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PO-AMS-882
ISN-43970

UNCLASSIFIED

UNITED STATES INTERNATIONAL DEVELOPMENT COOPERATION AGENCY
AGENCY FOR INTERNATIONAL DEVELOPMENT
Washington, D. C. 20523

GUATEMALA

PROJECT PAPER

IMMUNIZATION/CHILD SURVIVAL

AID/LAC/P-267

Project Number: 520-0339

UNCLASSIFIED

128

AGENCY FOR INTERNATIONAL DEVELOPMENT

PROJECT DATA SHEET

1. TRANSACTION CODE

A = Add
 C = Change
 D = Delete

Amendment Number

DOCUMENT CODE

3

COUNTRY/ENTITY

Guatemala

3. PROJECT NUMBER

520-0339

4. BUREAU/OFFICE

LAC

05

5. PROJECT TITLE (maximum 40 characters)

Immunization/Child Survival Project

6. PROJECT ASSISTANCE COMPLETION DATE (PACD)

MM DD YY
018 | 3 | 1 | 8 | 8

7. ESTIMATED DATE OF OBLIGATION

(Under "B." below, enter 1, 2, 3, or 4)

A. Initial FY 815

B. Quarter 4

C. Final FY 816

8. COSTS (\$000 OR EQUIVALENT \$1 =)

A. FUNDING SOURCE	FIRST FY 85			LIFE OF PROJECT		
	B. FX	C. L/C	D. Total	E. FX	F. L/C	G. Total
AID Appropriated Total	1,464	1,288	2,752	2,000	4,700	6,700
(Grant)	1,464	1,288	2,752	2,000	4,700	6,700
(Loan)						
Other						
U.S.						
Host Country	202	1,463	1,665	605	7,688	8,293
Other Donors)	157	--	157	789	--	789
TOTALS	1,823	2,751	4,574	3,394	12,388	15,732

9. SCHEDULE OF AID FUNDING (\$000)

A. APPRO- PRIATION	B. PRIMARY PURPOSE CODE	C. PRIMARY TECH. CODE		D. OBLIGATIONS TO DATE		E. AMOUNT APPROVED THIS ACTION		F. LIFE OF PROJECT	
		1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan
(1) HE	514	510		--	--	6,700		6,700	--
(2)									
(3)									
(4)									
TOTALS						6,700		6,700	

10. SECONDARY TECHNICAL CODES (maximum 6 codes of 3 positions each)

500 | 551 | 530 | 563

11. SECONDARY PURPOSE CODE

510

12. SPECIAL CONCERNS CODES (maximum 7 codes of 4 positions each)

A. Code BRW

B. Amount

13. PROJECT PURPOSE (maximum 480 characters)

To increase up to eighty percent vaccination coverage for children under five years of age and pregnant women who live outside the department of Guatemala.

14. SCHEDULED EVALUATIONS

Interim MM YY | MM YY | Final MM YY
0 | 2 | 8 | 7 | | | 0 | 6 | 8 | 8

15. SOURCE/ORIGIN OF GOODS AND SERVICES

000 941 Local Other: (Specify)

16. AMENDMENTS/NATURE OF CHANGE PROPOSED (This is page 1 of a _____ page FP Amendment.)

17. APPROVED BY

Signature

Title

1. J. Hill Controller
2. C. Costello, Director

Date Signed

MM DD YY
0 | 8 | 2 | 1 | 7 | 8 | 1 | 5

18. DATE DOCUMENT RECEIVED IN AID/W, OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION

MM DD YY
9 | 1 | 2 | 8 | 8 | 6

Project Authorization

DATE: August 27, 1985

Name of Country/Entity: Guatemala
 Name of Project: Immunization/Child Survival
 Number of Project: 520-0339

A. Pursuant to Section 104 of the Foreign Assistance Act of 1961 as amended, I hereby authorize the Immunization/Child Survival Project for Guatemala, involving planned obligations of not to exceed of US\$6,700,000 in grant funds over a three year period from the date of authorization subject to the availability of funds in accordance with the AID OYB/allotment process to help in financing the foreign exchange and local currency costs for the project. AID's contribution to the project will be made available in increments. The planned life of the Project is 3 years from the date of initial obligation.

B. The objective of the project is to reduce morbidity and mortality among children under five years and pregnant women, mainly in the rural areas of Guatemala, caused by the six most common immuno-preventable diseases: tuberculosis, polio, diphtheria, pertussis, tetanus and measles.

C. The Grant Agreement, which will be negotiated and executed by the Mission Director to whom such authority is delegated in accordance with AID regulations and Delegation of Authority (99.1.95), shall be subject to the following essential terms and covenants and major conditions, together with such other terms and conditions as AID may deem appropriate.

D. Source and Origin of Commodities, Nationality of Services

Commodities financed by AID under the Project shall have their source and origin in the United States or in Guatemala, except as AID may otherwise agree in writing. Except for ocean shipping, the suppliers of commodities or services shall have Guatemala or the United States as their place of nationality, except as AID may otherwise agree in writing. Ocean shipping financed by AID under the Project shall, except as AID may otherwise agree in writing, be financed only on flag vessels of the United States.

E. Conditions Precedent to Disbursement

1. Prior to any disbursement of funds or issuance of any commitment documents for funding of goods and services under the Grant, except for technical assistance and procurement of goods and services whose source and origin are outside of Guatemala, and as AID may otherwise agree in writing, the Ministry of Health and Public Assistance (MOH) shall furnish, in form and substance satisfactory to AID, evidence that the MOH has extended all contract

positions financed by the GOG in the Primary Health Care Component of the "Community Based Health and Nutrition Systems" Project (520-0251) so that such positions continue within the GOG budget to support the Immunization/Child Survival Project; that the MOH has transferred vehicles, furniture, equipment and materials granted by AID under AID Project 520-0251 to support Project 520-0339; and that the MOH will have provided appropriate office space for the headquarters of the Division of Disease Control and Surveillance and the Project Administration Unit in the General Directorate of Health Services headquarters.

2. Prior to any disbursement of funds or issuance of any commitment documents for funding of goods and services under the Grant, except for technical assistance and procurement of goods and services whose source and origin are outside of Guatemala, and as AID may otherwise agree in writing, the MOH shall furnish, in form and substance satisfactory to AID, a detailed time-phase Project Implementation Plan setting forth all activities to be completed during the life of the Project. This plan will include: 1) specific objectives and targets for completion during that time period, 2) specific tasks required and when they must be completed to meet objectives and targets, including Critical Path Network Analysis (CPN); 3) physical and human resources required to complete tasks; 4) a detailed budget which shows both AID funds and counterpart resources required to cover costs of human and physical requirements; and 5) a document which outlines the steps necessary for persons involved in project activities to be reimbursed for per diem and transportation expenses incurred in project related activities.

3. Prior to any disbursement of funds or issuance of any commitment documents for funding of goods or services under the Grant, except for technical assistance, the Ministry of Health shall furnish, in form and substance satisfactory to AID, a procurement plan which lists items to be procured and identified steps to be followed in procurement of these items.

F. Covenants

The Ministry of Health and Public Assistance (MOH) shall covenant, unless AID otherwise agrees in writing, that:

1. The MOH will obtain within 365 days dated from the date of the Agreement, funding from UNICEF, PAHO, Rotary Club or some other donor sufficient to cover a portion of vaccines, needles and syringes for the Project. Evidence of having obtained such funding will be the submission to AID by the MOH of a signed agreement between such other donor and the MOH.

2. Each MOH Area Chief (21 in total) shall prior to initiating activities under this Project; designate in writing a well qualified person or persons who are available to serve as part-time (80%) coordinator for EPI activities in his respective health area.

3. Each MOH Area Chief shall sign a statement prepared by the MOH Project Director that vehicles provided by the Project shall be assigned

to the EPI Area Coordinator for exclusive use in Project EPI activities. It shall also be understood that vehicles assigned to the Division of Epidemiology and Disease Control and to Health Areas shall be used solely for EPI project activities. A list shall be provided which will include the location of all vehicles provided by AID grant funds, its serial number, the person to whom it is assigned and the person's title.

4. By the end of April during each year of the Project the Cooperating Country shall furnish in form and substance satisfactory to AID a detailed time-phase Project Implementation Plan showing project activities to be completed during the next calendar year. This Plan will at a minimum specify major project activities and include a Critical Path Network.

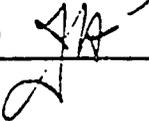
G. The following waiver to AID regulations requires AID/W approval:

1. An origin waiver from Geographic Code 000 to 899 to purchase 46 Japanese 185 cc motorcycles valued at approximately \$69,000.

Draft Vaughan/Odle 

Clearances:

A. Edward Baker, PDSO 

B. Joe Hill, CONT 

Signature 

Charles E. Costello
Director
USAID/Guatemala

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PROJECT SUMMARY AND RECOMMENDATIONS

A. Recommendations

USAID/Guatemala recommends that a grant of US \$6.7 million be authorized to the Government of Guatemala (GOG) to assist in the implementation of the proposed Immunization/Child Survival Project (I/CS) 520-0339. This US\$6.7 million will provide funding for the Project during a three year period beginning August 31, 1985 and terminating August 31, 1988.

B. Project Background and Setting

In recent years Guatemala's serious health problems have been reflected by a high infant mortality rate. This is due, in part, to the extreme poverty and poor nutritional status of a large portion of the rural population. In addition, high birth rates, low literacy rates, and the dispersal of the indigenous population in difficult mountainous terrain impede the Ministry of Health's ability to adequately serve the rural population.

The Ministry of Health (MOH) has pursued a policy of expanding primary health care since the 1978 Alma Ata Conference. One of the major elements in this approach has been the control of infectious disease through immunization of all children. The MOH's first efforts to provide more immunization coverage in the late 1960's consisted of offering immunization services to serve spontaneous demand in fixed MOH health facilities. While accurate information on disease incidence was not available, it became apparent that epidemics continued to occur and that poor health services utilization, lack of adequate human and material resources, an inadequate cold chain for conserving and transporting vaccines, and other factors made it difficult for the MOH to adequately immunize infants, the most vulnerable portion of the population.

In 1972, the decision was made to conduct semi-annual immunization campaigns throughout the country. While there was a major reduction in the incidence of immuno-preventable diseases among all age groups during the period 1972-1984, the campaign approach did not have a major impact on infant morbidity and mortality rates for these diseases.

In 1983, at the suggestion of the Pan American Health Organization (PAHO) the MOH decided to try a more active approach for the delivery of vaccination services in the Department of Escuintla. The department* which covers a large coastal area, was an area where several measles epidemics had occurred. The approach selected, canalización, or channelling, is an active promotion of vaccination activities by health service personnel and community

* A department is a geographical unit of jurisdiction within Guatemala roughly corresponding to a state in the U.S.

volunteers. These health service personnel carry out home visits to identify susceptible children and make appointments for them to receive vaccinations in a nearby health facility or another site in the community. The channelling process seeks to change the so-called "clinic psychology" which is basically a passive system whereby rural health workers remain in the health facility awaiting the arrival of clients for whom services are provided. Feedback from the results of this pilot project was positive, leading to the decision to implement this channelling strategy throughout the country in a phased approach, while still carrying out immunization campaigns in the remainder of the health areas.

C. Project Strategy

The Project is an integral component of the AID-supported health and population sector program in Guatemala. The strategy supports the GOG's initiative to expand and strengthen immunization with channelling as an important component of basic health care. The Project is in line with the Mission's health sector strategy to strengthen primary health care in rural areas of Guatemala.

In response to the recognized need to strengthen the national immunization program and building on the experience of channelling in Colombia and on the results of the trial project in Escuintla, the phased changeover to channelling is deemed feasible. Based on this experience, a community-based immunization delivery system is believed to be more effective for covering the vulnerable population with complete vaccination series than passive clinic based systems or periodic campaigns. An intensive, integrated support system with emphasis at the departmental level will insure maximum utilization of immunization resources.

The Project is designed to provide support to the MOH to increase its capacity for service delivery with existing staff and facilities. The Project seeks to reorient and motivate health personnel to work directly in the community on a house-to-house basis and to increase awareness of the importance of community interaction as a means to identify the at-risk population, to promote acceptance on the part of parents of immunizations for their children, and to make immunization services readily available at all times at health posts and centers. This will be done by providing technical assistance and funding for the strengthening of existing health services which are related to the immunization program. A spin-off outcome of the Project will be to improve the utilization of MOH health resources for other primary health care services, such as oral rehydration therapy (ORT).

The goal of this Project is to reduce infant/child morbidity and mortality from the early childhood communicable diseases. The Project purpose is to increase up to eighty percent vaccination coverage for tuberculosis, polio, diphtheria, pertussis (whooping cough), tetanus, and measles for children under five years of age and pregnant women who live outside of

the department of Guatemala by the end of the Project, August 31, 1988. This will be accomplished using a three-pronged approach: (1) where houses are close together health workers and community collaborators will map and visit houses to identify the population at risk, followed immediately by application of the vaccines; (2) in areas not covered by house visiting because the population is very dispersed, the population will be motivated to assemble in pre-determined sites for immunization of their children (both of the two approaches will be done not less than three times annually so that the immunization series can be completed within one year); and (3) all MOH health facilities will offer immunization services routinely.

At the end of the Project the following will indicate that the Project purpose has been achieved:

- (1) The MOH will be operating an efficient and effective immunization program affording protection to eighty percent of the children under five years of age in the Project area.
- (2) Eighty percent of all pregnant women will be immunized with tetanus toxoid so that neo-natal deaths of infants will be significantly reduced.
- (3) The morbidity and mortality of the six immuno-preventable diseases will be reduced from a range of 3 to 53 per 100,000 to a range for the six diseases of 0.5/100,000 to 10/100,000 inhabitants depending upon the epidemiological characteristics of each of the diseases.
- (4) The channelling mode for vaccinating will be well established in 21 non-metropolitan departments.

D. Project Budget

The proposed three year Immunization/Child Survival Project will cost an estimated \$15,781,943 (see Table 1.1). Subject to the availability of funds, a total of US\$6.7 million in AID Grant funds (42 percent of total project costs) will be provided for the Project. These funds will be utilized for training, supervision, promotion, cold chain, transport, maintenance, supplies, project management and evaluation. The GOG will provide funding for administrative support, a portion of vaccines and supplies, information and education, supervision, training, maintenance and operational staff. This contribution is estimated to be \$8,292,694, or 53 percent of total Project costs. UNICEF and Rotary Club are expected to provide \$763,323 for vaccines and supplies during the three year period 1985-1988 or 5 percent of total Project costs. PAHO is expected to provide an estimated \$25,927 for technical assistance amounting to 0.2 percent of total Project cost.

TABLE 1.1
PROJECT EXPENDITURES BY COMPONENT
IMMUNIZATION CHILD/SURVIVAL PROJECT (520-0339)
(in U.S. Dollars - \$000)

COMPONENTS	AID	OTHER DONORS	GOG	TOTAL
Component I				
Training, Supervision and Promotion	\$2,549	\$23	\$399	\$2,971
Component II				
Cold Chain, Vaccines and Supplies	435	664	867	1,966
Component III				
Vehicles and Transport and Cold Chain Maintenance	2,008	0	168	2,176
Component IV				
Project Management and Personnel	<u>833</u>	<u>0</u>	<u>5,777</u>	<u>6,610</u>
Sub-total	5,825	687	7,211	13,723
Inflation and Contingencies 15%	<u>875</u>	<u>102</u>	<u>1,082</u>	<u>2,059</u>
TOTAL ALL COMPONENTS	\$6,700 42%	\$789 5%	\$8,293 53%	\$15,782 100%

I. PROJECT BACKGROUND AND RATIONALE

A. Background

Poor health for the majority of its population continues to be a serious development problem for Guatemala. Indications of the seriousness of this problem are found in national mortality and morbidity statistics. As outlined in the 1984 USAID/Guatemala Mission Country Development Strategy Statement, the rural indigenous population of the Western Highlands (which comprises 46 percent of the population) has a life expectancy of 44 years. Overall life expectancy is 60.7 years. Infant mortality was estimated in 1983 at 64 per 1,000 live births, but in the indigenous areas, reported infant mortality was well over 100 per 1,000 live births. In addition, it is recognized that a large number of infant deaths may be unreported.

According to a 1982 study by the Ministry of Health (see Annex 1.1) the leading cause of infant mortality is intestinal diseases (25 percent) followed by respiratory diseases (45 species). An additional 28 percent of infants die of unknown causes as well as congenital anomalies (3 percent), whooping cough or pertussis (3 percent) and measles (4 percent). An effective immunization program can significantly lower death rates for measles and pertussis as well as diphtheria, tetanus, tuberculosis, and neonatal tetanus all of which are included in the large currently "unknown causes" category.

B. Current Status of Immunization in Guatemala

The MOH is the major provider of immunization services to the Guatemalan population. Prior to 1972, the Ministry of Health provided immunization services through a facility-based system in which vaccines were dispensed on a continuous basis responding passively to the spontaneous demand of the population. Immunization coverage was low with this system because of an inadequate cold chain and low utilization of MOH health service facilities. Lack of continuity of immunization services did not provide the degree of population immunity needed to prevent epidemics of diseases among children under five years of age.

When it became apparent in 1972 that measles was a major health problem, the MOH adopted a strategy of periodic national immunization campaigns. Although morbidity and mortality from these diseases were reduced as a result of the campaigns, the population coverage achieved was still not sufficient to prevent epidemic outbreaks.

In 1978 Guatemala officially adopted the Expanded Program on Immunization (EPI) as a conceptual method to control immuno-preventable diseases. The National Health Plan for 1979-82 identified the need to implement systematic and permanent measures to immunize all children under one year of age against the six major vaccine-preventable diseases. The strategy included semi-annual vaccination campaigns, strengthening the cold chain, and improving the system of epidemiological surveillance.

The national immunization campaigns are currently conducted twice a year during April-May and October-November, during which all MOH health staff are mobilized for a two week period. Special emphasis is at the health post level where the Rural Health Technicians (RHTs) and auxiliary nurses are particularly affected because they are the ones responsible for community organization and the first level of health care. Routine vaccination services are not available in all health centers and posts except during the campaign periods.

In 1983 an evaluation of EPI activities in Guatemala indicated that the semi-annual campaigns did not adequately provide protection to infants because the interval between the first and third dose was one year. It was estimated that only 30 percent of the children were protected. This immunization coverage was insufficient to prevent epidemics. The population also showed that the disease reporting system was inadequate. Other deficiencies noted were the lack of personnel and financial resources to effectively administer the program at the national level.

As a result, the Ministry of Health has sought to refocus the EPI program in order to attain epidemiologically effective coverage. It has chosen to adopt the Pan American Health Organization (PAHO) proposed strategy of channelling. Channelling requires more interaction between health staff and the community by incorporating a community census with home visits by health post and center staff, as well as retraining of volunteer community workers to assist with this work in their communities. Additionally, the reinforcement of management and logistic systems and community outreach serve as a basis for expanding other primary health care services, such as oral rehydration therapy and other basic maternal and child health care interventions. Utilizing a channelling approach results in better mobilization of human and capital resources, since health workers and facilities are used more intensely due to the stimulated demand for services.

In 1984, the Ministry of Health formally adopted the goal of extending the channelling methodology to eventually cover the entire country and replace the current vaccination campaigns department by department. Drawing on the experience in Escuintla, vaccination using channelling was introduced into three additional areas in early 1985 (Sacatepéquez, Santa Rosa and El Progreso). Plans have been made to initiate channelling activities in Zacapa, Jutiapa, Jalapa and Chiquimula in 1985, to make a total of eight areas covered by channelling by the end of the year. Personnel in these health areas have already received training in EPI and in some cases have begun initial community census activities.

The Government of Guatemala has requested AID assistance in financing implementation of the changeover from "campaigns" to "channelling" as the EPI strategy throughout the country. The proposed Immunization/Child Survival Project will support this changeover to cover 21 of the 24 departments in Guatemala (excluding the 3 health areas which cover metropolitan Guatemala City).

C. Project Strategy

The Immunization/Child Survival Project is specifically targeted towards providing protection against six immuno-preventable diseases (measles, polio, diphtheria, pertussis, tetanus and tuberculosis) for infants under five years of age and protection against neonatal tetanus in pregnant women. This is done via a national immunization program which strengthens the existing health infrastructure, involves volunteer community participation, and focuses on the population at risk. Channelling through house-to-house visits, where appropriate, will be coupled with well designed facility-based immunization services at the local level. This system will include:

- 1) Mapping of accessible areas and house-to-house visits by health staff and volunteers to identify the population at risk;
- 2) National promotion through mass media on a continuing basis;
- 3) Culturally adapted local information and education directed towards parents;
- 4) Immunization services at regular intervals (not less than three times annually) through house-to-house visits and vaccination clinics provided at centrally located sites; and
- 5) Immunization services available at all times during working hours at all health facilities.

The table in Annex I.3 indicates the population to be covered under the Project, as well as the number of houses by location, health facilities and accessibility of the population. The vast majority of the population, 72 percent, is accessible within two hours by foot from health facilities. Rather than passively awaiting the population to visit health posts and centers, the health personnel will make house-to-house visits and set up a vaccination field site, usually at a community volunteer's home, which by foot is accessible to community members within about fifteen minutes. Tables in Annex I.4 indicate the available human resources by area for health centers and health posts, respectively, which will participate in the Project.

D. USAID/Guatemala Assistance Strategy

1. Relationship to Mission Country Development Strategy Statement

USAID/Guatemala's overall strategy is targeted towards assisting rural poor to achieve a higher standard of living. It also calls for improving local institutional capacity to become self-sustaining. Major projects include increasing farm productivity and income, non-formal and bilingual education, village potable water supplies, community-based primary health care, and family planning services in both the private and public sector.

2. Relationship to Mission Programs/Lessons Learned

The Immunization/Child Survival Project's community-based activities build on previous USAID projects working in the rural areas starting almost 15 years ago. In the health sector Mission assistance helped develop a cadre of rural health workers called Rural Health Technicians (Técnicos en Salud Rural, RHTs) in the early 1970s. These workers are trained to work in the communities outside of fixed health facilities and to train community volunteers. Their efforts have resulted in an extensive network of volunteer health promoters at the community level who serve to actively support primary health care services.

Two research projects, both operating in rural areas in Baja Verapáz and El Progreso, have yielded valuable information on how health services can be expanded in the community. One, the Rural Health Promoters Training Research Project (PRINAPS), extensively used community health promoters (400) who provided simple health care and sold medicines at a small profit. The other, the Project for Integrated System of Nutrition and Primary Health Care (SINAPS), was directed at strengthening community health care by improving support systems to community health facilities along with reinforcing the linkage between them and the communities they served. The results of these operational research projects were positive in demonstrating the potential for expanding the delivery of health services through strong community participation.

In 1980, based on the results of these studies, the MOH and USAID/Guatemala decided to implement a project in three areas in the Highlands (San Marcos, Totonicapán and Sololá) entitled Community Based Integrated Health and Nutrition Systems 520-0251 (SCISN) with three main components, Environmental Sanitation, Primary Health Care and Support Systems.

An external evaluation of the SCISN Project was conducted in July-August 1983. It concluded that although the project's implementation assumptions were accurate, the Project suffered delays because of external factors (e.g., two changes of government). The project was also very complex with many components, activities and sub-activities, making it a difficult project to implement. The evaluation noted, however, that community participation in supporting the project was excellent.

The major lesson learned was that future projects should be simple in design with a well defined and manageable scope of activities. Administrative responsibility should be taken into account as well as managerial capacity available at both the central and area levels. Section III.B., Institutional Analysis, describes how these lessons will be applied in the present project.

3. Other Donor Activities

There are eight major donors who provide financial support to the health sector. A summary of the life of project obligations for on-going

health activities currently programmed is provided in Table 1.2. In addition to those international donors, there are several other donors who will be approached by the MOH to support the Immunization/Child Survival Project. These include Rotary Club International which has agreed to provide polio vaccines through 1989 and UNICEF who will provide for the remainder of the vaccines contemplated for the Project. An outline of the various projects receiving other donor support during 1984 is shown in Annex I.2.

Table 1.2
DONORS PROVIDING SUPPORT TO THE HEALTH SECTOR
Guatemala 1984
(Millions of U.S. dollars)

INSTITUTION	AMOUNT (LOP)	PERCENT
IDB	138.4	85.8
CARE	6.7	4.2
AID	5.8	3.6
CABEI	4.0	2.5
ACDI	3.3	2.0
UNFPA	2.0	1.2
UNICEF	0.7	0.4
UNDP/PAHO	0.5	0.3
	<u>161.4</u>	<u>100.0</u>

Source: "Resumen de la situación del país - Guatemala", May 1984, Pan American Health Organization (PAHO).

II. PROJECT DESCRIPTION

A. Project Goal and Purpose

The goal of this project is to reduce morbidity and mortality throughout Guatemala caused by the common early childhood diseases of tuberculosis, polio, diphtheria, pertussis, tetanus and measles. Achievement of this goal will be measured by a reduction of child morbidity and mortality from current ranges for the six immuno-preventable diseases of 3.0 per 100,000 to 53 per 100,000 inhabitants to ranges of 0.5 per 100,000 to 10 per 100,000 inhabitants per year by the year 2000.

The purpose of the project is to increase up to 80 percent vaccination coverage for children under five years of age and pregnant women who live outside of the department of Guatemala by the end of the Project, August 1988.

The above purpose reflects a targeting of the project on the six most common immunizable diseases found in Guatemala; tuberculosis, polio, diphtheria, pertussis, tetanus, and measles. It also represents a focusing on that group most vulnerable to such diseases and most poorly served by the

national health system, small children and pregnant women. In carrying out this purpose, the project will also help strengthen the MOH's ability to provide effective, community-based primary health care services to rural areas by implementing a "channelling" extension strategy. Channelling is an active, community-based approach whereby rural health personnel visit clients in their houses on a continual basis in order to promote and carry out vaccination and other primary health care activities.

The project is consistent with the Mission's country development strategy to increase rural incomes and productivity. It builds on previous USAID-MOH health projects which have improved primary health care services in the Western Highlands (Community-Based Integrated Health and Nutrition Systems - 520-0251), and have trained and equipped rural health technicians and promoters in selected areas outside of Guatemala City (SINAPS and PRINAPS).

B. End-of-Project Status Indicators (EOPS)

By the project termination date, the following EOPS will have been achieved:

1. Increase to 80 percent (or 454,000 children) the immunization coverage of children under one year of age against tuberculosis, polio, diphtheria, pertussis, tetanus, and measles.
2. Increase to 80 percent (or 772,000 children) the immunization coverage of children from one to four years of age against the same diseases (building upon an estimated 35 percent of this group already vaccinated by the MOH).
3. Increase to 80 percent (or 540,000 women) the vaccination protection of pregnant women against neonatal tetanus.
4. Institutionalization of the "channelling" extension strategy throughout 21 of the MOH's 24 health areas.

C. Outputs

1. MOH personnel trained to carry out a nation-wide channelling program :
 - 21 area health chiefs
 - 25 EPI area coordinators
 - 237 doctors and technicians in the central level of MOH.
 - 971 auxiliary nurses and Rural Health Technicians
 - 7,650 promoters or volunteers
 - 5,100 midwives
 - 25 cold chain maintenance technicians
 - 18 auto mechanics

2. Enable the MOH to perform continuous field supervision of immunization and other primary health activities through grant financing of 29 vehicles and their maintenance, as well as gasoline and per diem.
3. Provide a functioning, sustainable nation-wide cold chain network throughout the MOH.
4. Establish a reliable and up-to-date health information system through grant financed computerization of health records and financing of field surveys, evaluations and manual record-keeping systems.

D. Project Components

Training, Promotion and Supervision

1. Component One:

a. Background and Rationale

This component will support training, promotion and supervision of immunization activities by MOH personnel throughout all health areas outside of the department of Guatemala (i.e. a total of 21 areas). As the largest AID-funded component under the project, it reflects the crucial importance of trained technical and administrative support in enabling the MOH to effectively carry out immunizations on a continuous, community-outreach basis. The project's other three components (i.e. Cold Chain, Vaccines and Supplies; Vehicles, and Transport and Cold Chain Maintenance; and Project Management and Personnel) provide complementary equipment, vehicles and logistical support to this effort.

Activities within this Component and for the Project as a whole are based upon the "channelling" extension strategy. The project will introduce channelling in all areas of the country except for the department of Guatemala: eight areas in year one, eight in year two, and five in year three. To date, channelling is operational only in the departments of Escuintla, Santa Rosa, El Progreso, and Sacatepequez with support from a \$295,000 PAHO project. In addition, UNFPA has made available \$400,000 to pilot-test channelling in selected districts throughout the country over the last two years. Channelling has already been initiated in the departments of Zacapa and Jutiapa. The new Immunization/Child Survival Project will build on these efforts and extend the channelling and immunization services throughout all health areas outside the department of Guatemala. Channelling has begun with vaccination and oral rehydration therapy as target activities. Emphasis on other primary health care interventions, such as upper respiratory infections will be added as the program matures.

In complementing such other donor efforts, grant funds will be used to improve both the quantity and quality of training materials and courses presently available to the MOH (see Annex II.1). For example, a

1983 MOH-PAHO survey revealed that not all Health Areas have carried out Expanded Program of Immunization (EPI) courses and that most of the courses that have been given have not been on the channelling method. It also indicated that recently revised MOH norms on immunization schedules, reasons for not giving vaccines, and operational aspects of channelling require much retraining of health personnel. Supervisory systems within the MOH also continue to be deficient. For example, supervisory reports are inadequate, being primarily descriptive in nature and not useful for program evaluation. In addition, visits by MOH supervisors are rarely programmed, but carried out at random. Finally, promotional strategies for primary health care services, though strengthened by materials and techniques produced under past PAHO, United Nations Fund for Population Activities (UNFPA) and MOH projects, can also be improved. For this reason, the project will support promotional activities designed to address the cultural diversity and conservatism of Indians in the Western Highlands, and their skepticism concerning the desirability or effectiveness of services such as vaccination.

The three training, promotion and supervision activities to be carried out under this component will be geared to follow the phased introduction of channelled immunization into the 21 rural health areas. Training health personnel in implementing channelling and promoting immunization during the start-up of the program in each new area will represent one-time, start-up costs for the project.

Once institutionalized, channelling will operate on its own without the need for special retraining or promotional events. Supervision, on the other hand, will be a continuous need, both during and following the project's three-year life. Some refresher training and follow-up promotion of other primary health care interventions will be included in the planned Oral Rehydration Therapy Project anticipated for initiation in 1986 with AID financing.

Despite the different degree of continuity of these services, all three are interrelated. Training in channelling will precede field promotion, which in turn will precede implementation of immunization and its supervision. Furthermore, one stage will influence the other regardless of implementation sequence: e.g. promotional experiences will affect subsequent training content, and supervisors may detect new approaches which will help the promotion of immunization.

b. Training

The successful expansion and implementation of immunization services in Guatemala depend on the reinforcement of strong management and technical skills of MOH personnel at all levels of the health delivery system. Training in six basic content areas will be critical to the development of teams of personnel which are capable of implementing the Project at the health area, district, post, and community levels. This training will cover the following subjects; (1) programming and evaluation, (2) supervision and continuing education, (3) cold chain equipment operation maintenance, (4) promotion of community participation and health education,

(5) epidemiological surveillance and the management information system for program monitoring, and (6) technical knowledge and skills related to the delivery and administration of vaccines (see Annex II.2). The fortification of skills in these content areas will serve the purposes not only of the proposed project, but also for later expansion of primary health care activities throughout the same MOH administrative and operational system.

The project will train health workers within various levels in the MOH system, central, area and district (see Annex II.3). Training courses will begin at the central level, with central level trainees then providing training at the area level, and so on, down to courses held for traditional midwives and health promoters. Training materials will be drawn either from those previously designed (e.g. PAHO, SINAPS), or will be designed or adapted by two training technical personnel from the MOH Division of Human Resources, as well as by personnel transferred from USAID Project 520-0251. Private sector printers will be contracted to print training materials, since the MOH does not have appropriate in-house printing capability. Implementation of the project training will be carried out by the five medical doctors in the Division of Disease Control and Surveillance (DDCS), with technical assistance provided by resident PAHO advisors.

In summary, grant funds will be used to finance four courses each at the central level for project administrators, area chiefs, area EPI coordinators, and area statisticians. These courses will be given in accordance with the phased implementation of the project into the health areas i.e., four new health areas during the first year, eight the second, and five more during the third and last year of the project. Another series of courses to be held at the central level for cold chain and vehicle maintenance personnel, will follow a more accelerated schedule (three courses during the first year, and another one during year two) given the need to urgently reinforce these skills before project vehicles and equipment arrive in country. AID will finance \$23,182 for travel, per diem, and training materials for these central level courses, while the MOH will pay the salaries of their participating personnel and PAHO will provide two man/days of technical assistance per course to monitor training implementation in Guatemala City.

At the area level, one course will be held at each area to train area nurses, doctors and other technicians concerning the implementation of the project. Thereafter, courses will be held for auxiliary nurses and RHTs at the district level (nine courses per year per area), for health promoters at the post level (one course per year per area), and for midwives at the post level (one course per year per area introduced into the project). AID will provide \$365,621 for per diem, travel and training materials for these field-level training courses, while the MOH will pay the salaries of its participating personnel and PAHO will provide some 30 man-days of technical assistance to monitor course implementation.

c. Promotion

The promotion activity will have the general purpose of encouraging a greater awareness of immuno-preventable diseases and medical

intervention needed for the prevention of these diseases among the rural population in addition to promoting the demand for vaccination services under the project. The promotional methodology to be employed is especially designed to address the educational, cultural and economic level of prospective beneficiaries in rural areas. It will have four separate stages: a mass media campaign for general information, a mixed media campaign to support channelling and immunization by health field personnel, a follow-up mass media campaign to reinforce acceptance and expansion of the program in rural areas, and a combined promotional/educational program in rural schools. The content of this promotion will include such messages as identifying which diseases are preventable by vaccination, how many doses a child needs to be vaccinated against a given disease, and how and where a parent can take their child to get immunization services. Media to be used in the promotion of the project activities will include radio spots, posters and pamphlets, and vaccination cards to identify children and pregnant women who have been vaccinated.

The MOH's Division of Disease Control and Surveillance will coordinate implementation of promotional activities in conjunction with the EPI coordinators. Other support will be provided by a grant-funded, short-term promotion specialist who will work with both the DDCS and the Division of Human Resources in designing and carrying out promotional activities.

AID will finance all promotional activities and will fund \$547,800 for the production and broadcasting of 52 programs and 30 radio spots; \$296,000 for the production and printing of 370,000 pamphlets, 30,000 posters, and 1,400,000 vaccination cards; \$20,250 for the printing of other promotional materials such as 5,000 certificates for promoters and 1,000 immunization flipcharts; \$15,000 for a 15 day workshop in using promotional material and techniques; and \$64,800 for three diagnostic surveys, six pretests and three evaluations to assure the effectiveness of promotional activities.

d. Supervision

The purpose of this activity will be to support constant monitoring of channelling/immunization efforts at all levels within the MOH. PAHO is currently planning the development of a series of check-list supervision guides for each level of administration and service, specifically for the EPI channelling system. Training will be provided for all institutional personnel in charge of supervision in the use of these new guides and on communication and education techniques that will be employed by supervisors under this project.

Supervision of project activities at the health area level will be carried out by teams from the central level composed of at least one representative from the Division of Disease Control and Surveillance, the grant financed Project Administrator and a PAHO advisor. These supervisory visits will commence upon completion of district level training in each health area and will be done every three months thereafter for the project duration.

These visits will coincide with the internal area evaluations to be carried out at the end of each three-month vaccination cycle. The central level supervisory team will assess the following items during each of their visits: cold chain adequacy, completeness and reliability of project information reporting, number of vaccinations given by type, case-reporting of immuno-preventable diseases, supply of vaccines and supplies, adequacy of vehicle maintenance, supply and distribution of promotional materials, implementation of radio spots, and completeness of monthly supervision report forms for each district and health post visited by the Area EPI Coordinator. Central level supervisors will also verify that project vehicles are being utilized for the purpose to which they were assigned.

