PD-ABJ-011

A.I.D. EVALUATION SUMMARY - PART I XD

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

IDENTIFICATION DATA

A. Reporting A.I.D. Unit:

Mission or AID/W Office USAID/BOLIVIA
(ES# _____)

B. Was Evaluation Scheduled In Current FY Annual Evaluation Plan?
Yes ☐ Slipped ☐ Ad Hoc ☒
Evaluation Plan Submission Date: FY 94 Q 1

C. Evaluation Timing
Interim ☒ Final ☐
ExPost ☐ Other ☐

D. Activity or Activities Evaluated (List the following information for project(s) or program(s) evaluated; If not applicable, list title and date of the evaluation report.)

Project ~ No.	Project/Program Title	First PROAG or Equivalent (FY)	Most Recent PACD (Mo / Yr)	Planned LOP Cost (000)	Amount Obligated To Date (000)
511-0594	COMMUNITY AND CHILD HEALTH PROJECT	1988	9/95	20,000	15,494

ACTIONS

E. Action Decisions Approved By Mission or AID/W Office Director

Action(s) Required	Name of Officer Responsible for Action	Date Action to be Completed
Curtail activities in water and sanitation. Integrate CCH personnel into Ministry of Health. Develop activities for child survival interventions at the district level	Paul Ehmer	4/94

APPROVALS

F. Date Of Mission Or AID/W Office review Of Evaluation: (Month) 10 (Day) 14 (Year) 93

G. Approvals of Evaluation Summary And Action Decisions:

	Project Program Officer	Representative of Borrower/Grantee	Evaluation Officer	Mission or AID/W Office Director
Name (Typed)	Sigrid Anderson	Alvaro Muñoz Reyes	Anne Beasley	Carl Leonard
Signature	Sigrid Anderson	Alvaro Muñoz Reyes	Anne Beasley	[illegible]
Date	02/18/94	02/18/94	2/18/94	2/18/94

ABSTRACT

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

This is a midterm assessment of the Community and Child Health Project in Bolivia. The assessment has five objectives: 1) to evaluate the overall child survival situation in Bolivia; 2) to identify specific interventions or management improvements that could be implemented by the National Secretariat of Health which would have the greatest impact on saving lives and improving health over the next five years; 3) to determine in which programs interventions USAID has a comparative advantage; 4) to analyze how USAID can make a significant contribution to institutionalizing Secretariat of Health implementation of these interventions; and 5) to develop recommendations for the redesign of the CCH project to strengthen its assistance to the Secretariat of Health in identified areas. The assessment was carried out by a four-person team from the Office of Health AID/W and HHR/USAID/Bolivia. It was conducted from October 4-14, 1993. The team reviewed documents and conducted interviews with members of the Bolivian Government, staffs of NGOs and other donr agencies, and USAID. The team visited two rural health districts supported by the project and one member attended the final day of a Secretariat of Health planning meeting. Findings of the assessment identify four principal causes of infant and child morbidity and mortality outside the neonatal period. They are diarrheal diseases, respiratory infections, birth problems and prematurity, and vaccine-preventable diseases.

USAID should focus its efforts on improving health systems in areas where it has a comparative advantage. Eight areas are indicated.

1) Communication and social marketing for behavior change in support of child survival interventions
2) Policy
3) Health care financing and sustainability
4) Commodities and logistics systems
5) Training
6) Program development, management, information and evaluation systems
7) Service utilization and quality of care
8) Research

Many of the findings and conclusions of this study indicate that the real challenge for the remaining life of project will be in the rural areas. Emphasis should now be placed on preparing district level personnel to reach out to rural populations. Better delivery and distribution systems are needed so that rural facilities are adequately stocked with supplies and pharmaceuticals. This will improve the quality of care and should result in greater utilization of the facilities. Innovative health care interventions which are culturally sensitive should be developed by health workers who interact directly with targeted communities. Pilot activities which upgrade the quality of child survival interventions should also be designed for districts.

COSTS

I. Evaluation Costs

1. Evaluation Team Name	Affiliation	Contract Number OR TDY Person Days	Contract Cost OR TDY Cost (U.S.$)	Source of Funds
Dr. Al Bartlett	Office of Health, AID/W	10	14,656	Office of Health AID/W USAID/Bolivia
Dr. Mary Ann Anderson	Office of Health, AID/W	10		
Mr. Paul Ehmer	USAID/Bolivia/HHR	10		
Ms. Jennifer Macias	USAID/Bolivia/HHR	10		

2. Mission/Office Professional Staff Person-Days (Estimate) 12 (to review and revise report)

3. Borrower / Grantee Professional Staff Person-Days (Estimate) 10

A.I.D. EVALUATION SUMMARY - PART II

SUMMARY

J. Summary of Evaluation Findings, Conclusions and Recomendations (Try not to exceed the three (3) pages provided)
Address the following items:

- Purpose of evaluation and methodology used
- Purpose of activity(ies) evaluated
- Findings and conclusions (relate to questions)
- Principal recomendations
- Lessons learned

Mission or Office :	Date This Summary Prepared :	Title and Date Of Full Evaluation Report:
USAID/BOLIVIA	1/24/94	Midterm Assessment of the Community and Child Health Project 511-0594

The purpose of the Community and Child Health (CCH) Project is to contribute to the reduction of infant, child, and maternal mortality in Bolivia through an integrated package of child survival interventions, institutional development, and community participation. This assessment has five objectives: 1) to evaluate the overall child survival situation in Bolivia; 2) to identify specific interventions or management improvements that could be implemented by the National Secretariat of Health (SNS) which would have the greatest impact on saving lives and improving health over the next five years; 3) to determine in which program interventions USAID has a comparative advantage; 4) to analyze how USAID can make a significant contribution to institutionalizing SNS implementation of those interventions; and 5) to develop recommendations for redesign of the CCH Project to strengthen its assistance to the SNS in identified areas.

This assessment was conducted from October 4-14, 1993. It included a review of documents, and interviews with members of the Bolivian Government, staff of NGOs, other donor agencies, and USAID. It also included visits to two rural health districts supported by the project and attending a planning meeting of the National Secretariat.

Findings identify four principal causes of infant and child morbidity and mortality outside the neonatal period. They are diarrheal diseases, respiratory infections, birth problems and prematurity, and vaccine-preventable diseases. Over 60% of the rural population lacks access to basic health care. In rural areas it is estimated that only 31% of the women receive prenatal care and only 18% have institutional births. Malnutrition is an underlying cause in 57% of all deaths of children under six. Most children, especially in rural areas, do not attend clinics where their growth could be monitored.

USAID should focus its efforts on improving health systems in areas where it has a comparative advantage. These include the following:

1) **Communication and Social Marketing for Behavior Change in Support of Child Survival Interventions.** Many Bolivians, especially in rural areas, do not use health services. Marketing efforts to increase use of services should be culturally appropriate. Some USAID projects which have successfully developed culturally sensitive programs include Interactive-Radio-Learning, MotherCare, and Prosalud.

2) **Policy.** USAID should carry out policy dialogue for health care reform at the national level. The timing is right because Bolivia's new government is contemplating a series of structural changes to improve services in all social sectors. The A.I.D. Data for Decision-Making (DDM) could contribute to this process.

3) **Health Care Financing and Sustainability.** USAID has positive experience in this area, especially with Prosalud, which it can share with the Bolivian Government.

4) **Commodities and Logistics Systems.** In Bolivia USAID has had a major role in supplying and efficiently distributing vaccines and ORS for the national health program through the CCH Project. It has distributed contraceptives to the private sector through the Reproductive Health Project. The CCH Project has a smoothly functioning procurement system which should be retained.

5) **Training.** USAID should development a system of in-service training for district, area, and sector level health workers. This system should be based on a training needs assessment and would include training for nurses and mid-wives.

6) **Program Development, Management, Information and Evaluation Systems.** USAID should help the Bolivian Government develop a national child survival plan. The plan should have a sound strategy, a reasonable implementation plan, and targets for each intervention. Decentralized plans at the departmental and district levels should flow from the national plan.

7) **Service Utilization and Quality of Care.** USAID should work to increase utilization of GOB health services by improving access to, and quality of service. It can draw on experiences with MotherCare and Prosalud.

8) **Research.** A.I.D. Washington has had a key role in applied health research as has USAID/Bolivia with respect to the transmission of Chagas Disease. It should continue that role as resources permit.

The focus of the CCH Project through the time of this assessment has been mainly on the Central La Paz Office and the regional offices. Certainly this is where many of the financial resources have been channelled. Approximately 50% of the budget has been used to cover administrative costs and there are 101 people working and collecting salaries under CCH. CCH has a bureaucracy of its own which is, in many cases, parallel to that of the Ministry of Health. Accordingly, the process of integrating this staff into the Ministry should be a priority.

A large portion of project resources has been used for commodities. These include computers for the central, regional, and district offices which are necessary for financial and administrative monitoring, and useful so the staff could begin DDM training. Resources under this category have also been used for commodities to construct water and sanitation systems. Reduced project funding may mean curtailment of expenditures and activities in this area.

Many of the findings and conclusions of this study indicate that the real challenge for the remaining life of project will be in the rural areas. Emphasis should now be placed on preparing district level personnel to reach out to rural populations. Better delivery and distribution systems are needed so that rural facilities are adequately stocked with supplies and pharmaceuticals. This will improve the quality of care and should result in greater utilization of the facilities. Innovative health care interventions which are culturally sensitive should be developed by health workers who interact directly with targeted communities. Pilot activities which upgrade the quality of child survival interventions should also be designed for the districts.

Lessons learned include the following:

1. A complex project with many components may be difficult to implement effectively. USAID should try to limit the number of project components to those in which it has a comparative advantage.

2. Higher utilization of health facilities lowers unit costs and makes cost-recovery programs more effective. Access and quality of care impact on utilization.

3. The development of an efficient logistics system for the distribution and delivery of medical supplies and pharmaceuticals is necessary to provide adequate care in isolated, rural areas. Adequate supplies also improve the quality of care provided which attracts more users to outlying facilities.

4. In a project directed at improving medical care in outlying areas, coherent and unified strategies are needed to improve health intervention delivery at the community level. This helps the project achieve real health impact. These strategies should be developed through interactive planning with local health workers and communities. The planning process, accordingly, brings project personnel closer to the rural community populations targeted for assistance.

5. Sustainable training for health workers in the public sector assumes that the personnel will remain in their institutions after the training. The lack of a civil service, and arbitrary changes in personnel accompanying changes in government, weakens the impact of such training.

6. When a project is directed towards strengthening administrative and management capacities at different levels, i.e. central, regional, district, and outlying, activities should be tailored towards each level. If most of the project resources are channelled to the higher levels, impact at lower level facilities which purport to serve the targeted population, will be less. That is why pilot activities should be designed at the district levels to provide model responses to upgrade the quality of child survival interventions for the targeted population.

ATTACHMENTS

K. Attachments (List attachments submitted with this Evaluation Summary, allways attach copy of full evaluation report, even if one was submitted earlier; attach studies, surveys, etc., from "on-going" evaluation, if relevant to the evaluation report.)

MIDTERM ASSESSMENT OF THE COMMUNITY AND CHILD HEALTH PROJECT 511-0594

COMMENTS

L. Comments By Mission, AID/W Office and Borrower/Grantee On Full Report :

No comments

XD-ABI-211-A
ISN 87322

MIDTERM ASSESSMENT OF THE COMMUNITY AND CHILD HEALTH PROJECT 511-0594

PREPARED BY

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MR. PAUL EHMER AND MS. JENNIFER MACIAS
USAID/BOLIVIA

OCTOBER 1993

ACRONYMS AND ABBREVIATIONS

A.I.D.	Agency for International Development
AIDAR	A.I.D. acquisition regulations
ARI	Accute respiratory infection
CAI	Information Analysis Committee
CCH	Community and Child Health Project
CDC	Centers for Disease Control and Prevention
CDD	Control of Diarrheal Diseases
CDIE	Center for Development Information and Evaluation
CEASS	Centro de Abasticimiento de Suministros en Salud (Health supply delivery system)
COTALMA	Comité Tecnico de Apoyo a la Lactancia Materna
DDM	Data for Decision-Making
DHS	Demographic and Health Survey
EPI	Expanded program of Immunizations
FAR	Federal Acquisition Regulations
FTE	Full-time equivalent
GOB	Government of Bolivia
ICC	Interagency Coordinating Committee
IEC	Information, Education & Communication
INLASA	GOB Laboratory supported by USAID
IRL	Interactive Radio Learning Project
JHPEIGO	Johns Hopkins Program for International Education in Gynecology and Obstetrics
MOH	Ministry of Health
NGO	Non-governmental organization
ORS	Oral Rehydration Salts
ORT	Oral Rehydration Therapy
PAHO	Pan American Health Organization
PIL	Bolivian Diary Industry
PNCAN	National Program for the Prevention and Treatment of Anemia
PRITECH	Technologies for Primary Health Care
PROA	Centro de Servicios Integrados para el Desarrollo Urbano
PROCOSI	Programa de Coordinación en Supervivencia Infantil
PROISS	Proyecto Integral de Servicios de Salud
PSF	Programa Integrado de Servicios Basicos de Salud y Fortalecimiento Institucional del Sector
PVO	Private Voluntary Organization
RAPID	Resources for Awareness of Population Impact on Development
REACH	Resources for Child Health
RHS	Reproductive Health Services

RPR	Lab test for syphilis
SNIS	National Health Information System
SNS	National Secretary of Health
STD	Sexually transmitted disease
TDR	Tropical Disease Research
TT	Tetanus Toxoid
UDAPSO	Unidad de Analises de Política Social
UNDP	United Nations Development Program
UNFPA	United Nations Fund for Population Activities
UNGECH	Unidad de Gestión de Chagas
UPP	Population Policies and Planning Unit
URES	Regional Supply Units
URO	Oral Rehydration Units
US	Unidad Sanitaria
USAID	United States Agency for International Development
VITAL	Vitamin A Field Support Project
WHO	World Health Organization

EXECUTIVE SUMMARY

The purpose of the Community and Child Health Project is to contribute to the reduction of infant, child, and maternal mortality in Bolivia through an integrated package of child survival interventions, institutional development, and community participation. This assessment has five objectives: 1) to evaluate the overall child survival situation in Bolivia; 2) to identify specific interventions or management improvements that could be implemented by the National Secretariat of Health which would have the greatest impact on saving lives and improving health over the next five years; 3) to determine in which program interventions USAID has a comparative advantage; 4) to analyze how USAID can make a significant contribution to institutionalizing SNS implementation of those interventions; and 5) to develop recommendations for redesign of the CCH project to strengthen its assistance to the SNS in identified areas.

