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UNCLASSIFIED

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

GUATEMALA

PROJECT PAPER

IMMUNIZATION AND ORAL REHYDRATION THERAPY
SERVICES FOR CHILD SURVIVAL PROJECT

AMENDMENT NUMBER 3

AID/LAC/P-821

PROJECT NUMBER: 520-0339

UNCLASSIFIED

PROJECT DATA SHEET

TRANSACTION CODE

A = Add
 C = Change
 D = Delete

Amendment Number

3

DOCUMENT CODE

3

2. COUNTRY/ENTITY

Guatemala

3. PROJECT NUMBER

520-0339

4. BUREAU/OFFICE

LAC

5. PROJECT TITLE (maximum 40 characters)

Immunization & ORT Services for Child Surv

6. PROJECT ASSISTANCE COMPLETION DATE (PACD)

MM DD YY
 08 27 95

7. ESTIMATED DATE OF OBLIGATION
 (Under 'B' below, enter 1, 2, 3, or 4)

A. Initial FY 93

B. Quarter

C. Final FY 93

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

A. FUNDING SOURCE	FIRST FY 87			LIFE OF PROJECT		
	B. FX	C. L/C	D. Total	E. FX	F. L/C	G. Total
AID Appropriated Total	6,718		6,718	19,418	-	19,418
(Grant)	(6,718)	(-)	(6,718)	(19,418)	(-)	(19,418)
(Loan)	(-)	(-)	(-)	(-)	(-)	(-)
Other U.S. 1.						
Other U.S. 2.						
Host Country						
Other Donor(s)						
TOTALS						

9. SCHEDULE OF AID FUNDING (\$000)

A. APPROPRIATION	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) DA				13,918		3,000		16,918	
(2) ESF				2,500				2,500	
(3)									
(4)									
TOTALS				16,418		3,000		19,418	

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

11. SECONDARY PURPOSE CODES

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

A. Code
 B. Amount

13. PROJECT PURPOSE (maximum 480 characters)

Increased MOH capacity especially at the health area level, to manage and deliver child survival services (EPI, ORT & ARI).

14. SCHEDULED EVALUATIONS

Interim MM YY MM YY Final MM YY
 0 7 9 5

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 PP Amendment.)

Increase Grant Funding by \$3 million in DA funds; Extend the Project Assistance Completion Date from September 30 1994 to August 27, 1995; Add control of "ARI" as a fifth component; Revise the Project monitoring and evaluation strategy.

I certify that the methods of payment and audit plans are in compliance with the verification policy.

Gary Byllesby
 Gary Byllesby/Controller

17. APPROVED BY

Signature
 Terrence J. Brown
 Title
 Mission Director

Date Signed
 MM DD YY
 06 09 93

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

MM DD YY

PROJECT AUTHORIZATION AMENDMENT No. 3

Name of Country: Guatemala

Name of Project: Immunization and Oral Rehydration Therapy
Services for Child Survival Project

NUMBER OF PROJECT: 520-0339

1. Background. Pursuant to Section 104 of the Foreign Assistance Act of 1961, as amended, the Immunization and Oral Rehydration Therapy Services for Child Survival Project was authorized on August 27, 1985 (the "Authorization"), at an original Life of Project funding level ("LOP") of \$6,700,000 in grant funds, to be expended over a 3 year period from the date of the initial obligation. The Authorization was amended on June 24, 1986 to increase the authorized LOP to \$9,700,000 and to extend the Project Assistance Completion Date ("PACD") to August 27, 1988. The Authorization was further amended on August 28, 1987 to increase the LOP to \$16,418,000, to extend the PACD to December 31, 1991 and to include additional conditions precedent to disbursement for the Ministry of Health/Information and Management Activities.
2. Additional Funding. I hereby authorize an additional \$3,000,000 in grant funding pursuant to Section 104 of the Foreign Assistance Act of 1961, as amended, for a new LOP of not to exceed \$19,418,000. The planned PACD is hereby extended to August 27, 1995.
3. Source and Origin of Commodities/Nationality of Providers. Paragraph B of the Authorization is hereby amended to replace the reference to "Guatemala" with "Central American Common Market Countries." In addition, the following sentence is added: "Air travel and transportation to and from the United States financed under the Project shall be upon certified U.S. flag carriers to the extent such carriers are available within the meaning of the U.S. Fly America Act."

Authorization Amendment No.3
Project 520-0339
May 21, 1993
Page No. 2

4. Conditions and Covenants. Section E and F, Conditions Precedent to Disbursement and Covenants, are deleted in their entirety.

Approved [Signature] Date 6/9/93

Disapproved _____ Date _____

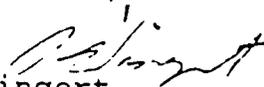
Drafted:	PDSO, SALvarado	<u>[Signature]</u>	Date	<u>05/20/93</u>
Clearance:	PDSO, TDelaney	<u>[Signature]</u>	Date	<u>5/21/93</u>
	OH&E, PO'Connor	<u>[Signature]</u>	Date	<u>5/21/93</u>
	OH&E, GCook	<u>[Signature]</u>	Date	<u>5/21/93</u>
	RLA, CBrown	<u>by fax</u>	Date	<u>05/20/93</u>
	CONT, GByllesby	<u>[Signature]</u>	Date	<u>6/7/93</u>

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ACTION MEMORANDUM FOR THE MISSION DIRECTOR

Date: May 21, 1993

FROM: C/PDSO, Elizabeth Warfield 

THROUGH: DDIR, Stephen C. Wingert 

SUBJECT: Authorization Amendment: Immunization and Oral Rehydration Therapy Services for Child Survival Project (520-0339)

Action Requested: That you approve the Project Paper and Authorization Amendments for the referenced Project to: 1) increase the Life of Project funding level from \$16,418,000 to \$19,418,000; 2) extend the Project Assistance Completion Date (PACD) from September 30, 1994 to August 27, 1995; and 3) add a new component for Control of Acute Respiratory Infections ("ARI").

Background: The Immunization/Child Survival Project was authorized in August 1985 as a \$6.5 million, three-year Project. The goal of the Project was to reduce infant and child mortality and morbidity caused by the six most common immuno-preventable diseases in Guatemala (diphtheria, pertussis, tetanus, polio, measles, and tuberculosis). In 1986, Amendment No. 1 increased LOP funding by \$3.0 million, extended the PACD by one year, and added an Oral Rehydration Component to the Project. The following year, Amendment No. 2 increased LOP funding by more than \$6.7 million, extended the planned life of project to six years and four months from the date of initial obligation, and broadened the Project focus to include enhancing and strengthening the Ministry of Health's (MOH) capacity to manage and deliver child survival services.

Based on findings of a February 1990 audit report, the Mission suspended the Project on March 16, 1990. Although the suspension was lifted in June 1991, virtually all project activities ceased until June 1992, when USAID/Guatemala contracted Clapp and Mayne (C&M) to provide technical assistance to support the development of the MOH's accounting, administrative and financial management system. At this time, the PACD was also extended to August 1993 to allow for implementation of Phase One of this contract. Finally on August 20, 1993, the PACD was extended to September 30, 1994, to allow the completion of activities designed to develop a sustainable ORS production facility at LAPROMED.

Under this PP Amendment a fifth Project Component (Control of Acute Respiratory Infections -ARI-), will be added, and funding will be provided for the implementation of the second phase of the Clapp and Mayne contract. In order to accomplish new ARI objectives and complete the Project's institutional strengthening activities, LOP funding will be increased by \$3.0 million (to a total of \$19.418 million), \$841,726 repaid by the MOH to the Project as a result of the above-mentioned audit will be reprogrammed, and the PACD will be extended for an additional year (to a ten year LOP).

Discussion: The Project Paper Amendment was reviewed on May 5, 1993. Below is a summary of the issues discussed at the meeting, the decisions made based on these discussions, and the revisions that were subsequently made to the draft PP Amendment.

1. Addition of the ARI Control Component

While activities under the new ARI component will begin just two years before the PACD, they will be implemented in only 8-10 health areas of the country as an "ARI pilot experience." These efforts will result in the development of a model for standard case management and reporting that the MOH can expand after the Project ends. The Charge will be advised of the Mission's intent to contract a long-term advisor under this component.

2. Recurrent Costs

In order to ensure the sustainability of project activities, including ARI interventions, the Grant Agreement Amendment will outline a clear strategy for transferring the responsibility for covering recurrent costs to the MOH. As part of this plan, all recurrent costs under the Project will be financed through counterpart contributions by the final year of the Project (1995).

3. Reprogramming of Previously Obligated Funds

Of the \$841,726 in reprogrammed funds, \$151,726 will be used for A.I.D. direct contracts and an additional \$690,000 of reprogrammed funds will be added to the Clapp and Mayne contract. These funds will finance an expatriate technical advisor in child survival, a local ARI expert, the implementation of ARI activities, certain operations research activities, and ongoing Project monitoring and evaluation activities. The obligation of the additional reprogrammed funds under the C&M contract will be made through a second amendment to that contract after the add-on is advertised in the CBD.

4. Other Donors

Given the Mission's intent to terminate its direct involvement in child survival interventions after the PACD of this Project, the PP Amendment has been edited to include a clear discussion of the anticipated role of other donors as A.I.D. withdraws from this area and the policy agenda that the Mission will pursue during the final years of this Project. This policy agenda will promote institutionalization of Project achievements. It will be designed to ensure that issues related to child survival and based on the Mission's experience are shared with other donors, and that their activities, as much as possible, will fill any gap created by A.I.D.'s withdrawal.

5. Counterpart Contributions

The Agreement Amendment will include counterpart commitments by the GOG that are both auditable and reasonable. While the GOG is prepared to make a significant resource commitment as part of this Amendment, final negotiations may result in a lesser amount than the approximately \$11.0 million cited in the PP Amendment.

6. Audits

Since the major contractor under the Project is a U.S. firm, it is not anticipated that any audits will be financed with project funds. However, in order to ensure available funding in the event that the Mission chooses to audit counterpart funds, \$10,000 will be set aside under the MOH Agreement (and not put into the C&M Contract) for audits.

7. LAPROMED

The Mission will work closely with the MOH and the San Carlos University (USAC) to establish an appropriate reporting system for the financial and quality control aspects of LAPROMED's activities following the completion of the PATH Contract. It is expected that, at least in the short term, the system should include quarterly reports. Some appropriate agreement, such as a tripartite memorandum of understanding between the MOH, USAC and the Mission, will be signed outlining the ongoing responsibilities of each signatory.

Waivers: A waiver for other than full and open competition to allow the addition of \$690,000 to the Clapp and Mayne contract will be prepared.

Action Memorandum for the Director
May 21, 1993
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Drafted: PDSO, SAlvarado	<u><i>SAlvarado</i></u>	Date	<u>05.10.93</u>
Clearance: PDSO, TDelaney	<u>TED</u>	Date	<u>5/11/93</u>
OH&E, PO' Connor	<u><i>PO' Connor</i></u>	Date	<u>5/11/93</u>
OH&E, GCook	<u><i>GCook</i></u>	Date	<u>7.1.93</u>
RLA, CBrown	by fax	Date	<u>5/21/93</u>
CONT, GByllesby	<u><i>g</i></u>	Date	<u>5/21/93</u>

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PROJECT PAPER AMENDMENT
IMMUNIZATION AND ORAL REHYDRATION THERAPY
SERVICES FOR CHILD SURVIVAL
PROJECT No. 520-0339

June, 1993

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ACRONYMS

AID	Agency for International Development
ARI	Acute Respiratory Infection
BCG	Bacillus Calmette Guerin
CP	Conditions Precedent
CMR	Child Mortality Rate
DHS	Demographic and Health Survey
DPT	Diphtheria Pertusis and Tetanus
EEC	European Economic Community
EOPS	End of Project Status
EPI	Expanded Program for Immunization
FY	Fiscal Year
GOG	Government of Guatemala
GTB	Technical Advisory Group
H/MIS	Health Management Information System
IGSS	Guatemalan Social Security System
IMR	Infant Mortality Rate
INCAP	Nutrition Institute of Central America and Panama
LOP	Life of Project
MCH	Maternal Child Health Division
MOH	Ministry of Health
MOF	Ministry of Finance

MSH	Management Sciences for Health
NGOs	Non Governmental Organizations
ORS	Oral Rehydration Salts
ORT	Oral Rehydration Therapy
ORU	Oral Rehydration Units
PACD	Project Assistance Completion Date
PHC	Primary Health Care
PAHO	Pan American Health Organization
PATH	Program for Appropriate Technology in Health
PP	Project Paper
PROAG	Project Agreement
REACH	Resources for Child Health Division
SO	Strategic Objective
SCM	Standard Case Management
TFR	Total Fertily Rate
TSR	Rural Health Technician
UNICEF	United Nations Children's Fund
URO	Oral Rehydration Units
USAID	United States Agency for International Development
WHO	World Health Organization

I. Summary of Project Amendment

A. Overview

The activities proposed under this Project Paper Amendment do not represent a radical reorientation of the Child Survival Project. To the contrary, this Amendment allows the Project to concentrate resources and activities on two of the project's four ongoing components (the Health/Management Information System (H/MIS) and Improved Administration and Financial Management), to improve the Project's monitoring and evaluation strategy and to increase the availability of technical expertise in the design and management of child survival programs. The PP Amendment also adds a fifth component, Control of Acute Respiratory Infections (ARI), the leading killer of Guatemalan children. These revisions to the PP will allow the child survival Project to maximize its contribution to Mission's strategic objective (SO) Smaller, Healthier Families.

On the one hand, given the Mission's planned phase-out of child survival in 1995, this amendment will allow greater emphasis on strengthening the management and financial capabilities of the 24 health areas to administer primary health care programs. The intent of emphasizing decentralization of functions to the health areas is to allow AID to leave the child survival sector with increased confidence that the MOH may maintain adequate levels of immunization and oral rehydration therapy (ORT) coverage and, consequently, lowered rates of child and infant mortality. On the other hand, the addition of the ARI component will permit the project to achieve greater reductions in the infant mortality rate (IMR) and child mortality rate (CMR) than immunizations and ORT alone. In Guatemala, ARI is now the leading cause of infant morbidity and mortality (see Tables 1 and 2 in Annex 6).

The objectives of this amendment are: 1) to extend the Project Assistance Completion Date (PACD) from September 30, 1994, to August 27, 1995; 2) to increase Life of Project (LOP) funding by US\$ 3,000,000 to US\$19,418,000; 3) to add "Control of ARI" as a fifth project component; and 4) to revise the Project monitoring and evaluation strategy. In order to effect these changes the Mission will amend its contract with Clapp and Mayne (C&M) to include two additional technical advisors (an expatriate and a local expert), to add the ARI research and training activities, and to increase funds for ongoing Project monitoring activities. A sole source waiver to amend the existing contract is justified based on Clapp and Mayne's unique implementation ability. As part of its contract, Clapp and Mayne has established a field presence in the 24 health areas in Guatemala, giving the company unique capability to implement and monitor the ARI component and the new monitoring and evaluation strategy.

1. Change the PACD

Based on the approval of the PP Amendment, the PACD of the project will be extended to August 27, 1995, completing a ten year LOP. The extension of the PACD will permit the Mission to: 1) fund the second phase of its contract with C&M (July 1, 1993 through August 27, 1995) to support the consolidation of improvements in immunization and ORT coverage and

improvements in the H/MIS and management capability, and 2) develop and implement for two years a series of activities to reduce the burden of ARI infections in selected health areas of Guatemala. The Mission's contract with PATH to develop the capacity for local production, distribution and promotion of ORS will end as scheduled at the end of FY 94 and no contract modifications are indicated as a result of this PP Amendment.

2. Increase LOP Funding by US\$3,000,000 and Reprogram \$690,000 of Previously Obligated Funds.

The Mission will obligate US\$3,000,000 to the Ministry of Health, raising the LOP grant funds to US\$19,418,000. This FY93 obligation will provide US\$2,745,371 for Phase II of the Clapp and Mayne contract, a US\$100,000 for a buy-in for technical assistance and quality control for ARI and ORT to the RD/H BASICS Project. An additional US\$144,629 will be reserved for studies including the final Project evaluation in June-July, 1995, and US\$10,000 for counterpart audits.

An additional US\$841,726 of previously obligated funds will be reprogrammed. US\$ 151,726 will be used for additional activities at the health area level related to 1) training in the use of the health/management information system and 2) training of local health technicians in the maintenance and repair of the cold chain, and 3) purchase of spare parts for the cold chain. An additional US\$690,000 will be added to the Clapp and Mayne contract as follows: US\$450,000 for an additional expatriate technical advisor in child survival to manage the EPI, ORT and ARI components; US\$40,000 to contract a local ARI/child survival expert; US\$ 75,000 for local ARI implementation activities; US\$50,000 for operations research activities; and US\$75,000 for ongoing Project monitoring and evaluation activities at the health area level.

3. Addition of the ARI Control Component

This PP Amendment proposes the addition of a fifth project component, the control of acute respiratory infections. The ARI Component will be implemented in two phases. The first phase includes intensive background research and training to implement a pneumonia control program in 4 priority health areas (June 1993- December 1994). Phase two will build on the implementation experience and lessons learned in the first four health areas, and extend pneumonia control activities to 4 to 6 additional health areas (August 1994 - August 1995). By the PACD, the Project will have a proven, cost-effective model that can be incorporated by the MOH (and other donors) into the national health delivery system.

4. Revised Project Monitoring and Evaluation Plan

This PP Amendment proposes three basic changes to the monitoring and evaluation plan for the Project. First, since the Mission will conduct a nationally representative Demographic and Health Survey (DHS) in late 1993, it is not reasonable to conduct another national coverage survey 18 months later in mid-1995 when this Project ends. It is reasonable to carry out small, low-cost regional studies (cluster samples) of immunization and ORT coverage throughout the

remainder of the Project to monitor more intensely progress toward coverage targets. The final evaluation will focus on progress toward the objectives of the H/MIS component and Administrative Improvement Components. The final evaluation will ascertain how well the H/MIS and administrative systems are functioning, especially at the health area level. The final evaluation will also ascertain overall MOH institutional capacity to manage and deliver child survival services, focusing in particular on technical and administrative capability to maintain immunization and ORT coverage levels achieved by the Project and to implement a national ARI control program. The final evaluation will be contracted directly by USAID/Guatemala.

The second proposed change is to add limited additional funding to the Clapp and Mayne contract to increase its monitoring responsibilities. As part of Component C (H/MIS), the contractor will conduct the small scale coverage studies referred to above. The studies will provide current information on immunization and ORT coverage and provide a necessary source of data to verify the quality of the health information system.

The third proposed modification to the plan is to add monitoring and evaluation activities for the ARI component.

II. The Smaller, Healthier Families Strategic Objective

A. Overview of SO To Date

Health problems in Guatemala are among the most severe in Latin America. High infant and maternal mortality rates result from poor sanitary conditions, widespread malnutrition, a chronically under-funded and inefficient public health system, and low access to and use of modern health services. The Mission's strategic objective (SO), "Smaller, Healthier Families" addresses these problems by supporting the Ministry of Health (MOH) and non-governmental organizations in their efforts to lower infant and child mortality and to reduce the total fertility rate.

The SO flagship project is the Family Health Services Project which has been designed to (a) continue expanding family planning and maternal health services, (b) assume a more aggressive role in policy dialogue and reform, and (c) conduct operations research to identify service delivery approaches that will be effective in rural, predominantly Mayan areas of the country. In addition to this effort in reproductive health, the SO comprises two other emphasis projects: Immunization and ORT for Child Survival, and Highlands Water and Sanitation. By 1997, the Mission plans to phase out of both child survival and water/sanitation to more fully concentrate its resources on reproductive health and family planning.

The Mission has been active in the area of child survival since 1985, with the overall goal of reducing infant mortality through the promotion of selected high impact child health interventions. The Mission's strategy includes support for four major interventions: a) increasing immunization coverage of six immuno-preventable childhood diseases (DPT, polio, BCG, measles) plus tetanus in women of reproductive age, b) increased use of oral rehydration therapy, c) development and use of health/management information systems, and d) the improvement of management capacity in the Ministry of Health. Implementation of project activities supports the decentralization of the MOH to the country's 24 Health Areas, particularly in the areas of financial management and administration.

B. Relationship of ARI Component to SO

As part of this PP supplement, the Mission is adding a fifth component to its child survival strategy: control of acute respiratory infections (ARI). Acute Respiratory Infection (ARI) is the primary cause of reported morbidity and mortality in Guatemalan infants and the second most frequently reported cause of death in children aged 1 to 4 years. Testimony to the positive impact of the past decade's diarrheal disease control efforts, this change in the mortality pattern represents a new, and as yet poorly recognized, challenge for public health programs.