The central level supervisory team will also assist the Area EPI Coordinator and the area team to resolve problems, and will reinforce the use of adequate and effective supervisory techniques with area personnel who are in charge of project supervision in that area. Wherever possible, the central level team will make random visits to health centers and health posts to supervise project activities as a check on health area reporting.

District level supervision will be under the responsibility of the Area EPI Coordinator in conjunction with the Area Chief. The content of each supervisory visit will follow a check-list supervision guide (developed by PAHO/Guatemala) to review cold chain adequacy, vaccine and supply stock, and monthly consolidated reports on district immunization activities. In addition, the Area EPI Coordinator will work with the district team to resolve problems identified during that visit.

Health post supervision for the project will be under the direct responsibility of the Area EPI Coordinator in conjunction with the district graduate nurse supervisor. Transportation of the nurse supervisor to the health post will be facilitated by the vehicle and gasoline provided to the Area EPI Supervisor with grant funds. Per diem for the nurse supervisor will not be provided by grant funds, as each district is budgeted a certain amount per month in per diem reimbursable by the MOH which is included as counterpart to the grant funds. The content of each monthly supervisory visit will follow a check-list supervision guide (developed by PAHO) to review the cold chain adequacy, vaccine and supply stock and inventory control forms, number of homes visited through channelling, number of vaccinations given by type, dose (first, second and third), and age of child; to assess the quality of care provided by health post personnel through a performance evaluation (done by the district nurse); to review and try to resolve problems and difficulties of health post personnel in carrying out project activities; and to provide continuing education to improve skills identified by the supervisors as in need of strengthening.

Supervision of rural health promoters and traditional midwives will be carried out by rural health technicians and auxiliary nurses with periodic assistance from the district graduate nurse. Supervisors will assess and report on the degree to which the volunteers are performing tasks expected of them: number of houses censused, number of promotional flyers and

posters distributed in the community, number of cases referred to the health facility, attendance at programmed refresher courses, and ability to explain the proper vaccination schedule and respond to parents' questions or hesitations about immunizations. Supervision will always be used as an opportunity for on-the-job continuing education.

In summary, the training, supervision and promotion component will provide \$398,200 in grant financing for per diem and travel to support supervision of the project's immunization activities at the area, district and health post level (see Table 2.1 for Component I budget). The GOG will provide \$265,140 to pay for the salaries of existing health system personnel who perform these project related tasks. In addition, the AID grant will pay the per diem and travel costs for the Area EPI Coordinators to carry out logistical monitoring functions. Auxiliary nurses and RHTs (who actually do all of the field execution of the project) will also receive grant financed per diem to cover each day they spend traveling to rural areas to carry out the program. During the project, AID will provide \$818,496 in grant funding for this expense, and the GOG will assume reoccurring costs following completion of the project.

2. Component Two: Cold Chain, Vaccines and Supplies

The purpose of this component is to provide cold chain equipment and supplies to carry out immunization through a channelling strategy.

a. Cold Chain

Strengthening of the MOH's cold chain will be a particularly critical input in supporting immunization under the Project. The effectiveness of the Expanded Immunization Program using the channelling strategy depends on having a functioning cold chain in place at every level of the health system. At the central level, this requires rapid pick-up of vaccines upon their arrival at the airport, adequate central storage facilities meeting international standards for vaccine conservation, and effective control mechanisms to ensure continuous protection of vaccine potency. The critical task of maintaining the cold chain from the central level to the area level and ultimately to the health centers and posts requires a network of functioning equipment and adequate vaccine and equipment handling procedures with such procedures to be understood and followed by those transporting and delivering vaccine at every health facility.

Several problem areas have been identified that impede the effectiveness of the cold chain in Guatemala. A national evaluation of the MOH immunization program was carried out in 1983 with technical and financial assistance from PAHO. The evaluation report noted the following problems with respect to the cold chain:

- Some health centers and posts are without refrigerators, while others have equipment that is not functioning due to lack of spare parts or

TABLE 2.1
PROJECT BUDGET COMPONENT I TRAINING, PROMOTION AND SUPERVISION
(U.S. DOLLARS)

COMPONENT I: Summary Budget Training, Supervision and Promotion	AID	OTHER DONORS	GOG	TOTAL
TRAINING				
a) Central level training for Guatemala City staff; Area Chiefs, EPI Coordinators, Statisticians and Mechanics	\$23,182	\$7,500	\$8,221	\$38,903
b) Area level training for Area Health personnel and mechanics	\$47,530	\$15,045	\$8,160	\$70,735
c) District and Post level training for Health personnel, promoters and midwives	\$318,091	\$0	\$117,300	\$435,391
Sub-total:	\$388,803	\$22,545	\$133,681	\$545,029
2. PROMOTION				
a) Radio Production and Broadcasting	\$547,800			\$547,800
b) Graphics Production and Printing	\$296,000			\$296,000
c) Research and Evaluation	\$64,800			\$64,800
d) Training	\$15,000			\$15,000
e) Promotional Materials	\$20,250			\$20,250
Sub-total:	\$943,850	\$0	\$0	\$943,850
3. SUPERVISION				
a) Supervision costs at Central, Area and District level	\$398,200	\$0	\$265,140	\$663,340
b) Per diem costs for Health workers carrying out channeling at the field level	\$818,496	\$0	\$0	\$818,496
Sub-total:	\$1,216,696	\$0	\$265,140	\$1,481,836
Sub-total Component I	\$2,549,349	\$22,545	\$398,821	\$2,970,715
Inflation and Contingencies: 15%	\$383,395	\$3,382	\$59,823	\$446,600
TOTAL COMPONENT I	\$2,932,744	\$25,927	\$458,644	\$3,417,315

sufficient funds to pay for energy costs. At the local level there is a shortage of cold boxes (for vaccine transport), thermoses, ice packs, and thermometers.

- At the operational level, personnel lack knowledge of adequate handling procedures for cold chain equipment.
- Routine and timely maintenance is not performed on cold chain equipment, leading to its early breakdown.
- Many kerosene refrigerators lack reliable supplies of fuel.

Since the 1983 evaluation, a considerable amount of cold chain equipment has been purchased by the MOH and donated by international agencies. A comprehensive inventory by UNICEF completed in August 1985 indicated that only 70 percent of all MOH cold chain equipment was in good condition and 30 percent was in poor or irreparable condition.

Cold chain equipment will be procured in a lump-sum procurement directly by AID during the first year of the project in order to take advantage of economies of scale regarding purchase price and procurement procedures. Purchase of kerosene to operate this equipment will be reimbursed by AID as equipment is installed and brought into operation.

Vaccines are received at the international airport by a representative of the Division of Disease Control and Surveillance and transported to the cold storage rooms of the Laboratory of Biologicals. From the central level to the health area, transfer of vaccines is the responsibility of each Area Chief. A representative of each health area is sent with a cold box or thermos and cold packs to pick up vaccine at the Laboratory of Biologicals and transport it to the cold storage facilities of the health area from which vaccine is distributed to all the health centers and posts in the region.

The Division of Engineering and Maintenance of the MOH is in charge of the acquisition and distribution of cold chain equipment. The Division of Disease Control and Surveillance is also responsible for establishing cold chain equipment needs and will coordinate equipment selection and installation in line with overall project needs.

At the Area level, management of the cold chain will be the responsibility of the EPI Coordinator under the supervision of the Area Chief, assisted by the Area nurse supervisor and area maintenance technician. At the health centers and posts, the cold chain is managed by nursing personnel who have minimal training in properly managing the cold chain.

The present project will build on the cold chain equipment funded by AID from the Community-Based Health and Nutrition Project

(520-0251) in three departments in the Western Highlands and will complement a variety of other equipment provided to the MOH by other donors. The central level vaccine storage facilities require significant improvements to guarantee the stable and reliable conservation of vaccines. Three areas needing improvement were identified in the 1985 UNICEF study: (1) storage compartments; (2) location and surroundings of the compartments; and (3) temperature control and monitoring.

The three existing cold rooms (one freezer and two refrigerators), which are used for other vaccines besides those used for EPI, have undergone repeated repairs and are considered inadequate for the needs of the nationwide project immunization program. There are two alternatives. The first option is to purchase three new cold rooms (one freezer compartment with an approximate storage capacity of 400 cubic feet and two refrigerated compartments, each with a capacity of 420 cubic feet). The second option is to purchase multiple individual freezers and refrigerators which would provide sufficient storage space for vaccines at the central level. The latter alternative will be implemented under the project since multiple freezers and refrigerators will provide additional security in the case of equipment failure (with a minimal amount of vaccine affected), and in the case of an electrical power outage, the smaller units conserve their temperature for longer periods.

The Project will provide grant funds for improvements in the location and surroundings of the central vaccine stores in order to create the ambient conditions necessary for supporting the cold chain. Finally, with respect to ensuring reliable temperatures, monitoring and control for the central level cold chain facilities, an automatic alarm system will be installed. Project grant funds will provide additional cold chain equipment so that at the Area level there will be one refrigerator for every health center (7) and every health post (15); one freezer for every health center (10) and every health post (25); and one cold box for every health center (10) and one for every health post (40) in the area. At the district health center level, one refrigerator per center will be required and at the health post level, one refrigerator per post will be needed. Additional cold chain equipment (thermometers, cold packs, thermoses) will also be purchased. All equipment purchased should carry a guarantee and be appropriate for efficient operation under ambient conditions of 28-40 degrees Centigrade.

The Component II Budget below provides for a total of \$225,021 in AID grant funds for cold chain equipment and \$210,294 for the purchase of kerosene for refrigerators. The MOH will contribute an estimated \$282,171 to finance the electricity for the operation of cold chain equipment (see Annex II.4 for Cold Chain Specifications).

b. Vaccines and Supplies

Vaccines and related supplies are purchased twice a year by the GOG through the PAHO Revolving Fund for the MOH, Instituto Guatemalteco

de Seguridad Social (IGSS), the Armed Forces and several private groups. Vaccines are ordered based on MOH wastage norms of 10 percent for DPT, polio, measles and tetanus toxoid (TT) and of 30 percent for BCG. Vaccination supplies (needles and syringes) are ordered based on one disposable 2.5 ml syringe with needle and four additional disposable needles for every five doses of DPT, measles and tetanus toxoid vaccines administered. This procurement process permits acquisition of vaccines meeting international standards at significant cost savings. Purchases of vaccines and supplies for the MOH have been adequate to meet the needs of the semi-annual vaccination campaigns and the channelling activities initiated to date in four health areas. However, procurement of vaccines and related supplies will have to be greatly increased in order to address the needs of a nation-wide immunization program contemplated under the project.

Other Donors will meet other vaccine requirements under the Project. Based on the objective to vaccinate 80 percent of children under 5 years of age for the six most immuno-preventable diseases, and to vaccinate 80 percent of pregnant mothers against neo-natal tetanus, the project will require 4,155,911 doses of diphtheria, tetanus, and pertussis; 1,488,700 doses of measles; 1,535,213 doses of BCG and 1,507,653 doses of tetanus toxoid. UNICEF is expected to approve \$810,000 in October 1985 to cover these needs under its proposed Child Survival Project. A covenant is contained in the AID Project Agreement requiring that UNICEF will have committed funding for this purpose within 365 days from the date of the AID Grant Agreement. Polio vaccine required for the project (4,155,911 doses) has already been assured through an agreement signed on February 6, 1984 between Rotary Club International and the MOH for \$374,600 to provide polio vaccine during the next five years. Of this amount, the Project will utilize \$93,759. Both the Rotary Club and UNICEF procurements will be procured through the PAHO revolving fund which ensures an economical price for these vaccines. A detailed list of vaccines to be procured for purposes of the project and their projected distribution among the 21 health areas is contained in Annex II.5.

Needles and syringes, in the amount of \$300,000, will also be financed by UNICEF and the GOG based on the amount of vaccines to be procured and distributed as discussed above. The MOH will provide cotton and alcohol for the immunization program in the amount of \$45,000. The budget items discussed above are summarized in the Component II Budget located on Table 2.2.

3. Component Three: Vehicles and Transport and Cold Chain Maintenance

The purpose of this component will be to provide transport to enable timely movement of personnel, vaccines, and information throughout the entire health system outside Guatemala City. It will also assure adequate maintenance for both vehicles and cold chain equipment (see Table 2.3 for Component Budget III Vehicles and Transport and Cold Chain Maintenance).

The MOH has a total fleet of 342 vehicles of which 75 percent (258) are operating in the 25 health areas, with the balance assigned to the

central level. The MOH also has 382 motorcycles and 4 small boats for personnel transport outside the health facilities (for the actual distribution see Annex II.6). However, according to information from the MOH Transport Department, only 126 of the vehicles are in good condition, and the rest are either in poor condition or inoperable (132). The main reasons for this are lack of preventive and timely maintenance spare parts, and the lack of daily attention to maintenance needs by the vehicle operators. The fleet is also not of standard manufacture, mainly because the MOH has no replacement program and is dependent on donors for replacements.

In the health areas, there are currently 140 vehicles, 66 of which are assigned to the Area Chiefs and the remainder (32) to health centers (districts). However, only 42 vehicles are available for the support of logistics, training, and supervision for all MOH activities, or an average of two vehicles per area.

Poor maintenance is a large cause of the current state of disrepair of MOH's motor pool. Maintenance is also a serious problem for cold chain equipment which was described previously in Component 2. Timely and capable maintenance of MOH's vehicles and equipment, as well as the ability to perform or contract out emergency repairs, will be crucial in assuring health personnel the requisite mobility to carry out the channelling program.

Procurement of vehicles under this component will be carried out by the three-man purchasing unit of the Project Administrative Unit within DDCS with support in completing the specifications from the Division of Maintenance and Engineering. Routine maintenance of vehicles will be carried out by 12 mechanics and 6 helpers based in the Engineering and Maintenance Division in Guatemala City with some support from the MOH auto repair shops located in the Transport Department of the MOH Division of Administration. Cold chain equipment will be maintained by 21 technicians based in the field, one assigned to each project area. All of these people will receive training under the project (see Component One), plus tools, spare parts, travel and per diem to be provided under this component.

In order to ensure this transport and maintenance capability, \$567,032 of AID Grant monies will fund the procurement of 29 vehicles, 46 motorcycles, and four boats to be used by health personnel, as well as the purchase of fuel (\$702,091) to run these vehicles under the project. All of the motorcycles and 25 of the 29 vehicles will be deployed in the health areas with the remaining four vehicles assigned to DDCS in Guatemala City. Approximately half of the motorcycles will be used by area maintenance technicians, and the other half will be used by EPI coordinators. Additional AID funded procurement will be for spare parts, tires, tools, per diem and other maintenance costs to support upkeep of the AID funded vehicle fleet (\$293,901) as well as spare parts, tools, per diem and training materials for maintenance of the cold chain (\$444,545).

4. Component Four: Project Management and Personnel

The purpose of this component will be to support MOH project management, as well as to provide for institutionalization of the channelling

TABLE 2.2

PROJECT BUDGET COMPONENT II COLD CHAIN, VACCINES AND SUPPLIES

COMPONENT II: Summary Budget	AID	OTHER DONORS	GOB	TOTAL
COLD CHAIN, VACCINES and SUPPLIES				
1. Cold Chain Equipment and Fuel				
a) Cold Chain Equipment (e.g. Freezers, Refrigerators, Cold boxes, Thermometers)	\$225,021	\$0	\$0	\$225,021
b) Kerosene	\$210,294	\$0	\$0	\$210,294
c) Electricity	\$0	\$0	\$282,171	\$282,171
Sub-total	\$435,315	\$0	\$282,171	\$717,486
2. Vaccines and Supplies				
a) Polio Vaccine	\$0	\$93,759	\$0	\$93,759
b) Other Vaccines	\$0	\$360,000	\$450,000	\$810,000
c) Needles and Syringes	\$0	\$210,000	\$90,000	\$300,000
d) Cotton and Alcohol	\$0	\$0	\$45,000	\$45,000
Sub-total	\$0	\$663,759	\$585,000	\$1,248,759
Sub-total Component II	\$435,315	\$663,759	\$867,171	\$1,966,245
Inflation and Contingencies: 15%	\$65,297	\$99,564	\$130,076	\$294,937
TOTAL COMPONENT II	\$500,613	\$763,323	\$997,247	\$2,261,182

approach for providing immunization and other primary health care services within the MOH. The latter purpose will thus help lay the organizational groundwork for a planned 1987 project in Oral Rehydration Therapy.

This project will be managed by the Chief of the DDCS with the assistance of an AID-funded long-term project administrator and an assistant administrator. The MOH Project Director (i.e. the Chief of DDCS) will be supported by a standing committee consisting of representatives from such agencies as the Rotary Club, UNICEF, and PAHO, MOH representatives from the DDCS, and the Engineering and Maintenance and Human Resources Divisions. The committee will be chaired by the Chief of DDCS but with differences subject to resolution by the Subdirector of DGSS. The grant project administrator and his assistant will support the Project Director and with the Area EPI Coordinators in the planning, implementation and evaluation of all project activities.

The Division of Disease Control and Surveillance will have direct supervision of the Project through the Health Area Chiefs; they, in turn, will appoint Area EPI Coordinators (from among RHTs, areas nurses, and environmental sanitation inspectors) who will be assigned full responsibility for EPI activities in his or her area. The EPI coordinator (the key field implementor for the project) will have extensive experience in working at the community level and will be provided with a vehicle, per diem and fuel for project activities. This person will be responsible for an integrated support system: ordering, receiving and distributing vaccines and other immunization supplies to health facilities; monitoring the cold chain; and collecting, analyzing, and consolidating service statistics during monthly supervision visits to the health facilities. In the two largest health areas, two EPI coordinators will be required for each. The District Supervisory team will accompany this person to those health posts under their jurisdiction. The Area EPI Coordinator will also assist the Area and District health staff in the investigation of communicable disease outbreaks. Finally, this coordinator will be trained as part of the Area EPI team and will also serve as a trainer for service personnel in his or her area.

The concept of using EPI coordinators has already proven itself in the PAHO/MOH channelling program in Escuintla as an effective mechanism of implementing and monitoring field EPI activities. In that department, the second most populous in the country and one characterized by serious health problems, the EPI coordinator (a sanitary inspector) has performed effectively in Escuintla by spending 70 percent of his time on immunization activities.

The final and perhaps most important link in implementing the project will be the RHTs and auxiliary nurses who will actually carry immunization services to peoples' homes. These workers are the "foot soldiers" of the channelling effort, and have performed well in the four departments so far where this approach has been used in Guatemala. To date, however, these personnel have travelled to homes and rural communities without per diem. Such travel without compensation reveals the great dedication of health

TABLE 2.3

PROJECT BUDGET COMPONENT III VEHICLES AND TRANSPORT AND COLD CHAIN MAINTENANCE

COMPONENT III: Summary Budget	AID	OTHER DONORS	GOB	TOTAL
VEHICLES and TRANSPORT and COLD CHAIN MAINT.				
1. Transport				
a) Vehicles (Four wheel drive vehicles, Boats Motorcycles)	\$567,032	\$0	\$0	\$567,032
b) Fuel for: Training, Supervision, Channeling and Maintenance	\$702,091	\$0	\$0	\$702,091
Sub-total	\$1,269,123	\$0	\$0	\$1,269,123
2. Cold Chain Maintenance				
a) Spare parts	\$323,020	\$0	\$0	\$323,020
b) Tools	\$58,825	\$0	\$0	\$58,825
c) Per diem	\$56,700	\$0	\$0	\$56,700
d) Train materials	\$6,000	\$0	\$0	\$6,000
Sub-total	\$444,545	\$0	\$0	\$444,545
3. Vehicle maintenance				
a) Spare parts and tires	\$200,678	\$0	\$0	\$200,678
b) Tools	\$6,000	\$0	\$0	\$6,000
c) Per diem	\$13,500	\$0	\$168,480	\$181,980
d) Vehicle maint.: (oil change, spark plugs)	\$73,723	\$0	\$0	\$73,723
Sub-total	\$293,901	\$0	\$168,480	\$462,381
Sub-total Component III:	\$2,007,569	\$0	\$168,480	\$2,176,049
Inflation and Contingencies: 15%	\$301,135	\$0	\$25,272	\$326,407
TOTAL COMPONENT III	\$2,308,705	\$0	\$193,752	\$2,502,457

extension workers in the four departments. However, it is unreasonable to assume that such dedication will continue for the indefinite future in the context of a nation-wide immunization channelling program. Consequently, the project will provide per diem to cover their costs. These re-occurring costs will be borne by the GOG after termination of the project funds.

The central project administrative unit will be housed within the DDCS in the main DGSS building in Guatemala City. The location of this unit within DGSS, as well as the consolidation of the DDCS Chief's office from a separate location to the DGSS, will be a condition precedent to disbursement in the project agreement. This location will group all DDCS and project staff in one office and also bring the DDCS Chief in greater proximity to the DGSS Subdirector for the resolution of implementation problems.

In addition to the two long-term (i.e., three years each) project administrators, the project will rely on the services of the following AID funded consultants: a training/supervisor specialist (8 months), an anthropologist (6 months), and a computer programmer (10 months). These services, plus secretarial support, office furniture and equipment, and audiovisual equipment will be covered by \$567,990 in AID grant financing. For its part, the MOH will assign a staff of 64 in medical, technical support and administrative areas who were formerly working in support of AID's Community-Based Health and Nutrition Project (520-0251) to work full-time in implementing the current Project. In addition, the GOG will provide from 20 percent to 65 percent of the time of 1,950 health staff at the central, area, district and post levels of the MOH health care delivery system to help implement the project. The total counterpart contribution for these two MOH staff sources is approximately US\$5,800,000.

Routine medical information will be required to implement channelling activities. This information will monitor how many infants have completed the immunization series by disease category and the amount of vaccine used by disease category. The information now available through the Health Areas' daily immunization register is sufficient to provide client status, as well as to produce a monthly utilization record which will provide information necessary for resupply. However, this information system must be replicated throughout the 21 rural health areas as well as be backed up by a central computer records center. Consequently, the project will provide \$30,000 in AID funding and \$4,500 in MOH funding for purchase of a computer, printing of supervisory guides and reports, and strengthening of a national immunization records-keeping management information system.

A final element in an adequate project management system will be a program of project evaluations and audits. This component will provide \$235,000 in AID funding to support three external audits of channelling and immunization field activities, two vaccination coverage surveys, one mid-term and one final evaluation. Further information concerning the project's evaluation plan is found in Section IV, Project Implementation and Evaluation Plan. A summary component budget for these and other activities follows on page 23.

III. PROJECT ANALYSIS

A. Technical Analysis

The purpose of the Project is to increase the number of completed vaccination series against polio, diphtheria, pertussis, tetanus, tuberculosis and measles to 80 percent of the number of children born each year. This will entail a change in strategy of the vaccination process currently employed in Guatemala. The MOH will adopt a channelling mode for the delivery of vaccinations in 21 of the 24 health areas. The three health areas located in the department of Guatemala, will not be included in the Project because current vaccination coverage in these areas is adequate.

Canalización, or channelling, is an active promotion of vaccination activities by health service personnel and community volunteers. These health service personnel carry out home visits to identify susceptible children and make appointments for them to receive vaccinations in a nearby health facility or another site in the community. The channelling process seeks to change the so-called "clinic psychology" which is basically a passive system whereby rural health workers remain in the health facility awaiting the arrival of clients for whom services are provided.

The traditional semi-annual campaigns presently utilized will, over a three year period, be replaced by a channelling approach. Vaccination coverage in Escuintla, an Eastern coastal department, increased from 10 percent during 1983 to 73 percent. This initial experience with channelling in Escuintla showed that channelling is more effective than the traditional semi-annual campaigns. Project Grant funds will provide the necessary financing to accelerate the change in vaccination strategy. Also, channelling will benefit the MOH service delivery system since other child and maternal health care interventions such as oral rehydration therapy, control of acute respiratory infections, and family planning will be more easily provided and accepted by the target population. This will be due to increased early detection as health service delivery personnel, during their house-to-house visits, will encounter cases of diarrhea, acute respiratory infections, and other conditions requiring attention which would otherwise have gone undetected.

1. Immuno-Preventable Diseases

It is estimated that 12 percent of all deaths in the rural area are made up of children under two years old. The MOH's Action Plan for 1984 lists the three major causes of death among children: 1) intestinal diseases (25 percent); 2) respiratory infections (17 percent) and 3) diseases preventible through vaccinations (7 percent).

The MOH Expanded Program for Immunizations (EPI) targets six diseases (measles, pertussis, tetanus, diphtheria, polio and tuberculosis). Newborns are especially susceptible to neonatal tetanus which justifies the

TABLE 2.4

PROJECT BUDGET COMPONENT IV PROJECT MANAGEMENT AND PERSONNEL

COMPONENT IV: Summary Budget.	AID	OTHER DONORS	GOG	TOTAL
PROJECT MANAGEMENT and PERSONNEL				
1. Project Management				
a) Project Administrative Unit				
1. Consultants	\$527,990	\$0	\$0	\$527,990
2. Office Equipment	\$40,000	\$0	\$0	\$40,000
b) Management Information:				
Printing of Supervisory guides and reports	\$30,000	\$0	\$4,500	\$34,500
c) Project Evaluation	\$235,000	\$0	\$0	\$235,000
Sub-total	\$832,990	\$0	\$4,500	\$837,490
2. GOG Support Personnel for EPI Channeling				
a) Central level	\$0	\$0	\$288,846	\$288,846
b) Area level	\$0	\$0	\$671,820	\$671,820
c) District level	\$0	\$0	\$4,811,400	\$4,811,400
Sub-total	\$0	\$0	\$5,772,066	\$5,772,066
Sub-total Component IV	\$832,990	\$0	\$5,776,566	\$6,609,556
Inflation and Contingencies: 15%	\$124,919	\$0	\$866,485	\$991,433
TOTAL COMPONENT IV	\$957,939	\$0	\$6,643,051	\$7,600,989
SUMMARY:				
TOTAL COMPONENT I	\$2,932,744	\$25,927	\$458,644	\$3,417,315
TOTAL COMPONENT II	\$500,613	\$763,323	\$997,247	\$2,261,183
TOTAL COMPONENT III	\$2,308,705	\$0	\$193,752	\$2,502,457
TOTAL COMPONENT IV	\$957,939	\$0	\$6,643,051	\$7,600,989
TOTAL ALL COMPONENTS:	\$6,700,000	\$789,250	\$8,292,694	\$15,781,944

Project's rationale for including pregnant women as a target group. The mortality rate due to measles and pertussis is significantly higher in Guatemala than in other Latin American countries (See Table 3.1). Among the diseases preventable through vaccination is measles, one of the most prevalent causes of mortality and which is most prominent in children under 5 years old. In Guatemala during 1982 there were 786 infant deaths caused by measles. In 1982, the age-specific incidence of measles for the less than one year old population was 253/100,000 population, compared with 188/100,000 population in the 1-4 year old age group. This high attack rate in the less than one year old population supports the need to immunize children against measles prior to their first birthday. In 1982, measles accounted for 4.2 percent of the total deaths reported in the country. In infants less than one year of age, measles accounted for 5.1 percent of total deaths. In the 1-4 year old group measles accounted for 12.4 percent of deaths.

Poliomyelitis does not cause a great problem as a contributor to mortality, but continues to occur in epidemic form approximately every two to three years in Guatemala. Such cases of disability present a tremendous financial burden to the country in medical care (both in acute and rehabilitative) and loss of productivity due to permanent paralysis. During the epidemic of 1982, involving 136 cases, the age specific attack rates for the less than one year olds was of 9.6/100,000 inhabitants and 9.9/100,000 in the 1-4 year olds. The overwhelming majority of the cases occurred in children from 6 to 23 months of age. This implies that early immunization at an early age is critical. Of the cases for which immunization status was obtained, 55 percent had received no doses of polio vaccine, 27 percent one or two doses and only 11 percent had completed the vaccination series (3 doses) reflecting the inadequate coverage of the target population.

Data obtained on the incidence of pertussis in 1982 also supports the need to immunize prior to the first birthday, as the age-specific attack rate for less than one year olds was reported as 137/100,000 population, compared with 67/100,000 population in the 1-4 year old group. In 1982 deaths due to pertussis amounted for 1.4 percent of the total reported deaths.*

While reported incidence of morbidity in diphtheria during 1982 was low, the age specific rates again supports the need for intervention prior to the first birthday.

Information on morbidity and mortality of neonatal tetanus is not available due to the fact that this pathology is not included in all reported tetanus incidences occurring in the country. Observations in other countries with similar conditions suggest that neonatal tetanus is a major contributor to infant mortality in rural areas. Given this, successful

* Source: MOH, Department of Biostatistics (1982 Annual Report) Division of Surveillance and Control of Diseases, Guatemala, 1983.

programs directed at immunization of pregnant women with tetanus toxoid (TT) will have a significant impact on the infant mortality in the country. Thus, the Project contemplates vaccination of pregnant women with 2 doses of tetanus toxoid during the seventh month of pregnancy to achieve a significant impact on the infant mortality in the country.

Evidence exists that the BCG vaccination against tuberculosis is not sufficient to interrupt the chain of transmission. At present the most effective interventions are detection and treatment of positive incidences. These interventions are beyond the scope of this Project. BCG applied during early infancy may protect the infant against more severe forms of disease (disseminated and meningeal) and for this reason, BCG continues to be included in EPI activities. Because the morbidity and mortality attributable to tuberculosis is not expected to be impacted through this Project, the Project will not rely upon tuberculosis data as an indicator of its success.

In Guatemala, epidemiological surveillance shows that mortality due to tuberculosis has decreased due to vaccinations, other fighting measures against the disease, and general improvement in life conditions. Mortality has decreased from a rate of 19.6/100,000 population in 1971 to 11.4/100,000 population in 1982 (See Annex III.2). This decrease in mortality due to B.C.G. vaccination justifies the continuation of BCG vaccination within the Expanded Program on Immunization (EPI).

Available data supports the need to obtain the greatest coverage possible in children prior to their first birthday. The attack rates of immuno-preventable diseases are high in this age group and delay in vaccination at this age leaves a vulnerable portion of the population exposed to the risk of morbidity and mortality from vaccine preventable diseases. In many cases, children who were not vaccinated prior to their first birthday do not need vaccination, as they have already had the disease. For this reason, the Project emphasizes vaccination for children less than one year old (see Annex III.4). Nevertheless children above one year of age who have not been vaccinated may still be susceptible. Therefore, the Project includes vaccination of children 1-4 years old as a special target during the first year of channelling in any given area. This will allow appropriate coverage for the prevention of epidemics. It is important to emphasize that this group (1-4 years old) is also the most affected section of the population due to malnutrition problems and intestinal diseases causing an increase in their vulnerability to diseases preventable by immunization.

2. Technical Characteristics of Vaccines

a. Vaccination Strategy

Vaccines for measles, TT and D.P.T. are intra-muscularly injected, while B.C.G. is an interdermis injection, and polio is orally induced. Measles and B.C.G. each provide lifelong protection with one dose. D.P.T. and polio require 3 doses to provide protection during 2 to 3 years. TT requires 2 doses for a 5 year protection period.

TABLE 3.1/TABLE 3.1

MORTALITY DUE TO IMMUNOPREVENTABLE DISEASES DURING 1982 IN LATIN AMERICAN COUNTRIES
(MORTALIDAD DE LAS ENFERMEDADES INMUNOPREVENIBLES EN LOS PAISES LATINO AMERICANOS EN EL AÑO 1982)

Country País	RATE/100,000 (TASA/100,000)						
	Polio Polio	Tetanus Tetanos	Pertussis Tbs Ferina	Measles Sarampión	Tuberculosis Tuberculosis	Diphtheria Difteria	Neonatal Tetanus Tetano Neonatal
Chile	0.0	--	0	0.1	--	0.1	--
Cuba	--	0.1	--	0.2	1.0	--	--
Guatemala	0.0	3.0	14.2	43.9	11.4	0.0	--
Mexico	--	--	--	--	11.6	--	--
Nicaragua	--	2.3	0.1	--	3.4	0.1	1.7
Paraguay	0.5	5.5	0.5	1.3	8.9	0.5	1.4
Republica Dominicana	0.4	0.9	0.05	1.3	8.2	0.2	0.5
Uruguay	0.0	0.3	0.4	0.0	2.9	--	--
Venezuela	--	0.7	0.3	1.0	4.8	0.01	0.09

SOURCE: Second Regional Meeting, Pan American Health Organization - World Health Organization, Expanded Program on Immunization, Lima, Perú, March 1984.

FUENTE: Segunda Reunión Regional, Organización Panamericana de Salud - Organización Mundial de la Salud, Programa Ampliado de Inmunización, Lima, Perú, Marzo 1984.

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b. Storage Requirements

The polio, measles and B.C.G. vaccines are labile and require refrigeration to avoid losing their effectiveness. D.P.T. vaccine and tetanus toxoid are less perishable but still require refrigeration.

Shelf life for vaccines while frozen is one year. The shelf life of refrigerated vaccines is three months. The cold chain training component ensures appropriate preservation of these biologics at various levels. At the central level adequate freezing facilities will exist to preserve enough vaccines for the country. At Health Area levels (i.e. Health Centers and Health Posts) the cold chain will be adequate for refrigeration of vaccines for all the corresponding area for three months. Health Post levels will have refrigeration capacity to store enough vaccines for application during a three month period.

The inventory carried out by a UNICEF contractor in June 1985 indicated that nationwide the Ministry had 882 refrigerators in good working condition but needed 238 more to complete the cold chain system. The Project grant funds will finance the purchase of 213 of these refrigerators and UNICEF will provide the remaining 25. Four needed freezers will be purchased with grant funds. Three of these will be utilized at the Central level and one will be used at the Area level in the department of Quiché. Spare parts and tools for the maintenance system are also needed and will be provided by AID grant funds. Fifteen refrigerators will be available at the central level to substitute for any refrigerators at the field level requiring major repair. The need for providing tools to repair cold chain equipment for central level and area level technicians has also been identified. The Project is designed to provide grant funds for tools and materials needed for maintenance of the cold chain system. Another of the problems encountered is the lack of funds for kerosene fueled refrigerators installed at the field level. AID grant funds are provided for this item.

3. Technical Feasibility of Channelling

Semi-annual vaccination campaigns carried out for 14 years in Guatemala have not resulted in the desired reduction in morbidity and mortality rates. Cyclical epidemics of polio and measles continue to occur in Guatemala. Measles and pertussis are still among the major causes of infant and pre-school mortality. Following epidemics of measles and polio in 1981 and 1982 respectively, the Ministry of Health decided to adopt the "channelling" strategy in 1983 and chose Escuintla as the pilot demonstration area. Feedback from the results of this pilot project was positive, leading to the decision to implement this channelling strategy throughout the country in a phased approach, while still carrying out campaigns in the remainder of the areas.

Adoption of the channelling approach resulted from the positive Colombian experience with channelling in their vaccination program.

In Colombia 9 of 20 regions of the country have adopted channelling and the results show an increase from an average of 29.6 percent covered in 1978 to an average of vaccination coverage rate of 70 percent in 1983 as well as a decrease in morbidity rates. During this same period the pertussis and tetanus morbidity rate decreased by 50 percent.

In Guatemala the new channelling strategy emphasized outreach by health workers in the community, promoting preventive services on a regular basis. The MOH recognized the need to establish a close relation between the MOH and the community through direct promotional interventions and preventive health care. In channelling, home visits are carried out by both the health personnel and the health promotor or a volunteer from the community. These health service personnel are charged with changing the attitude of 60 percent of the population who do not actively seek the preventive services which includes immunizations. Likewise, the adoption of channelling implies a change of approach by health personnel who currently carry out health functions within the health facilities. Via channelling they achieve a greater efficiency in carrying out their duties, as staff will employ part of their current idle time now lost while passively waiting for requests for services in the health facilities.

Currently, MOH health personnel are carrying out channelling activities without adequate support. Especially stressed are auxiliary nurses and rural health technicians (RHT) who have been forced to cover their own transportation costs and per diem. Even so, these field level technicians seem highly motivated and positive about continuing vaccinations utilizing the active outreach channelling approach. The approach allows them to provide services to pockets of the population formally not served, allowing health personnel to gain a sense of pride in carrying out their duties. However, these rural health workers cannot continue to absorb the additional cost involved in channelling; thus grant funds are provided for transportation and per diem for these health delivery personnel. Project training for field workers plus purchase of thermoses, syringes and other equipment necessary in their jobs will also help motivate health delivery personnel.