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series of structural changes to improve services in all social sectors. The A.I.D. Data for Decision Making (DDM) could contribute to this process.

3) **Health Care Financing and Sustainability.** USAID has positive experience in this area, especially with PROSALUD, which it can share with the Bolivian Government. The HNS project has begun work in Bolivia and could contribute to this area.

4) **Commodities and Logistics Systems.** In Bolivia USAID has had a major role in supplying and efficiently distributing vaccines and ORS for the national health program through the CCH Project. It has distributed contraceptives to the private sector through the Reproductive Health Project.

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3. Acute Respiratory Infections
4. Maternal and Neonatal Health
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I Introduction

A. Assessment Purpose and Objectives

The purpose of the present assessment is to 1) evaluate the overall child survival situation in Bolivia; 2) identify specific interventions or management improvements that could be implemented by the National Secretariat of Health (SNS) to have the greatest impact on saving lives and improving health over the next five years; 3) determine which program interventions represent a comparative advantage for US; 4) analyze ways in which US can make a significant contribution to institutionalizing SNS implementation of those interventions; and 5) develop recommendations for redesign of the CCH project to strengthen its assistance to the SNS in the identified areas.

B. Team Composition and Assessment Methodology

At the invitation of US/Bolivia, the Child Survival Assessment was conducted October 4-14, 1993. The team consisted of Dr. Al Bartlett and Dr. Mary Ann Anderson from the Office of Health, /Washington and Paul Ehmer and Jennifer Macias from the Health and Human Resources (HHR) Office in USAID/La Paz.

Team members reviewed documents; met with representatives of Bolivian governmental and non-governmental organizations, US staff, and donor agency representatives (see Annex A for a list of persons interviewed); and made field visits to two rural health districts: Altiplano Valle Sud in La Paz Department and Capinota in Cochabamba Department. One member attended the final day of an SNS planning meeting in Santa Cruz.

C. HHR Strategy, Objectives and Program

Under the new U.S. administration, the U.S. Agency for International Development USAID has reaffirmed population and health as priorities within its efforts to assist countries towards the goal of sustainable development. USAID is developing a new strategy that emphasizes integrated approaches to reduce population growth, decrease maternal and child mortality, and reduce the spread of HIV/S.

The objective of USAID/Bolivia's Family Health Strategy is to improve family health throughout Bolivia. This Strategy has three primary goals: to improve the development and implementation of policies; to improve the management capacity of both the public and

private sectors to provide curative and preventive health services; and, to improve the knowledge, attitudes and health practices of the population. The HHR Office has developed diverse strategies to support these goals: promoting cost-recovery activities to improve the financial viability of the sector; increasing access to and quality of reproductive health services; promoting public-private coordination in preventive and curative care; increasing the amount of resources designated for maternal and child health; and, supporting the decentralization of health administration and responsibility for service delivery.

The HHR Office manages a portfolio of nine bilateral projects in support of the Family Health Strategic Objective. The program supports activities in basic health and child survival service delivery, policy initiatives, experimental research and development activities, and institutional strengthening activities in the public and private sectors. Most projects incorporate activities focusing on both the supply and demand sides of health services. Projects include Community and Child Health (CCH), Self-financing Healthcare (PROSALUD), Private Voluntary Organizations (PROCOSI and CARE), Reproductive Health Services (RHS), AIDS/STDs Prevention and Control, Urban Development (PROA), Interactive Radio Learning (IRL), and Drug Awareness. The following brief discussion focuses on three projects referred to throughout this assessment that work directly with child survival activities in Bolivia.

The Community and Child Health project is described in much greater detail in Section III C. Briefly, this project represents USAID's major health and child survival activity with the public sector. The project supports national oral rehydration and immunization efforts, community water and sanitation activities, Chagas research, and rural district development activities.

PROSALUD is a private sector primary health care organization providing services in urban and peri-urban areas of Santa Cruz, El Alto and La Paz. This NGO has achieved considerable success in recovering costs by charging fees for curative services to low-income users while providing preventive services free of charge and selling drugs at cost, setting high quality standards of care, and increasing coverage rates under difficult socio-economic conditions.

PROCOSI is a coordination entity of Bolivian and U.S. PVOs working in health and child survival. With funds and a recently established endowment, PROCOSI provides technical assistance, training, and institutional support for its members.

In addition to bilateral activities, many centrally-funded activities are active due to Bolivia's designation as a "child survival emphasis" country. Many U.S. PVOs work in Bolivia with central Child Survival Grant support. Several organizations supported by USAID's Office of Health provide specific technical

training, conduct specialized assessments, and provide technical assistance. Annex B lists central projects active in health and child survival in Bolivia

II Child Survival Situation in Bolivia

A. Mortality, morbidity, and malnutrition.

Despite substantial progress in the last two decades, infant and child mortality in Bolivia remain among the highest in the Americas and among the highest in A.I.D.-assisted countries outside of Africa. The 1989 Demographic and Health Survey (DHS) estimated Bolivia's infant mortality rate to be 96/1,000 live births, and under five mortality to be 142/1,000 live births. The recently completed national census, which remains to be validated, but which was released by the previous government just prior to national elections, identified the national infant mortality rate to be 75/1,000; possible undersampling among rural and other difficult to access segments of the population may have resulted in this rate being lower than the real rate in the population.

In both the DHS and the census, rates of infant and child mortality are highest among the rural population: the rural infant mortality rate was 42% greater than the urban rate in the DHS and 64% greater than the urban rate in the recent census. The result of these urban-rural differences in mortality is that, despite the country's progressive demographic shift to a population that is now more than 60% urban, half or more of infant and child deaths continue to occur in the rural population. Among the country's regions, the Altiplano, with the highest infant mortality rate and 45% of the country's population, contributes the greatest number of infant and child deaths. The 60% urban figure from the most recent census also is confounded by the fact that the definition of urban is any area with greater than 2,000 population.

The DHS examination of components and causes of infant and child mortality revealed that neonatal deaths make up 43% of all infant mortality; of these neonatal deaths, more than half occur in the first week of life. These findings are expanded by the results of focused studies documenting high rates of perinatal death, 110 per 1000 live births, many of which result from complications of labor and delivery. The importance of these perinatal and neonatal deaths is underscored by Bolivia's extremely high maternal mortality rate (373 per 100,000 live births per DHS), part of which is also attributable to complications of labor, delivery, and the post-partum period and part to complications of illicit abortion. The official government figure for maternal mortality is 480/100,000 live births, an estimate based on <u>probable</u> under-reporting in the DHS because single women were not included.

The principal causes of infant and child morbidity and mortality

outside the neonatal period are diarrheal diseases and respiratory infections. The DHS found 28% of all children under age five to have had diarrhea within the preceding two weeks, with the highest prevalence (39% of all children) in the 12-23 month age group. Acute respiratory infection (cough with difficult breathing) was found to have occurred within the preceding two weeks in 20% of all children under age five, with the highest prevalence (26%) in the age group 6-23 months. These data indicate that children in Bolivia, on average, experience as many as 5-7 or more episodes of diarrhea and 4-5 or more respiratory infections each year.

These frequent illnesses contribute to and are worsened by high rates of undernutrition: the DHS found 38% of children under age three to be chronically malnourished (stunted). Both chronic and acute undernutrition among children appear to have actually increased since the 1981 National Nutritional Status Data Survey. While national seroprevalence data is not available, Bolivia has one of the hemisphere's highest rates of iodine deficiency; dietary data suggest that the Bolivian population, especially on the Altiplano, experience high rates of deficiency of other critical micronutrients, particularly vitamin A and iron.

B. Coverage and status of maternal and child health services.

In general, lack of access to basic health services continues to be a major contributor to Bolivia's high infant, child, and maternal mortality. UNICEF estimates that over one-third of the total population are without access to health services; predictably, there is a substantial urban-rural difference, with over 60% of the rural population lacking access to basic health care. This lack of access, in part complicated by barriers to utilization of health services even when access technically exists, results in families not receiving preventive care and information from health care providers and many life-threatening illnesses of children going without appropriate treatment. The impact of this lack of services is reflected in the DHS findings that for illnesses resulting in infant or child death, in essentially half (49%) no medical assistance was sought and in three-quarters (76%) the child died at home.

The following sections review the characteristics of services directed at the principal causes of infant, child, and maternal mortality:

1. Expanded Program of Immunization.

Bolivia's EPI program is apparently the most successful of its child survival programs. Available data indicate substantial increases in immunization coverage during the past few years, although different methodologies were used to achieve these data and resulting estimates (the planned 1994 DHS should provide data that are accurate and comparable to the 1989 DHS). The 1989 DHS

identified extremely low coverage rates, with only 7% of children fully immunized by age 12 months (13% with DPT3, 33% with measles, 3% with polio) and only 19% fully immunized in the 12-23 month age group. By 1992, largely as the result of an intensive campaign-oriented strategy and the polio eradication effort, UNICEF reported that children under age 12 months, 77% were fully vaccinated against DPT, 80% against measles, and 84% against polio.

These substantial increases in immunization coverage obviously represent a substantial policy commitment. Close and apparently effective donor coordination, centered around a functioning Interagency Coordinating Committee (ICC), have supported the government in developing and implementing this policy. The strategy has been especially effective in setting clear population-based targets and monitoring progress toward these targets at the local as well as the national level. It is observed that the lack of similar population-based targets and monitoring for other Child Survival program components, such as CDD, appears to result in local programming that emphasizes EPI targets over other interventions. There is also concern that the labor intensive, house-to-house campaign strategy used to achieve this progress is difficult to sustain, may create unreasonable expectations for its continuation, does not actively involve the population and responsible groups in immunization of their children, and in the face of limited human resources may undercut other maternal and child health services. Targets for immunization of women with Tetanus Toxoid (TT) appear to be less prominent in planning and implementation than do other immunization targets. There has not been a substantial mass media or community-based IEC effort to complement the campaign effort to increase immunization coverage.

Health staff appear to be adequately trained in basic immunization practices, including importance of the cold chain. Vaccine supply in general appears to be adequate, although shortages of vaccine in some facilities was mentioned during field visits. Cold chain equipment is likewise apparently adequate in most locations, although lack of maintenance capability was also identified in several sites during limited field visits. [It is unclear if the EPI logistic/supply system is integrated with the national CEASS system or is a parallel system.] Local health officials appear to monitor immunization coverage against targets, including regular review of coverage at monthly planning meetings (CAI). Because of this monitoring, it appears that these officials respond to inadequate progress by increasing effort in immunization, in some instances diverting personnel from other health activities including staffing of health posts. Recent outbreaks of measles in some populations may in some cases indicate cold chain failure, although the epidemiology of these outbreaks was inconsistently identified by different authorities. This inconsistency, and the development of local strategies not always based on proven outbreak control approaches, suggest the need for additional technical input in this area of evaluation, control, and programmatic review in the

face of outbreaks.

2. Control of Diarrheal Diseases (CDD)/Cholera.

The Bolivian CDD program is substantially weaker and less effective than the EPI program. Access to Oral Rehydration Solution (ORS), calculated at 56% nationwide in 1991 (with substantially lower levels in rural areas) remains a problem. ORS is used in only a small proportion of child diarrheal illnesses, although oral rehydration therapy (ORT) by administration of home fluids during child diarrhea was estimated by the DHS and more recently by UNICEF to occur in over half of episodes. As expected, more isolated and less educated families, i.e. those at greatest risk of child death from diarrhea, are those least likely to use ORT or ORS during diarrhea episodes. When ORT is used, the adequacy of these practices is unknown, and is brought into question by the DHS finding that 40% of mothers of children who died from diarrhea reported administering ORS before the child died.

The entry of cholera into Bolivia stimulated greater awareness of diarrheal diseases and the importance of fluid therapy, as well as an aggressive but incompletely structured approach to decentralized provision of ORS through community oral rehydration units (URO's). However, the national response to cholera has been characterized as initially slow and incomplete, and the linkage of cholera control activities to CDD program activities for prevention and treatment of child diarrhea remains weak.

The priorities of Bolivia's national CDD program have focused on rather traditional case management training of physicians and health workers, with lesser attention on ORS supply and distribution and, until the arrival of cholera, little attention on strategies to increase access to ORS. ORS supply remains virtually completely donor-dependent, with the US/Bolivia contribution to ORS procurement representing the greatest share of ORS in the country. Present policy is that ORS is provided free of charge.

Until recently, ORS distribution was principally through health facilities. With the advent of cholera, the government hastily established community UROs nationwide and provided rapid basic training to the community members staffing these UROs. In some cases, where community health promoters (RPS's) exist, these RPS's are in charge of the URO; in other communities, volunteer persons with yet less health training form the URO staff. The number of UROs established is unknown, but is estimated at about 6,000; a recent evaluation of a large sample of URO's estimated that the actual number functioning is probably substantially smaller.

At least until the arrival of cholera, the supply of ORS at the national level was estimated to be adequate. However, an in-depth evaluation conducted by PRITECH in 1991 found that substantial lack

of organization and management capabilities of the national distribution system operated by CEASS resulted in uncertain supply, stockouts (including some as long as 4-5 months), and hoarding of ORS at the district and lower levels, aggravating ORS shortages and lack of use at the peripheral health facility and end-user level. The rapid employment of the URO strategy has substantially aggravated this supply and distribution problem, since the number of end users that are supposed to have ORS has been substantially increased, and since no mechanism has been established to monitor ORS requirements and use in UROs or to resupply them in a systematic manner.

The national health information system (SNIS) tracks facility treatment of diarrhea and differentiates suspected cholera from non-cholera diarrhea. However, there is no technical evaluation or feedback regarding the implications of the information provided (which virtually always indicates that the number of child diarrhea cases treated is vastly below the number of episodes expected in the infant and child population). No targets are provided based on child population and morbidity projections at the national or local level; instead program performance is programmed and evaluated in the manner typical of ministries of health without such information systems, that is, based on past performance of the health facilities. The result is performance targets tremendously out of line with those needed to significantly increase appropriate case management of diarrhea, and failure to appreciate the need for increasing the role of additional (probably non-facility based) strategies to increase access to and use of ORS.