To date, USAID/Guatemala's bilateral child survival project has focused on reducing infant and child mortality from the five immunizable diseases and from diarrhea. The addition of an ARI or pneumonia control effort at this time is the logical next step towards improving the health and survival of Guatemala's more than 1.7 million infants and young children.

Not only is the need for pneumonia control intervention clear, it is also more feasible now than ever before. During the past three years, on the basis of studies conducted around the world, WHO has defined an ARI control strategy that is not only more effective and less costly than earlier strategies, but it has also been shown to be appropriate and safe when treatment is provided at the community level.

The revised WHO guidelines for ARI standard case management, which were introduced in 1991, focus on pneumonia--the category of ARI that most frequently leads to death in infants and young children. Gone (or greatly reduced in emphasis) are the previous concerns with common colds and other non-life-threatening forms of ARI, and respiratory rate cutoff points have been increased (based on intervention trials in a number of developing countries) to make diagnosis and treatment guidelines more specific to pneumonia and less wasteful of scarce antibiotics. The use of these new guidelines is expected to result in improved diagnosis and treatment of pneumonia, reduced costs to the client and the health system, and more rational prescription of antibiotics and other drugs for pneumonia and non-pneumonia.

The pneumonia control objectives and activities that will be supported through this Project Amendment build on immunization and diarrheal disease control components that are currently in place. Moreover, it will employ the same decentralized, Health Area-focused approach. And to the degree possible, pneumonia control training, operations research, information systems and evaluation activities will be integrated with those of the diarrheal disease control and immunization components at the Area level.

There exists a natural synergy between immunization, diarrheal disease and pneumonia control efforts that this project will exploit. For example, immunization against measles, diphtheria and pertussis is the only preventive measure against pneumonia that is currently feasible worldwide. An estimated 25% of all pneumonia deaths could be prevented through simply increasing immunization coverage. Moreover, both diarrheal disease and pneumonia control depend on similar changes in knowledge, skills and actions--e.g. early detection of signs and symptoms, rapid response on the part of families and health workers, treatment using low-cost, appropriate technologies that can be made readily available at the community level, a functioning referral system for treatment of severe disease, and information and quality control systems that permit the continual detection and correction of problems by those closest to them in the service delivery system.

Unlike immunization and diarrheal disease, which have been the focus of attention for some time in Guatemala, little is currently known about the organization and supply of ARI services in the country (i.e., knowledge and practices of health providers and performance of support systems) or about the population's perceptions and behaviors in relation to ARI and the ARI services available in the public sector. There is clearly much to learn and the pneumonia control component of this project will afford an excellent opportunity for such learning to take place. The activities suggested below take maximum advantage of opportunities for operations research that could lead to improved pneumonia SCM, increased access to low-cost antibiotics, and more effective management of project resources. MOH personnel will be involved in the planning and

execution of such project research in order to enhance their problem-solving capacity and to encourage their commitment to corrective actions at the local level.

By addressing one of the most important remaining causes of child morbidity and mortality and by strengthening the ability of the national Maternal Child Health directorate and the local Health Areas to address this problem, the pneumonia control component will significantly contribute to USAID's objective of smaller, healthier families and to the Project's stated purpose of enhancing and strengthening the Ministry of Health's capacity to manage and deliver all child survival services.

C. Future Directions

The Mission uses three performance indicators to monitor achievement of the SO, total fertility rate (TFR), infant mortality rate (IMR), and child mortality rate (CMR). The child survival project has a direct impact on both IMR and CMR. Between now and the 1995 phase-out from child survival activities, the Mission expects to have continued impact on the reduction of IMR and CMR. The project's emphasis on technical assistance to the MOH in the areas of cold chain, transportation, accounting and financial management, epidemiological surveillance, and ORS production and distribution may set the stage to maintain lower mortality levels beyond 1995. During the recent project suspension, the MOH demonstrated that it was still incapable of maintaining solid immunization and ORT programs without AID support. During suspension from 1990 and 1991, measles vaccination coverage fell by 30% and DPT and Polio by about 10%.

In August, 1995, ten years of USAID/Guatemala support for the Immunization and ORT for Child Survival Project will end. The Mission will remain involved in child survival through a large reproductive health project. Birth spacing and safe motherhood initiatives will continue to have a direct impact on infant mortality rates. Furthermore, two parallel processes are underway in the public sector that will permit the Government of Guatemala (GOG)/MOH to improve child survival investments. First, the GOG is expected to increase its support for the social sectors, especially primary health care in rural areas, where mortality rates are highest. Second, AID and other donors will provide technical assistance to the Ministries of Health and Finance to improve the percentage of allocated budget that is actually expended. In 1992, the 24 health areas, on average, spent only 30% of their allocated budgets. These interrelated processes will increase the locally available resources for child health investments. It is also important to note that the World Bank and the Inter-American Development Bank are planning to make a large health sector loan to the GOG to support MOH reorganization and decentralization. No specific child survival interventions are planned as part of the new project assistance under this loan.

AID has solid worldwide experience in child survival support, especially in the areas of EPI, ORT and ARI. If gains made in these three areas in Guatemala are to be maintained, new donors will have to take a more aggressive role. Otherwise, it is unlikely that gains made to date in Guatemala in the area of child survival can be sustained and improved upon.

During the final two years of this Project, the Mission will implement a two-tiered strategy to work with other donors to promote institutionalization of Project results. First, the Mission will work closely with those donors that have continuous in-country presence and are well positioned to provide additional technical assistance to the MOH in the area of child survival. The two most critical donors in this category are the Pan American Health Organization (PAHO) and UNICEF. Second, the Mission will step up its policy dialogue with the World Bank and the International Development Bank (IDB), especially around the upcoming health sector reform program to be financed as part of a joint World Bank/IDB loan to Guatemala. The specific dimensions of these two approaches are outlined below.

Coordination with PAHO and UNICEF

USAID is the largest contributor of technical assistance to the MOH for the implementation of child survival programs. The USAID Project is impact oriented and has pushed the MOH far more aggressively than other donors to improve its capacity to deliver child survival interventions. A key focus of this strategy includes the decentralization of planning and administrative functions to the 24 health areas. If the gains made by the MOH under the Project are to be sustained in the long term, other donors must be willing in the future to monitor child survival indicators and ORT coverage levels. It is important that USAID transfer, to the extent possible, its vision and strategy to PAHO and UNICEF so they are well positioned by the end of the Project to provide ongoing technical assistance to the MOH. The most effective way to achieve this outcome is to work closely with PAHO and UNICEF in all Project components during the final two years.

Over the past several months, USAID and PAHO have made renewed efforts to coordinate assistance to the MOH in the area of H/MIS. USAID is providing support to the MOH to develop the H/MIS for the 24 health areas; PAHO is active in developing a H/MIS for the hospital sector. The two donor agencies are coordinating their efforts to ensure compatibility of software and systems and to avoid duplication of efforts. UNICEF is working with the MOH health promoters to improve data collection efforts at the community level; these efforts are increasingly coordinated with the USAID Project. UNICEF and USAID are developing a plan to integrate community-level data into the HIS at the health area level. Later this year, the Project will sponsor the first inter-agency workshop on donor coordination around the H/MIS.

Both PAHO and UNICEF are active in the areas of immunizations and to a lesser degree ORT and control of ARI. USAID will use the interagency Maternal/Child Health (MCH) Committee chaired by the head of the MOH's MCH Department as the principle ongoing mechanism for coordination of donor assistance and transfer of AID experience and lessons learned. The Committee is very active and has served as an open forum for discussing policy issues such as the MCH norms and strengthening local administrative/planning capacities.

USAID is the most active in-country donor involved in the decentralization of administrative and planning functions to the 24 health areas. Project success in this area is key to a sustainable capacity in the MOH to deliver services. Yet, this is the area with the least amount of donor

coordination to date. The Project will utilize the MCH Committee as well as donor meetings and workshops to promote and make operational the MOH policy of decentralization.

Coordination with the World Bank and the IDB

During the past six months, the World Bank and the IDB have been designing the health sector reform program under the upcoming lending program for Guatemala. USAID has met with all of the Bank missions to Guatemala to promote inclusion of its policy and strategy within the policy benchmarks/conditionalities tied to the loan disbursements. It is still too early to determine how much of the USAID vision for health sector development will be included in the final reform program. The Mission will call upon A.I.D./Washington to assist in making its position clear to the banks at that level.

The Banks' health sector reform package focuses on decentralization of the MOH to the 24 health areas, greater efficiency and increased budget execution, expanded coverage and improved private-public sector coordination. While these broad areas are also of interest to USAID, the Banks are not planning to develop specific targets related to health impacts (such as reduced infant and maternal mortality). USAID measures success as improved health status of Guatemalan mothers and children; the banks use formative/process evaluation (such as numbers of personnel trained or increased budget execution) without focusing on health status indicators. The banks are will probably not be able to provide ongoing leadership/technical assistance to the MOH when USAID's Project ends since they typically do not maintain an in-country presence.

III. Project Status

A. Background

The original Project Paper was signed in August 1985, and Amendment No. 1 signed in July 1986, stated that the goal was to reduce infant and child mortality and morbidity. The Project has undergone two major amendments since its original signature in August, 1985. The original Project Paper focused on the theme "Immunization for Child Survival", and was predicated on a new approach to increase coverage against immuno-preventable diseases. This strategy is called channelling, which is a fusion of standard health service delivery practices and active client outreach via census-based promotion by local level health workers of preventive health behavior, including vaccinations.

The Project's purpose was to increase immunization coverage for the six immuno-preventable diseases (diphtheria, pertussis, tetanus, polio, measles, and tuberculosis) in children under five years, and tetanus toxoid for pregnant women, from 27 and 0.4 percent respectively, to 80 percent by August, 1988. The Project was to proceed in a phased fashion to cover the 21 Health Areas outside of metropolitan Guatemala. The Project components were: (1) training and supervision; (2) promotion; (3) cold chain; and (4) administrative support. These components provided transport, fuel, per diem, and permanent local surveillance systems to identify and refer

the target groups for immunization. In addition to AID grant funds of \$6.7 million, other donor support in the form of vaccines, syringes, and some technical assistance was programmed by UNICEF, PAHO, and Rotary Club International.

With substantial increases in the availability of Child Survival funds, the decision was made during the first year of the Project to add an oral rehydration therapy program component to the original immunization program focus. The Project was amended July 1986, to include the three Health Areas of metropolitan Guatemala and to add \$3.0 million in support of a national oral rehydration therapy (ORT) program. With the original \$6.7 million, total grant funding was raised to \$9.7 million and the LOP was extended 12 months to August 31, 1989. The purpose of the new component added by the Amendment was to increase the use of ORT from 0.9 percent to 80 percent by the end of the Project. The focus of the component was largely on the production and distribution of oral rehydration salts (ORS), but included support for training, supervision and promotion of ORT.

The Project had a difficult start-up. The original Agreement was signed in August, 1985, during the transition from a military regime to a civilian government, which took office in January, 1986. The change in government coupled with subsequent MOH staff changes and a nation-wide strike of health workers during the summer of 1986, caused delays and low expenditure of Project funds.

With forty percent of the Project time elapsed by August, 1987, only seven percent of the funds were expended mostly for commodities directly procured by USAID and were not tied to Project Conditions Precedent (CP) for disbursement of the original Project and Amendment No. 1. The original Project Agreement (PROAG) signed August 27, 1985, had four CP's which were not met until mid-April, 1986, or almost 8 months after signing. The four CP's established by PROAG Amendment No. 1 were not met until approximately six months after signing. The scheduled disbursements for program operation had to be postponed for a total of about fourteen months, which represented over half of the implementation period to August, 1987.

As of August, 1987, the slow Project expenditure rate had resulted in a large pipeline of approximately \$8 million versus the obligations of \$9.7 million. To address this problem, the Project strategy was modified to provide direct assistance to the MOH to accelerate Project implementation through improved management capacity and information systems.

Therefore, the Project was amended for a second time on August 28, 1987, to increase grant funding by \$6.718 million for the two new components (Health/Management Information and Improvement of Management Capacity) and related technical assistance. The Life of Project was extended for 28 months, to December 31, 1991. In addition, funds provided in the original Project for immunization and in Amendment No. 1 for ORT, were reprogrammed in response to the slow start during the first two years, and together with additional funds provided by Amendment No. 2, were intended to finance the Immunization and ORT Components during the remaining years of the Project.

The targets for immunization and ORT coverage during the LOP were reduced from 80% to 70%, and projected tetanus toxoid vaccinations for pregnant women were reduced to 60%, down from 80% in the original Project as amended.

Based on findings of a February 1990 audit report, the Mission suspended the Project on March 16, 1990. Although the suspension was lifted in June 1991, virtually all project activities ceased until June 1992, when USAID/Guatemala contracted Clapp and Mayne (C&M) to provide technical assistance that will support development within the MOH's central and area levels of an efficient accounting, administrative and financial management system. C&M is also responsible for disbursing project funds for certain Project activities. A third major activity of C&M is to train the central level MOH and health area level personnel in generally acceptable accounting principles and in the administration and financial management of Project funds. C&M will act as a bridge during a two year transition period, establishing a sound administrative and financial management system, training MOH personnel at the central level and in the 24 health areas in its use, and disbursing Project funds to support operational activities in immunization and oral rehydration therapy. At the end of this transition period it is anticipated that the MOH will then be able to manage AID, other donor, and its own funds according to generally acceptable accounting principles.

Project components for which funds have been disbursed are as follows: immunization, oral rehydration therapy, health management information system and administrative and financial management.

B. Status of Ongoing Project Components

1. EPI Component

With support from the Mission since 1985, the national Expanded Program of Immunization (EPI) made significant overall progress until the Project was suspended in March, 1990. For example, the polio coverage rate for children under one year increased from 9% in 1985 to 74% in 1990, but fell to 65% in 1991. Measles coverage increased from 23% in 1985 to 68% in 1990, falling to 48% in 1991 (see Tables 3 and 4 in Annex 6). The reinitiation of the Project in June, 1992 came too late for major support to the national campaign last year.

Table 1 illustrates the linkage between coverage rates and the national EPI campaigns. In 1987, the MOH failed to carry out the campaign, and coverage rates for all five childhood immunizations in children under one year fell by more than half. As a consequence of this situation, a measles outbreak began toward the end of 1989, reaching its highest incidence in April-May, 1990. This epidemic affected 8,819 people with 5,085 deaths, for an overall case fatality rate of 55.3%.

The Project has placed major emphasis on strengthening the cold chain, especially at the local level (health centers and posts) to assure that high quality vaccines are provided to children and

pregnant women. The Project established and achieved, prior to suspension, the goal of having an operational cold chain in 95% of the health centers and posts. During Project suspension, lack of fuel, maintenance and monitoring caused the deterioration of about 30% of the equipment. With the contracting of Clapp and Mayne, Inc. in June, 1992, renewed emphasis was placed on restoring the cold chain. A national level assessment was carried jointly by Clapp and Mayne and the MOH to identify specific equipment that had to be repaired and/or replaced. Training for the 24 health area maintenance technicians was provided as part of this assessment. As a result of this assessment, the MOH is procuring 300 electric refrigerators and the Project (Clapp and Mayne) is procuring 150 gas refrigerators. These procurement will restore the cold chain to 95% capacity. The Project (Clapp and Mayne) has contracted a local firm to provide maintenance to the cold chain and is devising a training plan for MOH maintenance staff to adequately maintain the cold chain in the future. In addition, the GOG/MOH will include in future year budget's sufficient funds for maintenance and fuel. The Project is also facilitating technical assistance from the Ministry of Energy and Mines to the MOH for the installation of 6 solar powered refrigerators in communities that have difficult accessibility.

Coordination with other donors including PAHO and UNICEF will continue to receive emphasis under the Project.

2. ORT Component

Diarrheal diseases are among the leading causes of infant and childhood morbidity and mortality. USAID/Guatemala, in coordination with other donors such as PAHO and UNICEF, supports the Guatemalan MOH to implement an effective strategy to control diarrheal diseases (CDD), including cholera. Cholera first hit Guatemala in July of 1991; the first cases were on the south coast, but during the past 18 months, cholera outbreaks have occurred in most regions of the country. While cholera is not a serious threat to very young children, it does represent a serious risk to children over three years, and falls within the LAC Bureau's CDD strategy.

The Project has supported oral rehydration therapy (ORT) activities since 1987 under Amendment No. 2. Prior to the suspension, the Project carried out a series of studies and interventions to improve ORT use. In 1987, a community level survey was conducted to determine local knowledge, attitudes and behavior related to control of diarrheal disease and use of ORS. A parallel study was conducted among MOH service providers. In 1988, the Project supported a series of workshops to train MOH personnel at the health area level to use and promote ORT.

The Project also includes a component to develop the in-country capacity to produce, market and distribute ORS. After the reinitiation of the Project, the Mission contracted PATH in September, 1992, to develop the productive capacity of the Laboratorio de Produccion de Medicamentos (LAPROMED), of the Facultad de Ciencias, Quimicas y Farmacia, San Carlos University. The remodeling work will be completed around October, 1993, at which time LAPROMED will be producing and packaging ORS. The PATH contract also provides

technical assistance in the areas of quality control, marketing, and qualitative research on ORS use. The contractor will also assist the MOH to determine its annual ORS needs, and to improve the logistics of ORS distribution.

By the end of the PATH contract, LAPROMED will be the principle supplier of ORS to the MOH. The cost to the MOH of LAPROMED ORS will be lower than a comparable product available in the private sector. PATH will also provide technical assistance to the LAPROMED staff, especially in the areas of financial management and planning, to ensure the sustainability of ORS production.

C&M is also playing a role in the ORT component of the Project by supporting ORS distribution and use, training of health area staff in promotion and use of ORS, and development of at least 9 local oral rehydration units (UROs) to facilitate training in ORT. PAHO will provide technical assistance in this area.

3. Health Management Information System

The health/management information system (H/MIS) is a critical Project component. Prior to the suspension, Project contractor Management Sciences for Health (MSH) conducted an analysis of the H/MIS, and in one Health Area (Solola) initiated a reorganization and strengthening of the H/MIS. These efforts were not implemented on a national level prior to Project suspension.

With the contracting of C&M in June, 1992, the Project acquired another long term technical expert in H/MIS (under subcontract with MSH). The new contract places emphasis on the development and use of a H/MIS in the 24 health areas and at the central level. The contractor has conducted an assessment of information needs at the local level, as well as the appropriate hardware and software required to develop the H/MIS. Each of the local health areas will have three computers - one dedicated to epidemiology, one dedicated to finances and accounting and one for administrative/secretarial functions. Each of the health areas will be connected to the central level and each other by fax-modem connections. At the central level, the concept of "microcenters" will be implemented. Rather than concentrating all inputs in the MOH Information Unit, technical assistance and computer equipment will also be provided to selected operational and administrative units at the central level to facilitate rapid, appropriate decision-making. Examples of the microcenters include personnel, maternal/child health and maintenance.

The H/MIS will emphasize three important topics: 1) epidemiological surveillance, including morbidity and mortality statistics, immunization and ORT coverage data, and provision of primary health care services by midwives and promoters; 2) financial management, especially in the 24 health areas including execution of GOG budget and local recurrent costs; and 3) administration including administrative procedures, inventories, maintenance of the cold chain and vehicles and personnel. C&M will train local staff in each of the health areas, giving

special support to the health area epidemiologists who will be responsible for the use of health information for planning and evaluation.

4. Improved Administrative Management

Improved administrative and financial management is a critical weakness in the MOH; lack of good management being the cause of problems that led to the Project suspension.

USAID/Guatemala has contracted C&M to provide technical assistance to the MOH at both the central and the health area levels to develop efficient systems for administration, accounting and financial management. C&M is also responsible for managing all project funds that are designated for commodities and technical assistance for the MOH (in other words, the MOH no longer has responsibility for the management of Project funds). Clapp and Mayne has responsibility for assessing procurement needs, warehousing, and distribution/logistics of Project resources. C&M will also train MOH staff at all levels in programming the annual budget, utilization of generally accepted accounting principles, and in the development and application of administrative procedures.