The Expanded Immunization Program (EPI) strategy utilizing channelling in Escuintla since 1983 has shown an increase in coverage in from 10 percent to 73 percent of completed series during the first year of implementation. Additionally, it has prevented cyclical epidemics caused by immuno-preventable diseases. Another positive result of the channelling strategy is that it provides health service personnel contact with dispersed rural populations and allows them to treat those not previously reached. The channelling mode, if successful on a national scale, will motivate other MOH Health Area programs such as; a) oral rehydration therapy, b) acute respiratory infections; and c) other maternal and child health care interventions which are adaptable to the channelling mode for service delivery.

Due to results in Escuintla, the MOH recently decided to extend the channelling strategy to 21 of the 24 health areas (except the 3 areas in Guatemala City). With help from PAHO, the Ministry has initiated the channelling process in 3 more areas (El Progreso, Sacatepéquez and Santa Rosa).

4. Management Information System

The Information Unit of the General Directorate of Health Services is redesigning the register and information forms for the activities which the MOH will develop to supply information on morbidity and mortality with greater efficiency. The Project includes grant funds to obtain the services of a short-term computer specialist and purchase a micro-computer for the Project to process all accounting and financial data and information on activities carried out in the involved areas. The Computer Specialist will develop a program to monitor Project activities and train the grant funded administrative assistant and secretarial staff to run the computer, which is to be purchased with grant funds. The Computer Specialist will also train 21 area level statisticians during central level training courses to supply adequate information.

5. Technical Assistance

The Project will require less technical assistance than might otherwise be needed because of PAHO's long-term relationship with the MOH and its commitment to improve the health infrastructure in Guatemala. PAHO is also recognized as a major provider of technical expertise for EPI. PAHO/WHO's two local epidemiology advisors who, on a full-time basis have assisted the MOH since 1983 in channelling activities, will strengthen technical assistance activities (i.e. during area level operative diagnosis, area level training, and supervision) contemplated in the Project. Regional PAHO technicians have collaborated with channelling activities and recently assisted in the design of an EPI coverage survey. Upon completing the coverage survey, PAHO will supply an epidemiologist who will assist the MOH with data interpretation of coverage survey results.

The Project will place a heavy workload on the Division of Disease Control and Surveillance's staff. Therefore, it is necessary to supplement the administrative capacity of the Division during the Project by providing one long-term grant financed consultant in health services management to serve as Project Administrator. This person will assist the Project Director in project implementation. The consultant will have a strong background in the management of health programs with emphasis on primary health care and/or immunization or related activities. This person will be contracted for a period of three (3) years. The proposed Administrator be assisted by an Assistant Administrator also paid by grant funds. In addition, a Computer Specialist will be required to develop programs to monitor Project activities and to integrate the information collected with the existing computer utilized by the MOH.

Promotion and information is an essential part of the Project which includes a national mass media campaign supporting local promotional efforts building upon local cultural traditions. Therefore, it will be necessary to contract a grant financed promotion expert to assist the MOH's Health Education Department in carrying out this vital Project component. The consultancy will include three visits for a total of 8 months duration; the

first six-month period will take place at the beginning of the Project during the design of the national promotion campaign; the following visits will each be of two month's duration and will coincide with the annual formative evaluations.

Due to the multi-cultural target population, an anthropologist well acquainted with indigenous health beliefs will be contracted with grant funds to assist in the design of promotional materials for use in the indigenous areas and to provide assistance to health staff in areas where cultural resistance to immunization is a problem. Given the nature of the work, this consultant should have training in anthropology and have extensive field experience. It is estimated that a total of 6 months consultation will be required at intervals dictated by the need for such services.

A grant financed training and supervision consultant will be required for eight months; with a six month consultancy at the beginning and a two-months consultancy one year after project initiation. The consultant will work closely with the MOH and PAHO in the improvement of existing training curricula, modules and manuals, and for the development of new materials. The consultant will be a technical expert in immunization program management and will be able to develop competency-based curricula and learning evaluation instruments.

B. Institutional Analysis

The Ministry of Health (MOH) will be the sole institution involved in Project implementation (see Annex III.5 for MOH Organizational Chart). The institutional analysis deals with three MOH organizational levels (See Chart 3.1). Level one, consisting of the General Directorate of Health Services (DGSS), will have overall MOH Project coordinating responsibility. At the second level are four health divisions having technical, administrative and logistic support responsibilities. These divisions consist of: the Division of Disease Control and Surveillance (DDCS); the Division of Human Resources (DHR); the Division of Engineering and Maintenance (DEM); and the Division of Administrative Services (DAS). At the third level are the Health Centers, Health Posts and hospitals which are responsible for actual delivery of immunization services.

1. Level One

a. General Directorate of Health Services

The General Directorate of Health Services (DGSS) is authorized by law (Reglamento Acuerdo Gubernativo 741-84) to direct and coordinate the technical and administrative services of the MOH. Thereby, entities at the second and third level of the administrative structure are under the direction of DGSS. Project activities will be monitored by DGSS via meetings and reports from the various participating DGSS divisions. The DGSS controls GOG processing of vouchers for grant funds. Adequate trained personnel and procedures exist within the DGSS therefore no Project inputs are

included for training at this level. The coordinating committee will integrate Project related immunization activities and will be assisted by DGSS Division Chiefs, the Project Administrator, an AID Mission representative and other donors including PAHO and UNICEF.

2. Level Two

Four DGSS divisions have Project responsibility at this level; the Division of Disease Control and Surveillance (DDCS), the Division of Human Resources (DHR), the Division of Engineering and Maintenance (DEM) and the Division of Administrative Services (DAS). AID grant funds are provided for personnel, training, and technical assistance in order to upgrade the technical and administrative support needed by the Project. The Project will also provide needed vehicles, cold chain equipment, supplies, tools, vaccines and funds for transportation fuel and equipment for logistical support required by Health Area personnel to carry out the channelling activities involved in vaccinating the target population.

a. Division of Disease Control and Surveillance (DDCS)

The DGSS division having technical responsibility for vaccination is the Division of Disease Control and Surveillance. The MOH's past channelling activities (i.e. diagnostic survey, training, promotion, implementation, and coordination) have been handled by the Division of Disease Control and Surveillance. Moreover, as the division responsible for immunization, DDCS is able to monitor Project progress and will serve as a focal point promoting other MOH divisions to supply their services in a timely fashion.

The Chief of the Division of Disease Control and Surveillance will act as Project Director and will be responsible for the supervision and evaluation of the Project and the coordination of all aspects involved in training, monitoring, as well as vaccines and material distribution at the national level.

The Government of Guatemala will supply the appropriate facilities including electricity, potable water and telephone services for the DDCS' Project technical personnel in the offices at the MOH's General Director for Health Services. In order to develop an efficient implementation unit responsible for Project activities, within the implementing unit a project administrator and his assistant will be financed with grant funds. The Project Administrative Unit will also utilize A.I.D. grant funds to employ an Administrative Assistant. Thirteen staff persons from the Primary Health Care Component staff of the Community-Based Integrated Health and Nutrition Systems Project (520-0251), whose PACD is September 30, 1985, will be transferred to the DDCS. The personnel from Project 520-0251 will be required for the implementation activities of the Immunization/Child Survival Project (see Annex III.6 for reallocation of Project 520-0251 personnel). The GOG will continue paying their salaries. The vehicles, equipment and materials

financed by AID under Project 520-0251 will be utilized to support the various divisions, technical and administrative offices of the present Project (see Annex III.7).

Short-term technical assistance for the DDCS will be required. Technical assistance will include a Training and Supervision Technical Advisor and a Computer Specialist. The technical assistance provided by the Training and Supervision Technical Specialist will help the DDCS in the design of supervisory and training materials and assist the DDCS's three current Public Health Technicians (each licensed medical doctors) and the division's chief (a post graduate epidemiologist in public health): The Computer Specialist will design programs needed to monitor Project activities and train DDCS staff how to utilize the computer. The Assistant Administrator and other permanent staff in the implementation unit will receive this training and thereupon will assume responsibility for input of field information. Reports will be prepared by the Project Director (Chief of DDCS) and the Grant financed Project Administrator utilizing computer outputs.

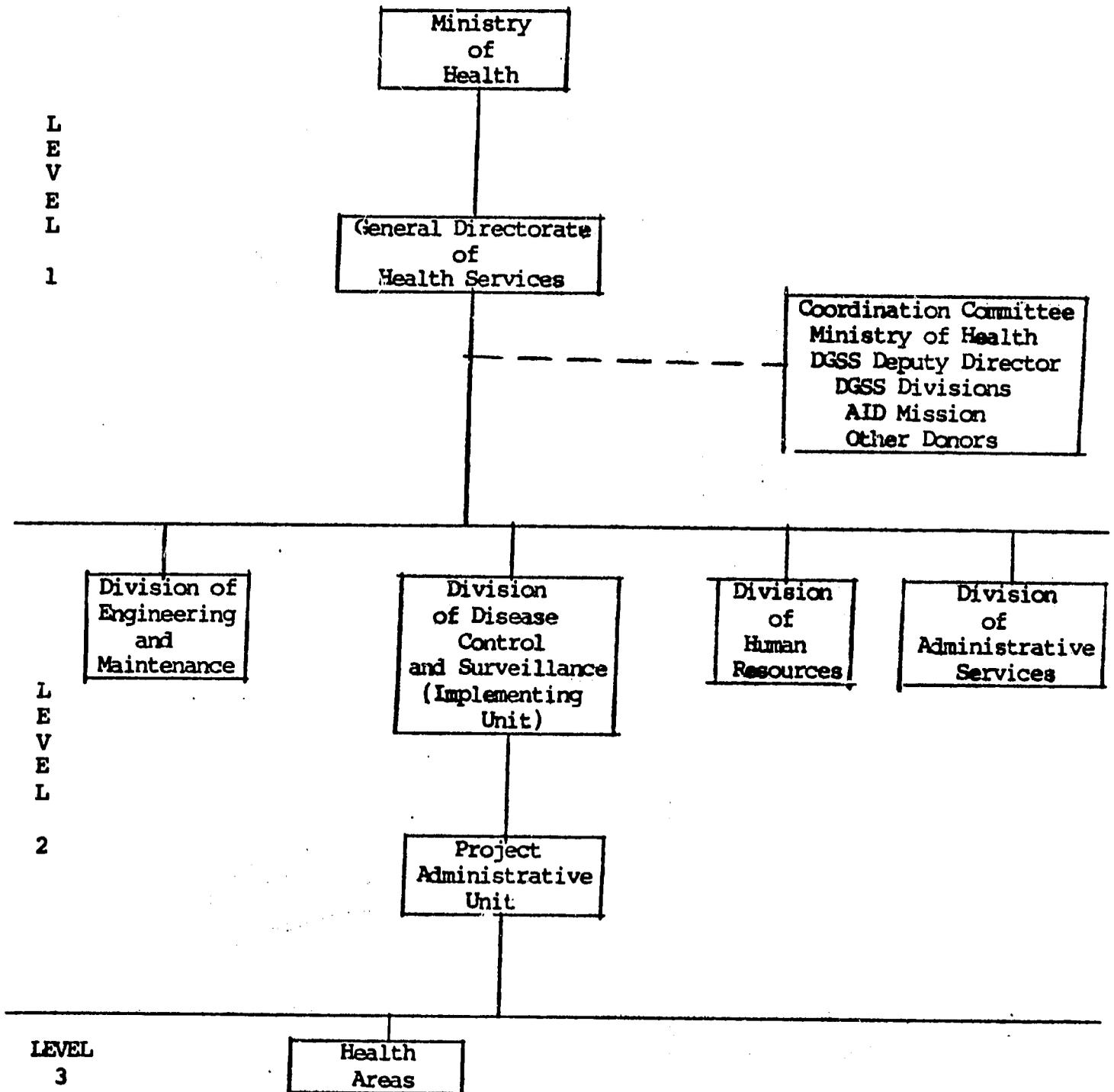
Technical DDCS staff members along with the two PAHO epidemiologists will also be responsible for training Health Area personnel in all aspects involved in channelling. The divisions's personnel will draw on their previous experience with channelling in the four health areas which have adopted the channelling strategy as their methodology for their Expanded Program on Immunization (EPI).

The DDCS will be responsible for orienting and training Health Area Headquarters staff concerning general activities involved in channelling. The Chief of Area will receive one day of training and the EPI Coordinators will receive five days (see Annex II.3). Twenty-one Area Chiefs and twenty-five EPI Coordinators will receive training in the channelling process. Upon receiving this training each Health Area will have a DDCS team conduct a diagnosis of the state of resources and programs available for immunization activities and evaluate the cold chain system. The team consists of a DDCS medical technician, a Department of Engineering and Maintenance (DEM) technician and a PAHO advisor. All these technicians are experienced in the channelling process. The DDCS four technical staff members and two other medical doctors, transferred from Project 520-0251, will provide adequate technical personnel resources needed to train Health Area staff in channelling. DDCS staff will also gain additional administrative support from personnel transferred from Project 520-0251 (See Annex III.6 for breakdown of transferred staff).

The technical staff members will be responsible for training Health Area headquarters personnel. Thereupon, Health Area personnel will train Health Center and Health Post staff. This cascade training approach has been utilized since 1983 by the MOH in training four Health Areas personnel in channelling activities.

Technical training materials previously developed by PAHO will be utilized and 2 PAHO advisors who initiated channelling activities in Escuintla during 1983 will provide valuable technical training input. PAHO

CHART 3.1
PROJECT ORGANIZATIONAL CHART
IMMUNIZATION/CHILD SURVIVAL PROJECT



channelling training materials consist of, diagnostic survey instruments, information logs, supervision guides and checklists. Promotional materials will be developed by the Division of Human Resources (see below). The Project thereby ensures that the in-house expertise and availability of technical materials, required for training Health Area staff in their responsibilities, are sufficient. AID will provide grant funds for per diem and transportation in order to ensure adequate administrative supervision and logistic support needed for DDCS to carry out the training program envisioned by the Project. The Division will receive 4 vehicles, one of which will be utilized by the grant financed Project Administrator and the other three to be used by the Central level supervisors. Fuel and per diem are also provided by AID grant funds.

b. Division of Human Resources (DHR)

The DHR will coordinate the production and printing by outside contractors of training and supervision materials already developed for channelling by PAHO. The division will also develop promotional materials for implementing channelling. DHR will collaborate with Health Areas on the design and implementation of promotional material. The division will coordinate with the Division of Disease Control and Surveillance on Central Level and Health Area training materials needed for the Project.

Materials and supplies will be transferred from Project 520-0251, and AID grant funds (approximately \$1,300,000) will be provided for the development and dissemination of promotional materials (i.e. posters, pamphlets, manuals, newspapers, and radio programs and spots) which are required by the Project. Six staff members transferred from Project 520-0251 will provide full-time assistance in developing these promotional materials. Two grant financed short-term technicians, a Promotional Technical Advisor and an Anthropologist, will provide technical assistance in the development of the materials. The DHR will contract a local printing firm to print promotional material and other materials needed for supervision and to monitor Project progress (e.g. manuals, registration forms).

c. Division of Administrative Services(DAS)

The Division of Administrative Services will provide backstop support needed for procurement and accounting in order to insure that adequate resources are provided for the Project by the GOG in annual budget negotiations. The Chief of this Division will provide five existing auto mechanics from its Transportation Department to ensure that the department is providing the Project with preventive maintenance and repair of vehicles utilized in Project activities. These five mechanics will be placed under the administrative control of the Division of Engineering and Maintenance who will store all parts and materials needed for the repair of vehicles and cold chain equipment.

DAS will provide divisions participating in the Project with administrative backstop support entailing accounting, personnel and

procurement matters. The division will also be responsible for ensuring that adequate GOG funds are budgeted annually for Project activities.

d. Division of Engineering and Maintenance (DEM)

The Division of Engineering and Maintenance is headed by an engineer and has the responsibility of maintaining the MOH's fleet of vehicles and other equipment, including that for the cold chain. This division will play a major role in maintaining the cold chain system to insure adequate refrigeration for vaccines. There are 21 refrigeration technicians, one in each Health Area and four in the Central Area office. Two maintenance technicians from Project 520-0251 will be transferred to the Division in order to provide additional training. AID grant funds will provide each technician with per diem, tools and spare parts needed to keep the cold chain system functioning. Three training courses have been scheduled to update field technicians skills. During the first year two courses are scheduled and another is scheduled during the second year.

DEM is also responsible for maintaining the MOH's vehicles in working order. Five auto mechanics from the DAS's Department of Transportation will be under the direction of DEM. They will provide full-time assistance providing preventive maintenance measures and repair of the Project vehicles. A short-term technician acquired as part of a PIO/C for the 29 vehicles will provide one week of preventive maintenance training for auto mechanics. The mechanics are also provided with per diem for maintenance activities requiring field trips.

3. Level Three

a. Health Centers and Posts

Channelling is part of the MOH's primary health care strategy which emphasizes preventive health interventions. At the operational level, Auxilliary Nurses and Rural Health Technicians (RHTs) deliver vaccines. These personnel are under the direction of Health Area Centers and Health Area Posts. (See Chart 3.2). In the past, the MOH has relied upon semi-annual campaigns for immunization services. This entailed health personnel spending two weeks every six months on delivery of immunizations (four weeks annually) in campaigns and additional time at health posts where vaccinating amounted to approximately 30 percent of their time. Grant funds will be utilized to accelerate the transition from the semi-annual campaigns to channelling. Until channelling is implemented nationwide, however, these campaigns will be utilized.

While channelling, MOH personnel will still spend approximately 30 percent of their time on channelling vaccination activities. This implies that one and one half days per week will be spent on outreach activities. These outreach activities will be initiated by a mapping exercise utilizing a promotor or community volunteers making house to house visits in order to identify the population at risk, namely, children of susceptible

vaccination age and pregnant women. This initial contact for diagnosis and promotion will be followed by immunization at a central point in the community, thereby further institutionalizing preventive services as a key component of MOH health care delivery. This channelling health delivery process will take place in each area every three months. At the urban level 50 homes per day will be reached and in rural areas 12 to 25 homes will be reached. At present, the average health worker sees 5-10 patients per day for curative care.

The reorientation of health delivery of MOH workers will not detract from the services routinely provided, but rather will allow them to more efficiently employ their time currently spent idle while awaiting clients. Channelling will allow all children under one year of age to receive a complete series needed for D.P.T. and polio and the single dose required each for measles and tuberculosis (B.C.G.) during their first year; likewise, coverage of 1-4 year old children will be increased from 40 percent to 80 percent and pregnant women will be vaccinated with tetanus toxoid, decreasing risks of neonatal tetanus.

An assessment of the human resources available to the MOH for participation for channelling activities shows that overall there are 4.2 auxiliary nurses per health facility (total of 382 auxiliary nurses and 206 RHIs). However, some Area Health Posts have only one auxiliary nurse and some health centers have as many as nine. In areas where the outreach component of channelling would result in a regularly scheduled closure of services for two half days per week, it may be desirable to redistribute intra-area personnel to permit understaffed health facilities to remain open full-time. The operative diagnosis conducted by DDCS will determine if personnel redistribution is needed. This is not expected to be a major impediment to the implementation of channelling because each Area Chief has the authority to redistribute personnel. Moreover, the average daily patient load would permit a reorientation of the times available for curative services without negatively affecting the health care provided to the community.

In areas which have large or scattered communities, the Area Chief will have MOH authority to commission personnel from other area districts within the same health area in order to execute the necessary phases. Prior to channelling an operational diagnostic survey occurs under the direction of DDCS in which an observational visit to each health area is made during a one week period. This diagnosis discloses existing deficiencies in the available resources, cold chain capacity, transportation services and community socio-cultural characteristics. Once these service deficiencies are identified, possible strategies utilized to overcome the obstacles will be studied. For example, in the Western Guatemalan Highlands, which has a very unaccessible population, it is possible that besides channelling micro-concentrations for vaccinations will be utilized. These will consist of periodic vaccinations through assembly of community members by the local authorities (mayors) and also via the health facilities which due to Project support will have the capacity to provide vaccinations for all spontaneous requests.

Training will be necessary for institutional and community personnel to get to know the channelling methodology and become familiar with vaccination registry and diagnostic survey instruments. A Training and Supervision Technical Advisor will be provided to assist in these activities.

One of the concerns raised about the technical feasibility of implementation of channelling deals with the mobilization of the health sector under conditions of limited financial resources. Traditionally, personnel who spend the day out of their normal workplace are entitled to per diem to cover the costs of meals while in the field. In addition, the cost of transportation to go into the field will be covered. In the case of channelling, the MOH has not been reimbursing per diem or transportation expenses, but rather has been stressing a commitment and dedication of the health personnel to absorb these costs under difficult economic times for the country. To date, this has been effective in the areas where channelling has been implemented (Escuintla, Santa Rosa, Sacatepequez, and El Progreso. This suggests the level of commitment of MOH health service personnel. However, this commitment cannot withstand the financial burden placed on workers living in a country undergoing economic hardship. Consequently, grant funds will finance these workers' per diem costs, plus other training and support activities which will offer material incentives for such continuing effort.

The MOH does not currently have sufficient capacity for providing critical Project support items such as transportation and per diem needed to implement a channelling strategy for immunization on a national scale. Therefore, the Project will provide grant funds for per diem and travel for field level health service personnel. Transportation costs as well as funds for maintenance of vehicles and cold chain equipment needed by field delivery technicians involved in channelling immunization activities are also provided with grant funds.

The Project contemplates the purchase of 29 vehicles with grant funds. Twenty-five (25) will be utilized by the 21 health areas involved and four of these will be utilized by DDCS Central Level staff (level one) exclusively for supervision, training, logistical and other related channelling activities. Likewise, four small motorboats will be provided with grant funds for the Petén, Solola and Izabal Health Area. The Project will also grant fund the purchase of 46 motorcycles. Twenty-one of these will be used by cold chain maintenance technicians to maintain and repair vehicles and keep the cold chain in operation. The remainder will be used by rural health technicians and auxiliary nurses. It is expected that, as needed, existing MOH vehicles (256) and motorcycles (382) already available nationwide will also be used to accomplish programmed activities (See Annex II.6). In order to maintain the above mentioned vehicles, motorcycles and motorboats during the life of project, grant funds have been included to finance fuels, lubricants, tires, tools, and spare parts needed for preventive and corrective maintenance.

Channelling activities will be carried out during daylight hours and will permit the personnel to return the same day to their headquarters. Collective transportation will be financed with grant funds as will the use of horse rental which will be occasionally required for health workers to reach communities removed from rural access roads. Likewise, fuel and vehicles provided with grant funds will facilitate the mobilization of the area level personnel for regular supervision and training.

b. Hospitals

The director of each hospital will receive training in the Area Chief Training Seminars contemplated by the Project. Hospital directors will determine whether they will have staff and back-up facilities to provide vaccination services directly in the hospital or whether they will refer individuals to the local health center.

c. Social Soundness Analysis

1. Overview of Socio-cultural Setting

Guatemala, with its markedly heterogenous population, is a complex and highly pluralistic socio-cultural setting in which to carry out public health programs. Its diverse geography encompasses highlands, coastal lowlands, and tropical jungles. Of its 7.6 million people, 65 percent live in rural areas, and 72 percent of the total population is engaged in agriculture. Some 60 percent of the rural agrarian population work on the large coffee, sugarcane and cotton plantations, while the rest are dedicated primarily to subsistence agriculture or small-scale production for local consumption. It is estimated that about 72 percent of the total population has access to health facilities of the MOH.

The Guatemalan population may be broadly classified into two ethnic groups: the ladinos (58 percent), of generally western culture and traditions and European and/or Indian ancestry, who speak Spanish as their main language; and the Indians, descendants of the Mayas and other indigenous peoples of Mesoamerica who retain today much of their traditional way of life and speak some 22 distinct dialects, most of which pertain to one of four major Indian language groups (Quiché, Mam, Cakchiquel and Kekchí). These classifications are very general, because within each group there exists a great deal of variation with respect to customs, beliefs and traditions. Membership in either group is self-selected and based more on language and customs than on racial distinctions, since the Ladino group includes many individuals whose families in the previous generation or two were considered to be Indians.

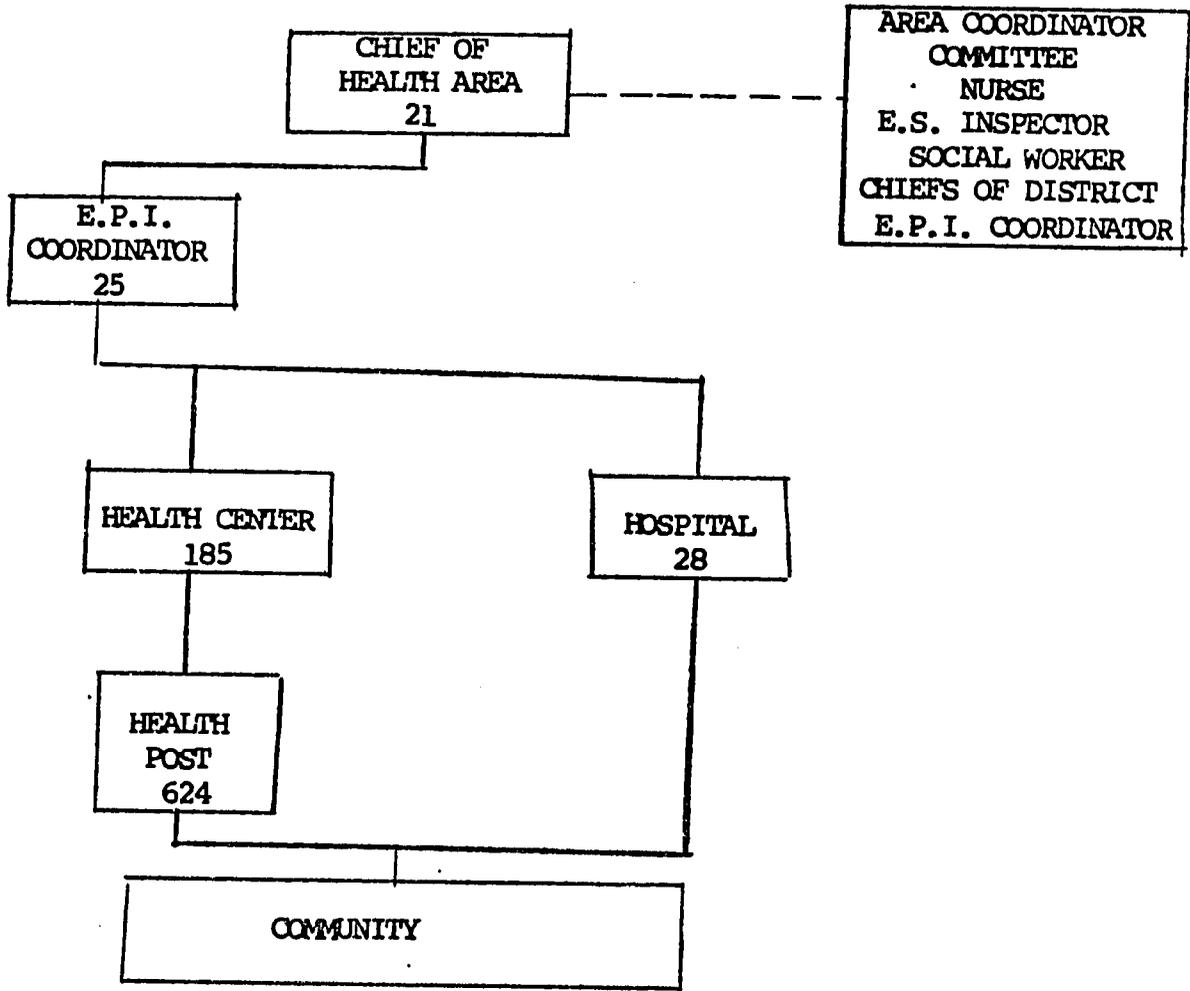
There is strong segregation between these two groups in their social organization and geographic distribution. Communities as well as departments may be classified as Indian or ladino, although some are considered mixed when the proportions are relatively equal. The Indian

CHART 3.1

LEVEL THREE

HEALTH AREA ORGANIZATIONAL CHART

IMMUNIZATION/CHILD SURVIVAL PROJECT



departments—Huehuetenango, Chimaltenango, El Quiché, Alta Verapaz, Sololá, Totonicapán and San Marcos--represent those of the altiplano, while the ladino departments—El Progreso, Santa Rosa, Izabal, El Petén, Esquintla, Jalapa, Jutiapa and Zacapa--are predominately coastal lowlands and the more tropical areas. The "mixed" departments (Sacatepéquez, Suchitepéquez, Retalhuleu, Baja Verapaz, Chiquimula and Quetzaltenango) are themselves further segregated at the municipio and community levels. The "ladinoization" of the Indians in the mixed departments is occurring rapidly due to migration to agriculture wage labor areas, modernization of market systems and penetration of ladino mass media.

Social organization and family life are very different for the two groups. Ladinos tend toward nuclear families, with greater class consciousness and desire for upward mobility. Social status for ladinos is generally derived from wealth, and their ideological beliefs emphasize the welfare of the individual and his family over that of the group.

The Indian population is much more closed, has retained its own cultural values and lifestyle, and has resisted acculturation. Indian communities themselves are differentiated by language, traditional dress and ancestral traditions. Many Indians speak only native dialects but may understand Spanish. Families tend to be extended, with social and political life dominated by men. Although many Indian men have abandoned traditional dress and speak Spanish in order to function in ladino society, the majority of Indian women still wear traditional costumes and are more likely to be illiterate and monolingual. Social status is derived from age and position of leadership in the cofradías, which are religious organizations for men and women that are dedicated to the veneration of a particular saint.

The diversity of Guatemala's cultural heritage is also reflected in the degree to which these two groups have incorporated each other's belief systems concerning health and disease. Among Indians as well as ladinos there exist various medical systems, which are often used simultaneously. Concepts of supernatural causes of disease, hot/cold qualities of illness, and "ojo" or evil eye are common to both, although the relation between these and specific symptoms may vary. Sickness is always considered to have a meaning, be it from natural causes (e.g., introduction of some evil or poisonous substance), an act of God, or sent by an enemy. Similarly, the various medical resources that exist—folk medicine, spiritists, shamans, curanderos (healers), brujos (witches), lay injectionists and pharmacists—are widely used by both ladinos and Indians. There is also a strong tradition of the participation of community members in healing and of holistic perceptions of disease.

A final relevant aspect of Guatemala's cultural setting is the increasing diversity in religious beliefs. While the Guatemalan population, as in the rest of Latin America, is traditionally Catholic (including the Indian population, which has totally integrated traditional indigenous religious practices and beliefs with Catholicism), a rapidly growing number of Guatemalans are joining a variety of Protestant Fundamentalist Protestant groups such as the Evangelicals and Pentecostals. This fact is of importance

because many of these groups have rejected western medical practices and place a great importance on faith healing and acceptance of disease as the "will of God."

2. Social Impact of the Current MOH Immunization Strategy

Coverage under the current immunization campaign strategy is estimated at between 30 and 40 percent of the population under five years. As reported anecdotally by health workers and documented in the 1983 Family Planning/Maternal-Child Health Survey, coverage with immunizations is significantly lower for the Indian population than for the Ladino (e.g., for measles, 60 percent vs. 46 percent, and for DPT, 38 percent vs. 19 percent, coverage for Indians and ladinos, respectively). This reflects both the generally lower coverage of health services for the Indian population and the widespread resistance of Indian groups to western health interventions such as immunization.

The current campaigns are hampered in their ability to reach the Indian population because of rough terrain and the lack of an adequate cold chain and transport to mobilize health workers in remote areas. It must also be recognized that cultural barriers, such as language and lack of recognition of the validity of western preventive interventions, are also factors that inhibit the parents' acceptance of immunization for their children. Promotional activities in the campaigns have not focused specifically on the Indian population nor have they dealt with these barriers. Mistrust of government health workers who are not from the community and who are viewed as outsiders is also a factor in many cases. Finally, the lack of supplies, medicine, and continuous vaccination services in the health facilities, which have contributed to the widespread perception that quality services are not available in the health posts, must also be recognized as obstacles to effective vaccination coverage.

3. Social Impact of the Immunization/Child Survival Project

a. Target Population

Direct beneficiaries of this Project will include infants and children under five years of age who will receive protection from the six vaccine-preventable childhood diseases and pregnant women and their newborns, who will receive protection from tetanus. The target population will be the rural population, located in the 21 departments outside the Department of Guatemala.

While past GOG immunization campaigns have been able to reach segments of the rural population these efforts are not considered to be effective in winning the trust of many mothers who have had but minimal contact with MOH health delivery personnel. Through the house-to-house channelling process a large segment of the population will for the first time see rural health personnel in their homes. These persons will be well received because a known community figure, the volunteer, will have provided the introduction and helped orient the rural target population to accept the

services being provided. The positive effect vaccinations have on their children will have been discussed by the volunteer and a family member and promotional efforts will add another positive dimension regarding the acceptance of vaccinations.

b. Project Benefits

The social impact of this Project will be two-fold. First, by increasing the knowledge of parents about the importance and effectiveness of immunization via Project promotional activities and by strengthening the capacity of the MOH to deliver immunization on a continuous basis and to carry out active outreach in the community, the Project will improve the acceptance of and access to a fundamental component of child primary health care. The increased field contact which health personnel will have with communities under channelling will, over time, lead to greater utilization of health services and, ultimately, to the improved health status of the most vulnerable groups of the population. It will also contribute to a more positive perception of health workers, which will in turn motivate these personnel in their efforts. Improved support for personnel will also motivate personnel.

The second aspect of social impact of the Project to the target population includes reduced morbidity and mortality from measles, polio, diphtheria, pertussis, tetanus and tuberculosis, as a result of the increased coverage and more effective completion of the vaccination series which are expected under the implementation of the Expanded Program on Immunization utilizing channelling. These benefits are understood to include the cost savings from expenditures on curative care or due to death or disability of children which were prevented by vaccinations. Less tangible but more important benefits are the emotional ones parents will derive from the reduced morbidity and mortality of their children and the knowledge that they have protected them by taking the decision to have them vaccinated. Given the high rates of morbidity and mortality among much of Guatemala's rural population, these benefits, over the long term, may be highly valued. It should be realized, however, that it will take several years before the benefits of the improved vaccination strategy under channelling will be perceived by the population.

c. Spread Effects

As noted previously, it is expected that the increased outreach of auxiliary nurses into the community through channelling will serve as a vehicle for the promotion of other primary health care services, such as oral rehydration therapy, pre-natal care, and family planning services. This will occur naturally to some extent, since while vaccinating the nurses will spontaneously talk to mothers about other health problems they may be having. The proposed Project will lend itself to subsequent add-on components of other primary health care services once the channelling strategy is in place.

Another important spread effect which is expected from the Project is an increased acceptance of government health services and

greater utilization of health posts and centers. It has been suggested that one of the reasons for low utilization is the perception by the population that services provided are of low quality and the sporadic availability of the services. The strengthened vaccine delivery system and training of MOH personnel and community volunteers under the Project will improve the quality and regularity of vaccination services and contribute to the greater acceptance and improved utilization of general MOH services. The intensive promotional activities planned for the Project will reinforce the service delivery activities and also contribute to increased acceptance and utilization of vaccination and, indirectly, other health services.

4. Socio-cultural Considerations and Suggested Approaches to Project Implementation

There are several important socio-cultural considerations which need to be dealt with during the implementation of this Project.

First, and perhaps foremost, the great heterogeneity of the Guatemalan population demands a flexible Project strategy that accommodates the particular needs of each area. This is especially true for the promotional activities which must be carefully tailored to address the attitudes and beliefs of the diverse population groups that will be served by the Project. The importance of developing promotion in the context of local belief systems, particularly among the Indian population, cannot be overemphasized.

Beliefs which need to be addressed include concepts of prevention; perceptions of who are the authority figures that make decisions about the vaccination of children and pregnant women; and attitudes toward health workers and the delivery of health services. For example, in many of the more traditional indigenous communities, house visits by a single auxiliary nurse is considered improper by the population and is at times strongly rejected. Also, religious beliefs leading to the rejection of vaccination are significant among some Protestant Fundamentalist groups. Indian health promoters should play an important role in transmitting true/factual information about vaccination side-effects and benefits to the more conservative target groups.

