Us Protect Our Children's Hearing Program (Protejamos el Oído de los Niños)  
PROCER Rehabilitation Center Sponsor Program (Programa de Protección de Centros de Rehabilitación)  
PROMOSER Promotion of Rehabilitation Services Component (Componente Promoción de los Servicios de Rehabilitación)

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Martin L. Carrillo, R.P.T.  
Luisa Montero-Diaz, M.S.  
Edmond Ayyappa, M.S.

This report was translated to Spanish by Maria Lydia de Castillo with the assistance of Hildi Pardo.

## EXECUTIVE SUMMARY

### A. PURPOSE OF THE EVALUATION

The purpose of this evaluation is to measure the progress in the improvement of rehabilitation services through FUNTER-established programs that provide timely and appropriate services to the disabled, their families and professionals serving the disabled and to assess the level of institutional development of FUNTER since the USAID/FUNTER Project began in 1987.

The evaluation focuses on the:

1. accomplishments and lessons learned over the last three years;
2. problems and constraints experienced;
3. impact of the USAID-funded project on FUNTER's institutional development and its capability to plan and implement sustained fundraising activities to recover operational costs;
4. degree to which prosthetic production and delivery have met the civilian demand;
5. nature and efficiency of the amputee flow system; and
6. use of human, technical, and financial resources to identify and improve services for persons with limitations.

### B. BACKGROUND

The Telethon Pro-Rehabilitation Foundation (FUNTER), a not-for-profit institution, was established in 1986 for the purpose of supporting rehabilitation activities. A Cooperative Agreement was signed with USAID on August 31, 1987 and has been amended once (June 30, 1989) for a total of US\$ 3.35 million. This agreement, commonly known as the USAID/FUNTER Project, focuses on the amputee population and is designed to strengthen and improve the delivery, range, and quality of rehabilitation services in El Salvador. It attempts to provide an integrated approach to treating the patient, in addition to supporting professionals. Amputees and other persons with limitations are provided with artificial limbs and/or support services and often, through the efforts of FUNTER, find a less hostile, more sensitive environment upon returning to their communities for full rehabilitation.

### C. PROJECT COMPONENTS

There are four project components:

- o Patient Support Services (PAP);
- o Prosthetic Workshop (FAPRO);
- o Community Education, Awareness, and Networking Program (CEC); and
- o Promotion of Rehabilitation Services (PROMOSER).

Through PAP, both pre- and post-prosthetic direct services to amputees are rendered; and a national amputee registry is kept. This component also identifies sponsors who are willing to cover the cost of artificial limbs for amputees unable to pay.

FAPRO produces and repairs permanent and temporary prostheses for upper and lower extremities. It has trained eleven prosthetists who are currently working at the workshop. It does research on manufacturing new products and components needed for the improvement of prostheses and has launched a rural extension program in which amputees are fitted in the field.

CEC compiles, delivers, and exchanges information about handicapping conditions and their treatment and prevention. It is designed to raise awareness about the plight of persons with disabilities, especially in rural areas. Specifically, CEC:

- o designs and publishes educational materials concerning rehabilitation and provides orientation in their use;
- o compiles books and other library materials; and
- o publishes a directory of treatment, referral and other professional services available to the handicapped.

Finally, PROMOSER supports institutions serving persons with disabilities by providing training to their staff to upgrade professional skills and by procuring and maintaining equipment and procuring materials on their behalf.

### D. ACCOMPLISHMENTS

The Project has demonstrated its strongest performance by the following activities:

1. It planned, laid out and set up the prosthetic laboratory and delivered its first prostheses in a period of nine months;

2. It has provided 1,110 artificial limbs (upper and lower extremities) of U.S. quality, exceeding the project goal of 1,000 during a two-year period;
3. It has produced quality prosthetic products at about one-tenth of production costs in the U.S. by manufacturing materials at FAPRO rather than importing them;
4. Eleven national prosthetists were trained to a level equivalent to U.S. standards;
5. It has developed and maintained a detailed and accurate national amputee registry;
6. It has raised the awareness of Salvadorans about the existence of disabling conditions and provided a variety of rural health workers and civic groups with training and information on how to prevent and treat these conditions;
7. It has developed a series of practical courses that can be used by other interested organizations and has organized training seminars for professionals in other institutions;
8. It has produced high-quality patient support services including housing, transportation and home follow-up;
9. It normally fits patients with artificial limbs in less than 15 days;
10. It has collected materials on disability and rehabilitation suitable for a specialized library;
11. It has produced and distributed over 50,000 copies of health education materials;
12. It has identified which agencies serve the disabled.

#### **E. PROBLEMS AND CONSTRAINTS**

Over the last three years, FUNTER has grown from a seven-person organization to 72 persons (as of September 1990). Many of the problems and weaknesses of the project can be attributed to the process of rapid growth. These include:

1. its lack of strategic planning, specifically, its failure to identify and prioritize the needs which should be addressed by the project;
2. insufficient attention to fundraising to ensure long-term viability of the institution;

3. difficult working conditions, including insufficient space for patient support and the physical separation of three office which causes problems in communication and coordination;
4. a lack of program integration. The institution is not perceived as an entity, and employees identify with programs rather than with the foundation as a whole;
5. a lack of adequate managerial and administrative skills at the top;
6. a lack of clear indicators and adequate statistical reporting for monitoring performance and patient follow-up; and
7. insufficient emphasis on networking, which may lead to provision of services which overlap with those in other institutions.

The evaluation team believes that this is not the time for the project to alter its scope, grow significantly in size or to diversify; instead, it is time to improve the quality of services and specialize.

#### **F. RECOMMENDATIONS AND CONCLUSIONS**

Major specific recommendations, in order of importance, are as follows:

1. FUNTER should identify and pursue specific goals and objectives with regard to growth, funding strategies, internal coordination, and image projected to the outside world: it should abandon the practice of focusing on project components and adopt a comprehensive, systems approach; ✓
2. FUNTER should continue to provide and expand services in areas where it has been successful. ✓
3. FUNTER should not initiate activities in the areas of mental retardation, learning disabilities, speech and hearing, or visual impairments; and vocational orientation should be offered to amputees only; ✓

4. FUNTER should undertake more aggressive fundraising and develop realistic plans and activities conducive to sustaining its level of operation when USAID funds are no longer available;
5. All FUNTER programs and personnel should be concentrated in a single location with sufficient space to reduce lost time and resources and improve communication within the project and the Foundation. FUNTER needs its own building, preferably built with non-USAID funds; and
6. The position of Technical Manager of the USAID/FUNTER Project should be divided on a functional basis into two positions: a Project Manager in charge of planning, programming, coordinating, and controlling the work of the various components, and a Medical Director in charge of clinical services provided by PAP and FAPRO.

The evaluation team has identified two major lessons learned from this project: one is that inter-institutional coordination is especially difficult in El Salvador; the other is that the project should not be expected to become self-sustainable in three years, especially in areas dealing with changes of attitudes and perceptions which inevitably take a long time.

In conclusion, this evaluation team views FUNTER as an institution experiencing growing pains, but which nonetheless has changed for the better the history of rehabilitation in El Salvador. Much has been done, but a lot still remains to be done--identification and treatment of yet undetected amputees, providing new prostheses for amputees who have been fitted and eventually will wear out the device, continued awareness raising conducive to full community acceptance and rehabilitation, extension of the prosthetic program into the field of orthotics (where demand is largely unmet), and so on. Therefore, the evaluation team recommends that USAID support to the Foundation be extended.

## I. INTRODUCTION

### A. PURPOSE AND OBJECTIVES OF THE EVALUATION

The purpose of this evaluation is to measure the level of functional and operational development and progress achieved by the USAID/FUNTER Project since its initiation in 1987. The general objective is to measure the improvement of rehabilitation services in El Salvador through FUNTER's established programs that:

1. provide direct and referral services to persons with disabilities and their families, as well as to professionals in the field of rehabilitation;
2. increase community awareness about rehabilitation and prevention of disabilities;
3. promote community based services for persons with limitations;
4. upgrade skills of rehabilitation professionals through in-service training; and
5. strengthen services for the disabled rendered by public and private institutions through procurement and maintenance of equipment and materials in their behalf.

Specifically, the evaluation seeks to determine the level and scope of the USAID/FUNTER Project's impact on FUNTER's capability to strengthen rehabilitation services in the country. It also seeks to assess progress toward sustaining the Patient Support Program (Programa de Ayuda a Pacientes - PAP); the Prosthetic Workshop (Fábrica de Prótesis - FAPRO); the Community Education, Awareness, and Networking Program (Campaña de Educación y Concientización de la Comunidad - CEC); and the Promotion of Rehabilitation Services Component (Componente Promoción de los Servicios de Rehabilitación - PROMOSER).

In compliance with the scope of work, the evaluation focuses on:

1. USAID/FUNTER Project's accomplishments, problems and constraints experienced, and lessons learned in a general sense throughout the last three years;
2. The impact of the project on FUNTER's organizational development and capability of planning and implementing sustained fundraising activities to recover operational costs;

3. The degree to which prosthetic production and delivery have met civilian demand for prostheses. (The amputee flow system receives special attention, including control of, and follow-up provided to, amputees who have entered FUNTER's rehabilitation cycle, evaluation tools used to diagnose amputees' needs, and motivational activities which promote rehabilitation and reintegration of persons with disabilities into the community and workplace); and
4. Assessment of FUNTER's progress in networking human, technical, and financial resources to identify and improve services for persons with limitations through special presentations, development and distribution of written and visual materials, design and delivery of in-service training according to disability area, and procurement of needed equipment and materials for centers that provide rehabilitation or special education services.

#### B. FUNTER AND THE USAID/FUNTER PROJECT

The Teleton Foundation Pro-Rehabilitation (Fundación Teletón Pro-Rehabilitación - FUNTER), a not-for-profit institution, was established on March 17, 1986 for the purpose of supporting rehabilitation activities initiated four years earlier by the Active 20/30 Club, a Salvadoran service group. Between 1982 and 1987 the Active 20/30 Club organized five televised fund raising marathons similar to those of Jerry Lewis, and collected sufficient contributions to construct, equip, staff, and manage three treatment centers--one located in San Salvador serving children with multiple disabilities and two regional out-patient centers (one in the eastern part of the country, the other in the west) rendering medical and therapeutical services to disabled persons of all ages. Although the three centers subsequently became integrated into the rehabilitation system supported by the Salvadoran government, the Foundation continues to provide auxiliary support to all three. The fifth and last televised marathon was held by the Active 20/30 Club in 1987 to endow FUNTER. The next such event is planned for November 1990.

According to FUNTER's by-laws, unchanged since the agency's inception, the objectives of the Foundation are to:

1. promote public awareness of, and sensitivity to, social integration of persons with physical, sensorial, and mental limitations;
2. provide economic assistance to institutions that have developed habilitation and/or rehabilitation programs for the handicapped;

3. complete construction and equipping of the Eastern Rehabilitation Center (Centro de Rehabilitación de Oriente - CROR) and the Western Rehabilitation Center (Centro de Rehabilitación de Occidente - CROC);
4. partially defray operational expenses of the Multiple Disabilities Center (Centro de Invalideces Múltiple2 - CIM), CROR, and CROC; and
5. watch over the development and operations of the three centers. These by-laws were published in the Diario Oficial of January 15, 1987.

On August 31, 1987 USAID and FUNTER signed a Cooperative Agreement (No. 519-0346) in which US\$ 2.45 million would be granted by USAID to assist the Foundation establish and support private and public rehabilitation services in El Salvador to meet the increased civilian demand resulting from the armed conflict. This agreement, commonly known as the USAID/FUNTER Project, is designed to focus on, but not limit support to benefit, the amputee population. The goal of the project is to strengthen and improve the delivery, range, and quality of rehabilitation services available in El Salvador. The target group expected to benefit from the grant was established at approximately 10,000 persons with handicaps, including a minimum of 1,000 civilian amputees.

The activities encompassed by the project in its original form were:

1. to establish a privately-operated prosthetics manufacturing workshop with sufficient production capability to meet nationwide civilian demand;
2. create a patient support fund to provide assistance to persons otherwise lacking financial resources and access to prosthetic devices;
3. develop and strengthen rehabilitation, educational, and vocational training services offered by the Salvadoran Rehabilitation Institute (Instituto Salvadoreño de Rehabilitación Integral - ISRI) for the physically, sensorially, and mentally disabled;
4. develop a network of human, technical, and financial resources, available domestically as well as abroad, compatible with the rehabilitation needs of persons with disabilities;
5. support design and production of public awareness education materials on handicapping conditions and limitations; and

6. develop a national/international resource clearinghouse for rehabilitation professionals and persons with disabilities.

The Cooperative Agreement has been amended once to increase its funding and scope. The amendment, signed on June 30, 1989, increased funding by US\$ 900,000 for a total of US\$ 3.35 million. While the original purpose of the project was not altered, the range of activities was broadened to:

1. extend production of prostheses to serve upper-limb civilian amputees;
2. establish a research program to enhance the capability of producing prosthetic components using materials available in El Salvador and other Central American countries, thus diminishing dependence on components and materials imported from the United States;
3. provide and coordinate medical/therapeutical support services both before and after prosthetic treatment;
4. foster coordination of educational, technical, and vocational services for persons with disabilities through implementation of training courses for professionals working with disabled Salvadorans;
5. provide assistance to train rehabilitation personnel, promote leadership training of persons with limitations, develop/purchase evaluative instruments and special materials to be used in rehabilitation settings, and purchase/maintain/repair specialized equipment for treating the disabled; and
6. design, implement, and monitor public education and community based rehabilitation programs oriented toward increasing awareness of prevention, early identification, intervention, and treatment of handicaps, especially in rural areas, where services are scarce.

The amendment broadens the scope beyond ISRI to include public and private agencies rendering services to persons with limitations. This change in focus from the original grant agreement was necessary because of ISRI's inability to provide acceptable work plans for the component in addition to poor coordination and communication with FUNTER at upper and middle management levels. Many of these past events seem to continue exerting a negative influence on effective communication and coordination between FUNTER and ISRI for strengthening rehabilitation services. These problems will be related to project performance throughout this evaluation.

The USAID/FUNTER Project constitutes the largest part of the general structure of FUNTER. Its activities are planned, executed, coordinated, and controlled by the Technical Manager, whose job description states that she is responsible for preparing calendars of major events, implementation and follow-up methodologies, profiles for the various project staff positions, strategy and accomplishment reports, and project budgets. She also is responsible for bringing to fruition, collegiately, the efforts of all project staff members who provide services to target populations. Her activities in this respect include assisting FUNTER's central administration in complying with USAID's accountability and reporting requirements, meeting regularly with her immediate subordinates to coordinate activities and for communication purposes, following-up on technical assistance provided by consultants, coordinating with USAID and the Technical Committee all evaluations, and assessing periodically, along with project personnel, training programs and resource utilization. The Technical Manager is assisted directly by a secretary.

The USAID/FUNTER Project is comprised of four components: PAP, FAPRO, CEC, and PROMOSER (see Figure 2-3). Through PAP both pre- and post-prosthetic direct services to amputees are rendered at CRI, where a national amputee registry is kept. Additionally, under this component the staff must identify sponsors (Patient Assistance Fund, Fondo de Ayuda a Pacientes - FAP) willing to cover the cost of prostheses for amputees unable to pay for their artificial limbs. An added responsibility includes operating a donor bank/distribution center, the Orthopedic Appliance Bank (Banco de Aparatos Ortopédicos - BAO), for wheelchairs, crutches, walkers, and other orthopedic appliances.

PAP is headed by a coordinator (Coordinadora de PAP) whose main function is to organize and coordinate multidisciplinary services rendered to civilian amputees which include medical evaluations, physical therapy, social services, psychological support, and job orientation. She supervises four social workers (two in CRI, one in FAP, and one in BAO), three part-time physiatrists, a physical therapist, a psychologist, a secretary, and a BAO stock clerk.

FAPRO is the second component of the USAID/FUNTER Project. It produces and repairs permanent and temporary prostheses for upper and lower extremities. FAPRO is headed by a General Manager (Gerente General de FAPRO). His duties include planning and organizing activities, supervising personnel, ordering raw materials and parts necessary for production, supervising research on import substitution, maintaining quality control, directing the rural extension program, and controlling costs of production in search of sustainability. Supported by an assistant and a secretary, the FAPRO Manager is responsible for the work of eleven prosthetists and a stock clerk.

CEC is the third component of the USAID/FUNTER Project. The purpose of this component is to compile, deliver, and exchange information about handicapping conditions and their respective treatment and prevention. It is designed to raise awareness about the plight of persons with disabilities, especially in rural areas, where the need is greatest. Design, publication, and orientation in the use of educational materials concerning rehabilitation; compilation of books and other library materials; and publication of a directory of professional services available to the handicapped and treatment/referral centers are included as component outputs.

The CEC Coordinator's (Coordinadora de CEC) job description identifies several specific functions: develop and organize a network of financial, technological, educational, and institutional resources in support of persons with disabilities and their families; identify social assistance and community based rehabilitation volunteers and train them so that they can provide support and referral services to persons with limitations and their families; develop a data bank of existing public and private resources available to the handicapped, including professional services and rehabilitation centers; prepare written materials on identification of the various disabilities and support of other USAID/FUNTER Project components; follow-up on the work of volunteers trained by CEC and their application of knowledge gained at seminars and other training events; and develop and maintain a library on disabilities and rehabilitation books and materials. She receives assistance from a secretary (one-half time) shared with PROMOSER.

A component of the USAID/FUNTER Project, PROMOSER, supports institutions throughout El Salvador serving persons with limitations by virtue of upgrading their staffs' professional skills and procuring/maintaining equipment and materials in their behalf. The functions of the PROMOSER Coordinator (Coordinadora de PROMOSER) are to identify training and equipment needs of private as well as public special education schools and rehabilitation centers; respond to these needs by organizing seminars, courses, etc. and procuring equipment and materials for them; and coordinate action with other project components and serve them by functioning as their institutional liaison. She is supported by an assistant and a secretary (one-half time) shared with CEC.

### C. EVALUATION REPORT FORMAT

In addition to this introduction, the main body of the evaluation consists of six parts (II-VII). Each of Parts II-VI concludes with separate sections on identification/discussion of lessons learned (i.e., causal factors that have proved critical to project successes/failures and techniques/approaches which have proved effective or had to be changed), including strong and weak linkages

within the system, and specific recommendations for enhancing implementation, increasing operational efficiency, and ultimately meeting established goals.

In Part II an analysis of FUNTER's organizational and financial management structures is presented based on the results of a verbal management survey. This survey, done via numerous interviews, was conducted to assess operational and procedural systems applied by FUNTER's executive staff, as well as its function, within each of the USAID/FUNTER Project components. The level and effectiveness of coordination between project funded personnel and FUNTER's other staff is investigated here, too, along with possible administrative overrides, blockages, or duplication of effort between project funded and non-funded personnel or activities. This section contains specific portions devoted to analyzing FUNTER's de facto organizational chart (prepared by the evaluation team, as no formal chart has ever been adopted by the Foundation), salary composition, and institutional expenditures, followed by a qualitative evaluation of the agency's administrative and expenditure performance.

Parts III-VI are devoted, one each, to the project components:

- o The Patient Support Program;
- o The Prosthetic Workshop;
- o the Community Education, Awareness, and Networking Program; and
- o the Promotion of Rehabilitation Services Component.

Each begins with a discussion of the objectives of the component. Then progress and accomplishments are identified and discussed, followed by a qualitative evaluation.

Specific procedures related to the Patient Support Program assessed in Part III include:

1. interviews done by social workers;
2. processes applied to medical evaluations and prosthetic prescriptions;
3. hours of physical therapy given to amputees;
4. quality control and amount of follow-up physical therapy;
5. content, approach, and level of psychological orientation;

6. follow-up procedures provided by FUNTER for amputees after receiving a prosthesis; and
7. efforts directed toward vocational reeducation, readaptation, and job placement. Adequateness of patient evaluation instruments, use of protocol, and effectiveness of support are especially important.

Also important in this section is the management and statistical reporting of the amputee registry.

Part IV addresses:

1. The Prosthetic Workshop's production/repair capability and quantity/quality of its output, including patient care;
2. Present and future demand for prosthetics and orthotics;
3. Nature and needs of the prosthetics training program;
4. Development of indigenous materials and technology in the elaboration of prosthetic components; and
5. The rural extension program.

Part V is devoted to:

1. An evaluation of FUNTER's development and distribution of written and visual materials for increasing community education on, and awareness of, handicapping conditions;
2. Mechanisms used to reach various communities and groups of people;
3. Efforts toward networking with public and private entities and number of individuals reached by this component;
4. Training programs and follow-up mechanisms applied to measure the effectiveness of training for networking; and
5. Development of the national and international resource guides for rehabilitation services.

Part VI assesses FUNTER's training/procurement component. Specific procedures being explored include:

1. Selection of training course topics, organization, and follow-up to measure course impact on beneficiaries;

2. Procurement of equipment and materials; and
3. Control mechanisms for maintenance of the equipment.

Finally, Part VII focuses on different aspects of the entire institution. It examines:

1. The average cost of USAID/FUNTER Project outputs as an indicator of operational efficiency;
2. FUNTER's relations with ISRI);
3. The Foundation's capability to survive and prosper independently of USAID support; and
4. Its future in the country's rehabilitation picture.

## II. ADMINISTRATIVE STRUCTURE AND FINANCIAL MANAGEMENT

This part of the evaluation contains an analysis of FUNTER's organizational and financial management structures based on the results of a management survey. It reviews operational and procedural systems both within and outside the USAID/FUNTER Project, as well as their interrelationships, with emphasis on effectiveness and coordination. It includes separate sections on organization, salaries, and expenditures.

The Foundation's work is done in three buildings, all in San Salvador. Central administration and Let Us Protect Our Children's Hearing Program (Protejamos el Oído de los Niños - PONI) offices are located at 83 Avenida Norte No. 345, Colonia Escalón. Amputees receive multidisciplinary assistance at the Comprehensive Rehabilitation Center (Centro de Rehabilitación Integral - CRI) building, Pasaje San Carlos No. 121, Boulevard Los Héroes, Urbanización San Ernesto. In addition, PAP, CEC, and PROMOSER components are located at this site. Prostheses are manufactured and fitted at the FAPRO building, 29 Avenida Norte No. 1137, near the U.S. Embassy.

### A. ORGANIZATION

FUNTER identifies the "Telethon Foundation Pro-Rehabilitation," a not-for-profit institution operating in El Salvador since 1986. Organizationally, it consists of three divisions: The Central Administration, the PONI Program (see Annex 10), and the USAID/FUNTER Project. This last one is headed by a Technical Manager; hence, FUNTER employees often call it the "Technical Management Section."

FUNTER's organizational structure is relatively simple (see Figure 2-1 for de facto organizational chart developed by the evaluation team with information provided by the Foundation's executives), with most functional relationships defined along the same lines as operational ones. The General Assembly (Asamblea General), consisting of 96 founding members and one honorary member, is at the top. Every other year a 12-person Board of Directors (Junta Directiva) is elected by and from within the General Assembly. The Board is in charge of strategic planning and making major decisions. It also oversees the Executive Director's (Director Ejecutivo) work. In addition, the structure includes a Technical Committee (Comité Técnico), a consultative body formed by two members of the Board, the Executive Director, the Technical Manager of the USAID/FUNTER Project, and a USAID representative. Created to improve communication about project activities and elicit more direct involvement by board members in decision making, the Technical Committee makes recommendations on major issues pertaining to the USAID/FUNTER Project.

The Executive Director is the highest-level, highest-paid employee of the institution. He is responsible for planning and programming to attain the Foundation's goals and objectives and for directing, staffing, and controlling its activities in accordance with the guidelines provided by the Board of Directors. His functions also include coordinating executive endeavors with other institutions, developing new projects, raising funds both in El Salvador and abroad, and administering these funds.

The Executive Director has a secretary and is supported in his fund raising and other efforts by an assistant for Public Relations. This person is in charge of informing members of the General Assembly about the nature and achievements of ongoing programs, contact potential contributors, and promote the goal image of the Foundation through the media and other means of communication. The Public Relations assistant depends functionally on the Administrator. The rest of the general structure consists of three parts: Central administration, headed by the Administrator, the PONI Program, directed by its coordinator (Coordinador del Programa PONI), and the USAID/FUNTER Project under the direction of the Technical Manager.

The Administrator (see figure 2-2) is entrusted with providing necessary logistical support for implementation and follow-up of financial, personnel, and other management decisions pertaining to the whole structure. His functions include supervision over preparation of budgets and financial statements, design of accountability systems, update and control of personnel records, design and implementation of procurement procedures, and management of financial resources allocated to some of ISRI's rehabilitation centers (built, equipped, and staffed with donations from televised marathons) through the Rehabilitation Center Sponsor (Programa de Protección de Centros de Rehabilitación - PROCER) Program; no staff is assigned to this last component (see Annex 10). The Administrator also functions as the Foundation's controller.

The Administrator supervises the work of an Accountant (Contador General), whose main functions are organizing, implementing, coordinating, and controlling an accounting registration-information system of all FUNTER activities. With the help of two assistants and a secretary, he supervises directly all accounting activities, maintains inventories, prepares the payroll and financial statements, processes payments to contractors, handles accounts payable, initiates the budget process in coordination with the various units, and coordinates with the Technical Manager the elaboration of periodic reports of the USAID/FUNTER Project as well as of other FUNTER activities.

Also under the supervision of the Administrator are five motorists, two messengers, and four guards. One of the motorists is stationed at CRI, another is stationed at FAPRO, and the other three are assigned to the PONI Program. Both messengers work at the central

administration office. Each building (central administration, CRI, and FAPRO) is assigned one guard; the fourth rotates positions covering the other three guards' days off.

The Foundation employs a total of 72 persons (as of September 1990). Forty-five (62.5 percent) of them, including the Technical Manager and her secretary, the entire PAP/FAPRO/CEC/PROMOSER staff, the Accountant, two central administration secretaries, two motorists, one messenger, and three guards, are paid with funds allocated through the USAID/FUNTER Cooperative Agreement. The remaining 27 employees, including the Executive Director, the Administrator (Gerente Administrativo), the Public Relations (Relaciones Públicas) assistant, both accounting assistants, a central administration secretary, a messenger, a guard, a services/cleaning person, and the whole PONI (Let Us Protect Our Children's Hearing Program, Protejamos el Oído de los Niños) staff, are paid with non-USAID funds (see Annex 2-1 and Annex 10-1).

A description of the USAID/FUNTER Project organization (Figure 2-3) is contained in the Introduction. The PONI Program organization (Figure 2-4) is not a USAID funded activity. A description of this program is contained in Annex 10-1, Non-USAID Project Activities.

#### **B. SALARIES**

According to the information provided, FUNTER currently spends a total of U.S.\$ 21,199 (144,150 colones) per month in salaries. (A full personnel list, along with job titles and individual monthly earnings, is presented in Annex 2-1; in order to estimate annual salaries, the monthly figure should be multiplied times 14.4 to include vacations and other paid benefits known as prestaciones.) More than three-fifths (62.7 percent) of the total amount for salaries is paid with USAID funds (see Table 2-1), a proportion virtually identical to the percentage of employees paid with money from the project. Funds from the Cooperative Agreement pay approximately a third (30.5 percent) of the Foundation's central administration salaries. Within the USAID/FUNTER Project, FAPRO and PAP account for the bulk of salary expenditures, obviously because they have more personnel than the other components.

#### **C. EXPENDITURES**

This section focuses on FUNTER's expenditures from September 1987 through August 1990. Purposely excluded are US\$ 300,000 set aside by USAID for direct administration of the project. Four expenditure categories are identified: Salaries and benefits, capital goods (i.e., machinery, equipment, etc. purchased directly by USAID), operational expenditures (i.e., rent, raw material for the Prosthetic Workshop, travel, etc.) and, in the case of FAPRO, a special allocation for technical assistance. The data base is disaggregated by source of funds (FUNTER internal vs. USAID/FUNTER Project) and by component (PAP, FAPRO, CEC, PROMOSER, and central

administration). This information is presented by four-month period and annual subtotals in Annex 2-2.

Aggregate expenditures of the Foundation throughout the three-year period amount to U.S. \$1,820,566 (at a rate of 6.8 colones per dollar). It has increased by 66.0 percent from the first to the second year and by 49.9 percent from the second to the third year. Almost two-thirds (64.5 percent) of the total outlay have been paid under the auspices of the project. The share of the USAID/FUNTER Project out of total annual expenditures has gained importance over time--from 41.9 percent in the first year to 69.5 percent in the second year and 70.2 percent in the third year. This trend reflects FUNTER's active involvement in project implementation; it also implies FUNTER's growing dependence on USAID funds to implement its activities.

Table 2-2 shows the percentage distribution of annual and aggregate expenditures in the salaries-and-benefits, capital-goods, and program-operation categories. (Technical assistance expenditures by FAPRO have been omitted for purposes of comparison.) The data reveal an upward trend in the overall relative importance of salaries and benefits, primarily due to greater allocations of non-project funds to this category. Allocation of internal funds to the purchase of capital goods has increased substantially over the 36-month period. While progressively more project funds have been used to support direct operations, fewer project funds have been directed toward the purchase of capital goods.

Table 2-3 has the same format as the previous one, but examines project expenditures disaggregated by category and component, including outlays in support of FUNTER's central administration. Salaries and benefits account for a relatively small portion of CEC and PROMOSER and are exceeded, proportionately, by operational expenses in every component. FAPRO and PROMOSER, in accordance with the project's goals for these components, exhibit the highest incidence of expenditures on capital goods.

In addition to the U.S. \$1,820,566 aggregate expenditure, since 1987 the Foundation has contributed U.S. \$1,196,860 toward construction, equipment, and/or operations of CIM, ISRI, CROR, CROC, and CEE under the PROCER Program. Most (92.8 percent) of the contributions occurred in 1987, as a result of proceeds from the last televised marathon. CIM, CROC, and, to a lesser extent, CROR have been the main beneficiaries of these contributions.

#### D. OBSERVATIONS AND EVALUATION

Throughout the Foundation one can sense a spirit of commitment, a mystique that makes things happen. Members of the Board of Directors express genuine interest in helping with rehabilitation efforts, and at least half of them support their expressions with significant allocations of their time to FUNTER's affairs. A cause

for concern, however, might be the exclusiveness of the General Assembly, which has not changed since its inception. Potential new members, their membership perhaps conditioned to sizeable and/or continuous financial contributions, could be a source of vitality, not only economically, but also in terms of creativity and contacts. Another cause of concern is the absence of long-term objectives, with virtually no strategic planning, which demonstrates lack of vision by the Board of Directors.

The overall administrative structure seems to be flexible. This presents definite advantages such as allowing administrators to alter potentially inefficient or damaging practices with relative ease, and at the same time correct operational problems such as not having procedure manuals or an organizational chart formally adopted by the institution. A related operational problem is that nobody really knows where certain parts of the structure fit. For example, the Technical Committee is placed by FUNTER's executives (see Figure 2-1) as a consultative body to the Board of Directors because of its importance in decision making; however, since, at least in principle, it has jurisdiction solely over the USAID/FUNTER Project, functionally it should be a consultative body to the Technical Manager. In any event, the Technical Committee is underutilized and operates on an ad-hoc basis as no formal operational guidelines exist.

The Executive Director appears to have excellent rapport with the Board of Directors and with his subordinates. He meets with the Technical Manager and with the Administrator every other week to coordinate activities. This practice, instituted in May 1990, has improved overall communications. He possesses good management skills and communicates well. Yet, sometimes he fails to demonstrate leadership, as in the case of not insisting about adoption of a formal organizational chart and procedure manuals. Whether or not he will be successful in raising funds remains to be seen. He claims that when he took over FUNTER's management in September 1989, the institution was experiencing more outgoing than incoming funds as a result of several unsuccessful fundraising events. Although the 1990 telethon is not sponsored by FUNTER, the Executive Director has been active contacting and visiting individuals and firms with the potential of becoming prominent donors. This level of involvement could be a partial indicator of his success as a fundraiser.

Communication and administrative cooperation do not score so well within the USAID/FUNTER Project, although, at the professional level, people work well together. Component heads were originally hired for their technical qualities; consequently, with the exception of the FAPRO manager, they possess few administrative skills. It behooves the Technical Manager to exercise administrative leadership within the project. However, she does not possess a degree in Administration nor much previous experience.

The Technical Manager and the four staff members directly under her supervision meet once a month. In addition, PAP-FAPRO and CEC-PROMOSER heads hold monthly meetings with the Technical Manager. Meetings seem to be more oriented toward reacting to amputee care and other target populations' problems than creating ways to improve internal coordination.

The four components need to be brought together under a truly comprehensive and visionary plan of activities and supervised in a collegiate manner beyond available capabilities. Although some effective communication exists among components, it tends to be informative rather than programmatic. Some avenues worth exploring might be:

1. that CEC coordinate with PAP's visits to rural areas a follow-up survey on health promoters' application of knowledge gained at the CEC seminars;
2. more involvement on the part of the rehabilitation staff of all components in selecting materials to be included in the CEC library; and
3. better use by PAP of the CEC Coordinator's vocational rehabilitation background in planning and implementing the project to reincorporate amputees socially within their communities after being fitted with prostheses, especially when it comes to contacting and seeking support by the business community.