C&M is currently in the process of contracting 24 administrative promoters (gestores) who will be responsible for the management of Project resources in each of the Health Areas and to provide technical assistance/support to the MOH Health Area Chief and other staff in the implementation of Project activities. In addition, the gestores will provide on-the-job training and supervision to MOH staff in the following areas: financial management procedures, inventory/end-use monitoring, implementation of a budgetary control system, and programming of the annual budget based on local health needs (as determined by the epidemiological profile). It is hoped that improved local administrative capacity will improve confidence within the higher levels of the MOH and the MOF to support decentralization of the MOH and to increase allocation of resources at the local level for primary health care. In the long run, this will increase the possibilities for sustainability of EPI/ORT interventions in Guatemala.

Between June and December, 1992, C&M sponsored three workshops on administrative and financial management. C&M and the MOH are coordinating closely with the MOF in the development of administrative and budgetary procedures. These workshops will be increased in Phase II of the contract as part of the effort to support decentralization. C&M will participate in the development of administrative norms and manuals, and will conduct training on their implementation.

The MOH is expected to receive additional GOG resources in the coming years. This Project, and especially this component, are key to improving the MOH's ability to program and utilize GOG resources efficiently, and in a manner that will have the greatest possible health impacts, especially in the rural areas.

IV. Amendment Description

A. ARI Component

1. Purpose of the ARI Component

The ARI Component will contribute to further reductions in infant and child mortality in Guatemala, particularly from pneumonia--the form of ARI that when left untreated most often kills young children. Its primary objectives are to improve the quality of pneumonia Standard Case Management (SCM) throughout the country and to double access to SCM in high priority Health Areas. This effort will lead to earlier diagnosis and treatment of pneumonia and more cost-effective use of GOG and family resources than at present.

Currently, only an estimated 25-30% of the population lives within reasonable distance of a health facility where staff have been trained to provide SCM and antibiotics are available. Within the ARI component, USAID and the MOH have the opportunity to test various alternatives for increasing access to pneumonia SCM. The principle strategy for increasing access to SCM, as proposed by the GOG, is by training the country's 9,000 active community health promoters to treat as well as to detect pneumonia. Other alternatives for increasing access might include training private pharmacists and/or traditional practitioners in SCM, developing sustainable antibiotic supply schemes at the local or Area level, and involving pharmaceutical manufacturers in training and educational efforts. Operations research conducted over the life of the ARI component will investigate a number of these alternatives.

The ARI component will strengthen the ability of the MOH to guide and organize pneumonia control activities throughout the country. At the national level it will support the establishment of a clinical training program for "master" trainers at one of the country's training hospitals. Furthermore, it will result in the revision of all ARI training and promotional materials and of the ARI training methodology and information systems currently in use. By supporting baseline and operations research, it will also make important information about pneumonia, its recognition and treatment available for the first time for use by national and Area planners.

The Health Area level will be the location for USAID-supported program assessments, health worker and promoter training and operations research studies. Through active participation in these activities, Area managers will develop important planning, evaluation and quality control skills that are currently lacking. They will also create an on-going ARI training capacity and improve the overall health referral system by improving coordination between primary and secondary health facilities.

Three overlapping phases of activity are proposed, two of which are financed and implemented by the Project. Phase 1, which will be carried out from June 1993 - December 1994, will include comprehensive planning, implementation and evaluation of ARI training and support activities in 4 Health Areas. All levels of workers will be trained, from hospital to promoter. This phase of intensive activity and operations research will be financed by USAID, with MOH

counterpart contributions from the annual budget at the Area and health facility levels. The Project will also coordinate ARI interventions and inputs with PAHO and UNICEF, especially in the areas of antibiotic supplies (through the Essential Drug Program) and training materials. Phase 2 will focus on improving the quality of SCM in 4 to 6 additional health areas, modifying the experience gained during Phase 1 as necessary according to local conditions. Continued support and ongoing monitoring will be given to the 4 health areas initiated during Phase 1. Phase 2 will begin in August 1994 and end in August 1995. Phase 3 will overlap with Phase 2 and will include a nationwide effort to up-grade the training and skills of health-facility personnel using materials and curricula tested during Phase 1 and Phase 2. At the end of Phase 2, the MOH will have a model for ARI training and control that will serve as the basis for a national ARI control program. Phase 3 will be carried out after USAID involvement has ended and will dramatically increase access to SCM by expanding training of health promoters, if this proves a cost effective alternative, to the rest of the country.

2. Description of Activities

(See the Implementation Schedule for the approximate timing and sequencing of the activities described below.)

Phase 1: Comprehensive pneumonia control activities and operations research in 4 priority Areas

a. Prepare National Plan of Action: This plan will incorporate inputs committed from USAID, PAHO, UNICEF and the MOH.

b. Incorporate pneumonia control questions to Demographic and Health Survey to be conducted in 1993. This will require a careful selection and sequencing of relevant questions, adaptation to allow for local terminology and concepts, and the possible addition of cost per treatment variables to the standard DHS module.

c. Include pneumonia control as a regular topic in the meetings of the Interagency Coordinating Committee for Maternal Child Health.

d. Establish a clinical ARI training center at the national level: The clinical training of pediatricians and Area trainers must be conducted in a site where a sufficient number of pneumonia cases are seen to allow for practice in standard case management and counseling. The Roosevelt or San Juan de Dios General Hospital in Guatemala City, major government training and referral facilities, would be good sites. The Director and staff there are ready to establish their own internal ARI training program and this could easily be expanded to include Area physicians and nurses on a rotation basis.

Resources:

- Technical assistance (.5 person months) to develop a training plan with Roosevelt Hospital, to train its staff as tutors. The same consultant could participate with the MOH in the initial revision of training materials for physicians and nurses.
- Study tour (for the national ARI Coordinator and hospital staff who would serve as senior tutors-4 persons) to a functioning ARI clinical training center in Mexico.
- Revised training materials (see below)
- Audiovisual equipment and supplies

e. Rapid Area Assessments: Conduct rapid facility assessments to determine training (ARI diagnosis and treatment practices) and support system needs, including antibiotic availability. These studies will be carried out by personnel of the Health Areas and Health Districts, supplemented by field workers hired by a local research firm or INCAP under subcontract to Clapp and Mayne. Technical assistance will be provided by the subcontractor AID (REACH). Questionnaires will be adapted from those used by INCAP for the study of physicians' diagnosis and treatment practices. Data will be hand tabulated at the Area level and analyzed further by the subcontractor and the MOH. Ideally, assessment findings will be presented at the national State-of-the-Art Workshop described below and used by the Area managers to develop their operational plans for pneumonia control. (see below)

Resources:

- Technical assistance (1 person month-AID(REACH), 2 person months-subcontractor Principal Investigator) to plan and conduct assessments.
- Workshop to train field teams 2-3 days
- MOH and subcontractor costs for field work and analysis

f. Conduct limited ethnographic research to provide information for revision of training and promotional materials, and eventual use with UNICEF and others to develop communications messages and materials. A short field study should be sufficient to validate the findings of Saenz de Tejada's earlier ethnographic studies and to detect regional and linguistic variations in terms and concepts.

Resources:

- Technical assistance (2 person months-subcontractor Principal Investigator)
- INCAP costs for field work and analysis

g. Conduct national Pneumonia Control State-of-the-Art workshop which will be attended by the MOH, IGSS, NGOs, training institutions, the pediatric association and collaborating international agencies: The purpose of this workshop will be to present information from recent studies of ARI in the country, to discuss changes in the WHO/MOH norms and the technical basis for these changes, and to present the proposed strategy and program for pneumonia control. Studies to be presented could include the: study of physician diagnosis and treatment of ARI (Chew), study of treatment of ARI with Vitamin A (Chew/Gadomsky), ethnographic studies of beliefs and practices surrounding ARI (Saenz de Tejada), Area assessments of ARI knowledge and practice and program support systems (see above).

h. Revise existing ARI training and communications materials according to new WHO norms and findings of formative research: This will begin as soon as the ARI Component is approved, but it will not be completed until after the findings from the ethnographic studies and Area assessments are available. Materials to be revised include: ARI training manuals, reference materials, flipcharts, posters, almanacs, and flyers.

Resources:

- Artwork and layout
- Printing costs

i. Revise existing ARI information registers and reports for use at each level of the system. This process is already in progress but it may require Technical Assistance that is not currently available in Guatemala in order to bring it to a satisfactory conclusion.

Resources:

- Technical assistance (2 weeks-tentative)
- Printing costs

j. Conduct ARI Management Training for Area teams: During this training. The pneumonia control program management training should build on the WHO Program Managers Modules, and include the review of the national ARI Plan of Action. It is currently planned that PAHO will support this type of training, but it is unclear whether the schedule and participants developed earlier will correspond to the needs of the USAID ARI Component. Discussions should certainly begin immediately with PAHO and the MOH to guarantee that managers from the 4 Areas targeted by USAID are included in the first training course.

Resources:

- l. five-day (residential) ARI program management training course for officers responsible for pneumonia control programs at Area and District levels and all related trainee and trainer costs (PAHO)

k. Develop Health Area Pneumonia Control Operational Plans: Each Health Area will use the findings of its assessment and the national ARI guidelines to prepare a 12 month plan of action that, once approved, will be supported by USAID under the Clapp and Mayne contract. Ideally, this will be started in a workshop setting.

Resources:

- Technical assistance (Clapp and Mayne expatriate advisor)
- 1, 3 day workshop and all related costs

l. Train Area trainers at the National Clinical Training Center: Appropriate selection of Health Area trainers will be a critical element of a successful program. A minimum of two clinical trainers (Area or District hospital staff) and two Health Area supervisors should be selected per area. (See Discussion of Training Issues).

- five-day (residential) training courses with content including clinical pneumonia control training, development of Health Area training plans, and training in practical training methodologies (USAID)

- Training site (Roosevelt or San Juan de Dios Hospital)
- Pneumonia control manuals, information system, promotional materials, and recommended curricula for each level of training
- Meals, lodging and transport for trainees

m. Establish Health Area training programs: This will entail the Area trainers equipping an appropriate classroom and clinical instruction area in their referral hospital, notifying trainees of the dates for their training and adjusting their own schedules to accommodate the needs of the training program.

n. Train physicians and nurses (hospital and health center staff) in revised SCM protocols, counseling/promotional skills and techniques for training and supervising lower level workers.

Resources:

- 3 day training program at hospital site
- Materials
- Meals/lodging/transport for trainees

o. Train health post personnel in the revised pneumonia SCM norms, counseling and supervision techniques to use with Health Promoters. This level of training would be conducted at the District Health Center by the staff with assistance from the Area Training Team.

Resources:

- 3 day training in District Health Center
- Health Area Training team
- Materials
- Meals/transport, if necessary

p. Train health promoters to detect and treat pneumonia according to SCM protocol and to counsel and to educate the community about the danger signs of pneumonia. This training will be carried out by the District Health Center staff (nurse, physician, TSR), with assistance from the Area Training Team. This training will be carefully monitored and evaluated under the Operations Research activities described above.

Resources:

- Health post or Health center training workshops of 2-3 days duration
- Health Area Training Team
- Materials

q. Operations Research: Plan and conduct operations research studies to investigate key service delivery questions, including the effectiveness of (1) training approaches and training materials; (2) alternative treatment protocols at the promoter level; (3) alternative approaches at the Area level to improve access to low-cost treatment, including antibiotic supply; (4) promotional messages and materials. Specific operations research studies will include small sample surveys and other techniques for collecting pre and post intervention data about the effectiveness of specific aspects of the pilot phase of activity. Technical assistance will be provided to develop study protocols, to train and standardize investigators and field workers, and to process and analyze study findings.

Resources:

- Technical assistance (Clapp and Mayne expatriate advisor, AID/BASICS, INCAP/Subcontractor).
- Materials, travel and other study costs

r. Supervision/Monitoring: Develop and test instruments and methods to facilitate the use of epidemiological, service and population-based data to monitor and evaluate pneumonia control activities. These may include: 1) simplified quality control protocols; 2) revised daily and monthly registers and reports; 3) formats and procedures for compiling, analyzing, reporting and using routine service statistics for program monitoring and evaluation.

Resources:

- Technical assistance (Clapp and Mayne expatriate advisor, AID/BASICS, INCAP/Subcontractor).
- Supervisors
- Allowances
- Materials

s. Evaluate Training of Facility-Based Personnel: Shortly after training courses for physicians, nurses, TSRs and auxiliary nursing staff are completed in each Area, these training experiences will be reviewed and modifications in the training and support systems relevant to these workers will be made accordingly. Pre and post training tests of knowledge and surveys of clinic records should be used to assess training results, as well.

Resources:

- Technical assistance (Clapp and Mayne expatriate advisor, AID/BASICS, INCAP, Subcontractor, local consultants)
- Results of Operations Research and routine monitoring
- Repeat facility assessments in Areas, if feasible
- Workshop with all trainee and trainer costs

t. Evaluate Training of Promoters: Operations research will be carried out during Phase I to assess the effect that the training and the proposed support strategy have on Promoter knowledge, skills and practice of SCM. Once training has been completed in the 5 areas, an

evaluation workshop will be held to review the findings of the operations research and to make recommendations for modifications in the norms, training and support of Promoters. Most importantly, this evaluation will determine whether Phase 3, as described below, will be carried out or whether other alternatives for increasing access to pneumonia SCM should be pursued.

Resources:

- Technical assistance (Clapp and Mayne expatriate advisor, AID/BASICS, INCAP, local consultants)
- Results of Operations Research and routine monitoring
- Repeat facility assessments in Areas, if feasible
- Workshop with all trainee and trainer costs

Phase 2: Expand Training of Facility-Based Health Personnel in 4-6 Additional Health Areas, August 1994-August 1995

- a. Revise pneumonia control training materials and curricula for hospital, health center and health post levels based on initial results in the pilot Health Areas
- b. Print sufficient quantities of revised materials and forms for additional Health Areas (PAHO, UNICEF, Clapp and Mayne).
- c. Conduct management training for Area ARI managers.
- d. Develop Area operational plans.
- e. Train Area Trainers at national clinical training center according to revised training strategy.
- f. Prepare Area Training programs
- g. Train physicians and nurses
- h. Training auxiliary nurses and TSRs.
- i. Supervise and monitor pneumonia control services as part of integrated supervision of health facilities.

B. Activities in Immunization, ORT, H/MIS, and Improved Administrative Management

All of the activities described below will be performed by the Project contractor, Clapp and Mayne, as Phase II of the contract.

1. Immunization Component

The Project will provide the necessary support to ensure a functioning cold chain through the following specific activities:

- Repair cold chain equipment and maintain it throughout the LOP.
- Conduct a functional diagnosis of the cold chain.
- Procure, store and ensure adequate handling and distribution of required equipment and supplies for health areas (e.g. kerosene, syringes, spare parts, tools).
- Provide financial/administrative support for in-service training activities for health area maintenance technicians.
- Provide the necessary support to locally procured minor supplies.
- Repair and maintenance the fleet of vehicles (including spare parts and fuel) to enable timely movement of personnel, vaccines, supplies and information throughout the entire health system outside Guatemala City.
- Support in-service immunization training activities, including financial and administrative skills required to maintain the cold chain and conduct campaigns.
- Provide financial and administrative support (including development of local radio messages and procurement of promotion materials) to carry out local promotion and health education activities in accordance with local programming regulations.
- In coordination with the MOH, UNICEF and PAHO, identify appropriate indicators to measure project achievements, e.g.: immunization coverage, cold chain operation, reduction of morbidity and mortality rates, etc. These activities will be done in conjunction with the Health/Management Information System.

2. ORT Component

In order to better manage the treatment of diarrheal cases and dehydration, the Project will follow the World Health Organization's recommendations. Pre-packaged ORS as well as homemade liquids, will be used to achieve effective diarrheal case management at all levels. Specific activities will include the following:

- Review and approve proposals for the creation of Oral Rehydration Units (ORUs) presented by hospitals and health centers.
- Purchase, develop and incorporate existing administrative and financial support for the implementation of ORUs.
- Monitor the adequate use of resources provided by the Project.
- Purchase educational material required to train institutional and community personnel (Manuals on norms for the Effective Management of Diarrheal Disease).
- Reception, transportation, warehousing and distribution of ORS in sufficient quantities (in response to local programming) for each Health Area to improve responsiveness to local needs and conditions.
- Provide administrative/financial support to training activities (review and approval of plans, payment of stipends to community personnel, purchase of educational materials, provision of pens, paper, etc.).
- Review and implement of forms and programs for data management which permit each Health Area to have effective control of the distribution, availability and needs of ORS.
- Support of the necessary actions to guarantee that voluntary personnel actively participate in the distribution, promotion and education of the population in relation to the appropriate management at the household level of children with diarrhea.
- Administrative/financial support for health education and local promotion of the appropriate management of diarrheal disease at the household level, as well as the evaluation of systematic sampling of communities to measure impact, coverage and change of behavior and attitudes of the population that receives services.

3. Health Management Information System

To facilitate improved decision-making at all levels of the health system, but especially in the health areas, the Project will develop a national health/management information system.

The emphasis of project activities, as outlined below, is to strengthen local planning and budgeting, as well as the understanding/use of epidemiological data.

- Update the H/MIS by incorporating software developments/programming advances achieved in 1991; the focus will be on user needs at the health area level in the areas of epidemiological and financial administration.
- Purchase computers and printers for installation in the 24 health areas.

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- Develop and install software and conduct needed training for efficient management, including accounting and finance.
- Support of the development of manuals of norms and training for all levels of the MOH with the objective of promoting increased understanding of the multiple advantages to be derived from such an information system.
- Training, supervision and evaluation of personnel responsible for the management of the information system at the local level, especially as relates to financial and accounting aspects.
- Provide technical assistance to the implementing units for the development and use of other software that will generate data/information which will meet the objectives of the Project.
- Support the design, production, and distribution of forms for data collection/entry at all levels of the MOH.
- Support the development of local surveys in order to obtain complementary information on population groups who do not have direct access to or regular use of health services.
- Procurement of spare parts and maintenance services for all hardware, ensuring that the system is functional at all times. Procurement of additional supplies, paper, etc.

4. Improved Management Capacity of MOH

Many of the activities that will contribute to improved management capacity in the MOH have been described above in the other three components, especially component C, the MIS. In addition, the Project will support the following activities:

- Contract one administrator in each health area to provide daily support/supervision and on-the-job training for the Health Area Chief, accountants and other administrative support staff.
- Review, evaluate, and improve the administrative systems related to budget and accounting, financial administration, personnel administration, logistics (commodities, inventories, projection of needs, supplies, distribution, control of vehicles, etc.), cost analysis of health programs, files and internal control systems (documentation).
- Design and implement administrative systems compatible with the systems of the MOH and AID. Manuals and forms should be developed and used and their results should be incorporated into an electronic data system.

- Administer Project funds on behalf of the MOH and AID. Appropriate registers should be kept and coordinated with the appropriate office of the Directorate General of Health Services, so that they are incorporated into the official MOH records.
- Support and participate in the formulation, presentation, analysis and approval of the annual operation plan of the central level implementing units, with emphasis in the four project components. These plans should include a corresponding budget, purchase plan and time schedule for implementation.
- Provide in-service training to the operating units of the MOH, Maternal-Child Health Department, Information Unit, Department of Epidemiological Surveillance and Control (central level) and 24 health areas as related to administration, financial management, accounting systems so that they function in accordance with AID regulations and the laws of Guatemala.
- Evaluate and improve upon the recurrent cost methodology developed in 1991-92 by the LAC/DR/HPN Health and Nutrition Technical Support Project; implement this methodology in all 24 health areas, including a review and improvement of the software, manuals and appropriate training courses.

V. Financial Plan and Audits

Over the Life of the Project (August 1985 to August 1995), the total funding to be provided by A.I.D. will be US\$19,418,000 in grant funds, of which \$16,418,000 have already been obligated. Through this Project Paper Amendment US\$3,000,000 in A.I.D. grant funds are being added to complete the Life of the Project level funding. The equivalent to US\$4,311,000 will be contributed to the project by other international donor agencies. Over the entire OP, the Government of Guatemala will contribute the equivalent of US\$11,616,857 to finance operational costs and activities related to child survival interventions nationwide. An amount of US\$8,483,000 of the total counterpart contribution was provided before the contracting of Clapp and Mayne in June, 1992 and US\$3,133,857 in counterpart funds will complement the activities financed by AID under the Clapp and Mayne contract. After December 31, 1994, the Project will no longer finance any MOH recurrent costs including, but not limited to, the procurement of supplies, spare parts, and maintenance services. As of June, 1992, the Project does not finance any MOH salaries, per diem or fuel costs.