Because of the closed socio-cultural environment of many Indian communities and because of the tradition of community participation in health-related matters, the support and participation of health promoters, midwives and other community volunteers in the channelling efforts is essential. These volunteers will be depended upon to assist the auxiliary nurses and Rural Health Technicians in channelling and in ensuring the positive response to vaccination activities by the community.

There is evidence in Guatemala that auxiliary health personnel can be effective in traditional communities when local health promoters play a supportive role. For example, under two on-going integrated community development projects, response to vaccination campaigns (and related

preventive health outreach activities) has been very positive. One of the projects, the AID sponsored Training of Community Promoters (520-0299), covers an isolated mountain range in the eastern ladino area where nearly 40,000 families live. A recent comprehensive evaluation of this project disclosed that 60 percent of eligible children in the area have been vaccinated. Nevertheless, only 40 percent of said group have received complete vaccination series. This suggests a receptive attitude on the part of the audience and an insufficient capacity by the outreach health system to meet their needs.

Under the other project, which serves eight Indian communities (10,200 people) in the Western Highlands, grass roots groups formed by community promoters have organized various health campaigns which have served about 55 percent of the population. This project trained 132 community health workers to give various types of shots and handle community medicine outlets.

Recent experiences of the Non-Formal Education Project (520-0281), which serves ten of twenty-two departments, suggest that trained community volunteers and auxiliary nurses can organize community groups to discuss health problems and encourage participation in various health campaigns. This national program produces printed materials (newspapers, photonovels, flyers, etc.) for neoliterate adults, which include health care promotion topics. This program also broadcasts daily messages in Spanish and vernacular languages which promote participation in health campaigns -- especially vaccination campaigns. Health system technicians, community promoters and mass media programs are undertaking concerted efforts to promote community participation in health services campaigns.

Finally, it must be recognized that the EPI channelling strategy places a large responsibility on the auxiliary nurses and RHTs to conduct the community census, make house-to-house visits to promote vaccination and to establish vaccination points in the neighborhoods. These first-line health workers have traditionally received the least support from the health system in terms of supplies, transportation, resources, training and supervision, yet they are expected to carry out some of the most difficult tasks of public health. While many auxiliary nurses have been criticized for their complacency and often discourteous attitudes toward the population they serve, the reverse has also been true in that their efforts are often not appreciated by the community or by their supervisors. It is important that this Project incorporate mechanisms to support and motivate the auxiliary personnel in their role as the key implementators of EPI.

These considerations have been built into the Project. A summary of the main methods that will be used to deal with these socio-cultural factors follows.

- (1) An emphasis on local area programming and evaluation has been incorporated through the area diagnostic surveys and EPI plans that will be developed by the health area EPI team.

- (2) Promotion efforts will be directed at specific population

groups, using the four main Indian languages, tailoring promotion content to target group beliefs and using formats designed for illiterates.

(3) In the educational diagnostic, before implementing channelling and promotion activities in the Indian areas, the participation of anthropologists is considered of fundamental importance. Anthropologists will carry out brief studies of health beliefs, attitudes and practice regarding immunization and will work with focus groups to identify channels and key contents for promotion, barriers to vaccination and solutions for overcoming these barriers.

(4) Efforts will be made to motivate the participation of local health promoters, midwives and other community health volunteers through initial and refresher EPI training and public recognition of their efforts in promotional activities. Although there are costs associated with training promoters and midwives they are important to the success of EPI in closed Indian as well as ladino communities. The small amount of training they will be provided in the Project is the minimum required. Efforts need to be made throughout the Project to stimulate promoters and other community health volunteers and to recognize their importance in the channelling activities.

(5) The training component for auxiliary nurses and RHTs and the payment of per diem and transport costs for training are the two main mechanisms for motivating these frontline health workers in the I/CS Project. Promotional activities such as radio programs will also serve to recognize the efforts of the auxiliaries and RHTs as well as the community health volunteers. Improved equipment and cold chain support, continual availability of vaccines and other supplies, and follow-up supervision will also encourage full participation of health services personnel in the channelling system.

D. Financial Analysis:

The purpose of this section is to assess the financial capability of the Directorate General of Health Services (DGHS) in areas relevant to implementing the Immunization/Child Survival Project and to determine the feasibility of the Project Implementation Plan. This analysis will also include cost estimate tables and implementation and financing methods. Finally, this section includes a recurrent cost analysis in order to maintain the level of activity in DGHS to continue the Immunization/Child Survival Project after the three year life of Project.

1. Cost Estimate and Financial Plan:

The purpose of the Project is to increase (up to 80 percent) vaccination coverage of children under five years of age and pregnant women who live outside of the Department of Guatemala. The Project will carry out this purpose through four components: I) Training, Promotion and Supervision; II) Cold Chain, Vaccines and Supplies; III) Vehicles and Transport and Cold Chain Maintenance; and IV) Project Management and Personnel.

These components are detailed in the Summary Illustrative

Project Budget in Annex III.8. The proposed total cost of the Project is US\$15,781,943. AID's grant contribution will comprise 42 percent of the total Project budget and it will be used to finance training, technical assistance, supplies, vehicles, cold chain equipment, tools, materials, as well as transportation and per diem in order to reinforce the institutional capacity of the Implementing Unit. Other donors, including UNICEF and the Rotary Club, will contribute US\$763,323 or 5 percent of the total Project budget in order to finance vaccines and related supplies during the three year period 1985-1988. In addition, it is anticipated that UNICEF and the Rotary Club will continue to provide grant funding to the MOH to purchase vaccines and supplies for at least two years beyond the Project PACD in 1988. Also, PAHO will provide an estimated US\$25,927 for part time technical assistance of two epidemiologists amounting to 0.2 percent of total Project costs. The GOG will provide funding for administrative support, a portion of vaccines and supplies, promotion, supervision, training, maintenance and operational staff; this contribution is estimated to be US\$8,292,694 or 53 percent of the total life of Project cost.

Annex III.9 provides the breakdown of foreign exchange and local currency costs under the Project, and indicates the relative distribution of grant, other donors and host country expenditures by input. In this table salaries figure as the most prominent input, followed by vaccines and related supplies. Annex III.10, shows projected Annual Expenditures by source of financing for each year of the three-year life of Project. Annex III.11 illustrates the methods to be employed in implementing and financing Project activities. All financial tables in this section reflect approximately a 15 percent inflation and contingencies factor on AID's Grant, other donors, and host country costs.

2. Accounting and Administrative Evaluation of the Implementing Unit for the Project

A review of the accounting and internal control systems used by the DGHS was conducted in order to determine if they were adequate to handle AID funds. This analysis of DGHS included the following:

- a) Interviews with the chief of the financial department, chief accountant, bank loan section, and budget section;
- b) Examination of the Directorate's accounting records; and
- c) Examination of support documentation and filing procedures.

3. Accounting System

There are six accountants and fourteen administrative employees in the Financial Department of the General Directorate of Health Services (DGHS). The accounting registers consist of the following:

- a) Cumulative trial balance
- b) Detailed trial balance
- c) Cost control by line item
- d) Inventory
- e) Fixed assets
- f) Sundry debtors

4. System of Internal Control

The Auditing Department has seven auditors whose function is basically preventive. In carrying out this function, they review all documents prior to their payment.

Typical auditing documents and procedures are the following:

- a) Authorization of requisition
- b) Review of purchase orders and proforma invoices
- c) Confirmation and clearances of such proforma invoices and purchase orders, assuring that all legal requirements have been met. On the average this entire process takes 2 days.
- d) On a random basis, verification of prices and other aspects of purchases.

5. External Audits

The Immunization/Child Survival Project provides grant funds for three independent audits (one per year). These audits will cover Project activities according to generally accepted auditing standards.

6. Purchase and Contract Procedures

In order to purchase goods or services, the DGSS operates in accordance with Decree No. 35-80 which contains purchasing and contracting regulations and procedures. In general, GOG purchasing and contracting regulations and procedures conform to those of AID. As with other GOG institutions the bid procedures of the DGSS require up to 180 days.

In addition, the Project will provide AID funds to support the contracting of a Project Administrator, his assistant and a computer programmer, as well as the purchase of a micro-computer for Project accounting and technical information management. This team will be complemented by the full time work on the Project of administrative and technical personnel previously assigned by DGHS to support AID Project 520-0251.

With the addition of this Project-specific support, the DGHS will have adequate administrative and financial personnel and capability to satisfactorily carry out the purpose of the Immunization/Child Survival Project.

7. Project Replication

Annex III.12 includes an estimate of US\$1,201,833 per year in addition to normal budgeted funds which the GOG would need to contribute in order to continue with the project beyond the PACD. This amount represents 1.5 percent of the total amount budgeted (Q80,602,000) for MOH in 1985. It is expected that the GOG will continue the program since immunization is a high priority of the MOH as so defined in the National Health Plan. As stated previously in the institutional, technical and financial analyses, the GOG presently has considerable established resources, personnel and material (vaccines and supplies), committed to project activities. In addition, UNICEF and the Rotary Club will provide the program with resources for the procurement of vaccines, syringes and needles for five years beginning in 1985 - two years beyond the life of the project. It is expected that at the end of the project the DGHS will have developed sufficient institutional capacity and will have acquired equipment and vehicles necessary to satisfactorily administer the program. Thus, assuming that the project will achieve its objectives and will have a successful impact on the target population, it is anticipated that the GOG will continue the program as a regular MOH activity beyond the PACD.

E. Economic Analysis

The Project is designed to reorient the MOH immunization program from a twice a year campaign strategy to channelling. AID funding is intended to facilitate the three-year transition.

Based on the nature of the Project, it is difficult to quantify its economic benefits. The best approach is cost effectiveness analysis, comparing the two methodologies: campaign vs. channelling.

When cost-effectiveness analysis is applied to projects which produce roughly the same level of economic benefit, the least cost alternative is, by implication, the one yielding the highest economic rate of return. For the case of this Immunization Child/Survival Project, channelling provides a greater level of benefit than campaigns. Not only will channelling offer a higher level of immunization coverage, but it will lower the delivery cost of other primary health services such as ORT. Hence, the focus of this analysis is to determine whether the additional benefits gained through channelling can be obtained without significant additional economic cost over what is already expended for immunization campaigns.

The economic analysis compares the estimated economic cost to deliver a dose of vaccine under the campaign strategy with the projected cost to deliver a dose of vaccine using the channelling strategy.

The economic cost of delivering a dose of vaccine was calculated based on the following costs attributable to the campaigns in 1984: an estimate of the cost of vaccines, based on the number of doses delivered plus

the MOH standard wastage factor of 10 percent (30 percent for BCG) for each vaccine; expenditures of the Division of Disease Control and Surveillance for vaccination supplies and promotion activities; and an estimate of the direct labor and administrative costs of the campaigns. This last figure was calculated as 4 percent of the central and area level budgets; 12 percent of the Health Center Type A budgets; 8 percent of the Health Center Type B budgets; and 15 percent of the Health Post budgets. The percentages applied were determined through analysis of budgets for 19 health areas and 200 health centers and discussions with MOH officials at the central level.

In order to compare campaigns to the three-year Immunization Child/Survival Project, an assumption had to be made about the likely level of campaign effort over the period 1985-1987. Given the current austerity in government expenditures which is likely to continue over the near term, for this Project analysis it is assumed that campaigns would continue over the next few years at approximately the same level of effort and cost as in 1984. Accordingly, the 1984 costs were adjusted to reflect 1985 equivalents. Since nominal wages of government workers were not increased in 1985, the 1984 labor costs were assumed for the following year. For 1986 and 1987, however, it was assumed that real wages would remain constant at the 1985 level. Promotion costs in 1985 were calculated as the 1984 expenses plus an increase based on the percentage change in the price level from mid-1984 to mid-1985 (30 percent). Imported vaccines and supplies were valued according to a shadow rate of foreign exchange. The assumed rate, Q2.50 per U.S.\$1.00, is a weighted average of the official and parallel rates.

Using these adjustment factors, the present value per dose administered over three years of campaigning was derived to be Q1.34, assuming a 15 percent discount factor. Table 3.2 shows these calculations in greater detail.

TABLE 3.2

ECONOMIC COST PER ADMINISTERED DOSE THROUGH CAMPAIGNS
(1985 CONSTANT PRICES)
(PRESENT VALUE (PV))

Total doses	(1,042,917)	(1,042,917)	(1,042,917)
Labor/Admin.	Q 983,603	Q 983,603	Q 983,603
Promotion	Q 389,147	Q 389,147	Q 389,147
Vaccines/Supplies	Q 218,315	Q 218,315	Q 218,315
Total	Q 1,591,065	Q 1,591,065	Q 1,591,065
Present Value (15%)	Q 1,591,065	Q 1,383,535	Q 1,202,619
Total doses in 3 yrs.: 3,128,751			
Total PV cost per dose: Q1.34			

Sensitivity Analysis

Shadow exchange rate	PV Cost per dose
Q3.00 = \$1.00	Q1.37
Q5.00 = \$1.00	Q1.52

An economic cost per dose administered under the channelling strategy of Q 1.02 (present value) was calculated based on a three-year project life. (See Table 3.3). Project costs include start-up costs such as vehicle and cold chain equipment purchase, as well as recurrent costs such as incremental labor costs, promotion and vaccines and supplies. The economic costs were derived from the Project budget, with some downward adjustment of labor expenditures. This was to reflect that many of the health personnel to participate in this activity are already employed by the Ministry of Health but are underutilized. Their additional effort in channelling activities implies little opportunity cost for the economy as a whole.

Given the Project purpose of establishing channelling as a permanent health service delivery system, attributing the start-up costs to only a three-year activity, and only to immunization, represents an overestimate of the true economic costs per dose. This upward bias was partially compensated for by subtracting the salvage value (25 percent) of both vehicles and cold chain equipment from costs at the end of the third year.

TABLE 3.3

ECONOMIC COST PER ADMINISTERED DOSE THROUGH CHANNELLING
(1985 CONSTANT PRICES)
(PRESENT VALUE (PV))

	1985	1986	1987
Total doses	(1,437,904)	(4,112,954)	(5,336,102)
Labor/Admin.	Q 432,090	Q 266,640	Q 178,985
Promotion	Q 585,510	Q 918,581	Q 976,959
Vaccines/Supplies	Q 4,453,566	Q 2,535,444	Q 2,565,725
Total	Q 5,470,555	Q 3,820,665	Q 3,721,669
Less vehicle/Equipment Salvage value	—	—	-Q487,815
Total	Q5,470,555	Q3,720,665	Q3,233,854
Present Value (15%)	Q 5,470,555	Q 3,235,361	Q 2,444,334

Total doses in 3 yrs.: 10,886,960
Total PV cost per dose: Q1.02

Sensitivity Analysis

<u>Shadow exchange rate</u>	<u>PV Cost per dose</u>
Q3.00 = \$1.00	Q1.27
Q5.00 = \$1.00	Q1.86

An additional adjustment had to be made for imported and exportable Project inputs such as vehicles, vaccines, fuel and parts. A shadow exchange rate of Q2.50 per U.S. dollar was used to convert these expenditures to their opportunity cost equivalents. In addition, incremental electricity expenses were converted at the same rate, to reflect the current subsidy element inherent in power prices. Generation of thermal power is dependent on petroleum products, currently imported and priced at a subsidy which carries through to electricity pricing.

Currently, the parameter in this analysis which is the most difficult to predict is the shadow foreign exchange rate. This uncertainty is based on the lack of knowledge about the volume of transactions passing through the illegal parallel market. Accordingly, the analysis was recalculated using a Q3.00 per U.S. dollar shadow exchange rate, which assumes that only about 30 percent (rather than 45 percent) of foreign exchange transactions occur at the official rate of Q1.00 per dollar. At this less favorable shadow exchange rate, the present value economic costs per dose of channelling is still 10 centavos less than for campaigns. Even at the extreme (and unlikely) shadow exchange rate of Q5.00 per U.S. dollar, channelling is only slightly higher in unit cost (present value) to campaigns.

The economic analysis concludes that over a three-year program, channelling can deliver a dose of vaccine for, an average of Q1.02 (present value). By comparison, through the existing campaign approach, an average dose is delivered at Q1.34. Besides greater cost-effectiveness, the expanded coverage afforded through channelling implies that there will be a reduced chance of disease outbreak. This additional benefit will translate into lower medical expenses and greater productivity for both the target population (children and pregnant women) and the rural population as a whole.

One cause of the lower economic cost of channelling is its lesser estimated labor/administrative costs per dose, due to its dependence on the underutilized time of health post personnel. The intensive, semi-annual campaigns, by comparison, require a high level of staff time, either in persons hired directly for the campaigns or in personnel pulled from other tasks. Hence, for the campaigns, there is a higher opportunity cost to society of the labor employed.

Channelling should be noted as lowering the cost of access to other health services such as ORT. The expanded community outreach which will be put into place through the Project will result in increased utilization of health personnel for other primary care services.

Finally, channelling provides benefits in the form of lower wastage of vaccine. The wastage rates in the analysis contained here are those historically observed in the campaigns. With the establishment of an effective cold chain it is likely that these wastage rates can be reduced, saving scarce foreign exchange for Guatemala. In addition, delivery of ineffective vaccine can be reduced, which will result in an increased level of economic benefit for Guatemalan society.

IV. Implementation/Monitoring Plan and Evaluation Arrangements

This Project will be implemented during a three-year period. The Agreement will be signed during August, 1985; the activities will be initiated in October 1985 and will continue until August 1988 (See Project Implementation Plan and Project Schedule of Activities).

Of the twenty-one targeted Health Areas, eight will have adopted the channelling process by the end of the first year. During the second year eight additional Areas will be covered and during the third year the remaining five Health Areas will have adopted channelling to complete a total of twenty-one areas. This means that in 1988 all Areas, except the three in Guatemala City, will have in operation a channelling delivery system for delivering immunizations. Health Area personnel will be able to take advantage of this channelling strategy to implement other programs, such as Acute Respiratory Infection (IRA), Oral Rehydration Therapy (ORT) and other maternal-child health care (MCH) interventions. At the end of the first year it is expected that 161,890 children will have been vaccinated. During the second and third year 463,090 and 600,800 children, respectively, will have received a complete vaccination series.

A. Illustrative Implementation Plan

ACTIVITY	ACTION AGENT(S)	DATE
Project Paper approved	USAID/Guatemala	August 27, 1985
Project Agreement signed	MOH	August 27, 1985
Conditions Precedent met (Sect. 4.1)	MOH	Dec. 25, 1985
(Section 4.2)		Feb. 23, 1986
Seven Area EPI Plans prepared and approved	Areas, DDCS/MOH	Nov. 1985
MOH Project Implementation Plan completed	MOH	Oct. 1985
Vehicle procurement initiated/announcement in CBD	USAID	Dec. 1985

ACTIVITY	ACTION AGENT(S)	DATE
PIO/Ts and PIO/Cs prepared for TA and cold chain equipment	USAID, MOH	Dec. 1985
Central Level Seminar for 8 Chiefs of Areas, Chiefs of Divisions DAS & donor representatives UNICEF and Rotary Club	DHS, DDCS, DME, AID, PAHO, UNICEF & Rotarty Club	Dec. 1985 Dec. 1985
EPI Coordinators selected and trained for 8 Areas (4 of these retained)	DDCS, DHR	Dec. 1985
Training for 8 Area statisticians	DDCS/DHR	Dec. 1985
Maintenance technicians trained for 21 Areas	DEM, PAHO	Dec. 1985
Refrigeration maintenance technicians trained for 21 Areas	DEM/DHR	Jan. 1985
Auto repair course begins	DEM, DHR	Jan. 1985
Initiate Training of DHR Promotion Team	STC in Promotion	Jan. 1985
Seven area level workshops initiated	Areas, DVCE/MOH, DRH	Dec. 85-Jan. 86
Promotional training materials designed and printed	DDCS, DHR	Feb. 1986
Long term management consultant and STC in promotion and training/supervision selected	USAID, MOH, PAHO	Feb. 1986
Promotion agency selected	USAID, DHR	Feb. 1986
Promotion KAP studies carried out	DHR Promotion Team	Feb. 1986
Begin Operative Diagnostic Survey in 4 Areas	DDCS, PAHO, UNICEF, DEM	Feb. 1986
Implementation Plan developed	Team, EPI Cdrs.	Feb. 23, 1986
Refrigeration Maintenance Technicians trained for 4 Areas	DEM	Mar. 1986
Auto Repair Course begins	DEM, DHR	Mar. 1986
Area levels prepare local EPI	DDCS, Health Area	Mar. 1986
National promotion materials prepared	DHR	Mar.-Apr. 86
National Promotional Plan approved	DDCS	April 1986
District level training in 8 Areas begins	Districts, EPI Cdr.	Mar. 1986
Promotion begins in 8 Areas	KAP study	April 1986
Vaccines and supplies delivered to areas	DVCE/MOH, EPI Coordinators	April 1986
Begin local preparation for channelling, promotors, midwives, and volunteers selected and trained, vaccination sites selected, schedule for first channelling cycle prepared	Auxiliary nurses Rural Health technicians	Apr.-May 86
Annual Project Implementation Plan completed	Proj. Adm., GOHS, DDCS, DEM, DHP, DAS	April 1986
Cold chain equipment in place in initial 8 Areas	DDCS/MOH, DEM/MOH, EPI Coordinators	April 1986

ACTIVITY	ACTION AGENT(S)	DATE
Vaccines and supplies delivered to Areas	DDCS, Chiefs of Areas	April 1986
First external audit begins	AID	May 1986
Channelling begins in 8 Areas	Areas	May 1986
Central level supervision begins (continues every 3 months)	DDCS/MOH	May 1986
Refrigeration Maintenance Technicians trained for 4 Areas	DEM	July 1986
Auto Repair Course	DEM, DHR	July 1986
First vaccination cycle completed	Aux. nurses, RHTs, volunteers	Aug. 1986
Internal evaluation in 8 Areas begins (after each 3-month cycle)	DDCS/MOH, EPI	Sept. 1986
External evaluation at end of year 1	Coord., Districts USAID, PAHO, INCAL	Sept. 1986
All commodities in-country and on site	DDCS	
Evaluation seminar in 8 Areas	USAID, MOH	Sept. 1986
Refrigeration Maintenance Technicians trained for 5 Areas	Areas	Oct. 1986
Central Level, Auto Repair training completed	DEM	Oct. 1986
	DEM	Oct. 1986
Nation-Wide Coverage Survey begins	PAHO, AID, MOH, field staff, DDCS	Dec. 1986
Second External Audit begins	AID	Feb. 1987
Mid-term Impact Evaluation begins	PAHO, AID, DDCS, Proj. Adm.	Mar. 1987
Annual Project Implementation Plan completed	Proj. Adm., DGSS, DDCS, DEM, DHP, DAS	April 1987
Annual Project Implementation Plan completed	Proj. Adm., DGSS, DDCS, DEM, DHP, DAS	April 1988
Nation-Wide Coverage Survey begins	PAHO, AID, MOH, field staff, Chief DDCS	May 1988
Third External Audit begins	AID	June 1988
Final Impact Evaluation completed	PAHO, AID, DDCS, Proj. Adm.	July 1988

B. Evaluation Plan

The evaluation plan for the Project includes three types of evaluation activities. These are coverage surveys, project evaluations and other donor evaluations.

1. Coverage Surveys:

AID Grant funds will finance two coverage surveys. These

surveys will supplement an initial coverage survey (not financed under the Project), which will begin in September 1985. These surveys will collect baseline data against which the progress of the Project can be measured. The second survey scheduled during December, will immediately precede the mid-term impact evaluation; the third and final survey, scheduled in May and June 1988, will immediately precede the final evaluation of the Project.

Each coverage survey will take six weeks. The first week will be spent as a preparatory week, with the preparation of the sample (selection of cluster locations), development and field testing of the questionnaire, and the preparation of the computer programs necessary for the data entry and analysis. The field survey will be carried out during weeks two through four. The country will be divided into three sectors in order to focus the study in manageable sizes for survey operations. Each sector's survey work will be completed in one week's time. Weeks five and six will be utilized for data analysis and report preparation.

Personnel necessary to work on the surveys include: One PAHO statistician, with extensive experience in sampling design of cluster-sampling surveys and in the development of the necessary computer software for the data entering and analyses; one PAHO EPI medical epidemiologist with extensive experience in the design and implementation of coverage surveys; four Health Area central level EPI staff to serve as trainers and supervisors; one programmer to develop the necessary software; three operators (coders/data enterers) to assist in the data processing; 96 interviewers (auxiliary nurses); 20 health field supervisors (either rural health technicians or social workers); and 96 community health volunteers to work with the interviewers and serve as translators and guides in indigenous areas. The GOG will cover salary cost of participating MOH employees. PAHO will supply salary costs of the statistician and EPI medical epidemiologist. PAHO will provide the statistician for three weeks and an epidemiologist for the six weeks of the survey. All of the costs incurred (except salaries of GOG personnel) will be covered by AID grant funds. It is estimated that each survey will cost approximately US\$30,000.

2. Project Evaluations

There will be two project evaluations, a mid-term and a final evaluation. These evaluations will follow the second and third coverage surveys. AID will provide approximately US\$229,000 in project grant funds to cover the cost of evaluation activities. PAHO will incur the cost of salaries for the two survey specialists and AID will cover all other costs, except for GOG personnel salaries.

a. Mid-term Evaluation

The mid-term evaluation will be conducted after the second coverage survey and will entail two persons/months. The mid-term evaluation will serve to provide AID and the MOH with information to determine whether adjustments in Project design is warranted. The evaluation team will have the participation of the Project Director (MOH), an EPI specialist (PAHO), the Project Officer (AID), and an outside project evaluation

specialist (PAHO). The project evaluation specialist will have expertise in immunization programs.

The evaluation will be scheduled for three weeks. Week one will involve a review of all documents available as well as a review of the data collected and methodology for evaluation. The director of Disease Control and Surveillance will have all necessary statistics available for review. Week two will be spent on field visits. Week three will be spent on the preparation of the report of the findings of the evaluation team, including Project progress, problems encountered, and recommendations for their resolution.

Responsibility for implementation of the recommendations will be clearly defined in the report of the evaluation. As part of this evaluation, the progress against verifiable indicator targets included in the logical framework will be assessed. Progress against activities scheduled in the implementation plan will also be reviewed, examining all Project elements which include Area diagnostic surveys, area EPI implementation plans, training supervision, promotion, cold chain, transport, maintenance, vaccines and supplies, management information/Project monitoring, and Project management/technical assistance. Reports generated by the Project Administrative Unit and participating DGSS Division will be reviewed and a random sample of areas will be visited to verify their reliability.

At the goal level, the impact of the Project will be measured in terms of reduction in morbidity and mortality due to the EPI target diseases. This Data on morbidity and mortality is available through the routine epidemiologic surveillance system. It is also anticipated that information will be available on morbidity and mortality indicators from the Institute of Nutrition for Central America and Panama INCAP/PAHO/UNICEF Evaluation Maternal and Child Health Study scheduled to be published in October 1985.

Quarterly reports output indicators utilized for Project monitoring may include recommendations for modifications if necessary. The quarterly reports will be generated by the Project Administrator from information sent in from each participating division chief and from health areas. Output indicators will include information on:

Preventative Maintenance Measures

By type of vehicle/cold chain equipment

Vaccines (Innoculations)

- Number of people completing series by type
- Number of people receiving dose

Training

- Number of persons trained by course type
- Number of courses held by type

Promotion

- Number of materials developed by type
- Number of manuals printed/disseminated
- Number of radio announcements aired

b. Final Evaluation

The final evaluation will have the participation of an EPI specialist (PAHO), a training and supervision specialist (external), a promotion specialist (external), and an evaluation specialist (external). The evaluation specialist will serve as the team leader. The Project Director (MOH), and the AID Project Officer, will participate as needed but only three to five days of their time will be required during the evaluation.

This evaluation will take six weeks, approximately 5 man/month., to permit sufficient time for a thorough review of all Project inputs and outputs. The Project Administrator will ensure that all data necessary is available to the evaluation team. The first two weeks of the evaluation will be spent on a review of data and documents available at the central level (documents to be included are: Project quarterly reports, report of the mid-term evaluation, reports of the PAHO/MOH EPI evaluations, reports of the coverage surveys, reports of internal evaluations and routine information system reports). The second two weeks of the evaluation will be spent on field visits to Project areas representative of all phases of channelling. The final two weeks of the evaluation will be spent on the preparation of the report of the findings,

Results of all previous evaluations will be reviewed (Project mid-term evaluation, PAHO/MOH EPI evaluations in 1985 and 1987) as will all coverage surveys. Success of the Project will be measured in terms of completion of the implementation plan, achievement of log frame indicators and the continuation of channelling activities in areas following Project involvement.

Results of the final coverage survey will be used as a measure of the effectiveness of the service delivery under the Project. Results will determine coverage levels attained among children currently between zero to four years old in Project areas.

The final evaluation will assess the impact of the project in terms of reductions in overall infant and childhood mortality and morbidity due to the EPI target diseases. This evaluation will use information collected through the routine information systems (weekly epidemiologic surveillance reports, monthly disease surveillance, civil registries, hospital discharge data) and information available from other projects such as the INCAP/PAHO/UNICEF Maternal and Child Health Study Evaluation. In addition to the evaluations of the service and impact statistics, the evaluation team will review management related statistics, commodity procurement and distribution, and maintenance performance records.

This evaluation will examine the question of need for support of future immunization activities in the Department of Guatemala and other departments served during the project. The evaluation will include a section which will provide the MOH with guidelines for continuing its channelling

activities in future years. A section will also be included which describes the extent to which the channelling approach utilized by the project for vaccination efforts has been incorporated at the local level by health personnel in providing other primary health services (e.g. oral rehydration), at the local level.

3. Other Donor Evaluations

As part of the ongoing assistance provided to the MOH in the field of immunizations, PAHO provides technical and financial resources to the MOH for the performance of comprehensive EPI evaluations using a standardized methodology developed by PAHO. This evaluation includes participation of international advisors with expertise in EPI activities, as well as individuals from other units within the MOH and the GOG health sector. It is a multidisciplinary evaluation with participation solicited from IGSS, MOH units such as Health Education, Planning, Finance, Biologics, and Statistics; and area level participation. In addition, participation of other international agencies involved in EPI activities is solicited.

As compared to other evaluations of immunization activities in Guatemala, the PAHO/EPI Evaluation covers all immunization activities nationwide regardless of the provider/sponsor.

The first EPI evaluation was conducted in 1983, and follow-up evaluations are scheduled for 1985 and 1987. A.I.D. will provide supplemental funds within the project for an EPI specialist during the entire three weeks of the evaluation. This person, a full-time PAHO staff member, and a medical epidemiologist with experience in EPI, will participate full-time in the evaluation activities, insuring that information needs of the project are met through the evaluation process. The project will receive copies of all reports.

C. Monitoring and Procurement Plan

1. Project Monitoring

The Office of Public Health and Population (OPHP) within USAID/Guatemala will be responsible for the monitoring and assuring the implementation of Project activities. OPHP will be assisted by the Mission's Project Development and Support Office (PDSO) on matters relating to general project monitoring and implementation. The Office of the Controller via normal expenditure review of projects will also assist OPHP in the monitoring of the Project.

Various mechanisms will be used by AID to monitor Project progress. Monthly reports from the Project Administrator and quarterly reports prepared by all MOH participating divisions will be sent to the Project Administrator, summarized, and forwarded to the Mission. Project financed audits, two coverage surveys and two evaluations will also help keep the AID Project Officer current on Project progress and assist the Mission to decide on the need for mid-course changes in Project implementation. Finally,

the Project Officers will make routine field trips to executing MOH divisions to verify and confirm the validity of quarterly reports.

The MOH General Director for Health Service Office will also monitor Project progress through reports completed by the Chief of the Division of Disease Control and Surveillance and internal audits completed by the MOH's auditor's office.

Other Donor's related vaccination activities will be coordinated by PDSO and OPHP through two mechanisms. First, related immunization documents such as this PP will be shared. Also the Mission will participate in the Inter Agency Coordinating Committee which was established during 1965. Members of the committee include PAHO, UNICEF, INCAP, UNDP and AID.

2. Project Contracting and Commodity Procurement Plan

a. Commodity Procurement

Because of the MOH's limited personnel resource and institutional capability to carry out local and international procurement for both commodities and technical assistance, the Mission believes that an exception to AID's policy as set forth in P.D. 68 is justified. Extensive AID experience and existing contractual arrangements with United States suppliers will greatly facilitate procurement. Since the rapid availability of these commodities will be critical to assuring the success of the Project, all procurement of foreign currency purchased goods and services will be performed by AID.

To the extent possible, lump-sum procurement will be utilized by AID for the purchase of major commodities for the Project including vehicles, cold chain equipment, computer and spare parts for vehicles and the cold chain. This will reduce the administrative burden of AID and help to reduce increased costs due to inflation of spare parts and materials. The Project Administrative Unit will have authority for local procurement. Established GOG procurement procedures will be followed.

Vaccines and vaccination supplies will be purchased with other donor funding. UNICEF will supply \$1.6 million for vaccines and supplies and the Rotary Club has donated \$374,600 for the purchase of polio vaccines. These funds will be used by the MOH together with its annual contribution of Q150,000 to purchase the vaccines and supplies through a PAHO revolving fund.

The MOH has sufficient warehousing space to store cold chain equipment. Spare parts will be stored at the Central level and a portion of cold chain spare parts will be immediately distributed to Health Area facilities.

3. Source/Origin

The source and origin of goods purchased under the project will be the United States and Guatemala. The nationality of suppliers of goods and services under the Project will be the United States and Guatemala.

The project includes funds for the purchase of refrigerators in accordance with AID regulations which limits eligibility of refrigerators to industrial, institutional or educational use. The project's use of refrigerators falls into the institutional eligibility.

A waiver for the purchase of 46 motorcycles valued at approximately \$69,000 is required for the project (See Annex IV.1). The project is in need of these light-weight (185CC) motorcycles suitable for mountainous terrain. Motorcycles needed by the Project must have warranty and after-sales service and spare parts available in Guatemala. The Mission is not aware of any U.S. manufactured light-weight mountain terrain motorcycle that meets the project needs and that has the necessary service and parts available locally.

4. Technical Assistance/Service Contractors

Two long-term administrative positions (Project Administrator, and Assistant Project Administrator, both local Guatemalans) will be contracted by AID with AID grant funds. Three short-term technical positions will also be created (Training and Supervision Technical Advisor, Promotional Technical Advisor, and an Anthropologist). AID grant funds are provided for these costs. A short-term AID grant funded contract will also be issued for an automobile technician to provide a preventive maintenance course.

D. Gray Amendment Opportunities

In accordance with a new Directive (CIB 85-21) dated July 5, 1985, the Mission Director is to certify in each Project Paper that the procurement plan was developed with full consideration of maximizing the involvement of Gray Amendment organizations in the provision of required goods and services and that the project is or is not appropriate for minority or Gray Amendment organization contracting.

1. Goods:

There is currently no system established to exclusively use Gray Amendment firms for the provision of project financed goods. However, Gray Amendment suppliers of goods are eligible to bid on Mission requests for project goods. Although there is no guarantee that a Gray Amendment firm will win the award, past Mission procurement experience indicates that a significant portion of project financed commodities are provided by Gray Amendment firms.

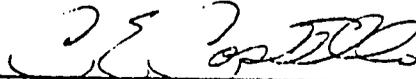
2. Services:

The project, as designed by a joint AID/GOG design team, includes financing for obtaining the services of three short-term personal

service contractors. The current Gray Amendment procedures are focused on Gray Amendment enterprises and are not suitable for contracting individuals. In spite of this the Mission encourages individuals that are considered minorities to bid on these three short-term positions. If any or all of the personal service contracts are awarded to minorities, the Mission will report these contracts and their amounts to AID/W for inclusion in the Agency overall Gray Amendment goals.

3. Certification:

Based on the above discussion I certify that full consideration was given to the inclusion of Gray Amendment organizations in the provision of the required goods and services and that opportunities exist both for individuals (services) and enterprises (goods) to bid on and to provide the necessary procurement.



Charles Costello

August 27, 1985

Date

E. Conditions Precedent and Covenants

Conditions precedent and covenants are detailed in the Project Authorization which is included in this PP.