At the same time, both PAP and FAPRO need a strong clinical leader to integrate the members of their multidisciplinary medical team into a coordinated group that offer as much comprehensive rehabilitation as resources and institutional scope permit. These professionals work well with one another, especially when they visit rural sites, but fall short of providing a team approach (see Part III for a more thorough discussion of absence of a team approach). What may be needed is a functional split of the Technical Manager's position into two positions: An administrative post, which might be called Project Manager (Gerente del Proyecto), responsible for all project funded activities implemented by PAP, FAPRO, CEC, and PROMOSER, and a second position, called Medical Director (Director Médico), to coordinate clinical services offered by PAP and FAPRO. In any event, management and sensitivity training are needed at all levels of operation.

Independently of personnel considerations, working in three sites is not conducive to administrative efficiency or technical coordination. Traveling from one location to another constitutes a waste of time. It also is a barrier to full staff integration; it curtails communication and cooperation. Instead of everybody experiencing a feeling of belonging to FUNTER, workers tend to identify themselves as CRI, FAPRO, or central administration

employees. The communication problem is exacerbated by limited access to telephone lines, which reduces, and often even eliminates, both incoming and outgoing calls, especially at CRI and, to a lesser extent, at FAPRO.

The tendency of the staff to identify with specific components rather than with the Foundation as a whole due to physical separation is aggravated by FUNTER's presentation of its components as separate programs. The USAID/FUNTER Project is composed of interrelated activities (i.e., PAP treats amputees directly, FAPRO manufactures and fits prostheses, CEC educates and raises awareness about disabilities and the rehabilitation process, and PROMOSER supports agencies serving persons with disabilities). Each has been created for the sake of complementing the others and all together justify the existence of, and receive support from, the central organization. By focusing exclusively on parts, oftentimes one fails to appreciate and understand the wholeness of the institution.

Space is a serious constraint at CRI. Social workers are overcrowded in a small room. The physical therapist cannot treat more patients simultaneously or with greater variety of therapy because of lack of space. The psychologist conducts her sessions next to the kitchen, where many employees take their breaks, thus limiting privacy. The physiatrists' examination room is so small that it hardly allows for adequate functional evaluation, including gait analysis. CEC library materials remain stored in boxes because there is no place to put shelves.

Statistical reporting from the financial information system is solid, as both computer hardware and software are adequate. The system provides good accountability and possesses the flexibility to obtain answers for specific questions. A few suggestions might contribute to making it even better. One small problem encountered is that it allocates salary expenses inaccurately. For example, the Technical Manager's salary is recorded as part of the central administration and her secretary's salary is charged to CEC; both should be classified as part of project management. Another deficiency is that the salary of the CEC/PROMOSER secretary appears as part of PAP. A third deficiency is that all of the CRI building's rent and other fixed expenses (i.e., electricity, water, etc.) are charged to PAP, so that the true cost of both CEC and PROMOSER are underestimated.

Another reporting inconsistency is that donations by organizations such as the Latin American Ladies (Damas Latinoamericanas), American Ladies (Damas Americanas), Lions' Club (Club de Leones), Latin American Association of Residents (Asociación Latinoamericana de Residentes), and others to cover the cost of individual prostheses are entered as a USAID/FUNTER Project expense. Over time, these donations amount to approximately U.S. \$18,382, a rather substantial sum of money, and should be recorded as a

recovered expense which, in the long run, will contribute toward enhancing the Foundation's prospects for sustainability.

A relatively small fraction of FUNTER's expenditures is accounted for by salaries and benefits, leaving plenty of funds for operations. The acquisition of capital goods has been steady, and the USAID share of the first year in this regard has been replaced by internal funds, not all of which are directed toward supporting USAID/FUNTER Project activities. This reflects at least some institutional ability to take over payments and other commitments when and if USAID decides to withdraw.

## **E. CONCLUSIONS AND LESSONS LEARNED**

Over the last three years FUNTER has grown substantially both in size and scope. This growth has been possible, to a large extent, because of the cooperative agreement signed with USAID. In spite of the many persons hired to offer all sorts of services, staff selection has been excellent. Employees not only work well with one another at all levels, but show a high degree of pride, commitment, and enthusiasm in their performance. Any institution capable of eliciting such response from its personnel is on its way to success. By and large the organizational environment is relaxed and, given the constraints faced by FUNTER, operations are conducted efficiently.

The overall administrative structure that has developed allows for changes which inevitably arise in a growing agency. The financial information system responds well to users' (inside as well as outside the institution) needs and is adequately computerized. All these constitute strong linkages.

Several weaknesses, some of them serious, have been detected. Physical separation of the three offices is a problem. Not only do effectiveness and operational efficiency suffer, but the various personnel subsets tend to develop independently of one another, which may give rise to conflicts in the future when everybody eventually is brought together (i.e., different subsets of the Foundation experiencing potential incompatibility with one another, jealousy, perceptions of favoritism, etc.).

Another weakness is that the Foundation does not promote itself as a comprehensive entity serving different populations. Instead, it is perceived by many people, including some members of the staff, as a loose collection of programs operating autonomously, if not independently, of one another. FUNTER needs to develop and embrace a sense of integration more consistent with a systems approach to management. Along these lines, the virtual absence of operational relationships, in terms of objectives, activities, etc., between the USAID/FUNTER Project and the PONI Program is conspicuous. One finds it difficult to believe that both exist within the same organizational framework.

Space is an immediate concern. Almost everybody at CRI is affected. Not only is this a long-run problem that must be addressed as size of target populations grows, but at present it is also impairing both quantity and quality of services rendered.

Finally, management needs to correct weaknesses related to lack of coordination and insufficiency of managerial skills within the USAID/FUNTER Project (see recommendations below).

#### F. RECOMMENDATIONS

1. All FUNTER programs and personnel should be concentrated in a single location with sufficient space to reduce lost time and resources and improve communication within the project and the Foundation. In the long run (by June 1992), FUNTER ought to purchase or construct a building. In the interim, personnel currently located at Escalón and at CRI should consolidate their offices in a substantially larger, leased site. (This seems to be an appropriate time to implement this recommendation since the owners of the Escalón house have asked FUNTER to look for other facilities.) For the present, FAPRO can continue operations adequately in the building it currently occupies because a move at this time would imply considerable effort and expense in conditioning the physical plant. FAPRO's need for 200 more square meters (for a total of 600 square meters) to accommodate additional equipment and trainees recommended in Part IV of this evaluation can be addressed in the short run by constructing a roof over the open patio area in the back of the building. More space also is needed for the areas of psychology, physical therapy, social work and the library, even if it means reducing the size of administrators' offices.
2. The position of Technical Manager of the USAID/FUNTER Project should be divided on a functional basis into two positions: A Project Manager in charge of planning, programming, coordinating, and controlling the work of the various components, and a Medical Director who would coordinate equally with the Project Manager on administrative matters and be in charge of clinical services provided by PAP and FAPRO. If this split is not possible because of constraints not contemplated in this evaluation, the Technical Manager position should be addressed in terms of its current administrative weaknesses.
3. FUNTER should hire a consultant to study ways in which the Foundation could adopt and project more integration in its activities and provide suggestions for fundraising and image making. The same consultant ought to explore

meaningful ways in which the USAID/FUNTER Project and the PONI Program may find some common grounds in identifying target populations and develop mutual support, coordinating activities with each other.

4. PAP, FAPRO, CEC, and PROMOSER should increase both quantity and quality of internal coordination in order to make better use of existing resources. More knowledge and input should be shared among the four components. Specifically, the CEC Coordinator should be used by PAP as a consultant in matters pertaining to professional rehabilitation, CEC should assist in contacting potential employers in behalf of PAP patients in the professional rehabilitation project, PROMOSER should assist CEC in organizing and implementing awareness and education courses, and more advantage should be taken of field trips by one another to follow-up on individual component activities.
5. A management consultant should be hired by FUNTER for one month to conduct training sessions and workshops for, as well as interact individually with, the Executive Director, the Administrator, and the USAID/FUNTER staff. The topic of these sessions should be organizational development, supervision, planning (both strategic and tactical), and control.
6. FUNTER's General Assembly should seek expansion through recruitment of new members, perhaps in a category other than founding members, based on the size and continuity of their financial support.
7. FUNTER's accounting procedures should allocate expenses more accurately and in accordance with actual practices in the organizational chart.

Table 2-1. FUNTER's monthly salaries by administrative division and source of funds, September 1990.

Administrative Division	Monthly Salaries (U.S. \$ Equivalent)		
	Total	USAID Funds	Other Funds
Total	21,199	13,281	7,918
FUNTER's central administration	6,049	1,846	4,203
USAID/FUNTER Project	11,435	11,435	-
Administration	1,471	1,471	-
PAP	3,854	3,854	-
FAPRO	4,331	4,331	-
CEC	735	735	-
PROMOSER	1,044	1,044	-
PONI Program	3,715	-	3,715

Table 2-2. Percentage composition of FUNTER's annual and aggregate expenditures spanning September 1987 through August 1990, by source of funds and expenditure category.

Source of Funds and Expenditure Category	Total	Year (percentage)		
		Sep 1987 Aug 1988	Sep 1988 Aug 1989	Sep 1989 Aug 1990
Total	100.0	100.0	100.0	100.0
Salaries and benefits	27.5	19.1	32.6	28.6
Capital goods	14.8	19.7	7.4	16.5
Operational expenses	57.7	61.2	60.0	54.9
USAID funds	100.0	100.0	100.0	100.0
Salaries and benefits	30.8	34.4	36.8	27.0
Capital goods	16.4	43.2	9.4	12.3
Operational expenses	52.8	22.4	53.8	60.7
Non-USAID funds	100.0	100.0	100.0	100.0
Salaries and benefits	22.8	8.1	26.8	31.7
Capital goods	12.5	2.7	4.6	25.4
Operational expenses	64.7	89.2	68.6	42.9

Table 2-3. Percentage composition of USAID/FUNTER Project's annual and aggregate expenditures spanning September 1987 through August 1990, by source of funds and expenditure category.

Source of Funds and Expenditure Category	Year (percentage)			
	Total	Sep 1987 Aug 1988	Sep 1988 Aug 1989	Sep 1989 Aug 1990
USAID/FUNTER Project	100.0	100.0	100.0	100.0
Salaries and benefits	30.8	34.4	36.8	27.0
Capital goods	16.4	43.2	9.4	12.3
Operational expenses	52.8	22.4	53.8	60.7
Central admin. support	100.0	100.0	100.0	100.0
Salaries and benefits	51.7	60.0	50.7	48.7
Capital goods	6.7	16.5	7.0	2.0
Operational expenses	41.6	23.5	42.3	49.3
PAP	100.0	100.0	100.0	100.0
Salaries and benefits	42.4	76.7	34.0	45.0
Capital goods	7.2	8.5	18.7	1.6
Operational expenses	50.4	14.8	47.3	53.4
FAPRO	100.0	100.0	100.0	100.0
Salaries and benefits	26.1	26.9	36.7	20.6
Capital goods	20.4	54.3	8.6	11.9
Operational expenses	53.5	18.8	54.7	67.5
CEC	100.0	100.0	100.0	100.0
Salaries and benefits	19.2	31.6	25.2	15.4
Capital goods	13.4	4.7	-	19.2
Operational expenses	67.4	63.7	74.8	65.4
PROMOSER	100.0	-	100.0	100.0
Salaries and benefits	13.3	-	-	14.7
Capital goods	32.4	-	-	35.8
Operational expenses	54.3	-	100.0	49.5

Figure 2-1. FUNTER's ORGANIZATIONAL CHART, SEPTEMBER 1990

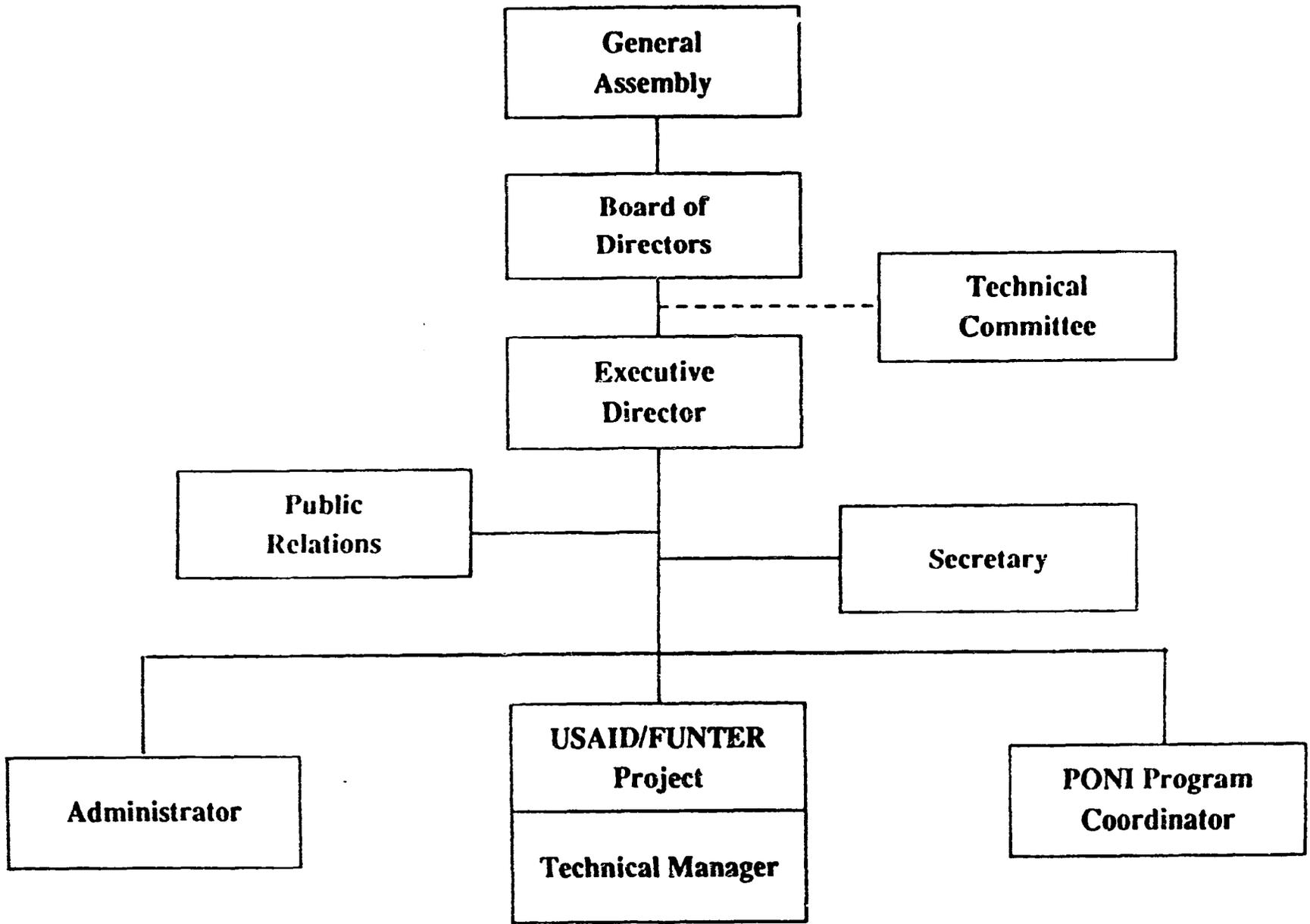


Figure 2-2. FUNTER's CENTRAL ADMINISTRATION

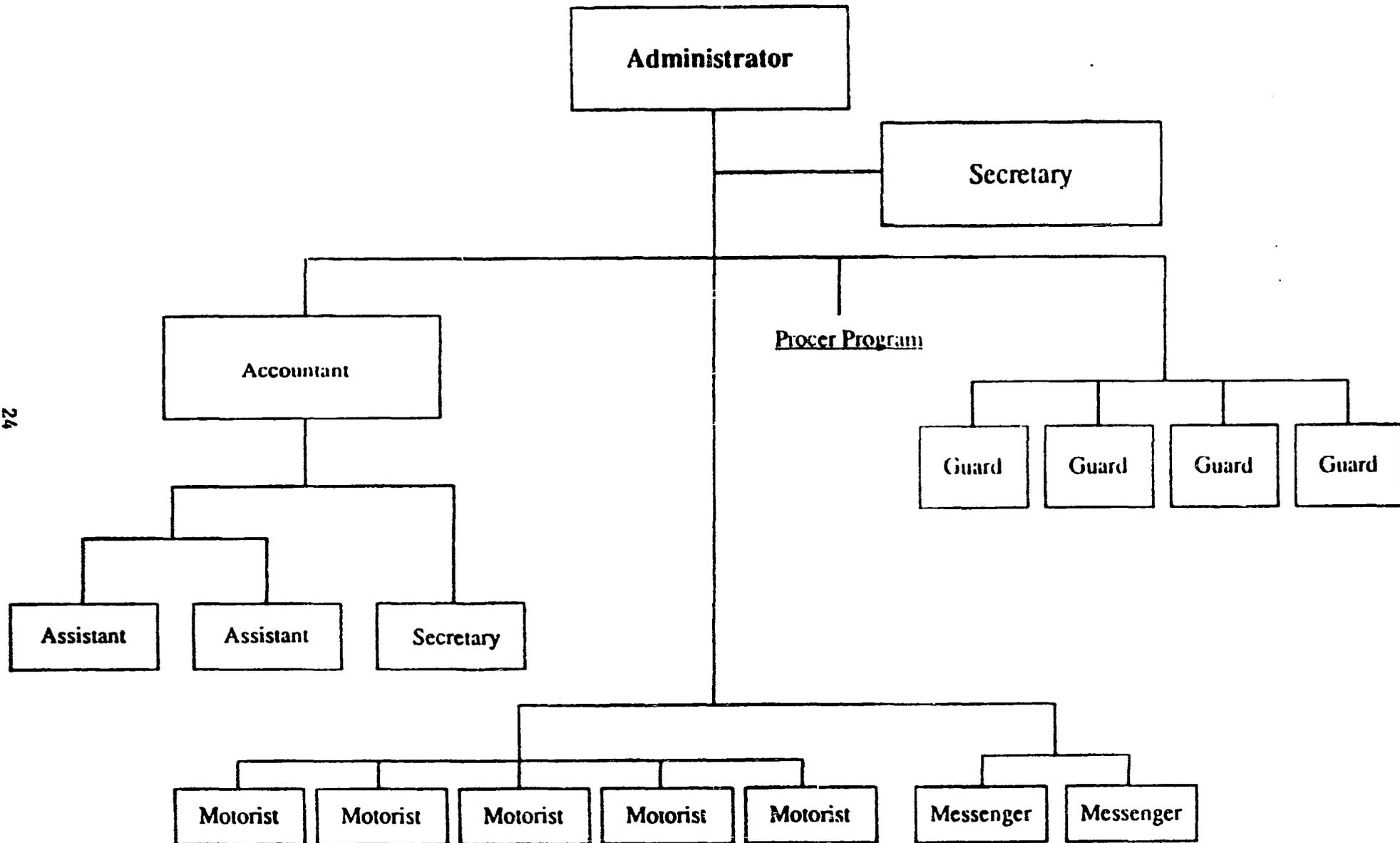
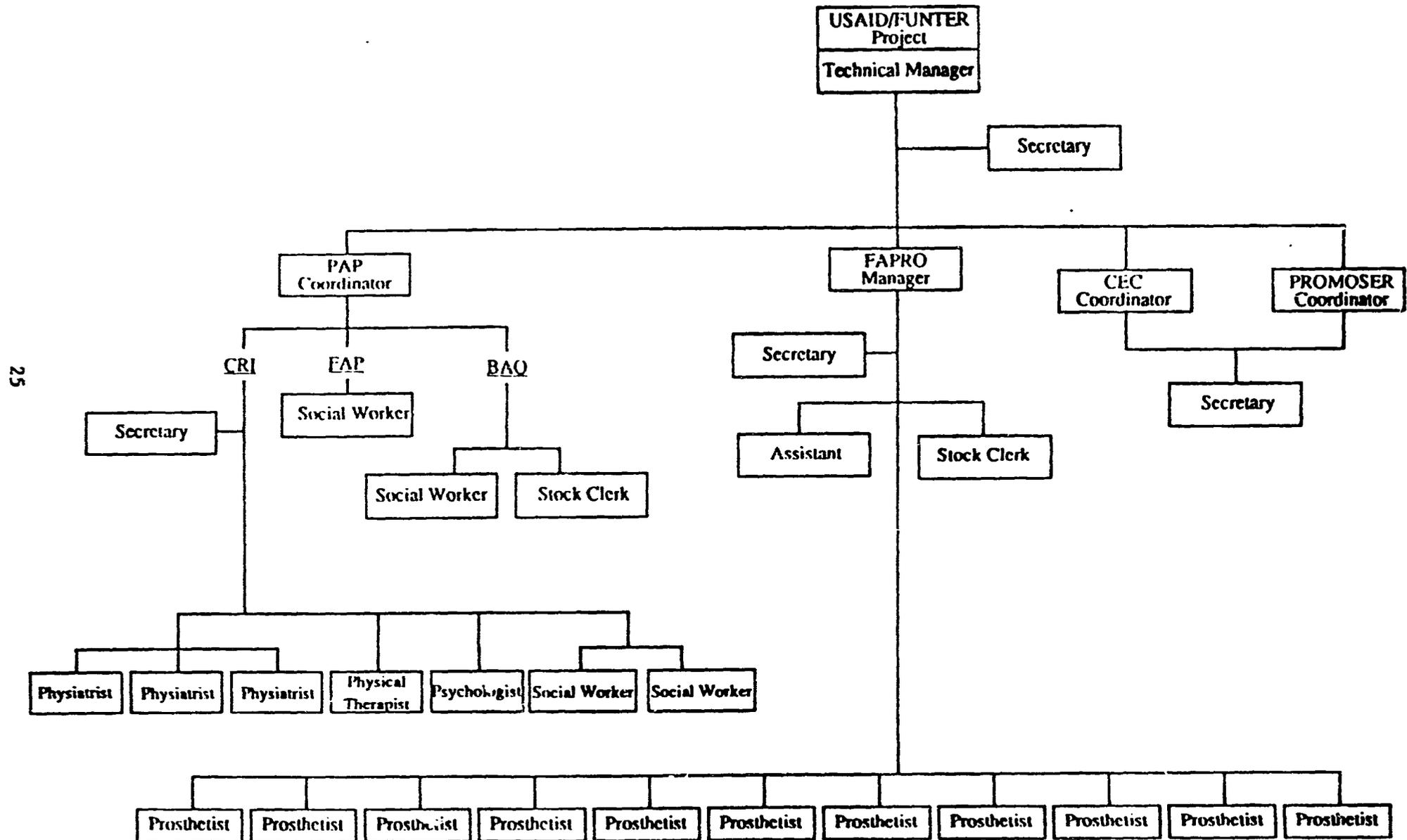
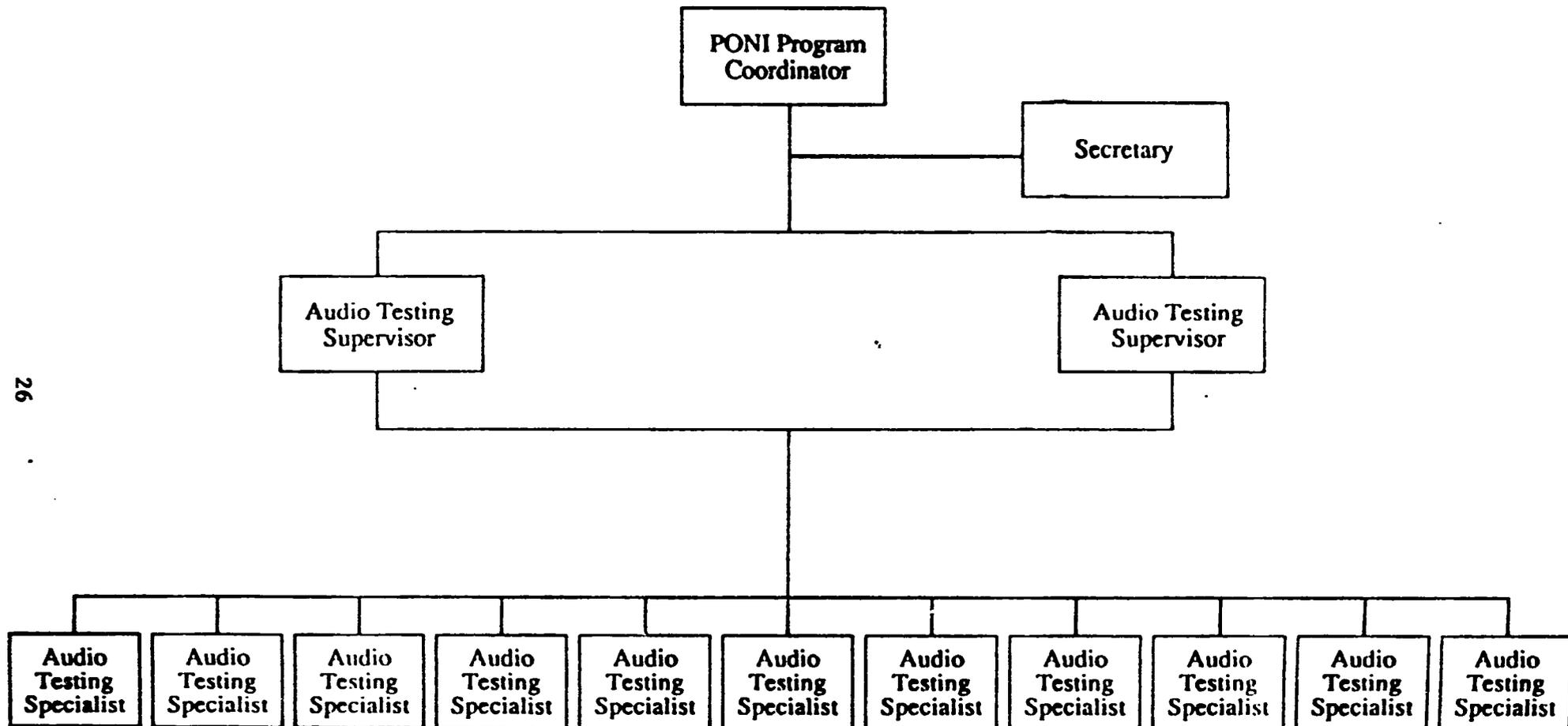


Figure 2-3. USAID/FUNTER PROJECT



**Figure 2-4. PONI PROGRAM**



### III. PATIENT SUPPORT SYSTEM (PAP)

#### A. BACKGROUND AND OBJECTIVES

This component has been oriented exclusively toward amputees and coordinates with the Prosthetic Workshop. It provides pre- and post-prosthetic services such as social work, psychological counseling, medical examinations, physical therapy, financial aid, and, to a limited extent, assistance in job placement and/or training for placement.

Figure 3-1 illustrates the various stages of the amputee flow chart, developed for this evaluation. Upon arrival, the potential patient is interviewed by a social worker located at CRI. If the person is not an amputee (or born without a limb), but possesses a limitation, he/she is referred to an agency rendering services to people with that limitation; if, conversely, the person is an amputee (or born without a limb), he/she undergoes an initial interview. Questions include general information (name, address and telephone number, urban-rural location, sex, place and date of birth, and marital status); names and ages of members of the same family nucleus; schooling; occupation and training; work experience; vocational interests (possible studies, hobbies, and sports); current job and job prior to amputation; income, expenditures, and debt; housing (tenure, electricity, potable water, and monthly rent); sources of referral; reason for and date of amputation; type of amputation, place where it occurred, and physical condition; and shoe size. Patients who intend to pay for the prosthetic device fully are only asked questions of general nature regarding their amputation. Two different evaluation forms exist, for whichever of the two cases applies, recording the initial interview.

The amputee then passes to the medical section; one of three physiatrists examines him/her and determines whether or not the patient's residual limb is suitable for fitting with a prosthesis. If it is not, the patient is placed under the care of the physical therapist (an evaluation sheet is filled containing data on patient's name and address, sex, age, occupation, cause of amputation, medical diagnosis, and dates and type of physical therapy administered) and referred back to the physiatrist at the end of treatment for further evaluation. Another evaluation form is filled by the physiatrist for each visit recording patient's name, address, age, occupation, date of accident, and date and type of amputation, plus physiatrist's evaluation, observations, and prosthetic prescription.

When the physiatrist considers the patient fit for prosthetic treatment (or before, if emotional problems are detected), the next stage consists of psychological evaluation and motivation support. One psychologist provides these services to all amputees. Data on

patient's name, address, date of birth, marital status, schooling, occupation, and relationship to other family members, as well as psychologist's observations and evaluation, are recorded yet in another form. Once this third stage is concluded, the patient is ready to go to the Prosthetic Workshop for casting.

On the day of delivery of the prosthesis, a social worker, the physical therapist, the psychologist, and the physiatrist meet with the prosthetist at FAPRO. The psychologist talks to the amputees in an attempt to motivate them and open up new horizons--things that could not be done before and are feasible with the artificial limb. The physical therapist explains fundamentals of prosthetic care/hygiene and hands out booklets that patients can take with them (three such booklets exist).

The social worker ascertains patient's ability to pay according to his/her socioeconomic condition and establishes the portion, if any, of the market price of the prosthesis subsidized by FUNTER and the portion to be paid by the patient, the latter usually consisting of a modest down payment plus installments. Unless the prosthesis is fully subsidized or paid outright, the patient signs a contract describing the prosthetic device, amount owed, and intended mode of payment. In addition, all patients are asked to sign a different form acknowledging receipt.

At this time, patients undergo another medical examination by the physiatrist, who decides if the prosthesis is adequate. One of three evaluation forms (for each type of prosthesis--above knee, below knee, and upper limb), containing numerous technical questions and a detailed protocol regarding the appropriateness of the device, is used in the final assessment. Once the amputee receives the prosthesis, he/she is asked to return in approximately three months for a check-up visit. Subsequent visits depend on patient's needs and experiences.

Amputees from outside San Salvador who cannot afford travel expenses are reimbursed the cost of the bus ticket. They also are provided with transportation from the bus terminal to CRI and back to the bus terminal. Lodging expenses are absorbed by the USAID/FUNTER Project if they need to stay overnight due to prosthesis manufacture or repair. In addition, a free lunch is given to patients of scarce resources who happen to be at either CRI or FAPRO waiting room between noon and 2:00 p.m.

Besides conducting the initial interview, assessing patients' ability to pay, ensuring that payment contracts are signed, and attending to patients' needs for overnight shelters, social workers coordinate referrals to hospitals; develop a socioeconomic profile for each patient; make home visits to amputees whose prosthesis has been fully subsidized and/or as advised by the medical team (i.e., psychologist, physiatrist, physical therapist, or prosthetist); locate amputees who do not show up for treatment; contact patients

who, for whatever reason, get lost in the system, through telephone, telegraph, or radio; find sponsors who defray the expenses of prostheses for amputees unable to pay; manage BAO, which is a bank/distribution system for wheelchairs, crutches, walkers, and other orthopedic appliances; and are in charge of the amputee tracking system as they identify previously undetected amputees, mostly in rural areas, while visiting municipalities throughout the country. This last activity is related to the national amputee registry, El Salvador's only formal tool with which the size of the amputee universe may be estimated.

## B. PROGRESS AND ACCOMPLISHMENTS

According to the national registry, a total of 1,670 amputees have been identified in El Salvador through August 1990. Of these, 1,268 amputees, or approximately three-fourths (75.9 percent), have been served directly by FUNTER in one way or another (i.e., have a clinical file). The remaining one-fourth have not received direct services because of various reasons. Most of these have incomplete addresses or have changed residence; some have not been able to travel to CRI or benefit from the rural extension program; others are dead, have left the country, or are in jail; still others are too old or need surgery before prosthesis; and the rest already have obtained artificial limbs using other means, are still pending, or simply refuse a prosthetic device.

The national amputee registry was started with a list of 1,155 persons compiled by the Knights of Malta. Throughout 1988 and in the first three months of 1989, 89 more persons were added to the registry, most of them persons who visited CRI for treatment. In April 1989 a drive was launched to identify all remaining undetected amputees nationwide. This drive has spotted 426 cases in 17 months (an average of 25.2 cases per month through August 1990) for a total of 1,670 observation units. The growth of the registry has not been uniform. It recorded an expansion of 50 cases in April 1989, 77 cases in May-August 1989, 83 cases in September-December 1989, 142 cases in January-April 1990, and 74 cases in May-August 1990. In the last three months of this series (i.e., June-August 1990), only an average of 13 amputees per month have been discovered, which might indicate that PAP social workers are close to exhausting the unidentified population or a need to apply different strategies.

Three out of four (74.1 percent) amputees with PAP clinical files are men. Almost three-fifths (58.1 percent) live in rural areas. The patients' regional distribution, presented in Table 3-1, reveals that 44.1 percent are concentrated in the Central Region, with over one-fourth (26.6 percent) of all cases reported in the capital city. Table 3-1 also shows a substantial number of patients in the Eastern Region, especially in Usulután and San Miguel. The Middle Central Region shows the lowest incidences of amputees receiving care by PAP, probably because of the ongoing

military conflict in that area.