All A.I.D. grant funds of this last amendment to the Project will be obligated in Fiscal Year 1993 within the Project Grant Agreement signed with the MOH. A.I.D. will reserve the right to administer US\$100,000 of a buy-in for the ARI Component (to be done before June 30, 1993), US\$144,629 to finance the final evaluation of the Project (in June 1995) and other research activities, and US\$10,000 for counterpart audits. Since Clapp & Mayne, the major implementing contractor, is a U.S. firm, it is subject to the Single Audit Act, and falls under FA/OP Supervision. No funds are thus budgeted in this Amendment for audit purposes.

Also a total of US\$841,726 of previously obligated but unearmarked funds will be reprogrammed. US\$ 151,726 will be used for additional activities at the health area level related to 1) training in the use of the health management information system and 2) training of local health technicians in the maintenance and repair of the cold chain, and 3) purchase of spare parts for the cold chain. An additional US\$690,000 will be added to the Clapp and Mayne contract as follows: US\$450,000 for an additional expatriate technical advisor in child survival to manage the EPI, ORT and ARI components; US\$40,000 to contract a local ARI/child survival expert; US\$ 75,000 for local ARI implementation activities; US\$50,000 for operations research activities; and US\$75,000 for ongoing Project monitoring and evaluation activities at the health area level.

Table No. 8 in Annex 7, Methods of Implementation and Financing, describes the disbursing mechanisms to be used under the Clapp & Mayne contract. As noted elsewhere in this PP supplement, the technical analysis done for the ARI Component suggested the need for the contracting of an expatriate Technical Advisor, whose contract will be financed using unearmarked remaining funds that will be reprogrammed.

Table No. 1 provides a Total Budget by Contributor by Year and Table No. 2 provides an Illustrative Financial Plan over the Life of the Project. Table No. 3 and 4 contain a Summary Budget by Contributor by Year and Table No. 4 presents a Summary of Projected Expenditures for this last amendment. Finally, Table No. 5 presents a Summary Budget for the Life of the Project, including activities before and after the Project suspension.

TABLE 1
 IMMUNIZATION AND ORAL REHYDRATION THERAPY SERVICES
 FOR CHILD SURVIVAL PROJECT No. 520-0339
 AID CONTRIBUTION, US DOLLAR

ELEMENT	P H A S E I		P H A S E II		TOTAL
	PRIOR WITHOUT C&M	OBLIGATED WITH C&M	CURRENT OBLIGATION	CURRENT RE-PROGRAMMING	
A. IMMUNIZATION					
-TRAINING AND SUPERVISION	1,336,286	31,224	20,000		1,387,510
-PROMOTION	824,333	46,000	60,000		930,333
-COLD CHAIN	792,367	667,026	12,000	49,310	1,520,703
-TRANSPORTATION	826,336	17,372			843,708
-MAINTENANCE	733,081	208,130	140,000	34,597	1,115,808
-MANAGEMENT	660,249				660,259
B. ORAL REHYDRATION THERAPY					
-PRODUCTION AND DISTRIBUTION OF ORS	1,597,051	6,737			1,603,788
-TRAINING AND SUPERVISION	832,965	22,800	70,000		925,765
-PROMOTION	257,960	18,800	80,000		356,760
-TECHNICAL ASSISTANCE HEALTHCOM	647,305	151,101			798,406
-TECHNICAL ASSISTANCE PATRI/LAPROMED		1,510,650			1,510,650
-TRANSPORTATION	27,092				27,092
-MAINTENANCE	80,781				80,781
-MANAGEMENT	49,821	7,397			57,218
C. HEALTH MANAGEMENT INF. SYSTEM	68,836	354,703	165,000	67,819	656,358
D. IMPROVED ADMINISTRATIVE SYSTEM	21,231	263,557	128,000		412,788
-TECHNICAL ASSISTANCE MSH PREVIOUS	1,453,662	256,050			1,709,712
-TECHNICAL ASSISTANCE CLAPP & MAYNE		1,805,361	1,995,371		3,800,732
E. ACUTE RESPIRATORY INFECTION					
-ARI ACTIVITIES			75,000	75,000	150,000
-BUY-IN ARI			100,000		100,000
-PSC CONTRACT IN ARI				450,000	450,000
-LOCAL CONTRACT FOR ARI				40,000	40,000
-OPERATIONS RESEARCH				50,000	50,000
F. LOCAL MONITORING & EVALUATION				75,000	75,000
G. FINAL EVALUATION			144,629		144,629
H. COUNTERPART AUDIT			10,000		10,000
I. MOU PERSONNEL					
TOTAL US DOLLARS	10,209,366	5,366,908	3,000,000	841,726	19,418,000

TABLE 2
IMMUNIZATION AND ORAL REHYDRATION THERAPY SERVICES
FOR CHILD SURVIVAL, PROJECT No. 520-0339
G O G CONTRIBUTION US DOLLAR EQUIVALENT

ELEMENT	PRIOR COMMITMENT	CURRENT COMMITMENT	TOTAL
A. IMMUNIZATION			
- TRAINING AND SUPERVISION	475,000		475,000
- PROMOTION			
- COLD CHAIN	672,000	1,497,849	2,169,849
- TRANSPORTATION	124,000		124,000
- MAINTENANCE	130,000		130,000
- MANAGEMENT	816,000		816,000
B. ORAL REHYDRATION THERAPY			
- PRODUCTION AND DISTRIBUTION OF ORS	1,241,000	914,179	2,155,179
- TRAINING AND SUPERVISION	154,000		154,000
- PROMOTION	25,000		25,000
- TECHNICAL ASSISTANCE HEALTHCOM			
- TECHNICAL ASSISTANCE PATH/LAPROMED			
- TRANSPORTATION			
- MAINTENANCE	5,000		5,000
- MANAGEMENT	910,000		910,000
C. HEALTH / MANAGEMENT INF. SYSTEM	255,000		255,000
D. IMPROVED ADMINISTRATIVE SYSTEM	71,000		71,000
- TECHNICAL ASSISTANCE MSH PREVIOUS			
- TECHNICAL ASSISTANCE CLAPP & MAYNE			
E. ACUTE RESPIRATORY INFECTION			
- ARI ACTIVITIES			
- BUY-IN ARI			
- PSC CONTRACT IN ARI			
- LOCAL CONTRACT FOR ARI			
- OPERATIONS RESEARCH			
F. LOCAL MONITORING & EVALUATION			
G. FINAL EVALUATION			
H. COUNTERPART AUDIT			
I. MOH PERSONNEL	3,605,000	721,829	4,326,829
TOTAL US DOLLARS	8,483,000	3,133,857	11,616,857

* Different exchange rates are applicable to this amount according to official rates that were valid on the dates that commitments were made.

VI. Monitoring and Evaluation

Monitoring and evaluation of the Immunization and ORT Services for Child Survival Project will be handled through the Demographic and Health Survey, special studies, and a final project evaluation. Monitoring and evaluation of the new ARI Component are part of the implementation strategy. Given the lack of prior experience in Guatemala on the part of both USAID and the MOH, the best approach to enhancing the national capability to control ARI/pneumonia is through an operations research strategy.

A. Performance level

The 1993 Demographic and Health Survey (DHS) is the main instrument to monitor performance of the Strategic Objective "Smaller, Healthier Families". The DHS provides population-based estimates of infant mortality and child mortality, two of the three performance level indicators used to measure progress toward achievement of the SO. These estimates can be compared to the indicators established in the 1987 survey to monitor progress over the past six years. Although the DHS will not be repeated in 1995 for financial and logistical reasons, the 1993 DHS will permit the Mission to establish a clear trend in infant and child mortality, which will be examined again in 1998 or 1999. In addition, following the 1993 DHS, the Project will be able to determine the degree of reliability of the official GOG mortality data. If there are only minor discrepancies, official data could be used to assess mortality levels in 1995 when the Project ends.

B. Project level evaluation

In August, 1995, the Mission completes ten years of support to the MOH in the area of child survival. The final project evaluation will examine the MOH's overall ability to manage and deliver child survival services. The principle questions to be answered will be: Are the H/MIS and administrative systems functioning well enough, especially at the health area level, to allow the MOH/Health Areas to continue budgeting, managing, monitoring and evaluating key child survival interventions (immunizations, ORS/ORT, and pneumonia control). The evaluation will also determine the MOH/Health Area level technical, administrative and logistic ability to maintain immunization and ORT levels achieved by the Project.

Revised coverage targets were set in Amendment No. 2 of the Project. Immunization and ORT coverage targets for children were lowered from 80 to 70%. Tetanus toxoid vaccinations for pregnant women were set at 60%, down from 80% in the original Project. Both of these changes responded to a better understanding of the difficulties encountered in making progress toward these goals, and the revised levels were considered more realistic for the period of the Grant, a situation still valid currently.

Revised output level indicators and means of verification are shown in the Logical Framework contained in Annex to this Amendment. As was discussed in previous amendments, the MOH infrastructure is weak, but it is expected that through Clapp & Mayne's assistance,

immunization and coverage targets will be achieved and the MOH capacity will be sufficiently enhanced to allow sustainability of interventions.

C. Ongoing Project Monitoring

The previous evaluation plan included a final nationwide coverage survey (of immunizations and ORT) at the completion of the Project. The nationally representative DHS will be conducted approximately 18 months prior to the PACD, making an investment in another national survey at the end of the Project unreasonable. As an alternative to the final coverage survey, this PP Amendment proposes that smaller scale coverage studies be conducted throughout the final two years of the Project, especially in geographic areas that have consistently low coverage throughout the 10 year LOP. These studies could be cohort studies or small operations research projects to measure the effectiveness of different strategies to increase coverage. Under subcontract to Clapp and Mayne and with approval from AID for each study, Management Sciences for Health (MSH) would plan and conduct these studies as part of Component C of the Project (health and management information systems). MSH is training the local epidemiologists (one per Health Area) as key users of the health information system. The epidemiologists should also be trained to collect and utilize complementary data to solve problems/answer questions that cannot be solved with service statistics, but special data collection efforts - such as coverage surveys. These surveys can also serve as a critical tool to verify the quality of epidemiological information system.

Small evaluations will also be carried out to ascertain whether the H/MIS and management systems are functioning at area level and to assess other process indicators related to systems such as flow of inventory records, the flow of local expenditures, flow of per diem, the flow of vaccines and ORS packages.

The monitoring of routine implementation will be carried out in close collaboration with the Chief-of-Party and the rest of the Clapp & Mayne's team.

D. Special Monitoring and Evaluation Efforts for the ARI Component

1. Operational Targets

As part of the development of the National Pneumonia Control Plan of Action, indicators to determine progress towards SCM training, logistics, access and utilization will be formulated. These indicators should be measured from readily available information sources such as reports on training and supervisory visits, clinical records and logbooks, pharmacy registers, and equipment distribution records. At the beginning of implementation in each Health Area, the Program should collect baseline information on all of these indicators and then use it to formulate the targets through 1995. Targets will be subject to USAID approval.

There are four essential indicators which describe the overall situation of a pneumonia control program, and which can only be measured through special surveys. These indicators have been defined by WHO as those that should be used globally for the monitoring of pneumonia control programs:

a. Proportion of the population which has access to standard case management through a health facility: a rough estimate of this indicator can be obtained through training records that show the number of health facilities having trained staff and through stock inventories that show those with a continuously sufficient stock of essential antibiotics. However, the best way to measure this indicator with statistical reliability is through a health facility survey.

b. Proportion of pneumonia cases seen at health facilities that receive standard case management: this indicator should be measured through a health facility survey.

c. Proportion of mothers of children less than 5 years old who know the signs that are suggestive of pneumonia which indicate a child with ARI should be taken to a health provider; this indicator should be measured through a household survey (knowledge questions).

d. Proportion of ARI cases needing assessment who are taken to an acceptable health provider: this indicator should be measured through a household survey (practice questions).

Indicators a and b, measure the access of the population to SCM and the quality of the SCM, while indicators c and d are related to the knowledge and practices of mothers.

The program will conduct a rapid health facility and a household survey in 1993 as part of the Health Area assessments. These surveys should be a problem-solving exercise which assesses all areas of the Program according to a pre-established methodology.

2. Impact Evaluation

The Ministry of Health has defined the following objectives for the National ARI Program, in relation to children under five years of age:

- to reduce mortality from acute respiratory infections, in particular pneumonia;
- to reduce the severity and complications of acute upper respiratory infections;
- to reduce the inappropriate use of antibiotics and other drugs for the treatment of acute respiratory infections;
- to reduce the incidence of acute lower respiratory infections, in particular pneumonia.

An important question is whether the strategy of increasing access to pneumonia SCM and improving the quality of SCM will be sufficient to achieve the goals set forth by the MOH.

It is very likely that this strategy will have an impact on the current excessive use of antibiotics and other drugs in the treatment of mild, viral respiratory infections in children. There are data from other countries suggesting that well-trained health providers prescribe less antibiotics and cough/cold medicines than untrained providers. The Program objective related to improving the rational use of drugs is, therefore, considered achievable, and as such, it will be formulated as a quantifiable target.

The technical effectiveness of pneumonia SCM and its effect on infant and child mortality have been proven in a number of settings. The question is whether the strategy as applied in Guatemala can contribute to further reducing the mortality from ARI in children. Since providers usually prescribe antibiotics to almost any child with ARI, it can be argued that the strategy has been over-implemented already, and that no additional benefits would be expected from training health providers to follow the revised SCM norms. Although there is some merit in this reasoning, the fact is that far too many children still die from pneumonia in Guatemala. In other developing countries it was found that many children die from pneumonia because they did not receive any antibiotic therapy at all, or that treatment was initiated too late. If these factors are also valid in Guatemala, as seems the case, the focus of the Program should be to emphasize: (1) the early identification of pneumonia at home and prompt care-seeking (more emphasis on face-to-face communication, and, at the right moment, mass communication); (2) permanent access to health services that are trained and equipped to treat pneumonia correctly (increasing the involvement of Promoters in ARI in rural areas where doctors are not readily available); (3) the regular availability of affordable antibiotics at first level health facilities.

To further guarantee program impact, areas with infant mortality rates higher than 50 per 1,000 live births should have the highest priority in the allocation of the financial and human resources of the Program. For this reason, the ARI component will be launched in 4 priority Health Areas of the MOH (San Marcos, Quiche, Huehuetenango and Alta Verapaz).

Measurement of ARI mortality poses difficult problems. Neither vital statistics or health facility reports are currently adequate sources of this type of information. The Program will study the completeness of vital statistics and estimate the extent of under-reporting and misclassification in the registered causes of death. If findings show that coverage and death classifications in the civil registry are highly unreliable, they will not be used for evaluation purposes. Instead, population-based mortality surveys will be the only reasonable mechanism to measure Program impact. The 1993 DHS will provide a good baseline, and subsequent DHS's can be used to monitor impact over time.

VII. Implementation Arrangements

A. USAID/Guatemala

1. Clapp and Mayne

a. Expatriate Technical Advisor in Child Survival

The Clapp and Mayne contract provides for 2 high level expatriate advisors: the Chief of Party serves as advisor to Component D (Improved Administrative Management) and the Project Deputy (MSH subcontract) serves as the technical advisor for Component C (H/MIS). The EPI and ORT components have been managed during Phase I of the contract directly by the COP who has neither the time nor the technical expertise to manage them. Therefore, this PP Amendment proposes that the contractor be authorized to hire a third high level expatriate technical advisor in child survival to manage the EPI, ORT and ARI components. (See Job Description in Annex 5).

b. Host-Country National Technical Coordinator

The additional host-country Technical Coordinator will provide direct assistance to the Health Areas for the development and execution of their pneumonia control plans, and to coordinate and act as the liaison officer between Clapp and Mayne, the Health Area Chiefs, the MOH/National ARI Coordinator and the other MOH Divisions. (See Job Description in Annex 5).

c. INCAP or Local Research Firm/Consultants

Clapp and Mayne will compete and award, subject to USAID approval, a subcontract with INCAP or another local research firm with previous experience in ARI research (or a series of short-term contracts with consultants) for the implementation of the research activities in the ARI component. This includes planning, implementing and assisting the MOH, and especially Health Area personnel, to carry out and use the findings from operations research and special studies. Direct and continuous research input will be required for:

- Health Area assessments
- Development and testing of quality control instruments and procedures
- Special ethnographic and qualitative studies to determine behavioral aspects of the pneumonia control problem
- Evaluation of pneumonia control interventions and other operations research in the pilot Areas.

d. Clapp and Mayne will administer funding and provide logistical support through existing USAID contract for all pneumonia control activities carried out by the participating health areas. The contractor will also administer funding and manage procurement for all

production of training, information systems, and promotional materials supported by the Project. Subcontractor MSH will improve the availability of reliable ARI data as part of its work on the health information system.

B. Central Project Buy-ins

As part of the ARI component, the Project will include a buy-in to the new RD/Health BASICS Project to be awarded by the end of FY93. This buy-in will provide approximately 8 person months of in-country short-term consultant time for the design and evaluation of specific aspects of the ARI component. An additional 1.5 months of core funded technical assistance is anticipated from the current RD/Health REACH Project to cover technical assistance needs between now and the initiation of the BASICS Project. The anticipated TA requirements are:

1. Establishment of national training plan and site for training of Area Training Teams (.5 person month).

Health Area pneumonia control assessments (1 person month, for planning and training).

Analysis and use of ethnographic study findings for the development of communications/counseling messages and materials (1 person month).

4. Study of antibiotic supply, distribution and cost to the client and health system (1 person month).

5. Operations Research to plan, monitor and analyze findings from special studies (4 person months).

6. Other (1 person month).

Resources:

1.5 person months of short term TA from REACH. (a and b)

8 Person months of short-term TA from Basics. (c,d,e, and f)

ANNEX 1

INSTITUTIONAL ANALYSIS

I. Ministry of Health/Maternal Child Health Division

The Ministry of Health initiated the current national ARI program in 1984. Activities between 1985 and 1986 included the dissemination of the previous WHO ARI norms adapted to the Guatemalan situation, workshop training of facility-level health providers to detect and treat moderate and severe ARI cases with antibiotics, and the production of a variety of educational and promotional materials for use at various levels of service.

Unfortunately, following the initial program development and training activities, the program appears to have received little special attention. Follow-up training to reinforce new skills did not take place, and frequent changes in personnel at the national level made the necessary continuity of supervision and support difficult.

In 1991, PAHO conducted an external review of the national ARI program, which showed serious problems at the policy and implementation levels. The absence of national goals and policies for reducing ARI mortality; scanty information about the epidemiological and cultural characteristics of the disease in Guatemala; and, the complete absence of information about the status of national control activities, were cited as serious problems in the PAHO evaluation.

During the past year, the Ministry has taken important steps to address these problems. ARI goals are now part of the national maternal child health plan (1992-1995); a qualified national coordinator has been appointed to oversee the program; and, a one-week ARI management training course was recently carried out for 60 Health Area and district personnel as well as representatives from national training and referral institutions and NGOs. The new WHO pneumonia control standard case management guidelines were also included in the new "National Maternal and Child Health Norms", published in 1992. However, there remains disagreement within the Ministry about the appropriateness of these international norms. One of the purposes of this project will be, in fact, to help the Ministry determine the desirability of proposed modifications to the international norms.

The Maternal Child Health Division will be responsible for planning, organizing and monitoring the activities called for in this project component and for coordinating inputs from the various international donors, NGOs, etc. The MCH Division will also play a key role in guiding and providing technical input to the Health Areas for the planning, implementation and evaluation of their pneumonia control activities.

II. Other MOH Divisions

Other divisions of the MOH will also be involved in the overall ARI effort including the Human Resources Division, the Pharmaceutical Unit and the Statistics Division. The input of these divisions will be critical to successful implementation of the proposed program, as will careful coordination of this input to avoid duplication of resources and contradictory messages going to providers and the population at large. This coordinating role (will/should) be played by the MCH Division and the national ARI coordinator.

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ANNEX 2

SOCIAL SOUNDNESS ANALYSIS

I. Overview of the Socio-Cultural Setting

The Social Soundness Analyses presented in the original Project Paper and as updated in Amendments No. 2 and 3 remain valid for the EPI, ORT, H/MIS and Administrative Strengthening Components of the Project. This PP Amendment provides an update of the analysis to incorporate the new ARI Component.