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ANNEX I.1/ANEXO I.1

TEN MAJOR CAUSES OF INFANT MORTALITY
DIEZ CAUSAS PRINCIPALES DE MORTALIDAD INFANTIL

GUATEMALA
1982

Diagnosis Diagnóstico	Deaths Defunciones	Percent Porcentaje	RATE/TASA (Per 100,000 pop)
Infectious Intestinal Diseases Enfermedades Infecciosas Intestinales	4,602	25%	1,480.0
Other Causes of Perinatal Mortality/Otras Causas de Mortalidad Perinatal	2,838	16%	913.0
Unknown Diseases Symptoms and Status/Síntomas de Enfermedades Desconocidas	2,665	14%	857.0
Pneumonia/Neumonía	2,485	13%	799.2
Measles/Sarampión	786	4%	253.0
Bronchitis, Ephesyma, Asthma/ Bronquitis, Efisema y Asma	609	3%	196.0
Congenital Anomalies/Anomalías Congénitas	539	3%	173.3
Influenza/Influenza	523	3%	168.2
Pertussis (whooping cough)/ Tos Ferina (tos estertorante)	503	3%	162.0
Septicemia (blood poisoning)/ Septicemia (sangre envenenada)	289	2%	93.0
Other Causes/Otras Causas	<u>2,607</u>	<u>14%</u>	838.4
T o t a l	18,446	100%	

SOURCE/FUENTE: Department of Biostatistics, Epidemiology Division, Ministry of Health Guatemala, 1982.

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ANNEX I.2/ANEXO I.2

HEALTH PROJECTS RECEIVING DONOR SUPPORT DURING 1984
PROYECTOS DE SALUD QUE RECIBIERON DONACIONES DURANTE 1984

<u>Institution</u> <u>Institución</u>	<u>Type of Project</u> <u>Clase de Proyecto</u>	<u>Amount/Cantidad</u> <u>(000Q)</u> <u>(Life of Project/</u> <u>Vida del Proyecto)</u>
IDB	1) Construction of hospitals and health centers/ Construcción de hospitales y puestos de salud	79,000
	2) Construction of potable water systems and sewers/Construcción de sistemas de agua potable y alcantarillado	59,437
	3) Potable water systems/Sistemas de agua potable	3,295
USAID	Rural Sanitation and Primary Health Care Saneamiento Rural y Servicios Primarios de Salud	5,774
CARE	1) Training of health personnel and construction of 20 health posts/ Adiestramiento del perso- nal de salud y construcción de 20 puestos de salud	1,400
	2) Construction of 15 rural potable water systems/Construcción de 15 sistemas de agua potable en el área rural	250
	3) Administration of food supplies/ Administración de Suministros Alimenticios	5,116
CABEI	Construction of 100 health posts Construcción de 100 puestos de salud	4,049.1
UNFPA	Increase MCH/family planning services in five health areas/Incremento de los servicios de planificación familiar en cinco áreas de salud	2,050
UNICEF	1) Construction of rural potable water systems/Construcción de sistemas de agua potable en el área rural	250
	2) Development of rural health services medicines/Desarrollo de los servicios de salud en el área rural medicinas	175.5

65

<u>Institution</u> <u>Institución</u>	<u>Type of Project</u> <u>Clase de Proyecto</u>	<u>Amount/Cantidad</u> <u>(0000)</u>
	3) Support of immunization (EPI) in 10 departments/Respaldo al programa de inmunización (PAI) en 10 departamentos	95.0
	4) Providing oral rehydration salts/Provisión de sales para rehidratación oral	38.7
	5) Support of rural health volunteers/Respaldo a los voluntarios rurales de salud	90.8
UNDP/ PAHO	National program to control medicines and pharmaceuticals/Programas nacionales para el control de medicinas y farmacéuticos	481.3

SOURCE: "Resumen de la situación del país - Guatemala", May 1984, Pan American Health Organization (PAHO).

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ANNEX I.3
POPULATION TO BE COVERED BY IMMUNIZATION/CHILD SURVIVAL PROJECT

Area	1985 Population	Children Under 1	Area Characteristics			Health Facilities			% Houses Accessible***
			Number Houses	Urban*	Rural	Hospital	Center	Post**	
Sololá	201,147	8,443	31,803	10,847	20,956	1	7	27	75
El Progreso	96,370	4,048	18,101	5,149	12,952	1	7	22	82
Santa Rosa	237,418	9,972	43,716	10,491	33,225	1	10	41	87
Sacatepéquez	150,968	6,341	26,295	22,351	3,944	2	3	16	93
Zacapa	144,820	6,082	27,752	9,563	18,189	1	9	19	68
Jalapa	164,690	6,917	31,208	10,548	20,660	1	5	7	66
San Marcos	593,015	24,907	96,442	11,621	84,821	1	14	56	71
Chimaltenango	289,901	12,176	52,839	24,942	27,897	1	10	49	90
Suchitepéquez	307,781	12,927	55,554	18,445	37,109	1	9	23	85
Quezaltenango	472,645	19,851	78,936	32,916	46,020	3	10	38	73
Huehuetenango	590,575	24,804	86,895	16,397	70,498	2	13	59	64
Baja Verapaz	157,157	6,601	26,067	4,953	21,114	1	6	22	62
El Quiché	473,865	20,028	62,961	6,312	56,649	1	17	47	63
Totonicapán	251,004	10,542	48,917	8,760	40,157	1	8	17	NA
El Petén	182,327	7,658	32,369	9,811	22,558	2	6	36	81
Retalhuleu	200,179	8,408	35,130	9,959	25,171	1	6	15	86
Alta Verapaz	491,078	20,625	71,298	9,849	61,449	1	14	29	35
Izabal	270,054	11,342	48,939	18,107	30,832	2	7	14	77
Escuintla	453,854	19,062	72,600	31,218	41,382	2	9	32	89
Chiquimula	223,311	9,379	41,878	9,255	32,623	1	7	11	63
Jutiapa	312,575	13,128	56,643	13,028	43,615	1	8	44	74
TOTAL	6,264,734	263,246	1,046,343	294,522	751,821	28	185	624	72****

*More than 2,000 population.

**Includes only active health posts

***Within 2 hours by foot from health facility.

****Weighted average for all health areas except Totonicapán.

SOURCES: DGE CELADE SEGEPLAN, Depto. de Población y Empleo, Estimaciones Preliminares, Abril 1985.

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ANNEX 1.4

AVAILABLE MANPOWER RESOURCES AT THE HEALTH CENTER LEVEL

Guatemala - 1985

Area	Number Health Centers	Physicians		Nurses		Social Workers		Sanitary Inspectors		Auxiliary Nurses		Rural Health Technicians		Total No. Health Center Personnel	
		Total	per HC	Total	per HC	Total	per HC	Total	per HC	Total	per HC	Total	per HC	Total	per HC
Escuintla	9	9	1.0	9	1.0	1	0.1	9	1.0	36	4.0	7	0.8	71	7.9
El Progreso	7	7	1.0	7	1.0	1	—	—	—	30	—	—	—	55	9.0
Santa Rosa	10	11	1.1	10	1.0	1	0.2	10	1.0	47	4.7	10	1.0	90	9.0
Sacatepéquez	3	4	1.3	3	1.0	2	1.0	4	1.3	14	4.7	2	0.7	30	10.0
Zacapa	9	19	2.0	9	1.0	1	—	11	1.2	27	3.0	3	0.3	69	7.7
Chiquimula	7	9	1.3	7	1.0	1	—	7	1.0	28	4.0	12	1.7	63	9.0
Jalapa	5	6	1.2	5	1.0	1	—	6	1.2	20	4.0	1	0.2	38	7.6
Jutiapa	8	11	1.4	7	1.0	1	—	11	1.4	18	2.3	—	—	47	5.9
Sololá	7	7	1.0	7	1.0	1	—	8	1.1	17	2.4	6	1.0	45	6.4
Totonicapán*	8	—	—	—	—	1	—	—	—	21	—	—	—	—	—
San Marcos	14	16	1.1	14	1.0	1	—	15	1.1	56	4.0	8	0.6	109	7.8
Chimaltenango	10	10	1.0	9	0.9	1	0.6	22	2.2	44	4.4	12	1.2	103	10.3
Quezaltenango	10	14	1.4	10	1.0	3	0.3	13	1.3	67	6.7	2	0.2	109	10.9
El Quiché	17	27	1.8	24	1.6	2	0.8	15	1.0	87	5.8	15	1.0	180	12.0
Huehuetenango	13	17	1.3	16	1.2	1	—	15	1.2	50	3.8	29	2.2	127	9.8
Suchitepéquez	9	9	1.0	9	1.0	1	0.3	11	1.2	36	4.0	13	1.4	81	9.0
Retalhuleu	6	6	1.0	6	1.0	1	—	6	1.0	18	3.0	—	—	36	6.0
Alta Verapaz	14	23	1.6	19	1.4	1	—	—	—	67	4.8	33	2.4	142	10.1
Baja Verapaz	6	11	1.8	9	1.5	1	—	8	1.3	32	5.3	23	3.8	83	13.8
Izabal	7	9	1.3	6	0.9	1	—	9	1.3	26	3.7	12	1.7	62	8.9
El Petén	6	7	1.0	7	1.0	1	0.3	9	1.3	28	4.0	18	2.8	71	10.1
TOTALS	185	232	1.3+	193	1.1+	25	0.2*	189	1.1+	769	4.2+	206	1.2+	1611	9.2+

* Data not available.

+ Average number personnel by type per Health Center not including Totonicapán.

Sources: Planes Operativos, 1985 from Individual Health Areas in Guatemala; Unidad de Información de la DGSS "Infraestructura de Servicios del Ministerio de Salud Pública y Asistencia Social."

ANNEX 1.4

AVAILABLE MANPOWER RESOURCES AT THE HEALTH POST LEVEL
Guatemala - 1984

Area	Health Posts	Health Centers	§ Access- ible Pop.	Auxiliary Nurse (AN)		Rural Health Technicians		Rural Health Promoters		Trained Traditional Midwives		Number of Houses per HP	Number of Houses per AN/RHT	No. Houses per Health Promotor
				Total	per HP	Total	per HP	Total	per HP	Total	per HP			
Escuintla	32	9	89	31	1.0	—	—	710	22.9	472	15.2	1,615	1,615	70
El Progreso	22	7	82	22	1.0	14	0.6	334	15.2	202	9.2	899	562	59
Santa Rosa	41	10	87	44	1.0	—	—	213	5.1	332	7.9	746	746	146
Sacatepéquez	16	3	93	27	1.7	11	0.7	225	140	105	6.6	1,287	536	92
Zacapa	19	9	68	19	1.0	19	1.0	314	16.5	161	8.5	609	304	37
Chiquimula	11	7	63	11	1.0	11	1.0	412	37.5	443	40.2	1,466	733	39
Jalapa	7	5	66	7	1.0	7	1.0	198	28.0	264	37.7	1,716	858	61
Jutiapa	44	8	74	46	1.0	14	0.3	203	4.4	464	10.1	776	597	176
Sololá	27	7	75	27	1.0	18	0.7	252	9.3	293	10.9	701	413	75
Totonicapán	17	8	17	*	—	—	—	—	—	—	—	—	—	—
San Marcos	56	14	71	69	1.0	1	—	797	12.1	750	11.4	856	856	71
Chimaltenango	49	10	90	53	1.0	—	—	189	3.4	409	7.4	713	713	215
Quezaltenango	38	10	73	31	0.8	19	0.5	260	6.8	447	11.8	1,200	923	176
El Quiché	47	17	63	35	1.0	35	1.0	161	4.6	446	12.7	793	397	172
Huehuetenango	59	13	64	52	1.0	—	—	—	—	—	—	896	896	—
Suchitepéquez	23	9	85	22	1.0	—	—	214	9.7	285	13.0	1,523	1,523	157
Retalhuleu	15	6	86	15	1.0	—	—	108	7.2	191	12.7	1,482	1,482	206
Alta Verapaz	29	14	35	26	1.0	—	—	277	10.7	176	6.8	654	654	61
Baja Verapaz	22	6	62	22	1.0	—	—	165	7.5	171	7.8	577	577	77
Izabal	14	7	77	12	1.0	12	1.0	203	16.9	225	18.8	1,983	992	117
El Petén	16	6	81	28	1.0	—	—	247	8.8	161	5.8	747	747	85
TOTAL	624	185		612	1.0+	161	0.3+	5,300	10.7+	6,400	11.8+			

* Data not available.

+ Average number personnel by type per Health Post in districts for which data are available.

Sources: Planes Operativos, 1985 for Individual Health Areas in Guatemala; Unidad de Información de la DGSS "Infraestructura de Servicios del Ministerio de Salud Pública y Asistencia Social.

ANNEX II.1

TRAINING MATERIALS FOR
IMMUNIZATION/CHILD SURVIVAL PROJECT (520-0339)

	Central Level	Area Level	District Level	Health Post	Community	Comments
1. Expanded Program on Immunizations (EPI) Planning, Administration and Evaluation Courses (5 modules). PAHO/WHO	—	126	630	620	—	To be provided by PAHO/Guatemala
2. Coverage extension of health services with primary attention strategy and the participation of the community: Summary of the situation in the American Region Official Document No.156, PAHO/WHO, 1978.	—	126	630	620	—	To be provided by PAHO/Guatemala
3. Primary Health Services Alma Ata Report, PAHO/WHO, 1978	—	126	630	620	—	To be provided by PAHO/Guatemala
4. Seminar on the "Health for Everybody in the Year 2,000" Action Plan - Final Report, MPH Guatemala - PAHO/WHO/UNICEF, 14-16 march 1983	—	126	630	620	—	To be provided by PAHO/Guatemala
5. Operations Manual for the Expanded Program on Immunizations, MPH Guatemala, 1984	—	126	630	1240	—	To be provided with AID Grant funds
6. Operations Manual for the Oral Rehydration Therapy Program, MPH Guatemala, 1984	—	126	630	1240	—	To be provided with AID Grant funds
7. Applying Solutions: Diarrhea and Oral Rehydration, UNICEF/PAHO/WHO, Guatemala	—	126	630	620	—	To be provided by PAHO/Guatemala

		Central Level	Area Level	District Level	Health Post	Community	Comments
8.	Instructions for the Operating Manual for Primary Health Services:	75	126	1,260	1,240	---	To be printed with AID Grant funds. (14 pages for each set of instructions)
	No. 1 - Summary of important facts for complying with immunization and oral rehydration operations at the community level						
	No. 2 - Summary of principal operational recommendations for the Oral Rehydration Therapy Program						
	No. 3 - Instructions for calculating vaccination needs						
	No. 4 - Instructions for avoiding vaccination spoilage						
	No. 5 - Dissemination of primary health services						
	No. 6 - Instructions for calculating the equipment necessary for vaccinating						
	No. 7- Storage time, temperature and transportation of biologicals, by operating levels						
9.	Instructions for completing forms for the EPI program	75	126	1,260	1,240	---	To be revised and printed with AID Grant funds
	FC-1 Census for Channelling Strategy						
	FC-2 Immunization Book						
	FC-3 Immunizations Daily Registry						
10.	Instructions for completing forms for the EPI program	75	126	1,260	1,240	---	To be revised and printed with AID Grant funds
	TRO-1 Daily registry of activities of the Health Volunteer						
	TRO-2 Daily registry of activites by the Health Unit						
	TRO-3 Monthly summary of works by localities and municipalities						

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	Central Level	Area Level	District Level	Health Post	Community	Comments
11. First Module: Diseases covered by EPI, vaccines, and their application by nurse assistants from the community area Second Module: Cold chain for nurse assistants from the community area Third Module: EPI programming at the local level for nurse assistants of the community area. Division of Human Resources, MPH, Guatemala, 1985	74	84	630	1,240	---	New updated version of 3 module set to be printed by the Division of Human Resources, MOH with AID Grant funds. (Each set \$8)
12. Expanded Program on Immunizations (EPI) community members, Division of Human Resources, MPH, Guatemala, 1985	---	---	630	620	13,500	New publication in stages of development to be printed by the División de Human Resources, MOH with AID Grant funds (each \$1)
13. Oral Rehydration Therapy Program, community members,, Division of Human Resources, MPH, Guatemala, 1985	---	---	630	620	13,500	New publication to be developed and printed by the Division of Human Resources, MOH with AID Grant funds. (Each \$1)
14. Maintenance and repair of cold chain equipment - Level I. Revised 1985	12	160	---	---	---	To be printed by the DEM with AID Grant funds
15. Maintenance and repair of cold chain equipment - Level II Engineering and Maintenance Division with assistance from PAHO. 1984	12	160	---	---	---	To be printed by the DEM with AID Grant funds

		Central Level	Area Level	District Level	Health Post	Community	Comments
16.	Guide for the appropriate care of a refrigerator, Engineering and Maintenance Division. 1984	20	10	420	620	---	To be printed by the DEM with AID Grant funds
17.	Flipcharts - "Cold Chain" I y II	---	---	300	---	---	To be provided by PAHO/Guatemala
17.	Vehicle Maintenance. Level I. 1985	12	120	---	---	---	To be printed by the DEM with AID Grant funds
18.	Vehicle Maintenance. Level II. Engineering and Maintenance Division. 1985	12	160	---	---	---	To be printed by the DEM with AID Grant funds

ANNEX II.2

TRAINERS AND PARTICIPANTS BY TYPE OF COURSE

IMMUNIZATION/CHILD SURVIVAL PROJECT

TYPE OF COURSE	PARTICIPANTS	TRAINERS	LOCATION	AVERAGE No. COURSES PER AREA
Central Level Seminar	MOH Administrators Area Chief Donor Agency Representatives	Div. Disease Control and Surveillance Div. Human Resources Div. Maintenance I/CS Project Adminis- trator PAHO/WHO Advisor	Guatemala City	- -
Area EPI Coordinator Training	Area EPI Coordinator	Div. Disease Control and Surveillance Div. Human Resources Div. Maintenance I/CS Project Adminis- trator PAHO/WHO Advisor	Guatemala City	-
Statistician Training	Area Statistician	Div. Disease Control and Surveillance	Guatemala City or Area	-
Maintenance Training	Area Maintenance Technicians	Div. Maintenance	Guatemala City	-

TYPE OF COURSE	PARTICIPANTS	TRAINERS	LOCATION	AVERAGE No. COURSES PER AREA
I. Area Level Seminar	Area Chief Area EPI Coordinator Area Nurse Supervisor Sanitation Inspector Social Worker Statistician District Directors District Nurses 2 District Auxiliary Nurses	Div. Disease Control and Surveillance Div. Human Resources Div. Maintenance PAHO/WHO Advisor	Area	1
II. District Training	30 Center & Post RHT's 30 Auxiliary Nurses 30 Sanitation Inspectors	Area Chief Area EPI Coordinator Area Nurse	Districts	9
III. Post Training	10 Trained Traditional Midwives or Volunteers 15 Promoters or Volunteers	District Nurse Auxiliary Nurse	Districts	30

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ANNEX II.3

END-OF-PROJECT TRAINING INPUT/OUTPUT SUMMARY
IMMUNIZATION/CHILD SURVIVAL PROJECT

	INPUTS			OUTPUTS
	NUMBER OF COURSES	NUMBER OF MANUALS	AVE. NUMBER PARTICIPANTS PER COURSE	TOTAL NUMBER PERSONS TRAINED
I. <u>CENTRAL LEVEL SEMINAR (Capital City)</u>				
Chief of Areas (1 day)	1	96	75	75
Area EPI Coordinators (5 days)	4	42	25	25
Maintenance Technicians, Level I (5 days)	4	23	25	25
Vehicle Maintenance, Level I (5 days)	4	23	18	18
Area Statisticians (2 days)	4	21	21	21
II. <u>AREA LEVEL SEMINAR</u>				
(Medical, Nurse, Statistician, Social Worker) (Department)				
Area Level Seminar (Yr.1) (3 days)	4	160	40	160
Area Level Seminar (Yr.2)	8	320	40	320
Area Level Seminar (Yr.3)	5	200	40	200
III. <u>DISTRICT HEALTH LEVEL TRAINING</u>				
(Municipio) (Areas 9 districts per area)				
District level training (Yr.1) (3 days)	4	240	36	240
District level training (Yr.2)	8	480	72	480
District level training (Yr.3)	5	200	45	200

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	INPUTS			OUTPUTS
	NUMBER OF COURSES	NUMBER OF MANUALS	AVE. NUMBER PARTICIPANTS PER COURSE	TOTAL NUMBER PERSONS TRAINED
IV. POST LEVEL TRAINING				
A. Rural Health Promoters/Volunteer (1 day)				
Training (Yr.1) (4)	120	1,800	15	1,800
Training (Yr.2) (8)	240	600	15	600
Training (Yr.3) (5)	150	2,250	15	2,250
B. Trained Traditional Midwives/Volunteers				
Refresher training (Yr.1) (4)	120	1,200	10	1,200
Refresher training (Yr.2) (8)	240	2,400	10	2,400
Refresher training (Yr.3) (5)	150	1,000	8	1,500
TOTALS	7,138	30,809		17,137

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ANNEX II.4/ANEXO II.4

SPECIFICATIONS FOR COLD CHAIN EQUIPMENT AT CENTRAL AND AREA LEVELS
ESPECIFICACIONES Y COSTOS DE EQUIPO A
ADQUIRIR PARA LA CADENA A NIVEL CENTRAL Y DE AREA

<u>QUANTITY/ CANTIDAD</u>	<u>DESCRIPTION/DESCRIPCION</u>	<u>PRICE/PRECIO</u>
49	<p>** REFRIGERATOR, ELECTRIC. APPROX. 110 to 140 litre (4-5 cu.ft.) capacity, tropicalized, fitted freezer compartment 310 X 90 X 60 mm (approximate 10 litres) 110 volts, 60 HZ A.C.</p> <p>(11 301 10 REFRIGERATOR ELECTRIC. 110-140L/4-5 CFT 110V 60HZ).</p> <p>REFRIGERADORES DE COMPRESION ELECT. de 110 a 140 litros (4 a 5 pies cúbicos) de capacidad, tropicalizado, con un compartimiento de congelación incorporado de 310 X 90 X 60 mm (aprox. 10 litros), 110 volts, 60 HZ C.A.</p>	Q14,700.00
4	<p>** REFRIGERATOR, ELECTRIC, COMPRESSOR TYPE, 285 LITRE (10 cu.ft.) capacity with separate door for freezer, compresor unit 1/5 H.P., freezer compartment 40 litres (1.4 cu. ft.) shelf area 1.24 sqm/13 sq. ft., 110 volts., 60 HZ A.C.</p> <p>(11 402 10 REFRIGERATOR ELECTRIC 285L/10CFT 220V/60HZ)</p> <p>REFRIGERADOR DE COMPRESION ELECTRICICO, de 285 LITROS (10 pies cúbicos), compartimento de congelación separado, unidad compresora de 1/5 HP, compartimiento de congelación de 40 litros (1.4 pies cúbicos), 110 volts., 60 HZ C.A.</p>	1,200.00
12	<p>* FREEZER, ELECTRIC COMPRESSION, gross internal capacity of 452 litres; net vaccine storage capacity of 378 litres; ice pack freezing capability per 24 hrs of (+43°C) 7.5 Kg., sources of power 110V/60HZ, performance at given ambient temperature (+32°C) - 27°/-20°C; hold over time during power cut out of 14.5 hrs to (+43°C); min/max temperature draw time</p>	

CANTIDAD/
QUANTITY

DESCRIPCION/DESCRIPTION

PRECIO/PRICE

+ 43°C/night time +15°C of -27°C/-19°C,
with device locking, external dimensions, 160 X
64 X 85 cm. External surface material of painted
steel; internal lining material of aluminum;
energy consumption per 24 hrs of 5.6 Kw X hr.

(TC-1850 FREEZER; (920-4817-02)

CONGELADOR ELECTRICO DE COMPRESION MARCA
"ELECTROLUX" o similar, capacidad bruta
interior de 452 litros, capacidad neta de
almacenamiento de vacunas de 378 litros,
con una capacidad de congelación de bolsas
de hielo en 24 h. de 7.5 kg. a (+43°C),
tipo de energía de 110V/60HZ, con un rendi-
miento en condiciones dañás de (+43°C -27°
C/-19°C; con una conservación de frio en caso
de corte de energía de 14.5 H. a (+43°C),
temperaturas mínima y máxima durante el
+ 43°C/noche + 15°C de - 27°C/-19°C;
con cerradora, dimensiones exteriores de 160 x
64 x 85 cm., material exterior de acero pintado,
interior de aluminio, con un consume de 5.6 KWH.

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** REFRIGERATOR FOR VACCINES 110 V/Kerosene 22 litre
(1.5 cu.ft.) net vaccine storage capacity (46
litre gross internal capacity) 850*560*700mm
(1XWXH) polyethylene box and hinged top-closing
lid, with 100 mm polyurethane insulation, lockable
pressure catch. Include outside thermometer
showing inside temperature, for thermostatically
controlled operation of 110 V/60HZ and Kerosene.
Two extra wicks included. Electrolux Model
RCW 42EK.

114,800.00

REFRIGERADORAS DE GAS POR ABSORCION, de 22 li-
tros (1.5 pies cúbicos) de capacidad neta de
almacenamiento de vacuna; capacidad bruta inte-
rior de 46 litros; dimensiones de 850 X 560 * 720
mm (1*w*h); caja de polietileno completamente
cerrado con un aislamiento de 100 mm de polioure-
tano rígido, cerradura a presión para evitar
contacto con temperatura exterior, con termó-
metro externo incluido mostrando la remperatu-
ra interna; incluyendo el kit para convertirla
a eléctrica de 110V/60HZ.

<u>CANTIDAD/ QUANTITY</u>	<u>DESCRIPCION/DESCRIPTION</u>	<u>PRECIO/PRICE</u>
	(11 518 20 REGRIGERATOR FOR VACCINE 220V/KEROSENE 22L)	
50	* COLD BOXES TYPE 20L CAJAS TERMICAS	18,100.00
100	* THERMOS VACCINE CARRIER EPI/PF/1.5 TERMO PARA TRANSPORTAR VACUNAS EPI/PF/1.5	1,105.00
150	* THERMOS KING SEELEY VACCINE CARRIER TERMO PARA TRANSPORTAR VACUNAS KING SEELEY MOD 3504 EPI/CCIS/81-3	3,450.00
3850	PLASTIC TRAY (IN THE LOCAL MARKET) BANDEJA DE PLASTICO (EN EL MERCADO LOCAL)	11,550.00
380	* VACCINE THERMOMETER 22/990/2, MARK BRANNAM TERMOMETRO PARA VACUNAS 22/990/2, MARCA BRANNAM	912.00
1000	THERMOS BAG (FOR KING SEELEY THERMOS) (IN THE LOCAL MARKET) BOLSA PARA TERMO (TERMO KING SEELEY) (EN EL MERCADO LOCAL)	10,000.00
	* Refer SUPDIR 55 Amendment 4. Referirse a SUPDIR 55 Enmienda 4	
	** "UNIPAC" UNIPAC - UNITED NATIONS CHILDREN'S FUND, SUPPLY DIVISION PROCUREMENT AND ASSEMBLY CENTRE, COPENHAGEN, CATALOGUE, 1985	

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ANNEX II.5/ANEXO II.5

VACCINES (IN DOSES) REQUIRED FOR IMMUNIZATION CHILD SURVIVAL PROJECT
 VACUNAS (EN DOSIS) NECESARIAS PARA EL PROYECTO DE INMUNIZACION Y SUPERVIVENCIA INFANTIL
 POLIO, DIPHTHERIA, PERTUSSIS AND TETANUS (D.P.T.) VACCINES
 REQUIRED BY HEALTH AREA - GUATEMALA
 VACUNAS ANTIPOLIO, DIFTERIA, TOSFERINA, Y TETANOS REQUERIDAS POR LAS AREAS DE SALUD
 GUATEMALA
 1985-1987

AREAS DE SALUD HEALTH AREAS	1985	1986	1987	T O T A L
Guatemala North	151,648	156,197	160,883	468,728
Guatemala South	—	—	—	—
Sacatepéquez	49,396 (*)	21,552	22,196	93,144
Chimaltenango	28,436	97,585 (*)	42,527	168,548
Amatitlán	—	—	—	—
Escuintla	62,905	64,792	66,739	194,436
Zacapa	47,393 (*)	20,440	20,820	88,653
El Progreso	31,533 (*)	13,619	13,836	59,038
Chiquimula	73,076 (*)	31,581	32,221	136,878
Izabal	19,242	19,819	94,116	133,177
Jutiapa	102,272 (*)	44,233	45,161	191,666
Jalapa	53,896 (*)	23,390	23,968	101,254
Santa Rosa	77,682 (*)	33,568	34,244	145,494
Suchitepéquez	29,908	103,441 (*)	45,012	178,361
Retalhuleu	20,274	20,882	69,465 (*)	110,621
Quetzaltenango	68,434	158,971 (*)	69,224	296,629
Totonicapan	27,124	84,484 (*)	36,815	148,423
Sololá	19,560	67,875 (*)	29,651	117,086
El Quiché	61,784	160,951 (*)	70,330	293,035
Huehuetenango	108,062	199,561 (*)	87,301	394,924
San Marcos	62,724	199,550 (*)	86,935	349,209
Alta Verapaz	48,290	49,739	170,993 (*)	269,022
Baja Verapaz	21,783	22,371	54,239 (*)	98,393
El Peten	25,878	26,654	66,630 (*)	119,162
T O T A L	1,191,300	1,621,255	1,343,356	4,155,911

(*) Inicio de vacunación por canalización/Initiation of vaccination by channeling.

SOURCE: Internal statistics compiled by Ministry of Health's Division of Disease Control and Surveillance, 1985.

FUENTE: Estadísticas Internas recopiladas por la División de Control y Observación de Enfermedades 1985.

ANNEX II.5/ANEXO II.5

SYRINGES AND NEEDLES (UNIT) REQUIRED FOR IMMUNIZATION CHILD SURVIVAL PROJECT
 JERINGAS Y AGUJAS (POR UNIDAD) NECESARIAS PARA EL PROYECTO DE
 INMUNIZACION Y SUPERVIVENCIA INFANTIL
 SYRINGES AND NEEDLES REQUIRED BY HEALTH AREA FOR DIPHTHERIA, PERTUSSIS
 AND TETANUS (D.P.T.) VACCINATIONS - GUATEMALA
 JERINGAS Y AGUJAS REQUERIDAS PARA LAS AREAS DE SALUD PARA VACUNAS DE
 DIFTERIA, TOS FERINA Y TETANOS - GUATEMALA
 1985-1987

HEALTH AREAS AREAS DE SALUD	Syringes/Jeringas			Needles/Agujas		
	1985	1986	1987	1985	1986	1987
Guatemala North	30,330	31,240	32,177	121,320	124,960	128,696
Guatemala South	--	--	--	--	--	--
Sacatepequez	9,880	4,312	4,440	39,520	17,248	17,760
Chimaltenango	5,688	19,520	8,508	22,752	78,080	34,032
Amatitlan	--	--	--	--	--	--
Escuintla	12,581	12,960	13,348	50,324	51,840	53,392
Zacapa	9,480	4,088	4,164	37,920	16,352	16,656
El Progreso	6,308	2,724	2,780	25,232	10,896	11,120
Chiquimula	14,616	6,316	6,444	58,464	25,264	25,776
Izabal	3,849	3,964	18,824	15,396	15,856	75,296
Jutiapa	20,456	8,848	9,032	81,824	35,392	36,128
Jalapa	10,778	4,678	4,796	43,112	18,712	19,184
Santa Rosa	15,440	6,716	6,852	62,160	26,864	27,408
Suchitepéquez	5,984	20,688	9,004	23,936	82,752	36,016
Retalhuleu	4,056	4,180	13,896	16,224	16,720	55,584
Quetzaltenango	13,700	31,796	13,848	54,800	127,184	55,392
Totonicapan	5,428	16,900	7,364	21,712	67,600	29,456
Sololá	3,912	13,576	5,932	15,648	54,304	23,738
El Quiché	12,352	32,192	14,068	49,408	128,768	56,272
Huehuetenango	21,612	39,912	17,460	86,448	159,648	69,840
San Marcos	12,548	39,912	17,338	50,192	159,648	69,552
Alta Verapaz	9,660	9,948	34,200	38,640	39,792	136,800
Baja Verapaz	4,360	4,476	10,848	17,440	17,904	43,392
El Peten	5,176	5,331	13,328	20,704	21,323	53,312
T O T A L	238,194	324,277	268,701	953,176	1,297,107	1,074,802

(*) Syringes of 2.5 ml. with needle No. 24 X 1" and needles No. 24 X 1"
 Jeringas de 2.5 ml. con aguja No. 24 X 1" y agujas No. 24 X 1"

Observations/Observaciones:

- Four syringes are given for each jar of 20 doses/Se da cuatro jeringas por cada frasco de 20 dosis.
- Four needles are given for each syringe/se da cuatro agujas por cada jeringa.

SOURCE: Internal statistics compiled by Ministry of Health's Division of Disease Control and Surveillance, 1985.

FUENTE: Estadísticas Internas recopiladas por la División de Control y Observación de Enfermedades 1985.

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ANNEX II.5/ANEXO II.5

MEASLES VACCINES REQUIRED FOR IMMUNIZATION CHILD SURVIVAL PROJECT
 MEASLE VACCINES REQUIRED 1985-1987 BY HEALTH AREA -GUATEMALA
 VACUNA ANTISARAMPIONSA REQUERIDA 1985-1987 PARA LAS AREAS DE SALUD -GUATEMALA

AREAS DE SALUD HEALTH AREAS	1985	1986	1987	T O T A L
Guatemala North	90,308	93,017	95,807	279,132
Guatemala South	—	—	—	—
Sacatepéquez	16,466 (*)	7,184	7,399	31,049
Chimaltenango	11,290	32,528 (*)	14,176	57,994
Amatitlán	—	—	—	—
Escuintla	20,968	21,597	22,246	64,811
Zacapa	15,794 (*)	6,813	6,940	29,547
El Progreso	10,511 (*)	4,540	4,629	19,680
Chiquimula	24,355	10,527	10,740	45,622
Izabal	7,038	7,249	31,372 (*)	45,659
Jutiapa	34,091 (*)	14,744	15,053	63,888
Jalapa	17,962 (*)	7,797	7,989	33,748
Santa Rosa	25,894 (*)	11,189	11,415	48,498
Suchitepéquez	10,080	34,481 (*)	15,004	59,565
Retalhuleu	5,842	6,017	23,155 (*)	35,014
Quetzaltenango	17,396	52,991 (*)	23,075	93,462
Totonicapan	8,418	28,162 (*)	12,272	48,852
Sololá	6,500	22,624 (*)	9,883	39,007
El Quiché	16,088	53,650 (*)	23,443	93,181
Huehuetenango	31,480	66,520 (*)	29,100	127,100
San Marcos	21,928	66,517 (*)	28,978	117,423
Alta Verapaz	13,626	14,035	56,998 (*)	84,659
Baja Verapaz	7,261	7,457	18,079 (*)	32,797
El Peten	7,784	8,018	22,210 (*)	38,012
T O T A L	421,080	577,657	489,963	1,488,700

(*) Inicio de vacunación por canalización/Initiation of vaccination by channeling.

SOURCE: Internal statistics compiled by Ministry of Health's Division of Disease Control and Surveillance, 1985.

FUENTE: Estadísticas Internas recopiladas por la División de Control y Observación de Enfermedades 1985.