According to monthly reports, a total of 973 prostheses have been delivered to 956 patients from May 1988 to August 1990. (This figure is underestimated by 59 prostheses during August-December 1988 which do not appear in the monthly reports; yet other documents record their delivery. Thus, the total number of deliveries should be 1,032 prostheses.) One can observe in Table 3-2 that the official number of prostheses delivered has climbed from 147 units in 1988 to 446 units in 1989 and 380 units in the first eight months of 1990, that is, a definite upward trend. A more careful look at the data suggests, however, that the delivery capacity per four-month period may be at about 200 devices and has been approached in May-August 1989, January-April 1990, and May-August 1990. The decline in deliveries during September-December 1989 reflects the military offensive which occurred in November.

By far most (86.7 percent) artificial limbs delivered are lower extremities. One should consider, however, that throughout 1988 no upper-limb deliveries could be made because the Prosthetic Workshop was not capable of producing them until December 1988. From January to August 1990 the relative importance of upper-extremity prostheses is slightly less than one fifth (18.7 percent). Within the lower-extremity category, below-knee outnumber above-knee prostheses almost two to one and temporary devices account for over one-third (35.9 percent) of the total. Over time the percentage of temporary prostheses has been on the rise. Within the upper-extremity category, the incidence of below-elbow devices is much greater than above elbow.

Recipients of prosthetic devices are fairly evenly distributed by age (see Table 3-3). Children under ten account for only 3.2 percent of all amputees. The incidence increases to 12.9 percent for patients 10-19 years old and 15.3 percent for patients 20-29 years old, declining steadily thereafter for subsequent age groups. Age is unknown for over one-fifth (21.2 percent) of recipients. Many of these received their prostheses in 1988, when patient's age was not recorded. The incidence of patients with age unknown in 1989 and 1990 is substantially smaller (11.2 percent).

PAP's monthly reports contain data on the value of sales based on the following prices: Two types of above-knee prostheses (U.S. \$610 for suction socket and U.S. \$657 for pelvic band); three types of below-knee prostheses (U.S. \$351 for SYMES, U.S. \$377 for PTB, and U.S. \$456 for joint and lacer); U.S. \$926 for above-elbow prostheses; and U.S. \$529 for below-elbow prostheses. These prices include treatment by the various rehabilitation professionals of PAP's multidisciplinary team as well as production costs. Prices in the U.S. for similar prostheses are substantially higher, in the order of US\$ 5,000 for suction socket; US\$ 5,500 for pelvic band; US\$ 3,500 for SYMES; and US\$ 3,000 for PTB, all lower-limb devices. Comparable U.S. prices for upper-limb prostheses are US\$ 10,000

above elbow and US\$ 7,500 below elbow. FAPRO's prices are about one-half of what private manufacturers in Central America charge for similar products.

PAP also reports monthly the value of discounts extended to virtually all patients. These discounts range between zero and 30 percent depending on patient's ability to pay. Table 3-4 shows the value of PAP prosthetic sales at market and discounted prices for May 1988 - August 1990. According to these data, the market value of the 973 prostheses sold over the 28-month period is U.S. \$355,055, an average price of U.S. \$365 per prosthesis. (The average price may seem excessively low because 31.1 percent of all devices delivered are temporary; consequently, they sell for substantially less than permanent ones.) The relationship between the market and the discounted value reveals that, on average, patients have received discounts of 23.3 percent of the market price. Discounts have declined from 29.0 percent for September 1988 - August 1989 to 20.7 percent of market price for September 1989 - August 1990.

In addition to absorbing the discount, the USAID/FUNTER Project subsidizes whatever portion of the prosthesis price patients cannot pay. On average, this amounts to 72.4 percent of the discounted value (see Table 3-4). In other words, patients have agreed to pay out of their own funds and/or donors have been found to contribute toward 27.6 percent of the discounted value (21.1 percent of the full market value) of all artificial limbs delivered. The size of the subsidy has risen over time--from 55.9 percent of discounted value in May-August 1989 to 69.6 percent in September 1988 - August 1989 and 77.8 percent in September 1989 - August 1990, as PAP identifies more amputees in remote rural areas through the national registry and broadens its coverage through the rural extension program, providing prostheses to some of the most economically deprived segments of the population.

The "USAID/FUNTER subsidy" referred to in Table 3-4 is paid entirely with USAID funds (project-sourced). Contributions on behalf of patients from donors and other sources are included under "down payment."

"Down payment" plus "balance owed" add up to "patient's responsibility." "Patient's responsibility" plus "USAID/FUNTER's subsidy" add up to "value of sales (discounted price)." This relationship is explained in Section III. D.

Of the prosthetic sales discounted value classified as patient's responsibility, less than two-fifths (38.8 percent) is received by PAP up front in the form of down payment by the patient or specific donation in his/her behalf. This portion has increased substantially over time, from 29.6 percent during September 1988 - August 1989 to 47.0 percent during September 1989 - August 1990, probably reflecting the success of PAP staff in obtaining

contributions for specific patients. As of September 1990, of the U.S. \$45,937 of patient responsibility in promissory notes, U.S. \$25,276 (55.0 percent) were in arrears. Why has such a large number of amputees stopped paying? Is it because they are unemployed after being fitted with their prosthesis and cannot afford to keep up with installments? If this were the case, it would provide an excellent rationale for setting up a professional/vocational rehabilitation effort. Or is it that they stop paying because they realize that payment cannot be enforced? If so, perhaps more careful screening of patients is in order. Further research is needed in determining reasons why so many patients fail to comply with their financial obligation.

Information on various activities performed by members of the multidisciplinary medical team are summarized in Table 3-5. Between May 1988 and September 1990 social workers have reported a total of 1,219 initial interviews with patients and 2,268 subsequent interviews. The number of initial interviews has risen rather slowly, which reflects changes in patient in-coming rate, but quite a few subsequent interviews are conducted toward the latter months of the series. Over two-thirds (67.8 percent) of the subsequent interviews have taken place in the last 12 months of the evaluation period. Similarly, an increasing number of patient socioeconomic profiles are being developed; of the 363 profiles reported over the 28-month span, almost two-thirds (65.3 percent) have been processed in the last year. Social workers have been busy, too traveling to the field attempting to contact amputees and draw them to CRI. A total of 656 such visits are registered, 86.1 percent of them occurring between September 1989 and August 1990.

Data for activities related to physical therapy are available starting in January 1989. Since then the physical therapist reports 490 patient evaluations, more in the first eight months of 1990 than all throughout 1989. She also reports 756 patient training sessions, at an incidence which has fluctuated little in the last 12 months; 148 lectures on prosthetic care and hygiene at a slightly increasing rate during the past year; and 13 home visits, all but one in 1990, to patients who, because of their condition, cannot travel to CRI.

The physiatrists report 2,529 medical examinations from May 1988 to August 1989. The number of these examinations per four-month period increases steadily until peaking in May-August 1989 and declines subsequently. Finally, records on psychological orientation services rendered go back only to July 1989. Over the 14-month span since then, accomplishments by the psychologist include holding 233 initial interviews, 159 subsequent interviews, 37 group therapy sessions, and 27 family therapy sessions.

In the first seven months of 1990, the FAP social worker wrote 71 letters to potential donors in behalf of amputees who could not pay for their prosthetic device. These letters have led (through

August 1990) to 23 contributions amounting to U.S. \$9,582, a fairly high rate of positive response (32.4 percent). This activity should include a follow-up element to ascertain why the other two-thirds have not contributed, so that a donor profile may be developed and the probability of a successful reply be enhanced.

### C. DEMAND PROJECTIONS

The demand for prosthesis can be projected through August 1991 using a linear equation, a quadratic equation or regression analysis (see Annex 9 for a complete discussion of these methodologies). In addition, these methodologies can be applied to different data sets, e.g. PAP service delivery or FAPRO production. In this section, the results produced by applying the different methodologies to different data sets will be compared to arrive at a "best estimate" of the demand for prosthesis.

The following table indicates the projected number of newly detected amputees by four-month periods from September 1990 to August 1991 using both the linear and quadratic equation methods.

	Projected Number of Newly Detected Amputees	
	<u>Linear Equation</u>	<u>Quadratic Equation</u>
September-December 1990	86	68
January-April 1991	80	43
May-August 1991	74	12
September 1990-August 1991	240	123

According to the quadratic equation method, virtually all amputees in El Salvador will have been identified by August 1991. Although neither methodology produces results which are statistically significant, the quadratic method is able to better accommodate the decline in registration of previously undetected amputees experienced in the last few months of the series, that is, of this evaluation.

Prosthetic devices in El Salvador have a life expectancy estimated by the Evaluation Team to be between two and four years. (A life expectancy of three years was used in estimating demand.) The team felt that a two-year life expectancy, commonly used in the United States, is too low for El Salvador where consumer expectations for fit and comfort are lower. Children's prostheses need to be changed approximately yearly. As less than 4 percent of those served by FUNTER have been children under 10, however, their effect

on demand would be negligible. Total demand estimates ought to include replacement, perhaps with the use of a depreciation rate which could be set at one-third of the number of artificial limbs delivered by PAP in the same four-month period of in previous years. Thus, for example, replacement demand for September-December 1990 is projected to be one-third of 66 prostheses delivered during September-December 1988, plus 102 prostheses delivered in September-December 1989, that is 56 units. If the replacement values are added to the first-time demand estimates presented above, the following results are obtained:

	Projected Demand For Prosthetic Devices <u>Including Replacement</u>	
	<u>Linear Equation</u>	<u>Quadratic Equation</u>
September-December 1990	142	124
January-April 1991	199	162
May-August 1991	223	161
September 1990-August 1991	564	447

Applying the same methodology to monthly data on the number of artificial limbs delivered by PAP between May 1988 and August 1990, the following projections can be made:

	Projected PAP Delivery As <u>Indicator of Demand</u>	
	<u>Linear Equation</u>	<u>Quadratic Equation</u>
September-December 1990	206	164
January-April 1991	222	149
May-August 1991	238	127
September 1990-August 1991	666	440

Prosthetic activity in the near future also can be projected utilizing monthly production data from FAPRO for the same period. Applying the same projection procedure to these data yields estimates similar to those obtained when projecting data from PAP. That is, the linear equation suggests a 12-month activity following the period of this evaluation of 680 units (instead of 666 units using PAP data), and the quadratic equation suggests 418 units (instead of 440 units using PAP data) (see graph on next page).

	<u>Projected FAPRO Production As Indicator of Demand</u>	
	<u>Linear Equation</u>	<u>Quadratic Equation</u>
September-December 1990	214	165
January-April 1991	226	142
May-August 1991	240	111
September 1990-August 1991	680	418

If the three projections are blended in equal proportions, thus taking into consideration both linear and quadratic estimates, continued identification of previously undetected amputees, artificial limb replacement and historical trends for both PAP and FAPRO, probably the most realistic estimates are obtained. These estimates, presented below, indicate a constant level of performance in the order of 180 artificial limbs per four-month period, a total of 535 units between September 1990 and August 1991.

	<u>Best Estimates of Demand Using Three Methods</u>
September-December 1990	169
January-April 1991	183
May-August 1991	183
September 1990-August 1991	535

During the first eight months of 1990, more than three-quarters (77.3 percent) of the prostheses manufactured by FAPRO were to fit lower-extremity amputees (26.3 percent above the knee; 51.0 percent below the knee). Most of the upper-limb devices (21.4 percent of the total) were below the elbow, and only a small fraction (1.3 percent of the total) were above the elbow. If these proportions are held constant throughout the September 1990 - August 1991 year, the composition of the estimated 535 prostheses produced/demanded during the 12-month period would be as follows: 141 devices above the knee, 273 devices below the knee, seven devices above the elbow, and 114 devices below the elbow. Using the price(s) for each type of prosthesis reported in Section III. B. of this Evaluation Report, the projected cost of providing the 535 artificial limbs is estimated to be U.S. \$264,397. The cost of the same mix in the United States would be about U.S. \$2.55 million.

PROJECTED COST OF ARTIFICIAL LIMBS (U.S. \$) SEPT 1990 - AUG 1991

Type of Prosthesis	Units	<u>In FAPRO</u>		<u>In the United States</u>	
		<u>Price</u>	<u>Total Cost</u>	<u>Price</u>	<u>Total Cost</u>
Above knee	141	632	89,162	5,250	740,250
Below knee	273	397	108,397	3,250	887,250
Above elbow	7	926	6,485	10,000	70,000
Below elbow	114	529	60,353	7,500	855,000
Total	535		264,397		2,552,500

D. OBSERVATIONS AND EVALUATION

The various members of the multidisciplinary team work well in providing their respective services. They are committed professionals who take their jobs seriously. Social workers are overloaded. Now that one of them has been assigned to work in BAO, their overload, as well as their scanty clerical support, are likely to become more obvious. The forms they have designed for their various activities are excellent and their adherence to the protocol they have developed allows them to cover so much ground. They need more room to do their paperwork and hold interviews, especially if more social workers are hired as PAP's number of patients rises and the scope of their work is broadened.

The physical therapist's attitude and patient contact are very good, and the quality of treatment rendered by her is adequate. Normally there is no patient waiting list, but additional space could increase both range of treatment provided and number of persons receiving treatment simultaneously. She is knowledgeable about prosthetic residual limb wrapping, ranging joints to avoid flexion contractures which may affect ambulation potential, and strengthening hip extensor and other key muscular groups to ensure stance phase stability. She communicates well with patients and seems to be a good candidate for training.

Therapeutic equipment at PAP is basic. It does not include mats for individual or group activities, or other physical agents or modalities such as ultrasound, tens, cold packs, bicycles, etc. Both the number of hours of patient care and the system used to reduce intensity of treatment are adequate. However, two deficiencies are detected. One is that the physical therapist does not meet with colleagues serving amputees in other institutions to share evaluation and treatment techniques and discuss new trends and issues. The other deficiency has to do with the patient evaluation form used thus far for it does not contain useful information about the patient other than results of the medical exam and cause of amputation; it is too general and allows for subjective interpretation. As a result of this project evaluation,

a much more complete form has been developed to address the physical therapist's information needs. The proposed revised form focuses on objectives of treatment, specific activities to be performed, and consultation with other professionals. It appears in Annex 3-1.

The physiatrist/patient relationship is good, although having a three-member, part-time staff may not be most conducive to full integration within the institution. The patient evaluation form they use gathers the necessary information. However, there is relatively little involvement on their part with other rehabilitation professionals or in the overall patient care process other than through medical evaluations. The physiatrists possess no more than two years of experience. The nature and diversity of their activities are constrained by the size of CRI's examination room.

The psychologist is enthusiastic in providing patients and their families with orientation and support for coping with amputations. Her dedication makes up for the little experience she possesses (she is a good candidate for training), although she lacks the physical infrastructure to work more efficiently. Space is a crucial constraint for the room she uses is uncomfortable--hot, noisy, and poorly furnished. She interacts well with individuals and captures people's attention when addressing groups, but appears to have difficulties administering tests to, and making evaluations of, children and illiterate patients. Another deficiency observed is that she does not keep in contact professionally with other psychologists working with amputees so that she can profit from their experience and share her own. Still another deficiency is the general/abstract nature of the patient evaluation form that has been used; it gathers only personal data and provides space for comments on background and overall psychological evaluation. A more complete form has been developed (see Annex 3-2) by members of this team containing specific questions and protocol on current conditions of the patient; family, personal, and work history; married and family life; personality interpretation; and attitude toward rehabilitation and use of prosthesis.

Members of the multidisciplinary group work well individually and render quality services, especially when one considers what amputees would get if PAP were not available. However, members stop short of pooling forces into a team approach and providing a global output. This is not a matter of professional insufficiency or unwillingness to cooperate; it occurs because of the absence of administrative direction which permeates the USAID/FUNTER Project at virtually all levels as they relate to PAP. It is reflected in the lack of sustained program development in this component that identifies new goals, strengthens current activities (thus furnishing the basis for concerted and unified action), and prepares PAP for future trends and challenges. It also is reflected in individual inadequacy of some evaluation forms and

repetitive nature of all, as different rehabilitation professionals systematically waste time recording answers to the same questions asked by others (i.e., date of birth, schooling, cause of amputation, etc.). Perhaps basic data recorded at a central location could be provided to all multidisciplinary team members who, in turn, could add to the patient management process information pertinent to their contribution.

Another unfortunate consequence of the absence of administrative guidance at all levels of PAP and above is the chaotic situation of data gathering, processing, and reporting. Nobody at PAP--in fact, nobody at CRI--truly understands why statistics are important, much less the relationship that should exist among various data. Statistics are considered a fastidious imposition from outside, and monthly reports are viewed as a necessary evil, another USAID requirement with which they must comply to keep money flowing in. Hence, when the records of 59 patients over a five-month period get lost, when delivered prostheses are double counted because patients appear twice in the same list, when crucial data are missing from patients' records, when in a simple arithmetic operation the total is not equal to the sum of its parts, or when financial statements do not match (i.e., for each record, down payment plus promissory note should equal value for which patient is responsible; patient's responsibility plus project's subsidy should equal discounted value of prosthesis), nobody seems to realize (or care) that something is very wrong with a significant portion of operations.

The computerized patient data management system is both inoperative and inadequate. A consulting firm hired by FUNTER has been developing and creating for over five months a patient data file consisting of 1,268 observation units. This endeavor should not have taken more than ten working days. Furthermore, the firm has failed to code large portions of the data, entering huge fields such as "right lower extremity, above knee, temporary" to describe type of prosthesis delivered which, properly coded, should not take any more than four bytes. Consequently, the data file, as it is, takes over one megabyte of memory space and is inoperative. One could argue that it is the consultant's responsibility to design data files to match clients' needs and, as such, the computer firm has acted irresponsibly. By the same token, one can conclude that relying solely on outside assistance to satisfy computer and reporting needs has been a mistake.

Follow-up services provided by PAP to amputees after prosthetic delivery focus on home visits to ascertain whether or not patients are using their prostheses, assess changes in their lives, and evaluate how they are coping with their disability. This includes examination of the physical environment (i.e., architectural barriers, accessibility, etc.). Unfortunately, no advantage is taken of this opportunity to gather data on real use of the artificial limb, nor to develop a profile of amputees who do not

use their prosthesis and the reasons for not using it.

Following up amputees to measure their level of reintegration into society as well as identifying the reasons why they have not fulfilled their financial obligation to FUNTER (i.e., making payments for their prostheses) were started in September 1990, at the time this evaluation was being conducted. Since the evaluation covers the period through August 1990, this activity was not reported.

Efforts to identify amputees throughout El Salvador have paid off, not only in terms of numbers, but also with respect to resource utilization. Radio and television have been used successfully in announcing the presence of the FUNTER team in various parts of the country through the rural extension program. Under this program, outings to eleven regional hospital sites serve as a basis for identifying previously undetected amputees, fitting and delivering prostheses, rendering physical therapy services/instruction and psychological orientation; delivering pamphlets to raise public awareness about prevention of disabilities and sensitivity toward the disabled, and visiting community centers.

Finally, a few words about PAP's professional/vocational rehabilitation efforts. Since August 1990 social workers have started contacting amputees who have been fitted with artificial limbs in an effort to secure for them training and eventual placement in appropriate jobs. One month later more than 60 persons have been contacted; nine out of ten have responded that they need and want assistance in securing training or employment. Some action has been taken on an individual basis. For example, one person has been placed in a seamstress training program, with PAP paying for it (U.S. \$ .74 per month); three persons have been matriculated in an electrician training school, PAP also paying the U.S. \$1.03 per person per month cost; and so on.

This practice reflects effective utilization of existing resources. FUNTER can play a most important role in this capacity, referring amputees and other persons with disabilities to existing training programs according to their preferences and capabilities, perhaps subsidizing them partially or fully. Utilization of existing resources make sense: Since the infrastructure is there already, the cost of training an additional person is relatively small compared to having to set up a course or training program. Furthermore, since existing programs are available for everybody, amputees are trained alongside non-amputees, ultimately competing with them, thus signaling their full reincorporation into society.

Notwithstanding the rationality of this argument, plans are underway to offer a computer course with the WANG Corporation. Presumably this effort has been initiated in response to a need expressed by many patients--their employment outlook when returning to their communities is bleak. For that matter, however, so is the

employment outlook bleak for the general population of El Salvador. Establishing special training programs, most likely at a substantial average cost per participant, so that amputees end up with better skills and employment opportunities than their non-amputee counterpart, is not FUNTER's mission. It constitutes duplication of efforts of other agencies probably better equipped to perform these activities. It also perpetuates segregation of the amputee.

Another example of activities in which FUNTER should not divert its resources is the literacy course for ten persons which came to an abrupt halt on account of the November 1989 military offensive. The Ministry of Education is the entity responsible for the literacy of all Salvadorans; in the final analysis, amputees do not necessarily "deserve" to be able to read and write any more than non-amputees. PAP is not better endowed than the Ministry of Education or any other didactic institution for teaching people how to read and write, how to become a computer technician, etc.

What PAP is uniquely qualified to do in this respect is to enhance the comparative advantage of persons with disabilities vis-a-vis the non-disabled in any job. Departing from the premise that, under equality of circumstances, most employers prefer to hire persons without rather than with disabilities, even when the disability does not impair job performance, PAP could direct its training efforts toward changing such circumstances. For example, if employers preferred to hire persons with disabilities not related to job performance who are cooperative and loyal to the firm rather than non-disabled persons who may not be so cooperative or may be constantly looking for better employment opportunities elsewhere, then PAP should sponsor courses and activities that convey values and behavior skills, not knowledge, so that persons with disabilities may compete more favorably in job markets.

#### E. CONCLUSIONS AND LESSONS LEARNED

Strong linkages revolve around smoothness of patient flow, which is the result of rationality and logical sequence of activities. The patient management system works well because it is well designed. The commitment, enthusiasm, and willingness to learn shown by the rehabilitation professionals contribute substantially to a quality output and a pleasant organizational environment.

The main weak linkage is the absence of administrative cohesiveness within this component as well as above it. Such absence reflects negatively on insufficient program planning and development; lack of integration for better coordination; and poor data gathering, processing, and reporting. It also poses a danger in terms of waste and duplication of effort with respect to the focus of professional/vocational rehabilitation activities.

Relying solely on outside assistance for computer and data

management skills has been a mistake. In the future, outside consultants in this and other areas should be hired only when the institution possesses the capability of communicating coherently with consultants and putting into practice their recommendations.

#### **F. RECOMMENDATIONS**

1. A management consultant should be hired for approximately two weeks to reorganize PAP's staff according to current and potential administrative needs and conduct training sessions to upgrade them, with emphasis on planning, efficiency, and statistical reporting.
2. PAP's computerized information system should be radically restructured. The current contractor should be replaced by a qualified technician/firm capable of providing technical assistance plus training in data input, retrieval, and analysis. In addition, PAP personnel responsible for data processing should receive extensive training in computer packages capable of handling their information processing and reporting needs, not only at present, but also in the immediate future, as FUNTER's activities and coverage expand.
3. PAP should develop and implement a professional personnel plan for training and continuing education. Specific activities needing attention include a one-month training/observation visit to a rehabilitation center abroad for the physical therapist, a one-month training/observation visit for the person responsible for professional rehabilitation activities to a country with socioeconomic conditions similar to those of El Salvador, and a one-month training visit for the psychologist to a program abroad that serve the socially and economically disadvantaged, especially the illiterate. Also important is collective training for all rehabilitation professionals to harmonize their patient management techniques and promote a team approach.
4. PAP should replace its amputee evaluation forms for physical therapy and psychological orientation with the forms presented in Annexes 3-1 and 3-2, respectively.
5. PAP should hire an additional social worker and another secretary assigned to social services. The variety and complexity of PAP's social work services also require the appointment of a lead person among them for allocating and coordinating professional tasks.
6. If the orthotic program is instituted at FAPRO (see next part), PAP should hire an occupational therapist for upper prosthetic and orthotic patient training. If none

is available, a physical therapist should be sent to an occupational therapy department in a quality amputee rehabilitation center for three months of on-the-job training in patient care of upper-limb deficits. Along with this position, there should be an allocation of approximately U.S.\$ 2,000 for the purchase of related equipment and materials. The occupational therapist should be located next to the physical therapy treatment area to enhance overall efficiency.

7. PAP should investigate carefully the feasibility of a full professional rehabilitation (i.e., vocational rehabilitation and job training) element before committing significant resources to it. This feasibility study should compare economic and social rates of return of creating infrastructure versus utilizing existing resources. If the feasibility study shows that a whole new set of activities is justified, a pilot project should be planned and implemented with a small (about 15), targeted number of amputees in selected job markets. This pilot project should be evaluated six months after its inception to ascertain its outputs and consequences.
8. PAP should sponsor courses and activities that convey values and behavior skills, not knowledge, so that persons with disabilities may compete more favorably in job markets.
9. PAP ought to sponsor amputee support groups that meet regularly (i.e., every other week). Snacks and refreshments should be served to encourage participation.
10. In order to complement services already being offered and enhance their quality, PAP should purchase the following equipment for the physical therapy room: A treatment table with mat (2.5 meters by 2.5 meters), an exercise bicycle, an ultrasound unit, an infrared lamp, a cold pack, and a tens unit. The cost of this equipment is estimated at approximately U.S.\$ 1,200. Similarly, a round conference table along with six comfortable chairs should be purchased so that group sessions can be conducted in the psychology room; also needed by the psychologist are testing/evaluation materials for children and illiterate patients. The cost of the equipment for psychological services is estimated at approximately U.S.\$ 500.

Table 3-1. PAP clinical cases through August 1990 by region and department.

Region and Department	Number of Cases	Percentage
Total	1,268	100.0
Western Region	152	12.0
Ahuachapán	30	2.4
Santa Ana	66	5.2
Sonsonate	56	4.4
Middle Central Region	116	9.2
Chalatenango	35	2.8
Cabañas	14	1.1
San Vicente	67	5.3
Central Region	559	44.1
La Libertad	91	7.2
San Salvador	337	26.6
Cuscatlán	55	4.3
La Paz	76	6.0
Eastern Region	386	30.4
Usulután	132	10.4
San Miguel	124	9.8
Morazán	78	6.1
La Unión	52	4.1
Unknown	55	4.3

Table 3-2. Prostheses delivered by PAP from May 1988 to August 1990, by type of prosthesis and four-month period.

Type of Prosthesis	Total	Prostheses Delivered		
		May 1988 Aug 1988	Sep 1988 Aug 1989	Sep 1989 Aug 1990
Total	973	81	410	482
Lower extremities	844	81	371	392
Above knee	184	15	91	78
Below knee	348	61	142	145
Temporary	303	2	136	165
Other	9	3	2	4
Upper extremities	129	-	39	90
Above elbow	13	-	6	7
Below elbow	112	-	31	81
Other	4	-	2	2

Type of Prosthesis	Sep 1988 Dec 1988	Jan 1989 Apr 1989	May 1989 Aug 1989
Total	66	162	182
Lower extremities	66	137	168
Above knee	12	40	39
Below knee	53	53	36
Temporary	1	44	91
Other	-	-	2
Upper extremities	-	25	14
Above elbow	-	1	5
Below elbow	-	22	9
Other	-	2	-

Type of Prosthesis	Sep 1989 Dec 1989	Jan 1990 Apr 1990	May 1990 Aug 1990
Total	102	196	184
Lower extremities	92	155	145
Above knee	16	28	34
Below knee	29	60	56
Temporary	45	67	53
Other	2	-	2
Upper extremities	10	41	39
Above elbow	3	-	4
Below elbow	7	41	33
Other	-	-	2

Table 3-3. Patients receiving prostheses from PAP during May 1988  
- August 1990, by age group and four-month period.

Age Group	Number of Patients			
	Total	May 1988 Aug 1988	Sep 1988 Aug 1989	Sep 1989 Aug 1990
Total	956	79	403	474
0-9 years old	31	-	10	21
10-19 years old	123	-	48	75
20-29 years old	146	-	59	87
30-39 years old	133	-	60	73
40-49 years old	109	-	46	63
50-59 years old	79	-	30	49
60 years and older	132	-	62	70
Age unknown	203	79	88	36

Age Group	Sep 1988 Dec 1988	Jan 1989 Apr 1989	May 1989 Aug 1989
Total	66	157	180
0-9 years old	1	3	6
10-19 years old	7	11	30
20-29 years old	8	18	33
30-39 years old	10	24	26
40-49 years old	5	18	23
50-59 years old	2	12	16
60 years and older	-	19	43
Age unknown	33	52	3

Age Group	Sep 1989 Dec 1989	Jan 1990 Apr 1990	May 1990 Aug 1990
Total	102	189	183
0-9 years old	2	10	9
10-19 years old	23	26	26
20-29 years old	19	29	39
30-39 years old	14	26	33
40-49 years old	6	29	28
50-59 years old	15	17	17
60 years and older	14	28	28
Age unknown	9	24	3

Table 3-4. Value of and payment for prostheses delivered by PAP from May 1988 to August 1990, by allocation of responsibility and four-month period.

Allocation of Responsibility	U.S. \$ Equivalent			
	Total	May 1988 Aug 1988	Sep 1988 Aug 1989	Sep 1989 Aug 1990
Value (market price)	355,055	22,899	163,911	168,245
Value (discounted)	272,349	22,588	116,331	133,430
Down payment	29,132	4,679	10,499	13,954
Balanced owed	45,938	5,291	24,918	15,729
Patient's responsibility	75,068	9,970	35,416	29,682
USAID/FUNTER's subsidy	197,279	12,618	80,914	103,747
Allocation of Responsibility		Sep 1988 Dec 1988	Jan 1989 Apr 1989	May 1989 Aug 1989
Value of sales (market price)		27,852	57,853	78,206
Value of sales (discounted price)		18,840	40,160	57,330
Down payment		2,063	5,130	3,306
Balance owed		3,551	10,475	10,891
Patient's responsibility		5,614	15,605	14,197
USAID/FUNTER's subsidy		13,226	24,555	43,133
Allocation of Responsibility		Sep 1989 Dec 1989	Jan 1990 Apr 1990	May 1990 Aug 1990
Value of sales (market price)		36,487	70,480	61,278
Value of sales (discounted price)		28,407	53,115	51,908
Down payment		4,117	5,812	4,025
Balance owed		4,526	5,057	6,146
Patient's responsibility		8,643	10,869	10,171
USAID/FUNTER's subsidy		19,764	42,246	41,737

Table 3-5. Selected activities performed by members of PAP's multidisciplinary medical team from May 1988 to August 1990, by type of rehabilitation professional, activity, and four-month period.

Rehabilitation Professional and Activity	Number of Cases Reported			
	Total	May 1988 Aug 1988	Sep 1988 Aug 1989	Sep 1989 Aug 1990
<b>Social workers</b>				
Initial interviews	1,219	198	446	575
Subsequent interviews	2,268	148	583	1,537
Patient profiles	363	49	77	237
Field visits	656	17	74	565
<b>Physical therapist</b>				
Patient evaluations	490	-	174	316
Training sessions	756	-	275	481
Lectures	148	-	46	102
Home visits	13	-	-	13
<b>Physiatrists</b>				
Medical examinations	2,529	197	1,176	1,156
<b>Psychologist</b>				
Initial interviews	233	-	37	196
Subsequent interviews	159	-	28	131
Group therapy sessions	37	-	-	37
Family therapy sessions	27	-	4	23

Table 3-5. Selected activities performed by members of PAP's multidisciplinary medical team from May 1988 to August 1989, by type of rehabilitation professional, activity, and four-month period (continued).

Rehabilitation Professional and Activity	Number of Cases Reported		
	Sep 1988	Jan 1989	May 1989
	Dec 1988	Apr 1989	Aug 1989
<b>Social workers</b>			
Initial interviews	171	131	144
Subsequent interviews	170	164	249
Patient socioeconomic profiles	26	27	24
Field visits, contact amputees	20	24	30
<b>Physical therapist</b>			
Patient evaluations	-	85	89
Patient training sessions	-	46	229
Lectures on prosthetic care	-	13	33
Home visits	-	-	-
<b>Physiatrists</b>			
Medical examinations	271	414	491
<b>Psychologist</b>			
Initial interviews	-	-	37
Subsequent interviews	-	-	28
Group therapy sessions	-	-	-
Family therapy sessions	-	-	4

Table 3-5. Selected activities performed by members of PAP's multidisciplinary medical team from May 1988 to August 1989, by type of rehabilitation professional, activity, and four-month period (continued).

Rehabilitation Professional and Activity	Number of Cases Reported		
	Sep 1989 Dec 1989	Jan 1990 Apr 1990	May 1990 Aug 1990
<b>Social workers</b>			
Initial interviews	159	254	162
Subsequent interviews	447	539	551
Patient profiles	73	84	80
Field visits	98	210	257
<b>Physical therapist</b>			
Patient evaluations	68	124	124
Training sessions	162	164	155
Lectures	22	32	48
Home visits	1	7	5
<b>Physiatrists</b>			
Medical examinations	368	448	340
<b>Psychologist</b>			
Initial interviews	45	64	87
Subsequent interviews	24	59	48
Group therapy sessions	-	4	33
Family therapy sessions	5	13	5



#### IV. PROSTHETIC WORKSHOP (FAPRO)

##### A. BACKGROUND AND OBJECTIVES

Perhaps this is the best known of FUNTER's components, since many people equate FUNTER with prosthetics (i.e., the scientific art within the medical field dealing with the design, fabrication, and fitting of artificial limbs). The Prosthetic Workshop is capable of matching the civilian demand for prosthetic devices. It was created in 1987 to produce lower-limb prostheses only, but in December 1988 production was extended to upper limbs.