Although cholera has increased awareness of diarrheal diseases in general, cholera activities have incompletely linked cholera control with prevention and treatment of child diarrhea, although "baseline" morbidity related to common diarrhea of children is the cause of substantially greater mortality than is cholera. Cholera control activities were slow to be organized and ineffective under the first cholera coordinator. Although these activities have become more effective, the national cholera plan continues to be less than 50% funded.

With the exception of recent cholera-related messages, the national CDD program has not developed or implemented an extensive communication strategy to respond to the low levels of adequate use of ORT and ORS. This appears to be an obvious area of need for increased policy and program activity. However, a note of caution is generated by the recognition that, especially with the inadequately structured URO strategy and uncertainties of ORS supply and distribution, a demand creation strategy would need to take into account the possibility that ORS supply may presently be inadequate in many localities.

As noted, a strategy focusing on facility-based management of diarrheal diseases has resulted in low levels of effective access

to information and treatment related to child diarrhea. At the level of district and local facilities, lack of treatment targets based on projections of number of children and expected rates of diarrhea (instead relying on programmed targets based on the greatly inadequate numbers of cases treated in preceding reporting periods) results in failure to emphasize activities and strategies aimed at increasing access to and use of ORT and ORS. The 1993 CDD program Health Facility Survey, carried out by the MOH in collaboration with PAHO, UNICEF, and PRITECH, identified very low levels of correct evaluation and treatment of child diarrhea by health personnel. Health worker performance in communication of correct information to mothers was even less adequate. In the cases of both physicians and health workers, CDD training was found to have resulted in little difference in evaluation or treatment practices, in comparison with personnel not trained by the CDD program.

A 1992 PRITECH evaluation of UROs found wide variability in the training received by URO staff, and substantial inadequacies among these staff in knowledge related to basic case management. Record keeping and supply status of UROs was also inadequate. The importance of deciding on the role of the URO strategy and systematizing it if it is to be maintained or expanded, is underscored by informant reports that in some communities UROs have achieved a predominant role in diarrhea management. This is apparently the result of the more geographically and culturally accessible nature of the UROs and because, in contrast to health facilities, UROs do not charge for consultations.

3. Acute Respiratory Infections.

Although ARI is one of the leading causes of infant and child morbidity and mortality in Bolivia, until recently there was no national program to address this problem. The 1989 DHS found that among all children under age five reported to have had symptoms of potentially severe ARI (cough with breathing difficulty), only 29% were taken for medical care. This proportion was substantially lower in the rural population (20%), and reached very low levels in the indigenous population (7% among families speaking only an indigenous language). The majority of those coming for care attended higher level facilities (public hospitals and health centers) and private physicians; few reported utilization of more peripheral health facilities. Other analyses of service utilization for ARI indicate that, especially in rural areas, there are substantial delays in care-seeking for ARI, resulting in children arriving at facilities with more severe and difficult to treat diseases.

Bolivia's national ARI program was assessed in late 1992 by the REACH Project. This program began in 1985, based on then existent WHO/PAHO norms for ARI classification and treatment. The program emphasized health worker training, emphasizing local management of

mild to moderate ARI; in implementation, this program received little of the public health system's attention or resources. In 1991, the program was revitalized and has taken important steps in establishing improved ARI services. These include revision of ARI program guidelines to emphasize detection and treatment of pneumonia (the most lethal form of ARI); development of training and communication materials for health workers, and actual training in some sites; inclusion of ARI reporting in the SNIS; ethnographic study of ARI-related practices and beliefs; and inclusion of drugs required for ARI treatment (cotrimoxazole) in the national drug system under CEASS.

Several policy and strategy issues were identified in the REACH assessment of Bolivia's ARI program. These include the need to develop strategies to increase access to appropriate case management at peripheral levels. Doing so will require not only elaboration of such a strategy and training of health workers (such as RPS's), but also addressing policy obstacles such as limited use of appropriate antibiotics by peripheral and community health workers. As with ORS, supply of medication for ARI treatment is subject to the inadequacies of the CEASS distribution system. In addition to diarrheal diseases, a functional ARI program must deal with the issues of developing a functional referral system for cases too severe to be managed locally.

The REACH assessment determined that the ARI program was subject to many of the difficulties facing other Child Survival and maternal health programs, including inadequate supervision, support, and information. Like CDD, ARI control suffers from a lack of national or local target setting based on realistic projections of numbers of children and of ARI episodes, instead setting targets based on previous periods' facility-based performance. In the absence of such reality-based targets, and of feasible strategies to reach them, program activities are likely to remain facility-based and inadequate to reach the substantial number of infants and children dying of ARI. Accordingly, ARI program activities will likely continue to be subordinated to other programs having such targets (especially EPI and more recently prenatal care).

Due to the relative immaturity of the ARI program, no concerted effort has been made to develop or implement a national behavior strategy for ARI. Recent ethnographic studies of family beliefs and practices regarding ARI in their children provide important input for development of such a strategy. A substantial effort in demand creation is neither warranted nor appropriate until the program succeeds in establishing appropriate case management services, at least at the health facility level and preferably through a community-based mechanism.

Since the DHS, there has been no systematic information collected on health service utilization related to ARI; similarly, no extensive evaluation of practices in existing services (comparable

to the CDD Health Facility Survey) has been carried out. At the time of the 1992 REACH assessment of the country's ARI program, only a few health regions had undertaken health worker training in ARI. A small number of PVOs have adapted ARI training for community health workers (promoters), but this approach appears not to have penetrated the public health system to date. While ARI drugs (principally cotrimoxazole) are included in the national distribution system, there has been no extensive evaluation of their availability in the health system.

One focused study, conducted by REACH at the request of the Santa Cruz regional health office and PROSALUD, found that case management practices by physicians and health workers in both public and private facilities are frequently at variance with standard case management for ARI. This study documented frequent overuse of antibiotics in treatment of children with respiratory symptoms. Quality control approaches to improve case management were suggested, and implemented in some facilities, but their effect has not yet been evaluated.

4. Maternal and Neonatal Health

The most recent estimate from the 1989 DHS survey of the maternal mortality ratio is 373 per 100,000 live births. However, this is an underestimate because the survey did not include single women, who may account for as much as 30% of maternal mortality, particularly due to unsafe abortion. Taking this underestimation into account it appears that the 1989 ratio is similar to the 480 maternal deaths per 100,000 live births that Bolivia reported as its national maternal mortality ratio for 1973-77. Much higher ratios have been reported in remote rural areas. Overall, the risk of a Bolivian woman dying in pregnancy or childbirth is 60 times higher than for a woman in the U.S. or Europe. There will be a follow-up DHS survey in 1994 which will again assess maternal mortality, but it appears that there has been no real progress in reducing it over the past two decades. Maternal mortality in Bolivia is the highest in the western hemisphere. Leading causes of death are unsafe abortion, hemorrhage, infection, and toxemia.

Coverage of maternity services was low in the 1989 DHS with only 47% of women receiving any prenatal care, and only 42% of women delivered by a trained attendant. Coverage was much higher in cities where 64% of women received prenatal care and 58% gave birth in an institution, versus rural areas where prenatal care and institutional births reach only 31% and 18% respectively. Traditional birth attendants are not found in Bolivia for the most part and deliveries in rural areas are often attended by the husband or relatives. Furthermore, there are currently no professional nurse/midwives although Bolivia had such a category of health workers (matronas) up until 20 years ago.

Thus there is a serious chasm between physicians trained in obstetrics and based primarily in cities, and rural households with no prenatal care or birth attendants. This urban bias is exacerbated by the MOH's policy of forbidding the nurses and health auxiliaries that do work in the rural areas to give antibiotics or oxytocin which can save mothers' lives in cases of infection and hemorrhage. There is a critical need to restore the position of matrona at district hospitals, to delegate authority for giving antibiotics and oxytocin to nurses and auxiliaries, and probably to train women to be birth attendants at the village level as well. The lack of authority to give antibiotics affects other interventions, such as the ability to treat acute respiratory infection, another critical child survival intervention. MotherCare used the Fundación San Gabriel to train traditional birth attendants, and developed a corresponding curriculum and training manual. The Maternal and Child Health Department of the Universidad Mayor de San Simon in Cochabamba has expressed an interest in starting a nurse/midwife training program.

According to the 1989 DHS, although 63% of women were aware of family planning methods, only 30% were using them (12% modern, 18% traditional). Induced abortion, even though illegal, is the major method of limiting births. The unmet demand for family planning in Bolivia was estimated by the national population policy unit (UPP) in 1992 as 36%. However, even with greatly increased access and information, most women still are choosing not to use family planning.

A prevalence of syphilis in pregnancy of 10% was reported in one study, which contributes to stillbirths and congenital syphilis, and also is a risk factor for HIV/S. Yet Bolivia does not seem to stress routine sexually transmitted diseases (STD) screening and treatment as part of prenatal care, and has placed its STD control emphasis only on high risk groups (urban prostitutes). Treatment and prevention of STDs in women and their partners, especially syphilis--which can be detected with the RPR card test and treated at the time of the visit without referral to an STD lab and consequential high loss to follow-up--should be an integral part of prenatal and reproductive health care.

The perinatal mortality ratio for Bolivia was estimated at 110 per 1000 live births in the National Plan for Child Survival and Development and Maternal Health, 1989. Neonatal mortality was 41 per 1000 live births in the 1989 DHS. 43% of all infant mortality occurred in the first month of life. One third of neonatal deaths were due to birth problems (asphyxia, hypoxia, trauma), 17% due to respiratory infection, 13% due to diarrhea, and 6% due to tetanus. Neonatal tetanus rates are highest in the lowlands. Delayed initiation of breastfeeding, neglect, and provision of anise tea (mate de anis) and other liquids to the newborn contribute to

hypothermia, neonatal respiratory infection and diarrhea.

In 1989 the Ministry of Health launched a comprehensive National Plan for Child Survival and Development and Maternal Health with a goal of reducing maternal and infant mortality by 50% by 1993. Specific objectives for maternal health care were to increase the coverage for prenatal care and delivery by a trained attendant or in a health institution; to provide of reproductive health services including birth spacing; to prevent STDs; to detect and treat nutritional deficiencies; to test for uterine or cervical cancer and other gynecological problems in all health facilities; to use a simplified Perinatal History Card (designed by the Latin American Perinatal Health Center -- CLAP) for all pregnant women; to immunize with tetanus toxoid; to distribute safe delivery kits and to assess risk. Training of traditional birth attendants was also stressed. Through USAID's Reproductive Health Project, and assistance by PAHO and UNFPA, family planning services have become much more widely available. However, other aspects of the government's plan remain largely on paper.

Assistance from USAID through MotherCare has shown that in Bolivia there is often a cultural clash between modern medical providers' practices and families' traditional beliefs and practices. This contributes to underutilization of maternity and family planning services, even in urban areas like Cochabamba where MotherCare is working. This clash can be resolved and service utilization increased somewhat for prenatal care, family planning and institutional births through health personnel training and health facility reforms which "humanize" the practices of the providers, and through education to families to give them a better understanding of risks in pregnancy and delivery and the importance of seeking care. MotherCare developed effective educational and training materials for their work in Cochabamba which will now be adapted and reprinted for use throughout the country with USAID support.

In remote rural areas (Inquisivi) MotherCare/Save the Children developed a process of organizing women's groups which discuss maternal health problems and then develop their own plans for addressing them (*autodiagnóstico*). In addition, they created a corps of trained birth attendants. This process has become a powerful tool for mobilizing communities and increasing prenatal care coverage, tetanus toxoid immunization, delivery by a trained attendant, and family planning acceptance. These community efforts were not met with equal efforts on the part of the district health system to assure that facilities were adequately equipped, staffed and supplied with drugs so they could serve as acceptable referral points for obstetric emergencies. As a stopgap measure to compensate for the defunct rural health facilities, women had to be referred to La Paz (5 hours by road) for obstetric emergencies. Efforts should be made under donor assistance for health infrastructure at the district level to equip, pharmaceutically

stock, and staff all hospitals according to WHO's criteria for obstetrical emergencies at the First Referral Level. In addition, feasible methods should be developed for identification and timely referral of women with obstetric emergencies to such health facilities. Other U.S. PVO members of PROCOSI in Bolivia have expressed considerable interest in replicating the "*autodiagnóstico*" approach for reproductive health and child survival activities in the communities where they work.

5. Nutrition and Breastfeeding

Micronutrient Malnutrition Nutritional anemia in women of reproductive age is an important problem in Bolivia (estimated prevalence of 33-45% in pregnancy) which is not being systematically addressed, although the government has a National Program for the Prevention and Treatment of Anemia (PNCAN). This program calls for the provision of a daily supplement of 200 mg of ferrous sulfate (40 mg elemental iron) and 0.25 mg folate to all pregnant women, but is hampered by a poor attendance for prenatal care and the lack of supplies at peripheral facilities. There is no indicator of what proportion of pregnant women are covered with iron/folate supplements in the MOH's health information system (SNIS), although there is an indicator for vitamin A supplements to children. UNICEF, which often supplies governments with iron/folate tablets for distribution in prenatal care, is not bringing any iron/folate supplements into Bolivia. Commodity and technical assistance by A.I.D. could give this program a real boost. The anemia problem may be exacerbated by Chagas disease in areas where Chagas is endemic.

A USAID-funded survey assisted by the VITAL Project found that 1% of the total population was blinded by Vitamin A deficiency and 48% with low serum retinol levels. Accordingly, the MOH launched a new program of prevention in 1993 to provide 1 megadose (100,000 I.U.) Vitamin A capsule to children 6-11 months of age in conjunction with measles immunization, and a 200,000 I.U. dose every 6 months thereafter till 5 years of age. The program also calls for providing megadose vitamin A supplements as part of treatment of measles, diarrhea, acute respiratory infection and severe malnutrition. The receipt of Vitamin A is to be noted on the child's growth chart. The government's program also calls for providing an immediate postpartum dose of 200,000 I.U. of Vitamin A to women. Capsules will be brought in by UNICEF for this program, and thus it does not appear that US commodity support assistance will be required. However, continued technical assistance by A.I.D. could play a key role in assuring that the program is effective. Fortification of some widely eaten, centrally processed foodstuff with vitamin A is under consideration, and Bolivia will need technical assistance to pursue this option.