ANNEX II.5/ANEXO II.5

SYRINGES AND NEEDLES REQUIRED FOR MEASLES VACCINE FOR THE
IMMUNIZATION CHILD SURVIVAL PROJECT BY HEALTH AREA - GUATEMALA
JERINGAS Y AGUJAS NECESARIAS PARA VACUNAS CONTRA EL SARAMPION PARA EL PROYECTO
DE INMUNIZACION Y SUPERVIVENCIA INFANTIL PARA LAS AREAS DE SALUD - GUATEMALA
1985-1987

HEALTH AREAS AREAS DE SALUD	Syringes/Jeringas			Needles/Agujas		
	1985	1986	1987	1985	1986	1987
Guatemala North	18,062	18,604	19,162	72,248	74,416	76,648
Guatemala South	---	---	---	---	---	---
Sacatepequez	3,294	1,438	1,490	13,176	5,752	5,960
Chimaltenango	2,258	6,506	2,836	9,082	26,024	11,344
Amatitlan	---	---	---	---	---	---
Escuintla	4,194	4,320	4,450	16,776	17,280	17,800
Zacapa	3,160	1,364	1,388	12,640	5,456	5,552
El Progreso	2,108	908	926	8,416	3,632	3,704
Chiquimula	4,872	2,106	2,143	19,438	8,424	8,572
Izabal	1,408	1,450	6,276	5,632	5,800	25,104
Jutiapa	6,820	2,950	3,002	27,280	11,800	12,008
Jalapa	3,594	1,560	1,598	14,376	6,240	6,392
Santa Rosa	1,295	2,238	2,284	5,180	8,952	9,136
Suchitepéquez	2,016	6,898	3,002	8,064	27,592	12,003
Retalhuleu	1,170	1,204	4,632	4,690	4,816	18,528
Quetzaltenango	3,480	10,600	4,616	13,926	42,400	18,464
Totonicapan	1,684	5,634	2,456	6,736	22,536	9,824
Sololá	1,300	4,526	1,978	5,200	18,104	7,912
El Quiché	3,218	10,730	4,690	12,872	42,920	18,760
Huehuetenango	6,296	13,304	5,820	25,184	53,216	23,280
San Marcos	4,386	13,304	5,796	17,544	53,216	23,184
Alta Verapaz	2,726	2,808	11,400	10,904	11,232	45,600
Baja Verapaz	1,454	1,492	3,616	5,816	5,968	14,464
El Peten	1,558	1,608	4,442	6,232	6,432	17,768
T O T A L	80,353	115,552	98,003	321,412	462,208	392,012

(*) Syringes of 2.5 ml. with needle No. 25 X 5/8" and needles No. 25 X 5/8"
Jeringas de 2.5 ml. con aguja No. 25 X 5/8" y agujas No. 25 X 5/8"

Observations/Observaciones:

- Four syringes are given for each jar of 10 doses/Se da cuatro jeringas por cada frasco de 10 dosis.
- Four needles are given for each syringe/se da cuatro agujas por cada jeringa.

SOURCE: Internal statistics compiled by Ministry of Health's Division of Disease Control and Surveillance, 1985.

FUENTE: Estadísticas Internas recopiladas por la División de Control y Observación de Enfermedades 1985.

ANNEX II.5/ANEXO II.5

TETANUS TOXOID VACCINES REQUIRED FOR THE IMMUNIZATION CHILD SURVIVAL PROJECT
BY HEALTH AREA - GUATEMALA
TOXOIDE TETANICO REQUERIDO PARA LAS AREAS DE SALUD 1985-1987 - GUATEMALA

AREAS DE SALUD HEALTH AREAS	1985	1986	1987	TOTAL
Guatemala North	---	---	---	---
Guatemala South	---	---	---	---
Sacatepéquez	16,608	17,105	17,615	51,328
Chimaltenango	---	32,704	33,750	66,454
Amatitlán	---	---	---	---
Escuintla	49,925	51,423	52,957	154,305
Zacapa	15,928	16,223	16,824	48,675
El Progreso	10,602	10,839	11,020	32,461
Chiquimula	24,563	25,065	25,573	75,201
Izabal	---	---	31,640	31,640
Jutiapa	34,382	35,105	36,142	105,629
Jalapa	18,115	18,564	19,021	55,700
Santa Rosa	26,116	26,640	27,177	79,933
Suchitepéquez	---	34,775	35,724	70,499
Retalhuleu	---	---	23,353	23,353
Quetzaltenango	---	53,442	54,938	108,380
Totonicapán	---	28,404	29,216	57,620
Sololá	---	22,818	23,531	46,349
El Quiché	---	54,109	55,816	109,925
Huehuetenango	---	67,089	69,287	136,376
San Marcos	---	67,087	68,996	136,083
Alta Verapaz	---	---	57,486	57,486
Baja Verapaz	17,288	17,754	18,234	53,276
El Peten	---	---	22,400	22,400
TOTAL	213,527	579,116	703,410	1,507,653

(*) Only in areas where channeling is implemented/Únicamente en áreas donde se va implantando la canalización

SOURCE: Internal statistics compiled by Ministry of Health's Division of Disease Control and Surveillance, 1985.

FUENTE: Estadísticas Internas recopiladas por la División de Control y Observación de Enfermedades 1985.

ANNEX II.5/ANEXO II.5

SYRINGES AND NEEDLES REQUIRED FOR THE IMMUNIZATION CHILD SURVIVAL PROJECT
BY HEALTH AREA - GUATEMALA
JERINGAS Y AGUJAS REQUERIDAS PARA TOXOIDE TETANICO EN LAS AREAS DE SALUD - GUATEMALA
1985-1987

HEALTH AREAS AREAS DE SALUD	Syringes/Jeringas			Needles/Agujas		
	1985	1986	1987	1985	1986	1987
Guatemala North	--	--	--	--	--	--
Guatemala South	--	--	--	--	--	--
Sacatepequez	3,324	3,424	3,524	13,296	13,696	14,096
Chimaltenango	--	6,544	6,752	--	26,176	27,008
Amatitlan	--	--	--	--	--	--
Escuintla	9,988	10,288	10,596	39,952	41,152	42,384
Zacapa	3,188	3,248	3,308	12,752	12,992	13,232
El Progreso	2,124	2,164	2,204	8,496	8,656	8,816
Chiquimula	4,916	5,016	5,116	19,664	20,064	20,464
Izabal	--	--	6,328	--	--	25,312
Jutiapa	6,880	7,024	7,232	27,520	28,096	28,928
Jalapa	3,624	3,716	3,808	14,496	14,864	15,232
Santa Rosa	5,224	5,328	5,436	20,896	21,312	21,744
Suchitepéquez	--	6,956	7,148	--	27,824	28,592
Retalhuleu	--	--	4,672	--	--	18,688
Quetzaltenango	--	10,692	10,938	--	42,768	43,752
Totonicapan	--	5,684	5,844	--	22,736	23,376
Sololá	--	4,564	4,708	--	18,256	18,832
El Quiché	--	10,824	11,164	--	43,296	44,656
Huehuetenango	--	13,420	13,860	--	53,680	55,440
San Marcos	--	13,420	13,860	--	53,680	55,440
Alta Verapaz	--	--	11,500	--	--	46,000
Baja Verapaz	3,450	3,552	3,648	13,840	14,208	14,592
El Peten	--	--	4,480	--	--	17,920
T O T A L	42,728	115,864	146,126	170,912	463,456	584,504

(*) Syringes of 2.5 ml. with needle No. 24 X 1" and needles No. 24 X 1"
Jeringas de 2.5 ml. con aguja No. 24 X 1" y agujas No. 24 X 1"

Observations/Observaciones:

- Four syringes are given for each jar of 20 doses/Se da cuatro jeringas por cada frasco de 20 dosis.
- Four needles are given for each syringe/se da cuatro agujas por cada jeringa.

SOURCE: Internal statistics compiled by Ministry of Health's Division of Disease Control and Surveillance, 1985.

FUENTE: Estadísticas Internas recopiladas por la División de Control y Observación de Enfermedades 1985.

ANNEX II.5/ANEXO II.5

BOG VACCINES REQUIRED FOR THE IMMUNIZATION CHILD SURVIVAL PROJECT
BY HEALTH AREA - GUATEMALA
VACUNA B.C.G. ANTI-TUBERCULOSA REQUERIDA POR LAS AREAS DE SALUD - GUATEMALA
1985-1987

	1985	1986	1987	T O T A L
Guatemala	27,758	30,534	33,587	91,879
Sacatepequez	19,460 (*)	8,490	8,744	36,694
Chimaltenango	14,733	38,441	16,750	69,924
Escuintla	24,781	25,524	26,291	76,596
Zacapa	18,665 (*)	8,052	8,202	34,919
El Progreso	12,421 (*)	5,365	5,470	23,256
Chiquimula	28,783 (*)	12,441	12,693	53,917
Izabal	10,972	12,069	37,076 (*)	60,117
Jutiapa	40,288 (*)	17,425	17,790	75,503
Jalapa	21,228 (*)	9,214	9,442	39,884
Santa Rosa	30,602 (*)	13,224	13,490	57,316
Suchitepequez	13,340	40,750 (*)	17,732	71,822
Retalhuleu	8,637	9,501	27,365 (*)	45,503
Quetzaltenango	22,142	62,625 (*)	27,270	112,037
Totonicapan	10,229	33,281 (*)	14,503	58,013
Soloá	9,814	26,738 (*)	11,680	48,232
El Quiché	18,414	63,408 (*)	27,706	109,528
Huehuetenango	29,343	78,614 (*)	34,391	142,348
San Marcos	30,008	78,611 (*)	34,247	142,866
Alta Verapaz	17,430	19,173	67,361 (*)	103,964
Baja Verapaz	8,581	8,813	21,367 (*)	38,761
El Petén	7,953	8,748	25,433 (*)	42,134
T O T A L	425,582	611,041	498,590	1,535,213

(*) Inicio de vacunación por canalización/Initiation of vaccination by channeling.

SOURCE: Internal statistics compiled by Ministry of Health's Division of Disease Control and Surveillance, 1985.

FUENTE: Estadísticas Internas recopiladas por la División de Control y Observación de Enfermedades 1985.

ANNEX II.5/ANEXO II.5

IMMUNIZATION CHILD SURVIVAL PROJECT
 PROYECTO DE INMUNIZACION Y SUPERVIVENCIA INFANTIL
 SYRINGES AND NEEDLES REQUIRED FOR B.C.G. VACCINES AGAINST TUBERCULOSIS
 BY HEALTH AREA
 JERINGAS Y AGUJAS REQUERIDAS PARA VACUNAS B.C.G. ANTI-TUBERCULOSA
 POR AREA DE SALUD
 1985-1987

HEALTH AREA AREAS DE SALUD	Syringes/Jeringas			Needles/Agujas		
	1985	1986	1987	1985	1986	1987
Guatemala	109	109	109	100	102	112
Sacatepequez	27	27	27	65	29	30
Chimaltenango	77	77	77	50	129	56
Escuintla	55	55	55	83	86	88
Zacapa	44	44	44	63	27	28
El Progreso	41	41	41	42	18	19
Chiquimula	31	31	31	96	42	43
Izabal	33	33	33	37	41	124
Jutiapa	65	65	65	135	59	60
Jalapa	22	22	22	71	31	32
Santa Rosa	66	66	66	103	45	45
Suchitepequez	46	46	46	45	136	60
Retalhuleu	32	32	32	29	32	92
Quetzaltenango	64	64	64	74	209	91
Totonicapan	38	38	38	35	111	49
Sololá	47	47	47	33	90	39
El Quiché	86	86	86	62	212	93
Huehuetenango	91	91	91	98	263	115
San Marcos	86	86	86	100	263	115
Alta Verapaz	60	60	60	59	64	225
Baja Verapaz	40	40	40	29	30	72
El Petén	57	57	57	27	30	85
T O T A L	1,217	1,217	1,217	1,436	2,039	1,673

OBSERVATIONS/OBSERVACIONES:

- 1 ml. Omega Microstat syringes/Jeringas Omega Microstat de 1 ml.
- Reusable stainless steel needles/Agujas reusables de acero inoxidable
- Syringe: 5 x hospital, 2 x c/c of Health and 1 x c/ Health Post/
 Jeringa: 5 x hospital, 2 x c/c de salud y 1 x c/ Puesto de Salud
- Needles: 1 x c/300 vaccine doses/Agujas: 1 x c/300 dosis de vacuna

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ANNEX 11.5/ANEXO 11.6

DISTRIBUTION OF VEHICLES BY HEALTH AREA, (MAY 1985)
 CUADRO 2 - DISTRIBUCION DE VEHICULOS POR AREA DE SALUD, (MAYO 1985)
 SOURCE/FUENTE: DEPARTMENT OF TRANSPORT/DEPARTAMENTO DE TRANSPORTES, D.C.S.

	TYPE OF VEHICLE/TIPO DE VEHICULO								NEW VEHICLES VEHICULOS NUEVOS		TOTAL VEHICLES TOTAL VEHICULOS						
	Truck Camión	Car Auto	4 Wheel Drive Vehicle/Vehículo en las 4 ruedas	Pick- Up	Ambu- lance Ambu- lancia	Bus MI- cro- bus	Van/ Pa- rel	Heavy Truck Camión	In Stock Existentes TOTAL	MOTOR- CYLES MOTOS	BOATS LANCHAS	4 Wheel Drive Vehicle/Vehículo en las 4 ruedas	Motor- cycles Motos	Boats Lanchas	Ve- hi- cles Motos	Motor cycles Motos	Boats Lanchas
Health Area North Guatemala/Area de Salud Guate- mala Norte			5		1			6									
Hospital San Juan de Dios	1		1	3	2		2	9									
Hospital de Salud Mental	2			1			1	4									
Hospital Anti- tuberculoso San Vicente	1		1	1	1			4									
Health Area South Guatemala/Area de Salud Guate- mala Sur			4					4									
Hospital Roose- velt	3			1	6		3	13									
Hospital Infan- til de Infec- tología	1				1			2									
Centro de Re- cuperación de Lisiados	1							1									
Dispensario In- fantil Antitu- berculoso			1					1									
Health Area Amatit- lán/Area de Sa- lud Amatitlán			1	1				2									
Hospital Na- cional				2	1			3									
Health Area Escula- r/Area de Salud Escular	1		5					6	6	-	1	2	-	7	8		
Hospital Nacio- nal Amatitlán					2			2									
Hospital de Ti- quisate					1			1									

	TYPE OF VEHICLE/TIPO DE VEHICULO								NEW VEHICLES VEHICULOS NUEVOS			TOTAL VEHICLES TOTAL VEHICULOS				
	Truck Ca- mi- reta	Car Au- to- mó- vil	4 Wheel Drive Vehicle/Vehí- culo contrac- ción en las 4 ruedas	Pick- Up	Ambu- lance lan- cha	Br's MI- cro- bus	Van/ Pa- rel	Heavy Truck Ca- mión	In Stock Existentes TOTAL	MOTOR- CYLES MOTOS	BOATS LANCHAS	4 Wheel Drive Vehicle/Vehí- culo contrac- ción en las 4 ruedas	Motor cycles Motos	Boats Lan- chas	Ve- hi- cles Moto- ches	Motor cycles Moto- ches
Health Area Santa Rosa/Area de Salud Santa Rosa Hospital Nacional Cullapa	1		3		1			5	11		1	2	-	6	13	-
Health Area Sacate- pequez/Area de Sa- lud Sacatepéquez Hospital Nacional Amigua Guatemala Hospital Elisa Martínez Hogar Fray Rodrigo de la Cruz				1	2			3								
Health Area El Pro- greso/Area de Sa- lud El Progreso Hospital Nacio- nal El Progreso		1	1	2				4	23	-	1	2	-	5	25	-
Health Area Zacapa/ Area de Salud Zacapa Hospital Nacional Zacapa			2		4		1	8	13	-	1	2	-	9	15	
Health Area Chiquimula/ Area de Salud Chi- quimula Hospital Nacional Chiquimula			3	1			1	5	7	-	1	2	-	6	9	-
Health Area Jalapa/ Area de Salud Jalapa Hospital Nacional Jalapa	1		3		1			5	13	-	1	2	-	6	13	
Health Area Jutiapa/ Area de Salud Jutiapa Hospital Nacional Jutiapa			5					6	19	-	1	2	-	7	21	
Health Area Sololá/ Area de Salud Sololá Hospital Nacional Sololá				1	1			2								
Health Area Totonicapán/ Area de Salud Toton- icapán	1		2	2	1			6	9	1	1	2	1	7	11	2
								2								
	1		2	2	1			6	29	-	1	2	-	7	31	-

	TYPE OF VEHICLE/TIPO DE VEHICULO									NEW VEHICLES VEHICULOS NUEVOS		TOTAL VEHICLES TOTAL VEHICULOS					
	Truck Camión	Car Auto	4 Wheel Drive Vehículo con trac- ción en las 4 ruedas	Pick- Up	Ambu- lancia	Bus MIBus	Van Paseo	Heavy Truck Camión	In Stock Existentes TOTAL	MOTOR- CYLES MOTOS	BOATS LANCHAS	4 Wheel Drive Vehículo con trac- ción en las 4 ruedas	Motor cycles Motos	Boats Lanchas	Ve- hi- cles Motos	Motor cycles Motos	Boats Lanchas
Hospital Nacional Totonicapán				1	2			3									
Health Area San Marcos/ Area de Salud San Mar- cos	3		3	1	1			8	18	-	2	3	-	10	20	-	
Hospital Nacional San Marcos				1	2			3									
Health Area Chimalte- rango/Area de Salud Chimalteango	1		5	1				7	42	-	1	2	-	8	43	-	
Hospital Nacional Chimalteango					2			2									
Health Area Quetzalte- rango/Area de Salud Quetzalteango	2		3	1				6	16	-	1	2	-	7	18	-	
Hospital Nacional de Occidente				1	3			4									
Hospital Rodolfo Robles			1				1	2									
Hospital de Coate- peque				1	2			3									
Escuela de Enfer- meras	2					1		3									
Health Area El Quil- ché/Area de Salud El Quiché	2		5	3			1	11	43	-	2	3	-	13	46	-	
Hospital Nacional El Quiché					3			3									
Health Area Huehuete- rango/Area de Salud Huehueteango			3	3				6	12	-	2	3	-	8	15	-	
Hospital Nacional Huehueteango				1	2			3									
Hospital de San Pedro Necta			1		1			2									
Health Area Suchite- péquez/Area de Salud Suchitepéquez	1		2	1				4	6	-	1	2	-	5	8	-	
Hospital Nacional Mazateango				1	2			3									
Health Area Retalhuleu/ Area de Salud Retal- huleu	1		1					2			1	2	-	3	2	-	

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	TYPE OF VEHICLE/TIPO DE VEHICULO									NEW VEHICLES VEHICULOS NUEVOS				TOTAL VEHICLES TOTAL VEHICULOS					
	Truck Camión	Car Auto	4 Wheel Drive Vehicle/Vehículo contracción en las 4 ruedas	Pick- Up	Ambu- lance Ambu- lancia	Bus MI- cro- bus	Van Pe- rel	Heavy Truck Camión	In Stock Existentes	TOTAL	MOTOR- CYLES MOTOS	BOATS LANCHAS	4 Wheel Drive Vehicle/Vehículo contracción en las 4 ruedas	MOTOR- cycles Motos	Boats Lanchas	Van mi- cles	MOTOR cycles Motos	Boat Lanchas	TOTAL
Hospital Nacional Retalhuleu					3				3										
Health Area Alta Verapaz/ Area de Salud Alta Verapaz	1		5	1	4				11	51	-		1	2	-	12	53	-	
Hospital Nacional Cobán					2				2										
Health Area Baja Verapaz/ Area de Salud Baja Verapaz	2		2	1				1	6	29	-		1	2	-	7	31	-	
Hospital Nacional Salamá				1	1				2										
Health Area Izabal/ Area de Salud Izabal			2		1				3	2	1		1	2	2	4	4	3	
Hospital Nacional Puerto Barrios					2				2										
Hospital Infantil Elisa Martíáñez INDAPS	2			2	1			1	1										
Health Area El Petón/ Area de Salud El Petón			6	1	2			1	9	23	2		2	3	1	11	26	3	
Hospital Nacional San Benito	1			1	1				3										
Hospital Melchor de Marcos				2	1				3										
TOTAL	38	0	84	45 467	77 757	2	5	7	0	258	382	4	25 29*	46	4	287 1547	428 4267	8	

*Deben incluirse 3 vehículos nuevos más para la División de Epidemiología y uno más para la Administración del Proyecto.
 (*3 more vehicles should be included for the Epidemiology Division and one for the administration of the Project.)

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ANNEX III.1/ANEXO III.1

TEN MAJOR CAUSES OF GENERAL MORTALITY
DIEZ CAUSAS PRINCIPALES DE MORTALIDAD GENERAL

GUATEMALA, 1982

<u>Diagnosis/Diagnóstico</u>	<u>No. of Deaths/No. Defunciones</u>	<u>Rate Per 100,000 Pop./Tasa (X 100,000 Habit.</u>
Infectious Intestinal Diseases/ Enfermedades Infecciosas Intestinales	14,415	195.0
Unknown Disease Symptoms and Morbidity Status/ Síntomas y Estados Morbosos mal Definidos	10,437	141.0
Pneumonia/Neumonías	7,059	95.3
Other Causes of Perinatal Mortality/Ciertas Afecciones Originadas en el Período Perinatal	6,350	85.8
Homicide and Intentional Injuries Caused by Other Person/Homicidio y Lesiones Infringidas Inten- cionalmente por otra Persona	6,179	83.5
Nutritional Deficiencies/Deficiencias Nutricionales	3,386	45.7
Measles/Sarampión	3,247	44.0
Circulatory System Diseases/Enfermedades del Aparato Circulatorio	2,217	30.0
Infectious and Parasitary Diseases/ Enfermedades Infecciosas y Parasitarias	1,659	22.4
Accidental and Intentional Injuries/ Enfermedades en las que se Ignora si Fueron Accidental o Intencionalmente Infringidas	1,626	22.0
Other Causes/Las Demás Causas	20,406	276.3

SOURCE/FUENTE: Ministry of Health, Biostatistics Department, Division of
Surveillance and Control of Diseases, Guatemala,
1983./Ministerio de Salud, Departamento de Bioestadística,
División de Epidemiología, Guatemala, 1983.

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ANNEX III.2

MORTALITY BY IMMUNO-PREVENTABLE DISEASES
 REPUBLIC OF GUATEMALA
 MORTALIDAD POR ENFERMEDADES IMMUNOPREVENIBLES
 REPUBLICA DE GUATEMALA
 1971-1982

YEAR AÑO	MEASLES SARAMPION		PERTUSSIS TOS FERINA		TETANUS TETANOS		POLIO POLIO		T. B. C. T. B. C.	
	DEATH DEF.	RATE TASA (*)	DEATH DEF.	RATE TASA (*)	DEATH DEF.	RATE TASA (*)	DEATH DEF.	RATE TASA (*)	DEATH DEF.	RATE TASA (*)
1971	5,861	105.5	2,975	53.6	215	3.9	78	1.4	1,090	19.5
1972	2,203	37.7	2,867	49.1	235	4.0	58	1.0	1,118	19.1
1973	230	3.8	1,299	21.5	214	3.5	49	0.8	1,052	17.4
1974	465	7.9	2,120	33.9	176	2.8	42	0.7	1,076	17.2
1975	5,319	82.2	1,346	20.8	187	2.9	10	0.1	1,185	18.3
1976	7,003	104.9	1,321	19.8	184	2.7	14	0.2	1,025	15.4
1977	4,644	67.4	1,291	18.7	179	2.6	13	0.2	1,034	15.1
1978	2,027	28.1	1,271	17.6	164	2.3	36	0.5	921	12.2
1979	4,890	65.8	1,412	19.0	66	0.9	23	0.3	959	12.5
1980	1,766	23.0	1,517	19.7	87	1.1	37	0.5	869	11.3
1981	2,231	31.0	1,069	14.8	121	1.7	31	0.4	792	11.0
1982	3,247	43.9	1,054	14.2	218	3.0	0	0.0	844	11.4

(*) Rate per 100,000 inhabitants/Tasa por 100,000 habitantes.

SOURCE: GOG Directorate General of Statistics (1971-1977)
 Department of Bio statistics, D.G.S.S. (1978-1980)
 FUENTE: Dirección General de Estadística (1971-1977)
 Departamento de Bioestadística D.G.S.S. (1978-1980)

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ANNEX III.3

MORBIDITY BY IMMUNO-PREVENTABLE DISEASES
 REPUBLIC OF GUATEMALA
 MORBILIDAD POR ENFERMEDADES IMMUNOPREVENIBLES
 REPUBLICA DE GUATEMALA
 1971-1982

YEAR AÑO	MEASLES SARAMPION		PERTUSSIS TOS FERINA		TETANUS TETANOS		POLIO POLIO		T. B. C. T. B. C.	
	CASES CASOS	RATE TASA (*)	CASES CASOS	RATE TASA (*)	CASES CASOS	RATE TASA (*)	CASES CASOS	RATE TASA (*)	CASES CASOS	RATE TASA (*)
1971	3,250	58.5	2,063	37.1	(-)	(-)	301	5.4	6,199	111.6
1972	1,474	25.2	2,210	37.8	(-)	(-)	135	2.3	9,454	161.0
1973	296	4.9	1,439	23.8	97	1.6	208	3.4	7,682	127.1
1974	926	14.8	1,870	29.9	87	1.4	30	0.5	8,653	138.6
1975	3,007	46.5	724	11.2	92	1.4	44	0.7	10,655	164.7
1976	3,791	56.8	915	13.7	65	0.9	27	0.4	10,354	155.2
1977	2,682	38.9	1,047	15.2	85	1.2	46	0.7	12,072	175.2
1978	2,178	30.2	1,099	15.2	64	0.9	37	0.5	9,917	137.5
1979	3,351	45.1	1,452	19.5	67	0.9	35	0.5	9,297	125.1
1980	2,703	35.2	1,513	19.7	60	0.8	76	1.0	7,153	93.1
1981	3,472	48.2	1,211	16.8	80	1.1	40	0.6	6,641	92.2
1982	3,973	53.7	1,532	20.7	85	1.2	34	0.5	7,277	98.3

(*) Rate per 100,000 inhabitants/Tasa por 100,000 habitantes.

(-) Information not available/Información no disponible

SOURCE, Division of Epidemiology, D.G.S.S.

FUENTE, División de Epidemiología, D.G.S.S.

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ANNEX III.4/ANEXO III.4

PROJECT COVERAGE BY YEAR/EXTENSION DEL PROYECTO POR AÑO

IMMUNIZATION/CHILD SURVIVAL PROJECT

PROYECTO DE INMUNIZACION/SUPERVIVENCIA INFANTIL

Guatemala Areas Covered by Project/Areas de Guatemala Cubiertos por el Proyecto

Projected Coverage of Children Under Age 1, Children 1-4 Years Old,
and Pregnant Women with Complete Immunization Series by End of the Project/
Cobertura Proyectada al Finalizar el Proyecto de Series Completas para
Inmunizacion de Niños Menores de 1 Año, Niños de 1-4 Años, y Madres Embarazadas

	Year 1 8 Areas Año 1 8 Areas	Year 2 16 Areas Año 2 16 Areas	Year 3 21 Areas Año 3 21 Areas	TOTAL
Total Population in Project Areas/ Total Población en Areas del Proyecto	1,784,006	5,102,929	6,620,470	
Total Children under Age 1 in Project Areas/Total de Niños Menores de 1 Año en las Areas del Proyecto	74,928	214,323	278,060	567,311
Coverage of Children Under Age 1/ Cobertura de Niños Menores de 1 Año	80%	80%	80%	80%
Total Children Under Age 1 with Com- plete Immunization Series - per year/ Total Niños Menores de 1 Año con Series Completas de Vacunas - p/año	59,942	171,458	222,448	453,848
Total Children 1-4 Years Old in Project Areas per yr./Total Niños de 1-4 Años Dentro del Proyecto p/año	226,568	648,072	840,800	1,715,440
Coverage of Children 1-4 Years Old/ Cobertura de Niños de 1-4 años	45%	45%	45%	45%
Total Children 1-4 Years Old with Complete Immunization Series p/year/ Total Niños de 1-4 Años con Series Completas de Vacunación por año	101,956	291,632	378,360	771,948
Total Pregnant Women in Project Area/Total de Mujeres Embarazadas en el Area del Proyecto	89,200	255,146	331,023	675,369
Coverage of Pregnant Women/ Cobertura de Mujeres Embarazadas	80%	80%	80%	80%
Total Pregnant Women with Complete Immunization Series per Year/Total de Mujeres Embarazadas con Series Comple- tas de Vacunación por Año	71,360	204,117	264,819	540,296
TOTAL VACCINATION/TOTAL VACUNACION	233,258	667,207	865,627	1,766,092

Sources: DEE, CELADE, SEGEPLAN, Population and Employment Department, Preliminary Estimations, April 1985./Fuente: DEE, CELADE, SEGEPLAN, Departamento de Población y Trabajo, Estimaciones Preliminares, Abril 1985.

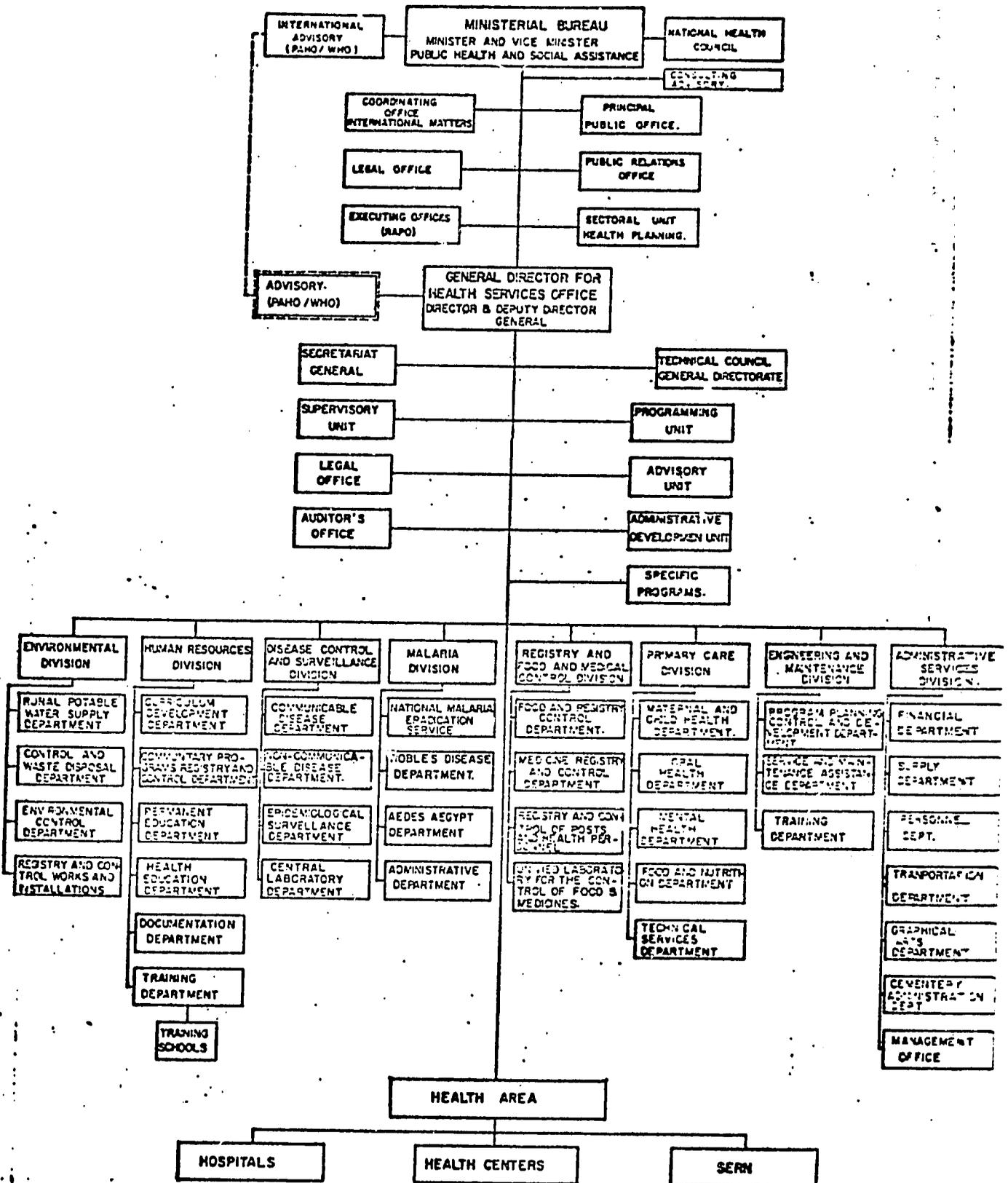
*Assumes/Atribuye:

- Children under Age 1 (4.2% of population)/Niños menores de 1 año (4.2% de la población)
- Children 1-4 years old (12.7% of population)/Niños de 1-4 años (12.7% de la población)
- Pregnant women (5% of population)/Madres embarazadas (5% de la población)
- 2.8% annual growth rate/la tasa anual de crecimiento es el 2.8%

ANNEX III.5

(ORGANIZATIONAL CHART)

MINISTRY OF PUBLIC HEALTH AND SOCIAL ASSISTANCE. (1984)



* SOURCE : REGLAMENTO ACUERDO GUBERNATIVO N° 741-84
 MINISTERIO DE SALUD PUBLICA Y ASISTENTE SOCIAL, AUGUST 24 1984.

ANNEX III.6

PERSONNEL FROM THE COMMUNITY BASED INTEGRATED HEALTH AND
NUTRITION SYSTEMS PROJECT (520-0251) PRIMARY HEALTH COMPONENT
WHO WILL SUPPORT THE CHILD SURVIVAL/IMMUNIZATION PROJECT*

No.	Technical Personnel at the Central Level	Salary in Quetzales			Reallocation
		Monthly	Annual	LOP 3 Years	
<u>Technical Personnel at the Central Level</u>					
1	Chief II Public Health Program	Q625	Q7,500	Q22,500	Disease Surveillance and Control Division
1	Chief I Public Health Program	550	6,600	19,800	Disease Surveillance and Control Division
1	Medical Public Health Researcher	525	6,300	18,900	Human Resources Division
1	Nursery Supervisor I	230	2,760	8,280	Human Resources Division
1	Nutritionist	525	6,300	18,900	Human Resources Division
1	Technical Advisor	525	6,300	18,900	Human Resources Division
1	Training Advisor I	190	2,280	6,840	Human Resources Division
1	Illustrator I	140	1,680	5,040	Human Resources Division
1	Audiovisual Aids Survey	220	2,640	7,920	Disease Surveillance and Control Division
1	Administrative Chief III	425	5,100	15,300	Disease Surveillance and Control Division
1	Accountant Assistant III	200	2,400	7,200	Disease Surveillance and Control Division
1	Office Clerk III	170	2,040	6,120	Disease Surveillance and Control Division
1	Office Clerk III	170	2,040	6,120	Disease Surveillance and Control Division
1	Office Clerk II	140	1,680	5,040	Disease Surveillance and Control Division
1	Office Clerk*	129	1,548	4,644	Disease Surveillance and Control Division
1	Office Clerk*	129	1,548	4,644	Disease Surveillance and Control Division

* 520-0251 Primary Health Component terminates in September 1985

* Personnel will remain unchanged and continue to work in Totonicapán, Sololá and San Marcos.

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No.	Technical Personnel at the Central Level	Salary in Quetzales			Reallocation
		Monthly	Annual	LOP 3 Years	
2	Office Clerk*	258	3,096	9,288	Engineering and Maintenance Division
1	Warehouseman II	160	1,920	5,760	Disease Surveillance and Control Division
3	Drivers	330	3,960	11,880	Disease Surveillance and Control Division
1	Janitor II	75	900	2,700	Disease Surveillance and Control Division
23	Subtotal	5,716	68,592	205,776	

Personal at the Health Area Level (Totonicapán, Sololá and San Marcos)

1	Maintenance Technician	575	6,900	20,700	Engineering and Maintenance Division
1	In Charge of Maintenance II	200	2,400	7,200	Engineering and Maintenance Division
3	Training Advisors	960	11,520	34,560	*
20	Nurse Assistants				
	Public Health I	2,000	24,000	72,000	*
4	Nurses II	880	10,560	21,680	*
3	Nutritionist Assistants I	390	4,680	14,040	*
1	Social Worker II	220	2,640	7,920	Human Resources Division
2	Social Worker I	400	4,800	14,400	*
1	Warehouseman I	110	1,320	3,960	*
1	In Charge of Maintenance III	240	2,880	8,640	*
3	Laboratory Technician I	330	3,960	11,880	*
1	Warehouseman I	110	1,320	3,960	*
41	Subtotal	6,415	76,980	230,940	
64	Total	12,131	145,572	436,716	

* Personnel will remain unchanged and continue to work in Totonicapán, Sololá and San Marcos.