In February 1988 the training of 12 prosthetists, two with previous prosthetic experience plus ten high school graduates with neither training nor experience, began, and three months later the first prostheses were delivered. In September 1990 eleven of them were graduated by FAPRO as prosthetic technicians.

Throughout 1988 FAPRO was in charge of patient management. It provided social work and physiatrist services and coordinated with the Knights of Malta for the services of a psychologist and a physical therapist. After the creation of CRI in January 1989, FAPRO-amputee interaction has been limited to the various aspects of fitting, production, and repair.

Amputees at the workshop are received by a secretary, who identifies their file, discusses financial arrangements, if needed, and provides basic information regarding the overall fitting process. By this time the patient already has been evaluated at PAP by a social worker, a physiatrist, the psychologist, and the physical therapist, all of whom sign off on an overview sheet which includes the prosthetic prescription. Thus, the prosthetist is provided with information about patient interaction with other members of the medical team.

On average, it takes about five days to design, elaborate, and fit a prosthesis. Amputees are casted on the first day. They are asked to return on the third day for dynamic alignment. Fitting and ultimate delivery take place on the fifth day. For patients living in San Salvador and without money for lodging, delivery can be made the day after casting for lower limbs and two days after casting for upper limbs.

##### B. PROGRESS AND ACCOMPLISHMENTS

Perhaps the most remarkable accomplishment is that nine months after FUNTER signed the Cooperative Agreement with USAID, FAPRO opened its doors and delivered its first 12 prostheses. The equipment, prosthetic layout, and initial training and technical assistance were in place in a very short period.

FAPRO accomplishments can be divided into four areas: Training, production, extension, and research. The first training phase took place between February and April 1988 and lasted ten weeks. During this time a physician was contracted to teach 12 prosthetic trainees six hours of Anatomy and Physiology per week. In addition, a team consisting of social workers, a psychologist, and an occupational therapist combined efforts to teach every week ten hours of Biomechanics, ten hours of Prosthetic Theory, four hours of Psychology, four hours of Human Behavior, and six hours of Applied Prosthetic Theory, throughout the same period, for a total of 400 contact hours. In May and June 1988 two U.S. prosthetists spent two weeks each lecturing and performing practical demonstrations.

Formal training began in September 1988 under Baja Prosthetics and Orthotics Services, a company headquartered in Chula Vista, California. The program, oriented more toward practical aspects than to prosthetic theory, consisted of six modules: Clinical, casting, plastics, finishing, cosmetic cover, and upper limbs. It was terminated for convenience by USAID at FUNTER's request in October 1988, four months before its expiration date. Students progressed at a faster pace than was anticipated under the technical assistance contract. There also was a need to decentralize services to benefit more amputees, which the Baja Training Program did not contemplate. Mobile prosthetic field units were created as a response to increasing demand by amputees experiencing difficulties in traveling to San Salvador to receive prosthetic treatment.

The fourth and last training phase occurred between November 1989 and August 1990, under the direction of a bilingual U.S. prosthetist, with emphasis on production supervision. The process culminated with the graduation of eleven candidates shortly afterwards. Edmond Ayyappa, a non-MSCI member of the evaluation team, administered the final practical/theoretical certification exam (the theoretical portion is reproduced in Annex 4-1) in four areas of adeptness--lower-limb above knee, lower-limb below knee, upper limb, and patient management and prosthetic fit. Every trainee has demonstrated at least a minimum level of competency in prosthetic socket design, alignment and prescription principles, and other areas of prosthetic knowledge. The results of the exam are as follows:

	<u>Lower Limb</u>		<u>Upper Limbs</u>	<u>Patient Management and Prosthetic Fit</u>
	<u>Above Knee</u>	<u>Below Knee</u>		
<u>Legend</u>	88	81	82	84
	77	79	75	-
0 - 65 fail	85	83	78	86
66 - 75 acceptable	88	87	81	90
76 - 85 good	89	83	79	85
86 - 95 very good	92	90	90	-
96 - 100 excellent	81	88	85	-
	78	79	81	-
	95	89	93	89
	88	86	83	81
	91	88	88	-

Other training activities sponsored by the Prosthetic Workshop include a one-day seminar on amputee treatment and appropriate technology for prosthetists, physicians, and physical therapists held at FAPRO in August 1988 and a ten-week course for physical therapists at Rosales Hospital (three hours per day, five days a week) on how to handle and fit post-operative pylons. The course, which started in August 1989, was taught by two FAPRO prosthetists in collaboration with the French agency Physicians Without Borders (Médicos sin Fronteras). In addition, the workshop manager and five prosthetists have attended a one-week congress of ACOPPRA held in Costa Rica in March 1990.

The production of prostheses is FAPRO's most tangible output. Between May 1988 and August 1990 the workshop has produced 1,110 prostheses (see Table 4-1) with less than one percent rejection rate. If one considers PAP's reported number of prostheses delivered during the same period (973 units) plus the 59 units missing from August to December 1988, the disparity between PAP and FAPRO figures amounts to 78 devices (7.0 percent), which can be explained easily in terms of units produced awaiting delivery, units that had to be discarded because of serious imperfections, patients that never came to pick up their prosthesis, or simply errors and omissions.

Less than one-sixth (13.7 percent) of prosthetic devices produced by FAPRO are upper limb; the rest are lower limb. However, the relative importance of upper-limb prostheses has been rising. In the first eight months of 1990 they account for 22.7 percent of the total. Below-knee devices outnumber those above knee two to one. Above-elbow prostheses are rare, only 1.3 percent of the entire output during the 28-month span.

According to Table 4-1, aggregate production has increased steadily since the workshop opened. It goes up by 25.3 percent from the first to the second four-month period and by 37.9 percent from the second to the third. Between May and August 1989 production begins

to level off, increasing by only 9.4 percent, declining in September-December 1989 probably because of the widespread military conflict in November. During the first four months of 1990 production seems to reach its peak, just below 200 units, at a level which is not likely to expand by much.

The volume of production at FAPRO compares favorably with its military counterpart, CERPROFA (San Salvador). The levels of production for both institutions during January-August 1990, by type of device, is presented in Table 4-2. While CERPROFA has manufactured a few more below-knee units, FAPRO produces many more above-knee and upper-extremity artificial limbs.

FAPRO also repairs prostheses, its own and others'. With few exceptions, repairs take less than a day. As may be observed in Table 4-3, a total of 650 devices have been repaired during the 28 months encompassed by this evaluation. Over time the numbers increase, with minor fluctuations, peaking in September 1989 - April 1990. The decline of May-August 1990 probably is just another fluctuation. In the long run this activity is expected to become increasingly important as more amputees with prostheses need and seek repair services.

Compared to CERPROFA San Salvador, FAPRO has repaired substantially fewer prostheses in 1990 (215 repairs for FAPRO versus 747 repairs for CERPROFA). One has to consider, however, that CERPROFA has been manufacturing a lot of devices during past years--201 units in 1986, 385 units in 1987, 218 units in 1988, and 339 units in 1989. Hence the large demand for repairs in the military sector can be attributed to the number of patients fitted with prostheses.

Concerned about amputees in remote rural areas who lack either motivation or resources to visit the workshop in San Salvador, since October 1989 FAPRO has been offering its services in eleven hospitals throughout the country. These hospitals are located in Usulután, La Unión, Morazán, San Miguel, San Vicente, Zacatecoluca, Chalatenango, Santa Ana, Sonsonate, and San Salvador. Measurements, mold examinations, and repairs are done in the field; production takes place back at the workshop; and subsequent fitting, delivery, and therapy take place in the field. Prosthetists travel to these areas accompanied by a social worker, the psychologist (in the casting trip only), and the physical therapist (when local physical therapy services are not available), all from PAP. A local physiatrist is contracted for specific visits and hospitals provide the necessary infrastructure. From September to December 1989, prostheses manufactured for patients in the rural extension program account for 20.4 percent of the total (see also Table 4-3). In 1990 the proportion increases significantly: 40.6 percent for January-April and 37.4 percent for May-August.

Research efforts have been oriented toward possibly manufacturing in FAPRO new products and components needed in the elaboration of prostheses. The new products being explored constitute an extension into the field of orthotics plus the development of an indigenous SACH (solid ankle cushion heel) foot. Components under investigation include fabrication of polyurethane ankle blocks; in-house manufacture of nylon and cotton stockinettes and prosthetic/orthotic joints; potential use of plastic and rubber foams manufactured in Central America as substitutes for soft-liner materials currently used; and elaboration of prefabricated polypropylene and polyethylene prostheses, orthoses, and components. This implies modification of technologies imported from the United States and other industrialized countries to accommodate the use of cheaper, indigenous resources.

### C. OBSERVATIONS AND EVALUATION

Training the eleven prosthetists has been a major success. These technicians will continue to serve amputees in the area in future decades, with a potential of training many technicians throughout their lives. Although currently there is no demand for additional prosthetists in El Salvador, this successful model of prosthetic education could be extended to full-tuition paying candidates from elsewhere in Central America, the Caribbean, or even South America. A program of networking could contribute to drawing students from other nations. This would benefit FAPRO not only in terms of strengthening sustenance potential, but also in sharpening prosthetists' skills as they share experiences of different nature, cultural as well as technical, not to mention the services potentially rendered to Salvadoran amputees. A maximum of four prosthetic trainees could be accepted over the next three years. They should adhere to established rigorous standards with heavy emphasis on practical experience.

As a logical sequence of past activities and in order to respond to the largely unmet civilian demand for orthotic services in El Salvador (i.e., persons with congenital problems, scoliosis, complicated fractures, neck or spinal cord injuries, etc.), the training program easily could be extended into orthotics for four candidates selected from the eleven prosthetists. The infrastructure already exists and the additional cost would be minor. The program could consist of three levels: Entry, technical training, and preceptor experience. The entry level (one-month duration) serves to determine whether or not candidates possess the manual dexterity, intellectual background, and interpersonal skills necessary for training. Throughout the technical training level, lasting approximately one year, trainees cover the various modules under the direction of an advisor. Once trainees reach the preceptor experience level, also estimated to last one year, they continue to work under the advisor's supervision, building their clinical and applied expertise. At the end of their apprenticeship experience, trainees take a

theoretical/practical certification exam administered by the advisor, along the lines of the prosthetics exam.

part of the duties of the advisor would include translating from English into Spanish several manuals in order to build a library nucleus easily available to prosthetists and orthotic trainees. This requires a reading room, even if it is small, solely for this purpose, where personnel are not only permitted but encouraged to expand their knowledge. A reading room (none exists at present) is a necessity for improving quality of education and patient care. In addition, training and continuing education efforts could be complemented with short visits by U.S. specialists in different areas within prosthetics and orthotics.

The quality of work performed at FAPRO conforms to U.S. standards. Alignment and socket design principles accord with U.S. practices. However, some differences do exist. The incidence of exoskeletal (i.e., crustacean type limbs with laminated plastic exterior) prostheses is much greater in El Salvador than in the United States. (In the U.S. these prostheses are used in patients with a high level of activity or for specific purposes such as people around water.) Endoskeletal devices (i.e., a rigid inner pylon surrounded by a soft foam exterior, not as common in El Salvador, are lighter, more adjustable, and more cosmetic. The main reason for this differential is that imported prefabricated endoskeletal components are more expensive than the basic materials ordered in bulk for manufacturing exoskeletal limbs.

Other differences between production in the U.S. and El Salvador also relate to cost and involve the absence of hydraulics, carbon fiber technology, and electric and myoelectric control prostheses. More advanced technology has not been introduced for obvious economy reasons, and the status quo should be maintained in this regard. Techniques used at FAPRO compare favorably with techniques used for, and the quality of output produced in, the low-end, low-cost U.S. market such as prosthetic devices received by public aid patients.

Comparing FAPRO with the only other Salvadoran institution of its kind, CERPROFA (San Salvador), one finds in CERPROFA eleven technicians plus three trainees, approximately the same staff size as FAPRO's, working in a substantially smaller area. (Management confesses that available space is suitable for only six technicians.) Below-knee amputees at the CERPROFA prosthetic workshop oftentimes are not dynamically aligned with an adjustable alignment device, even though the staff possesses the knowledge and equipment to do it and patient load is not greater than FAPRO's. This practice produces an inferior end product since the precise placement of the socket over the foot is critical for optimal gait. At FAPRO the adjustable alignment device is uniformly used. CERPROFA, however, has one major advantage over FAPRO: It produces orthotic devices. During January-August 1990 CERPROFA has produced

175 such devices, an indication of existing demand for orthotics in El Salvador.

The 1,110 prostheses manufactured at FAPRO over its first 28 months of operation are the best single indicator of the workshop's success. Prosthetic patient services have addressed the most immediate and crucial needs of the civilian amputee population, although an indeterminate number of amputees remain to be identified and receive help. This is not the case, however, with persons in need of orthotic bracing, as the quantity and quality of national orthotic care leaves much to be desired. There is general consensus among persons interviewed that this is a priority area.

The overview sheet provided by PAP to the prosthetist is excellent; it acquaints him with what has happened between the patient and other members of the multidisciplinary team. This enhances the likelihood of obtaining an appropriate prescription before work on the prosthesis is started. The FAPRO waiting room, next to a flower garden, is pleasant and kept clean. Rest rooms and a drinking water fountain are within easy access.

All prosthetists are dressed professionally in clean, white laboratory coats and conduct themselves with confidence. They show sensitivity toward patients. Good amputee-prosthetist rapport is created by discussing briefly amputee's background prior to treatment, a practice that builds trust and confidence. There is mutual respect at every stage of the fitting process.

The rural extension program operates timely and efficiently. It reflects FUNTER's ability to respond to the needs of the amputee population; specifically it shows that the Foundation cares, that it possesses the ability to perceive needs, and that its structure is sufficiently flexible to accommodate changes of this nature. The same favorable conditions of patient-prosthetist rapport are replicated in the field, and prosthetists interact well with other members of the multidisciplinary team. Infrastructure support provided by the hospitals is adequate. So far the rural extension program has been one of FUNTER's major success stories; without it 181 amputees might not have received prosthetic treatment.

Interaction between the manager and his assistant is smooth and mutually supporting. Both possess good administrative skills and are aware of the importance of data gathering, processing, and reporting. Consequently, FAPRO can provide with relatively short notice reliable information concerning its operation. No conflict appears to exist between management and staff. Instructions are given with a healthy combination of authority, respect, and sensitivity. The work environment seems to be free of friction among staff members. One of the prosthetists with previous experience at the Military Hospital in San Salvador has had difficulties in blending with other prosthetists; however, it

appears to be a minor personality clash without impact on patient care.

Given the growing number, nature, and complexity of activities that are likely to develop in the immediate future, some division of labor among prosthetists might be indicated. This would not change communication or authority channels, everybody continuing to report to the workshop manager, as FAPRO's organizational structure would remain intact. It merely would allow some individuals to devote all their attention and efforts to certain tasks, thus averting inefficiencies that inevitably develop when everybody does a little bit of everything. The most obvious areas of specialization appear to be patient care, including the rural extension program, technical education, and product development.

Sufficient stock for most eventualities is neatly arranged in a well kept stockroom. A stock clerk dispenses materials to prosthetists in an orderly manner. Detailed records are maintained regarding stock. A major difficulty occurs when an unusual component is required and must be ordered and received, usually from the United States, before the patient can be treated for it can cause delays of three months or more. There is no solution for this problem other than overstocking at a significant expense or, in the long run, developing and relying more on indigenous components and technology.

Import substitution is the right orientation for FAPRO's research efforts for two reasons. The first and most important is economic. Raw materials and components imported from the United States are expensive. If the workshop is going to become self-sustaining, and since amputees generally can pay for only a small portion of the price of the artificial limb, even when it is subsidized, reducing cost while maintaining (or even improving) quality makes sense. Furthermore, manufacturing orthotic braces, SACH feet, polyurethane ankle blocks, nylon and cotton stockinettes, prosthetic and orthotic joints, etc. could lead to exporting to other Central American and Caribbean countries.

The second reason for import substitution has to do with the logistics of ordering and receiving components within a short period. This involves more than just avoiding minor patient inconvenience for the timely application of a prosthesis can improve the outcome and reduce the rejection rate, especially with regard to upper limbs. Now that prosthetists have concluded their minimum training, investigation of alternative technologies is likely to become an increasingly important activity at the workshop throughout the next three years.

Whenever modified technology is applied, the question of product safety comes up. At FAPRO a field testing process has been applied to protect both patient and prosthetist. One concern is component breakage, with possible patient injury, while using a test

prosthesis. Proper precautions are taken such as monitoring application carefully and frequent follow-up visits to detect material stress fracture. Only after repeated testing is the new technology applied to the general population. This approach is used consistently in the United States in search of stronger, lighter, more adjustable, and more economical materials and components.

Modified technology also could result in patients' allergies or irritation as reactions to new materials. Taping these materials to the skin for 24 hours and examining it for redness, swelling, or other symptoms would provide for adequate testing. A much more serious problem is the possible carcinogenic effect to the prosthetists of currently used and potential materials. A much needed dust collection system has been requested by the workshop. In the interim, prosthetists are using protective mouth screens, a practice which is not completely safe and, consequently, should be corrected.

Consulting regional manufacturers of newly introduced materials for their chemical constitution is a must. Specifically, the composition of plastics and foams should be explored to plan for unlikely, yet possible events such as accidental burning in the thermoplastic oven or by a production heat gun. If these materials discharge harmful gases when burned, proper precautions should be observed. (In the United States, for example, Kydex is regularly used in the fabrication of orthotics, even though it produces chlorine gas when inadvertently burned.) The two workshop ovens have an excellent ventilation system.

Many items in the field of orthotics, including upper and lower limb splints and spinal orthotics, can be prefabricated in various sizes that fit most patients. However, a significant degree of competency is necessary to engage in their production. It is not advisable to attempt to develop any prefabricated orthotic modules until orthotic candidates complete their full two-year training. In the meantime, prefabricated orthoses imported from the United States and duplicated at the workshop could be used to satisfy both domestic and regional demand.

#### **D. CONCLUSIONS AND LESSONS LEARNED**

The module approach and contents used to train prosthetic technicians is a good approach. It is suitable for replication in other countries with similar conditions to those of El Salvador, continued in El Salvador for full-tuition paying prosthetic students coming from abroad (without having to set up expensive infrastructure in other nations for only a few candidates), and/or easily extended onto the field of orthotics to meet a largely unfulfilled and growing Salvadoran demand for orthotic care. Another strong linkage is that production of prostheses is sufficient to meet current demand, at a level of quality comparable

to U.S. public aid patients and at substantially lower cost.

The rural extension program provides an ideal case study for proper institutional identification of needs, responsiveness, and flexibility to reallocate resources and accommodate to a rapidly changing environment, even when it has meant departing from a well established didactic program. One lesson learned here is that FAPRO has not been intimidated by the prospect of possibly disastrous consequences from shifting direction for the sake of pursuing what it has perceived as the right course of action.

Technology modification efforts also provide a valuable lesson in terms of comparative advantage. If ongoing and projected import substitution experiments are successful, it is not inconceivable that, in a few years, El Salvador export prostheses, orthotic devices, and components to its immediate neighbors.

Only one weakness is detected with FAPRO. It has to do with lack of vision, even more than planning, for prosthetists' continuing education and professional enrichment. If this is not corrected, much of the knowledge acquired throughout the last two years could wither away. The deficiency lies not only in the absence of such program, but in the lack of physical infrastructure (i.e., reading room, technical books and pamphlets in Spanish, etc.) as well as encouragement by management to learn more and become increasingly proficient over time.

#### **E. RECOMMENDATIONS**

1. FAPRO should initiate, perhaps in coordination with CEC, a Central American networking system to connect with prosthetic and orthotic facilities, physiatrists, orthopedists, and other physical rehabilitation professionals for purposes of informing them about its educational programs and products.
2. If there is enough demand by Salvadoran or foreign full-tuition paying students, the prosthetic program should be continued, admitting a maximum of four candidates over the next two years, under the supervision of a prosthetic/orthotic training advisor.
3. FAPRO should select, based on merit and ability, four orthotic training candidates from its eleven prosthetists to receive one year of intensive guided technical training (i.e., lectures, reading assignments, demonstrations, supervised applications, etc.) and one year of internship/apprenticeship working more independently under the supervision of a prosthetic/orthotic training advisor.

4. The prosthetic/orthotic training advisor should be bilingual and possess at least a baccalaureate degree in Prosthetics and Orthotics plus five years of clinical and technical experience.
5. Six U.S. specialists in different areas of Prosthetics and Orthotics should be invited by FAPRO for one-week training sessions which include theory, practical demonstrations, supervision, and evaluation of tasks, all followed by a final exam.
6. FAPRO's manager should receive additional training at a major prosthetic/orthotic teaching institution, either in the United States or one of the World Rehabilitation Fund training programs such as the one in Buenos Aires, which lasts six months.
7. FAPRO should select from its prosthetists supervisors in charge of three areas: Patient care, technical education, and product development. The rest of the prosthetists should work under the patient care supervisor and everybody will continue to respond to the workshop manager. One person working under the patient care supervisor should be entrusted fully with the technical aspects of the rural extension program. The supervisor in charge of product development should be assigned the responsibility of testing proposed modified technologies, carefully monitoring patients while maintaining specific records of developmental experiences and outcomes.
8. FAPRO should pursue gaining the technology to produce solid ankle cushion heel (SACH) prosthetic feet, cotton and nylon stockinettes, and polyurethane ankle blocks to reduce costs of production. The FAPRO manager and one prosthetist should visit "Ortopedia Universal" in Mexico City to purchase equipment and materials for SACH foot production. The manager would stay one week while making the final purchase decision, while the prosthetist would remain for one month to learn the technology needed to produce the SACH foot and polyurethane ankle block domestically. (Polyurethane can be imported at a very competitive price from "Productos Eiffel, S.A." in Guadalajara, Mexico.) The cost of acquiring SACH foot technology is estimated at approximately US\$ 15,000.
9. FAPRO should refrain from producing its own prosthetic and orthotic joints until a careful feasibility/cost-effectiveness study is conducted.
10. A feasibility study should be conducted by FAPRO to explore comparative costs, plant capacity, and potential

markets in Central America and the Caribbean for its prostheses, SACH foot, and polyurethane ankle block.

11. FAPRO should purchase a dust collection/evacuation system as soon as possible to protect the health of its prosthetists.
12. FAPRO should purchase the following equipment to accommodate growth in demand for prosthetics and orthotics: A low-cost lathe (torno) to turn and shape metal and various plastics in the production of prosthetic knee joints, orthotic joints, and wrist units; a bevel shears (guillotina); a sutton landis five in one; four work benches; a table saw for metal; a patcher; a sole stitcher; a shoe machine; and an additional video camera/recorder for patient training. The cost of this equipment is estimated at approximately US\$ 30,000.

Table 4-1. Prostheses produced by FAPRO from May 1988 to August 1990, by type of prosthesis and four-month period.

Period	Number of Prostheses						
	Total	Lower Limbs			Upper Limbs		
		Sub-total	Above Knee	Below Knee	Sub-total	Above Elbow	Below Elbow
May 1988 - Aug 1990	1,110	958	318	640	152	14	138
May 1988 - Aug 1988	99	99	17	82	-	-	-
Sep 1988 - Aug 1989	482	443	155	288	39	6	33
Sep 1989 - Aug 1990	529	416	146	270	113	8	105
1988: May - Aug	99	99	17	82	-	-	-
Sep - Dec	124	120	15	105	4	-	4
1989: Jan - Apr	171	151	63	88	20	-	20
May - Aug	187	172	77	95	15	6	9
Sep - Dec	137	113	43	70	24	3	21
1990: Jan - Apr	197	155	44	111	42	1	41
May - Aug	195	148	59	89	47	4	43

Table 4-2. Prostheses produced by FAPRO and CERPROFA from January to August 1990 by type of prosthesis.

<u>Type of Prosthesis</u>	<u>Number of Prostheses</u>	
	<u>FAPRO</u>	<u>CERPROFA</u>
Total	392	241
Lower limbs	303	236
Above knee	103	8
Below knee	200	228
Upper limbs	89	5
Above elbow	5	n.a.
Below elbow	84	n.a.

n.a. = Not available.

Table 4-3. Prostheses repaired by FAPRO from May 1988 to August 1990 and prostheses produced for the rural extension program from September 1989 to August 1990, by type of prosthesis and four-month period.

Period	Number of Repairs	Prostheses Produced for the Rural Extension Program	
		Number	Percentage
May 1988 - Aug 1990	650	181	100.0
May 1988 - Aug 1988	44	-	-
Sep 1988 - Aug 1989	272	-	-
Sep 1989 - Aug 1990	334	181	100.0
1988: May - Aug	44	-	-
Sep - Dec	69	-	-
1989: Jan - Apr	109	-	-
May - Aug	94	-	-
Sep - Dec	119	28	15.5
1990: Jan - Apr	120	80	44.2
May - Aug	95	73	40.3

## V. COMMUNITY EDUCATION, AWARENESS, AND NETWORKING PROGRAM (CEC)

### A. BACKGROUND AND OBJECTIVES

The main goal of the USAID/FUNTER Project is to support and enhance, rather than duplicate, existing rehabilitation services. The purpose of CEC is to compile, deliver and exchange information about the nature, treatment and prevention of handicapping conditions. It is designed to raise public awareness about the plight of persons with disabilities in order to facilitate their eventual reintegration into society by virtue of increasing levels of acceptance and understanding. CEC has offered seminars, designed and published booklets, organized a library and made audiovisual presentations to different groups.

An aggressive networking drive is critical to fulfilling USAID/FUNTER's goal. Effective support of rehabilitation services requires that resources and needs be identified, and that appropriate resources be matched with needs. Although, to some extent, networking is a function of all four project components, formal communication and collaboration between FUNTER and other rehabilitation/education entities, either public or private, are largely under CEC's jurisdiction.

Given the abundance of needs and scarcity of resources in El Salvador, duplication of efforts is a luxury that the country cannot reasonably afford. Yet, as in many Latin American and other Third World nations, it is a reality. Mutual distrust, lack of communication, and territorial disputes oftentimes characterize relations between institutions created to provide services of whatever kind to underattended or previously unattended populations. Hence the commitment to coordinate with existing local agencies, through CEC and the other components, is an essential strategy.

CEC's main function is to deliver and exchange information about the nature, treatment, and prevention of physical handicapping conditions, especially in rural areas, where a large percentage of persons with disabilities live. In order to exercise this function, CEC has organized training seminars focusing on identification of disabilities and community based rehabilitation. The design, publication, distribution, and orientation in the use of educational and informational materials concerning rehabilitation has been used as another awareness tool. A third activity is to compile a comprehensive directory of resources and services available to the disabled both in El Salvador and abroad that enable the Foundation to serve as a clearinghouse for rehabilitation resources and referral. Also as a part of the clearinghouse effort is a drive to organize and maintain a library on disabilities and rehabilitation books and materials accessible to the public at large.

## B. PROGRESS AND ACCOMPLISHMENTS

Planning, organization, and delivery of ten four-day seminars (each with 30-40 participants) on community based rehabilitation for 340 employees of the Ministry of Health has been a distinctive activity of this component. The seminars took place between May 1988 and February 1989 and were given to the universe of 255 health promoters (promotores de salud), formerly rural health aides (ayudantes rurales de salud), working in rural areas nationwide and their 85 supervisors.

The Ministry of Health does not include rehabilitation in the training curriculum of its health promoters. It was felt that these health promoters, whose role includes prevention, treatment, and community development, could become advocates of persons with disabilities in their rural communities after learning about physical limitations and adequate referral. The Ministry allowed promoters to attend and paid for their transportation. CEC provided trainers, curriculum, materials, locale, and room and board.

Each participant received a "Training Manual for Volunteers in Community Rehabilitation" (Manual de Entrenamiento para Voluntarios en Rehabilitación Comunitaria) prepared by CEC along the same lines as the seminar. (The content covers most disabilities.) The seminar methodology included didactic as well as practical experiences and site visits. The Foundation's own staff was used as technical resources, plus outside experts were drawn from local communities. Persons with disabilities also participated as trainers.

A written follow-up survey has been conducted to assess the extent to which health promoters have applied in their communities what they learned in the seminars. In addition, five regions of the country have been visited with the explicit purpose of measuring, through interviews with the health promoters themselves, the impact of the seminars and solve problems that might have been encountered in referring persons with disabilities for service. Slightly over half of the rural health promoters interviewed respond that they have applied the knowledge gained to refer people to available services. Unfortunately, it has not been determined if referred persons ever received the appropriate services. Health promoters generally cite poverty and absence of nearby service sites as the principal reasons why persons with disabilities do not pursue and ultimately obtain these services.

CEC has developed a set of 12 booklets ranging from ten to 22 pages, each on a different form of disability. These booklets contain basic, useful information on the characteristics of handicapping or potentially disabling conditions and tips on how to lessen the difficulties of the handicapped. National referral centers and technical resources also are cited. The booklets cover

the following areas: Identification, treatment, and prevention of amputations, deformities of the feet, deafness and communication disorders, spinal cord injuries, burns and deformities, spinal cord deformities, polio and cerebral palsy, epilepsy, mental retardation, children with learning disabilities who have normal intelligence, blindness and visual impairments, and multiple disabilities. Approximately 55,000 booklets, equivalent to more than 4,500 sets, have been printed.

The booklets are designed for easy photocopying so that recipients may make multiple copies and pass them onto a broader number of persons. About 460 sets have been distributed through the Ministry of Education among its regional directors; on average, regional directors are responsible for ten school principals in a ten square kilometer area with a population of 15,000 students. Another 600 sets have gone to public health centers through health promoters, regardless of whether or not they have participated in the seminars. Many more have been distributed among participants of various PROMOSER events: 100 sets to medical and paramedical personnel of regional hospitals, 150 sets to specialists in rehabilitation centers, and 300 to participants in other seminars. Persons receiving services at CRI or FAPRO also get copies pertinent to their disability. And an indeterminate amount has been sent to ISRI.

Seven private schools and one public school have hosted 30-minute presentations of a puppet show developed by CEC. (Along with these presentations 200 sets of booklets have been distributed.) The shows, attended by groups ranging from 30 to 500 children, portray the disabled child as a human being with the same emotions and aspirations as any other child. The program has been prepared with the assistance of a special education teacher. There are plans to present it in other elementary schools and to develop a different kind of awareness program oriented toward high school students.

Two other types of materials have been developed by CEC. One is a set of two pamphlets for publicity purposes detailing services provided by the Foundation; approximately 2,000 copies of each have been printed and many have been reportedly distributed, although there is no objective way of verifying this information. The other type of materials developed by CEC is a set of three videotapes about activities sponsored by FUNTER: A documentary of its programs, a review of puppet shows presented, and a report of the training seminars held for health promoters.

The directory of resources and services available for persons with disabilities has been in the development stage for over one year. It is nearing completion, and with the recent purchase of the computer, updating and changes will be easier to handle. It is expected that over 1,000 entries will be printed and sent to professionals handling patients with disabilities, special education and rehabilitation centers, private clinics,

universities, and libraries. The directory, entitled "Professional and Resource Guide" (Guia Profesional y de Recursos), will contain information on the specialty, name, address, and telephone number of individual as well as institutional resources available in El Salvador. A guide for international agencies doing work in rehabilitation will appear separately.

CEC also has acquired roughly 500 books, booklets, magazines, and other written materials in an effort to develop a resource library containing specific information on disabilities and rehabilitation. It is currently attempting to purchase books at wholesale prices in Mexico through the USAID Office of Education and Training Project "RTAC Two." Materials have been catalogued by author and by topic, but, due to lack of space, many books remain in boxes at the coordinator's office. Thus, the library is not operational.

### C. OBSERVATIONS AND EVALUATION

Although CEC has made admirable progress in reaching different strata of the community such as health promoters, school children, teachers, and rehabilitation professionals, there is no concerted effort toward reaching and educating persons with limitations. Other components of the USAID/FUNTER Project (i.e., PAP and FAPRO) could act as vehicles for disseminating materials especially prepared by CEC for disabled persons on how to cope with their disability both physically and mentally. For example, these materials might be placed in PAP and FAPRO waiting rooms, lists of pertinent services might be given to prosthetic candidates, or amputees simply could be invited into the library once it becomes operational. Persons with limitations are prime targets for education and consciousness raising regarding their own limitations. Another way of reaching out might be to have "spots" in the forthcoming November 1990 televised marathon on guiding people with handicaps to existing services. This would be an excellent time to publicize the professional resource guide and its contents.

It is important that CEC contact health promoters repeatedly to keep them motivated and reinforce the training and sensitivity imparted at the seminars. Doing the seminars was a wonderful idea, but the effort will go to waste eventually unless contact is maintained. An appropriate way of doing this, not only with the health promoters, but also with participants of other FUNTER events as well, is via publication and mailing several times a year of a fact sheet, each number focusing on a different disability topic. The 50 percent plus positive response by health promoters in applying knowledge gained in the seminars speaks well of the long-term impact of this activity.

The manual prepared for volunteers in community rehabilitation has been adapted from the Hesperian Foundation's community rehabilitation material developed in Mexico. Both content and

depth conform to the objectives of the seminars and the composition of their participants, although technical information should be revised for minor errors and inconsistencies. Distribution of this manual allows users to obtain quick information and refresh their memory on matters pertaining to disabilities and their prevention.