II. Project Benefits

The social impact of the ARI Component of the Project will be felt in a number of ways. First, by expanding and improving the quality of pneumonia standard case management throughout the country, the ARI Component will contribute to the control of one of the primary causes of high infant and child mortality and, as a result, it will substantially improve child survival. In combination with the other primary health care interventions that have been the focus of the Project to date, effective ARI intervention has the potential to result in dramatically reduced rates of both death and disability in children under five years of age. Death from ARI currently contributes disproportionately to the country's loss of young lives and, it can be assumed, to household expenditures for curative medical care and loss of care-taker productivity. Therefore, reductions in death and disability from pneumonia should, over the long term, contribute not only to improved health but also to improved socio-economic conditions for Guatemala's population.

By promoting the choice of Cotrimoxazol --a low-cost, available and highly effective antibiotic for community level care of pneumonia-- the ARI Component will substantially reduce the costs of pneumonia treatment to the client and to the national health system. This will, in turn, contribute to the national ARI Program's sustainability, to the improved availability of antibiotics in government health facilities, and to increased utilization of these facilities once families learn that treatment for pneumonia is being offered or that it can be purchased at a very low cost.

While Cotrimoxazol is available in most government health facilities today and/or in state and municipal pharmacies, and while its use is recommended by WHO/PAHO, the Guatemalan Ministry of Health does not currently recommend it as the first line treatment for pneumonia, choosing instead the more expensive injectable Procaïne Penicillin. While based on cultural and logistical considerations, this choice is detrimental overall because it means that a course of pneumonia treatment is from 10 to 20 times more expensive than it need be. Recommending the use of injectable penicillin also increases the risks of contamination where ample supplies of sterile needles and syringes are not available, as is the case in most of rural Guatemala.

By agreeing to use and promote Cotrimoxazol as the first line treatment for pneumonia under the ARI Component, the MOH will save many thousands of dollars each year that will then be used for the purchase of larger quantities of Cotrimoxazol and other medications. The choice of Cotrimoxazol instead of Penicillin will also protect the population against contacts with contaminated needles and syringes and the possible transmission of AID and other diseases through such contacts.

The ARI Component will strengthen the Health Area's ability to plan, manage and evaluate pneumonia control and other child survival efforts. To the degree possible, AREA health officials will be involved in all aspects of implementation, from baseline assessments through evaluation. The training, quality control, supervision, monitoring and evaluation techniques that will be introduced as part of the ARI Component will aid health officials in their routine management of all primary health care interventions, including ARI. Because the ARI Component will make baseline data and findings from operations research available to them for the first time, managers will also be able to apply real data about pneumonia incidence, treatment and behaviors in their planning exercises. From experience in Guatemala and elsewhere, it has been shown that helping local managers to collect and apply such information to their own situations, is highly motivational, resulting in personal commitment and ownership of solutions to the problems they identify.

An important requirement for pneumonia control is a functioning health referral system. By creating a hospital-based training facility in each area and at the national level, the ARI Component will forge an important link between secondary and primary health services. Because they currently function under different administrative lines within the MOH, close communication between these services does not always exist nor do they function effectively as parts of the same referral network. Experiences in other areas of health intervention in Guatemala (i.e., maternal and neonatal care), have shown that clinical training and supervisory responsibilities which are shared by an Area Hospital and Health Office can contribute to more effective referral care in both rural and urban areas.

III. Spread Effects

Pneumonia control focuses on curative care when pneumonia occurs. As such, it responds to the population's commonly expressed desire for more community-level curative care. By improving the availability of antibiotics to health facilities and promoters, the ARI Component will increase the health workers' credibility in the eyes of the population. In turn, this will improve health workers' morale and increase the population's utilization of their other preventive and curative knowledge and services.

The ARI Component's focus on counseling of families of infants and young children will result in improved communications between providers and clients and counseling about not only pneumonia danger signs and treatment but also about other important aspects of child health -- immunization, nutrition, oral rehydration therapy.

MOH negotiations with local pharmaceutical manufacturers, in preparation for the start up of the ARI Component, are expected to result in the production of low cost Cotrimoxazol tablets in pediatric dosages. These generic tablets will then be available not only for bulk purchase by the government but also for sale in private pharmacies. Since many people are known to bypass the medical services entirely (going instead to a pharmacy to buy a medication recommended by the "pharmacist"), motivating the private pharmaceutical industry to produce this product with instructions for its use will be an important step towards making an appropriate, over-the-counter product available to the public outside of the government health system.

Other spread effects have to do with:

- Improved management of all primary health services at the Area level due to exposure to new training, quality control and operations research techniques.
- Strengthened health referral system for all pediatric acute care.

IV. Socio-Cultural Considerations

A. Ethnic and Linguistic Diversity

Any effort to communicate pneumonia danger signs and treatment protocols to the Guatemalan population must take linguistic and conceptual differences into consideration. At present, however, concepts and terms specific to pneumonia and other forms of ARI have been very poorly documented. The current lack of ethnographic research conducted outside of the urban area, makes it difficult to guess what types of regional and cultural variation may be necessary in training and communications content. However, the Area-focused approach recommended for the ARI Component should make it possible to adjust such content to local differences, once basic ethnographic and linguistic variations are better understood. An ethnographic study at the onset of the ARI Component has been included in its design to provide this type of information in a systematic way. It is also expected that health workers in each of the Areas will contribute a wealth of ARI-specific information from their own field experiences and their own cultures.

B. Under-utilization of health services

While the indigenous population's reluctance to utilize "western" medical services may contribute to substantial under-utilization of health services when pneumonia occurs, it is very likely that extremely limited access in rural areas and economic barriers are more important reasons for failing to seek care for infants and children than the fear or rejection of modern medicine. The value placed on infant survival and the judgements made by families about the cost-benefit of seeking care for sick children, may also affect when and if they seek care outside of the home. In some settings, families tend to delay treatment until pneumonia has progressed to a very severe state, thereby seriously reducing the chances for survival. The cultural determinants of such behavior clearly require exploration before determining how best to

promote the timely use of available services.

While the ARI Component's strategy of increasing access and quality of SCM will improve services, aggressive promotion of those services will undoubtedly be necessary in the future to increase utilization. The mass media will be a potentially important channel for both educating and motivating families to seek care. However, until the government health services are adequately trained, supplied and supervised to provide SCM, use of the media to increase utilization is not recommended.

C. Changing clinical practice

Changing the clinical practices of physicians is not an easy task in any culture. This is at least partially because physicians are taught to interpret clinical signs and prescribe individualized treatment for their patients. Consequently, it is difficult for them to accept a standardized diagnostic and treatment protocol even under the best of circumstances. Acceptance by physicians -- particularly those that are in positions of authority--of the WHO treatment protocol is required in Guatemala to ensure that lower level health workers are adequately trained and supported in their use of the SCM guidelines. The training strategy recommended for the ARI Component is designed with this challenge in mind. By combining clinical practice in a respected national referral hospital with classroom training, the ARI Component will seek to convince influential physicians of the cost-effectiveness of the SCM protocol, while also teaching them to use this protocol in their own practice and to teach it to their subordinates. The ARI Component also has the potential to involve such physicians in state-of-the-art seminars, continuing education programs and operational research in which they can identify for themselves the effectiveness of pneumonia SCM.

V. Effect on Women

The ARI Component calls for up-grading the training and skills of physicians, nurses, auxiliary nurses and community health promoters, many of whom are women. This will make them more effective health providers and give them greater confidence in their own clinical skills. For lower level providers, acquiring a clinical skill like pneumonia case management, and being authorized and equipped to use it, also increases the worker's credibility and effectiveness with her clients and the community at large.

An important element of the ARI program will be teaching care-takers of infants and young children (most of whom are women) to recognize pneumonia danger signs. The simple rules of home care for pneumonia will be added to the mothers's or grandmother's knowledge. Counseling and education will lighten the emotional burden of caring for sick children by clearly defining the danger signs that should trigger examination and treatment by a trained health worker, and by giving clear instructions for correct treatment of pneumonia.

By introducing Cotrimoxazol and experimenting with various ways to improve access to this and other antibiotics used in pneumonia treatment, the ARI Component will make such treatment much more accessible to the general population than at present, thus speeding recovery and lightening the woman's financial, as well as her physical burden in caring for her sick child.

ANNEX 3

LOGICAL FRAMEWORK
IMMUNIZATION AND ORT SERVICES FOR CHILD SURVIVAL

Narrative Summary	Objectively Verifiable Indicator	Means of Verification	Important Assumptions
<p>Goal: To reduce morbidity and mortality throughout Guatemala caused by the common early childhood diseases</p>	<p>Measures of Goal Achievement: Reduction in proportion of childhood mortality (under 5 years old) attributable to the common early childhood diseases</p>	<ul style="list-style-type: none"> • MOH Records • DHS • Local studies 	<p>Child Survival interventions will support decrease infant mortality</p>
<p>Project Purpose: Increased MOH capacity especially at the health area level to manage and deliver child survival services (EPI, ORT & ARD)</p>	<p>EOPS</p> <ol style="list-style-type: none"> 1. 70% coverage of children under 1 year for the following vaccinations: DPI (3rd dose) Polio (3rd dose) Measles 2. 70% coverage of children under 5 years for DPI, Polio and Measles 3. 60% coverage of pregnant women for the tetanus toxoid (2nd dose) 4. 60% ORT coverage of diarrheal disease cases of children under 5 years 5. 60% of pneumonia cases in 8 health areas are treated according to MOH norms 6. HMIS installed, functioning and appropriately utilized in 24 health areas and at central level 7. Administrative systems installed, functioning and appropriately utilized in 24 health areas 	<ul style="list-style-type: none"> • Local studies • MOH records 	<ul style="list-style-type: none"> • The MOH will be capable of implementing different methodologies to achieve targets • Political will for decentralization of MOH will continue

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LOGICAL FRAMEWORK IMMUNIZATION AND ORT SERVICES FOR CHILD SURVIVAL

Narrative Summary	Objectively Verifiable Indicator	Means of Verification	Important Assumptions
Outputs:	1	1	<ul style="list-style-type: none"> • MOH will assign enough resources to attain sustainability of child survival activities
1 Cold chain appropriately functioning in 24 health areas	95% of local facilities have a well functioning refrigerator	Local surveys for cold chain equipment and supervision	
2 Local capability to produce ORS to meet MOH requirements	2 EAPRO/MI D produces 2 000 000 ORS packets annually	2 Reports of # of ORS produced	<ul style="list-style-type: none"> • MOH will incorporate the administrative financial and accounting systems generally accepted
3 National ORS distribution system	3 90% of health centers and posts incorporated into national ORS system	3 Visits	
4 MOH service providers are promoting ORT/ORS use	4 60% of mothers are using ORT (ORS &/or homemade solutions) to prevent dehydration	4 Final Evaluation/DHS/local studies	<ul style="list-style-type: none"> • MOH will coordinate other donor resources to ensure success of child survival activities with the technical assistance of the contractor
5 24 health areas are capable of managing and are using standardized HMIS for local decision making	5 <ul style="list-style-type: none"> • 80% of areas statisticians epidemiologists and administrators are familiar with and using the HMIS Manual • 80% of the routine epidemiological reports are available on time 	5 Final Evaluation/DHS/local studies	<ul style="list-style-type: none"> • MOH will establish an adequate logistics system for project activities
6 Enhanced MOH administrative and financial capability for resource execution	6 <ul style="list-style-type: none"> • Increase budget execution in 24 health areas by 60% • 80% of health area administrators are familiar with and using administrative manuals 	6 Final Evaluation/DHS/local studies	<ul style="list-style-type: none"> • Transfer of management skills and knowledge from the contractor to MOH through in the job training will be successful
7 Health personnel in 8 health areas using standard case management for treatment of pneumonia	7 <ul style="list-style-type: none"> • 80% of hospital health center and post clinical personnel in 8 health areas understand and apply standard case management norms • 80% of health promoters in 8 health areas understand and use standard case management and know symptoms of pneumonia in children under 5 years 	7 Final Evaluation	

**LOGICAL FRAMEWORK
IMMUNIZATION AND ORT SERVICES FOR CHILD SURVIVAL**

Narrative Summary	Objectively Verifiable Indicator	Means of Verification	Important Assumptions
Inputs: 1 Training 2 Commodities supplies 3 Technical Assistance 4 Administration 5 Construction/renovation 6 Promotion publications	1 US\$4,418,334 2 US\$5,366,809 3 US\$7,038,853 4 US\$1,226,207 5 US\$ 128,233 6 US\$1,239,564	<ul style="list-style-type: none"> • Contractor Records 	<ul style="list-style-type: none"> • Strong donor coordination will be achieved

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ANNEX 4

TECHNICAL ANALYSIS OF ARI

I. Context

Guatemala's twenty-four departments present dramatic contrasts in terms of development and culture. While Guatemala City and other urban areas enjoy relatively well-developed infrastructure, the rural areas of the country have very limited access to basic health services. In fact, only an estimated 25-30% of the total population is considered to live within reasonable distance of an existing health facility.

Approximately 1.7 million of Guatemala's over 9 million inhabitants are children under 5 years of age--children who are at high risk of death from diseases that are either preventable or easily cured if detected and treated early. Acute respiratory infections, or ARIs, fall into both of these categories.

In recent years in Guatemala, ARI has emerged as the primary cause of death in infants under one year of age and the second most frequently reported cause of death in children under five. In addition, ARI is currently the primary cause for child consultations at all government health facilities.

Pneumonia, the most virulent form of ARI, is of greatest concern in Guatemala and elsewhere because it most often kills infants and young children. Other forms of ARI (ranging from the common cold or flu, to throat and ear infections), while causing discomfort, do not normally lead to death; contrary to what many still believe, it has been shown that these milder forms of ARI do not progress to pneumonia even when left untreated. In developing country settings, two-thirds of all pneumonias are thought to be bacterial or viral plus bacterial in nature. This is in sharp contrast to the situation in developed countries where most pneumonias are viral. The good news is that bacterial pneumonias can be effectively treated with low-cost antibiotics and that the majority, if treated early, can be cured without hospitalization.

Primary preventive measures against ARI in young children include increasing immunization coverage against measles, pertussis and diphtheria, eliminating smoke from the home environment, reducing low-birth-weight, and improving nutrition. While these preventive measures are feasible over the long term, all of them except immunization depend on coordinated, multisectoral development efforts that are extremely difficult to maintain.

Over the short term, the early detection and treatment of pneumonia (secondary prevention) and increased measles and DPT immunization coverage (primary prevention) are the two most promising approaches to reducing death from ARI/pneumonia. Studies in Nepal, Bangladesh and elsewhere have shown that early detection and treatment of pneumonia can reduce ARI mortality by 30% or more. It is estimated that attaining full immunization coverage could also

result in a 25% decrease in ARI deaths. In other words, by tackling pneumonia control and immunization simultaneously it should be possible to achieve substantial combined reductions in infant and child mortality.

Revised guidelines for ARI Standard Case Management (SCM), published by WHO in 1991, now focus special attention on the diagnosis of pneumonia (by counting respiratory rate and watching for other clinical signs) and its treatment with low-cost antibiotics. These guidelines have been applied in a variety of settings and shown to be extremely effective, and they are currently gaining acceptance in national programs around the world. The following subsections of this report describe Guatemala's national ARI Program, the steps that are being taken to bring it into line with the revised WHO guidelines for SCM, and the management and implementation problems it faces in the future.

II. Magnitude of the ARI Problem

According to PAHO estimates, between 1985 and 1990, Guatemala's pneumonia and influenza specific mortality rates were the highest in Central America at 998 per 100,000 infants and 181 per 100,000 children 1-4 years of age. This is despite an estimated decline in the rates of 43% for infants and 60% for young children over the past 30 years. (The source of PAHO's data, is unknown but presumed to be hospital statistics or the vital statistics registry of the government, both of which are seriously biased.)

Population-based data on ARI incidence and mortality are not available for Guatemala. Unfortunately, the 1987 Demographic and Health Survey (DHS) did not include an ARI module and there have been no other country-wide or region-wide studies to assess the estimated magnitude of the ARI problem. Vital statistics, which are collected in all communities, have also not been systematically analyzed for ARI mortality. (While a potential source of important age and cause-specific mortality data, the well-documented problems of under-reporting and mis-reported causes of death would undoubtedly result in serious bias if these data were used.)

The only available data at present come from government health facilities, where it is believed only a fraction of ARI cases are seen. Nonetheless, these data give an idea of the magnitude of the ARI problem:

- Hospital data reviewed during this assessment show that ARI accounts for almost 50% of visits by children, mainly to the more specialized services, and approximately 48% of pediatric hospitalizations. According to informants, ARIs are also the conditions for which antibiotics are most frequently prescribed, often unnecessarily, in out-patient services.

- Annually only around 13,000 cases of ARI are reported in children under five years of age by all MOH services in the country. This results in a roughly calculated ARI rate of 7.6 per 1,000 children, or only about 1/46th of the probable rate in the population. (Small-area household surveys conducted by NGOs have reported ARI rates of 350 to 450, depending on the region of the country.)

- Analysis of health facility data for 1991 shows that only an estimated 4.8% of expected ARI and 4.7% of expected pneumonia cases were seen in MOH health facilities during the year (see Appendix 3). Based on the assumption that each child will experience 5 episodes of ARI per year and that 15% of children under 5 years of age will experience pneumonia each year, these findings lead to the conclusion that only a very small proportion of those children who need treatment are actually receiving it. As only 25-30% of the population has "reasonable access" to MOH health facilities, this finding appears logical.

III. National Commitment

The GOG was a pioneer in ARI program development in Latin America, appointing its first national ARI Program Coordinator in 1984. The following year, the Maternal Child Health Department (MCH) of the MOH (where the Program is housed) embarked upon an ambitious program of ARI materials development and training of hundreds of government health providers. Hospital, health center and health post staff were trained to diagnose and treat ARI, and community health promoters were trained to detect and refer to higher levels of care. ARI training and reference manuals, flipcharts, posters, pamphlets and almanacs were produced and distributed during this period. The MOH also added a number of ARI variables to the national health information system in order to track cases of ARI by type, evolution and use of antibiotics. The WHO guidelines for ARI control which were in use in 1985 were the basis for the national ARI Program. These guidelines classified ARI as "mild", "moderate", and "severe" and recommended antibiotic treatment for both moderate and severe cases.

Unfortunately, commitment to the national ARI Program diminished after 1985. With little international donor attention focused on ARI from 1985-1992, the MOH continued to provide only limited support. No refresher training was conducted during this period and, in 1991, when PAHO conducted an evaluation of the Program, the evaluation team found the following problems:

- absence of explicit national policies, goals and plans for ARI control;
- an almost complete lack of information about the ARI situation in the country (epidemiological, cultural, programmatic);
- lack of a monitoring system for tracking activities and the quality of ARI services;
- failure to introduce the newly revised WHO norms for ARI SCM;
- lack of antibiotics in the health facilities visited during the evaluation;
- frequent changes of the ARI Program Coordinator resulting in a lack of ARI leadership at the central level.

In 1992, with assistance from PAHO and UNICEF, the MOH took the following important steps to revitalize the national ARI Program:

- ARI goals were included in the National Maternal Child Health Plan 1992-1996;
- the new MOH manual of MCH norms, printed in 1992, includes an up-dated ARI section which corresponds to the revised WHO SCM guidelines;

- with PAHO support, a training course for AP! program managers was planned (and conducted during the period of our assessment mission) for 60 MOH, NGO and health training facility representatives; two more training programs of this type are also planned;
- efforts were begun to revise the ARI reporting requirements at all levels of the government health system; and,
- the ARI Program Coordinator who was originally assigned to head the Program in 1984 was reassigned to the position.

These steps bode well for the future of the national ARI Program, but there is still much to be done. The country lacks a written plan of action for the next phase of ARI work and there are major hurdles to be overcome in terms of policy and program implementation. These are discussed below.

IV. ARI Policies and Norms

Even though the written ARI norms which were recently produced by the MOH agree with the revised WHO guidelines for SCM, there is no evidence that these norms have actually been accepted within the MOH. To the contrary, site visits suggest that the old norms are still widely used in the Health Areas. The most important variations between the approved SCM norms and practice at the local facilities include:

- The choice of Procaine Penicillin as the first line treatment for pneumonia: Sulfametoxazol/trimetroprim, also known as Cotrimoxazole, is recommended by WHO. Cotrimoxazole is available in tablet form and is generally broken, crushed and mixed with liquid for administration to infants and young children. However, MOH personnel justify the choice of Procaine Penicillin citing that (1) mothers have difficulty or will not give tablets to young children, (2) Cotrimoxazole syrup is as expensive as injectable penicillin and logistically more difficult to distribute, and (3) people in Guatemala prefer injections to tablets.