ANNEX III.7

EQUIPMENT AND MATERIALS FOR PROJECT TRANSFERRED FROM
COMMUNITY-BASED HEALTH AND NUTRITION SYSTEMS PRIMARY HEALTH CARE PROJECT
No. 520-0251

No.	Description	In Stock	Price	Total Price
<u>I OFFICE FURNITURE</u>				
1	Secretarial desk model E-8	7	Q140.00	Q980.00
2	3-Drawer filing cabinet model A-2	8	95.00	760.00
3	Trash can 11 x 11 x 13 model B-2	4	5.00	20.00
4	Bookcase Model L-2	2	120.00	240.00
5	Information type desk	7	60.00	420.00
6	Economic Chair	5	25.00	125.00
7	Table for typewriter	4	30.00	120.00
8	Secretary chair model S-6	5	30.00	150.00
9	Two level paper cases	6	5.50	33.00
10	4 drawer filing cabinet Mod. A-1	6	110.00	660.00
11	Mod. f-15 stool with drawing table	1	110.00	110.00
12	Executive desk model E-2	1	250.00	250.00
13	Executive chair model S-2 Pint	1	100.00	100.00
14	Tapistry folding chair	1	15.00	15.00
<u>II OFFICE EQUIPMENT</u>				
15	Remington typewriter	2	675.00	1,350.00
16	No. 747 stapler	2	18.60	37.20
17	IBM electric typewriter	1	1,225.00	1,225.00
18	Victor trade calculator	1	179.00	179.00
19	Casio trade calculators	2	139.00	278.00
<u>III AUDIOVISUAL EQUIPMENT</u>				
20	21" Color television	1	1,324.66	1,324.66
21	Tripod for camara with revolving head	1	385.00	385.00
22	Portable video cassette recorder VHS	2	1,037.90	2,075.80
23	Cannon Telephoto Lens FD 200MM/4	1	267.50	267.50
24	Cannon angle 35 mm. F/2.8	1	167.99	167.99
25	Cannon camara with lens Model A-1	1	629.70	629.70
26	Reversible type 200 Video Cassette regular manual	1	374.50	374.50
27	Radio tape recorders	4	147.76	590.64
28	Screen with tripod	3	225.00	675.00
29	Overhead Projectors	3	550.00	1,650.00
30	Slide projectors	3	584.45	1,753.35
31	Sound motion picture projector	3	1,300.00	3,900.00
<u>VI PRINTING EQUIPMENT:</u>				
32	AB-Dick offset machine	1	5,000.00	5,000.00
<u>V. VEHICLES:</u>				
33	Jeep station wagon	2	9,810.00	19,620.00
34	Pick-up jeep	1	8,886.00	8,886.00
35	Refrigerated pick-up	1	15,383.00	15,383.00
36	Zusuki Motorcycles	13	1,840.40	23,925.20
37	Honda Motorcycles	8	1,345.50	10,764.00
<u>VI. REFRIGERATING EQUIPMENT:</u>				
38	Ice making machine	1	1,452.41	1,452.41
39	Cold boxes	11	263.56	2,899.16
40	Atlas freezer	1	1,800.00	1,800.00
41	Complete laboratory equipment	7	3,734.95	26,144.65
			T O T A L	Q136,720.06
				=====

ANNEX III.8

**PROJECT BUDGET BY COMPONENT ACTIVITY AND FINANCIAL SOURCE
IMMUNIZATION/CHILD SURVIVAL PROJECT
(U.S. DOLLARS)**

COMPONENT I: Summary Budget Training, Supervision and Promotion	AID	OTHER DONORS	GOB	TOTAL
TRAINING				
a) Central level training for Guatemala City staff; Area Chiefs, EPI Coordinators, Statisticians and Mechanics	\$23,182	\$7,500	\$8,221	\$38,903
b) Area level training for Area Health personnel and mechanics	\$47,530	\$15,045	\$8,160	\$70,735
c) District and Post level training for Health personnel, promoters and midwives	\$318,091	\$0	\$117,300	\$435,391
Sub-total:	\$388,803	\$22,545	\$133,681	\$545,029
2. PROMOTION				
a) Radio Production and Broadcasting	\$547,800			\$547,800
b) Graphics Production and Printing	\$296,000			\$296,000
c) Research and Evaluation	\$64,800			\$64,800
d) Training	\$15,000			\$15,000
e) Promotional Materials	\$20,250			\$20,250
Sub-total:	\$943,850	\$0	\$0	\$943,850
3. SUPERVISION				
a) Supervision costs at Central, Area and District level	\$398,200	\$0	\$265,140	\$663,340
b) Per diem costs for Health workers carrying out channeling at the field level	\$818,496	\$0	\$0	\$818,496
Sub-total:	\$1,216,696	\$0	\$265,140	\$1,481,836
Sub-total Component I	\$2,549,349	\$22,545	\$398,821	\$2,970,715
Inflation and Contingencies: 15%	\$383,395	\$3,382	\$59,823	\$446,600
TOTAL COMPONENT I	\$2,932,744	\$25,927	\$458,644	\$3,417,315

COMPONENT II: Summary Budget	AID	OTHER DONORS	GOG	TOTAL
COLD CHAIN, VACCINES and SUPPLIES				
1. Cold Chain Equipment and Fuel				
a) Cold Chain Equipment (e.g. Freezers, Refrigerators, Cold boxes, Thermometers)	\$225,021	\$0	\$0	\$225,021
b) Kerosene	\$210,294	\$0	\$0	\$210,294
c) Electricity	\$0	\$0	\$282,171	\$282,171
Sub-total	\$435,315	\$0	\$282,171	\$717,486
2. Vaccines and Supplies				
a) Polio Vaccine	\$0	\$93,759	\$0	\$93,759
b) Other Vaccines	\$0	\$360,000	\$450,000	\$810,000
c) Needles and Syringes	\$0	\$210,000	\$90,000	\$300,000
d) Cotton and Alcohol	\$0	\$0	\$45,000	\$45,000
Sub-total	\$0	\$663,759	\$585,000	\$1,248,759
Sub-total Component II	\$435,315	\$663,759	\$867,171	\$1,966,245
Inflation and Contingencies: 15%	\$65,297	\$99,564	\$130,076	\$294,937
TOTAL COMPONENT II	\$500,613	\$763,323	\$997,247	\$2,261,182

COMPONENT III: Summary Budget

VEHICLES and TRANSPORT and COLD CHAIN MAINT.

	AID	OTHER DONORS	GOG	TOTAL
1. Transport				
a) Vehicles (Four wheel drive vehicles, Boats Motorcycles)	\$567,032	\$0	\$0	\$567,032
b) Fuel for: Training, Supervision, Channeling and Maintenance	\$702,091	\$0	\$0	\$702,091
Sub-total	\$1,269,123	\$0	\$0	\$1,269,123
2. Cold Chain Maintenance				
a) Spare parts	\$323,020	\$0	\$0	\$323,020
b) Tools	\$58,825	\$0	\$0	\$58,825
c) Per diem	\$56,700	\$0	\$0	\$56,700
d) Train materials	\$6,000	\$0	\$0	\$6,000
Sub-total	\$444,545	\$0	\$0	\$444,545
3. Vehicle maintenance				
a) Spare parts and tires	\$200,678	\$0	\$0	\$200,678
b) Tools	\$6,000	\$0	\$0	\$6,000
c) Per diem	\$13,500	\$0	\$168,480	\$181,980
d) Vehicle maint.: (oil change, spark plugs)	\$73,723	\$0	\$0	\$73,723
Sub-total	\$293,901	\$0	\$168,480	\$462,381
Sub-total Component III:	\$2,007,569	\$0	\$168,480	\$2,176,049
Inflation and Contingencies: 15%	\$301,135	\$0	\$25,272	\$326,407
TOTAL COMPONENT III	\$2,308,705	\$0	\$193,752	\$2,502,457

COMPONENT IV: Summary Budget.

PROJECT MANAGEMENT and PERSONNEL

1. Project Management

a) Project Administrative Unit

- 1. Consultants
- 2. Office Equipment

	\$527,990	\$0	\$0	\$527,990
	\$40,000	\$0	\$0	\$40,000

b) Management Information:

- Printing of Supervisory guides and reports

	\$30,000	\$0	\$4,500	\$34,500
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c) Project Evaluation

	\$235,000	\$0	\$0	\$235,000
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Sub-total

	\$832,990	\$0	\$4,500	\$837,490
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2. GOG Support Personnel for EPI Channeling

a) Central level

	\$0	\$0	\$288,846	\$288,846
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b) Area level

	\$0	\$0	\$671,820	\$671,820
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c) District level

	\$0	\$0	\$4,811,400	\$4,811,400
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Sub-total

	\$0	\$0	\$5,772,066	\$5,772,066
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Sub-total Component IV

	\$832,990	\$0	\$5,776,566	\$6,609,556
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Inflation and Contingencies: 15%

	\$124,949	\$0	\$866,485	\$991,433
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TOTAL COMPONENT IV

	\$957,939	\$0	\$6,643,051	\$7,600,989
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SUMMARY:

	AID	OTHER DONORS	GOG	TOTAL
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TOTAL COMPONENT I

	\$2,932,744	\$25,927	\$458,644	\$3,417,315
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TOTAL COMPONENT II

	\$500,613	\$763,323	\$997,247	\$2,261,182
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TOTAL COMPONENT III

	\$2,308,705	\$0	\$193,752	\$2,502,457
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TOTAL COMPONENT IV

	\$957,939	\$0	\$6,643,051	\$7,600,989
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TOTAL ALL COMPONENTS:

	\$6,700,000	\$789,250	\$8,292,694	\$15,781,943
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ANNEX III.9

PROJECT COSTS DETAIL BY COMPONENT, ACTIVITY AND CUPRENCIES
DETALLE DE COSTOS DEL PROYECTO POR COMPONENTE, ACTIVIDAD Y MONEDAS

IMMUNIZATION CHILD SURVIVAL PROJECT
PROYECTO DE IMMUNIZACION/SUPERVIVENCIA INFANTIL
(US DOLLARS/DOLARES DE LOS ESTADOS UNIDOS)

AID

COMPONENTS/INPUTS COMPONENTES/INSUMOS	YEAR 1 1ER AÑO		YEAR 2 2NDO AÑO		YEAR 3 3ER AÑO		TOTAL TOTAL	
	FX	LC	FX	LC	FX	LC	FX	LC
	ME	ML	ME	ML	ME	ML	ME	ML
<u>I. Training, Promotion & Supervision/Capacitación, Promoción y Supervisión</u>								
Transport and Per Diem/ Transporte y Viáticos	-	258,446	-	577,995	-	675,525	-	1,511,966
Materials and Supplies/ Materiales y Suministros	-	326,564	-	340,586	-	301,434	-	968,584
Evaluations/Evaluaciones	-	39,200	-	21,600	-	4,000	-	64,800
Salaries/Salarios	4,000	-	-	-	-	-	4,000	-
SUBTOTAL	4,000	624,210	-	940,181	-	980,959	4,000	2,545,350
<u>II. Cold Chain, Vaccines & Supplies/Cadena Fría, Vacunas y Suministros</u>								
Equipment/Equipo	213,471	11,550	-	-	-	-	213,471	11,550
Kerosene/Kerosene	-	65,390	-	70,098	-	74,806	-	210,294
SUBTOTAL	213,471	76,940	-	70,098	-	74,806	213,471	221,844
<u>III. Vehicles & Transport & Cold Maintenance/Vehículos y Transporte & Mantenimiento Frío</u>								
Equipment/Equipo	567,032	-	-	-	-	-	567,032	-

COMPONENTS/INPUTS COMPONENTES/INSUMOS	YEAR 1 1ER AÑO		YEAR 2 2NDO AÑO		YEAR 3 3ER AÑO		TOTAL TOTAL	
	FX	LC	FX	LC	FX	LC	FX	LC
	ME	ML	ME	ML	ME	ML	ME	ML
Fuel/Combustible	-	213,024	-	237,181	-	251,885	-	702,091
Materials/Materiales	-	6,000	-	-	-	-	-	6,000
Spare Parts & Tools/ Repuestos y Herramien- tas	307,382	-	138,871	-	142,270	-	588,523	-
Maintenance/Mantenimiento	-	16,995	-	27,066	-	29,662	-	73,723
Per Diem/Viáticos	-	23,400	-	23,400	-	23,400	-	70,200
SUBTOTAL	874,414	259,419	138,871	287,647	142,270	304,947	1,155,555	852,013
IV. <u>Project Management & Personnel/Administración del Proyecto y Personal</u>								
Salaries/Salarios	139,990	136,000	80,000	86,000	-	86,000	219,990	308,000
Equipment/Equipo	40,000	-	-	-	-	-	40,000	-
Materials/Materiales	-	15,000	-	10,000	-	5,000	-	30,000
Evaluations/Evaluaciones	-	10,000	30,000	60,000	75,000	60,000	105,000	130,000
SUBTOTAL	179,990	161,000	110,000	156,000	75,000	151,000	364,990	468,000
V. <u>Contingencies/Impre- vistos</u>	192,451	166,207	34,991	218,694	34,991	479,704	262,433	612,344
TOTAL (FX/LC)	1,464,326	1,287,776	283,862	1,672,620	252,261	1,991,416	2,000,449	4,699,551
GRAND TOTAL (FX + LC)	2,752,102		1,956,482		1,991,416		6,700,000	

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OTHER DONORS/OTROS DONANTES

COMPONENTS/INPUTS COMPONENTES/INSUMOS	YEAR 1 1ER AÑO		YEAR 2 2NDO AÑO		YEAR 3 3ER AÑO		TOTAL TOTAL	
	FX	LC	FX	LC	FX	LC	FX	LC
	ME	ML	ME	ML	ME	ML	ME	ML
<u>I. Training, Promotion & Supervision/Capacitación, Promoción y Supervisión</u>								
Salaries/Salarios	5,500	-	8,500	-	6,250	-	20,250	-
Per Diem/Viáticos	540	=	1,080	=	675	=	2,295	=
SUBTOTAL	6,040	=	9,580	=	6,925	=	22,545	=
<u>II. Cold Chain, Vaccines & Supplies/Cadena Fría, Vacunas y Suministros</u>								
Vaccines/Vacunas	95,017	-	187,428	-	171,314	-	453,759	-
Supplies/Suministros	35,000	=	90,000	=	85,000	=	210,000	=
SUBTOTAL	130,017	=	277,428	=	256,314	=	663,759	=
<u>III. Vehicles & Transport & Cold Maintenance/Vehículos y Transporte & Mantenimiento Frío</u>	-	-	-	-	-	-	-	-
<u>IV. Project Management & Personnel/Administración del Proyecto y Personal</u>	-	-	-	-	-	-	-	-
<u>V. Contingencies/Imprevistos</u>	20,589		43,237		39,120		102,946	
TOTAL (FX/LC)	156,646		330,245		302,359		789,250	
GRANT TOTAL (FX/LC)	156,646		330,245		302,359		789,250	

GOVERNMENT OF GUATEMALA (GOG)/GOBIERNO DE GUATEMALA (GDG)

<u>COMPONENTS/INPUTS</u> <u>COMPONENTES/INSUMOS</u>	<u>YEAR 1</u> <u>1ER AÑO</u>		<u>YEAR 2</u> <u>2NDO AÑO</u>		<u>YEAR 3</u> <u>3ER AÑO</u>		<u>TOTAL</u> <u>TOTAL</u>	
	<u>FX</u>	<u>LC</u>	<u>FX</u>	<u>LC</u>	<u>FX</u>	<u>LC</u>	<u>FX</u>	<u>LC</u>
	<u>ME</u>	<u>ML</u>	<u>ME</u>	<u>ML</u>	<u>ME</u>	<u>ML</u>	<u>ME</u>	<u>ML</u>
<u>I. Training, Promotion & Supervision/Capacitación, Promoción y Supervisión</u>								
Salaries/Salarios	-	<u>90,698</u>	-	<u>151,548</u>	-	<u>156,575</u>	-	<u>398,821</u>
SUBTOTAL	-	90,698	-	151,548	-	156,575	-	398,821
<u>II. Cold Chain, Vaccines & Supplies/Cadena Fría, Vacunas y Suministros</u>								
Electricity/Electricidad	-	85,248	-	93,773	-	103,150	-	282,171
Vaccines/Vacunas	<u>150,000</u>	-	<u>150,000</u>	-	<u>150,000</u>	-	<u>450,000</u>	-
Supplies/Suministros	<u>30,000</u>	<u>15,000</u>	<u>30,000</u>	<u>15,000</u>	<u>30,000</u>	<u>15,000</u>	<u>90,000</u>	<u>45,000</u>
SUBTOTAL	180,000	100,248	180,000	108,773	180,000	118,150	540,000	327,171
<u>III. Vehicles & Transport & Cold Maintenance/Vehículos y Transporte & Mantenimiento Frío</u>								
Per Diem/Viáticos	-	<u>56,160</u>	-	<u>56,160</u>	-	<u>56,160</u>	-	<u>168,480</u>
SUBTOTAL	-	56,160	-	56,160	-	56,160	-	168,480
<u>IV. Project Management & Personnel/Administración del Proyecto y Personal</u>								
Salaries/Salarios	-	<u>1,008,852</u>	-	<u>2,083,182</u>	-	<u>2,680,032</u>	-	<u>5,772,066</u>
Material/Material	-	<u>1,500</u>	-	<u>1,500</u>	-	<u>1,500</u>	-	<u>4,500</u>
SUBTOTAL	-	1,010,352	-	2,084,682	-	2,681,532	-	5,776,566

COMPONENTES/INPUTS COMPONENTES/INSUMOS	YEAR 1 1ER AÑO		YEAR 2 2NDO AÑO		YEAR 3 3ER AÑO		TOTAL TOTAL	
	FX	LC	FX	LC	FX	LC	FX	LC
	ME	ML	ME	ML	ME	ML	ME	ML
V. <u>Contingencies/Imprevis- tos</u>	21,633	205,515	21,633	356,946	21,683	454,296	64,899	1,016,757
TOTAL FX/LC	201,633	1,462,973	201,633	2,758,109	201,633	3,466,713	604,899	7,687,795
GRAND TOTAL FX/LC	1,664,606		2,959,742		3,668,346		8,292,694	

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ANEXO III.10/ANNEX III.10

RESUMEN DE LOS COSTOS DEL PROYECTO
SUMMARY PROJECT COSTS

(En US\$)
(IN US\$)

	<u>AÑO 1/YEAR 1</u>			<u>AÑO 2/YEAR 2</u>			<u>AÑO 3/Year 3</u>			<u>AÑO 4/Year 4</u>		
	<u>Foreign Exchange/ Morada Extranjera</u>	<u>Local Currency/ Morada Local</u>	<u>Total</u>									
VID	1,464,326	1,287,776	2,752,102	283,862	1,672,620	1,956,482	252,261	1,739,155	1,991,416	2,000,449	4,699,551	6,700,000
trons/ others	156,646	-	156,646	330,245	-	330,245	302,359	-	302,359	789,250	-	789,250
deG/ OG	<u>201,633</u>	<u>1,462,973</u>	<u>1,664,606</u>	<u>201,633</u>	<u>2,758,109</u>	<u>2,959,742</u>	<u>201,633</u>	<u>3,466,713</u>	<u>3,668,346</u>	<u>604,899</u>	<u>7,687,795</u>	<u>8,292,694</u>
total	1,822,605	2,750,749	4,573,354	815,740	4,430,729	5,246,469	756,253	5,205,868	5,962,121	3,394,598	12,387,346	15,781,944

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Immunization/Child Survival Project

ANNEX III.11

PROCUREMENT PLAN

<u>Component/Item</u>	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Total</u>	<u>Payment Procedure</u>	<u>Purchasing Procedure</u>	<u>Type of Currency</u>
Component 1							
Training, Supervision and Promotion							
1. TRAINING							
a. Central level training for Guatemala City staff; Area Chiefs, EPI Coordinators, Statisticians and Mechanics (Per diem, materials, supplies and transport costs)	\$16,036	\$5,753	\$1,393	\$23,182	I	I and/or II	Q.
b. Area level training for Area Health personnel and mechanics (Per diem, materials, supplies and transport costs)	\$12,040	\$21,840	\$13,650	\$47,530	I	I and/or II	Q.
c. District and Post level training for Health personnel, promoters and midwives (Per diem, materials, supplies and transport costs)	\$85,248	\$143,288	\$89,555	\$318,091	I	I and/or II	Q.
Sub-Total	\$113,324	\$170,881	\$104,598	\$388,803			
2. PROMOTION							
a. Radio Production and Broadcasting	\$125,800	\$182,200	\$239,900	\$547,800	I	I and/or II	Q.
b. Graphics Production and Printing	\$141,500	\$117,500	\$37,000	\$296,000	I	I and/or II	Q.
c. Research and Evaluation	\$39,200	\$21,600	\$4,000	\$64,800	I and 2	III	Q. and US\$
d. Training	\$15,000	\$0	\$0	\$20,250	I	I and/or II	Q.
e. Promotional Materials	\$20,250	\$0	\$0	\$20,250	I	I and/or II	Q.
Sub-Total							

<u>Component/Item</u>	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Total</u>	<u>Payment Procedure</u>	<u>Purchasing Procedure</u>	<u>Type of Currency</u>
1. SUPERVISION							
a. Supervision/Per diem costs at Central, Area and District level	\$51,840	\$138,880	\$207,480	\$398,200	1	---	Q.
b. Per diem costs for Health workers carrying out channelling at the field level	\$121,296	\$309,120	\$388,080	\$818,496	1	---	Q.
Sub-Total	\$173,136	\$448,000	\$595,560	\$1,216,696			
Sub-Total Component I	\$628,210	\$940,181	\$980,958	\$2,549,349			
Inflation and Contingencies: 15%	\$94,562	\$141,358	\$147,475	\$383,395			
TOTAL COMPONENT I	\$722,772	\$1,081,539	\$1,128,433	\$2,932,744			

Component II

Cold Chain, Vaccines and Supplies

COLD CHAIN EQUIPMENT AND FUEL
(KEROSENE)

Cold Chain Equipment (e.g. Freezers, Refrigerators, Cold boxes, Thermometers)	\$225,021	\$0	\$0	\$225,021	3	III	US\$
Kerosene	\$65,390	\$70,098	\$74,806	\$210,294	1	III	Q.
Sub-Total	\$290,411	\$70,098	\$74,806	\$435,315			

VACCINES AND SUPPLIES*

DHS will purchase part of these inputs with regularly funds assigned in the National Budget; most of the vaccines and related supplies will be purchased PAHO with US dollars to be granted by UNICEF and ROTARY CLUB.

<u>Component/Item</u>	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Total</u>	<u>Payment Procedure</u>	<u>Purchasing Procedure</u>	<u>Type of Currency</u>
Sub-total Component II	\$290,411	\$70,098	\$74,806	\$435,315			
Inflation and Contingencies: 15%	\$43,562	\$10,515	\$11,221	\$65,297			
TOTAL COMPONENT II	\$333,973	\$80,613	\$86,027	\$500,613			
Component III							
Vehicles and Transport and Cold Chain Maintenance							
1. TRANSPORT							
a. Vehicles (4 wheel drive vehicles, Boats, Motorcycles)	\$567,032	\$0	\$0	\$567,032	3	III	US\$
b. Fuel for Training, Supervision, Channelling and Maintenance	\$213,024	\$237,181	\$251,885	\$702,091	1	III	Q.
Sub-Total	\$780,057	\$237,181	\$251,885	\$1,269,123			
2. COLD CHAIN MAINTENANCE							
a. Spare parts	\$161,512	\$80,754	\$80,754	\$323,020	3	III	US\$
b. Tools	\$58,825	\$0	\$0	\$58,825	3	III	US\$
c. Per diem	\$18,900	\$18,900	\$18,900	\$56,700	1	---	Q.
d. Train materials	\$6,000	\$0	\$0	\$6,000	1	I and/or II	Q.
Sub-Total	\$245,237	\$99,654	\$99,654	\$444,545			
3. VEHICLE MAINTENANCE							
a. Spare parts and tires	\$81,045	\$58,117	\$61,516	\$200,678	I and 3	II and III	Q. and US\$
b. Tools	\$6,000	\$0	\$0	\$6,000	3	III	US\$

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<u>Component/Item</u>	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Total</u>	<u>Payment Procedure</u>	<u>Purchasing Procedure</u>	<u>Type of Currency</u>
d. Vehicle maint.: (oil charge, spark plugs)	\$16,995	\$27,066	\$29,662	\$73,723	I	I	Q.
Sub-Total	\$108,540	\$89,683	\$95,678	\$293,901			
Sub-Total Component III	\$1,133,834	\$426,518	\$447,217	\$2,007,569			
Inflation and Contingencies: 15%	\$170,075	\$63,978	\$67,083	\$301,135			
TOTAL COMPONENT III	\$1,303,909	\$490,496	\$514,300	\$2,308,705			
Component IV							
Project Management and Personnel							
I. PROJECT MANAGEMENT							
a. Project Administrative Unit							
1. Consultants	\$275,990	\$166,000	\$86,000	\$527,990	4	III	US\$
2. Office Equipment	\$40,000	\$0	\$0	\$40,000	I or 3	II and/or III	Q. and US\$
b. Management Information							
Printing of Supervisory guides and reports	\$15,000	\$10,000	\$5,000	\$30,000	I or 2	III	Q.
c. Project Evaluation	\$10,000	\$90,000	\$135,000	\$235,000	4	III	US\$
Sub-Total	\$340,990	\$266,000	\$226,000	\$832,990			
Inflation and Contingencies: 15%	\$51,149	\$39,900	\$33,900	\$124,949			
TOTAL COMPONENT IV	\$392,139	\$305,900	\$259,900	\$957,939			
TOTAL COMPONENTS	\$2,752,792	\$1,958,548	\$1,988,660	\$6,700,000			

Keys: Payment Procedure

1. Reimbursement procedure
2. Direct reimbursement
3. AID purchasing Agent
4. AID/G Contract
5. H.C. Contract

Purchasing Procedure

- I. Quotations
- II. Open Contract
- III. Bid

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GOS will procure part of these inputs through the open contract system with its own funds.

ANNEX III.12

G06: INCREMENTAL COSTS ANALYSIS

PROJECT COMPONENT	YEAR 1		YEAR 2		YEAR 3	
	BUDGETED	ADDITIONAL	BUDGETED	ADDITIONAL	BUDGETED	ADDITIONAL
1. TRAINING AND SUPERVISION						
a) Central level seminar						
Participant (salary) (year 1:20 persons, year 2:10, year 3:10)						
40 central personnel x \$40 x 1 day (year 1:8 persons, year 2:8, year 3:5)	\$800		\$400		\$400	\$400
21 area chief x \$40 x 1 day	\$320		\$320		\$200	\$200
Per diem for trainees (year 1:8 persons, year 2:8, year 3:5)						
21 area chief x \$20 x 1 day						
b. AREA EPI COORDINATOR TRAINING SEMINARS						
Trainers (salary)						
2 Epidemiology x 5 days x \$40	\$400		\$400		\$400	\$400
1 Human resources x 2 days x \$25	\$50		\$50		\$50	\$50
1 Maintenance x 3 days x \$25	\$75		\$75		\$75	\$75
Per diem for trainees (year 1:8 persons, year 2:11, year 3:6)						
25 persons x 5 days x \$20						
c. AREA STATISTICIAN TRAINING						
Trainer (salary) (year 1: 8 areas, year 2: 8, year 3:5)						
1 central level x 2 days x \$40 x 21 areas	\$640		\$640		\$400	\$400
Trainees (salary) (year 1:8 persons, year 2:8, year 3:5)						
21 Statistician x 2 days x \$13	\$208		\$208		\$130	\$130
Per diem for trainees (year 1:8 persons, year 2:8, year 3:5)						
21 Statisticians x 2 days x \$20						

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606: INCREMENTAL COSTS ANALYSIS

PROJECT COMPONENT	YEAR 1		YEAR 2		YEAR 3		YEAR 4	
	BUDGETED	ADDITIONAL	BUDGETED	ADDITIONAL	BUDGETED	ADDITIONAL	BUDGETED	ADDITIONAL
d) TRAIN AREA MAINTENANCE								
1. Training Cold Chain (salary)								
(year 1:3 courses, year 2:1)								
1 engineer x 5 days x \$25								
	\$375			\$125				
2 technicians x 5 days x \$15								
	\$450			\$150				
21 trainees x 5 days x \$15 per die								
2. Training in vehicle maintenance								
(year 1:3 courses, year 2:1)								
1 engineer x 4 days x \$25								
	\$300			\$100				
2 technicians x 4 days x \$15								
	\$360			\$120				
e. AREA LEVEL SEMINAR								
Trainers (salary)								
3 Epidemiology x 3 days x \$40								
	\$1,440			\$2,880		\$1,800		\$1,800
1 Maintenance x 3 days x \$40								
	\$480			\$960		\$600		\$600
Per diea for trainers								
3 Epidemiology x 3 days x \$20								
1 Maintenance x 3 days x \$20								
Per diea for trainees								
9 district x 4 persons x 3 days x \$20								
(year 1:4 areas, year 2:8, year 3:5)								
f. DISTRICT AND HEALTH POST LEVEL TRAINING								
Area level trainers (salary)								
9 district x 4 persons x 4 days x \$30								
	\$17,280			\$34,560		\$21,600		\$21,600
(year 1:4 areas, year 2:8, year 3:5)								
Per diea for trainers								
9 district x 4 persons x 4 days x \$20								
(year 1:4 areas, year 2:8, year 3:5)								
Per diea for trainees								
30 posts x 2 persons x 3 days x \$15								
(year 1:4 areas, year 2:8, year 3:5)								

GOS: INCREMENTAL COSTS ANALYSIS

PROJECT COMPONENT	YEAR 1		YEAR 2		YEAR 3		YEAR 4	
	BUDGETED	ADDITIONAL	BUDGETED	ADDITIONAL	BUDGETED	ADDITIONAL	BUDGETED	ADDITIONAL
g. PROMOTOR TRAINING								
Trainers (salary) (year 1:4 areas, year 2:8, year 3:5)								
30 courses x 1 district trainer								
		x 1 day x \$ 17	\$2,040		\$4,080		\$2,550	
30 courses x 1 Health post assistant								\$2,550
		trainer x 2 days x \$ 13	\$3,120		\$6,240		\$3,900	
								\$3,900
Per diem for trainers (year 1:4 areas, year 2:8, year 3:5)								
30 courses x 1 district trainer								
		x 1 day x \$ 15						
h. TRADITIONAL MIDWIFE TRAINING								
Trainers (salary) (year 1: 4 areas, year 2:8, year 3:5)								
30 district x 1 trainer x 1 day x \$17			\$2,040		\$4,080		\$2,550	
30 district x 1 Health post assistant								\$2,550
		trainer x 2 days x \$13	\$3,120		\$6,240		\$3,900	
								\$3,900
Per diem for trainers (year 1: 4 areas, year 2:8, year 3:5)								
30 district x 1 district trainer x 1 day x \$15								
i. SUPERVISION								
Central level staff (salary) to area Year 1: 8 areas, year 2: 16, year 3: 21 (5 visits/area per year x \$40 x 2 persons)								
			\$3,200		\$6,400		\$8,400	
								\$8,400
Per diem Central level Year 1: 8 areas, year 2: 16, year 3: 21 5 visits/area per year x \$20 x 2 persons								
								\$4,200
Area level to districts (salary) Year 1: 8 areas, year 2: 16, year 3: 21 9 districts x 4 visits/year x 2 persons								
		x \$30	\$17,280		\$34,560		\$45,360	
								\$45,360
Per diem area to district Year 1: 8 areas, year 2: 16, year 3: 21 9 districts x 3 visits/year x 2 persons								
		x \$20						

606: INCREMENTAL COSTS ANALYSIS

PROJECT COMPONENT	YEAR 1		YEAR 2		YEAR 3		YEAR 4	
	BUDGETED	ADDITIONAL	BUDGETED	ADDITIONAL	BUDGETED	ADDITIONAL	BUDGETED	ADDITIONAL
<hr/>								
j. DISTRICT STAFF TO HEALTH POSTS (salary) Year 1: 8 areas, year 2: 16, year 3: 21 3 visits per year per area 2 district persons x \$17 x 30 post visits	\$36,720		\$48,960		\$64,260		\$64,260	
Per diem: 3 visits per year per area Year 1: 8 areas, year 2: 16, year 3: 21 2 district persons x \$20 x 30 post visits								\$75,600
k. SUPERVISION/LOGISTICS/EPI (per diem) Year 1: 8 areas, year 2: 16, year 3: 21 Year 1: 8 EPI Coord. Year 2: 19, year 3: 25 x \$20 x 10 days/man								\$105,000
l. CHANNELING FIELD WORK (per diem) Year 1: 8 areas, year 2: 16, year 3: 21 Year 1: 361 persons, year 2: 920, year 3: 1155 4 days x 12 months x \$7.00 (50¢/per diem)								\$388,080
Sub-total	\$90,698	\$0	\$151,548	\$0	\$156,575	\$0	\$156,575	\$595,560
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2. PROMOTION								
1 Station x 52 programs x \$500								\$30,000
Printing								
Pamphlets								\$5,000
Posters								\$9,000
Vaccination Cards								\$10,000
Bracelets for children with complete vaccination								\$30,000
5,000 Certificates for promoters x \$0.05								\$250
SUB-TOTAL	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$84,250
<hr/>								
3. COLD CHAIN								
Kerosene								
Year 1: 2 gal x 52 weeks x \$1.25 x 503 Refrig								
Year 2: 2 gal x 52 weeks x \$1.34 x 503 refrig								
Year 3: 2 gal x 52 weeks x \$1.43 x 503 refrig								\$74,806
Electric energy								
Year 1: 12 months x 592 refrig. x \$12.00								
Year 2: 12 months x 592 refrig. x \$13.20								
Year 3: 12 months x 592 refrig. x \$14.52	\$85,248	\$0	\$93,773	\$0	\$103,150	\$0	\$103,150	\$0
SUB-TOTAL	\$85,248	\$0	\$93,773	\$0	\$103,150	\$0	\$103,150	\$74,806

606: INCREMENTAL COSTS ANALYSIS

PROJECT COMPONENT	YEAR 1		YEAR 2		YEAR 3		YEAR 4	
	BUDGETED	ADDITIONAL	BUDGETED	ADDITIONAL	BUDGETED	ADDITIONAL	BUDGETED	ADDITIONAL
4. TRANSPORT								
FUEL								
Training								
Train area chief								
Year 1:	8 areas x 1 trip x 400 miles/15MPG							
		x \$3.10 gallon						
Year 2:	8 areas x 1 trip x 400 miles/15MPG							
		x \$3.41 gallon						
Year 3:	5 areas x 1 trip x 400 miles/15MPG							
		x \$3.75 gallon						\$500
Train area level seminar								
Year 1:	4 areas x 1 trip x 400 miles/15MPG							
		x \$3.10 gallon						
Year 2:	8 areas x 1 trip x 400 miles/15MPG							
		x \$3.41 gallon						
Year 3:	5 areas x 1 trip x 400 miles/15MPG							
		x \$3.75 gallon						\$500
District and Health post level training								
Year 1:	4 areas x 1 trip x 9 districts							
		x 200 miles/15MPG x \$3.10 gallon						
Year 2:	8 areas x 1 trip x 9 districts							
		x 200 miles/15MPG x \$3.41 gallon						
Year 3:	5 areas x 1 trip x 9 districts							
		x 200 miles/15MPG x \$3.75 gallon						\$2,250
Supervision								
Central level								
Operational Diagnosis								
Year 1:	4 areas x 1000 miles/15MPG x \$3.10							
Year 2:	8 areas x 1000 miles/15MPG x \$3.41							
Year 3:	5 areas x 1000 miles/15MPG x \$3.75							\$1,250
Central level to Areas								
Year 1:	21 areas x 5 trips x 400 miles/15MPG							
		x \$3.10 gallon						
Year 2:	21 areas x 5 trips x 400 miles/15MPG							
		x \$3.41 gallon						
Year 3:	21 areas x 5 trips x 400 miles/15MPG							
		x \$3.75 gallon						\$10,500

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606: INCREMENTAL COSTS ANALYSIS