The 12 booklets have an excellent design and serve a good purpose. They contain drawings and are easy to understand. While it is unrealistic to attempt to measure the concrete effect of their distribution on target audiences' attitudes toward the disabled in such a short span of time (even if it were possible, no indicators or tools have been developed), this vehicle is beneficial in reaching a large number of persons who may have misconceptions, fears, and negative attitudes toward the impaired. The true, long-term impact of these booklets will more than likely motivate and stimulate people to think about their attitudes and fears, not necessarily change them. These materials make an important contribution to raising public awareness and are considered useful by ISRI and the Ministry of Education.

School principals and teachers have been receptive to the puppet shows. The effect of this program on changing children's attitudes toward their peers with limitations has been deemed positive by CEC based on observed reactions during the program. However, there has been no follow-up to determine the level of understanding and internalization nor to remind school principals and teachers about FUNTER's services. These principals definitely should receive a copy of the resource guide. CEC also could target parent groups (Escuelas para Padres) through the Ministry of Education for distribution of booklets and presentations about disabilities.

Rapid completion of the directory of resources and services is of utmost importance. In addition to the information already gathered, a brief description of the service would be valuable (i.e., special education school serving children ages 6-16 who have visual impairments). It is important that this directory reach persons with impairments and their families, as well as groups such as the Cooperative Association of Independent Groups for Comprehensive Rehabilitation (Asociación Cooperativa para Grupos Independientes para Rehabilitación Integral - ACOGIPRI). Interaction with ACOGIPRI and similar institutions naturally will be strengthened over time as a result of further networking. They should be included in CEC's mailing list not only for the directory, but also for the fact sheets and other publications.

The library needs to become operational and its materials available to the entire FUNTER staff. Periodic memos could be circulated informing employees of publications acquired. Publications on prosthetics and orthotics are scarce. It is especially important that CEC acquire up-to-date publications for the continuing education of prosthetists and likely forthcoming training of orthotic candidates. This effort must be coordinated with FAPRO.

CEC's endeavors to educate the public about disabilities and raise consciousness so that people with limitations be viewed as potentially productive members of the community fall well within FUNTER's scope. They are important functions often overlooked by rehabilitation agencies. Education activities have been organized properly for the audiences targeted. For example, puppet shows are a motivating vehicle for elementary school children, while seminars are more appropriate for health promoters. The awareness events and materials developed by CEC demonstrate professionalism.

Changing perceptions and attitudes on the part of society at large is essential to complete rehabilitation, which culminates in the rehabilitated person's return to the community as a productive member. Attitudes change slowly and the task is ongoing in nature. An indicator of success of CEC's awareness efforts would be to observe people with disabilities pursuing positions within the community at all levels--as family members, workers, even elected officials. El Salvador, as many other countries, is a long way from this ultimate goal, but CEC is a first step in the right direction.

#### **D. CONCLUSIONS AND LESSONS LEARNED**

This is a desirable component. Its results may not be as tangible as PAP's or FAPRO's, but its impact, in terms of preventing disabilities, changing attitudes toward persons with limitations, and opening up in the long run sources of funding from an increasingly sympathetic population, is significant. A lesson learned here might be that USAID-sponsored development programs in El Salvador and elsewhere, especially those which advocate profound changes in habits, feelings, and philosophical views, may profit significantly by allocating resources to conditioning the environment so that it may become more receptive to the outputs of the organization. Targeting key groups such as health promoters (for broad coverage) and children (for shaping opinions at an early age) is a strong linkage. So are the orientation and content of written and visual materials produced by CEC.

Several shortcomings are detected. One is CEC's neglect in reaching and educating persons with disabilities regarding their own limitations. Another weak linkage is the absence of puppet show follow-up to study more thoroughly children's true levels of understanding and internalization. Still another is that CEC has not developed indicators or tools to measure attitudinal change conducive to evaluating its own performance. A fourth deficiency is that the directory of resources and services has taken too long. Finally, lack of space seems to be an overriding consideration in making the library operative.

## **E. RECOMMENDATIONS**

1. CEC should develop audiovisual materials (i.e., posters, videotapes, and audiocassettes) especially geared to amputees and their families for exhibit at FAPRO and CRI waiting rooms, and even take to the field in the rural extension program. These materials should contain information about preparing patients and families both emotionally and physically along the road to full rehabilitation (i.e., accepting the disability, prosthetic stump wrapping, etc.).
2. The library should become operational as soon as possible. Proper space and seating facilities must be sought. While the library may contain printed and audiovisual materials on a wide variety of subjects related to rehabilitation, efforts should be directed primarily toward fulfilling the current needs of existing programs. Suggested areas include treatment of amputees, rural outreach, orthotics, physical medicine, community education and awareness, community based rehabilitation, management, and health administration. There should be widespread access to this library by all segments of the community and its use ought to be promoted vigorously. In addition, a small collection of manuals and materials pertaining to the design, fabrication, and fitting of prosthetics/orthotics and related physical medicine subjects should be kept in an area of easy access at FAPRO.
3. CEC should coordinate with the Ministry of Health and schedule the four-day seminars on community rehabilitation for approximately 350 health promoters who have not taken it.
4. CEC should develop and implement a communication system oriented toward health promoters and teachers who have participated in its events to keep them motivated and informed about identification and prevention of disabilities and availability of services for more effective referral. This communication system could take the form of a fact sheet on different topics published and distributed every three months or so.
5. CEC should include public school teachers and members of the business community among its prime targets in consciousness raising efforts. Public school teachers can be reached effectively via regional meetings sponsored by the Ministry of Education.

6. Once the directory of resources is published, CEC should expand it to include services classified by specialty area (i.e., services for the hearing impaired, the developmentally disabled, etc.), rehabilitation centers, and associations of persons with physical disabilities.
7. CEC should develop an attitude monitoring system in the form of surveys, etc. so that bias against, and attitudes toward rejecting, persons with disabilities in different communities can be detected, their origin be identified, and courses of action to correct them be taken.

## **VI. PROMOTION OF REHABILITATION SERVICES COMPONENT (PROMOSER)**

### **A. BACKGROUND AND OBJECTIVES**

This component, created in October 1989, was originally designed to reinforce services offered only by ISRI. The main objective was to provide funds for upgrading the professional skills of ISRI's staff and procuring equipment and materials for the eight rehabilitation centers under ISRI's umbrella. After USAID/FUNTER project funding was increased, PROMOSER was redesigned to conform to an outreach philosophy shared by both USAID and FUNTER. The component's objectives of training professionals and procuring/maintaining equipment for programs serving the disabled remain the same, but the scope of assistance has been broadened to include 96 other institutions in addition to ISRI.

Once domestic training needs and corresponding populations are identified, Salvadoran experts in the field are sought and approached for training delivery. These experts prepare the curriculum and didactic materials, while PROMOSER sets up the form of delivery (i.e., lectures, workshop, demonstrations, group discussions, etc.). Training activities also include travel abroad in special cases.

Requests for specific equipment and materials are submitted by rehabilitation centers, special education schools, and other agencies working with the disabled throughout the country. Along with the procurement of equipment, PROMOSER commits resources to maintenance. Decisions involving international travel for training and observation purposes and procurement of materials/equipment in behalf of the institutions served by PROMOSER require the approval of FUNTER's Technical Committee.

### **B. PROGRESS AND ACCOMPLISHMENTS**

The first task undertaken by PROMOSER was to identify the universe of institutions that fall under its scope of work for purposes of both training and procurement. As of September 1990, 105 such institutions, including CRI, have been identified and 50 have been visited by PROMOSER staff. A list of the 105 institutions identified, along with the type of institution and number of persons benefitting both directly and indirectly from their services, is presented in Annex 6-1. According to this list, the 105 entities serve 927 persons directly and 74,446 persons indirectly. A map showing the geographical distribution of the subset of 50 agencies visited is presented in Map 6-1.

Then a needs assessment survey covering 96 of the 105 agencies was conducted. The survey questionnaire used probes 18 areas such as sources of funding, services provided, longevity, size and composition of staff, and target population. Almost two-thirds

(64.6 percent) of the observations are schools and other entities under the Ministry of Education, 8.3 percent belong to ISRI, 15.6 percent are hospitals and centers administered by the Ministry of Public Health, and 11.5 percent are private institutions. Almost four-fifths (78.1 percent) of the agencies work in special education; more than one-fourth (27.1 percent) are directly involved in physical medicine and/or rehabilitation; 13.5 percent do work in prevention; 12.5 percent offer medical treatment; and 11.5 percent are training oriented. (The percentages of the latter classification do not add to 100.0 because several institutions engage in multiple activities.) According to this survey, the areas of greatest training needs, as perceived by these agencies, in order of priority, are speech and learning disabilities, special education, family training, community based rehabilitation, occupational therapy, and physical therapy. Specific topics of interest cover teaching techniques for slow learners, handling gifted children, pre-vocational orientation, human relations, early stimulation, and data gathering/analysis.

In spite of its short existence, PROMOSER has sponsored quite a few professional training activities. These include a one-day conference on mental health in December 1988 for 380 professionals from ISRI; three five-day workshops on learning disabilities in February-March 1990 for 138 public and private school employees, mostly teachers, many of them from ISRI; three five-day courses on basic neurodevelopment in March-April 1990 for 68 health promoters, teachers, nurses, physicians, and others from 12 agencies (nobody from ISRI attended); three five-day courses on rehabilitation nursing in April-May 1990 for 80 nurses working on public and private institutions throughout the country; a four-day multidisciplinary rehabilitation seminar in June 1990 for 48 physical therapists, physicians, and other professionals from 26 public and private centers in San Salvador; a five-day seminar on rehabilitation social work in July 1990 for 28 professionals, most of them social workers, from 23 centers serving nationwide populations; and a one-day seminar in September 1990 on the impact of communications on comprehensive rehabilitation for 34 persons from a wide variety of professions and representing 13 different media agencies. In addition, a one-day conference was held in April 1990 for FUNTER personnel, mostly secretaries, to acquaint them better with the Foundation's goals and objectives, activities, and interdependence needs.

PROMOSER also has sponsored short-term training abroad. In July-August 1989, even before its formal inception, PROMOSER funds were used to defray expenses of a two-month training course on neurodevelopment treatment in Cuernavaca, Mexico, attended by a physical therapist working then at CIM. Two physicians, an occupational therapist, and a physical therapist, all from ISRI, plus a physiatrist from PAP went to Costa Rica in March 1990 for a one-week seminar on multidisciplinary rehabilitation. (This is the same seminar attended by the Prosthetic Workshop manager and

five prosthetists; FAPRO's personnel expenses were paid by FAPRO, not PROMOSER.)

In July 1990 four deaf leaders from various agencies participated for four days in the Latin American Congress of the Deaf, and a PAP physician attended a two-day child rehabilitation seminar in Guatemala. In August 1990 the CEC and PROMOSER coordinators surveyed for 17 days practices in various rehabilitation centers and programs in Costa Rica, Panama, Puerto Rico, and the Dominican Republic for possible application at CRI. And in September 1990 FUNTER's Technical Manager and the PROMOSER assistant went to Guatemala for three days to identify resources for future training programs.

Although, as of September 1990, no equipment has been purchased by PROMOSER in behalf of the rehabilitation centers and schools it supports, the first batch has been approved by the Technical Committee. This batch contains various quantities of 28 different types of imported equipment (i.e., fixed bicycle, ultraviolet-ray lamp, electric vibrator, etc.) for 25 agencies, 31 types of equipment and materials produced in El Salvador (i.e., didactic material, wheelchair, mimeograph, etc.) for 42 agencies, and 16 types of special-order equipment (i.e., physical therapy table, work bench, mirror, etc.) for 18 agencies. Since the acquisition of these materials and equipment is pending due to revision by USAID of PROMOSER's contracting procedures, no money value is available. However, PROMOSER has budgeted (for September 1990 - March 1991) U.S. \$147,059 for the purchase of imported equipment and U.S. \$28,118 for the acquisition of materials and equipment produced in El Salvador. In addition, U.S. \$4,235 are budgeted for maintenance, all amounting to a total of U.S. \$179,412.

Plans for the immediate future include an exhibit in October 1990 of low-cost didactic material for special pre-school education. Also planned is a collaborative effort with PONI to administer hearing tests and provide prostheses, when needed, to children in 12 remote special schools far from speech and hearing centers. Finally, the Francisco Gavidia and José Matías Delgado universities have been contacted with a proposal from PROMOSER whereby students near graduation fulfill their social service requirement at CRI evaluating children and training teachers in various areas of disability and rehabilitation.

#### **C. OBSERVATIONS AND EVALUATION**

Based on the generalized, diffused nature of the training activities sponsored by PROMOSER, it seems that this component's strategy is to reach as many professionals as possible to provide them with basic training. Its purpose has not been to sponsor quality controlled training to a few professionals. Although topics have been selected on a sound basis (i.e., identification of training needs by professionals working in the field), there

has been no systematic approach to selecting priority areas and offering courses and seminars in a logical sequence. There are numerous urgent needs in El Salvador and PROMOSER has attempted to respond to a wide variety of them. But the ones considered by the majority of rehabilitation professionals as of high priority are not necessarily the ones that FUNTER can satisfy best. For example, most professionals surveyed want training in speech and hearing, which is definitely not within FUNTER's experience, expertise, or direct scope. Attention to proper selection of topics needs to be emphasized.

There are plans for offering more advanced courses oriented to another, more select, population of professionals. For these courses technical experts from abroad may be brought in, as both the coordinator and her assistant have identified in their travel specific persons who can be contracted for technical assistance. Whenever possible, however, local expertise should be used.

PROMOSER could be most helpful to the rest of FUNTER in responding to the staff's own training needs through seminars, conferences, and workshops like the one held in April 1990 to acquaint workers better with the Foundation's goals and objectives, activities, and interdependence needs. In July of this year a survey was conducted in FUNTER to ascertain personnel priorities for training. Effective interdisciplinary team management, improving interpersonal relations, and project administration were identified as priority areas.

Every beneficiary of a FUNTER formal training event must sign a commitment contract (hoja de información y compromiso) to replicate in his/her professional environment and convey to others, within two months, the knowledge gained through the activity. The participant's supervisor also must sign the commitment contract. (Records indicate that almost all participants sign.) This procedure seems to reflect the importance that PROMOSER assigns to immediate and practical application of its training events. Regardless of whether or not participants replicate and/or apply what they have learned, at least the importance of replication is communicated to them.

PROMOSER contacts participants by telephone or site visits to follow-up on their commitment and provide assistance, if needed, in doing so. Whenever an attempt has been made to transfer knowledge/information, the replicator fills out and submits a follow-up activity report (informe de actividades de seguimiento) which adequately captures the information necessary to determine how the course was replicated. According to the number of follow-up forms returned and PROMOSER's first-hand knowledge of ongoing activities, approximately 20 percent of the beneficiaries have passed on, in a formal manner, knowledge acquired in a PROMOSER event.

A difficulty encountered in enforcing people's commitment to replicate is that some persons do not possess the training skills necessary to teach others. Other times participants do not have in their own work environment sufficient financial resources to organize an event with materials, snacks, etc. PROMOSER currently is looking into ways of enhancing follow-up by revising the commitment contract and including other methods of applying knowledge acquired which may be more realistic for certain persons, or, alternatively, allocating a budget to replicators to defray expenses. (The latter option requires strict adherence to accountability practices such as submitting receipts, limiting expenses to specific categories, etc. which sometimes is difficult for PROMOSER itself, let alone individuals trained by the component.) At any rate, it is important to note that PROMOSER is well aware of the positive rippling effects of a training event when it is replicated.

A training agenda review reveals that PROMOSER utilizes appropriate methodologies in organizing its courses and workshops. Methodologies include healthy combinations of lectures and practical activities, such as demonstrations and use of discussion groups. There seems to be good use of audiovisual materials.

An evaluation form (formulario de evaluación del evento) has been developed so that participants rate content, organization, delivery system, etc. This form can measure adequately participants' perceptions and opinions of courses. It would be better if it included an additional question: "How will you apply in your environment what you have learned in this course/seminar?" Answers may provide PROMOSER with an indication of what to do to enhance replication.

Another practice oriented toward application of knowledge has proved to be quite successful in the rehabilitation social work seminar. Every participant was given the task to develop a work plan tailored to his/her specific work environment. Thus, a direct outcome of this seminar was an action plan to be implemented back home. Perhaps this technique could be applied in other events with other professionals.

With respect to networking capabilities, PROMOSER has experienced difficulties in coordinating systematically with the Ministry of Education, although many training courses have focused on its personnel. These courses have been conducted without formal support by, or in coordination with, the Ministry. The Ministry's attitude is described by FUNTER as one of supporting passively PROMOSER's attempts to collaborate.

A visit to the Planning Division of the Ministry of Education has revealed that, although special education was identified in 1985 as a priority area, along with curriculum development, literacy, and educational administration, in practice it has received little

attention. Only one person, a coordinator for special education (coordinador de educación especial), is assigned to this activity and possesses neither a budget nor didactic material for serious training.

There is no rehabilitation or special education plan within the Ministry of Education. Consequently, PROMOSER has proceeded to fill an obvious training gap. Although, in principle, the Ministry has its own training component, it is not operational and has not addressed either rehabilitation or special education. Furthermore, although the Ministry's definition of these two areas is very broad, it does not include individuals with severe disabilities, only children with mild or learning disabilities which can be addressed through the regular school system. Apparently attention to severe disabilities is left to the Ministry of Health through ISRI.

According to all parties, ironically, there has been and continues to be a desire on the part of the Ministry of Education to collaborate with FUNTER. Meetings between both institutions have been held at top and mid-level management. The Ministry has participated in panels as part of CEC's health promoters seminars. FUNTER has provided the Ministry with sets of the 12 booklets developed by CEC, and they have been distributed, seemingly adequately, to regional directors, who, in turn, at least in a few follow-up cases, have passed them onto school principals and teachers.

In reciprocity, the Ministry of Education has allowed its employees to attend all FUNTER's training events organized for them. In addition, the Foundation has participated in several seminars sponsored by the Ministry of Education through a two-year grant from the Organization of American States. Furthermore, at FUNTER's insistence, planning has begun between PROMOSER and the Ministry of Education to organize a series of seminars for October and November 1990. As of September, topics have not been determined yet, but discussions have revolved around seminars on speech and language, Down's syndrome, and genetic problems. PROMOSER also is in the process of procuring educational toys and a photocopier for some schools. Identification of schools in need of equipment and materials is coordinated with the Ministry.

Although there seems to be ample communication between these two entities and an ongoing attempt to collaborate more closely, there is no concrete sign of effective coordination. FUNTER insists that the Ministry should more actively direct and advise FUNTER regarding courses, possible participants, etc. that could benefit from future training. The Ministry, on the other hand, suggests that the best way FUNTER can continue assisting is through procuring equipment and materials for ill-equipped schools, providing training in all areas of special education except learning disabilities, which already is covered, securing funds to

hire a consultant to help in the elaboration of a systematic plan for special education, and lobbying with elected officials so that the whole field of rehabilitation, including special education, may receive greater attention.

The nature of PROMOSER's networking efforts with other public dependencies such as the Ministry of Health, the Department of Justice, and ISSS, as well as with universities and other agencies, are limited to general discussions, inviting their personnel to FUNTER-sponsored events, keeping them informed regarding FUNTER's activities, and occasionally utilizing their experts as resources for training sessions. The same can be said about interaction with institutions gathering persons with disabilities, such as ACOGIPRI, the Federation of Parents and Friends of Persons with Disabilities (Federación de Padres y Amigos de Personas con Discapacidades), the Deaf Persons Association (Asociación Salvadoreña de Sordos), the Blind Persons Association (Asociación Salvadoreña de Ciegos), and the Special Education Foundation (Fundación de Educación Especial). The networking efforts have not led to a mutual, much less collective commitment to avoid duplication nor a pooling of resources for more cost-effective programming.

A confusion between the roles of CEC and PROMOSER arises from the fact that both units engage in networking activities and offer courses/seminars, although presumably for different publics. In the past, the distinction has not always been clear. Also, PROMOSER is of recent creation. Prior to the creation of PROMOSER, CEC was in charge of all networking. By and large CEC does networking on an individual basis, while PROMOSER works directly with institutions, training and dealing with rehabilitation professionals only in their capacity as members of these institutions.

Perhaps the tasks and responsibilities of CEC and PROMOSER might be examined more closely to determine in what ways, if any, the two components could collaborate more closely. Both are engaged in some type of training. Although CEC concentrates on community awareness and PROMOSER develops professional skills, the nature and level of some of the courses sponsored by PROMOSER could easily fall under the consciousness raising category. Perhaps PROMOSER's training objectives could focus more on community awareness and on general, very basic training in rehabilitation for professionals not working on rehabilitation. Attempting to upgrade directly the technical skills of every rehabilitation professional in El Salvador would be a monumental and unrealistic task. Whenever more in-depth training is sought, it might be more efficient to coordinate assistance from universities that include therapy, psychology, special education, or rehabilitation courses in their curricula. In any event, areas covered by other FUNTER components such as treatment of amputees, physical medicine, physical and occupational therapy, and community based rehabilitation deserve emphasis.

Finally, a few words about equipment procurement. PROMOSER needs assistance and support from FUNTER's central administration, especially the accountant, in this process. Ironically, while central administration may provide technical knowledge, it may lack understanding of the rationale behind certain activities. Apparently the actual purchase of the first batch of materials and equipment in behalf of rehabilitation centers and special schools has not occurred yet (as of September 1990) because of the inexperience of FUNTER with USAID's procedures for host-country procurement. (Perhaps an overall need for an organization experiencing FUNTER's growth rate is a specialist in procurement logistics, particularly in dealing with international funds.)

USAID's regulations are designed to ensure accountability in the disbursement of funds. While they may be quite rational and so obvious that they are taken for granted in the United States, Salvadorans, even those who have lived abroad and even those in FUNTER's central administration, may have difficulties understanding the nature and justification of the process. They tend to rationalize their failure to comply with seemingly (in their eyes) stern and absurd requirements by concluding that USAID is dragging its feet.

Although the evaluation has focused more on administrative, performance and efficiency considerations than upon the accounting system, some specific weaknesses can be noted. The accounting system is capable of tracking proceeds from recipients and uses of those proceeds, at least at a minimum. The major weaknesses are not related to preparing progress reports for outside donors or providing the necessary accountability.

Rather, the major weaknesses lie in not providing the service-oriented units (i.e., PAP, PROMOSER, and, to some extent, the other units) with the necessary information and technical support to improve the efficiency of their operations. For example, the Accounting Office should work more closely with PAP and train its personnel in determining who (i.e., patient, donor, or FUNTER) pays for what portion of the artificial limb and related services provided by PAP. (It may be necessary first to standardize criteria.) At the time of the evaluation, such tracking was not being done.

The Accounting Office also should provide support to PAP personnel in identifying and tracking amputees who are behind in their payment schedule. One way in which this could be done is by designing a system that identifies each amputee and the amount of payment made, not to the FUNTER office, but to banks throughout the country.

PROMOSER should receive support from the Accounting Office to carry on its procurement activities on behalf of institutions rendering services directly to persons with disabilities.

Perhaps USAID can assist the Foundation through PROMOSER in sharing with its Salvadoran counterpart the foundations on which the principles of rationality, accountability, and efficiency in U.S. public administration rest, and how to cope with the bureaucratic hurdles inherent to it. While it may not always result in open acceptance, at least the purpose of the mandates might be better understood and subsequent compliance be enhanced.

#### D. CONCLUSIONS AND LESSONS LEARNED

PROMOSER has shown flexibility and responsiveness to needs in the field as perceived by professionals in the field. This is a strong linkage for it is filling a gap left by public institutions which, because of their nature, are limited in scope and coverage by budgets and other constraints. Emphasis on replication implies a long term multiplier effect as knowledge and technology are passed on from one group to another. If all USAID-sponsored programs throughout the world had an effective replication clause attached to them, USAID would have much more to show for its efforts and taxpayers' money.

A lesson learned here might be that transmission of knowledge and willingness by the recipient to replicate an event are necessary, yet not sufficient conditions for generating an effective chain reaction, since many people have problems communicating, let alone teaching. A training-the-trainer ingredient might be essential in the replication formula; that is, teach not only technology, but also the tools for effective communication.

Lack of direction, probably as a result of insufficient strategic planning, is a weakness of this component. A concerted effort is needed so that all courses and seminars offered be connected logically and contribute to strengthening a specific rehabilitation sector or segment; otherwise resources are in danger of being dispersed and PROMOSER's impact could get so diluted that it becomes undetectable. A related weakness is that PROMOSER has not been as successful in networking as it should have been. Ties with other institutions remain cordial, but superficial. This does not necessarily mean that the component or its staff is at fault; perhaps guarded cooperation rather than open integration is the nature of the beast, in which case changing PROMOSER's orientation and strategy might seem sensible.

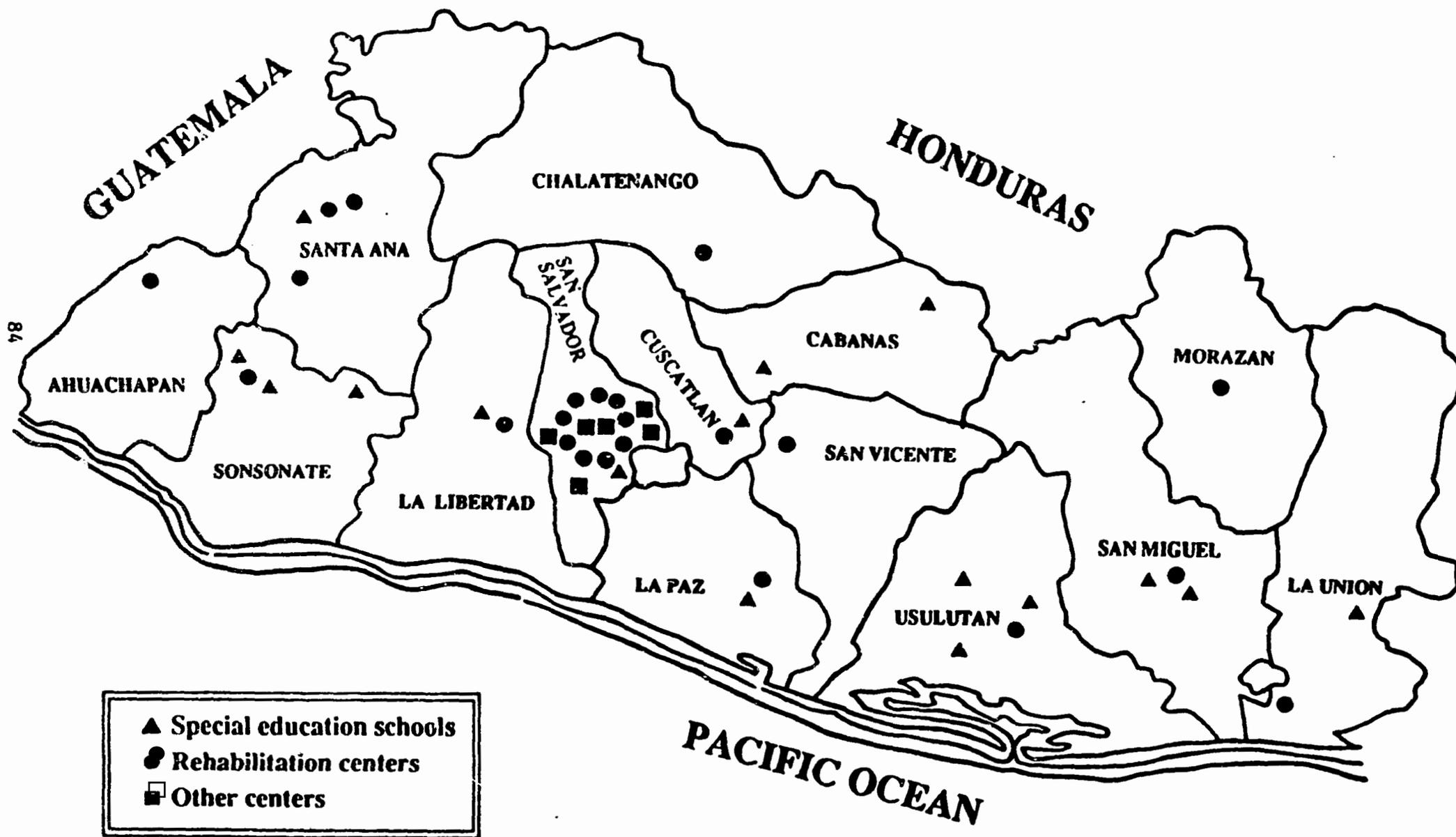
This component's staff needs help, most likely from FUNTER's central administration and even from USAID, when it comes to procurement. Complying with regulations is viewed as a senseless exercise which must be undertaken to keep bureaucrats happy. If there is no perception of purpose, there can be no organization of activities or control over the outcome. Central administration is not happy having to come to PROMOSER's rescue for it views itself as busy with other issues of "real importance," that is, shaping up the Foundation's global affairs. Once again, artificial

separation of components and activities, which inevitably leads to different persons in different departments focusing exclusively on their own microcosm and not responding to what may happen in other parts of FUNTER, detracts from overall effectiveness.

#### **E. RECOMMENDATIONS**

1. PROMOSER should define precisely its scope of work (i.e., goals and objectives, activities, and evaluation). Throughout next year, at least, its sponsored training should be confined to areas currently covered by other USAID/FUNTER Project components.
2. The PROMOSER Coordinator should form a technical support group of rehabilitation professionals from major institutions rendering services to assist her on matters such as determining the technical content of specific training activities and their potential beneficiaries.
3. PROMOSER should include in its course structure, on a regular basis, the development by participants of implementation plans describing how they intend to apply in their respective environments what they have learned. A training-the-trainer ingredient should be added to all courses and seminars.
4. A more precise definition of PROMOSER's scope of work is needed, and further differentiation is necessary between CEC and PROMOSER. In addition, the tasks and responsibilities of CEC and PROMOSER should be examined closely to explore ways of pursuing further coordination and mutual support.
5. Through PROMOSER USAID should prepare a seminar for pertinent FUNTER staff explaining the rationality, accountability, and efficiency principles on which U.S. public administration rests, as well as the origin and logic of procurement requirements with which the Foundation and other development agencies must comply in order to receive foreign-aid support.

Map 6-1. Institutions in whose behalf PROMOSER procures equipment and materials, September 1990



## VII. INSTITUTIONAL ANALYSIS

After reviewing FUNTER's administrative and financial management structures in Part II of this evaluation and each of the components of the USAID/FUNTER Project in Parts III-VI, an analysis of the entire institution is presented here, examining the average cost of USAID/FUNTER Project outputs as an indicator of operational efficiency. Also examined in this part are FUNTER's relations with ISRI, its capability of surviving and prospering beyond USAID support, and its future in the country's rehabilitation picture.

### A. COST OF OUTPUTS

The average cost of the various outputs calculated here are based on an arbitrary, although seemingly reasonable allocation of expenditures reported for September 1987 - August 1990 in Part II of this evaluation by each project component, plus a proportional fraction of central administration's fixed cost (see Annex 2-2), among the various outputs identified for the four components in Parts III-VI. Calculations may not be very accurate and may vary widely depending on assumptions regarding allocation of expenditures among components and among outputs within components, but provide an idea of how much or how little rendering these services costs in El Salvador.

Total fixed cost is obtained by adding over the three-year period USAID support to central administration under the Cooperative Agreement in the amount of U.S. \$127,563 plus one-half of FUNTER's internal fund allocation (U.S. \$323,510), for a total fixed cost of U.S. \$451,073. (The other half of the Foundation's own funds expenditures is allocated directly and indirectly to the PONI Program; consequently, it is not included in this analysis.) The U.S. \$451,073 are then distributed proportionately according to individual expenditures reported by the four components (U.S. \$160,658 by PAP; U.S. \$725,307 by FAPRO; U.S. \$95,641 by CEC; and U.S. \$64,377 by PROMOSER, an aggregate of U.S. \$1,045,983). The resulting fractions and allocations of fixed cost by component are as follows: 15.4 percent for PAP (U.S. \$69,282), 69.3 percent for FAPRO (U.S. \$312,784), 9.1 percent for CEC (U.S. \$41,245), and 6.2 percent for PROMOSER (U.S. \$27,762).

When the fixed cost of each component is added to its respective variable cost, total cost is obtained. Thus, the following chart is useful as a summary of global information about project costs.

Component	Fixed Cost	Variable Cost (U.S. \$ Equivalent)	Total Cost
PAP	69,282	160,658	229,940
FAPRO	312,784	725,307	1,038,091
CEC	41,245	95,641	136,886
PROMOSER	27,762	64,377	92,139
All components	451,073	1,045,983	1,497,056
(PONI Program, not analyzed here)			323,510
Total FUNTER expenditures over the three years			1,820,566

FAPRO's outputs are perhaps the easiest outputs to quantify for they are quite tangible: Prosthetic training, production and repair of artificial limbs, rural extension program, and research on input substitution. The criteria used are as follows: FAPRO's reported expenditures during this period amount to U.S. \$725,307. Consider the U.S. \$232,019 special technical assistance allocation as the cost of training the prosthetists; divided by eleven trainees, the variable cost of two and one-half years of prosthetic training per person is U.S. \$21,093, or U.S. \$8,437 per year.