With UNICEF assistance, Bolivia has reportedly had major success in reducing iodine deficiency over the past 10 years through iodized salt and iodine capsules to endemic areas. This success is evidenced by the reduction in endemic goiter in school children from 60% to less than 5%. Since there are still pockets of the rural population which do not consume iodized salt, but rely on the same block salt used by animals. UNICEF plans to assist with iodation of this source as well. The government of Bolivia wants to eliminate iodine deficiency by 1994, and it appears that USAID need not assist in this endeavor as UNICEF is providing adequate support.

Breastfeeding The breastfeeding situation in Bolivia and program recommendations are provided in detail in A.I.D.'s July 1992 report, "The State of Breastfeeding in Bolivia: Practices and Promotion," by the MotherCare and LAC Health and Nutrition Sustainability Projects. There has been a documented decrease in the prevalence and duration of breastfeeding in Bolivia over the past decade and the DHS 1989 survey found that only 55% of infants 0-4 months of age were exclusively breastfed, and that one third of all breastfed infants also were bottle-fed. The most sub-optimal infant feeding practices are found in the lowland areas, e.g. Santa Cruz, where DHS reported a median duration of breastfeeding of only 13.2 months, in contrast to a median duration of 19.7 months in the highlands. Failure to initiate breastfeeding within the first hour after delivery and delays of 24-36 hours in giving colostrum are also the norm and contribute to neonatal hypothermia and mortality as birth attendants concentrate on delivering the placenta and meanwhile neglect the newborn infant. Through formation of mother support groups in the community, MotherCare/Save the Children was able to increase the percentage of mothers who initiated breastfeeding within the first hour from 25% to 61%.

Seventeen Bolivian physicians and nurses have received A.I.D. support for lactation management education training at Wellstart San Diego and formed a local breastfeeding promotion organization, COTALMA. Breastfeeding promotion has been given a boost in Bolivia in the last two years with the launching of the Baby Friendly Hospital Initiative. As of March 1993 three major hospitals in Bolivia (San Gabriel in La Paz, Jaime Sanchez in Sucre, and Daniel Bracamonte in Potosi) have achieved the ten steps for promoting breastfeeding (WHO/UNICEF) deemed necessary to be considered "baby friendly". A National Breastfeeding Training and Resource Center established by COTALMA with USAID funding, held its first course for 23 managers of breastfeeding promotion in hospitals from each of the 9 major cities in Bolivia in September 1993. The Center plans 4 courses of 2 weeks each per year for 20 participants in split sessions of 1 week each. La Leche League has a branch in Bolivia which is doing some small-scale mother support group work on a voluntary basis in La Paz, Oruro, and Cochabamba, but they would need outside support to work at a significant scale. There does not appear to be much collaboration between COTALMA and La

Leche League.

What is lacking in breastfeeding promotion efforts are 1) community-based mother support groups; 2) training of health auxiliaries; 3) integration of breastfeeding into the related programs of diarrheal disease and acute respiratory infection control and growth monitoring; 4) communication and social marketing; 5) integration of education on the lactational amenorrhea method into family planning services. The latter point is particularly important given the sensitivities surrounding modern family planning methods in Bolivia and the fact that up to 40% of women perceive breastfeeding as a natural method for birth spacing. Yet few of these women, nor the health workers who counsel them, know that for breastfeeding to be an effective method it must be full breastfeeding (unsupplemented), menses should not have returned, and the woman must be in the first six months postpartum. The Population Council is planning to do operations research on promoting lactational amenorrhea as a family planing method in Bolivia. Many women become pregnant while breastfeeding according to COTALMA which culturally leads to its abrupt cessation. Thus family planning needs breastfeeding to lengthen birth intervals in women who are not contracepting, and breastfeeding needs family planning after menses return to prevent the next pregnancy leading to abrupt weaning and termination of breastfeeding.

The incidence of low birth weight is estimated to be 15%. The 1989 DHS Survey found only 2% of infants 3-5 months old underweight and 8% stunted. However, protein-energy malnutrition in Bolivian preschool children rises steadily as they enter into the weaning period and there has been no improvement in the past decade. Malnutrition is an underlying cause in 57% of all deaths of children under 6 years of age. Among children 3-36 months old measured in the 1989 DHS, 38% were stunted (a rate second only to Guatemala in the region) and 13% were underweight for their age. A major determinant, besides infections like diarrhea, is infrequent feeding of a starchy, low-energy density, low protein weaning diet. The MOH has a national growth monitoring program and growth charts are completed for children who attend well-baby clinics. However, most children, particularly in rural areas, do not attend clinics. Furthermore, besides weighing the child and plotting the chart, it is unclear what, if any, counselling to mothers concerns their child's growth. An MOH statistical system of reporting the percentage of children in various grades of malnutrition also places inappropriate emphasis on static grades of malnutrition in the individual child rather than on whether the child's own growth curve is going up, staying flat or declining.

Supplementary feeding programs aimed at addressing malnutrition in pregnant and lactating women and preschool children are supported by the World Food Program. However, little work appears to have been done on improving locally available, home-prepared weaning

foods or affordable commercial weaning foods, though UNICEF has expressed interest in working on appropriate complementary foods. The provision of powdered milk supplements to pregnant and lactating women through the Social Investment Fund (FIS) and the World Food Program is of concern, as this milk often is used instead for bottle-feeding infants, contributing to diarrhea and displacing breastfeeding. There is considerable political pressure by the Bolivian dairy industry (PIL) and the European Community to sell surplus milk to the programs. Food supplements have been used as a incentive to attract mothers and children in for child survival services, but have created dependency and proved unsustainable, leading to a collapse in coverage of health services when food is not available.

6. Chagas Disease.

Bolivia is one of the pre-eminent foci of Chagas Disease in the hemisphere, with seroprevalence rates indicating previous or current infection with the trypanosome reaching up to 70% in the populations of some regions. Entomologic and epidemiologic research indicate that Bolivia represents a true endemic focus of the disease and of the triatome insect vector. The prevalence of this vector, its presence in large numbers in many rural and peri-urban houses in the lower regions of Bolivia, its ability to transmit the infection to and from a number of domestic and wild animal species in addition to man, and its relative resistance to insecticides and other control measures, have made the transmission cycle difficult to break.

While not technically a child survival intervention, feasible and cost-effective measures to control infection or identify and treat cases would be a contribution to child health in Bolivia and other countries with high prevalence of the disease, since many children in endemic areas are infected early in life and experience clinical effects of the disease later in their lives. Some children apparently succumb to the acute phase of the disease, a problem that has not been adequately defined. Small studies have identified a high prevalence of infection of the placenta and transplacental infection in endemic areas, and a possible association of such infection with low birthweight and early infant mortality. However, since the occurrence of Chagas infection is associated with poverty, as are many of the other conditions that are proven risk factors for low birthweight and infant mortality, such an association cannot be accepted without control for these other factors.

There does not exist a consensus on the best approach to control of Chagas disease in Bolivia. The large World Bank funded UNGECH Project has focused on intensive spraying of homes infected with the insect vector, while the USAID supported research and intervention approach has combined improvement of houses with insecticide use. Since neither approach appears to be affordable

or sustainable on a large scale, the appropriate policy remains to be defined. Another policy issue relates to the proposal for blood screening in endemic areas, since some transmission apparently occurs via transfusion; this issue is linked to the broader and more disturbing issue of "informal" transfusion of blood by health practitioners and others in some parts of the country. This practice, and effective measures to control it, deserve at least as much concern as the screening and treatment of blood for T. cruzi infection.

In endemic areas, no coherent efforts have been made to educate the population on the nature of the disease and its relation to control of the insect vector. This is an obvious communication challenge, since the vector is common, especially in the rural setting, and effects of infection do not appear until many years after infection.

There is no programmatic health service approach to Chagas disease in Bolivia, and the potential components of such an approach are difficult to define.

II.C Government of Bolivia

1. Health Infrastructure

Bolivia's health infrastructure presents a classic example of the problems reinforced and exacerbated by limited and poorly planned physical and human resources. The system is characterized by a network of facilities with an uneven geographic distribution, poorly planned construction, insufficient maintenance, inappropriate equipment, and inadequate drug supply. Human resources support is minimal. Facilities are understaffed with inappropriately trained providers. Salaries are very low. The quality of attention is questionable and, not surprisingly, services are underutilized.

Physical Infrastructure The Secretariat of Health has inherited a centralized health system, capped by 12 *Unidad Sanitarias* (U.S.). The Units wield considerable influence over implementing central level policies, and allocating human resources throughout the region. Located in Department capitals, the Units manage tertiary care facilities, coordinate with local medical and nursing schools, and supervise national health programs through a district structure.

The national health network includes approximately 90-95 Districts, each with a hospital of limited capability to provide tertiary care services. The hospitals are poorly equipped, have an inadequate drug supply, and are understaffed. For example, the facilities are rarely able to manage labor and delivery complications and must refer to the tertiary hospital at the regional (US) level. The

District Manager manages multiple responsibilities with little support; theoretically, he provides direction and program guidance based on Area and District level statistics which he, in turn, collects and aggregates. In addition, he is responsible for the administration and financial aspects of the program and is expected to provide technical guidance and support to peripheral facilities.

Districts are divided into Areas, each with a health center. The quality of services provided by health centers varies widely according to location, provider and facility. In urban areas, a doctor may be in attendance providing curative and preventive care. In rural areas, the health centers often have beds for hospitalization.

Health posts are located in rural communities attended occasionally by a nurse or auxiliary. The post may support community promoter activities for education outreach and referral linkages.

Human Resources The health system is dominated by highly specialized doctors who jealously guard their economic and technical power. Medical school training emphasizes curative care with little discussion on primary health care or public health. To remedy the shortage of doctors in rural areas, the ex-Ministry of Health instituted a policy of the *"año provincia."* Prior to specialization, doctors are required to spend a year in a rural area. However, the system is very weak. The doctor is frequently absent, receives little supervision, and poor preparatory training. An introduction to rural conditions, specific health problems and cultural sensitivity are not included in the medical school curriculum. Motivation is low, given the physical conditions of site, lack of resources, poor linkages with the community and short time in the region.

Nurses receive considerably less training, much lower remuneration, and very low status as a result. The potential for nurses to improve child survival in Bolivia has been overlooked. Nurses may be the only health providers in an isolated rural community. They play a crucial role in education and referral linkages.

The same comment applies to auxiliary nurses located at desolate health posts. With training, support and supervision the auxiliary could provide crucial links between the community and the formal health system. Often a member of the community , she has a strong understanding of the cultural and social barriers that prevent service utilization.

Beyond the formal health sector, communities often have voluntary health promoters or *Responsables Populares de Salud (RPS)*. These are community members selected for training to promote primary health care and link with the health infrastructure. Due to limited resources and political will, the program has had varying degrees of success.

Logistics With donor support, the Ministry of Health developed a parallel structure to assume responsibility for the distribution of drugs to all levels. The *Centro de Abasticimiento de Suministros en Salud* (CEASS), was given authority to manage, supply, store and distribute all public health supplies. It is responsible for wholesale distribution of medical supplies from the central to the regional level. Regional Supply Units (URES) are responsible for regional distribution of supplies to the District level and should coordinate with their counterparts, the Unidades Sanitarias. To date, the system has not functioned successfully. The central level is highly politicized and poorly managed; little communication or coordination exists between technical counterparts within the Ministry or with the regional and District levels. The lack of a regular supply of commodities continues to be a complaint heard at all levels. The Ministry has attempted to improve the logistics system with initial efforts to decentralize and the development of an essential medicines program.

Despite concerted donor effort, the absence of essential medicines at all service levels remains a critical problem. Several international donors have attempted to improve the system; USAID is also interested in providing support. The HHR Office plans to conduct an assessment of the public sector logistics system to identify USAID's technical niche and appropriate assistance.

Policy Development/Data Management The National Health Information System (SNIS) is a recent innovation at the Ministry of Health created in response to a serious lack of basic information at the health District level on service statistics and epidemiologic information for planning purposes. In its third year of operation, the system appears to be functioning as a data collection system, however, it is questionable whether the data is used for planning and policy making purposes at any level.

Information is collected from the Area level upwards and, aggregated at District and regional levels. Forms seek information regarding all aspects of the service delivery system, including information on all the major public health programs supported by the Secretariat of Health. Compilation of this information at district, regional and national levels still needs rationalization and improvement. Of particular concern is the present insufficient capacity to analyze and use the information collected for planning and programming. NGOS are also requested to participate in the system and report coverage statistics to the District level. Monthly Informational Analysis Committee (CAI) meetings at all levels are supposed to evaluate the quality of the data, analyze the information and develop program and activity objectives accordingly. At the Area and District levels these meetings appear to simply review the data, compare the information by health facility, and plot immunization coverage. For example, District

Directors were unable to discuss baseline data that would suggest program goals for immunization coverage, prenatal care visits, or births attended. They only were able to discuss services provided in absolute numbers and compare figures to the previous year accomplishments.

Budget Although reports vary, health accounted for 1.5% of the total government budget in 1992 and 1993. For 1994, the new government promises this proportion will increase to 2.5-3%. The majority of the health budget goes to hospitals and human resources, leaving inadequate funds for basic preventive care and educational efforts. Primary health care and public health activities are primarily supported by the international donor community.

2. Reorganization

With recent elections in August 1993, a new coalition between a number of parties, led by Mr. Gonzalo Sanchez de Lozada, who won the greatest proportion of the popular vote for president, has formed a new government. A new government structure has been proposed, and new Ministers named. One of the major proposed policies of the new administration is to reform government structures, theoretically reducing the number of bureaucratic layers, especially in La Paz, with the creation of 3 new "super Ministries" that consolidate a number of ministries in the old government. The former Ministry of Health and Social Development has been changed to a National Secretariat of Health (SNS) within the Ministry of Human Development.