- Continuing the use of the old ARI classifications--"mild", "moderate", and "severe" ARI. When the previous, short-lived ARI program was launched in Guatemala, state-of-the-art case management grouped ARI into three levels - mild, moderate and severe. Although the new norms introduce a more targeted classification of "pneumonia" and "non-pneumonia", these norms are not practiced in Guatemala. Preference for the old system is justified based on the wishes of Health Area staff who are already familiar with the old classifications and want to continue using them.

- Recommending antibiotic treatment for "moderate" ARI cases (which include otitis and pharyngitis) as well as for pneumonias. This was justified by the assertion that moderate ARIs could progress into more serious disease if not treated.

While logical on the surface, these variations must be seriously questioned for both financial and technical reasons (see Antibiotics section). At the very least, it can be concluded that health workers and managers will be confused if the MOH continues to use both the old and the new

SCM terminology and written materials simultaneously. Because the old norms recommended that all moderate ARIs be treated with antibiotics, it is also very likely that current treatment practices will continue, e.g., over-treatment of non-pneumonias with antibiotics.

V. Provider Practice/Quality of SCM

Little is known about the impact of the national ARI Program's earlier training effort, which ended in 1986, or the quality of SCM in government health facilities. Only one study of provider practice was found: a study conducted recently in the three large teaching hospitals in Guatemala City and in a number of urban and peri-urban IGSS health centers. (Chew, INCAP, unpublished). While this study covered facilities that may not have been included in the MOH's 1985-1986 training, preliminary findings reveal a number of common problems that are worthy of mention. First, only 1% of the physicians observed in the study counted respiratory rate correctly or at all during their examinations of children who presented with cough--counting respiratory rate for one full minute is the basis for pneumonia screening. Secondly, most physicians prescribed multiple medications for their ARI patients. It is likely that, once analyzed more closely, many of these medications will be found to be either unnecessary and/or more costly than the WHO recommended options.

To understand provider practices at lower levels of the health system, a cursory analysis of MOH service data for 1991 was carried out during our assessment (Appendix 3). While such data are admittedly imperfect, this type of analysis can help to identify gross problems and trends. In this case, a number of problems that are common elsewhere seem to be present in Guatemala, as well.

- Underdiagnosis of pneumonia (or severe ARI): Only approximately 3% of all of the children seen with ARI were classified as having severe ARI. In a developing country like Guatemala, the expected proportion is much higher (i.e., 9-15%).

- Over-use of antibiotics for treatment of non-pneumonias: The number of antibiotic treatments reported corresponds to 56% of the total ARI cases seen, and 112% of the combined moderate and severe cases. These proportions are much higher than they would have been if the stricter respiratory rate cutoff points for treatment (contained in the revised WHO guidelines) had been applied instead of those contained in the older norms. Only pneumonias and other bacterial ear and throat infections, or no more than 25% of all ARI cases in most developing country settings, require antibiotic treatment. This finding may indicate that previous training was successful, since it recommended that all moderate as well as severe ARI cases be treated with antibiotics. However, it also indicates that efforts are needed to up-date provider knowledge and to change their prescribing practices.

Prior to introducing revised SCM norms, it would be useful to gather more precise information about current treatment practices and the individual, professional and resource-related factors that affect them. Once the new norms have been introduced, making sure that

a supervision/quality control system is in place to encourage their use will also be extremely important.

VI. Increasing Access to SCM Through Health Promoters

During the initial years of the national ARI Program, emphasis was placed on increasing the population's access to SCM by training professional staff at first level health facilities and referral hospitals. In the coming years, the MOH believes that the only way to significantly extend SCM to undeserved communities will be through trained community health promoters. The MOH is therefore requesting USAID assistance to train promoters both to diagnose ARIs, as in the past, and to treat pneumonia with antibiotics. Because Guatemalan promoters are trained to give injections, the MOH has proposed that they be trained to give Procaine Penicillin as the first line treatment.

Promoters have been successfully trained to treat pneumonia using Cotrimoxizole tablets and syrups in other developing country settings and it is reasonable to believe that they could be trained to do the same in Guatemala. The use of Procaine Penicillin by promoters is not recommended for the reasons cited earlier and described below (see Antibiotic Supply).

Experience shows that promoters require careful training, on-the-job reinforcement of their knowledge and skills, and a reliable supply of antibiotics in order to treat pneumonia. It is beyond our ability, after only two weeks in Guatemala, to say whether or not the conditions exist for this support to be provided or whether current barriers to drug supply, for example, can be overcome during the two years of USAID support. Certainly, any USAID-supported ARI program that focuses on Promoters must address these issues. Moreover, because of the high cost involved in training and supporting Promoters, the effort to extend training to all Promoters should proceed slowly, including sufficient operations research to determine whether or not expansion of services in this way is the most cost-effective option for the GOG.

VII. Training and Reference Materials

Materials produced by the MOH in 1985 need revision. Content should be up-dated and targeted to different levels of worker. Obviously, the materials that are used with a physician or graduate nurse may be totally inappropriate for an auxiliary nurse, and vice versa. In the past, these differences were not taken into consideration. There is also a need to incorporate the terminology and explanatory models of ARI as understood by the population and to strengthen training content related to counseling. (see Communications section)

The methodologies used in past ARI training programs in Guatemala (presentation, reading of modules and discussion) and the training approach proposed by the MOH for the future (mass distribution of revised materials, a short training of trainers courses and second, third and fourth generation training conducted by Area trainers with little supervision) have both been shown to be ineffective in other settings. Practical, hands-on training in which trainees count respiratory

rate and observe the other clinical signs of pneumonia is required for health workers to develop required diagnostic and treatment skills. Initially, there will also be a need to convince specialists and other key individuals that the revised ARI norms are effective at preventing deaths from ARI.

The MOH has requested assistance from USAID to revise and print new training and reference materials. We suggest that USAID also assist in developing and testing new approaches to training, including the use of targeted training materials and more practical training methods. In Section III, Discussion of Training Issues, we describe a training approach that is more resource intensive, but which we believe would also be much more effective than the model proposed by the MOH.

VIII. Communications: Demand Generation and Counseling

Standard ARI case management can avert most deaths from pneumonia but only if families recognize signs and seek care promptly. The ARI Treatment Chart issued by WHO includes Four Rules of Home Care for children with ARI: food, fluids, soothing the throat, and when to seek care. For ARI, it is important to recognize that only strict attention to the fourth rule -- "when to seek care"--will prevent death. For this reason, recent ARI programs have focused their informational messages on pneumonia danger signs, the urgency of care-seeking when these occur, and treatment instructions to improve compliance.

The national ARI Program made the decision from the beginning not to use the mass media to stimulate demand for ARI services before those services were able to provide adequate SCM, i.e., until providers were adequately trained and antibiotics were readily available. Instead the Program focused on expanding SCM and simultaneously teaching physicians and other providers how to communicate the rules of home care to their clients. Program training curricula for primary health care doctors and nurses included the Four Rules of Home Care and the techniques for face-to-face communication with and counseling of clients. Program educational materials (flipcharts, posters, and flyers) also include these messages.

The Program has limited information about how much time doctors and nurses devote to communicating the ARI home care rules during their contacts with mothers, but it is thought to be very little. While there have been no large-scale studies of provider counseling or family knowledge in this regard, the study conducted by INCAP (Chew) found that the vast majority of mothers did not receive instruction on home care from the physicians and nurses observed.

Given the importance of immediate action when danger signs occur, it is crucial that the generic home care instructions are well understood by the mother. This concern will undoubtedly require a significant amount of attention in the future. In order to address it:

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- More ethnographic information is needed about the local beliefs and practices and the relationship between the signs and symptoms recognized by mothers and the clinical signs of pneumonia. Local "explanatory models" need to be constructed and validated to determine whether cultural variations must also be taken into consideration. At a minimum, additional studies are needed to identify terms for rapid or difficult breathing, which have to be taken into account in the design of messages for both face-to-face and mass media communication.

- More attention must be placed during training on ARI counseling and promotional techniques; the video and modules "Talking with Mothers" about ARI could be used for this purpose.

- Other ways of reaching the population with ARI messages must be tried.

An important question is whether the ARI Program is actually ready to increase the demand for ARI services, and, if it is not, when it will be ready to do so on a national basis? It is our feeling that it is too early, given problems with the quality of SCM and questions about antibiotic availability, to recommend the use of the mass media to raise awareness about pneumonia in young children. Such educational and promotional efforts should continue to be conducted only in areas where ARI services are up and running, by training and relying on both health workers and community promoters to spread the message.

Over the long term, however, given what appears to be rather serious under-utilization of ARI services, it will probably not be enough to rely only on health workers and Promoters to generate demand. Aside from the mass media, it may be worthwhile exploring the role of private pharmacies, private physicians, traditional healers, and pharmaceutical manufacturers in this effort.

IX. Antibiotic Supply

In our discussions with central MOH and Health Area staff, the ARI problem they mentioned most frequently was the inadequate supply of antibiotics in government health facilities. This problem is a common one, but it is also much more complicated in Guatemala than first meets the eye, as we discuss below.

First, there are a number of reasons why antibiotics are not readily available, including:

- Penicillin versus Cotrimoxazole: The choice of Procaine Penicillin for ARI treatment has serious financial implications for the Ministry of Health. As shown below, even without the additional costs of needles and syringes, Procaine Penicillin is from 10 to 20 times more expensive than Cotrimoxazole tablets.

**Estimated Annual Antibiotic Needs for
Treatment of Pneumonia Cases at Primary Health Care Level**

Total population	9,000,000
Children 0-4 years	1,700,000
Incidence of pneumonia (15%)	255,000
Non severe pneumonia to be treated at home by PHC facilities (50%)	127,500

Cost if Cotrimoxazole (Sulphametoxazol/Trimetorprim) used for home treatment at PHC level:

Current cost in US\$ through UNIPAC (UNICEF)(0.17 per treatment unit)	\$ 21,675
Current cost in US\$ through MOH Pharmaceu- tical Unit (0.14 per treatment unit)	\$ 17,840

Cost if Procaine Penicillin (not currently recommended by WHO) used for home treatment of pneumonia at PHC level:

Current cost in US\$ through UNIPAC (UNICEF)(1.21 per treatment unit)	\$ 154,275 ¹
Current cost in US\$ through MOH Pharmaceu- tical Unit (2.70 per treatment unit)	\$ 344,250 ²

(These estimates assume that 50% of the pneumonia incidence will be treated at home and that other cases will either be missed or classified as severe pneumonia and treated by hospitals or private physicians.)

¹ This cost does not include solvent or syringes.

² This cost does not include syringes.

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The conclusion from this analysis is that the quantity of antibiotics purchased by the GOG could be dramatically increased if Cotrimoxazole tablets were purchased instead of Procaine Penicillin. Most national ARI programs, for reasons of cost, have decided to use Cotrimoxazole tablets to treat pneumonia and are training health workers to teach mothers to crush the tablets and mix them with food or liquids to be given to the young child. Although the mothers' compliance with tablets may be a problem, research indicates that this can be overcome through adequate counseling.

- "Free" antibiotics: The GOG has a stated policy that all medications will be given free in government health facilities. Such facilities are, in fact, prohibited from charging for medications. Therefore, they do not have the local autonomy to establish their own revolving drug supplies. However, in many health facilities and towns, the MOH Pharmaceutical Unit (MOH Pharmaceutical Unit) has established revolving drug supplies, also known as Municipal and State Pharmacies, where antibiotics can be purchased at a subsidized price. State and Municipal pharmacies are often located in government health centers and hospitals.

- Criteria for ordering pharmaceuticals at the Area or District levels: Area Health Offices, health centers and hospitals are permitted to order their own pharmaceuticals through the government procurement system; health posts receive a standard list of products in similar quantities throughout the country. Only recently has the MOH, with PAHO assistance, begun to train Area and District managers to order essential pharmaceuticals in a way that makes sense epidemiologically and financially. It is fair to assume that the portion of the GOG pharmaceutical budget that is programmed by district health centers and hospitals could be better used by eliminating the purchase of products that have either very limited use or that are much more expensive than appropriate alternatives.

While these factors have a negative effect on the antibiotic supply, there is also reason to believe that effective community-based solutions to the problem could be developed:

- MOH Pharmaceutical Unit, State and Municipal pharmacies: As mentioned above, these entities make antibiotics available to the community at cost. There are reportedly 150 community-based outlets (municipal and NGO-run) and an unknown number of Promoters selling and distributing Cotrimoxazole around the country at the present time. Many of them purchase from the MOH Pharmaceutical Unit, taking advantage of a revolving drug fund established for just this purpose. State Pharmacies, which are located in hospitals and health centers and which are also supplied by the MOH Pharmaceutical Unit, are selling Cotrimoxazole and other antibiotics to the public at cost. Prices of all outlets supplied by the MOH Pharmaceutical Unit are far below those of commercial outlets and pharmacies.

- Promoters' revolving drug supply: The MOH has a program through which basic pharmaceuticals are given free of charge to those Community Health Promoters who are able to request them at the central office in Guatemala City. While this program probably serves very few Promoters, it is worthy of further study. Unlike government health workers and clinics, the Promoter is allowed to charge for the drugs s/he distributes and, therefore, could be

instrumental in establishing a revolving stock of antibiotics at the community level.

- NGO programs: NGOs frequently supply pharmaceuticals to the Promoters and clinics that they work with. In other countries, they have been instrumental in testing revolving drug funds, fees for service, etc.

- Private pharmaceutical manufacturers and generic products: Three local drug companies are currently producing low-cost, generic forms of Cotrimoxazole in adult dosage (encouraged by PAHO's Essential Drugs Program). There is reason to believe that these manufacturers would also be willing to produce pediatric dosages of Cotrimoxazole and perhaps even to package their products for different age groups, as has been done in other countries. The availability of low-cost, generic Cotrimoxazole is a great advantage both to the government, with its bulk purchasing power, and to the general population.

- MOH annual pharmaceutical procurement: We were told that prior to 1991 or 1992, the MOH Pharmaceutical Unit had included Cotrimoxazole tablets in its annual procurement. While the EEC donation was being provided, however, this item was greatly reduced in quantity. If the MCH Division advises the MOH Pharmaceutical Unit that Cotrimoxazole will again be needed, there is every reason to believe that much larger quantities will be made available for "free" distribution in health facilities.

- International donations: Until recently, the European Economic Community was donating antibiotics (not clear whether donation consisted of Cotrimoxazole, or Penicillin, or both) through UNICEF to the GOG. This donation stopped in 1992, but it is expected to start up again in the future, this time directed towards 49 targeted municipalities. UNICEF may also donate Cotrimoxazole in its priority Areas, and PAHO, under its Essential Drugs Program, expects to make supplementary pharmaceuticals available to Health Posts in five Areas during the coming year. With adequate planning, this supplementary assistance could include Cotrimoxazole and other antibiotics that are commonly required for referral care.

In short, while the availability of free or low-cost antibiotics is undoubtedly a serious problem, we believe that it is being aggravated by current ARI treatment policies and the failure to address the problem of financing through multiple channels. It is important to keep in mind that when MOH officials express concern about the lack of antibiotics, they are not saying that antibiotics are not available, but that they are not available "free", in sufficient quantities either to the health facilities or to the population. In today's world, with shrinking health sector budgets and growing populations, it is probably unrealistic to expect that such drugs will be free to all who need them. The ideal would be to make ARI antibiotics inexpensive enough so that all but the very poor are able to afford them. Special funds or stocks of free antibiotics could then be established for the poorest of the poor and other vulnerable population groups.

In other settings, the availability and affordability of drugs have been improved by careful implementation of a combination of user fees, district control of funds and community contributions.

It is vital that USAID's support of the national ARI Program include operational research in selected areas to test sustainable antibiotic supply and financing strategies.

MOH acceptance of Cotrimoxazole tablets as the treatment of choice for the primary care level should be negotiated before start up of the USAID ARI component.

X. Monitoring and Quality Control

The national ARI Program has not established a system for monitoring program activities or progress towards goals and operational targets. The national health information system currently collects information on a number of important ARI control variables, but this information is presented in numerical form and does not appear to have been used to assess program trends or achievements in any meaningful way.

Indicators can be constructed from the service statistics that are currently available, as shown in Appendix 3. While service statistics provide admittedly imperfect data, generating and tracking a few indicators of ARI access, diagnosis and treatment on an on-going basis would be useful. Prior to determining the indicators to be tracked, a number of potential alternatives should be validated through baseline studies at the facility level.

The current effort to revise the ARI reporting forms that are used at the Promoter, clinic and Area levels should be carefully coordinated to guarantee that the information collected is useful to managers at all levels. At present, the proposed forms (initial drafts) do not match from one level to the next; the amount of information collected is excessive; and, the proposed use of the information is unclear. Based on experience in other countries, REACH recommends that only a few (four or five) key indicators be generated through service reports. It is our opinion that outside technical assistance may be required to facilitate these revisions in the ARI information system.

XI. Related Activities of Other National and International Agencies

PAHO

Materno Infantil -

Funding and technical assistance for ARI advocacy and program management training (according to MOH, \$60,000 budgeted for training workshops; other funding from country and regional budgets also available).

Medicamentos Esenciales

Working with five Health Areas and the MOH Pharmaceutical Unit to improve procurement and use of available budget for essential drugs at Health Area, hospital, health center and health post levels; also providing supplemental drugs to health posts in the five Areas (\$200,000 budgeted through 1995).

INCAP

Grupo Técnico Base (GTB)

The GTB coordinates resources of INCAP, PAHO and WHO and works directly with the MOH, primarily with the MCH Division and in support of the Local Health Systems strategy; potentially a good channel or mechanism for information sharing between INCAP and MOH (no budget).

Dr. Francisco Chew/Dr. Ana Gadomsky (Johns Hopkins University) -

Dr. Chew and Dr. Gadomsky are currently completing a study of Vitamin A administration during ARI episodes and its effects on short and long-term morbidity. This study also includes two components that could potentially be very important in the design and implementation of the pneumonia control program -- a study of women's recognition of pneumonia danger signs and symptoms, and a study of ARI diagnosis, treatment and counseling practices of physicians and nurses working in hospitals and health centers in and around the Capital (Roosevelt, General, IGSS). The instruments used could conceivably be adapted/simplified for use by Area Health Offices to assess and monitor the quality of case management provided by trained health workers and to evaluate the pneumonia control program at the facility level.

Lic. Sandra Saenz de Tejada (anthropologist) -

Lic. Tejada conducted an ARI ethnographic study in 1989 in poor barrios of Guatemala City and currently beginning a four country study of pneumonia control practices at the household level. The study site in Guatemala is Ciudad Vieja, Sacatepequez. The first part of the study (3-4 months) is qualitative in nature and will provide taxonomy of signs and symptoms, illness classification, health seeking behaviors, compliance with prescribed treatments, sources and costs of services and antibiotics. The second phase of the study (8-9 months) will include prospective observations of a large number of ARI cases in the homes to validate the findings of the first phase. Potential use of this study's findings include (1) incorporating them into the counseling and training materials and training courses to be conducted; (2) using the terms and concepts to develop research instruments for the DHS, operations research, and other household surveys; (3) using them to develop communications messages for counseling materials and mass media campaigns.

Study of Indoor Smoke Pollution and Its Relationship to ARI and Low-Birth Weight -

A small study of this type was carried out in Quetzaltenango several years ago; a new, larger, prospective study is currently planned, but funding has not yet been approved; expected funding source is WHO.

Distribution of "ARI News" in Spanish -

INCAP distributes this important publication throughout Central America. According to APHA, INCAP's mailing list is seriously out of date so it is unclear if the individuals in Guatemala who should be receiving "ARI News" are indeed receiving it.

UNICEF

Communications -

UNICEF is concentrating on the "demand" side of the ARI problem and household-level "self-care" of ARIs. Support is planned for network of 100 NGOs throughout the country, with emphasis in high priority departments. In the past, UNICEF administered funding from the EEC for procurement of ARI antibiotics; however, this relationship ended in 1992. UNICEF also supported the production of the national MCH plan (1992-1996) and norms which were recently published. (Budget has been designated for priority Health Areas, primarily for NGO support and production of communications and program support materials for the community level; UNICEF also plans to purchase pediatric dose tablets of Cotrimoxazole for distribution by health promoters in its priority areas; UNICEF has its own materials productions unit and technical staff in the priority Areas)

EEC

No contact during assessment mission, but we were told that EEC will place a representative in country soon and that it will continue support for procurement and free distribution of specific essential drugs in 49 municipalities.