Of the remaining U.S. \$493,288 spent by FAFRO over the 36-month period, allocate 87 percent (U.S. \$429,161) to production of artificial limbs, 3 percent (U.S. \$14,799) to repairs, 5 percent (U.S. \$24,664) as an additional cost due to traveling to the field for fitting and delivery, and another 5 percent to research. (The average cost of research, however, is not calculated because there is no tangible output yet.) Thus, the average variable cost of an artificial limb is obtained dividing the 1,110 devices produced into the U.S. \$429,161 spent, that is, U.S. \$387 per device. Similarly, the average variable cost per repair is obtained dividing the 650 units repaired into U.S. \$14,799, which yields U.S. \$23 per repair. This methodology also is used to calculate a surcharge attributed to the rural extension program. Divide the 181 units delivered in the field into U.S. \$24,664 and the average variable cost of a prosthesis delivered in the field rises to U.S. \$523.

The FAPRO fixed cost of U.S. \$312,784 is distributed among the various outputs using the same proportions as for variable costs. Thus, 32.0 percent (U.S. \$100,056) corresponds to training the prosthetists for an average fixed cost of U.S. \$9,096 per trainee, or U.S. \$3,638 per trainee/year. Of the remaining U.S. \$212,727 of FAPRO's fixed cost allocation, 87 percent (U.S. \$185,072) is assigned to prosthetic production for an average fixed cost of U.S. \$167 per unit produced; 3 percent (U.S. \$6,382) is assigned to prosthetic repairs for an average fixed cost of U.S. \$10 per unit

repaired; and 5 percent (U.S. \$10,636) is assigned to the rural extension program so the average fixed cost of field fitted and delivered units goes up to U.S. \$226.

The average costs of FAPRO outputs can be summarized as follows:

FAPRO Outputs	Average Fixed Cost	Average Variable Cost (U.S. \$ Equivalent)	Average Total Cost
Prosthetic trainee	9,096	21,093	30,189
Prost. training per year	3,638	8,437	12,075
Prosthesis produced	167	387	554
Rural extension program	59	136	195
Rural prosthesis produced	226	523	749
Prosthesis repaired	10	23	33

PAP exhibits a greater variety and complexity of outputs than does FAPRO due to the many services provided at CRI. The allocation criteria for the outputs of this component are as follows: 42 percent of both fixed and variable expenditures corresponds to direct services provided by social workers (12 percent allocated to producing 1,219 initial interviews with amputees; 12 percent allocated to 2,268 subsequent interviews; 8 percent allocated to 237 patient socioeconomic profiles; and the remaining 10 percent allocated to 656 field visits to attempt to contact amputees); 13 percent corresponds to services provided by the physical therapist (4 percent each allocated to producing 490 patient evaluations; 756 patient training sessions; and 148 lectures on prosthetic care and hygiene, plus 1 percent allocated to 13 home visits); 20 percent corresponds to services provided by the three physiatrists (2,529 medical examinations); 20 percent corresponds to psychological orientation services (7 percent allocated to producing 233 initial interviews; another 7 percent allocated to 159 subsequent interviews; 3 percent allocated to 37 group therapy sessions; and another 3 percent allocated to 27 family therapy sessions); 4.5 percent corresponds to the national amputee registry (429 new cases identified); and the remaining one-half of 1 percent corresponds to FAP's output (71 letters written in behalf of amputees who cannot pay for their prostheses).

Overall average costs per person benefitted are obtained by dividing the 1,268 PAP clinical files into the various total costs. Thus, average total cost is estimated to be U.S. \$182 (U.S. \$55 average fixed cost plus U.S. \$127 average variable cost). Similarly, costs per patient per month can be calculated by dividing the aggregate number of months since patients entered the

system into the various total costs. According to these calculations, average total cost per patient/month is U.S. \$16 (U.S. \$5 average fixed cost plus U.S. \$11 average variable cost). When the fixed, variable, and total cost amounts assigned to the various professional activities/efforts are divided by their respective outputs, the average cost estimates are as follows:

PAP Outputs	Average Fixed Cost	Average Variable Cost (U.S. \$ Equivalent)	Average Total Cost
<b>Social workers</b>			
Initial interview	7	16	23
Subsequent interview	4	8	12
Socioeconomic profile	23	54	77
Field visit	11	24	35
<b>Physical therapist</b>			
Patient evaluation	6	13	19
Patient training session	4	8	12
Lecture on care/hygiene	19	43	62
Home visit	53	124	177
<b>Physiatrists</b>			
Medical examination	5	13	18
<b>Psychologist</b>			
Initial interview	21	48	69
Subsequent interview	30	71	101
Group therapy session	56	130	186
Family therapy session	77	178	255
Amputee identified	7	17	24
Letter written (FAP)	5	11	16
Services per patient	55	127	182
Services per patient/month	5	11	16

Seven different kinds of output can be identified in the CEC component. These include ten seminars organized for 340 rural health promoters and supervisors (40 percent of the component's effort); eight puppet shows, portraying the plight of children with disabilities, presented in public and private elementary schools (10 percent of effort); 4,500 sets of 12 booklets containing basic information on various disabilities (25 percent of effort); 4,000

publicity pamphlets detailing services provided by the Foundation (3 percent of effort); three videotapes about activities sponsored by FUNTER (2 percent of effort); a directory of resources and services available to persons with disabilities, which is not finished yet (15 percent of effort); and development of a resource library on disabilities and rehabilitation (5 percent of effort).

As with the other components, average costs are estimated dividing the component's fixed cost (U.S. \$41,245), variable cost (U.S. \$95,641) and total cost (U.S. \$136,886) portions allocated to each activity by the units of output identified in the activity. Thus,

CEC Outputs	Average Fixed Cost	Average Variable Cost (U.S. \$ Equivalent)	Average Total Cost
Health promoter trained	48.53	112.51	161.04
Puppet show	515.56	1,195.53	1,711.07
Set of booklets on disab.	2.29	5.31	7.60
Publicity pamphlet	.31	.72	1.03
Videotape	274.97	637.60	912.57

Training rehabilitation professionals rendering services to persons with disabilities is the most important output identified for PROMOSER. Its level of effort in relation to the global output of this component is set at 80 percent. Specific training skill upgrading activities considered here are a one-day conference on mental health for 380 ISRI professionals; three five-day workshops on learning disabilities for 138 public and private school employees; three five-day courses on basic neurodevelopment for 68 health promoters, teachers, nurses, and others; three five-day courses on rehabilitation nursing for 80 nurses; a four-day multidisciplinary rehabilitation seminar for 48 professionals from different fields; a five-day seminar on rehabilitation social work for 28 social workers; a one-day seminar on the impact of communications on comprehensive rehabilitation for 34 persons from a wide variety of professions; and a one-day conference for 14 FUNTER staff members on the Foundation's goals and objectives, needs, and activities. Considering that these activities add up to 5,050 person-days of training, average costs are obtained by dividing this output into 80 percent of this component's total costs. The results indicate that the average total cost of a PROMOSER person-day's training is U.S. \$15 (U.S. \$5 average fixed cost plus U.S. \$10 average variable cost).

The level of effort for procuring and maintaining equipment and materials is set at 15 percent. This includes a proportional cost of identifying institutions that qualify for support by PROMOSER, setting up the first batch of equipment and materials identified in Part VI, etc. There is no output for these activities as of September 1990, so no average costs can be calculated.

Finally, the third output identified here for PROMOSER is training abroad, which is assigned the remaining 5 percent level of effort. Specific activities include a two-month (approximately 50 days) training course on neurodevelopment treatment in Cuernavaca for a CIM physical therapist, a six-day seminar in Costa Rica on multidisciplinary rehabilitation attended by five professionals from ISRI and PAP; a four-day congress participation in Mexico by four deaf leaders; a two-day child rehabilitation seminar in Guatemala attended by a PAP physician; a 17-day tour of rehabilitation centers in various countries by the CEC and PROMOSER coordinators; and a three-day visit to Guatemala by the Technical Manager and the PROMOSER assistant to identify resources for future training programs. These activities add up to 138 person-days, for an average fixed cost of U.S. \$10, an average variable cost of U.S. \$23, and an average total cost of U.S. \$33 per person-day.

#### B. FUNTER AND ISRI

Internally, FUNTER perceives itself as a supportive entity always willing to coordinate with other agencies. From the outside, however, this perception is not substantiated by ISRI, the Salvadoran institution responsible for providing and coordinating nationwide public services rendered to persons with disabilities. Financially dependent on the Ministry of Health, ISRI was created in 1961 and began operating in 1963. It serves as umbrella for eight rehabilitation centers plus an asylum for the elderly.

Under the terms of the original USAID/FUNTER Cooperative Agreement, ISRI was designated as the sole beneficiary of FUNTER's technical assistance, training, and equipment/material procurement programs. Funds were designated by USAID to upgrade the professional skills of ISRI's staff and purchase/maintain equipment for its centers. FUNTER was to manage the funds and support the endeavor. However, due to ISRI's internal administrative hurdles and inability to develop and submit appropriate training plans, both USAID and FUNTER decided to broaden the scope of possible beneficiaries in this part of the project so that other rehabilitation and special education institutions throughout El Salvador could benefit from FUNTER's training and procurement activities, although ISRI would remain a major beneficiary.

Some communication, although no coordination, between the two institutions seems to exist at the highest echelons. FUNTER's Executive Director is a member of ISRI's Board of Directors. He attends board meetings regularly and consequently is aware of ISRI's plans and activities. He maintains that he informs ISRI's board members, collectively as well as individually, about FUNTER's goals, actions, and accomplishments. Yet the President and the General Manager of ISRI claim they do not know what FUNTER is doing. Some steps have been taken recently to improve communication and initiate coordination. During the course of this evaluation, the Executive Director and members of FUNTER's board

met with ISRI' President and board members, thus opening up formal inter-institutional communication channels.

Communication and coordination between FUNTER and ISRI are much stronger at the patient care level. Rehabilitation professionals from both institutions refer cases to each other for partial/total treatment and mutual support seems to be the rule rather than the exception. Furthermore, informal conversations with ISRI therapists and teachers reveal that they are reasonably satisfied with what they have gotten out of courses sponsored by FUNTER. A solid communication barrier between the two entities, however, seems to exist at the middle management level. This barrier may be the result of interpersonal differences, unfortunate past events, jealousy, and cumulative misunderstandings. Whatever the reasons, it constitutes a formidable obstacle to possible guidelines originating at the top for greater interaction between the two agencies and/or requests from the field by rehabilitation professionals for more flexibility and enhanced FUNTER-ISRI cooperation.

### C. SUSTAINABILITY

Is FUNTER capable of surviving without USAID support? The answer is probably yes. How much of its current operation will have to be curtailed if and when such an event occurs? That is one of the subjects addressed in this section. Other subjects include FUNTER's overall fundraising capability and recovery procedures.

When the Cooperative Agreement was amended, a specific portion (Section G, Paragraph 2b) specified that "FUNTER will present to USAID no later than August 31, 1989 fundraising goals which correspond to a cash income plan that identifies FUNTER's projected level of commitment which the organization is capable of sustaining for operating the prosthetic workshop and providing support services for civilian amputees using non-USAID funds. The plan will at a minimum include fundraising targets on an annual basis, as follows: July 1989 through June 1990 (50%), July 1990 through June 1991 (75%) and July 1991 through June 1992 (100%). These benchmarks represent FUNTER's responsibility to develop and carry out a dynamic fundraising program generating income equal to an identified level of expenditures for personnel, inventory, and operating expenses for the Prosthetic Workshop and related support services. Progress against targets will be reviewed every six (6) months, beginning with the second annual review. Continued AID funding will be based on progress against these targets, as well as technical performance."

To the best of the knowledge of this evaluation team, no formal review of this nature has ever taken place. After an extensive search for documented targets, work plans, etc., three sources of information have been identified. One is an undated report entitled "Fundraising Work Plan" (Plan de Trabajo para Recaudación

de Fondos) which seems outdated, as goals are set for 1988. It mentions as fundraising activities the national donors' program (FAP), a similar international effort to receive donations from abroad, a film charity event, and a week-end drive to persuade shoppers to donate their shopping change to FAP. The work plan is vague and the nature of the activities is not capable of addressing a significant portion of FUNTER's financial needs.

The second source of information on fundraising goals and activities identified by the evaluation team is a one-page statement of expected donations for 1991 prepared by FUNTER. The 1991 fundraising goal is set at U.S. \$757,353--U.S. \$294,118 from a televised marathon, U.S. \$279,412 raised by FAP through the donors' program, a fundraising event referred to as the million-colon banquet (banquete del millón), two raffles for U.S. \$14,706, and U.S. \$22,059 in donations by members of the General Assembly.

Judging by the third source of information identified by the team, a table prepared by FUNTER for this evaluation detailing 1988-1990 non-USAID contributions to the Foundation (see Table 7-1), fundraising goals set for 1991 are not realistic. For example, consider that over the three-year period the Foundation has received from members of the General Assembly a total of U.S. \$5,229. Projecting (U.S. \$22,059) four times as much in contributions for 1991 is a significant departure from experience. Similarly, the projection for contributions to the donors' program (U.S. \$279,412) is over 14 times more than the amount of donations received during the last three years (U.S. \$19,055). In fact, the overall goal of U.S. \$757,353 exceeds by 22 percent the total amount of non-USAID cash donations recorded during 1988-1990. (Donations in 1988 by the Active 20/30 Club include U.S. \$392,179 rolled over from the November 1987 telethon.)

The inevitable conclusion from this analysis is that not much fundraising seems to be going on other than preparations for the November 1990 televised marathon. A rather reasonable goal of U.S. \$367,647 has been set for this event. Of course, assuming it is successful, continuing marathons of this nature, perhaps every other year, would be a source of financial vitality needed by the Foundation to maintain some of its operations beyond the construction/equipment installation stage.

Non-USAID cash contributions received by FUNTER during 1988-1990 (U.S. \$625,762) are slightly less than the Foundation's expenditures (U.S. \$638,196) of non-USAID funds throughout approximately the same period (September 1987 - August 1990, see Annex 2-2). If one were to judge by this comparison and project performance onto the future, FUNTER would be in no position to sustain any of the project activities, assuming that the central administration portion paid with internal funds and the PONI Program remain intact. Of course, such comparison is not entirely valid, since a lot of physical infrastructure has been acquired,

at a rate which will not necessarily be maintained in the future, even if USAID support is extended for another three years. Furthermore, there is no point in having a central administration without services, so that central administration would have to be curtailed.

If USAID discontinued financial support to FUNTER, the Foundation probably would reduce its central administration by one secretary, both accounting assistants, one messenger, and two guards. FAPRO probably would experience a cut in four to six prosthetists, the stock clerk, and the assistant to the manager. PAP also would be reduced substantially (from four to one and one-half social workers, from three to one physiatrist, and from full-time to part-time physical therapist and psychologist). Both CEC and PROMOSER would be reduced to a minimum, probably consolidated into one component.

As all prosthetic technicians are fully occupied at present, any reduction in their numbers would result in a proportionate reduction in the quantity of service which can be delivered. A reduction of staff in other categories would impact more heavily on the quality of service delivery.

A deficiency that needs to be corrected is that FUNTER has not applied to the U.S. Internal Revenue Service for tax-deductible contribution status. Being a USAID recipient of funds qualifies the Foundation for such status, which is likely to enhance its chances of obtaining substantial contributions from the United States. In addition, FUNTER should contact international agencies and foundations as potential donors of technical and financial resources. As a case in point, FUNTER should get in touch with Partners of the Americas in El Salvador, which is funding a professional rehabilitation project (i.e., Proyecto Fénix).

Another deficiency in the system has to do with the apparent inability to enforce payment from amputees after they have been fitted with prostheses. An analysis of a random sample consisting of 467 patients reveals that almost two-thirds (64.2 percent) are in arrears and one-fourth (24.0 percent) has paid their full share of the price of their prosthesis (in an indeterminate number of cases their device was paid by a donor, so that this proportion does not necessarily reflect compliance with the prosthetic receipt contract). The remaining 11.8 percent are up to date in their installments. As of September 1990, delinquent payments amount to U.S. \$25,276, more than half (55.0 percent) of the original balance owed of U.S. \$45,937 throughout the three-year span of this evaluation (see Table 3-4).

#### D. THE FUTURE

Although many people know something about the Teleton Foundation, their ideas about what FUNTER does is not always accurate and oftentimes is limited to a segment or component (i.e., amputee care, awareness campaigns, equipment procurement, etc.). It is essential that FUNTER gain greater recognition in the community, taking advantage of contacts made through publications, events, and whatever means at its disposal to explain its role, functions, and impact on the national rehabilitation scene. Utilizing this respect, it could assume a leadership role in the formulation of a National Rehabilitation Plan through advocacy, lobbying, organization, and financial support of this effort through CEC and PROMOSER. Along these lines FUNTER should hire persons with disabilities as opportunities arise, thus taking leadership as a role model institution in the employment of the physically challenged.

FUNTER needs its own building where all its components can be gathered. This structure should preferably be built with non-USAID funds. There are four reasons for this recommendation: First, they have stated repeatedly that they are going to do it. Second, a building constitutes a tangible result of the community's effort and reinforces by its very presence whatever public relation campaigns are launched by the institution. Third, it is a source of pride, as it marks a significant milestone in the history of rehabilitation in El Salvador, accomplished by Salvadorans themselves. Fourth, it conveys a positive message to USAID and other donor institutions about FUNTER's irrevocable and long-term commitment to the disabled community, dispelling fears that there may be no life beyond foreign aid.

During the course of this evaluation and partly motivated by it, FUNTER's Executive Director and members of the Board have set out to locate a piece of land suitable for construction. They have met with the President of El Salvador and members of the Government to arrange for possible donation of the land where the future FUNTER building would be constructed. A good time for such donation might be during the forthcoming telethon.

As FUNTER continues to expand its coverage, it might become increasingly and inevitably perceived by ISRI as invading its turf, duplicating efforts, and so on. A little (although not excessive) duplication of effort is not necessarily evil; known by its other name, competition, it might be invigorating to both institutions. The Foundation, however, should continue providing support to ISRI, upgrading the skills of its professionals and procuring equipment and materials for its centers in areas that fall within FUNTER's institutional scope. Furthermore, on a trial basis, FUNTER should fund specific projects initiated and implemented solely by ISRI as long as proper accountability of expenditures and objective evaluation of results are provided.

In recent meetings held at the highest echelons of both FUNTER and ISRI, the possibility of merging the two institutions (in fact, FUNTER taking over ISRI and its budget, but only absorbing a fraction of its staff) has been discussed. At least for next year, FUNTER should refrain from taking over ISRI, if the situation arose, no matter how tempting the offer might seem. A sudden and massive change could be potentially catastrophic, and the relative efficiency which has characterized the Foundation could rapidly turn into chaos. FUNTER simply does not possess the managerial resources to handle such move. In any event, before any action is taken in the long run, if circumstances are ever propitious, an in-depth study of ISRI's proper focus, needs, resources, and institutional constraints should be conducted.

Another quandary likely faced by FUNTER, as the environment almost forces it to expand, is to decide which direction such expansion should take. Should the Foundation broaden its institutional scope so as to attempt to satisfy a greater diversity of needs or should it concentrate in activities already familiar? This is not the time to alter scope or grow significantly in size or diversity; instead, it is time for better quality and more specialization. FUNTER should continue to provide and expand services in areas where it has been so successful: Identification, referral, and treatment of amputees; raising awareness and consciousness of capabilities and needs of the disabled, especially in rural areas; in-depth training of prosthetists; and organizing and training seminars for professionals in selected fields and from selected institutions. At least throughout the next three years, the Foundation should direct its efforts toward making these services even better and should not dissipate its resources in other rehabilitation areas, which, albeit admirable and highly needed, it has no expertise.

FUNTER should not initiate programs or even activities in mental retardation, learning disabilities, speech and hearing, or visual impairments. Vocational orientation should be offered to amputees only. The Foundation should definitely not undertake bold projects such as managing a farm for the disabled or instituting vocational training workshops for any disability. However, a new area that seems suitable for direct involvement by FUNTER is expansion of PAP and FAPRO into patient management for, and production of, orthotics.

Obtaining assistance on organizational development and strategic planning will become increasingly important as the Foundation continues to grow and experiences expansion pains. If nothing is done about the administrative and data reporting deficiencies pointed out in Parts II and III, poor management and inefficient communication systems may eventually develop into overriding bottlenecks. In addition, FUNTER needs to identify and pursue specific goals and objectives regarding areas of growth, funding strategies, internal coordination, and image projected to the

outside world.

#### **E. CONCLUDING REMARKS**

Should USAID continue supporting FUNTER's rehabilitation efforts beyond the current cooperative agreement? This evaluation shows that the Foundation has reached, and in some cases surpassed, rather efficiently, most of their USAID Project goals. By and large USAID regulations and reporting requirements have been met. FUNTER's personnel, quite competent professionally, exhibits a consistent disposition to assist, listen, and learn. The institutional infrastructure is already laid out, and the rules of the game are known by everybody. Thus, there is every indication to conclude that another three years of USAID-FUNTER association can be quite fruitful, especially after recommendations in this evaluation are implemented. Along these lines, the evaluation team recommends that, should another cooperative agreement be signed, a midterm evaluation (perhaps at the end of the first year), as well as a final evaluation, be conducted for purposes of detecting possible deficiencies and suggesting appropriate changes while the project still goes on.

Table 7-1. Donations received by FUNTER from sources other than USAID, by source and year, 1988-1990.

Source	Donations (U.S. \$ Equivalent)			
	Total 1988-1990	1988	1989	1990
All sources	854,315	553,284	164,305	136,726
Active 20-30 Club	399,839	399,839	-	-
Interest on deposits	103,130	44,447	47,059	11,624
Machinery and equipment	115,231	55,272	15,823	44,136
Government of Korea	43,940	-	43,940	-
Public Welfare Foundation	65,882	-	25,735	40,147
FUNTER Arts Festival	15,580	15,580	-	-
In-kind services	40,145	19,439	2,176	18,529
Cash	17,045	-	7,766	9,279
Members General Assembly	5,229	2,050	2,566	613
Donations to FAP	19,056	8,691	6,074	4,291
Other	29,238	7,966	13,166	8,106

Donations for 1990 include only January-August.

## RECOMMENDATIONS

Throughout this evaluation the team has identified 47 specific recommendations and courses of action directed toward improving the performance of FUNTER and the USAID/FUNTER Project. Most of these are presented by component in separate sections at the end of Parts II-VI. Recommendations of a global nature appear in Part VII. The purpose of this section is to identify the 20 most important ones and establish their priority order in the opinion of the evaluation team.

1. FUNTER should identify and pursue specific goals and objectives regarding areas of growth, funding strategies, internal coordination, and image projected to the outside world. It should abandon the practice of focusing on specific parts or components and adopt a comprehensive, systems approach.
2. FUNTER should continue to provide and expand services in areas where it has been so successful: Identification, referral, and treatment of amputees; raising awareness and consciousness of capabilities and needs of the disabled, especially in rural areas; in-depth training of prosthetists; and organizing and training seminars for professionals in selected fields and from selected institutions. At least throughout the next two years, the Foundation should direct its efforts toward making these services even better and should not dissipate its resources in other rehabilitation areas, which, albeit admirable and highly needed, it has no expertise. Instead of diversifying its activities, FUNTER's emphasis should be placed in networking.
3. FUNTER should not initiate programs or even activities in mental retardation, learning disabilities, speech and hearing, or visual impairments. Vocational orientation should be offered to amputees only. The Foundation definitely should not undertake bold projects which are occasionally mentioned, such as managing a farm for the disabled or instituting vocational training workshops for any disability.
4. FUNTER should undertake more aggressive fundraising and develop realistic plans and activities conducive to being able to sustain its level of operation when USAID funds are no longer available. Courses of action include applying to the U.S. Internal Revenue Service for tax-deductible contribution status and increasing recovery of cost of prostheses. FUNTER's General Assembly should be made accessible to potential new members based on the size and continuity of their financial support.

5. All FUNTER programs and personnel should be concentrated in a single location with sufficient space to reduce lost time and resources and improve communication within the project and the Foundation. In the long run (by June 1992), FUNTER ought to purchase or construct a building with internal funds. In the interim, personnel currently located at Escalón and at CRI should consolidate their offices in a substantially larger, leased site. (This seems to be an appropriate time to implement this recommendation since the owners of the Escalón house have asked FUNTER to look for other facilities.) For the present, FAPRO can continue operations adequately in the building it currently occupies because a move at this time would imply considerable effort and expense in conditioning the physical plant. FAPRO's need for 200 more square meters (for a total of 600 square meters) to accommodate additional equipment and trainees recommended in Part IV of this evaluation can be addressed in the short run by constructing a roof over the open patio area in the back of the building. More space also is needed for the areas of psychology, physical therapy, social work and the library, even if it means reducing the size of administrators' offices.
6. The position of Technical Manager of the USAID/FUNTER Project should be divided on a functional basis into two positions: A Project Manager in charge of planning, programming, coordinating, and controlling the work of the various components, and a Medical Director who would coordinate equally with the Project Manager on administrative matters and be in charge of clinical services provided by PAP and FAPRO. If this split is not possible because of constraints not contemplated in this evaluation, the Technical Manager position should be addressed in terms of its current administrative weaknesses.
7. PAP should develop and implement a professional personnel plan for training and continuing education. Specific activities needing attention include a one-month training/observation visit to a rehabilitation center abroad for the physical therapist, a one-month training/observation visit for the person responsible for professional rehabilitation activities to a country with socioeconomic conditions similar to those of El Salvador, and a one-month training visit for the psychologist to a program abroad that serve the socially and economically disadvantaged, especially the illiterate. Also important is collective training for all rehabilitation professionals to harmonize their patient management techniques and promote a team approach.

8. Six U.S. specialists in different areas of Prosthetics and Orthotics should be invited by FAPRO for one-week training sessions which include theory, practical demonstrations, supervision, and evaluation of tasks, all followed by a final exam.
9. FAPRO should select, based on merit and ability, four orthotic training candidates from its eleven prosthetists to receive one year of intensive guided technical training (i.e., lectures, reading assignments, demonstrations, supervised applications, etc.) and one year of internship/apprenticeship working more independently under the supervision of a prosthetic/orthotic training advisor.
10. At least for the next year, FUNTER should refrain from taking over ISRI, if the situation arises, no matter how tempting the offer might seem.
11. FUNTER should continue providing support to ISRI and, on a trial basis, fund specific projects initiated and implemented solely by ISRI as long as proper accountability of expenditures and objective evaluation of results are provided.
12. PROMOSER's training should be confined to areas currently covered by other USAID/FUNTER Project components.
13. Through PROMOSER, USAID should prepare a seminar for pertinent FUNTER staff explaining the rationality, accountability, and efficiency principles on which U.S. public administration rests, as well as the origin and logic of procurement requirements with which the Foundation and other development agencies must comply in order to receive foreign-aid support.
14. PAP's computerized information system should be radically restructured. The current contractor should be replaced by a qualified technician/firm capable of providing technical assistance plus training in data input, retrieval, and analysis. In addition, PAP personnel responsible for data processing should receive extensive training in computer packages capable of handling their information processing and reporting needs, not only at present, but also in the immediate future, as FUNTER's activities and coverage expand.
15. PAP should investigate carefully the feasibility of a full professional rehabilitation (i.e., vocational rehabilitation and job training) element before committing significant resources to it. This feasibility

study should compare economic and social rates of return of creating infrastructure versus utilizing existing resources. If the feasibility study shows that a whole new set of activities is justified, a pilot project should be planned and implemented with a small (about 15), targeted number of amputees in selected job markets. This pilot project should be evaluated six months after its inception to ascertain its outputs and consequences.

16. The library should become operational as soon as possible. Proper space and seating facilities must be sought. While the library may contain printed and audiovisual materials on a wide variety of subjects related to rehabilitation, efforts should be directed primarily toward fulfilling the current needs of existing programs. Suggested areas include treatment of amputees, rural outreach, orthotics, physical medicine, community education and awareness, community based rehabilitation, management, and health administration. There should be widespread access to this library by all segments of the community and its use ought to be promoted vigorously. In addition, a small collection of manuals and materials pertaining to the design, fabrication, and fitting of prosthetics/orthotics and related physical medicine subjects should be kept in an area of easy access at FAPRO.
17. FAPRO should pursue gaining the technology to produce solid ankle cushion heel (SACH) prosthetic feet, cotton and nylon stockinettes, and polyurethane ankle blocks to reduce costs of production. The FAPRO manager and one prosthetist should visit "Ortopedia Universal" in Mexico City to purchase equipment and materials for SACH foot production. The manager would stay one week while making the final purchase decision, while the prosthetist would remain for one month to learn the technology needed to produce the SACH foot and polyurethane ankle block domestically. (Polyurethane can be imported at a very competitive price from "Productos Eiffel, S.A." in Guadalajara, Mexico.) The cost of acquiring SACH foot technology is estimated at approximately US\$ 15,000.
18. FAPRO should select from its prosthetists supervisors in charge of three areas: Patient care, technical education, and product development. The rest of the prosthetists should work under the patient care supervisor and everybody will continue to respond to the workshop manager. One person working under the patient care supervisor should be entrusted fully with the technical aspects of the rural extension program. The supervisor in charge of product development should be assigned the responsibility of testing proposed modified technologies, carefully monitoring patients while maintaining specific records of developmental experiences

and outcomes.

19. A management consultant should be hired by FUNTER for one month to conduct training sessions and workshops for, as well as interact individually with, the Executive Director, the Administrator, and the USAID/FUNTER staff. The topic of these sessions should be organizational development, supervision, planning (both strategic and tactical), and control.
20. The PROMOSER Coordinator should form a technical support group of rehabilitation professionals from major institutions rendering services to assist her on matters such as determining the technical content of specific training activities and their potential beneficiaries.

Annex 2-1. FUNTER's personnel, position held, and monthly salary by source of funds and component, September 1990.

Source of Funds, Component, and Name	Position	Monthly Salary (U.S. \$ Equivalent)
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PAID THROUGH THE USAID/FUNTER PROJECT

Central Administration

Francisco E. Larín Ramos	Accountant	441
Claudia Erazo de Girón	Executive secretary	221
Rosa E. Melgar Vega	Secretary	176
José Alberto Flamenco	Messenger	176
Pablo J. Navas Guzmán	Motorist	147
Eduardo A. Pérez Reyes	Motorist	147
Herundino Castillo Peña	Guard (FAPRO)	140
Juan V. Cea Aguilar	Guard	132
Ricardo O. García Palacios	Guard (CRI)	132
Rafael Cenén Colorado	Guard (CRI)	132

Project Management

Lidia N. Sánchez de Tinetti	Technical Manager	1,176
Cecilia Hernández de Rivas	Executive Secretary	294

PAP

Rosa M. Cruz de Lobo	Coordinator	662
Clara A. Martínez	Psychologist	494
Ruth I. Morán Baños	Social worker	397
Zoila A. de Rivera	Social worker	324
Vilma E. Calderón	Social worker	324
María C. Campos de Alvarez	Physical therapist	309
Silvia V. Guadrón Ramírez	Social worker	265
Maritza Castillo de Olsen	Executive secretary	221
Martha V. Henriquez (part-time)	Physiatrist	184
Manuel E. Rodríguez Sorto	Stock clerk	176
Ricardo F. Flores (part-time)	Physiatrist	147
Nelly F. Romero Cruz	Service and cleaning	132

FAPRO

José O. Osorio	General manager	1,165
Sandra E. Moreno	Assistant to manager	368
Francisco A. Flores Bonilla	Prosthetic technician	353

Source of Funds, Component, and Name	Position	Monthly Salary (U.S. \$ Equivalent)
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Carlos M. Zelaya Cornejo	Prosthetic technician	353
Pedro A. Flores	Prosthetic trainee	229
Ana K. Sandoval de Martínez	Secretary	221
José F. Menjivar Solórzano	Prosthetic trainee	169
Oscar A. Beltrán Aparicio	Prosthetic trainee	163
Juan A. Ortiz Bolaños	Prosthetic trainee	159
Jorge A. García	Stock clerk	159
Jesús F. Martínez Serrano	Prosthetic trainee	154
Mario E. Guevara Martínez	Prosthetic trainee	147
René E. Estévez Lemus	Prosthetic trainee	147
José A. Villalobos Rivas	Prosthetic trainee	147
Juan R. Ventura Mejía	Prosthetic trainee	132
María E. Quijada de López	Services and cleaning	132
María A. Rivera	Services and cleaning	132

CEC

Ana G. Carranza de Saprissa	Coordinator	588
Rina Moreno de Osorio	Secretary	147

PROMOSER

Ruth Linares de Melara	Coordinator	529
Cecilia Novoa Fogelbach	Training coordinator	368
Rina Moreno de Osorio	Secretary	147

NOT PAID THROUGH THE USAID/FUNTER PROJECT

Central Administration

Luis E. Angulo	Executive Director	1,765
Heriberto Marroquín Peña	Administrator	882
Ana Zuleima de Vásquez	Executive Secretary	362
Elizabeth de Schimmel	Public Relat. assist.	282
Miladys C. Alvarez	Accounting assistant	213
Ana M. Sánchez Márquez	Accounting assistant	213
José A. Tula Pineda	Guard	176
Manuel de J. Melina	Messenger	176
Celanda T. Medrano	Services and cleaning	132

Source of Funds, Component, and Name	Position	Monthly Salary (U.S. \$ Equivalent)
<b>PONI Program</b>		
Juan Allwood Paredes	Coordinator	882
Morena G. Henriquez de Barahona	Secretary	265
Marta E. Zelanda Castro	Audio test. superv.	199
José N. Fernández	Audio test. special.	184
Claudia B. Posada	Audio test. special.	184
Elva O. Alvarado de Portillo	Audio test. special.	184
Luis A. López Lemus	Audio test. superv.	176
Alma Karyn Manzur	Audio test. special.	159
Roberto A. Cortez	Audio test. special.	159
René I. Bonilla	Audio test. special.	147
Valile A. del Cid López	Audio test. special.	147
Andrés A. González	Audio test. special.	147
Néstor O. Granados Leiva	Audio test. special.	147
Blanca del Rosario Zamora	Audio test. special.	147
José R. Rivas Martínez	Audio test. special.	147
Francisco A. Corpeño	Motorist	147
Nelson E. Jiménez Barrera	Motorist	147
Miguel A. Flores Chévez	Motorist	147

Annex 2-2. FUNTER's annual and aggregate expenditures by source of funds, component within the USAID/FUNTER Project, expenditure category, and four-month period spanning September 1987 through August 1990.