The National Secretariat of Health in turn has proposed a reorganization of the former Ministry of Health, reducing the number of technical Directorates in an attempt to simplify central decision making. The new structure will also more directly connect the technical Sub-Secretary of Health to the Regional and District health structures, which are to be delegated more authority and decision-making responsibility. The new administration will particularly favor two important themes in the coming years - decentralization, and popular participation in local decision-making. The specific mechanisms by which these two themes will be implemented are only now being developed, but the direction is positive, and affords a new opportunity for USAID to work together with the government in bringing better quality health services closer to the population in need.

A draft of the new vision statement of the Secretariat of Health is presently being circulated and is expected to be officially approved in the coming weeks. Six specific themes have been developed within the vision statement. First is the recognition that good health is a right, which must be promoted by the government. Access to health services will be improved, and urban-rural and cultural differences in morbidity and mortality rates

between different population groups will be reduced. The most concrete proposal in this regard is a retreat from increasing efforts in cost recovery, particularly with regard to certain preventive interventions and among certain disadvantaged population groups. The government feeling is that family planning services, pre- and post-natal care, and delivery services should be provided free of charge, to facilitate economic access, especially to disadvantaged groups. USAID will have to reinforce its efforts in policy dialogue and technical assistance to show that cost recovery systems can work, even in poor populations, and that without strengthening efforts to recover costs, the government will be unable to provide the needed services.

The second theme is sustainable development in the health sector, through promoting decentralization to regional and district structures. This theme was also discussed in the previous administration, and a number of donor activities, including USAID's, focus on providing resources more directly to regional and district structures. There is much more work to be done in this area, due to limited managerial and administrative capacities at these decentralized levels. In addition, a true decentralization, involving the local management of financial resources, has yet to occur, and district structures particularly are ill-organized to plan for, program, manage and evaluate the use of these resources. A great need exists for some sort of structured public health administration training program focussed on field level realities. Such a program could continually train and recycle regional and district level managers to improve administrative capacity and facilitate decentralization.

The third theme is popular participation in development activities. The idea is that the government needs to make better use of local structures and capacity in planning for and implementing health programs, in both rural and urban areas. There was some experience with this model in the mid 1980s under a previous Bolivian administration. Some structures and individuals with experience in this earlier model still exist, and the present government hopes to use this existing capacity as a base for popular participation. USAID has had some recent experience with a powerful model of community decision-making and development in small areas, but the model is very human resource intensive, and requires significant investment in community needs assessment and problem identification. The government seems to be considering a much more top down process through already existing local government structures. Further discussion on appropriate models will be required.

The fourth theme is the development of better health status as an integral part of the larger process of social development. The issues of health, nutrition, water and sanitation, education and environment need to be dealt with in an integrated fashion, and not separately. Opportunities for coordination and cooperation abound

in these sectors, and need to be taken advantage of, particularly at the operational level where resources are limited, and social sector personnel are also limited.

The fifth theme is the development of a system which will assure access to health facilities and services for the entire Bolivian population. Such a social security system for health now doesn't exist, and would require the development of new social insurance mechanisms, which now lack the necessary financial resources. This target is probably a long way off for Bolivia, without a lot more work in development of insurance schemes and cross financing and subsidization mechanisms.

The last theme is the development of specific targets in the sector for the improvement of health indicators, such as infant, child and maternal mortality, and the reduction of rural-urban and rich-poor differentials in these measurements now. This is where all the priority programs are mentioned. All appropriate areas are mentioned, but in the document itself, it's not really clear what the priorities should or will be.

In terms of the re-organization of the Secretariat itself, a revised organizational structure (See Annex D) has been developed and accepted by the new leadership. During a recent workshop, the new structure was presented to the newly appointed officials at central and regional levels. The structure itself was accepted by the group without much discussion. An important aspect of the new structure is the creation of a new unit for project evaluation and international relations. This new unit will have important coordination functions, particularly since there are so many donors and non-governmental organizations working in the health sector in Bolivia. The country has been very fragmented between different donors, the most important being large World Bank and Interamerican Development Bank projects, as well as USAID's CCH activity. The details of the final reorganization in terms of who will be responsible for what offices at the lower levels is still not entirely clear.

What is clear is the priority that the Secretariat wants to put on decentralization. This will include strengthening of the regional and district administrative structures. Although different projects are supporting expanded district administrative teams in selected districts, the normal personnel structure of the Secretariat at the district level only includes one physician responsible for all technical and administrative matters. Clearly this structure needs to be improved, but it's not clear whether the Government has the resources to reinforce district personnel in any way.

The new organization proposes a regional structure with well defined job responsibilities, but with staff requirements that seem unrealistic. In addition, the regional level only provides

administrative support to the districts, where the real service programs will be managed. In terms of donor support to the decentralized structure, there is a much greater chance of affecting service delivery and real programs if external support is provided to the district level, as a number of the large donors, including USAID are now doing. There will clearly be competition between the regions and the districts for limited support.

The proposed district structure has not yet been developed by the Secretariat. An important issue for all donors for the future feasibility of carrying out the policy of decentralization is how can the government support the increased personnel at a time when government money is scarce, and the Secretariat already dedicates a large portion of its health budget to salaries?

In terms of targeting resources, the Health Secretariat will try to emphasize the peri-urban and rural areas, because these contain a much higher proportion of poor people without access to other services, and these areas also contain higher proportions of infant and child deaths, also due to lower quality and more dispersed service delivery points. The latest census data also point out the fact that a number of poor peri-urban areas are growing at a rate of up to 9% per year, which has important implications for the needed growth of services to keep pace with the population increase.

The new government also plans to stop new infrastructure development, and particularly the construction of new hospitals, due to the severe underutilization of present infrastructure. In addition, the Secretariat will continue to have problems staffing new facilities due to existing budget constraints. A number of infrastructure development projects, like the World Bank project, have already used up much of the construction portions of their budgets, but have barely touched the equipment line items. Additional equipment is needed to make the facilities operational. In many instances, equipment and remodeling would be sufficient to help improve existing facilities. This is especially important in for maternal care and delivery services in district hospitals, which serve as the reference points for lower level facilities presented with complicated cases. If the district hospitals can't handle the referral patients they receive due to lack of supplies and equipment, the whole system breaks down.

The government remains concerned about the shortage of doctors in rural areas. Bolivia presently has a serious oversupply of physicians in specialty areas, particularly in the major urban centers, while the rural areas suffer serious shortages of primary care doctors. The government recognizes the fact that the present system under which candidates for graduation from Bolivian medical schools are required to serve for one year with the Ministry in rural areas is not the answer to this problem. In fact in many cases it only makes the problem worse because most of these doctors

only serve for one year in the rural areas, and then leave, resulting in no professional continuity in these posts. This problem of professional turnover is further exacerbated by the fact that there is no professional civil service in Bolivia. Changes in government often mean that individuals with experience and training down to the district level lose their jobs. Accordingly, there is a loss in experience and training impact.

Training is seen by the new Secretariat as extremely important in terms of building up decentralized capacity, particularly at the district level. However, this priority conflicts with the far-reaching changes of personnel under the new government. Investments in training are quickly nullified by political maneuvering leading to frequent personnel changes which often results in a serious lack of experience and continuity at central, regional and district levels.

A longer term vision expressed by high level central officials is the creation of a situation in which a standard packet of services could be developed by the Health Secretariat in preparation for contracting out some of the service provision aspects of the present system. In this case, the Secretariat would pull back to a more technical support and normative role within the whole health service system. In the present system, the Secretariat is too closely involved in delivering services through a national network which is very difficult to manage from the central offices. This is partly why the emphasis on decentralization becomes a priority. This idea of contracting for services is a much longer term vision, which should be encouraged. As first steps, the Secretariat should be encouraged to work more to develop central planning, analysis and policy making capacities, with a major responsibility to coordinate in a much more effective manner external donor and NGO assistance.

To encourage local participation in planning and development, two mechanisms will be used by the new government. First, the existing municipal government structure will be strengthened to reach into the community. This is especially relevant in the urban areas, but also in rural areas where the "alcalde" structure can be used. These existing government mechanisms, however, are more oriented to a top/down philosophy which emphasizes the government authorities' role in guiding and controlling the planning process, rather than encouraging true participatory input from the communities.

The second mechanism is one of encouraging the development and management of more projects at lower levels of the system. This is already exemplified by the district level activities of USAID and those of other donors. This approach is presently constrained by the lack of managerial capacity and experience at lower levels, as well as frequent turn-over of government personnel for political reasons, even at district levels. Also, most of the district level activities of CCH and other projects are focussed on providing

inputs to the district administrative structure, and don't really make the link to the communities that would be needed to achieve true community participation, including a more bottom/up planning process.

The bottom/up approach is exemplified by the experience of the Mothercare project in Cochabamba, and the Save the Children community "auto-diagnosis" methodology, both of which proved successful in mobilizing communities to participate in identifying priorities and planning for improvements in their own health care. USAID should look for a way to encourage more of the bottom/up approach, probably through local NGOs, which are working much more closely in the community. The difficulty is that often the connection between true grass roots development efforts promoted by PVOs and the formal health infrastructure is missing. Fortifying this connection will be a major challenge in the next few years as the government tries to implement its efforts in participatory development.

The CCH project is just beginning to implement a planned health education and training strategy, which is designed to increase administrative and technical knowledge of health personnel, as well as reach into the community with key information and messages in promoting child survival. This approach draws heavily on experiences of community organization using a population census approach to draw government health workers and community volunteers into the community to begin a dialogue and to identify needs. In the process, high risk families that will need special attention are also identified. A close monitoring and evaluation of this approach will be necessary to determine whether it provides a good model for developing the health system/community connections discussed above.

At a recent seminar to introduce the new structure and priorities to all new central and regional level health officials, the Secretary of Health emphasized the following points. First, following on the recent census, he recognized that continuing population growth must be factored into government plans for the provision of services by the government over the next few years. Health services must continue to expand to meet increasing demand, as well as improve quality to promote increased utilization.

Second, in an attempt to lower the still high levels of maternal and infant mortality, the Secretariat wants to emphasize certain priority programs over the next six months. These are: diarrhea/cholera control, with a major national communications effort planned for the next few months; continuing support to the immunization program, with particular emphasis on measles due to the documented morbidity and mortality effects of this disease, particularly on young children, and recent measles outbreaks in various areas of the country; and increased promotion and emphasis on prenatal and maternal care, including a push to increase the

numbers of medically supervised births, and the identification and follow-up of high risk pregnancies.

Third, partly as a response to the recognized number of illegal abortions, and the impact on maternal mortality of complications related to these abortions, the Secretary announced that new efforts to increase the use of modern family planning methods will be encouraged, as well as the creation of a joint program with the Secretariat of Education to introduce family life and sex education in the schools. These initiatives, discussed so openly by a high level government official are encouraging signs, which should be taken advantage of by USAID and other donors to move ahead in this important area.

A further policy initiative announced by the Secretary was the decision to provide all pre- and post-natal care, maternity services, and family planning services free in government facilities. There is a feeling in the new government that present charges associated with these services are constraining access, particularly in poor, rural areas where utilization is presently the lowest. This new policy, while well intentioned, goes against some of USAID's own recent experience with PROSALUD, which shows that populations are willing to pay for services, even in poor peri-urban areas, when the services provided are of high quality, and are appreciated by the community. Other experience elsewhere in the world also shows that even extremely poor communities are willing to pay something for good services. The new policy makes it even less likely that government services will improve, because one of the impediments to quality service in government facilities is the lack of materials, equipment and supplies, which will only be made worse by further reducing financial resources available at the local facility level.

The first major initiative by the new Secretariat of Health will be a media campaign to promote improved hygiene, and the recognition of diarrhea as a major health problem as the cholera/diarrhea season approaches. The management of this campaign will be a test case for the new policy of decentralization. The new directors of the health regions (Unidad Sanitaria) were asked to develop detailed needs to carry out the campaign in their areas. They were asked to do a first cut theoretical exercise at the seminar, to be followed by a more realistic canvass upon return to their regions in concert with the district directors. A number of issues emerged from this exercise at the seminar.

First, the new regional directors, many of whom have had no previous administrative experience, were clearly not ready to do the kind of detailed planning necessary even to determine their needs in support of the campaign. At both regional and district levels, administrative capacity must be strengthened through some sort of training. In the past, directors were never asked to know how to budget for their real needs, particularly since many

resources come from outside donors. Also, most of the response to the diarrheal disease problem in recent years has been directed to the outbreaks of cholera, and programmed in an ad hoc fashion, without much thought given to longer term structural and sustainability issues. These issues must be addressed to develop a national response that will effectively address the chronic and acute childhood diarrhea problem. A number of questions remain regarding the present national response.

What is the present situation with regard to the availability of oral rehydration salts throughout the national health facility structure and in community rehydration centers (UROs)? Is there an information system in place to gather this type of information on a regular basis? Are the community volunteers who staff the UROs in place, and properly trained to provide appropriate service and referrals? How will the continued distribution of salts be assured? Are appropriate systems of re-supply in place? How will the use of packaged salts be promoted versus the promotion of continued feeding and use of home based solutions? Of major concern is whether an adequate supply of salts is presently available at the community level to meet the projected demand created by a media campaign.

In addition, the key messages and targets for the campaign have not been developed. There is an immediate need for technical assistance in all these areas to assist the Secretariat in its short-term planning. Over the longer term, developing commercial and social marketing of salts will be important to supplement government distribution, and assure wider availability, particularly in remote rural areas, where existing commercial distribution channels for soft drinks or other products could be used.

II.D Other Donor Activity

A good description of the role of other donors in Bolivia's Health Sector can be found in the 1992 CDIE Evaluation of A.I.D. Child Survival Programs Bolivia Case Study. Donor assistance to the health sector including that of A.I.D. is around $50 million per year. A.I.D. assistance to Bolivia's health sector is around $11 million per year. The government of Bolivia has divided up the health sector assistance of the major donors geographically by district. (See Annex C). For example, the World Bank's $38.5 million loan, known as PROISS, for improving health infrastructure is in the 16 urban/peri-urban districts of the departments of La Paz (including El Alto), Cochabamba, and Santa Cruz as a complement to USAID's work through the CCH Project in 6 of the rural districts of the same departments. The World Bank provides funds primarily for construction and equipping of urban health centers. The SNS would like to better integrate the PROISS and CCH projects to achieve an effective referral network for health emergencies

between the primary and tertiary levels of the system and between rural and urban areas in the three departments where both projects are working. The Inter-American Development Bank has a $34 million loan and a $5.0 million grant for health infrastructure (known as PSF) in 12 districts in the departments of Chuquisaca, Oruro, Pando, Potosi, Tarija, and Beni.