NGOs

Contacts only with Project Hope and CARE during assessment mission; The scale of NGO involvement in ARI is not known and would be worth further investigation. 79 NGOs are said to purchase pharmaceutical, including ARI antibiotics, at low-cost from the MOH Pharmaceutical Unit, and several of them have taken advantage of the revolving funds for essential drugs that were originally set aside for establishment of municipal pharmacies. Several NGOs have received technical assistance to introduce the revised WHO pneumonia control guidelines.

XII. DISCUSSION OF TRAINING ISSUES

The ARI Program will give high priority to training as a key activity to increase the access of the population to standard case management. The organization of training is probably the most time- and effort-consuming Program activity.

Six types of training courses will be needed to meet the needs of different types of health workers:

A. National level: Case management training for specialists and key Area medical staff in charge of pneumonia control training programs.

The training of pediatricians and key Area medical personnel is very important for the success of the ARI Program. They have an important role to play in the care of hospitalized children with severe pneumonia, in the treatment of other severe respiratory infections, and in the prevention of mortality. Training courses will be needed to ensure that pediatricians acquire updated information and skills related to inpatient care, and that they are in full support of the ARI Program's policies and the revised SCM strategy.

The recommended duration of the national Training of Trainers course is 5 days. The curriculum should include lectures, the detailed study of WHO documents, (including the module on the management of ARI in young children and the manual on case management of ARI in small hospitals), and clinical practice. A center for training of specialists and key Area staff should be developed in Guatemala City, potentially at the Roosevelt Hospital where the staff have already participated in a study of provider practice and where they appear to be ready to establish such a training program for hospital staff and residents.

B. Area Level: Training in program management for the officers responsible for ARI activities.

The objective of this course will be to train health managers to plan, monitor and evaluate ARI control activities. Two courses of this type are already being planned by the national ARI Program with PAHO funding. The courses will be organized in Guatemala by the central level MOH staff.

The management course for the Area's officers would be of greater practical value if the participants could combine the study of the managerial principles for the control of ARI (using the WHO/ARI Program Managers' modules) with a review of the National ARI Plan of Action and the review of data from their own Area assessments. During the course the participants should be required to formulate or reformulate a plan of ARI activities for their own jurisdictions, under the guidance of the course facilitators. Experience in other countries indicates that participants become highly motivated when they are requested to apply the principles of planning to their own areas. For this to take place, ARI managers should be carefully selected and asked, in advance, to bring the data to the course that they will need to

carry out the planning exercises.

All mornings during the Training of Trainers' course should be used to review cases, to discuss the new SCM norms with tutors, and to apply them with sick children in in-patient wards and out-patient clinics. Afternoons should be used for making full use of the wide range of clinical training materials developed by the ARI program and WHO. Only tutors who are fully convinced that the WHO pneumonia SCM guidelines are effective should be assigned the tutorial responsibilities within the national and Area ARI training programs. It is of paramount importance that the clinics attached to the training programs perform SCM as recommended in the ARI program guidelines, including the appropriate use of antibiotics. A training program which teaches what it does not practice seriously undermines the achievement of its training objectives. To accommodate the clinical training required, the number of trainees rotating through the hospital services must be small and in relation to the service's ability to absorb them. Four persons during each training week is the number recommended for the first round of training of master trainers.

C. Area Level: Clinical case management training for doctors and nurses and trainers of lower level health workers.

One of the first activities at the initiation of the Program in each Area will be the establishment of an ARI training program (ATP) at a general or paediatric hospital by those individuals who were trained at the national level. Clinical training of doctors and nurses from the hospital and from the districts within the Area will take place in this site where it should be possible to observe and treat pneumonia cases first-hand. WHO materials and adapted local materials will be used in this training. Each ATP must be supplied with basic equipment, audiovisual aids and educational materials. And to ensure that Area trainers are prepared to effectively transfer SCM, counseling and training skills (for second generation Area trainings), they must be involved in both clinical practice and theoretical training sessions.

The duration of the training course should be 3-4 days, and it should include clinical practice in an outpatient or inpatient service and use of the WHO modules that focus on the management of children with ARI and counseling skills. Courses could include lectures (epidemiology of ARI in children, case management protocol, antibiotic treatment), the use of the WHO video exercises to practice counting respiratory rates and the assessment of children with coughs and difficult breathing. The immediate results of the course will be assessed through pre and post-course tests.

WHO has developed a 4-Day Course on Outpatient Management of Young Children with ARI which includes a wide range of materials and provides guidance for organizing effective clinical exercises. The course was successfully field tested by WHO. The Program should consider adapting this course for the training of primary health care doctors.

The quality of the training provided to this level of health provider is of primary concern since the Program will not meet its objectives if training is effective only in disseminating

knowledge; the challenge will be to incorporate the correct case management of pneumonia into the clinical practice of primary health care. The results of health facility surveys that have measured training effectiveness in other settings, demonstrate just how difficult it is to change medical and nursing practices. There should be no illusions that the training methodologies of the past will be sufficient for the future, because they simply will not.

D. Case management training for rural health auxiliary personnel.

A 3-day course for rural health auxiliary staff should be designed. The physicians and nurses trained in step 3 above would act as the trainers for these courses. Training content should be both theoretical and practical, including observation of children with ARI in the ambulatory services of the nearest district referral hospital. The ARI case management manual would be the basis for training content. The objectives of the course would be to train auxiliary nursing staff and rural health technicians to: (1) communicate the early signs of pneumonia and the need for prompt care seeking to family members; (2) assess children with cough or difficult breathing; (3) provide nursing care for children with respiratory infections according to the case management protocol; and, (4) give antibiotic treatment when necessary. The two WHO videos on assessment of children with ARI could be used.

E. Case management training for Community Health Promoters.

SCM training for Promoters must be geared to their level of literacy and understanding of basic medical concepts. The more practical and participatory the training can be the better. It is recommended that Health Center staff, trained in step 3 above, act as the trainers of Health Promoters and that auxiliary nurses and TSR's continue to be responsible for their supervision. WHO modules for use with Promoters exist, but they have not been fully field-tested, as yet. Development or revisions of the Promoter training curriculum and materials should be one of the first priorities during Phase I of the ARI Component.

Other types of training, and other methods of training may also be required to reach ARI Component goals. For example, in urban areas, many caretakers take their sick children directly to private physicians, traditional healers and/or private pharmacies for treatment, bypassing the government facilities entirely unless hospitalization is required. This raises the possible need to address these sectors with training and information.

More information is needed from private physicians about their current practices and attitudes towards SCM and their use of antibiotics. If it appears necessary, and it is within the scope of the USAID-funded ARI Component, new efforts could be initiated to direct up-to-date information on ARI SCM to the private general and pediatrics practitioners currently providing services to children with pneumonia. A good network for this might be the private medical associations. Another probable channel to private physicians would be the pharmaceutical industry's marketing system. Potentially effective continuing education efforts might be launched through either network to target physicians with material about SCM and Cotrimoxazole.

ANNEX 5

STAFFING REQUIREMENTS

I. A. Long-term Technical Advisor in Child Survival (Expatriate)

Level of Effort: One person for two years.

Scope of Work:

- Advise MOH on EPI, ORT and Pneumonia Control program implementation strategies, training programs, logistics, and monitoring and information systems.
- Provide support for the development of a National Plan for Pneumonia Control.
- Provide support and training of Health Area personnel during the Operational of Plans for EPI, ORT and ARI activities, including a budget and financial plan for the local level.
- Provide technical assistance and promote the design of alternative strategies for assuring availability of antibiotics at the local level.
- Assist in the design of an ARI program information system.
- Assist in training MOH personnel in the implementation of alternative methods of evaluation of EPI, ORT and ARI interventions.
- Coordinate the design and implementation of operational research (especially for ARI) through local universities, INCAP and other private organizations.
- Promote the involvement of the pharmaceutical private sector in the implementation of the ARI program.
- Promote the development of population and epidemiological studies related to ARI and pneumonia mortality, morbidity and cause-effect.
- Support the MOH in their coordination of national efforts to raise awareness of and resources for control pneumonia in the country.

Qualifications:

- MD and MPH (epidemiology or infections disease control) or PhD (Medical Anthropology) with at least five years experience working within a ministry of health in Latin America and at least five years of experience providing technical assistance in planning, implementation, training and evaluation of infection control programs.
- Experience in providing technical assistance in a Latin American environment.
- Experience working with USAID and United Nations administrative and technical cooperation systems.
- Willingness to travel 30% of the time inside the country.
- Fluency in Spanish and English.

II. ARI Technical Officer (Clapp & Mayne; Local)

Level of Effort: One person for two years.

Scope of Work:

- Coordinate efforts of C&M to provide administrative and technical support in the design and implementation of Health Area pneumonia control plans and activities.
- Coordinate the C&M administrative and technical support provided for training of Area personnel.
- Coordinate the C&M administrative and technical assistance for the design of activities to assure availability of antibiotics at the local level.
- Coordinate the C&M administrative and technical support for the design and implementation of a supervision and monitoring strategy.
- Coordinate C&M administrative support for implementation of operational research at the Area level.
- Coordinate production of training materials and reports.
- Coordinate production, review and revision of Area reports to the MOH and USAID.

Qualifications:

- MD with three years experience working within Ministry of Health in Guatemala. MPH and/or Epidemiology or statistics training desirable.
- Experience in MOH administrative and training procedures.
- Willingness to travel 60% of the time inside the country.
- Computer skills (spreadsheets, Word processors, graph designers).
- Fluency in English (not necessarily).

ANNEX 6

TABLE No. 1
10 Principal Causes of Infant Mortality
Guatemala, 1989

CAUSES	No.	RATE x 1,000
1. Perinatal Diseases	4,663	14.1
2. Acute Respiratory Infection	2,903	8.8
3. Diarrhea	2,469	7.5
4. Congenital Anomalies	661	2.0
5. Malnutrition	539	1.6
6. Endocrine, Metabolic and Immune Diseases	379	1.1
7. Other Bacterial Diseases	238	0.7
8. Viruses	222	0.7
9. Other Infectious and Parasitic Diseases	214	0.6
10. Undefined signs, symptoms	953	2.9
Remain Causes	441	1.3
TOTAL	13,682	41

*Note: Official Infant Mortality Rate for 1989

Source: Information Unit, DGSS, Ministry of Health

TABLE No. 2
PRINCIPAL CAUSES OF MORBIDITY
Guatemala, 1987

CAUSE	UNDER 1 YEAR	1-4 YEARS	UNDER 5 YEARS	TOTAL No.
1. Acute Respiratory Infection	29.0	36.0	65.0	165,571
2. Diarrheal	26.0	41.0	67.0	100,290
3. Malaria	2.0	14.0	16.0	57,662
4. Malnutrition	16.0	44.0	60.0	42,173
5. Tuberculosis	2.0	6.0	8.0	4,940
6. Gonococcus Infections	0.5	0.6	1.1	4,118
7. Hepatitis Infection	5.0	43.0	48.0	2,515
8. Chicken Pox	16.0	34.0	50.0	2,040
9. Complicated Tuberculosis	3.0	9.0	10.0	1,308
10. Syphilis	1.5	1.5	3.0	1,270

Source: Information Unit, DGSS, Ministry of Health

TABLE No. 3
IMMUNIZATION COVERAGE (%) IN CHILDREN UNDER 1 YEAR OLD

VACCINE	1985	1986	1987	1988	1989	1990	1991	1992*
DPT	9	39	16	44	56	66	60	49
POLIO	9	41	18	58	64	72	65	51
MEASLES	23	52	24	55	60	68	48	44

Source: Information Unit, DGSS MOH

*Information available as of September 1992

TABLE No. 4
IMMUNIZATION COVERAGE (%) IN CHILDREN UNDER 1-4 YEARS OLD
Guatemala, 1985-1991

VACCINE	1985	1986	1987	1988	1989	1990	1991	1992*
DPT	41	69	56	62	50	39	48	28
POLIO	40	78	58	74	59	51	56	30
MEASLES	55	79	74	67	51	49	45	33

Source: Information Unit, DGSS MOH

*Information available as of September 1992

ANNEX No. 7
Detailed Illustrative Budgets
for this Amendment

TABLE No. 3

**EXPANDED PROGRAM OF IMMUNIZATION AND ORAL REHYDRATION THERAPY
SERVICES FOR CHILD SURVIVAL, PROJECT No.520-0339
AID CONTRACT No.520-0339-C-00-2147-00
CLAPP AND MAYNE, INC., AND PROJECT ELEMENTS
PERIOD: JULY-93 TO AUGUST-95**

No	COMPONENT	PHASE II						TOTAL FX+LC
		JULY 1993		1994		AUGUST 1995		
		FX	LC	FX	LC	FX	LC	
	CLAPP AND MAYNE PERSONNEL	48,736	79,642	96,283	158,492	118,868	118,868	620,889
	CLAPP AND MAYNE OTHERS EXPENDITURES	199,264	120,358	399,717	239,742	257,579	157,822	1,374,482
	SUB-TOTALES	248,000	200,000	496,000	398,234	376,447	276,690	1,995,371
1	EXPANDED PROGRAM OF IMMUNIZATIONS (EPI)		41,200		108,300		82,500	232,000
2	ORAL REHYDRATION THERAPY (ORT)		25,000		75,000		50,000	150,000
3	HEALTH MANAGEMENT INFORMATION SYSTEM (H/MIS)		31,300		70,800		62,900	165,000
4	IMPROVED ADMINISTRATIVE SYSTEM (IAS)		21,400		64,000		42,600	128,000
5	ACUTE RESPIRATORY INFECTIONS (ARI)		20,000		30,000		25,000	75,000
	SUB-TOTALES		138,900		348,100		263,000	750,000
	TOTALES	248,000	338,900	496,000	746,334	376,447	539,690	2,745,371

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TABLE No. 3-A
 EXPANDED PROGRAM OF IMMUNIZATION AND ORAL REHYDRATION THERAPY
 SERVICES FOR CHILD SURVIVAL PROJECT No 520 0339
 AID CONTRACT No.520-0339-C-00-2147 00
 DETAILED OF PHASE II OF CLAPP AND MAYNE ILLUSTRATIVE BUDGET
 JULY 1993-AUGUST 1995

No	CATEGORY	FASE II								
		JULIO 1, 1993		1994		AGO 31, 1995		TOTALES		
		FX	LC	FX	LC	FX	LC	FX	LC	FX+LC
1	SALARIES	41,000	67,000	81,000	133,334	100,000	100,000	222,000	300,334	522,334
2	FRINGE BENEFITS	7,736	12,642	15,283	25,158	18,868	18,868	41,887	56,668	98,555
3	OVERHEAD	85,970		171,938		114,625		372,533	0	372,533
4	TRAVEL, TRANSPORTATION AND PER DIEM	7,422	11,132	14,843	22,264	9,894	14,842	32,159	48,238	80,397
5	ALLOWANCES AN DIFFERENTIAL	5,587	8,380	11,173	16,760	7,449	11,172	24,209	36,312	60,521
6	OTHER DIRECT COSTS	8,818	13,228	17,637	26,456	11,758	17,637	38,213	57,321	95,534
7	PROCUREMENT/MANAGEMENT		138,900		348,100		263,000	0	750,000	750,000
8	SUBCONTRACTS	61,237	87,618	123,789	174,262	73,628	114,171	258,714	376,051	634,765
	SUB-TOTAL	217,830	338,900	435,663	746,334	336,222	539,690	989,715	1,624,924	2,614,639
9	FIXED FEE	30,170		60,337		40,225		130,732		130,732
	GRAND TOTAL	248,000	338,900	496,000	746,334	376,447	539,690	1,120,447	1,624,924	2,745,371

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TABLE No. 3-B
CLAPP & MAYNE, INC. STAFF

No.	NOMBRE	PUESTO	FECHA INGRESO	FECHA EGRESO
PERMANENTE				
1	Barrillas Fco De Jesus	Guardian	01/04/93	
2	Cardona Edwin	Gestor Huehuetenango	09/10/92	
3	Carranza G Lesbia Leticia	Gestor Guatemala Sur	02/22/93	
4	Cifuentes David	Gestor Suchitepequez	01/04/93	
5	Corado Lopez Raul Dario	Programador de Sistemas	12/01/92	
6	Davila Walter E	Gestor Chimaltenango	01/04/93	
7	Fron Marco Antonio	Asistente Financiero	07/01/92	
8	Fuentes Juan Leonardo	Programador de Sistemas	12/16/92	
9	Fuentes Lucrecia P (de)	Asesor Administrativo	01/18/93	
10	Fuentes Lucrecia P (de)	Gestora San Marcos	08/27/92	01/17/92
11	Garcia Andres	Gestor Guat. Norte	11/06/92	
12	Garcia Felidey	Piloto	08/28/92	
13	Giron Flores Marwyn	Gestor Baja Verapaz	02/01/93	
14	Giron Victoria	Administradora	07/13/92	
15	Haro Arlette	Gestora Amatitlan	02/01/93	02/28/93
16	Jacobs B. Ericka	Gestor Quezaltenango	01/18/93	
17	Mancilla Oscar Rutilio	Guardian	09/28/92	11/29/92
18	Manrique A. Leonardo	Gestor Totonicapan	01/21/93	
19	Marcio Cantillo	Epidemiologo	07/13/92	
20	Martinez Mayron	Gestor Solola	02/01/93	
21	Mejia Chamale Jaime	Conserje	09/08/92	
22	Mejia Pimentel Danilo	Asesor Financiero	07/01/92	
23	Ortiz Luisa Pineda (de)	Secretaria	08/17/92	
24	Pacajo Miguei Angel	Asistente Financiero	07/01/92	
25	Paiz Zeledon Gil	Gestor Peten	03/01/93	
26	Pastor Juan Pablo	Gestor Izabal	02/01/93	
27	Pastor Max Oswaldo	Programador de Sistemas	01/15/93	
28	Pecks Jorge	Asesor en Compras	07/01/92	
29	Pedro Ignacio Escalante	Programador de Sistemas	01/04/93	
30	Pena Jose M	Director Proyecto	06/28/92	
31	Perez Edgar	Gestor Alta Verapaz	02/22/93	
32	Pineda Jose Fco	Asesor Administrativo	07/01/92	01/09/93
33	Puente Marlon Alfredo	Encargado de Inventario	12/14/92	01/31/92
34	Rios Yambo Ramon	Sub-Director Proyecto	09/19/92	
35	Rodas Mario Romeo	Gestor Quiche	01/12/93	
36	Rodriguez Julio Cesar	Encargado de Bodega	12/14/92	
37	Ruano Guzman Giovanni Francis	Gestor Sacatepequez	02/01/93	
38	Santos Jose Maria	Gestor Escuintla	02/01/93	02/28/93
39	Sosa de Gilda	Gestora San Marcos	02/01/93	
40	Tuy Julio Alberto	Gestor Santa Rosa	02/15/93	
41	Arriola Sandoval Gildardo	Encargado Cont Inventarios	02/05/93	
42	Arriola Sandoval Jose Antonio	Gestor Chiquimula	03/01/93	
43	Aguilar Duarte Julia Raquel	Gestora Escuintla	03/10/93	
44	Hernandez Manuela	Gestora Retalhuleu	03/24/93	
TEMPORAL				
1	Aguirre Milton	Asesor	09/24/92	12/31/92
2	Moran Ivonne E.	Traduccion	12/16/92	02/08/93
3	Valdes G. Mara Ivonne	Apoyo Secretarial	07/18/92	
4	Edgar Lopez	Digitador Cadena de Frio	01/25/93	

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TABLE No. 4

IMMUNIZATION AND ORAL REHYDRATION
SERVICES FOR THE CHILD SURVIVAL, PROJECT NO. 520-0339

PROJECT IMPLEMENTATION PLAN

ACTIVITY	ACTION AGENT(S)	1993												DATE	
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DIC		
E P I															
Changes to Immunization Committee	C&M/MOH														AUG 1993
Improved Municipality/HA Registration	C&M/MOH/Muni														OCT 1993
Continuing Coordination	INT'L AGENCIES														Continuing
Finance Special Request	C&M/MOH														Sporadic
District and Community Promotions	C&M/MOH/HA														Continuing
Support of National Sweeps	C&M MOH														OCT 1993
Cold Chain Equipment															
Cold Rooms Installation, Central	MOH														SEP 1993
Arrival/Dist AID Refrigerators	AID/C&M														NOV 1993
Arrival/Dist Thermometers	AID/C&M														SEP 1993
Vaccine Transportation Boxes	AID/C&M/MOH														AUG 1993
AID Provided Syringes	AID/C&M/MOH														AUG 1993
Procurement of 500 Thermos	C&M/AID														DEC 1993
Repair of Refrigerators	C&M/MOH														Continuing
Assist Instal Solar Ref	MOH/C&M/MINES														DEC 1993
Discharge Unrepair Ref Inventory	MOF/MOH														NOV 1993
Prepare/Dist Booklet on Ref	C&M/MOH														AUG 1993
Disposition of two Cold Rooms	MOH/MOF														NOV 1993
Training on Cold Chain	C&M														Continuing
Training of Maint Techs	C&M/INTECAP														OCT 1993
O R T	C&M/MOH/AGEN														AUG 1993
Define strategy on Implementation of UROC's	C&M/MOH														30 May 93
Workshop to unify criteria on implementation	C&M/MOH														
Procurement of Items Needed in UROC's in 4 areas	AID/C&M														30 Jun 93
Procurement of Training Material	C&M/MOH														