Source of Funds, Component, and Expenditure Category	Expenditures (U.S. \$ Equivalent)			
	Total	Sep 1987 Aug 1988	Sep 1988 Aug 1989	Sep 1989 Aug 1990
<b>Total</b>	<b>1,820,565</b>	<b>353,661</b>	<b>587,083</b>	<b>879,821</b>
Salaries/benefits	437,635	67,561	139,980	230,094
Capital goods	234,639	69,643	31,754	133,242
Operat. expenses	916,273	216,457	257,408	442,408
Technical assist.	232,019	-	157,941	74,078
<b>Non-USAID funds</b>	<b>647,019</b>	<b>205,531</b>	<b>179,254</b>	<b>262,234</b>
Salaries/benefits	147,696	16,574	47,992	83,130
Capital goods	80,520	5,617	8,327	66,576
Operat. expenses	418,802	183,339	122,935	112,528
<b>USAID/FUNTER Project</b>	<b>1,173,547</b>	<b>148,130</b>	<b>407,829</b>	<b>617,588</b>
Salaries/benefits	289,939	50,987	91,988	146,964
Capital goods	154,119	64,026	23,427	66,666
Operat. expenses	497,471	33,118	134,473	329,880
Technical assist.	232,019	-	157,941	74,078
<b>PAP</b>	<b>160,657</b>	<b>4,576</b>	<b>50,231</b>	<b>105,850</b>
Salaries/benefits	68,169	3,509	17,086	47,574
Capital goods	11,515	390	9,400	1,725
Operat. expenses	80,975	678	23,745	56,552
<b>FAPRO</b>	<b>725,307</b>	<b>108,736</b>	<b>284,878</b>	<b>331,693</b>
Salaries/benefits	128,987	29,226	46,630	53,131
Capital goods	100,377	58,991	10,874	30,512
Operat. expenses	263,924	20,519	69,433	173,972
Technical assist.	232,019	-	157,941	74,078

Source of Funds, Component, and Expenditure Category	Expenditures (U.S. \$ Equivalent)			
	Total	Sep 1987 Aug 1988	Sep 1988 Aug 1989	Sep 1989 Aug 1990
CEC	95,641	9,286	21,461	64,894
Salaries/benefits	18,344	2,933	5,404	10,006
Capital goods	12,869	437	-	12,432
Operat. expenses	64,429	5,916	16,057	42,456
PROMOSER	64,378	-	6,163	58,215
Salaries/benefits	8,544	-	-	8,544
Capital goods	20,844	-	-	20,844
Operat. expenses	34,990	-	6,163	28,827
Administ. support	127,563	25,531	45,096	56,936
Salaries/benefits	65,897	15,319	22,869	27,709
Capital goods	8,514	4,208	3,152	1,154
Operat. expenses	53,151	6,004	19,075	28,072

Annex 2-2. FUNTER's annual and aggregate expenditures by source of funds, component within the USAID/FUNTER Project, expenditure category, and four-month period spanning September 1987 through August 1990 (continued).

Source of Funds, Component, and Expenditure Category	Expenditures (U.S. \$ Equivalent)			
	Sep 1987	Sep 1987	Jan 1988	May 1988
	Aug 1988	Dec 1987	Apr 1988	Aug 1988
Total	353,661	144,634	74,921	134,106
Salaries/benefits	67,561	10,717	20,507	36,337
Capital goods	69,643	-	34,341	35,302
Operat. expenses	216,457	133,916	20,073	62,468
Technical assist.	-	-	-	-
Non-USAID funds	205,531	133,766	20,197	51,568
Salaries/benefits	16,574	4,321	4,334	7,919
Capital goods	5,617	-	5,617	-
Operat. expenses	183,339	129,445	10,245	43,649
USAID/FUNTER Project	148,130	10,868	54,724	82,538
Salaries/benefits	50,987	6,396	16,173	28,418
Capital goods	64,026	-	28,724	35,302
Operat. expenses	33,118	4,472	9,827	18,819
Technical assist.	-	-	-	-
PAP	4,576	-	1,627	2,949
Salaries/benefits	3,509	-	1,586	1,923
Capital goods	390	-	-	390
Operat. expenses	678	-	42	636
FAPRO	108,736	7,320	46,138	55,278
Salaries/benefits	29,226	4,300	8,785	16,111
Capital goods	58,991	-	28,724	30,267
Operat. expenses	20,519	2,989	8,629	8,901
Technical assist.	-	-	-	-

Source of Funds, Component, and Expenditure Category	Expenditures (U.S. \$ Equivalent)			
	Sep 1987	Sep 1987	Jan 1988	May 1988
	Aug 1988	Dec 1987	Apr 1988	Aug 1988
CEC	9,286	-	928	8,358
Salaries/benefits	2,933	-	917	2,016
Capital goods	437	-	-	437
Operat. expenses	5,916	-	10	5,906
PROMOSER	-	-	-	-
Salaries/benefits	-	-	-	-
Capital goods	-	-	-	-
Operat. expenses	-	-	-	-
Administ. support	25,531	3,549	6,031	15,951
Salaries/benefits	15,319	2,066	4,884	8,369
Capital goods	4,208	-	-	4,208
Operat. expenses	6,004	1,482	1,147	3,375

Annex 2-2. FUNTER's annual and aggregate expenditures by source of funds, component within the USAID/FUNTER Project, expenditure category, and four-month period spanning September 1987 through August 1990 (continued).

Source of Funds, Component, and Expenditure Category	Expenditures (U.S. \$ Equivalent)			
	Sep 1988	Sep 1988	Jan 1989	May 1989
	Aug 1989	Dec 1988	Apr 1989	Aug 1989
<b>Total</b>	<b>587,083</b>	<b>183,326</b>	<b>183,187</b>	<b>220,570</b>
Salaries/benefits	139,980	32,082	52,443	55,455
Capital goods	31,754	11,916	10,299	9,539
Operat. expenses	257,408	86,681	67,798	102,929
Technical assist.	157,941	52,647	52,647	52,647
<b>Non-USAID funds</b>	<b>179,254</b>	<b>59,181</b>	<b>43,318</b>	<b>76,755</b>
Salaries/benefits	47,992	10,775	19,428	17,789
Capital goods	8,327	1,705	1,176	5,446
Operat. expenses	122,935	46,701	22,714	53,520
<b>USAID/FUNTER Project</b>	<b>407,829</b>	<b>124,145</b>	<b>139,870</b>	<b>143,814</b>
Salaries/benefits	91,988	21,306	33,015	37,667
Capital goods	23,427	10,212	9,123	4,092
Operat. expenses	134,473	39,980	45,084	49,409
Technical assist.	157,941	52,647	52,647	52,647
<b>PAP</b>	<b>50,231</b>	<b>10,477</b>	<b>20,075</b>	<b>19,679</b>
Salaries/benefits	17,086	898	5,561	10,627
Capital goods	9,400	-	6,422	2,978
Operat. expenses	23,745	9,580	8,090	6,075
<b>FAPRO</b>	<b>284,878</b>	<b>84,970</b>	<b>98,778</b>	<b>101,130</b>
Salaries/benefits	46,630	11,959	17,702	16,969
Capital goods	10,874	8,023	2,700	151
Operat. expenses	69,433	12,341	25,730	31,362
Technical assist.	157,941	52,647	52,647	52,647

Source of Funds, Component, and Expenditure Category	Expenditures (U.S. \$ Equivalent)			
	Sep 1988	Sep 1988	Jan 1989	May 1989
	Aug 1989	Dec 1988	Apr 1989	Aug 1989
CEC	21,461	7,735	6,046	7,680
Salaries/benefits	5,404	1,302	2,109	1,993
Capital goods	-	-	-	-
Operat. expenses	16,057	6,433	3,937	5,687
PROMOSER	6,163	2,952	-	3,211
Salaries/benefits	-	-	-	-
Capital goods	-	-	-	-
Operat. expenses	6,163	2,952	-	3,211
Administ. support	45,096	18,011	14,971	12,114
Salaries/benefits	22,869	7,147	7,644	8,078
Capital goods	3,152	2,189	-	963
Operat. expenses	19,075	8,674	7,327	3,074

Annex 2-2. FUNTER's annual and aggregate expenditures by source of funds, component within the USAID/FUNTER Project, expenditure category, and four-month period spanning September 1987 through August 1990 (continued).

Source of Funds, Component, and Expenditure Category	Expenditures (U.S. \$ Equivalent)			
	Sep 1989	Sep 1989	Jan 1990	May 1990
	Aug 1990	Dec 1989	Apr 1990	Aug 1990
<b>Total</b>	<b>879,821</b>	<b>250,895</b>	<b>276,321</b>	<b>352,605</b>
Salaries/benefits	230,094	70,235	76,893	82,966
Capital goods	133,242	46,241	41,108	45,893
Operat. expenses	442,408	94,934	141,023	206,451
Technical assist.	74,078	39,486	17,296	17,296
<b>Non-USAID funds</b>	<b>262,234</b>	<b>83,177</b>	<b>84,392</b>	<b>94,665</b>
Salaries/benefits	83,130	24,176	24,863	34,091
Capital goods	66,576	31,397	35,179	-
Operat. expenses	112,528	27,604	24,350	60,574
<b>USAID/FUNTER Project</b>	<b>617,588</b>	<b>167,718</b>	<b>191,929</b>	<b>257,941</b>
Salaries/benefits	146,964	46,059	52,031	48,874
Capital goods	66,666	14,844	5,928	45,894
Operat. expenses	329,880	67,330	116,674	145,876
Technical assist.	74,078	39,486	17,296	17,296
<b>PAP</b>	<b>105,850</b>	<b>35,854</b>	<b>40,486</b>	<b>29,510</b>
Salaries/benefits	47,574	16,582	16,086	14,906
Capital goods	1,725	817	908	-
Operat. expenses	56,552	18,455	23,493	14,604
<b>FAPRO</b>	<b>331,693</b>	<b>87,518</b>	<b>111,639</b>	<b>132,536</b>
Salaries/benefits	53,131	17,804	18,143	17,184
Capital goods	30,512	3,728	1,735	25,049
Operat. expenses	173,972	26,502	74,465	73,005
Technical assist.	74,078	39,486	17,296	17,296

Source of Funds, Component, and Expenditure Category	Expenditures (U.S. \$ Equivalent)			
	Sep 1988	Sep 1988	Jan 1989	May 1989
	Aug 1989	Dec 1988	Apr 1989	Aug 1989
CEC	64,894	17,519	8,325	39,050
Salaries/benefits	10,006	3,221	3,576	3,209
Capital goods	12,432	9,146	3,286	-
Operat. expenses	42,456	5,151	1,464	35,841
PROMOSER	58,251	5,425	14,202	38,588
Salaries/benefits	8,544	-	4,687	3,857
Capital goods	20,844	-	-	20,844
Operat. expenses	28,827	5,425	9,515	13,887
Administ. support	56,936	21,404	17,275	18,257
Salaries/benefits	27,709	8,452	9,539	9,718
Capital goods	1,154	1,154	-	-
Operat. expenses	28,072	11,797	7,736	8,539

Annex 3-1. Recommended patient evaluation form for use by PAP's physical therapist.

EVALUACION DE FISIOTERAPIA

Nombre del paciente \_\_\_\_\_

Sexo \_\_\_\_\_ Edad \_\_\_\_\_ Ocupación \_\_\_\_\_

Escolaridad \_\_\_\_\_ Dirección \_\_\_\_\_

Diagnóstico médico \_\_\_\_\_

Nivel de amputación \_\_\_\_\_

Causa de amputación \_\_\_\_\_

Fecha de amputación \_\_\_\_\_

Atendido(a) en \_\_\_\_\_

¿Ha recibido tratamiento de terapia física? Sí \_\_\_\_\_ No \_\_\_\_\_

¿Utilización previa de prótesis? Sí \_\_\_\_\_ No \_\_\_\_\_

A. Evaluación física

1. Sensibilidad: Normal \_\_\_\_\_ Alterado(a) \_\_\_\_\_  
Hipersensible \_\_\_\_\_  
Hiposensible \_\_\_\_\_  
Ausente \_\_\_\_\_

2. Estado del muñón: Piel y tejidos blandos

Color \_\_\_\_\_ Temperatura \_\_\_\_\_

Forma \_\_\_\_\_ Heridas \_\_\_\_\_

Higiene \_\_\_\_\_ Abscesos \_\_\_\_\_

Cicatrización \_\_\_\_\_ Otros \_\_\_\_\_

3. Trastornos sensibles del muñón:

- Dolor fantasma. Presente \_\_\_\_\_ Ausente \_\_\_\_\_
- Prurito. Sí \_\_\_\_\_ No \_\_\_\_\_
- Dolor. Sí \_\_\_\_\_ No \_\_\_\_\_

4. Goniometría:

		Derecho	Izquierdo
Hombro	Flexión	_____	_____
	Extensión	_____	_____
	Abducción	_____	_____
	Aducción	_____	_____
	Rotación interna	_____	_____
	Rotación externa	_____	_____
Codo	Flexión	_____	_____
	Extensión	_____	_____
Muñeca	Flexión dorsal	_____	_____
	Flexión palmar	_____	_____
	Desviación cubital	_____	_____
	Desviación radial	_____	_____
Mano	Flexión metacarpo falángica	_____	_____
	Flexión interfalángicas (1a)	_____	_____
	Flexión interfalángicas (2a)	_____	_____
	Extensores metacarpo falángica	_____	_____
	Abductores	_____	_____
	Aductores	_____	_____
	Oponente del meñique	_____	_____

		Derecho	Izquierdo
pulgar	Flexión metacarpo falángica	_____	_____
	Flexión interfalángica	_____	_____
	Extensión metacarpo falángica	_____	_____
	Extensión interfalángica	_____	_____
	Abducción	_____	_____
	Aducción	_____	_____
	Oposición	_____	_____
Cadera	Flexión	_____	_____
	Extensión	_____	_____
	Abducción	_____	_____
	Aducción	_____	_____
	Rotación interna	_____	_____
	Rotación externa	_____	_____
Rodilla	Flexión	_____	_____
	Extensión	_____	_____
Tobillo	Flexión dorsal	_____	_____
	Flexión plantar	_____	_____
	Eversión	_____	_____
	Inversión	_____	_____

5. Fuerza muscular:

MUSCULOS

IZQUIERDO	MIEMBROS SUPERIORES	DERECHO
	Serrato mayor	
	Porción superior del trapecio	
	Porción inferior del trapecio	

	Porción media trapecio romboide	
	Porción anterior deltoides	
	Dorsal ancho redondo mayor	
	Porción media deltoides	
	Porción posterior deltoides	
	Pectoral mayor	
	Biceps braquial supinador largo	
	Triceps braquial	
	Grupo pronadores	
	Flexión palmar mayor cubital anterior	
	Primero y segundo radial exterior cubital posterior	
	Grupo supinador	

IZQUIERDO

MIEMBROS INFERIORES

DERECHO

	Psoasiliaco	
	Glúteo mayor	
	Glúteo mediano	
	Grupo aductor	
	Grupo rotador externo	
	Grupo rotador interno	
	Biceps crural, semitendinoso, semimembranoso	
	Cuadriceps	
	Gemelos, soleo	
	Tibial anterior, tibial posterior	
	Peroneo lateral largo, lateral corto	

6. Mediciones antropométricas:

Talla: \_\_\_\_\_

Peso: \_\_\_\_\_

Longitud del muñón: \_\_\_\_\_

Perímetro del muñón: \_\_\_\_\_

7. Equilibrio corporal

a. Con apoyo: Aditamento utilizado

Andador \_\_\_\_\_ Muletas \_\_\_\_\_ Bastón \_\_\_\_\_

b. Sin apoyo: Bueno \_\_\_\_\_ Regular \_\_\_\_\_ Malo \_\_\_\_\_

c. Con prótesis: Bueno \_\_\_\_\_ Regular \_\_\_\_\_ Malo \_\_\_\_\_

8. Coordinación corporal: Actividades de transferencia

Buena \_\_\_\_\_ Regular \_\_\_\_\_ Mala \_\_\_\_\_

9. Coordinación manual

a. Dos manos: Buena \_\_\_\_\_ Regular \_\_\_\_\_ Mala \_\_\_\_\_

b. Una mano: Buena \_\_\_\_\_ Regular \_\_\_\_\_ Mala \_\_\_\_\_

10. Marcha en paralelas: Buena \_\_\_\_\_ Regular \_\_\_\_\_ Mala \_\_\_\_\_

11. Marcha con muletas: Buena \_\_\_\_\_ Regular \_\_\_\_\_

Mala \_\_\_\_\_ No hace \_\_\_\_\_

B. Actividades de la vida diaria

12. Actividades del vestido: Solo \_\_\_\_\_ Ayuda parcial \_\_\_\_\_

Ayuda total \_\_\_\_\_

13. Actividades de alimentación: Solo \_\_\_\_\_ Ayuda parcial \_\_\_\_\_

Ayuda total \_\_\_\_\_

14. Ambulación dentro de la casa: Solo \_\_\_\_\_ Con ayuda \_\_\_\_\_

15. Actividades de higiene: Solo \_\_\_\_\_ Con ayuda \_\_\_\_\_

C. Aspectos psicológicos generales

16. Estado mental: Optimista \_\_\_\_\_ Colaborador \_\_\_\_\_  
Aprehensivo \_\_\_\_\_ Deprimido \_\_\_\_\_  
Indiferente \_\_\_\_\_ Otro \_\_\_\_\_
17. Interés en el tratamiento: Bueno \_\_\_\_\_ Regular \_\_\_\_\_  
Malo \_\_\_\_\_
18. Cooperación y participación: Buena \_\_\_\_\_ Regular \_\_\_\_\_  
Mala \_\_\_\_\_

D. Objetivos del tratamiento

19. Mejorar el estado de la piel y de tejidos blandos.  
Sí \_\_\_\_\_ No \_\_\_\_\_ Método \_\_\_\_\_  
\_\_\_\_\_
20. Incrementar la movilidad articular  
Tronco \_\_\_\_\_  
Miembro superior \_\_\_\_\_  
Miembro inferior \_\_\_\_\_
21. Incrementar la fuerza muscular  
Tronco \_\_\_\_\_  
Miembro superior \_\_\_\_\_  
Miembro inferior \_\_\_\_\_
22. Incrementar el equilibrio corporal  
Sentado \_\_\_\_\_ Arrodillado \_\_\_\_\_  
De pie \_\_\_\_\_ Reacción protección brazos \_\_\_\_\_

23. Incrementar la coordinación corporal. Transferencias:

Acostado a sentado \_\_\_\_\_

Sentado a silla o de pie \_\_\_\_\_

Acostado a un solo pie \_\_\_\_\_

Cuatro puntos a arrodillado \_\_\_\_\_

Arrodillado a de pie \_\_\_\_\_

Otros \_\_\_\_\_

24. Incrementar fuerza y coordinación manual

Manual \_\_\_\_\_

Bimanual \_\_\_\_\_

25. Entrenamiento de la marcha. Mejorar:

Simetría \_\_\_\_\_

Velocidad \_\_\_\_\_

Gasto energético \_\_\_\_\_

Resistencia \_\_\_\_\_

Marcha en paralelas \_\_\_\_\_

Marcha en muletas \_\_\_\_\_

Marcha con bastón \_\_\_\_\_

26. Mejorar actividades de la vida diaria

Vestido \_\_\_\_\_

Alimentación \_\_\_\_\_

Higiene personal \_\_\_\_\_

Ambulación en el hogar \_\_\_\_\_

27. Necesidad de entrenamiento o rehabilitación vocacional

Sí \_\_\_\_\_ No \_\_\_\_\_

28. Necesidad de interconsulta a

Médico \_\_\_\_\_

Psicólogo \_\_\_\_\_

Trabajador social \_\_\_\_\_

Recreación y deportes \_\_\_\_\_

Otros \_\_\_\_\_

E. Plan de tratamiento

29. Tipo de tratamiento

Intensivo \_\_\_\_\_ Moderado \_\_\_\_\_ Regular \_\_\_\_\_

30. Frecuencia del tratamiento

Diario \_\_\_\_\_ Tres veces por semana \_\_\_\_\_

Dos veces por semana \_\_\_\_\_ Plan para el hogar \_\_\_\_\_

31. Actividades terapéuticas

Hielo \_\_\_\_\_ Masaje \_\_\_\_\_

Calor (húmedo o seco) \_\_\_\_\_ Electroterapia \_\_\_\_\_

Entrenamiento muscular \_\_\_\_\_ Reeducción marcha \_\_\_\_\_

Equilibrio/coordinac. \_\_\_\_\_ F.N.M.P. \_\_\_\_\_

Observaciones: \_\_\_\_\_

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\_\_\_\_\_  
Firma

\_\_\_\_\_  
Fecha

Annex 3-2. Recommended patient evaluation form for use by PAP's psychologist.

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HISTORIA PERSONAL

A. Datos personales

Nombre \_\_\_\_\_

No. de expediente \_\_\_\_\_

Fecha de nacimiento \_\_\_\_\_

Edad \_\_\_\_\_ Escolaridad \_\_\_\_\_

Profesión u oficio \_\_\_\_\_

Procedencia \_\_\_\_\_

Dirección \_\_\_\_\_

Religión \_\_\_\_\_

Diagnóstico médico \_\_\_\_\_

B. Breve descripción del suceso de la amputación \_\_\_\_\_

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C. Descripción de la situación actual del paciente \_\_\_\_\_

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D. Historia familiar. (Completar la información dada por trabajo social.) Atmósfera del hogar e influencia.

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E. Historia personal

1. Infancia

- a. Demandas excesivas \_\_\_\_\_
- b. Sobreprotección \_\_\_\_\_
- c. Castigos \_\_\_\_\_
- d. Adaptación familiar y social \_\_\_\_\_

2. Escolaridad

- a. Edad de inicio \_\_\_\_\_
- b. Adaptación al ambiente escolar \_\_\_\_\_
- c. Relación con maestros y compañeros \_\_\_\_\_
- d. Rendimiento \_\_\_\_\_
- e. Intereses \_\_\_\_\_
- f. Liderazgo \_\_\_\_\_
- g. Reprobaciones \_\_\_\_\_

3. Adolescencia

- a. Conflictos \_\_\_\_\_
- b. Adaptación de las figuras paternas o de autoridad \_\_\_\_\_  
\_\_\_\_\_
- c. Rendimiento académico \_\_\_\_\_
- d. Presión del grupo \_\_\_\_\_

4. Edad adulta

- a. Historia ocupacional \_\_\_\_\_
- b. Cambios \_\_\_\_\_
- c. Dificultades de adaptación \_\_\_\_\_
- d. Hábitos ante el dinero \_\_\_\_\_
- e. Adaptación social \_\_\_\_\_
- f. Distracciones \_\_\_\_\_
- g. Religión \_\_\_\_\_
- h. Interés \_\_\_\_\_

F. Historia matrimonial

Actitud hacia el sexo complementario \_\_\_\_\_

Circunstancias del matrimonio o de la unión \_\_\_\_\_

\_\_\_\_\_

Características del cónyuge \_\_\_\_\_

Número de hijos \_\_\_\_\_

G. Interpretación de la personalidad del paciente \_\_\_\_\_

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H. Actitud del paciente hacia su rehabilitación y el uso de prótesis \_\_\_\_\_

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I. Recomendaciones \_\_\_\_\_

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Firma

\_\_\_\_\_

Fecha

Annex 4-1. Certification final exam administered to eleven FAPRO prosthetic trainees in September 1990.

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PART I: UPPER-LIMB PROSTHETICS

1. How can you, as a prosthetist, make it easier for an upper-limb amputee to reach the middle of the body (for toilet and eating purposes)?
2. What would be your recommendation (prescription) for a long below-elbow prosthesis?
3. What would be your recommendation (prescription) for a short below-elbow prosthesis?
4. What would be your recommendation (prescription) for a very short below-elbow prosthesis?
5. Where is the Northwestern ring positioned on the back?
6. Why?
7. What suspension options exist for a below-elbow prosthesis?
8. On a below-elbow prosthesis, how can you increase longitudinal rotation by socket design considerations and prescription considerations?

PART II: BELOW-KNEE PROSTHETICS

1. Where do you position the foot in static alignment for the coronal plane?
2. Where do you position the foot in static alignment for the sagittal plane?
3. Where do you position the foot in static alignment for the transverse plane?
4. Why do we seek to encourage knee flexion after heel strike?
5. Why do we seek a varus moment at midstance?
6. How would you alter the alignment if you had a valgus moment?
7. How do you determine the initial placement of the supercondylar cuff?
8. When is a joint and lacer (corset) indicated?

9. Where is the joint center initially located on a joint and lacer corset below knee?

### PART III: ABOVE-KNEE PROSTHETICS

1. What is a quadrilateral socket?
2. Where is the ischium located in a quadrilateral socket?
3. By what criteria do you position the medial wall of the quadrilateral socket (as viewed in the transverse plane)?
4. How do you position the prosthetic knee bolt (as viewed in the transverse plane)?
5. What prescription would you recommend for a geriatric above-knee amputee who has poor stability?
6. What above-knee suspension options are available?
7. When would you avoid using a suction socket?
8. What is the most important muscle group for above-knee amputees' knee stability?
9. Where is the gluteus medius?
10. What is the TKA?
11. How much flexion do we put in an above-knee socket?
12. Why do we put flexion in an above-knee socket?

Annex 6-1. Institutions identified by PROMOSER as serving persons with disabilities in El Salvador, by type of institution, and number of persons benefitting both directly and indirectly, September 1990.

<u>Institution and Type</u>	<u>Persons Benefitted</u>	
	<u>Directly</u>	<u>Indirectly</u>
Total	927	74,446
ISRI	397	18,910
Centro del Aparato Locomotor	80	4,500
Centro de Audición y Lenguaje	45	900
Centro de Educación Especial	45	575
Centro de Invalideces Múltiples	36	7,210
Centro de Parálisis Cerebral	36	3,015
Centro de Rehabilitación de Ciegos	40	130
Centro de Rehabilitación de Occidente	35	1,610
Centro de Rehabilitación de Oriente	15	910
Asilo de Ancianos Sara Z.	65	60
Ministerio de Salud Pública	149	29,550
Hospital de Ahuachapán	7	2,400
Hospital Benjamín Bloom	20	1,900
Hospital de Chalatenango	6	450
Hospital Rosales	20	6,700
Hospital de Santa Ana	20	1,400
Hospital de Santa Tecla	15	1,200
Hospital de San Vicente	8	1,500
Hospital de Sonsonate	12	5,600
Hospital de Usulután	8	1,300
Hospital de Zacatecoluca	8	3,200
Centro de Salud de Chalchuapa	5	2,200
Centro de Salud de Cojutepeque	5	700
Centro de Salud de Nueva Guadalupe	5	500
Centro de Salud de Gotera	5	300
Centro de Salud de Metapán	5	200

<u>Institution and Type</u>	<u>Persons Benefitted</u>	
	<u>Directly</u>	<u>Indirectly</u>
Ministerio de Educación	258	3,901
Dept. Educ. Esp., Dir. Gral. de Educ. Básica	2	98
Escuela de Audición y Lenguaje de San Miguel	5	65
Escuela de Educación Especial de Acajutla	4	55
Escuela de Educación Especial de Armenia	4	65
Escuela de Educación Especial de Cojutepeque		
Escuela de Educación Especial de Ilohasco	4	45
Escuela de Educación Especial de Juayua	5	120
Escuela de Educación Especial de Jucuapa	4	35
Escuela de Educación Especial de Santa Ana	10	65
Escuela de Educación Especial de San Salvador	10	160
Escuela de Educación Especial Santiago de María	4	23
Escuela de Educación Especial de San Miguel	8	165
Escuela de Educación Especial de San Vicente	6	85
Escuela de Educación Especial de Santa Tecla		
Escuela de Educación Especial de Sensuntepeque	4	55
Escuela de Educación Especial de Sonsonate	4	130
Escuela de Educación Especial de Usulután	4	80
Escuela de Educación Especial de Zacatecoluca	4	40
Escuela de Educación Especial de La Unión	4	30
Escuela Humberto Quinteros No. 2	4	60
Escuela Urbana Mixta Colonia Quiñónez No. 2	4	60
Escuela Unificada General Gerardo Barrios	4	60
Escuela Unificada República de Paraguay	4	60
Escuela Unificada Dr. Ranulfo Castro	4	60
Escuela Unificada David J. Guzmán	4	60
Escuela Urbana Mixta Rafael Alvarez	4	60
Escuela Urb. Unif. Dr. Humberto Quinteros No. 1	4	60
Escuela Urbana Mixta Cantón El Refugio	4	60
Escuela Urbana Mixta Walter Deininger	4	60
Escuela Urbana Mixta Marcelina Flamenco	4	60
Grupo Escolar Unificado Jose Ma. Cáceres	4	60
Kindergarten de Quezaltepeque	4	60
Escuela Urbana Mixta Colonia Guadalupe No. 2	4	60
Escuela Urbana Mixta Barrio Belén No. 1 y 2	4	60
Escuela Urbana Mixta Jorge Lardé No. 2	4	60
Escuela Rural Mixta Unif. Col. San Ramón No. 1	4	60
Escuela Urbana Unificada Juana López No. 1	4	60
Escuela Urbana Unificada Col. Guadalupe No. 2	4	60
Escuela Rural Mixta Cantón Calle Real No. 1	4	60
Escuela Unificada España No. 1	4	60
Escuela Unificada Concha de Escalón No. 2	4	60
Escuela Unificada Metropolitana Zacamil	4	60
Grupo Escolar República de Japón	4	60

Institution and Type	Persons Benefitted	
	Directly	Indirectly
Esc. Unif. de Varones Rep. de Costa Rica No. 2	4	60
Escuela Parroquial Fray Martín de Porras	4	60
Escuela Urbana Mixta Unif. 22 de Junio No. 1	4	60
Escuela Juana López No. 2	4	60
Esc. Urb. Mixta Unif. Rep. de Nicaragua No. 2	4	60
Escuela Urbana Mixta Unificada San Marcos No. 1	4	60
Escuela República de Chile No. 1	4	60
Hogar del Niño	4	60
Escuela Urbana Mixta Unificada Agua Caliente	4	60
Escuela Rural Mixta Cantón El Pilar	4	60
Escuela Rural Mixta Unificada Cantón San José	4	60
Escuela Rural Mixta El Tamarindo	4	60
Escuela Urbana Unificada Salarrué	4	60
Escuela Urbana Mixta Abel de J. Alas	4	60
Escuela Urbana Unificada Dr. Julio E. Avila	4	60
Escuela Urbana Unificada Francisco Morán	4	60
Escuela Urbana Mixta Unificada Juan E. Coto	4	60
Escuela Urbana Unificada de Nombre de Jesús	4	60
Escuela Rural Cuesta Mancía	4	60
<b>Centros No Gubernamentales</b>	<b>123</b>	<b>22,085</b>
Escuela Cristiana para Sordos	2	25
Escuela de Educación Especial Nuevo Mundo	3	55
Escuela Santaneca de Enseñanza	3	25
ASAPAED	4	
ASPACIM	4	25
Hogar de Parálisis Cerebral	4	215
Hogar del Niño Minusválido Abandonado	4	205
Centro de Rehabilitación de Chirilagua	2	100
Centro de Rehabilitación Intipucá	2	100
Hospital de ANTEL	6	
ISSS	30	20,000
CRI	40	1,300
ACOGIPRI	5	35
Hospital Militar de San Salvador	5	
CERPROFA		
Hospital Militar de San Miguel	5	
Federación de Padres y Amigos de Discapacitados	4	
ALFES		
FESADIR		

## **ANNEX 7-1. SCOPE OF WORK**

### **ARTICLE I: TITLE**

This will be the first evaluation of the Strengthening Rehabilitation Services Project FUNTER No. 519-0346 as described in Article F Section 2 of Attachment I of the Grant Agreement.