UNICEF provides approximately $11 million per year for commodities (e.g. safe birth kits, iodine, respiratory rate timers for ARI), breastfeeding support for Baby Friendly Hospitals, nutritional services (especially stressing reducing iodine deficiency, growth monitoring and appropriate complementary feeding) and education, as well as district-level activities throughout Potosi and Chuquisaca departments (including the installation of 100 water systems per year). In 1993, UNICEF supplied 1.5 million ORS packets to Bolivia for the first time to augment the supply being brought in by A.I.D. which does not appear to be enough to meet demand. They have made videos for use in Bolivia on their Facts for Life publication and added videos on Iodine Deficiency and Chagas disease. UNICEF also plans to promote family planning through mass media.

There appears to be little coordination, cross-fertilization, and harmonization by the SNS of the public sector health activities of the major donors working at departmental and district level in various regions of the country. In contrast, there are Inter-agency Coordinating Committees which function effectively for the government's national immunization and diarrheal disease programs and also the National Coordinating Committee for the government's reproductive health program, with its technical sub-committees for services, IEC, training, research and evaluation, and policy.

Technical services (approximately $3.5 million for 4 years) and contraceptives for reproductive health services in public sector health facilities are implemented at the national level by the Pan American Health Organization with UNFPA funds, but PAHO also is assisting with strengthening of local health systems in 11 districts. The UNFPA has a small reproductive health program. The UNDP supports basic sanitation infrastructure in 30 districts. Bilateral assistance to Bolivia's health sector has been received from France (2 districts in Potosi), Germany (1 district in Cochabamba), Spain, Holland, Belgium, Italy and Japan. More than 150 non-governmental organizations contribute around $15 million per year.

In 1990 the government established the Social Investment Fund (FIS) with $74 million from various bilateral donors and the World Bank, two thirds of which is expected to be used for health activities including maternal and child health care, basic sanitation, vector-borne disease control (malaria, Chagas, leishmaniasis), and milk supplements for pregnant and lactating women. In 29 districts, FIS funds and technical support from PAHO and UNFPA are being used to strengthen local health systems.

III Health Systems Improvements for Achieving Maximum Impact on Child survival and Health over the Next Five Years

As described in Section II the four leading causes of death in children under five years of age per 1989 DHS, in rank order of importance are diarrhea, acute respiratory infection, birth problems and prematurity, and vaccine-preventable diseases, with malnutrition as an underlying cause in most deaths. Thus these major child survival problems must continue to be USAID's top priorities in the health sector. To address these problems in Bolivia, certain health system improvements are deemed to be critical. These will be described in two categories: 1) those in which USAID has a comparative advantage, and 2) those in which USAID does not have a comparative advantage, citing USAID project experience in Bolivia or elsewhere for each.

III.A Health Systems Improvements in USAID's Comparative Advantage

1. Communication/Social Marketing/Behavior Change/Community Mobilization

There is an acute need in Bolivia for communication and social marketing for behavior change in support of child survival interventions. Meanwhile there is also a need for community mobilization and participation in order to increase utilization of health services. While there have been various educational campaigns, e.g. cholera prevention, it is not evident that these have been solidly based on qualitative research to make them culturally appropriate, nor that the MOH has the skills to carry out effective communication and social marketing. Much more attention has been paid to the health intervention side of the equation and to achieving short-term impact rather than to long-term behavior change. A poignant example is the unsustainable campaign and house-to-house approach used for achieving immunization coverage, to compensate for the lack of community awareness and attendance for immunization at health facilities. The communication gap is great between western medicine and traditional Aymara and Quechua health beliefs and practices. The mid-term evaluation of the CCH Project noted that community participation and health promotion and education were weak components. There is a need for commercial social marketing of ORS. Access to radio seems to be good throughout the country.

Yet USAID does have a clear comparative advantage in communication, social marketing and community mobilization for behavior change. There are a number of examples from the USAID/Bolivia program. The innovative Interactive Radio Learning Project has proven to be an

effective way to teach health concepts to primary school children. The mass media educational campaign conducted by Population Communication Services for the Reproductive Health Project led to measurable increases in awareness and demand for modern contraceptive methods. MotherCare has produced high quality and very participatory educational materials on prenatal care, and safe/clean birth for peri-urban Cochabamba that will now be adapted and reproduced for use throughout the country. Private voluntary organizations supported by PROCOSI and other USAID grants have been very active in health education and most notably in community mobilization which is the PVOs' particular strength, e.g. the women's group *autodiagnóstico* approach used by MotherCare/Save the Children to reduce maternal and neonatal mortality in remote, rural areas. PROSALUD has also been very effective in disseminating educational materials prepared by others and in advertising its own services in the community. This has contributed to much greater utilization of services than traditionally found in government health facilities. Worldwide, A.I.D. has a number of other central technical assistance projects for communication and social marketing that have amassed a wealth of experience in changing various health behaviors, namely Healthcom, SCOM, and Nutricom.

2. Policy

A number of key areas for policy change in the health sector are apparent: 1) increasing government of Bolivia expenditures for health, 2) shifting those expenditures away from tertiary and curative services to preventive primary health care, 3) cost recovery with equity, 4) public/private partnerships, 5) delegation of authority from physicians to nurses, 6) donor coordination and harmonization of approaches, 7) evolution from single vertical services toward permanently institutionalized integrated services, 8) decentralization. To date, USAID has focussed more on district-level support for integrated child survival programs through the CCH Project and less on policy dialogue for health care reform at the national level. Since Bolivia's new government is contemplating a series of structural changes to improve services in all the social sectors and is open to policy dialogue, the timing is extremely favorable for USAID to shift more of its attention to national level policy issues to make the health system more efficient, equitable and sustainable.

The A.I.D. Data for Decision Making (DDM) Project has proposed several specific areas for A.I.D. assistance to launch this process in Bolivia. One is the development of a non-technical presentation for wide dissemination on the need for health care reform and the key elements that need to be considered, which could draw heavily on examples from this year's World Bank World Development Report on Health. A similar presentation on population growth by Dr. Wolowyna of the RAPID Project was very effective, as has been A.I.D's support of the Population Policies and Planning Unit (UPP)

in the Ministry of Planning and Coordination. Compilation and dissemination of successful health sector reform experiences from Bolivia (PROSALUD) and other countries would also be very helpful. The DDM computerized Health Resources Planning Model could also be used as a tool for policy analysis, planning and evaluation allowing experimentation with different health services' coverage goals and technical norms coupled with different levels of human resources and infrastructure. This work could be carried out at UDAPSO in the Ministry of Planning and Coordination or at a policy unit in the reorganized Secretariat of Health.

A comparative study of approaches used by the different donors that are providing health assistance at district level in Bolivia (e.g. World Bank, Interamerican Development Bank, USAID, etc.) would assist the new Secretariat of Health to develop policies on its role and the role of donors in the decentralization process, as well as contribute greatly to donor coordination and cross-fertilization and harmonization of approaches within the national system.

Under the Reproductive Health Project, A.I.D. has also had considerable success in working with the government to reform national norms for delivery of services. This is another critical policy area for A.I.D. support since, as previously stated, failure to delegate authority, for example, for distribution of antibiotics to nurses and health auxiliaries is a key impediment to achieving maternal and child survival goals.

3. Health Care Financing and Sustainability

The new government of Bolivia is in the throes of a debate on whether or not to roll back its attempts at cost recovery for certain health services like maternity care in order to achieve equity, and because accounting for the funds collected has been a real administrative headache. Yet Bolivia is dangerously dependent on unsustainable donor funding for its health services, funding less than 10% of health care expenditures from its own Treasury, and allocating less than 2% of its total national budget to health. Meanwhile it has been established worldwide, but more importantly in Bolivia (PROSALUD) that consumers will pay for better quality curative health care. Paradoxically PROSALUD is spending at higher levels than the MOH in its urban health centers, but its unit costs are considerably less because of much higher utilization of services, and its cost recovery is much higher than MOH facilities. Quality of care and patient satisfaction as perceived by patients are better in PROSALUD than in MOH facilities. Furthermore, in response to equity concerns, PROSALUD is able to cover the indigent population free of charge and provide free preventive health care services as well as the MOH, but with the critical difference that the costs of doing so are subsidized by effective cost recovery for curative services.

Health care financing and sustainability are clearly critical issues for Bolivia's health system and areas in which USAID has extensive experience. The self-financing revolving drug funds that the CCH Project has established at district level are another example of the kind of useful assistance USAID can provide. Other centrally funded projects that have extensive experience in providing the type of technical assistance required are the LAC Health and Nutrition Sustainability Project, and the RD/Health Financing and Sustainability and Quality Assurance Projects. An essential tool for rational financial planning is national health accounts to describe the totality of sources and uses of expenditure flows in both governmental and non-governmental health sectors. The DDM Project has proposed to assist the government to set-up such a system.

4. Commodities and Logistic Systems

Efficient procurement and functional delivery systems to assure adequate supplies of essential commodities like vaccines, oral rehydration salts, contraceptives, antibiotics, etc. in all areas of the country are obviously critical to successful child survival interventions. In Bolivia, USAID has played a major role in supplying and efficiently distributing vaccines and ORS for the national program through the CCH Project and contraceptives to the private sector through the Reproductive Health Project. Although commodity procurement is often not seen as in USAID's comparative advantage, the Mission and the CCH Project have successfully overcome USAID's own burdensome administrative requirements and now have smoothly functioning procurement systems that should be retained. It is not clear that any other donors are prepared to step in and meet the Bolivia health program's commodity requirements, so if resources permit it is suggested that USAID continue in this role. Additional commodities may also be required such as antibiotics for ARI, prenatal syphilis control programs, or iron/folate tablets for anemia, which USAID could consider providing given its comparative advantage.

5. Training

Training, both pre-service and in-service, is an important determinant of health worker performance and quality of care. In Bolivia, doctors and nurses within the MOH structure often have received little public health nor health services administration training. Because many of these personnel, at least down to the district level, are politically appointed, the turnover with every election leads to a loss of trained personnel and subsequent additional training for new appointees. Thus fundamental personnel policy issues need to be resolved for training to be a truly effective investment in the public health sector. There have been many well-designed and executed USAID -assisted, in-service courses on case management of diarrhea and cholera (PRITECH), ARI, immunization (REACH), clinical family planning (JHPIEGO), lactation

management (COTALMA/Wellstart), data for decision-making (CDC) and prenatal/delivery care (MotherCare) illustrating A.I.D.'s strengths in in-service health worker training. However, these appear to be one-time only courses and not embedded in a system of routine in-service training for district, area and sector level health workers. The CCH Project training of trainers component was delayed and just got started in May 1993 and so cannot be evaluated yet.

Before proceeding with additional assistance for training in child survival interventions, USAID should commission a training needs assessment based on a review of all that has been done and the existing gaps. Then it should formulate a comprehensive training strategy. More stress on revising curricula for pre-service training with a focus on public health and health administration is also needed. Another specific need for basic training is to reinstate nurse-midwifery (*matrona*) courses, so that this category of locally-recruited and assigned worker can be permanently posted at district hospitals to begin to address obstetric emergencies in rural areas. In addition courses for community-based birth attendants - *parteras*- may be useful, if focused on life-saving delivery skills.

6. Program Development, Management, Information and Evaluation Systems

National child survival program development, management, information and evaluation systems based on an epidemiologically sound strategy, with feasible but focused implementation plans and targets for each of the key child survival interventions are needed by Bolivia at this time. De-centralized plans at departmental and district level can then flow from the national plan. The one and only intervention that seems to be applying this concept is the immunization program and it has paid off handsomely in impressive increases in coverage over the past few years.

The national health information system (SNIS) is a step in the right direction, but on closer examination one finds that targets for child survival interventions other than immunization are not based on achieving universal coverage of the actual population in need, but rather on status quo targets of the actual number of children or women served in the recent past. The SNIS needs to be made more effective for local decision-making through activation of the information analysis committees (CAI) that are supposed to meet monthly at area, district and departmental levels. Likewise, in order to facilitate the use of the information system for management decision-making by senior MOH officials, it needs to be made much more user-friendly. Computerized mapping of target achievements by districts, i.e. a geographic information system, is one idea for making information much more visual and useful. Feedback from the national level to the local levels through computerized, personalized letters is another very effective method

for increasing the reliability and utility of the current system.

There is a lack of adequate management systems for decentralized decision-making including local financing, accounting, transportation, personnel, supervision, training, logistics, and equipment maintenance. The CCH Project has made some good contributions to increasing the utility of SNIS in the districts in which it is working, supplying computers and training in their use, and hosting the DDM training by CDC. PROSALUD also has exemplary program development, management, information and evaluation systems with many features applicable to de-centralized management of health systems at the district level. However, more often than not, USAID for the sake of short-term expediency has used administratively effective, parallel contractor or PVO systems to overcome the constraints of Bolivia's public health system, rather than grappling with improving it. Health administration technical assistance has been effectively applied by USAID elsewhere and is much needed now in Bolivia.

7. Service Utilization/Quality of Care

The underutilization of government health services is a widespread problem in Bolivia that leads to high unit costs for services provided. As mentioned earlier, increasing utilization can be achieved through better quality of care, including humanizing care and making it culturally sensitive, through communication, social marketing and community mobilization activities and through making health facilities more accessible in rural areas. Good examples of USAID's success in overcoming underutilization are the MotherCare maternal and neonatal health activities through PVOs in Cochabamba, and the PROSALUD clinics in Santa Cruz and El Alto. It is noteworthy that both of these examples are peri-urban and private. An evaluation of service utilization and quality of care provided by distributors at oral rehydration units (URO) has been done by PRITECH and REACH has looked at the quality of ARI case management in PROSALUD. Again neither of these examples is in government health centers. The one example which compares service utilization and quality of care as well as costs is the LAC Health and Nutrition Sustainability Project's comparative study of PROSALUD and government health facilities in Santa Cruz which found both better utilization and quality at PROSALUD. The lessons learned now need to be translated into concrete reforms in government health facilities. A.I.D. central projects that specialize in qualitative research on consumers' attitudes such as Healthcom or BASICS or MotherCare could provide technical assistance to Bolivia as well as the worldwide Quality Assurance Project.