PROJECT COMPONENT	YEAR 1		YEAR 2		YEAR 3		YEAR 4	
	BUDGETED	ADDITIONAL	BUDGETED	ADDITIONAL	BUDGETED	ADDITIONAL	BUDGETED	ADDITIONAL
Area to Districts								
Year 1: 21 areas x 9 districts x 9 trips x 100-miles/15MPG x \$3.10 galon								
Year 2: 21 areas x 9 districts x 9 trips x 100 miles/15MPG x \$3.41 galon								
Year 3: 21 areas x 9 districts x 9 trips x 100 miles/15MPG x \$3.75 galon								\$42,525
District to posts								
Year 1: 21 areas x 30 posts x 3 trips x 150 miles/15MPG x \$3.10 galon								
Year 2: 21 areas x 30 posts x 3 trips x 150 miles/15MPG x \$3.41 galon								
Year 3: 21 areas x 30 posts x 3 trips x 150 miles/15MPG x \$3.75 galon								\$70,875
Promotion								
Year 1: 21 areas x 3 trips x 400 miles/15MPG x \$3.10 galon								
Year 2: 21 areas x 3 trips x 400 miles/15MPG x \$3.41 galon								
Motorcycle TSR (channeling)								
Year 1: 21 areas x 30 posts x 5 trips x 150 miles/60MPG x \$3.15 galon								
Year 2: 21 areas x 30 posts x 5 trips x 150 miles/60MPG x \$3.46 galon								
Year 3: 21 areas x 30 posts x 5 trips x 150 miles/60MPG x \$3.81 galon								\$30,004
Boats TSR (channeling)								
Year 1: 4 boats x 144 trips x 3 hrs x 16PH x \$3.10 galon								
Year 2: 4 boats x 144 trips x 3 hrs x 16PH x \$3.41 galon								
Year 3: 4 boats x 144 trips x 3 hrs x 16PH x \$3.75 galon								\$6,480

606: INCREMENTAL COSTS ANALYSIS

PROJECT COMPONENT	YEAR 1		YEAR 2		YEAR 3		YEAR 4	
	BUDGETED	ADDITIONAL	BUDGETED	ADDITIONAL	BUDGETED	ADDITIONAL	BUDGETED	ADDITIONAL
Motorcycle maintenance								
Year 1: 21 areas x 30 posts x 3 trips								
x 100 miles/60MPG x \$3.15 gallon								
x 100 miles/60MPG x \$3.81 gallon								\$12,002
Supervision and logistics EPI								
Year 1: 10 days x 25 EPI Cord x 100 miles/								
15MPG x 12 x \$3.10 gal								
Year 2: 10 days x 25 EPI Cord x 100 miles/								
15MPG x 12 x \$3.41 gal								
Year 3: 10 days x 25 EPI Cord x 100 miles/								
15MPG x 12 months x \$3.75 gal								\$75,000
SUB-TOTAL	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$251,885
5. MAINTENANCE								
Cold Chain								
Central level								
Audivisual Training Material								
Spare parts								\$24,318
Area level								
Spare parts								\$56,436
Maintenance per die								
180 days x 21 technicians x \$15 (60d/y)								\$18,900
Vehicle maintenance								
Central tools autoshop								
Vehicle spare parts								
Motorcycle spare parts								\$21,750
Boats spare parts								\$3,450
Maintenance services: vehicles								\$600
Year 1: 29 vehicles x 5 services x \$75								\$18,270
Year 2: 29 vehicles x 7 services x \$82								
Year 3: 29 vehicles x 7 services x \$90								
Vehicle Maintenance								
Motorcycles								
Year 1: 46 motorcycles x 4 services x \$30								
Year 2: 46 motorcycles x 6 services x \$33								
Year 3: 46 motorcycles x 6 services x \$36								\$9,936

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606: INCREMENTAL COSTS ANALYSIS

PROJECT COMPONENT	YEAR 1		YEAR 2		YEAR 3		YEAR 4	
	BUDGETED	ADDITIONAL	BUDGETED	ADDITIONAL	BUDGETED	ADDITIONAL	BUDGETED	ADDITIONAL
Boats								
Year 1: 4 boats x 2 services x \$75								
Year 2: 4 boats x 4 services x \$82								
Year 3: 4 boats x 4 services x \$91								\$1,456
Tires vehicles								
Year 1: 29 vehicles x 5 tires x \$165								
Year 2: 29 vehicles x 5 tires x \$181								
Year 3: 29 vehicles x 5 tires x \$200								\$29,000
Tires motorcycles								
Year 1: 46 motorcycles x 2 tires x \$60								
Year 2: 46 motorcycles x 2 tires x \$66								
Year 3: 46 motorcycles x 2 tires x \$73								\$6,716
Maintenance per diem								
60 days/year x 5 mechanics x \$15								
52 maintenance technician (personnel)								
x 300/mos x 36 mos x 30% time								\$4,500
	\$56,160		\$56,160		\$56,160		\$56,160	
SUB-TOTAL	\$56,160	\$0	\$56,160	\$0	\$56,160	\$0	\$56,160	\$195,332
6. VACCINES and SUPPLIES								
Vaccines *	\$150,000		\$150,000		\$150,000		\$120,000	
Needles and Syringes *	\$30,000		\$30,000		\$30,000		\$70,000	
Polio Vaccine **							\$26,229	
Cotton, alcohol	\$15,000		\$15,000		\$15,000		\$15,000	
*: UNICEF **: ROTARY								
SUB-TOTAL	\$195,000	\$0	\$195,000	\$0	\$195,000	\$0	\$231,229	\$0
7. PROJECT MANAGEMENT								
c. Management information								
foras information system, supervision								
guide, printing 10,000								
epidemiology report	\$1,500		\$1,500		\$1,500		\$1,500	
SUB-TOTAL	\$1,500	\$0	\$1,500	\$0	\$1,500	\$0	\$1,500	\$0

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606: INCREMENTAL COSTS ANALYSIS

PROJECT COMPONENT	YEAR 1		YEAR 2		YEAR 3		YEAR 4	
	BUDGETED	ADDITIONAL	BUDGETED	ADDITIONAL	BUDGETED	ADDITIONAL	BUDGETED	ADDITIONAL
B. PERSONNEL								
a) Central level								
1 Project Director x \$800/mos. x 36 mos x 50% time	\$4,800		\$4,800		\$4,800		\$4,800	
3 Epidemiologists x \$800/mos. x 20% time	\$5,760		\$5,760		\$5,760		\$5,760	
1 Chief Dept. of Health Education x \$800/mos. x 36 mos x 30% time	\$2,880		\$2,880		\$2,880		\$2,880	
1 Nurse Educator x \$375/mos. x 36 mos x 50% time	\$2,250		\$2,250		\$2,250		\$2,250	
1 Social Worker x \$325/mos. x 36/mos. x 50% time	\$1,950		\$1,950		\$1,950		\$1,950	
3 Health Educators x \$350/mos. x 36 mos. x 50% time	\$6,300		\$6,300		\$6,300		\$6,300	
1 Area Training Supervisor x \$375/mos. x 36 mos. x 50% time	\$2,250		\$2,250		\$2,250		\$2,250	
1 Graphic Artist/Draftsman x \$250/mos. x 36 mos. x 50% time	\$1,500		\$1,500		\$1,500		\$1,500	
SUB-TOTAL	\$27,690		\$27,690		\$27,690		\$27,690	
b) Area Level								
1 Health Area Chief x \$800/mos. x 12 mos. x 20% time x (7,16,21) Areas	\$13,440		\$30,720		\$40,320		\$40,320	
1 Area Nurse Supervisor x \$375/mos. x 20% time x (7,16,21) Areas	\$6,300		\$14,400		\$18,900		\$18,900	
1 Area Maintenance Technician x \$285/mos. x 12 mos. x 65% time x (7,16,21) areas	\$15,561		\$35,568		\$46,683		\$46,683	
1 Area Statistician x \$265/mos. x 12 mos. x 15% time x (7,16,21) Areas	\$3,339		\$7,632		\$10,017		\$10,017	
1 EPI Coordinator x \$375/mos. x 12 mos x (7,16,21) Areas	\$31,500		\$72,000		\$94,500		\$94,500	
SUB-TOTAL	\$70,140		\$160,320		\$210,420		\$210,420	

year 1: 7 Health Areas in Project
year 2: 16 Health Areas in Project
year 3: 21 Health Areas in Project

606: INCREMENTAL COSTS ANALYSIS

PROJECT COMPONENT	YEAR 1		YEAR 2		YEAR 3		YEAR 4	
	BUDGETED	ADDITIONAL	BUDGETED	ADDITIONAL	BUDGETED	ADDITIONAL	BUDGETED	ADDITIONAL
c) District Level								
9 District Chief x \$700/mos. x 12 mos. x 10% time (7,16,21) Areas	\$52,920		\$120,960		\$158,760		\$158,760	
9 District Nurses x \$325/mos. x 12 mos. 15% x (7,16,21) Areas	\$36,855		\$84,240		\$110,565		\$110,565	
27 Auxiliary Nurses (Health Center x \$225 x 12 mos x 55% time x (7, 16, 21) Areas	\$280,665		\$641,520		\$841,995		\$841,995	
9 Rural Health Technicians x \$225/mos. x 12 mos. x 55% time x (7, 16, 21) Areas	\$93,555		\$213,840		\$280,665		\$290,665	
29 Auxiliary Nurses (Health Posts)x\$225/mos x 12 mos. x 55% time x (7, 16, 21) Areas	\$301,455		\$689,040		\$904,365		\$904,365	
SUB-TOTAL	\$765,450		\$1,749,600		\$2,296,350		\$2,296,350	
Community-based health and nutrition system								
Central level *	\$68,592		\$68,592		\$68,592		\$68,592	
Area level *	\$76,980		\$76,980		\$76,980		\$76,980	
Sub-total	\$145,572		\$145,572		\$145,572		\$145,572	
Total: Component Personnel	\$1,008,852		\$2,083,182		\$2,680,032		\$2,680,032	
* See annex # III.33 Personnel of community based health and nutrition system (#520-0251) to support immunization/child survival project								
TOTAL: ALL COMPONENTS	\$1,437,458	\$0	\$2,581,163	\$0	\$3,192,417	\$0	\$3,228,646	\$1,201,833

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ANNEX IV.1

WAIVER FOR PURCHASE OF LIGHT WEIGHT MOTORCYCLES

It is requested that a waiver be processed and approved to allow the procurement of 46 Japanese motorcycles valued at approximately \$69,000. The basis of the proposed waiver is that no U.S. manufacturer makes such a light-weight motorcycle and that service facilities and a supply of spare parts are available for Japanese motorcycles and are not available for U.S. manufactured motorcycles.

The Project is in need of a light-weight 185 cc motorcycle suitable for mountainous terrain. Moreover, motorcycles needed by the Project must have warranty and after-sales service and spare parts available in Guatemala. Mission is aware of no U.S. manufactured light-weight mountain terrain motorcycle that meets the Project needs and that has the necessary service and parts available locally.

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ANNEX V.1

5 C (2) - PROJECT CHECKLIST

Listed below are statutory criteria applicable to projects. This section is divided into two parts. Part A includes criteria applicable to all projects. Part B applies to projects funded from specific sources only: B.1 applies to all projects funded with Development Assistance Funds, B.2 applies to projects funded with Development Assistance loans, and B.3 applies to projects funded from ESF.

CROSS REFERENCES: IS COUNTRY CHECKLIST UP TO DATE? Yes, attached.

HAS STANDARD ITEM CHECKLIST BEEN REVIEWED FOR THIS PROJECT? Yes.

A. GENERAL CRITERIA FOR PROJECT

1. FY 1985 Appropriation Act Sec. 523; FAA Sec. 634A; Sec. 653(b).

(a) Describe how authorizing and appropriations committees of Senate and House have been or will be notified concerning the project; (b) Is assistance within (Operational Year Budget) country or international organization allocation reported to Congress (or not more than \$1 million over that amount)?

a) Congressional notification was submitted to Congress and expired on July 22, 1985

b) Yes

2. FAA Sec. 611(a)(1). Prior to obligation in excess of \$100,000, will there be: (a) engineering, financial or other plans necessary to carry out the assistance and (b) a reasonably firm estimate of the cost to the U.S. of the assistance?

a) Yes

b) Yes

3. FAA Sec. 611(a)(2). If further legislative action is required within recipient country, what is basis for reasonable expectation that such action will be completed in time to permit orderly accomplishment of purpose of the assistance? Not applicable.
4. FAA Sec. 611(b); FY 1982 Appropriation Act Sec. 501. If for water or water-related land resource construction, has project met the standards and criteria as set forth in the Principles and Standards for Planning Water and Related Land Resources, dated October 25, 1973? (See AID Handbook 3 for new guidelines.) Not applicable.
5. FAA Sec. 611(e). If project is capital assistance (e.g., construction), and all U.S. assistance for it will exceed \$1 million, has Mission Director certified and Regional Assistant Administrator taken into consideration the country's capability to maintain and utilize the project effectively? Yes.
6. FAA Sec. 209. Is project susceptible to execution as part of regional or multilateral projects? If so, why is project not so executed? Information and conclusion whether assistance will encourage regional development programs. Not applicable.
7. FAA Sec. 601(a). Information and conclusions whether project will encourage efforts of the country to: (a) Increase the flow of international trade; (b) foster private initiative and competition; and (c) encourage development and use of cooperatives, credit unions, Not applicable.

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and savings and loan associations; (d) discourage monopolistic practices; (e) Improve technical efficiency of industry, agriculture and commerce; and (f) strengthen free labor unions.

8. FAA Sec. 601(b). Information and conclusions on how project will encourage U.S. private trade and investment abroad and encourage private U.S. participation in foreign assistance programs (including use of private trade channels and the service of U.S. private enterprise).

U.S. Private trade will be supported by procurement of goods and services in the U.S.

9. FAA Sec. 612(b), 636(h);
Fy 1982 Appropriation Act Sec. 507. Describe steps taken to assure that, to the maximum extent possible, the country is contributing local currencies to meet the cost of contractual and other services, and foreign currencies owned by the U.S. are utilized in lieu of dollars.

The Government of Guatemala has consistently supported all A.I.D. financed development projects with counterpart necessary to achieve project objectives.

10. FAA Sec. 612(d). Does the U.S. own excess foreign currency of the country and, if so, what arrangements have been made for its release?

No.

11. FAA Sec. 601(e). Will the project utilize competitive selection procedures for the awarding of contracts, except where applicable procurement rules allow otherwise?

Yes.

12. FY 1982 Appropriation Act Sec. 522. If assistance is for the production of any commodity for export, is the commodity likely to be in surplus on world markets at the time the resulting productive capacity becomes

Not applicable.

operative, and is such assistance likely to cause substantial injury to U.S. producers of the same, similar or competing commodity?

13. FAA 118(c) and (d). Does the project comply with the environmental procedures set forth in AID Regulation 16? Does the project or program take into consideration the problem of the destruction of tropical forests?

Yes. The project does not involve construction or alteration of tropical forests.

14. F A 121(d). If a Sahel project, has a determination been made that the host government has an adequate system for accounting for and controlling receipt and expenditure of project funds (dollars or local currency generated therefrom)?

Not applicable

15. FY 1985 Continuing Resolution Sec. 536. Is disbursement of the assistance conditioned solely on the basis of the policies of any multilateral institution?

No.

B. FUNDING CRITERIA FOR PROJECT

1. Development Assistance Project Criteria

a. FAA Sec. 102(b), 111, 113, 281(a). Extent to which activity will (1) effectively involve the poor in development, by extending access to economy at local level, increasing labor-intensive production and the use of appropriate technology, spreading investment out from cities to small towns and rural areas, and insuring wide participation of the poor in the benefits of development on a sustained basis, using the appropriate U.S. institutions; (2)

(1) The poor will be directly involved in project activities as they play an important role in promoting project activities involved in health delivery by facilitating introduction of health service personnel to local community members, orienting promotional technicians to develop culturally appropriate media and by helping to create a community network insuring adequate immunization for rural residents throughout the nation. Self-help efforts are supported as the

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help develop cooperatives, especially by technical assistance, to assist rural and urban poor to help themselves toward better life, and otherwise encourage democratic private and local governmental institutions; (3) support the self-help efforts of developing countries; (4) promote the participation of women in the national economies of developing countries and the improvement of women's status; and (5) utilize and encourage regional cooperation by developing countries?

project includes community involvement through the volunteer networks used for promotion of health activities. Women will be used extensively in project activities as they play a major role in the GOG's health delivery system supported by the project. They will serve as nurses, auxilliary nurses, promoters and midwives which are highly visable positions within the project.

b. FAA Sec. 103, 103A, 104, 105, 106. Does the project fit the criteria for the type of funds (functional account) being used?

Yes.

c. FAA Sec. 107. Is emphasis on use of appropriate technology (relatively smaller, cost-saving, labor-using technologies that are generally most appropriate for the small farms, small businesses, and small incomes of the poor)?

Yes.

d. FAA Sec. 110(a). Will the recipient country provide at least 25% of the costs of the program, project, or activity with respect to which the assistance is to be furnished (or is the latter cost-sharing requirement being waived for a "relatively least developed" country)?

Yes

e. FAA Sec. 110(b). Will grant capital assistance be disbursed for project over more than 3 years? If so, has justification satisfactory to Congress been made, and efforts for other financing, or is the

Grant funds will not finance capital assistance.

recipient country "relatively least developed"? (M.O. 1232.1 defined a capital project as "the construction, expansion, equipping or alternation of a physical facility or facilities financed by AID dollar assistance of not less than \$100,000, including related advisory, managerial and training services, and not undertaken as part of a project of a predominantly technical assistance character".

f. FAA Sec. 122(b).

Does the activity give reasonable promise of contributing to the development of economic resources, or to the increase of productive capacities and self-sustaining economic growth?

Yes. Cost savings should result for the GOG as the project's preventative health measures will lower the rate of illnesses needed to be treated in future years.

g. FAA Sec. 281(b).

Describe extent to which program recognizes the particular needs, desires, and capacities of the people of the country; utilizes the country's intellectual resources to encourage institutional development; and supports civil education and training in skills required for effective participation in government processes essential to self-government.

The project supports a locally initiated health delivery system which builds on existing facilities and existing technical capability.

2. Development Assistance Project Criteria (Loans Only)

a. FAA Sec. 122(b).

Information and conclusion of capacity of the country to repay the loan, at a reasonable rate of interest.

Guatemala has demonstrated its capacity to repay on a timely basis all AID loans.

b. FAA Sec. 620(d). If assistance is for any productive enterprise which will compete with U.S. enterprises, is there an

Not applicable.

agreement by the recipient country to prevent export to the U.S. of more than 20% of the enterprise's annual production during the life of the loan?

c. ISDCA of 1981, Sec. 724(c) and (d). If for Nicaragua, does the loan agreement require that the funds be used to the maximum extent possible for the private sector? Does the project provide for monitoring under FAA Sec. 624 (g)?

Not applicable.

3. Economic Support Fund Project Criteria

a. FAA Sec. 531(a).
Will this assistance promote economic or political stability? To the extent possible, does it reflect the policy directions of FAA Section 102?

Not applicable.

b. FAA Sec. 531(c).
Will assistance under this chapter be used for military, or paramilitary activities?

Not applicable.

c. FAA Sec. 534. Will ESF funds be used to finance the construction of the operation or maintenance of, or the supplying of fuel for, a nuclear facility? If so, has the President certified that such use of funds is indispensable to non-proliferation objectives?

Not applicable.

d. FAA Sec. 609. If commodities are to be granted so that sale proceeds will accrue to the recipient country, have Special Account (counterpart) arrangements been made?

Not applicable.

5c(1) - COUNTRY CHECKLIST

Listed below are statutory criteria applicable generally to FAA funds, and criteria applicable to individual fund sources: Development Assistance and Economic Support Fund.

A. GENERAL CRITERIA FOR COUNTRY ELIGIBILITY

1. FAA Sec. 481; FY 1985 Continuing Resolution Sec. 528. Has it been determined or certified to the Congress by the President that the government of the recipient country has failed to take adequate measures or steps to prevent narcotic and psychotropic drugs or other controlled substances (as listed in the schedules in section 202 of the Comprehensive Drug Abuse and Prevention Control Act of 1971) which are cultivated, produced or processed illicitly, in whole or in part, in such country or transported through such country, from being sold illegally within the jurisdiction of such country to United States Government personnel or their dependents or from entering the United States unlawfully?

Guatemala does take adequate steps to prevent narcotics traffic.

2. FAA Sec. 620(c). If assistance is to a government, is the government liable as debtor or unconditional guarantor on any debt to a U.S. citizen for goods or services furnished or ordered where (a) such citizen has exhausted available legal remedies and (b) the debt is

No.

not denied or contested by such government?

3. FAA Sec. 620(e)(1). If assistance is to a government, has it (including government agencies or subdivisions) taken any action which has the effect of nationalizing, expropriating, or otherwise seizing ownership or control of property of U.S. citizens or entities beneficially owned by them without taking steps to discharge its obligations toward such citizens or entities? No.

4. FAA Sec. 620(a), 620(f), 620(D); FY 1985 Continuing Resolution Sec. 512 and 513. Is recipient country a Communist country? Will assistance be provided to Angola, Cambodia, Cuba, Laos, Syria, Vietnam, Libya, or South Yemen? Will assistance be provided to Afghanistan or Mozambique without a waiver? No.

5. FAA Sec. 620(j). Has the country permitted, or failed to take adequate measures to prevent, the damage or destruction by mob action of U.S. property? No.

6. FAA Sec. 620(1). Has the country failed to enter into an agreement with OPIC? N/A

7. FAA Sec. 620(o); Fishermen's Protective Act of 1967, as amended, Sec. 5. (a) Has the country seized, or imposed any penalty or sanction against, any U.S. fishing activities in international waters? N/A

(b) If so, has any deduction required by the Fishermen's Protective Act been made?

8. FAA Sec. 620(q); FY 1985 Continuing Resolution Sec. 518. (a) Has the government of the recipient country been in default for more than six months on interest or principal of any AID loan to the country? (b) Has the country been in default for more than one year on interest or principal on any U.S. loan under a program for which the appropriation bill (or continuing resolution) appropriates funds?

No.

9. FAA Sec. 620(s). If contemplated assistance is development loan or from Economic Support Fund, has the Administrator taken into account the amount of foreign exchange or other resources which the country has spent on military equipment? (Reference may be made to the annual "Taking Into Consideration" memo: "Yes, taken into account by the Administrator at time of approval of Agency OYB." This approval by the Administrator of the Operational Year Budget can be the basis for an affirmative answer during the fiscal year unless significant changes in circumstances occur.)

The Administrator is expected to approve the FY 1985 Operational Year Budget soon; in doing so will take into account the relevant questions regarding military expenditures as presented in the "Taking into Consideration" memorandum. The "Taking into Consideration" memorandum has been prepared and it includes no information that would cause the Administrator to question the assistance contemplated.

10. FAA Sec. 620(t). Has the country severed diplomatic relations with the United States? If so, have they been resumed and have new bilateral assistance agreements been

No.

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negotiated and entered into since such resumption?

Country is not delinquent.

11. FAA Sec. 620(d). What is the payment status of the country's U.N. obligations? If the country is in arrears were such arrearages taken into account by the AID Administrator in determining the current AID Operational Year Budget? (Reference may be made to the Taking into Consideration memo.)

No.

12. FAA Sec. 620A; FY 1985 Continuing Resolution Sec. 521. Has the country aided or abetted, by granting sanctuary from prosecution to, any individual group which has committed an act of international terrorism? Has the country aided or abetted, by granting sanctuary from prosecution to, any individual or group which has committed a war crime?

No.

13. FAA Sec. 666. Does the country object, on the basis of race, religion, national origin or sex, to the presence of any officer or employee of the U.S. who is present in such country to carry out economic development programs under the FAA?

No.

14. FAA Sec. 669, 670. Has the country, after August 3, 1977, delivered or received nuclear enrichment or reprocessing equipment, materials, or technology, without specified arrangements or safeguards? Has it transferred a nuclear explosive device to a non-nuclear weapon state, or if such a state, either

received or detonated a nuclear explosive device? (FAA Sec. 620E permits a special waiver of Sec. 669 for Pakistan.)

15. ISDCA of 1981 Sec. 720. Was the country represented at the Meeting of Ministers of Foreign Affairs, and Heads of Delegations of the Non-Aligned Countries to the 36th General Assembly of the U.N. of Sept. 25 and 28, 1981, and failed to disassociate itself from the communique issued? If so, has the President taken it into account? (Reference may be made to the Taking into Consideration memo.)

Guatemala was not represented at the meeting.

16. FY 1985 Continuing Resolution. If assistance is from the population functional account, does the country (or organization) include as part of its population planning programs involuntary abortion?

No.

17. FY 1985 Continuing Resolution Sec. 530. Has the recipient country been determined by the President to have engaged in a consistent pattern of opposition to the foreign policy of the United States?

No.

FUNDING SOURCE CRITERIA FOR COUNTRY ELIGIBILITY

1. Development Assistance Country Criteria

No determination has been made of gross violations of human rights.

FAA Sec. 116. Has the Department of State determined that this government has engaged in a consistent pattern of gross violations of internationally recognized human rights? If so, can it

be demonstrated that contemplated assistance will directly benefit the needy?

2. Economic Support fund Country Criteria

FAA Sec. 502B. Has it been determined that the country has engaged in a consistent pattern of gross violations of internationally recognized human rights? If so, has the country made such significant improvements in its human rights record that furnishing such assistance is in the national interest?

No determination has been made of gross violations of human rights.

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LOGICAL FRAMEWORK
IMMUNIZATION/CHILD SURVIVAL
AUGUST 31, 1985 - AUGUST 31, 1988

NARRATIVE SUMMARY	VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p>GOAL: Reduce child morbidity and mortality rates throughout Guatemala from common early childhood diseases.</p>	<p>MEASURE OF GOAL ACHIEVEMENT: Reduction in proportion of childhood mortality (0-4 years old) attributable to the vaccine preventable diseases (except tuberculosis) to ranges of 0.5 to 10 per 100,000 inhabitants by the year 2,000.</p>	<p>MOH statistics (specifically MOH Census Diagnostic Surveys).</p>	<p>Project results will be measured against current target population estimates. Improvements in disease surveillance system are likely to result in apparent higher proportional morbidity and mortality rates thus changing the proportion of the target population receiving benefits as estimated in the goal statement.</p>
<p>PURPOSE: Increase to 80% immunization coverage for children less than five years of age and pregnant mothers with completed vaccination series and living outside the department of Guatemala by September, 1988.</p>	<p>Epidemic cycles of measles and poliomyelitis eliminated.</p> <p>Eradication of indigenous transmission of poliovirus</p> <p>END OF PROJECT STATUS: MOH system vaccinates up to 80% of children less than 5 years of age residing in areas covered by channelling (i.e. completing their vaccination series tuberculosis, polio, diphtheria, pertussis, tetanus, and measles).</p>	<p>MOH statistics (specifically MOH Census Diagnostic Surveys).</p>	<p>Channelling as a mode of immunization service delivery will improve acceptance of immunizations and will increase utilization of health services.</p>
<p>12/88</p>	<p>Up to 80% of pregnant women residing in areas covered by channelling will receive two doses of TT during their pregnancy</p>	<p>Volunteer network will be available and effective in convincing the population of need for vaccination series.</p>	

NARRATIVE SUMMARY	VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
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National immunization program carried out on a regularly scheduled basis to protect children against immunopreventable diseases.

OUTPUTS:

1. Increase access to immunization services in project areas.	100% of current MOH outpatient facilities (185 Health Centers, and 625 Health Posts) will vaccinate any child in need at any visit.	MOH records and quarterly evaluation survey.	MOH budget for channelling program is sufficient.
- In GDHS fixed facilities.	Home visit and neighborhood vaccination occurs at least three times per year in the project area.	MOH records and quarterly evaluation survey.	MOH provides full level of administrative support.
- At community level by GDHS Auxilliary Nurses and Rural Health Technicians(RHTs).	Household based coverage surveys conducted by auxiliary nurses.	Household based coverage surveys conducted by auxiliary nurses.	
2. Improved detection of disease information system.	Complete monthly reporting from 29 hospitals, 185 Health Centers, and 624 Health Posts.	Records maintained by Project Administrative Unit.	
3. Improved GDHS statistics and supervision system.	Quarterly visits to all Health Areas and monthly visits to all Health Centers.	Records maintained by Project Administrative Unit.	
.4. Improved performance of operative GDHS level health personnel in immunization service delivery.	Number of children less than one year old completing vaccination series reaches 278,000 during 1988.	Project Coverage Surveys.	

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NARRATIVE SUMMARY	VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
	Number of children 1-4 years old completing vaccination series reaches 840,000 during 1988.	Project Coverage Surveys.	
	Number of pregnant women vaccinated during 1988 reaches 264,000.	Project Coverage Surveys.	
5. Improved knowledge of populace regarding immunization.	Change in response towards parents seeking immunization services for their children.	Knowledge attitudes and practices (KAP) studies.	

INPUTS

	<u>U.S.</u>	<u>GOG</u>	<u>Other Donor</u>
1. Training Supervision and Promotion*	2,932,744	458,644	25,927
2. Cold Chain, Vehicles and Supplies*	500,012	997,247	763,323
3. Transportation Vehicle and Cold Chain Maintenance*	2,308,705	195,752	0
4. Project Management, Technical Assistance, and Personnel*	957,939	6,643,051	0

MOH shall submit a detailed Project Implementation Plan, a Procurement Plan, and written approval of staff and material transfer from project 520-0255.

*Inflation and Contingency of 15% included

AGENCY FOR INTERNATIONAL DEVELOPMENT
WASHINGTON, D C 20523

ANNEX V.3

LAC/DR-IEE-85-57

ENVIRONMENTAL THRESHOLD DECISION

Project Location : Guatemala

Project Title and Number : Immunization/Child Survival
: 520-0339

Funding : \$3,000,000

Life of Project : Three years

IEE Prepared by : LAC/DR

Recommended Threshold Decision : Negative Determination

Bureau Threshold Decision : Concur with Recommendation

Comments : None

Copy to : Charles Costello, Director
USAID/Guatemala

Copy to : Carol Dabbs, LAC/DR

✓ Copy to : Lars Klassen, LAC/DR

Copy to : IEE File

James S. Hester Date AUG 26 1985

James S. Hester
Chief Environmental Officer
Bureau for Latin America
and the Caribbean

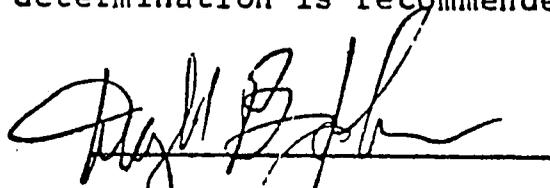
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INITIAL ENVIRONMENTAL EXAMINATION

Project Description: Through the provision of commodities (vaccines, supplies, equipment and vehicles), technical assistance and training, the capability of the Ministry of Health (MOH) to provide increased immunization services will be strengthened to allow vaccination coverage of 80% of children and infants. More specifically, the Project will promote increased knowledge on immunization and ORT through an intense mass media health education program; will strengthen the MOH transport and cold chain systems and maintenance of related equipment; will expand training programs for MOH staff in relevant disciplines; and will improve the MOH management information system.

Environmental Impact: While this project aims to improve health care in Guatemala, it will not involve activities such as health facility construction, water supply system development or waste water treatment which might affect the environment. Project activities will otherwise have a positive impact on health environment for the general populace, however.

Recommendation: Based on strong assurances that no activities under this project will have negative, nonreversible impacts on the environment, a negative determination is recommended.



Dwight B. Johnson
Director
Office of Development Resources
Bureau for Latin America
and the Caribbean

OPHP

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CONSEJO NACIONAL DE
PLANIFICACION ECONOMICA
Guatemala, C. A.

002232

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ANNEX V.4

Necessary Action Appropriate
Handling

NUMERO	_____
CLASIFICACION	DCT-694-85

Si se refiere al número y clasificación de esta nota

Due Date _____

Date Routed 7/10/85 by ASD

Guatemala,
8 de julio de 1985
Dr. Chang
Mr. Andriano
Action
CB

Señor
Charles E. Costello
Director de AID
Ciudad de Guatemala

Señor Director:

Tengo el agrado de dirigirme a usted para referirme al proyecto de Inmunización PID Supervivencia de la Niñez, identificado por esa Agencia con el número 520-0339, el cual cubre una de las siete áreas comprendidas en el Plan de Necesidades Prioritarias de Salud en Centroamérica y Panamá, al cual los países de la región están dando especial atención.

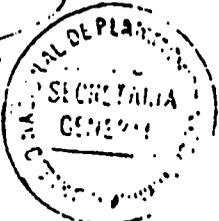
La vigencia de dicho proyecto, al permitir extender la inmunización a toda la República como un componente básico de la salud, por medio del sistema de "Canalización", permitirá alcanzar las metas del MSPAS en inmunización previstas en el Plan de Acción de dicho Ministerio.

La técnica de vacunación identificada, incidirá en uno de los campos de la patología infantil que responde en forma más inmediata a las acciones, llevando los niveles de defensa contra las enfermedades comprendidas en el proyecto (tuberculosis, poliomiélitis, difteria, tos ferina, tétano y sarampión), con base en los 29 hospitales, 187 centros de salud y 611 puestos de vacunación del MSPAS; promoviéndose desde ya entre sus resultados inmediatos una reducción en los gastos de tratamiento y rehabilitación de las enfermedades correspondientes, en relación a lo requerido en años precedentes.

Con base en lo anterior, agradeceré al Señor Director de AID en Guatemala que el proyecto de Inmunización PID Supervivencia de la Niñez, No. 520-0339 se ponga en vigencia a su más pronta conveniencia.

Sin otro particular, aprovecho la ocasión para reiterarle las muestras de mi consideración y estima,

Leonel Hernández Cardona
Lic. Leonel Hernández Cardona
Secretario General



LH/LFLB/adela

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ACTION MEMORANDUM

TO: Mr. Charles E. Costello/Director

THROUGH: Mr. Edward Baker/CPDSO

FROM: Mr. Lawrence Odle/PDSO

DATE: August 27, 1985

ACTION:

Your approval is requested for a grant of \$6,700,000 from Section 10.4 of the Foreign Assistance Act of 1961 for health appropriations to Guatemala for the Immunization/Child Survival Project 520-0339. It is planned that a total of \$3,300,000 will be obligated in FY 1985.

DISCUSSION:

The Project is designed to provide support to the MOH to increase its capacity for service delivery with existing staff and facilities. The Project seeks to reorient and motivate health personnel to work directly in communities on a house-to-house basis and to increase awareness of the importance of community interaction as a means to identify the at-risk population, to promote acceptance on the part of parents of immunizations for their children, and to make immunization services readily available at all times at health posts. This will be done by providing technical assistance and funding for the strengthening of existing health services which are related to the immunization program.

The goal of this Project is to reduce infant child morbidity and mortality from the early childhood communicable diseases. The Project purpose is to increase up to eighty percent vaccination coverage for tuberculosis, polio, diphtheria, pertussis (whooping cough), tetanus, and measles for children under five years of age and pregnant women who live outside of the department of Guatemala by the end of the Project, August 1988. This will be done by a three-pronged approach: (1) where houses are close together health workers and community collaborators will map and visit houses to identify the population at risk, followed immediately by application of the vaccines; (2) in areas not covered by house visiting because the population is very dispersed, the population will be motivated to assemble in pre-determined sites for immunization of their children (both of the two approaches will be done not less than three times annually so

that the immunization series can be completed within one year); and (3) all health facilities will offer immunization services routinely.

WAIVERS:

An origin waiver from Geographic Code 000 to purchase 46 185 cc motorcycles from Geographic Code 899 with approximately \$65,000 in grant funds is required. Since this procurement is above the \$50,000 vehicle origin waiver limit which can be authorized by the Mission Director, AID/W will be required to approve the requested waiver.

JUSTIFICATIONS TO THE CONGRESS:

Congressional Notification expired on July 22, 1985 (State Cable 260341)

RECOMMENDATION:

That you approved the proposed project and sign the attached Project Authorization.

Approved



Charles E. Costello/Director/USAID/Guatemala

Disapproved

Charles E. Costello/Director/USAID/Guatemala

Date: August 27, 1985

Attachments:

1. Project Authorization
2. Project Paper

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