### **ARTICLE II: PURPOSE**

The purpose of this evaluation is to measure the level of functional and operational development and progress achieved since the Project's initiation in 1987. Specifically to evaluate: the impact of the extension of patient support services to rural areas as it relates to the increased number of beneficiaries, time and cost; the identification process of amputees and the effectiveness of the amputee tracking system as it is organized through the national amputee registry; the procedures implemented to facilitate the acquisition of a prosthetic device to amputees; medical diagnosis, social-economic interviews, psychological guidance, physical therapy and patient follow-up; the effectiveness of networking efforts between FUNTER and other public and private agencies in terms of increasing the disabled's knowledge about availability of services, and the general public's knowledge concerning the needs of the disabled and prevention of disabilities; improvement of the skill levels of rehabilitation professionals through in-service training and improving the quality of rehabilitation services through procurement of needed equipment and materials as well as ensuring maintenance of existing equipment; and the development of FUNTER's organizational capacity to plan and carry out fund raising activities that are proportional to the level of project need to sustain established, on-going activities. This evaluation will be used as the basis for a joint AID/FUNTER review of project activities and achieved level of sustainability relevant to continuing AID support of FUNTER's rehabilitation program. The evaluation results could also be used as a guide for the design of a possible project amendment that would extend the life of the project and increase the funding level to correspond with the scope of identified activities.

### **ARTICLE III: BACKGROUND**

The purpose of this project is to assist the Teleton Foundation Pro-Rehabilitation (FUNTER) to establish and support private and public rehabilitation services in El Salvador in order to meet the increased civilian demand resulting from the armed conflict, focusing but not limiting support to benefit the amputee population. The goal of the project is to strengthen and improve the delivery, range and quality of rehabilitation services available in El Salvador. A target group of approximately 10,000 handicapped, including a minimum of 1,000 civilian amputees are expected to benefit from the program.

This \$3,350,000 three year Cooperative Agreement has been amended once to increase its scope and funding (June 30, 1989, increased by \$900,000). The Grant provides financial support directly to the "Fundación Teletón Pro-Rehabilitación" (FUNTER), a Salvadoran private not-for-profit organization. FUNTER's principal objective is to promote the rehabilitation of individuals who are either physically, sensorially, or mentally disabled in order to help them achieve maximum social integration.

The Foundation was established in March 1986, for the purpose of supporting rehabilitation activities initiated in 1982 by a Salvadoran service group, the 20/30 Club. Through the realization of five televised fund raising marathons similar to events carried out by Jerry Lewis, the 20/30 Club received sufficient contributions to construct, equip, staff and manage three treatment centers: one serving the needs of multiply disabled children, as well as two regional out-patient rehabilitation centers. These regional centers, one in the East, the other in the Western part of El Salvador, provide medical and therapeutical services for disabled infants, children and adults. The fifth and final "TELETON" was carried out by the 20/30 Club in 1987 in order to establish the present Foundation. Although the three centers have since been integrated into the public rehabilitation system, the Foundation continues to provide auxiliary support to all three.

The USAID/FUNTER project consists of four components that are designed to integrate operationally and functionally to support a system of integrated rehabilitation services. A description of each component follows.

Prosthetic Laboratory: This component provides for a privately run laboratory capable of matching supply and demand for prosthetic devices. Initially, in 1987, the production focus was on lower limbs only. In 1989, the laboratory began producing upper limbs as well. "End of project" production capacity was originally projected to be 20 prostheses per month. Actual capacity is now between 50 and 60 per month, excluding repairs. The laboratory was equipped by FUNTER staff utilizing project funds. Two Salvadorans with prior prosthetic experience were employed to design a basic training program for ten other Salvadorans with no prior prosthetic training or experience. Subsequent to this initial program which was started in February 1988, the FUNTER Lab delivered its first 12 lower limb prostheses on May 5, approximately nine months after project initiation.

In September 1988, USAID contracted a U.S. firm to design and carry out a formal, 24 month training program for both groups--those with prior experience and training and the novice group. However, after 18 months of technical assistance, the formal training contract was terminated for convenience by the U.S. Government. In order to maintain a level of quality control, FUNTER subsequently hired a

U.S. prosthetist fluent in Spanish to supervise the program. The original training design did not anticipate the high level of the Salvadoran students' capabilities nor the need to decentralize services through mobile prosthetic field units necessitated by the large number of amputees experiencing difficulty in coming to San Salvador.

As a result, the laboratory's staff now takes services to the field. The extension program involves FUNTER's social workers, the prosthetists (students and supervisor), medical personnel, physical therapists and a psychologist. Through this extension program, measurements, molds, repairs and examinations are done in the field, production in San Salvador and consequently, fitting, delivery and therapy back in the field. The laboratory produces both endo- and exoskeletal type prostheses as well as temporary, intermediate and permanent versions of each for lower limbs. Temporary and permanent upper limbs are also produced.

It is important to note that a separate assessment of this component is planned and will therefore not be evaluated directly. However, this evaluation will include tasks which require an analysis of certain managerial/operational aspects related to the component. The assessment results will also be included as a separate attachment to the final evaluation report.

The Patient Support Program: This component coordinates closely with the Prosthetic Laboratory and provides such pre and post prosthetic services as: social/economic interviews and patient follow-up, physical therapy, psychological counseling, financial aid and, to a limited extent, assistance in job placement and/or training for placement. Added responsibilities under this component include finding sponsors who cover the cost of prostheses for amputees unable to pay for the device; a donor bank/distribution system for wheelchairs, crutches and walkers and coordination and support of a civilian amputee soccer team. In addition, this component also monitors and maintains the amputee registry which is El Salvador's only formal tool with which to measure the amputee universe. The offices for this component are located in what FUNTER refers to as their Center for Integrated Rehabilitation Services (CRI).

Community Education, Awareness, Networking: This component was designed to meet the need for delivery and exchange of information about handicapping conditions, their treatment and prevention, targeting especially the rural areas where a large percentage of El Salvador's disabled live.

Networking of resources and services between public and private institutions, organizations and agencies benefiting the handicapped is vital for a country which is itself, economically disabled. Therefore, this component is coordinated with the Ministries of Health and Education and a variety of private entities. Training

focused on identification of disabilities and community based rehabilitation has been a key part of this component. Design, publication and orientation in the use of educational, and informational materials concerning rehabilitation is another awareness tool. In addition to the identification of all national resources for the handicapped, a description of services, locations of treatment or referral centers and the publication of a professional directory are included as project outputs. These activities will create a base for FUNTER to serve as a clearinghouse for rehabilitation services. A national directory will also be supplemented by an international source guide for rehabilitation services according to each specific disability.

Promoting Rehabilitation Services: This component was originally designed to reinforce services offered only by one institution, the Salvadoran Rehabilitation Institute for the Handicapped--ISRI. The principal focus was to provide funds for up-grading the professional skill level of ISRI's staff and procurement of equipment and materials for the eight specific (by disability) centers under ISRI's umbrella.

In 1989, when USAID increased project funding, this component was redesigned to correspond to an outreach philosophy which FUNTER and USAID believed was necessary. ISRI continues to be a recipient within the framework of the component but alongside with approximately 109 other institutions habilitating or rehabilitating the disabled. The component's objectives of training to improve skill levels, purchase of equipment for programs serving the disabled and provisions of maintenance and equipment have remained the same.

#### **ARTICLE IV: STATEMENT OF WORK**

A. General Objectives: To measure the progress in the improvement of rehabilitation services through FUNTER established programs that provide timely and appropriate services to the disabled, their families and professionals serving the disabled; to increase the community's awareness about the area of rehabilitation and the prevention of disabilities as well as to promote community based services for the handicapped; to improve rehabilitation professionals' skill levels through in-service training and to strengthen services through procurement and maintenance of equipment and materials for both public and private entities serving the disabled.

B. Specific Objectives: This evaluation will determine the level and scope of the project's impact with regard to FUNTER's capability to strengthen private and public rehabilitation services. The evaluation will also measure FUNTER's progress toward sustaining the privately run Prosthetic Laboratory, Patient Support Program, the Community Education, Awareness and Networking

Program and the Promotion of Rehabilitation Services Component. In order to evaluate FUNTER's progress, a minimum of a 3 person evaluation team will review and assess the following major factors:

1. Project accomplishments, problems/constraints and lessons learned in a general sense;
2. The impact the project has had on FUNTER's organizational development, their capability to implement and plan for sustained implementation through fund raising activities to recover operational costs.
3. The degree to which prosthetic production and delivery has met the civilian demand for prosthetic devices.
4. The project's amputee flow system; the control and follow-up provided to amputees once they enter FUNTER's rehabilitation cycle; evaluation tools used to diagnose each amputee's needs and motivational activities which promote rehabilitation and integration of the disabled individual back into the community and workplace.
5. FUNTER's progress networking human, technical and financial resources to identify and improve services for the handicapped through special orientations, development and distribution of written and visual materials, design and delivery of in-service training according to disability area and the procurement of needed rehabilitation equipment and materials for a variety of centers that provide rehabilitation or Special Education Services.

C. Specific Tasks to be completed by the Contractor/Team:

- Task 1. Perform a management survey to evaluate operational and procedural systems applied to the overall project by FUNTER's Executive Staff and their function within each of the project's components. (i.e. procurement and inventory procedures as they relate to the Grant Agreement and other project documents; financial management for prosthetic devices in terms of cost control and recovery procedures applied to prostheses which are partially financed by FUNTER and partially by the amputee; management and statistical reporting for the amputee registry). Describe the strong and weak linkages within these systems and provide recommendation as to how they can be improved.
- Task 2. Investigate the level and effectiveness of coordination between project funded personnel and FUNTER's other staff. Describe any administrative overrides, blockages, weaknesses or duplication of effort between project funded and non-project funded

personnel/activities. Provide recommendations for improving coordination in direct relation to project implementation and meeting established goals.

- Task 3. Evaluate FUNTER's procedures related to their Patient Support Program; appropriateness of interviews done by the social workers; processes applied to medical evaluations and prosthetic prescription; average number of hours of physical therapy given to amputees, the quality of control and amount of follow-up physical therapy; content, approach, and level of psychological orientation; follow-up procedures provided by FUNTER for amputees after receiving a prosthesis; efforts directed toward vocational reeducation, readaptation or job placement. Make recommendations for improving the support systems evaluated, the adequateness of evaluation instruments, the use of protocols and the level and effectiveness of support and follow-up systems.
- Task 4. Evaluate FUNTER's progress in the area of Community Education, Awareness and Networking through a review of all written and visual materials produced for this area and the distribution system for these materials; the kinds of mechanisms used to reach the communities with information concerning the disabled and prevention of disabilities; the success of networking with other public and private entities and the number of individuals reached through this component; the appropriateness of training programs and the follow-up mechanisms applied to measure the effectiveness of the training for networking. Provide recommendations for improving this component and identify the established level of progress obtained in relation to the development of national and international resource guides for rehabilitation services.
- Task 5. Review FUNTER's training and procurement component. Evaluate procedures for selection of training course topics, organization of courses, follow-up procedures/monitoring to measure course impact on beneficiaries; procedures used to procure equipment and materials and control mechanisms for follow-up maintenance of equipment. Make recommendations which will guide FUNTER toward improving their training program as well as an indication as to whether this component should be continued based on its effectiveness.

Task 6. Based on the findings of tasks 1-5, make observations and recommendations concerning the progress FUNTER has achieved during the life of the project. In addition, describe the direction which the FUNTER project could take; identify any duplication of effort (technical/administrative) and provide a brief description of activities for a possible follow-on project proportional to FUNTER's capabilities.

#### ARTICLE V: METHODOLOGY

The evaluation methodology should include but not be limited to:

- A. Field trips with FUNTER personnel responsible for carrying out the extension of rehabilitation services within the Community Education, Awareness and Networking and Promotion of Rehabilitation Services Programs.
- B. Interviews with FUNTER personnel, USAID representatives, MOH representatives, representatives from the Ministry of Education and other institutions or agencies identified by FUNTER as being involved in rehabilitation and networking related to the project.
- C. Site visits to FUNTER's Executive office, Center for Integrated Rehabilitation Services (CRI) and Prosthetic Laboratory.
- D. Review of the following documentation:

USAID background material/update cables on rehabilitation strategy.

USAID/FUNTER Grant Agreement/Project Description.

Project implementation letters.

Project Amendment.

USAID Semi-Annual Reviews.

FUNTER's yearly work plans.

Monthly reports (amputee registry).

FUNTER's Trimestral Project Progress Reports.

USAID regulations, procedures as they relate to the Grant Agreement and FUNTER's implementation of project activities.

FUNTER's personnel/staffing plan, contracting and procurement procedures.

Assessment documents related to the Prosthetic Laboratory.

## **ARTICLE VI: LEVEL OF EFFORT**

It is envisioned that the scope of work herein contained could be accomplished in a six week period by a three person team. The team leader is expected to be in-country one week before the other team members arrive to review all documentation, visit FUNTER facilities and establish an agenda based on the entire scope of work. This individual will have a total of 36 work days to complete his/her responsibilities. The additional members of the team are expected to be in-country a total of 12 work days to carry-out the specific parts of the evaluation, present and review all drafts to the team leader and make revisions as requested.

While the work of the team can be broken down into suggested specific scopes of work for the individual members, the general intent is to bring together a group of technical specialists which, in the aggregate, has the balance of academic background, specific work experience and technical expertise needed to understand the work and to produce a quality document. In this connection, it is paramount that the individual consultants work as a team so that the end product is a natural, well coordinated discussion work.

Field service should begin as soon as possible (Effective Date of Contract), and may be carried out in phases but must terminate with the delivery of the USAID approved evaluation report no later than October 15, 1990.

## **ARTICLE VII: QUALIFICATIONS**

The Contractor shall provide a three person team with qualifications described below or those acceptable to USAID/El Salvador:

A. Team Leader: The team leader will be responsible for coordinating the evaluation with USAID and FUNTER. In addition, he/she will design and approve all evaluation formats, edit all draft documents and present the final document with results and recommendations by project area. The team leader will also be responsible for reviewing and incorporating any other assessment documents related to the overall project which AID deems necessary. The following are considered essential credentials:

1. Recommended degrees in Public Health Administration and/or Organizational Development, Management/Systems Analysis.
2. Proven experience in designing, carrying out, analyzing, coordinating and reporting evaluation results.
3. Demonstrated experience in Organizational Development.
4. Knowledge of AID procedures and regulations.

5. Experience working with and evaluating similar Private Voluntary Organizations which depend on fund raising strategies for sustainability and that are community oriented.
6. Knowledge of management/operational procedures (especially within the Salvadoran P.V.O. context) as they apply to accounting, inventory controls, personnel, etc.
7. Knowledge about rehabilitation field desirable.
8. Fluent in Spanish and English.
9. Demonstrated experience working in Latin America; a minimum of five years is desirable.

The Team Leader is designated as "Key Personnel" within the evaluation.

B. Rehabilitation Specialists (2): These individuals will report to the team leader and be responsible for carrying out the evaluation of two key project components: The Community Education and Awareness and Networking Program and the Promotion of Rehabilitation Services Component. Essential credentials are:

1. Ten years consecutive experience in one or more of the following areas: a) Rehabilitation Counseling, b) Community Based Rehabilitation Programs, c) Training of Rehabilitation and Special Education Professionals.
2. Preferred degree(s) in Rehabilitation with areas of specialization being either a) Physical or Occupational Therapy, b) Physical Medicine, c) Vocational Education, Rehabilitation and/or Counseling.
3. Knowledge of materials and equipment related to the field of rehabilitation.
4. Experience working with community based rehabilitation programs in rural, preferably Latin countries.
5. Ability to communicate effectively in Spanish.

The Contractor may find it possible to identify one individual with the broad base of experience to cover the evaluation tasks under each component mentioned. Therefore, one individual may be recommended for USAID approval.

All of the above consultants should be in very good physical and mental condition which allow him/her to carry out his/her work under El Salvador's present political conditions.

## ARTICLE VIII: REPORTS AND DELIVERABLES

(A six day work week is authorized)

The following reports will be delivered to the HPN Technical Officer in charge of coordinating the evaluation. All reports must be presented in both Spanish and English, in the quantities specified:

<u>Deliverable</u>	<u>Quantity</u>	<u>Due Date</u>
Outline of evaluation procedures/ content/methodology	<u>5</u> ** 5	2 weeks after EDOC* (Team leader)
Individual work plans and evaluation formats for each team member and their corresponding areas to be evaluated	<u>5</u> 5	3 weeks after EDOC (for re- habilitation specialists)
Draft evaluation report	<u>10</u> 10	6 weeks after EDOC (team leader)
Final evaluation report	<u>10</u> 10	3 weeks after acceptance of final evalua- tion results

\* Effective Date of Contract

\*\* — English  
Spanish

Within three weeks after leaving the country, the contractor shall send to USAID ten copies of the final report: five in English and five in Spanish. The evaluation report will include the following sections. A) An Executive Summary, including purpose of the evaluation, methodology used, findings, conclusions and recommendations. It will also include comments on impact and lessons learned. It should be complete enough so that the reader can understand the evaluation without having to read the entire document. The summary should be a self-contained document. B) A copy of the scope of work under which the evaluation was carried out. The methodology used will be explicitly outlined and each scope will contain the requirement to assess how (and how successful) the project or program being evaluated fits into the Mission's overall strategy. Any deviation from the scope will be explained. C) A listing of the evaluation team, their field of expertise and the role they played on the team. D) A clear presentation of the evaluation recommendations, in a separate section of the report if convenient, so that the reader can easily

locate them. E) The project's lessons learned should be clearly presented. These should describe the causal relationship factors that proved critical to project success or failure, including necessary political, policy, economic, social and bureaucratic preconditions within the host country and AID. These should also include a discussion of the techniques or approaches which proved most effective or had to be changed and why. Lessons relating to replicability and sustainability will be discussed. F) A paginated Table of Contents. G) Annotated bibliography of all project related documents.

## ANNEX 8-1. TEAM MEMBERS AND METHODOLOGY

**Manuel J. Carvajal, Ph.D. (Economics).** Team Leader. Professor of Economics at Florida International University. Author of six books and 50 articles in books and professional journals. He worked with USAID/Costa Rica (Rural Development Office) in 1968-1969 and has served as a USAID consultant in Washington, D.C., El Salvador, Costa Rica, Guatemala, and Honduras. Previous work with USAID/El Salvador includes midterm and final evaluations of Project HOPE. He also has served as consultant to the World Bank, the Library of Congress, and the Smithsonian Institution, among others, and, in El Salvador, DIVAGRO and FORTAS.

Besides coordinating the activities of other team members and preparing the report, Mr. Carvajal has concentrated on evaluating operational and procedural systems applied to the overall project by FUNTER's executive staff and their function within each of the project's components (i.e., procurement and inventory procedures as they relate to the cooperative agreement and other project documents, financial management for prosthetic devices in terms of cost control and recovery procedures applied to prostheses partially subsidized by FUNTER, and management/statistical reporting for the amputee registry). Other areas being evaluated directly by him are level and effectiveness of coordination between project funded and non-funded staff, organizational capacity to plan and conduct fund raising activities, quantity and quality of statistics on progress and accomplishments, average cost of various project outputs, and impact of diminishing returns and growth pains.

**Martin L. Carrillo, R.P.T. (Physical Therapy).** Rehabilitation Specialist. Author of five professional articles, he is in private practice in Miami. He has lectured extensively throughout Latin America and held teaching positions with the University of Chile and the University of Miami. His consulting experience spans over Colombia, Costa Rica, the Dominican Republic, El Salvador, Honduras, and Nicaragua. In El Salvador he provided advisory services to the Cerebral Palsy Center in 1987.

Mr. Carrillo's areas of responsibility in this assessment include evaluating technical coordination of the various components within the USAID/FUNTER Project and FUNTER's procedures related to its Patient Support Program (i.e., appropriateness of interviews done by social workers, processes applied to medical examinations and prosthetic prescription, quantity and quality of physical therapy services and follow-up rendered to amputees, level and context of psychological orientation, and post-prosthetic care and patient follow-up). They also encompass an evaluation of the amputee tracking system.

**Luisa Montero-Diaz, M.S.** (Speech/Language Pathology). Rehabilitation Specialist. Employment Program Associate at Melwood Training Center, Upper Marlboro, Maryland. She is a former Peace Corps volunteer who has worked with CPH International, Inc. in Paraguay as a technical trainer and with the National Child and Family Institute in Ecuador, also as a technical consultant and trainer.

Ms. Montero-Diaz's major contributions to this evaluation are in assessing FUNTER's efforts toward vocational reeducation, readaptation, and job placement as well as progress in the area of community education, awareness, and networking. She has reviewed all written and visual materials produced for this area and has evaluated the distribution system for these materials, the mechanisms used to reach communities with information concerning disability prevention and needs of the disabled, networking with public and private agencies and number of persons reached through this component, appropriateness of training programs, and effectiveness of training for networking. She also has reviewed progress in the development of the national and international resource guides for rehabilitation centers, improvement in the skill levels of rehabilitation professionals through in-service training (i.e., course topic selection, organization, and follow-up monitoring), and enhancement in the quality of rehabilitation services in the country through procurement of equipment and materials in behalf of institutions treating persons with disabilities.

**Edmond Ayyappa, M.S.** (Health Science). Certified Prosthetist and Orthotist. Clinical and Research Prosthetist and Orthotist at the Special Team for Amputations, Mobility, and Prosthetics (STAMP), Veterans Administration in Long Beach, California. He has authored the Prosthetic Desk Reference and six professional articles. His experience includes teaching with California State University at Dominguez Hills and working with Karg Prosthetics in Torrance, California; Children's Hospital at Stanford; the Rehabilitation Institute of Chicago; and the Hospital for Special Surgery in New York City. In the last six years he has delivered 70 lectures at technical conferences and seminars.

The main task assigned to Mr. Ayyappa is to ascertain the degree to which FUNTER's prosthetic production and delivery have met the civilian demand for prosthetic devices, assess quantity and quality of training received by FUNTER's prosthetists (i.e., course topic selection, organization, and learning) as well as their needs for further professional skill development, and evaluate the quality of prosthetic output and fitting, including the rural extension program. Mr. Ayyappa also is responsible for reviewing progress toward manufacturing new products and components using indigenous raw materials instead of more expensive inputs imported from the United States and the feasibility of instituting an orthotics program.

All four team members have used similar methodologies: The three FUNTER locations (executive office, CRI, and FAPRO) were visited, interviews were held with FUNTER directors and paid personnel, as well as with USAID representatives, and documents provided by the USAID Mission and requested from other sources concerning FUNTER's operation and rehabilitation services in general in El Salvador were reviewed. (A list of persons interviewed for purposes of this evaluation is presented in another part of this document.) In addition, Mr. Carvajal, Mr. Carrillo, and Mr. Ayyappa visited the physical rehabilitation unit of the Military Hospital and CERPROFA's prosthetics/orthotics laboratory; Mr. Carvajal, Mr. Carrillo and Ms. Montero-Diaz visited ISRI; Mr. Carrillo visited CPC, CIM, and CEE; and Ms. Montero-Diaz visited the planning unit of the Ministry of Education. Mr. Carrillo also held interviews with several rehabilitation professionals throughout the country.

Patients and their families at both PAP and FAPRO were observed while interacting with FUNTER's staff and interviewed subsequently by Mr. Carrillo, Ms. Montero-Diaz, and Mr. Ayyappa. Mr. Carvajal worked closely with FUNTER's accountant, the Administrator, the Technical Manager, and the four project component heads to obtain data on accomplishments and finances. Mr. Carrillo administered a survey to 12 physical therapists working with children in various institutions to explore their opinion about FUNTER's contribution and impact. Mr. Ayyappa traveled to Sonsonate twice to observe and evaluate prosthetic fitting and delivery as well as services rendered by FUNTER in its rural extension program. Mr. Ayyappa worked very closely with the eleven FAPRO prosthetists, developing and administering a theoretical/practical certification exam to assess their knowledge and abilities. Passing this exam was a requirement for graduation.

## ANNEX 9-1. METHODOLOGY FOR DEMAND PROJECTIONS

The demand for prosthesis in the near future (i.e. September 1990 through August 1991) can be estimated using different methodologies. One technique consists of projecting monthly data for detection of amputees, available for the 17-month period April 1989-August 1990 into the future using ordinary least squares or regression analysis. Let 'DETECT' be the dependent variable measuring the number of previously undetected amputees registered each month in the series and 'MONTH' be a series of consecutive integers starting with '1' for April 1989, the first month for which data are available, '2' for May 1989, and so on through '17' for August 1990. The least-squares estimates (with standard errors in parentheses underneath) for a linear equation of this nature are as follows:

$$\text{DETECT} = 28.213 - 0.350 \text{ MONTH} \\ (0.550)$$

$$F = 0.41 \quad r^2 = 0.026$$

These estimates are not statistically significant, and the equation explains only 2.6 percent of the variation of the dependent variable. In an effort to accommodate possible nonlinearity in the trend of the data, a quadratic transformation of the independent variable is introduced into the equation with the following results:

$$\text{DETECT} = 25.426 + 0.530 \text{ MONTH} - 0.049 \text{ MONTH}^2 \\ (2.408) \quad (0.130)$$

$$F = 0.26 \quad r^2 = 0.036$$

The regression coefficients and the F ratio continue lacking statistical significance, accounting for only 3.6 of the variation of the dependent variable.

Notwithstanding this lack of statistical significance, demand for artificial limbs originating from registration of previously undetected amputees can be projected for the 12-month period immediately following the span of this evaluation by inserting into each equation the integer corresponding to each successive month ('18' for September 1990, '19' for October 1990, and so on through '29' for August 1991). The results of these projections by four-month period for first-time demand for prosthetic devices are as follows for the linear and quadratic equations:

	Projected Number of Newly Detected Amputees	
	<u>Linear Equation</u>	<u>Quadratic Equation</u>
September-December 1990	86	68
January-April 1991	80	43
May-August 1991	74	12
September 1990-August 1991	240	123

According to the quadratic equation method, virtually all amputees in El Salvador will have been identified by August 1991. Although neither methodology produces results which are statistically significant, the quadratic method is able to better accommodate the decline in registration of previously undetected amputees experienced in the last few months of the series, that is, of this evaluation.

Prosthetic devices in El Salvador have a life expectancy estimated by the Evaluation Team to be between two and four years. (A life expectancy of three years was used in estimating demand.) The team felt that a two-year life expectancy commonly used in the United States, is too low for El Salvador where consumer expectations for fit and comfort are lower. Children's prostheses need to be changed approximately yearly. As less than 4 percent of those served by FUNTER have been children under 10, however, their effect on demand would be negligible. Total demand estimates ought to include replacement, perhaps with the use of a depreciation rate which could be set at one-third of the number of artificial limbs delivered by PAP in the same four-month period of previous years. Thus, for example, replacement demand for September-December 1990 is projected to be one-third of 66 prostheses delivered during September-December 1988, plus 102 prostheses delivered in September-December 1989, that is 56 units. If the replacement values are added to the first-time demand estimates presented above, the following results are obtained:

	Projected Demand Prosthetic Devices Including Replacement	
	<u>Linear Equation</u>	<u>Quadratic Equation</u>
September-December 1990	142	124
January-April 1991	199	162
May-August 1991	223	161
September 1990-August 1991	564	447

Obviously, the lack of statistical significance of the regression

coefficients detracts from the credibility of these projections. Therefore, an alternative technique has been used to explore a different perspective. This technique, also based on ordinary least squares, relies on monthly data on the number of artificial limbs delivered by PAP between May 1988 and August 1990. Let 'PAP,' the dependent variable, be the number of artificial limbs delivered each month and 'MONTH' be a series of consecutive integers starting with '1' for May 1988, '2' for June 1988, and so on through '28' for August 1990. The regression estimates (with standard errors in parentheses underneath) for the linear and quadratic equations, presented below, are statistically significant and explain approximately one-third of the variation of the dependent variable, a relatively high level for cross-sectional data.

$$\text{PAP} = 19.627 + 1.043^{***} \text{ MONTH} \\ (0.311)$$

$$F = 11.28^{**} \quad r^2 = 0.303$$

and

$$\text{PAP} = 11.671 + 2.634^{**} \text{ MONTH} - 0.055^* \text{ MONTH}^2 \\ (1.271) \quad (0.041)$$

$$F = 6.62^{**} \quad R^2 = 0.346$$

\*\*\*Statistically significant at 99 percent probability level.

\*\*Statistically significant at 95 percent probability level.

\*Statistically significant at 80 percent probability level.

If the same projection procedure is applied (i.e., inserting into each equation the integer corresponding to each successive month, that is, '29,' for September 1990, '30' for October 1990, etc. through '40' for August 1991), the following results are obtained:

	Projected PAP Delivery As Indicator of Demand	
	<u>Linear Equation</u>	<u>Quadratic Equation</u>
September-December 1990	206	164
January-April 1991	222	149
May-August 1991	238	127
September 1990-August 1991	666	440

These estimates are substantially higher than the ones obtained through detection of amputees plus replacement.

Prosthetic activity in the near future also can be projected utilizing monthly production data from FAPRO for the same period.

Let 'FAPRO,' the dependent variable, be the number of artificial limbs produced each month from May 1988 to August 1990 and 'MONTH' be a series of consecutive integers spanning from '1' to '28.' The regression estimates (with standard errors in parentheses underneath), presented below, also are highly significant and explain about one-third of the variation of the dependent variable.

$$\text{FAPRO} = 27,325 + 0.849^{***} \text{ MONTH} \\ (9.272)$$

$$F = 9.78^{**} \quad r^2 = 0.273$$

and

$$\text{FAPRO} = 18.189 + 2.677^{**} \text{ MONTH} - 0.063^{*} \text{ MONTH}^2 \\ (1.084) \quad (0.036)$$

$$F = 6.78^{***} \quad R^2 = 0.352$$

Applying the same projection procedure to these data yields estimates similar to those obtained when projecting data from PAP. That is, the linear equation suggests a 12-month activity following the period of this evaluation of 680 units (instead of 666 units using PAP data), and the quadratic equation suggests 418 units (instead of 440 units using PAP data).

	Projected FAPRO Production As Indicator of Demand	
	<u>Linear Equation</u>	<u>Quadratic Equation</u>
September-December 1990	214	165
January-April 1991	226	142
May-August 1991	240	111
September 1990-August 1991	680	418

If the three projections are blended in equal proportions, thus taking into consideration both linear and quadratic estimates, continued identification of previously undetected amputees, artificial limb replacement and historical trends for both PAP and FAPRO, probably the most realistic estimates are obtained. These estimates, presented below, indicate a constant level of performance in the order of 180 artificial limbs per four-month period, a total of about 535 units between September 1990 and August 1991.

Best Estimates of Demand  
Using Three Methods

September-December 1990	169
January-April 1991	183
May-August 1991	183
 September 1990-August 1991	 535

During the first eight months of 1990, more than three-quarters (77.3 percent) of the prostheses manufactured by FAPRO were to fit lower-extremity amputees (26.3 percent above the knee; 51.0 percent below the knee). Most of the upper-limb devices (21.4 percent of the total) were below the elbow, and only a small fraction (1.3 percent of the total) were above the elbow. If these proportions are held constant throughout the September 1990 - August 1991 year, the composition of the estimated 535 prostheses produced/demanded during the 12-month period would be as follows: 141 devices above the knee, 273 devices below the knee, seven devices above the elbow, and 114 devices below the elbow. Using the price(s) for each type of prosthesis reported in Section III. B. of this Evaluation Report, the projected cost of providing the 535 artificial limbs is estimated to be U.S. \$264,397. The cost of the same mix in the United States would be about U.S. \$2.55 million.

Type of Prosthesis	Units	<u>In FAPRO</u>		<u>In the United States</u>	
		(U.S. \$ or Equivalent)			
		<u>Price</u>	<u>Total Cost</u>	<u>Price</u>	<u>Total Cost</u>
Above knee	141	632	89,162	5,250	740,250
Below knee	273	397	108,397	3,250	887,250
Above elbow	7	926	6,485	10,000	70,000
Below elbow	114	529	60,353	7,500	855,000
 Total	 535		 264,397		 2,552,500

ANNEX 10-1. NON-USAID PROJECT ACTIVITIES

A component of FUNTER is the PONI Program. The objectives are to prevent child hearing disabilities, detect hearing deficiencies at an early stage, and provide medical assistance to affected children. A specific goal of this program is to administer hearing tests annually to approximately 200,000 first grade students in the public school system across the nation. (So far about 90,000 children have been tested by eleven audio testing specialists working under two supervisors.) The functions of the PONI Program Coordinator are to select, organize, and supervise PONI Program personnel; develop work plans; and coordinate activities with the Ministry of Health, the Ministry of Education, and the various medical professionals related to the program.

Another component of FUNTER not supported by USAID is the PROCER program. Expenditures for this program are as follows:

FUNTER's expenditures under the PROCER Program by year and institution, 1987-1990.

Expenditures under the PROCER Program (U.S. \$ Equivalent)					
Institution	Total	1987	1988	1989	1990
Total	1,196,860	1,110,659	29,788	30,513	25,900
CIM	488,681	425,975	13,213	23,593	25,900
ISRI	912	-	-	912	-
CROC	465,283	449,602	12,047	3,634	-
CRO	241,070	235,082	3,614	2,374	-
CEE	914	-	914	-	-

**PERSONS INTERVIEWED**

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