8. Research

Applied and operations research is always essential to help resolve problems of access, use and quality of services in a child survival program. Research also helps medical personnel to keep up with the state of the art in health technologies, and to find clinically efficacious, efficient and effective ways to tackle additional causes of death in mothers and children. At the central level A.I.D. has played a key role in applied health research. In Bolivia, USAID has also played a key role in research on the transmission of Chagas disease and intervention trials to attempt to combat it through insecticidal spraying and house remodeling. National state-of-the art diarrhea and STD laboratories, and a Chagas laboratory have been set-up with USAID and CDC support. Priority research topics for the future might include ARI intervention trials, approaches to improving reproductive health in adolescents, interaction of Chagas disease and anemia and the role of iron/folate supplements for ameliorating the effects of Chagas disease, insecticidally impregnated bed nets for control of Chagas, syphilis prevention, screening and treatment in pregnancy, and urban/peri-urban child survival activities through government municipal health systems.

III.B Health Systems Improvements not in USAID's Comparative Advantage

1. Personnel Policy

A major constraint in the health system now is the lack of a professional civil service in the sector, which would maintain some continuity through political changes in government. Under the present system, program directors at the central level, and regional and district directors are all subject to change at any time, particularly during a political transitions to new governments. In fact, all central directors and staff responsible in the new Secretariat organizational chart are new, as are all regional directors. In addition, a number of district directors have already either lost their jobs or been changed as part of the reorganization. This constant turn-over of personnel is very disruptive to maintaining direction and momentum over time on priority public health programs.

Also, at the peripheral levels, the present policy which requires graduating medical students to serve one year in rural government facilities, while a good idea in theory, has not proved to be as helpful as it was supposed to be. Most of these doctors do not want to be in the rural areas, are not knowledgeable or committed to public health, have no prior experience in dealing with poor, indigenous populations, and plan to leave the rural areas and government service as soon as their one year is over. In many cases these doctors don't show up in the places they are supposed to serve, or if they do, they only come to work sporadically. The turnover is terribly disruptive to work in the health facilities.

A further problem which makes this constant turn-over worse is that the nurses who also staff many rural health facilities are not authorized to prescribe certain medications or undertake certain procedures. They could be easily trained and supervised to do this, and that would improve service delivery, because nurses are more permanent.

Unfortunately, changes in civil service or personnel policy of the Government are not presently within the capacity of USAID to influence. These are policy issues that must be dealt with at a higher level, with donor coordination and cooperation, particularly with the World Bank and other multi-national donors. These are issues which would lend themselves to non-project assistance, policy-type projects, which could provide general budget support either inside or outside the health sector in return for the necessary reforms. With the level of resources available to HHR in the near future, USAID would probably not have enough leverage to effect such changes in the system. USAID can continue to try through its Project Agreements to require that certain key personnel not be changed over the course of its projects, but sometimes even these agreements become difficult to enforce with political changes in the Bolivian Government.

2. Health Infrastructure

As the population continues to grow and as increasing urbanization leads to population movements, additional health facilities will need to be built. However, the present government is beginning its restructuring with the statement that there is presently not a need for new construction in the sector. There is a feeling that with presently available infrastructure, the necessary coverage could be achieved. Existing facilities are so seriously under-utilized that it makes little sense to continue to build more. This team happened to come across an abandoned government facility in El Alto during the field visits. This health center was only two years old, but looked much older, was in a complete state of disrepair and was closed. The government hopes that with the reorganization and decentralization, present facilities can be equipped and improved to attract additional clients.

In addition, both the World Bank and the Inter-American Development Bank are supporting facility construction under their projects. According to the government, the construction part of the World Bank's project is nearly used up, but the equipment and remodeling parts of the budget have hardly been touched. No construction has yet begun under the IDB project, but it is programmed to take place within the next year. USAID experience in other countries with construction has not rendered entirely satisfactory results. Procurement, environmental, and engineering requirements of USAID make construction projects administratively and management

intensive. In such projects USAID management is focused on construction details rather than on technical policies and programs in which it does have a comparative advantage.

On the other hand, providing equipment to support priority programs in facilities underutilized due to lack of supplies and equipment, can be important because it increases use and improves the quality of services. However, USAID procurement regulations, and source and origin requirements sometimes hinder its ability to provide, in a timely manner,equipment which can be operated and maintained locally. On a small scale, US has been helpful in improving services in urban and peri-urban areas of Cochabamba and Santa Cruz through the Mothercare and PROSALUD activities. However, it seems at first glance that there are sufficient unused resources in the multi-lateral donor projects to equip many facilities. The critical first question is determining the needs. The team has suggested that an inventory at the district reference hospital level, for example, be conducted to determine equipment and supply so that obstetric referrals in high risk cases can be correctly handled.

3. Community Infrastructure - Water and Sanitation Systems, and Household Improvements for Chagas Control.

The team was asked to look particularly at the experience of the CCH project in these areas, to determine whether the impact of these activities was justified by the resources allocated to them. On the basis of only one field visit to a village which had benefitted from the installation of a new water and sanitation system, the team has the following comments. The project idea of providing water to facilitate entry into a community to promote improved child survival and maternal health seems logical. However, in the community visited the intervention stopped with the provision of water. The village person responsible for maintenance of the system did not seem aware or knowledgeable about other aspects or problems of child survival in his village. The whole focus of the water intervention tended to focus on the engineering and maintenance aspects and not on the public health issues involved.

The water system provided by the project furnished each household in the community (66 families) with at least one tap in the family compound. The latrines provided were constructed with cement, and in most cases were probably of better quality than the village houses themselves, which were all made of local adobe brick. The latrines were also provided with water and a soakpit for the discharge of the waste. The water system itself was actually chlorinated at the reservoir/collector just outside the village. Since this was a very newly installed system, the maintenance experience was limited. The costs of installation of the system were estimated at about $25,000. Each family had to pay $35 to hook up to the system, and a predetermined monthly usage charge of

1-3 Bs per family was levied. Before the installation of the system, most families had a shallow well in their own compound. Of course this water was probably contaminated, but it had been available in the village.

The team felt that the system installed was more ample than what had expected to see, because outlets with water were in every house and in the cement latrines. Water was provided by a gravity feed system from a source 2-3 km away from the village. Since no pumps were involved, the maintenance was assumed to be minimal. Still, the team questioned the replicability of this model to supply potable water to other rural areas, or to promote better family health and child survival. All the administrative and technical assistance costs associated with the intervention were not included in the costs mentioned above. Even with the costs cited, it would cost $150-200 million to begin to cover all rural areas with this model.

The home improvements for Chagas also rely on outside resources to achieve the final impact. The outside resources provided on a cost per house basis ($250 at the beginning of the project, and $150 now) would probably not be affordable by most families in the areas visited. Credit schemes are being developed to help with the financing problem. However, the home improvements under the Chagas component were considered differently by the team. Much of the work to date in this area has been linked to the research part of the Chagas project, aimed at determining the impact of these improvements on the incidence and transmission of the disease. In this regard the work is still considered important, but once the research is completed and the results are known, the team felt that the project should not continue to begin home improvement programs in other geographical areas.

III.C Relationship of the CCH Project to interventions and management improvements required for maximum impact on child survival and health in Bolivia.

In the final analysis, achieving maximum impact on child survival and health in the Bolivian context will depend on increasing access, use, and quality of basic services and interventions aimed at the principal problems of health in the country, and identified in section II of this report.

The foregoing analyses have focussed on the needs of child survival and health programs to achieve maximum impact, and also on USAID's comparative advantages vis-a-vis those needs. Since the CCH Project is USAID/Bolivia's principal child survival and health activity, it seems appropriate to examine the CCH Project, as currently amended, in relation to those needs and comparative advantages. The following sections are intended to begin this examination; the commentary is provided by component, referring

both to the design of the component and to its actual implementation.

1. Assistance to Control of Diarrheal Diseases / Cholera.

Budget: A.I.D. $1,000,000
PL-480 $0

Design: This component provides principally commodity support, in the form of oral rehydration salts and small quantities of other necessary equipment, to the national CDD program. The design also permits for the provision of technical assistance and the support of local activities such as training.

Implementation: Commodity provision has apparently been effective and timely; project logistics resources have occasionally been used to overcome distribution problems outside of the districts where the project is directly working. In addition to administrative support of commodity procurement, the project supports technical input in the form of a full-time component manager and one and one-half FTE's of resident technical assistance located at the central project office. Support has also been provided for supplying of URO's and for training activities, among others.

Assessment: This component appears to have responded well to the country's needs for external support of its ORS requirements. However, as noted in section II, there are substantial needs for re-examining and improving key elements of the country's approach to CDD. These include re-examination of the core strategy of training physicians and health workers, especially in light of recent findings of the CDD Health Facility Survey demonstrating low levels of correct assessment and treatment and little effect of past training. There is also need for a systematic re-evaluation and improvement of the national distribution system; further evaluation and assessment of the URO strategy compared to other approaches to increasing community access to and use of ORS; development and implementation of a national CDD/cholera communication and social marketing approach; and the development of procedures to develop and apply appropriate population-based targets for CDD program performance in the context of national and local health information systems. It is not clear that the project at this time offers the breadth and depth of technical capability to respond to many of these technical assistance and policy improvement requirements.

Integration of the CDD/cholera component with the integrated district health/child survival component appears to be an area where substantial improvement could be achieved. Identifying and responding to the deficiencies of CDD coverage, use, communication, target setting, and strategy development at the national level is beyond the reach of this component as presently designed. However, identifying and developing model responses to these deficiencies in

target districts and improving the peripheral health services for the corresponding populations is exactly what the CCH Project should do under this component. Improved model responses would help districts provide essential health and child survival interventions. A major area for improvement is the technical quality of key child survival activities. These activities should be integrated into those designed to strengthen district level systems.

Recommendations:

-The commodity procurement activity of this component should be maintained.

-The component's technical assistance activities should be increased, with additional resources from outside the project; this additional technical assistance should be used for a systematic re-evaluation of the elements identified as essential to improving performance of the CDD and cholera programs (i.e. quality assurance for health worker performance, ORS supply and distribution, communication/social marketing, development and application of population-oriented performance targets, assessment and support for effective strategies to improve community level access to and use of ORS and ORT). Emphasis should be placed on linking cholera control activities and information, on the one hand, to improving prevention and management of infant and child diarrhea on the other. This linkage is important since diarrheal disease is the cause of much more mortality in the country than is cholera itself.

-A systematic assessment should be carried out of CDD/cholera activities, capabilities, and strategies in the district development component;strategies and targets resulting from this assessment should be identified, implemented, and evaluated using clearly defined performance indicators.

-Given the priority placed by the new Bolivian government on control of diarrheal diseases and cholera, this component may deserve to be expanded once it has been re-examined and reoriented as discussed above.

2. Assistance to the National Immunization Program.

Budget: A.I.D. $5,800,000
PL-480 $1,300,000

Design: This component serves principally to provide commodities essential to the national Expanded Program of Immunization (EPI), including vaccines, syringes and needles, and cold chain equipment. The component also provides other program support activities, including training and technical assistance.

Implementation: As with the previous component, commodity procurement and distribution under this component has apparently been effective and timely. Component resources have also supported costs of distribution of commodities procured under the project; (the relation of this project distribution process to the national distribution system is not certain from project documents). Support has also been provided for travel and training costs of health system personnel, including the Data for Decision Making (DDM) training in epidemiology and health system management. This component also supports the technical and management oversight of a component director and a physician epidemiologist. External technical assistance has been generally limited to input to the DDM training course from the Centers for Disease Control (CDC).

Assessment: This component appears to be generally successful in providing essential commodities to the national EPI program. Training and other support activities under this component were not evaluated, but the relatively good performance of the EPI program suggests that investment in such activities is appropriate.

In particular, the DDM training for health system professionals in epidemiology, information use, and management, appears to have been effective and useful to participants for their planning and management responsibilities. One aspect of this course that appears to warrant further examination and may require possible improvement or complementary training is the process of using information on principal maternal and child health diseases and intervention strategies other than immunization. As noted in section II, course trainees appear comfortable in examining and responding to local immunization coverage information in relation to real population-based targets. However, these same trainees do not appear to compare information in such major areas as diarrheal diseases, ARI, pregnancies and births, and undernutrition to population-based rate estimates. Accordingly, they program their resources and activities based on artificial (and artificially very low) program performance targets. Such failure to understand health system data in the real context of maternal and child health needs in Bolivia contributes to failure to identify the need for additional strategies for delivery of key child survival and health interventions.

The existence of measles outbreaks in both urban and rural areas of the country, including in areas where immunization coverage is reportedly high, should trigger a coordinated assessment of system function (e.g., cold chain), outbreak control, and acute and post-illness case management activities (treatment of complications, vitamin A, nutritional recuperation). Some additional, perhaps external, technical assistance may be required to support such an assessment and to develop appropriate recommendations.

Recommendations:

-The commodity procurement element of this component should be continued.

-Support for training and operational activities should also be continued.

-Consideration should be given to providing a broader group of health system professional/managers with the DDM epidemiology, health information, and management course, with the caveat that course content and orientation should be re-evaluated in terms of improved use of information related to key maternal and child health areas other than immunization.

-Consideration should be given to providing additional technical assistance, including external assistance if indicated, in developing a coherent assessment of, and response to, measles outbreaks; this element may deserve expansion, given the new government's appropriate emphasis on measles control and the high case fatality and severe acute under-nutrition expected to be associated with measles in a population such as Bolivia's.

-Consideration should be given to providing additional technical and operational support for an expanded communication and social marketing strategy and program in support of EPI.

3. Development of District Integrated Health/Child Survival Capabilities.

Budget: A.I.D. $8,300,000
PL-480 $2,000,000

Design: This is the largest of the project's components, accounting for 38% of total project resources.

According to the amended Project Description, this component is designed to "improve community participation in child survival programs" and to "improve support systems at the health district level." The stated objective of the component is "to develop the capacity of six Health Districts and their communities to diagnose, plan, implement, and evaluate community-based responses to their health problems."