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TABLE No. 4

IMMUNIZATION AND ORAL REHYDRATION
 SERVICES FOR THE CHILD SURVIVAL, PROJECT NO. 520-0339
 PROJECT IMPLEMENTATION PLAN

ACTIVITY	ACTION AGENT(S)	1993												DATE
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DIC	
Workshops for RHT & Aux Nurse of Health Post in 4 HA	C&M/MOH													31 Aug 93
Training of Volunteers by RHT & Aux Nurse	MOH													30 Sep 93
Installation of UROCs in 4 areas,	C&M/ MOH													30 Nov 93
Evaluation visit to installed UROCs	C&M/MOH													Continuing
Develop plans for Integral Training UROC	C&M/MOH													30 Jul 93
Develop methods of training by Integral Training Unit	C&M/MOH													30 Sep 93
Program installation of first Integral Training Unit	C&M/MOH													30 Nov 93
Maintenance of vehicles	C&M													DEC 1993
Maintenance of motorcycles	C&M													DEC 1993
Vehicle and Maintenance Study	C&M/MOH													JUL 1993
Training for Vehicles maintenance														SEP 1993
Procurement for Vehicles' Spare parts	C&M													DEC 1993
Procurement for Motorcycles' Spare parts	C&M													DEC 1993
Procurement of Tires	AID													DEC 1993
System for Vehicles utilization Control	C&M													JUN 1993
SIIS Work Formats and Forms														
1 Evaluation of SIIS Forms	C&M/MOH													AUG 1993
2 Printing of Forms	C&M/MOH													OCT 1993
3 Distribution of Forms	C&M/MOH													NOV 1993
4 Training on Use of Forms(24 Areas - 96 Persons)	C&M/MOH													NOV 1993
Acceleration of the Information System	C&M													
1 Elaboration of Sample	C&M													DEC 1993
2 Telecommunications Implementation	C&M													DEC 1993
3 Coordination of Microcenter at (9) Central y (24) Areas	C&M													DEC 1993
														SEP 1993

TABLE No. 4

IMMUNIZATION AND ORAL REHYDRATION
SERVICES FOR THE CHILD SURVIVAL, PROJECT NO. 520-0339

PROJECT IMPLEMENTATION PLAN

ACTIVITY	ACTION AGENT(S)	1994												DATE
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DIC	
Immunization Campaign														
Changes to Immunization Committee	C&M/MOH													MAR 1994
Improved Municipality/HA Registration	C&M/MUNI/MOH													NOV 1994
Continuing Coordination	INT'L AGENCIES													Continuing
Finance Special Request	C&M/MOH													Sporadic
District and Community Promotions	C&M/MOH/HA													Continuing
Support of National Sweeps	C&M MOH													Periodic Ch
Cold Chain Equipment														
Repair of Refrigerators	C&M/MOH													Continuing
Training on Cold Chain	C&M/INTECAP													JUN 1994
Training of Maint Techs	C&M/MOH													AUG 1994
Procurement of Items Needed in UROC's in 20 areas	AID/C&M													MAR 1994
3 Workshops to extend training to 20 areas	C&M/MOH													MAY 1994
Procurement of Training Material	C&M/MOH													APR 1994
3 Workshop for RHT & Aux Nurse of Health Post 20 HA	C&M/MOH													JUL 1994
Training of Volunteers by Tech & Nurses in 20 HA	MOH													AUG 1994
Installation of UROCs in 20 Health Areas.	C&M/ MOH													Continued
Evaluation visit to installed UROCs	C&M/MOH													Continued
Training of MOH Personnel on Training Units	C&M/MOH													MAR 1994
Procurement of Needed Items for Training Units	C&M													MAY 1994
Installation of Five Training Units	C&M/MOH													MAR 1994
Evaluation on impact in Communities with UROCs	C&M													MAY 1994

TABLE No. 4

IMMUNIZATION AND ORAL REHYDRATION
SERVICES FOR THE CHILD SURVIVAL, PROJECT NO. 520-0339

PROJECT IMPLEMENTATION PLAN

ACTIVITY	ACTION AGENT(S)	1994												DATE	
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DIC		
Maintenance of vehicles	C&M														DEC 1994
Maintenance of motorcycles	C&M														DEC 1994
Vehicle and Maintenance Study	C&M														DEC 1994
Training for Vehicles maintenance	C&M														SEP 1994
Procurement for Vehicles' Spare parts	C&M														DEC 1994
Procurement for Motorcycles' Spare parts	C&M														DEC 1994
Procurement of Tires	C&M														SEP 1994
System for Vehicles utilization Control	C&M														DEC 1994
SIIS Work Forms															
1 Evaluation and Reduction of SIIS Forms	C&M/MOH														AUG 1994
2 Printing of Forms	C&M/MOH														OCT 1994
3 Distribution of Forms	C&M/MOH														NOV 1994
4 Training on the use of Forms (24 Areas 96 Person)	C&M/MOH														NOV 1994
Acceleration of Information System															
1 Support in Short term Sampling 24 Areas	C&M/MOH														SEP 1994
2 Implementation of Mapping System, Central	C&M/MOH														JUL 1994
3 Intersectoral Coordination (Births and Deaths)	C&M/MOH														OCT 1994
Computer Programming Support															
1 Report Generation on SIIS Year 1993	C&M/MOH														MAR 1994
2 Accounting System Implementation for 24 Areas	C&M/MOH														JUN 1994
3 System Design For Volunteer Personnel	C&M/MOH														OCT 1994
4 System Programing for Volunteer Personal System	C&M/MOH														DEC 1994
Support for the Health Area Microcenters															
1 Decentralized Maintenance Program	C&M/MOH														SEP 1994
2 Decentralized Volunteer Personnel Process	C&M/MOH														OCT 1994

TABLE No. 4

IMMUNIZATION AND ORAL REHYDRATION
SERVICES FOR THE CHILD SURVIVAL, PROJECT NO. 520-0339

PROJECT IMPLEMENTATION PLAN

ACTIVITY	ACTION AGENT(S)	1995												DATE	
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DIC		
Improved Municipality/HA Registration	C&M/MUNI/MOH														APR 1995
Continuing Coordination	INT'L AGENCIES														Continuing
Finance Special Request	C&M/MOH														APR 1995
District and Community Promotions	C&M/MOH/HA														Continuing
Support of National Sweeps	C&M MOH														JUN 1995
Cold Chain Equipment															
Repair of Refrigerators	C&M/MOH														JUL 1995
Completion of Installation of All UROC's	AID/C&M														APR 1995
Workshop to Analyze Benefits & Lessons learned	C&M/MOH														APR 1995
Make an Impact Evaluation	C&M/MOH														MAY 1995
Installation of last three Training Units	C&M/MOH														JUN 1995
Final workshops for RH Tech & Aux Nurs	MOH														JUL 1995
Final Evaluation of Volunteers	C&M/ MOH														
Maintenance of vehicles	C&M														JUL 1995
Maintenance of motorcycles	C&M														JUL 1995
Vehicle and Maintenance Study	C&M														JUL 1995
Training for Vehicles maintenance	C&M														JUL 1995
Procurement for Vehicles' Spare parts	C&M														JUL 1995
Procurement for Motorcycles' Spare parts	C&M														JUL 1995
Procurement of Tires															
System for Vehicles utilization Control	C&M														JUL 1995

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TABLE No. 4

IMMUNIZATION AND ORAL REHYDRATION
SERVICES FOR THE CHILD SURVIVAL, PROJECT NO. 520-0339

PROJECT IMPLEMENTATION PLAN

ACTIVITY	ACTION AGENT(S)	1995												DATE
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DIC	
Work Forms for the SIIS														
1 Evaluation and Reduction of SIIS Formsos	C&M/MOH													FEB 1995
2 Printing of Forms	C&M/MOH													MAR 1995
3 Distribution of Forms	C&M/MOH													MAY 1995
4 Training on Use of Forms (24 Areas 96 Persons)	C&M/MOH													MAY 1995
Acceleration of Information System														
1 Support on Sampling Type Coorte 24 Areas	C&M/MOH													JUL 1995
2 Implementacion Sistema Personal Voluntario 24 Areas	C&M/MOH													JUL 1995
3 Intersectorial Coordination (Epidemiological Vigilance)	C&M/MOH													JUL 1995
Computer Programing Support														
1 Report Generation SIIS Year 1994	C&M/MOH													MAR 1995
2 Design of Human Resource System	C&M/MOH													MAR 1995
3 Programing For Human Resource System	C&M/MOH													JUN 1995
4 Implementation of Human Resource System	C&M/MOH													JUL 1995
Support for Health Area Microcenters														
1 Support for Needed Planning Procurement	C&M/MOH													APR 1995
2 Descentralization of Human Resources Program	C&M/MOH													JUL 1995
3 Support for Other Local Information Systems	C&M/MOH													JUL 1995
4 Maintenance Contract	C&M/MOH													Continuing
Training														
1 Training for QPRO and Human Resource System	C&M/MOH													JUL 1995
2 Training on QPRO and Analysis of Indicators	C&M/MOH													JUL 1995
Interno Project Support														
1 IRA, PAI/TRO Systems	C&M/MOH													Continuing
2 Budget and Accounting Systems	C&M/MOH													Continuing

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TABLE No
 IMMUNIZATION AND ORAL REHYDRATION THERAPY SERVICES
 FOR CHILD SURVIVAL PROJECT
 AID CONTRACT No 520-0339-C-00-2147-00
 METHODS OF IMPLEMENTATION AND FINANCING
 PHASE II
 U.S. DOLLAR

ACTIVITY	ACTION AGENT(S)	METHOD OF FINANCING	GRAND TOTAL
EXPANDED PROGRAM OF IMMUNIZATION (EPI)			
COLD CHAIN			
Freight refrigerators	C&M	CONTRACT DIRECT PAYMENT	6 000
Maintenance & spare parts installations	C&M	CONTRACT DIRECT PAYMENT	40 000
	C&M	CONTRACT DIRECT PAYMENT	6 000
IMMUNIZATIONS			
National immunization campaign	C&M	CONTRACT DIRECT PAYMENT	40 000
Training	C&M	CONTRACT DIRECT PAYMENT	20 000
Promotion	C&M	CONTRACT DIRECT PAYMENT	20 000
TRANSPORTATION			
Freight motor HA-GUAT HA (maintenance)	C&M	CONTRACT DIRECT PAYMENT	6 000
Maintenance for 50 vehicles	C&M	CONTRACT DIRECT PAYMENT	53 000
Maintenance for 100 motorcycles	C&M	CONTRACT DIRECT PAYMENT	17 000
Spare parts			
For 50 vehicles	C&M	CONTRACT DIRECT PAYMENT	5 000
For 100 motorcycles	C&M	CONTRACT DIRECT PAYMENT	3 000
Fuel	C&M	CONTRACT DIRECT PAYMENT	10 000
Training	C&M	CONTRACT DIRECT PAYMENT	5 000
SUB-TOTAL			232 000
ORAL REHYDRATION THERAPY (ORT)			
ORAL REHYDRATION UNITS (ORU)			
Remodelations	C&M	CONTRACT DIRECT PAYMENT	20 000
Equipment, materials and supplies	C&M	CONTRACT DIRECT PAYMENT	30 000
Training	C&M	CONTRACT DIRECT PAYMENT	50 000
Promotion for ORT activities	C&M	CONTRACT DIRECT PAYMENT	50 000
SUB-TOTAL			150 000
HEALTH MANAGEMENT INFORMATION SYSTEM (HMIS)			
COMPUTER SYSTEM			
Maintenance	C&M	CONTRACT DIRECT PAYMENT	40 000
HEALTH INTEGRATED INFORMATION SYSTEM (HIIS)			
Materials and supplies	C&M	CONTRACT DIRECT PAYMENT	40 000
Training	C&M	CONTRACT DIRECT PAYMENT	70 000
Monitoring	C&M	CONTRACT DIRECT PAYMENT	15 000
SUB-TOTAL			165 000
IMPROVED ADMINISTRATIVE SYSTEM (IAS)			
MANAGEMENT OF FUNDS-PROCUREMENT			
Materials and supplies	C&M	CONTRACT DIRECT PAYMENT	48 000
Training (Procedures installation, execution for budget - cost - administration)	C&M	CONTRACT DIRECT PAYMENT	60 000
ADM SUPPORT CENTRAL LEVEL			
Materials and supplies	C&M	CONTRACT DIRECT PAYMENT	10 000
Training	C&M	CONTRACT DIRECT PAYMENT	10 000
SUB-TOTAL			128 000
ACUTE RESPIRATORY INFECTION (ARI)			
CLAPP AND MAYNE, INC	C&M	CONTRACT DIRECT PAYMENT	75 000
SUB-TOTAL			75 000
TOTALS			750 000

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TABLE No. 6
 IMMUNIZATION AND ORAL REHYDRATION THERAPY SERVICES
 FOR CHILD SURVIVAL PROJECT, No.520-0339
 GOG COUNTERPART DURING LIFE OF PROJECT
 U.S. DOLLAR

ELEMENT	1993	1994	1995	TOTAL
Expanded Program of Immunization (EPI)	524,328	545,689	575,973	1,645,990
Oral Rehydration Therapy (ORT)	49,142	483,160	541,833	1,074,135
Health/MIS & Improved Administrative System (IAS)	50,000	60,000	60,000	170,000
Acute Respiratory Infection (ARI)	560	576,672	766,852	1,344,084
SUBTOTAL	624,030	1,665,521	1,944,658	4,234,209
PERSONNEL				
Central Level	35,706	39,277	43,204	118,187
Area Level	228,850	251,735	276,909	757,494
Health Centers Level	1,377,039	1,514,744	1,666,217	4,558,000
Health Posts Level	434,888	478,377	526,214	1,439,479
SUBTOTAL	2,076,483	2,284,133	2,512,544	6,873,160
TOTAL US\$	2,700,513	3,949,654	4,457,202	11,107,369

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TABLE No. 7
 IMMUNIZATION AND ORAL REHYDRATION THERAPY SERVICES
 FOR CHILD SURVIVAL PROJECT, No. 520-0339
 REMAIN UNEARMARKED FUNDS OF AMENDMENT No. 3
 TO BE IMPLEMENTED BY USAID/GUATEMALA
 U.S. DOLLAR

ELEMENT	1993	1994	1995	TOTAL *
2 - AID DIRECT CONTRACTS				
PSC CONTRACT LONG TERM FOR T.A. IN ARI (CLAPP & MAYNE)	100,000	200,000	150,000	450,000
LOCAL HIRE OF EXPERT FOR ARI PROGRAM (CLAPP & MAYNE)	10,000	15,000	15,000	40,000
OPERATION RESEARCH	20,000	20,000	10,000	50,000
ADDITIONAL FUNDS FOR ARI ACTIVITIES (CLAPP & MAYNE)	25,000	25,000	25,000	75,000
3 - AUDITS/EVALUATIONS				
LOCAL SURVEYS, STUDIES AND WORKSHOPS (CLAPP & MAYNE)	30,000	25,000	20,000	75,000
TOTAL US DOLLAR	185,000	285,000	220,000	690,000

TABLE 5
 BOG COUNTERPART FUNDS DETAILED HIGH PERSONNEL BUDGET

CENTRAL LEVEL	US \$ '000			TOTAL
	1993	1994	1995	
DIRECTOR	2771	2777	2777	8325
SUBDIRECTOR	4146	4077	4141	12364
DEPUTY DIRECTOR	1601	1577	1547	4725
EPIDEMIOLOGIST I	2347	2582	2840	7769
EPIDEMIOLOGIST	2347	2582	2840	7769
CHIEF III MATERNO INF.	2601	2881	3147	8609
CHIEF II MATERNO INF.	2474	2721	2994	8189
CHIEF III MATERNO INF.	2474	2721	2994	8189
NURSE III MATERNO INF.	1020	1122	1134	3276
CHIEF II INFORMAT.	2474	2721	2994	8189
PROFESIONAL II	2092	2301	2501	6894
TECHN III INFORMAT.	1995	2195	2414	6604
CHIEF II SECTORIAL	2347	2582	2840	7769
CHIEF TECHN PROFISE	1002	1102	1212	3316
PROF TECH III SECT.	913	1004	1106	3023
TOTAL CENTRAL LEVEL	25705	28277	40205	118188
AREA LEVEL	US \$ '000			TOTAL
	1993	1994	1995	
AREA CHIEF	76806	84520	92972	254327
EPIDEMIOLOGIST	52281	56587	64446	173314
RURAL HEALTH TECH	17006	18797	20577	56380
PROFESIONAL I, BSE	25807	28086	31226	85119
SECTETARY	14701	16171	17756	48628
TECHNICAL	13444	14738	16267	44449
STENOGRAPHER	14910	16401	18041	49352
LOCAL WORKER	12685	14174	15591	42450
TOTAL LEVEL AREA	228850	251735	276906	757491
DISTRICT LEVEL	US \$ '000			TOTAL
	1993	1994	1995	
DIRECTOR	550366	605400	665940	1821712
PROFESSIONAL NURSE	188721	207590	228552	624863
RURAL HEALTH TECH	175738	193301	212501	581540
ENVIRONMENTAL INSPEC	154075	169480	186401	509956
MUNICIPAL NURSES	308149	338954	372860	1019963
TOTAL DISTRICT LEVEL	1377009	1514744	1666217	4558000
HEALTH POSTS	US \$ '000			TOTAL
	1993	1994	1995	
PROFESIONAL POST	434888	471377	512214	1418479
NON-PROFESIONAL POST	114888	128377	139214	382479
TOTAL PERSONNEL	2076480	2284120	2517645	7078245

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TABLE No. 9

IMMUNIZATION AND ORAL REHYDRATION THERAPY SERVICES FOR CHILD SURVIVAL PROJECT No. 520-0339				
ELEMENT	1993	1994	1995	TOTAL
EPI	524,328.00	545,688.00	575,974.00	1,645,990.00
ORT	49,142.00	483,160.00	541,833.00	1,074,135.00
ARI	560.00	576,672.00	766,852.00	1,344,084.00
HEALTH MIS AND IAS	50,000.00	60,000.00	60,000.00	170,000.00
SUBTOTAL	624,030.00	1,665,520.00	1,944,659.00	4,234,209.00
	1993	1994	1995	TOTAL
PERSONNEL				
CENTER LEVEL	35,706.00	39,277.00	43,205.00	118,188.00
AREA LEVEL	228,850.00	251,735.00	276,908.00	757,493.00
DISTRICT LEVEL	1,377,039.00	1,514,744.00	1,666,217.00	4,558,000.00
POST LEVEL	434,888.00	478,377.00	526,214.00	1,439,479.00
SUBTOTAL	2,076,483.00	2,284,133.00	2,512,544.00	6,873,160.00
TOTAL USS	2,700,513.00	3,949,653.00	4,457,203.00	11,107,369.00

TABLE No. 10

COMPONENT No. 1 EXPANDED PROGRAM GOG COUNTERPART FUNDS IMMUNIZATION (EPI)				
ITEMS	USS 1993	USS 1994	USS 1995	USS TOTAL
PER DIEM				
Q26,000	10,487.00	10,914.00	11,519.00	32,920.00
TRANSPORTATION				
Q545,000	20,973.00	21,828.00	23,039.00	65,840.00
MATERIALS				
Q512,000	10,487.00	10,914.00	11,520.00	32,920.00
VACCINES, SYRINGES				
Q4,3000,000	477,138.00	496,576.00	524,135.00	1,497,850.00
FUEL				
Q1,000,000	5,243.00	5,457.00	5,760.00	16,460.00
TOTAL				
Q5,717,000	524,328.00	545,688.00	575,973.00	1,645,990.00

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