In support of this intention, the component is designed to provide technical assistance (both directly from project staff and from other sources external to the project), commodities, operational support for activities such as training and workshops, and temporary support for additional MOH personnel at the Unidad Sanitaria and District levels; under the project agreement, these additional personnel are initially funded using PL-480 funds, and are intended to be absorbed into the regular MOH budget

incrementally (with the process to be completed by the end of FY 1995).

Implementation: This component has the highest burn rate of any of the operational components of the project. The greatest part of this execution has been accounted for by provision of equipment and funds for improvement of district level administrative capacity; salaries, travel costs, and per diem of headquarters and field project personnel; operational costs, including training expenses for health personnel in the six target districts; subcontracts with PVO's and with a private sector organization for execution of selected component activities; and short term technical assistance.

Outstanding activities carried out under this component include the training of the district health officers from the target districts in the DDM epidemiology, health information, and management course (resulting in an impressive capability to use provided hardware and software to compile and organize information), and the use of credit guarantees and management inputs to allow the establishment and operation of decentralized drug supply systems that operate on a cost (plus 10%) recovery rotating fund basis to supply the districts' subordinate health facilities.

Little activity in this component appears to have been directed to improving functioning of the more peripheral health care delivery points (health centers and posts), nor -beyond the development of water and sanitation committees in the small number of communities receiving piped water - to community involvement in the diagnosis, planning, implementation, and evaluation process for health services and the development of community-based responses to health problems. Support for this aspect is tied to an approximately $600,000 contract with a local firm to implement a comprehensive staff training and public health education strategy. At the time of the teams's visit, the contractor was just completing the initial training of trainers courses in project districts.

Assessment: This component has been focused on providing inputs which has represented a substantial cost to the project.

A significant concern is that, despite its high rate of utilization of resources, the component appears not to have a clear strategy for using provided inputs in effective interventions developed and carried out at the local level to increase access, use, and quality of the key health and child survival interventions other than EPI (ORT/ORS, ARI treatment, prenatal/delivery/post-natal care, prevention and treatment of undernutrition).

The need for such "coherent and unified strategies" was identified in the mid-term evaluation. The amended Project Description for this component clearly demonstrates the intention to link systems strengthening inputs to improved delivery of health interventions at the community level in order to achieve real health impact:

through interactive planning with local health workers and communities, the project is required to:

-"prioritize one or two problems which pose the highest risk, to address with Project resources each year;"

-"develop a plan, with verifiable indicators, to address those problems;"

-"each district will be evaluated yearly on progress toward the chosen intervention's indicators;" impact indicators "will be measured to the extent possible, along with intermediary indicators."

These requirements demonstrate the clear intention of this component to strengthen district level capabilities in order to generate clearly identified, planned, realized, and evaluated improvements in delivery of essential health services and ultimately, in health status of the population of each district. The mid-term evaluation identified examples of indicators that might be used for planning and monitoring this process of improved services within the project districts, based on the report of consultant Sharon Benoliel. However, this process of linking and monitoring systems improvement in relation to service outputs has to date not been addressed by component activities.

Such a linkage, with monitoring of effects and impact, is also required under the component to develop and evaluate models and strategies that will provide information on the improvement of services in other districts of the country. Without a clear vision of this process, and the development and application of a system to implement and evaluate it, the district strengthening process becomes simply an exercise in providing inputs and creating capabilities that are not necessarily sustainable, replicable, or effective in addressing the country's principal public health problems.

Although this team's ability to collect direct information about the component's activities (as opposed to the substantial amount of indirect information derived from key informant interviews and review of documents), examples of this lack of connection between systems strengthening and service improvement at the population level were not difficult to find. They include:

-As previously noted, despite impressive capability to collect and organize information, the districts visited demonstrated a failure to use this information to analyze the adequacy of services other than immunization, and to plan activities or seek new approaches in response to this information.

-The district-level rotating fund drug provision system appeared to be successful in both its organization and

management. Already, however, there is a danger that this strategy would not assure the presence and reasonable cost of drugs essential for key health programs. Under the program in the district visited non-essential drugs were being bought and sold, including some for which there was no clear medical indication. Having begun this process of buying non-essential drugs, district personnel was being subjected to the proprietary activities of pharmaceutical company retailers, an influence that is in part responsible for widespread inappropriate and resource-wasting prescription of drugs. Given the strong incentives within any system using cost-recovery for drugs to increase drug prescribing, there is a need for strong management practices and oversight based on a clear vision of the intent of such a drug provision strategy (assuring the availability of essential drugs, not generating revenues for the system). There was no evidence that such a vision existed in the personnel of the district or of the project, and no procedures for control of this system were presented.

-The training materials reviewed (Cientifica materials on community mobilization and community-level health care for nurse auxiliaries, as well as the manual for obstetric care for nurses [from CLAP, selected by the project for inclusion with the birth attention kits supplied to district health facilities]) were either unclear and apparently inadequately designed, or contained technical content not responsive to the needs of the intended users. For example, the CLAP manual gives extensive detail on risk factors and clinical presentation of common obstetric complications (e.g., the various forms of hemorrhage), but gives absolutely no information on how to manage these complications. Appropriate technical review of available materials and USAID experience would reveal that the problem-oriented, operational obstetric training materials developed by the MotherCare project, in part based on experience in Bolivia, would be much more responsive to the operational needs of the personnel for whom they are intended.

Another important shortcoming of this component is the use of the installation of water systems as a proxy (or, in concept, a "hook") for community participation. Depending on the installation of water as a basis for establishing community participation will limit the component's community level activities to a very small number of communities and a very small potential impact. Moreover, such a linkage of water installation to development of community-based health activities is clearly not replicable on a large scale. Viewed from the perspective of the whole of Bolivia, this linkage would make development of community health activities a process that would not be completed until well into the next century.

Linking water installation to community health development

overlooks the important and successful community health related activities of numerous organizations in Bolivia, including those of various PVO's. The amended Project Description clearly intends for this experience to be drawn on in this component, citing the use of "such techniques as community focus groups and autodiagnosis".

A final significant shortcoming of this component, development of district capabilities, is its implementation as a management, administrative, and personnel structure parallel to that of the MOH. In reality, there is little connection between the MOH system and the personnel and management structure developed and supported at the district level by the project. In addition, there is no apparent movement toward integrating into the MOH system personnel seen to be truly essential to improved function at the district level (e.g., the administrator). These two findings call into serious question both the sustainability of this components' achievements and the potential effects of those achievements in improving the larger MOH system.

Recommendations:

-This component requires an extensive critical re-examination aimed at on developing, implementing, and evaluating decentralized approaches to using improved management and planning capabilities and innovative strategies to actually increase access, use, quality, and sustainability of essential health and child survival services in the Bolivia. This re-examination should include 1) the real use of information to identify and address major maternal and child health needs; 2) the application of effective techniques for community participation; 3) the need for an increased focus on improving the actual quality of services provided by health workers (especially peripheral health workers - nurse auxiliaries, promotores, and URO's) and linking those services to the community; 4) the development of management guidelines for the revolving drug procurement and distribution system; 5) the technical quality of activities carried out in target districts. This re-examination should also consider how the activities carried out under this component can contribute to decentralized health activities at the national level.

It is likely that technical assistance from sources external to the project will be required for this re-examination and for development of strategies to address shortcomings identified.

-USAID/Bolivia and the project should actively seek mechanisms to inject the experience of this component into the MOH system and to draw upon and coordinate with the experience of other district-level health care delivery improvement activities in the country (PROISS, BID, UNICEF, among others). This could include extending the DDM training (with the caveat expressed

above), the district level drug procurement and supply scheme (with management controls as suggested), and the information management capabilities (with additional attention to local use of information for population-based programming).

- USAID/Bolivia and the project should begin immediately to identify the personnel and activities of this component that can feasibly be integrated into the MOH system, and should immediately take steps to begin such integration. The parallel system developed under the component should be phased down as soon as possible, since it is unsustainable and counter-developmental.

-It is important for USAID/Bolivia to note that many of the issues tightly linked to appropriate delivery of essential health and child survival services, which include improved management and service delivery approaches, and cost recovery, have already been worked out - albeit in the urban context - by PROSALUD. USAID should avoid reinventing its own wheel, and should draw substantially on PROSALUD's experience and capabilities; this could include technical assistance to adapt PROSALUD's management and service delivery procedures to the rural setting, since an organization that has successfully dealt with these problems in one setting is more likely to identify successful solutions in a different setting than an organization that has not.

-Similarly, USAID/Bolivia should seek mechanisms to inject into this component the successful community-based methods for participatory health development that have been generated in Bolivia and similar settings, to a large degree by organizations supported by A.I.D.

-The linkage of community health development to introduction of water and sanitation improvements should be broken. While it is clearly appropriate for health development to accompany water and sanitation improvements wherever they occur, such improvements cannot be made a precondition for community based health development activities.

-There should be a comprehensive review of the training strategies and materials developed under this component. The training element is extremely costly, and appears to be based on a model that has proven repeatedly ineffective in developing country settings (cascade training). The materials developed or chosen appear not to respond to the real problems and needs of intended users; it is especially inappropriate under the component to reinvent materials in areas (such as CDD and maternal care) where proven materials and approaches for training of various levels of personnel already exist. This is especially important if the technical capability of the training development subcontractor is not solidly

established.

-Consideration should be given to adding a small number of urban/peri-urban districts to this component (possibly in urban areas in the three departments of the country that together comprise the majority of the population [La Paz, Santa Cruz, Cochabamba]). However, this component should maintain its rural district focus.

-Although this component is operating at a higher burn rate than other project components, consideration should not be given to redirecting funds from other project components or adding funds into this component until the apparent shortcomings of the component have been critically examined and satisfactorily addressed. Even if the component is substantially improved, the effectiveness of additional funding for the component should be weighed against the possible effectiveness of other uses of available funds.

4. Chagas Disease Control.

Budget: A.I.D. $1,500,000
PL-480 $2,500,000

Design: This component is designed to conduct operational research on control of Chagas disease, intended to inform policy and strategy development, and to provide input to the GOB in development of a long-term Chagas control program. The design includes improvement of 2,000 rural houses in twenty communities, supposedly to support the production of manuals on housing, education, and insecticide use in control of the disease vector. The design also includes focused investigation and pilot interventions aimed at interruption of means of transmission other than the household vector, such as transmission by transfusion and congenital transmission.

Implementation: The component has supported improvement of houses in several rural communities, at a cost of between $150-$200 per house; this element of the component has included technical assistance, support of local personnel overseeing house improvement, and provision of the actual materials used in house improvement. In addition, the component has supported the development of a technically excellent laboratory and the conduct of a number of laboratory, epidemiologic, and entomologic investigations; one focus of these investigations has been attempts to identify effective concentrations and application modalities of various insecticides in an attempt to control the insect vector. The component has provided extensive technical assistance, including expatriate technical assistance, in the development, execution, and analysis of all these activities. The component has also supported travel and per diem costs associated with training and scientific meetings, including overseas travel by Bolivian

professionals associated with Chagas control activity. A substantial number of project publications related to Chagas disease and the component's various activities have also been produced.

Assessment: This component represents an important "target of opportunity" for USAID/Bolivia, and deserves to be continued. Some of its activities, however, need to be re-examined, as does the level of funding assigned to the component, which in total exceeds the funding of the CDD/Cholera and the Water and Sanitation components.

The research activities are apparently of high technical quality. These activities should continue to be focused on the development of interventions likely to contribute to effective and feasible disease control approaches. Even so oriented, it is not clear that the products of the research will result in clear and practical disease control recommendations, given the complexity of the disease transmission cycle and its close relation to the way of life and circumstances of the high risk population. The probability of producing such recommendations should be considered in the design and approval of individual research activities.

These same considerations result in questioning of the house improvement element of this component: house improvement is a known intervention for control of the Chagas vector, but is difficult to carry out and represents a significant expense for the high risk population. The rationale for improving 2,000 houses is unclear, since the cost is considerable and since the intervention is highly unlikely to be easily replicable in other communities in the absence of the materials and support provided by the project. It would appear that the input required for development of manuals and educational approaches could be obtained from the improvement of a much smaller number of houses. A strong communication/ social marketing strategy would be a worthwhile product of this component, since only with such a strategy would there be much likelihood that the poor rural population would invest their own money, or potentially borrow money from a revolving fund (organized and operated by a PVO or organization such as Habitat, not by USAID), on relatively expensive house improvements to prevent a disease whose major effects occur many years after exposure. The possibility of providing technical input into the establishment of such a revolving fund should be considered, if market studies identify potential demand for such a mechanism.

Input by the component into the development of a national Chagas control strategy appears to be constrained by differences in approach to control of the disease between the CCH Chagas group and the national program (UNGECH). Since it will be difficult to evaluate the effects of the project's intervention strategy, it is unclear how these differences will be objectively resolved.

Recommendations:

-This component should be continued, with a focus on applied research and policy/strategy development; funding for the component should be reviewed in relation to overall health and child survival priorities.

-The component should focus on putting its disease control experience, including that in home improvement, into operational form and interacting with other organizations to support the application of this experience on a wider basis.

-The component has begun to seek funding for some of its research activities from other interested agencies, such as WHO/TDR; this approach should be encouraged to promote the development of a diverse funding base for these research activities and capabilities.

-The house improvement activity should be re-evaluated, and possibly curtailed, due to its high relative cost, small impact, and low replicability.

-The project should explore, possibly in collaboration with the GOB, the possibility of a public-private partnership to support some of the research that has potential proprietary benefit, such as the testing of insecticides and of improved application strategies.

-The project should explore the potential usefulness of an education/communication/social marketing strategy related to control of Chagas disease, depending on whether clear messages and feasible desired behaviors could be defined; if these conditions could be met, the project may wish to collaborate with local health officials in development and implementation of such a strategy.

5. Water and Sanitation.

Budget: A.I.D. $1,900,000
PL-480 $ 900,000

Design: This component is straightforwardly designed to provide new or improved water and sanitation services to approximately 120 communities in the six districts targeted under the district development component. Installation of the systems is designed to be carried out through contracts with NGO's. The design includes community organization for oversight, maintenance, and fee collection, and collaboration with local authorities responsible for water and sanitation development.

Implementation: This component has expended most of the funds utilized to date in the procurement of materials for water system

and latrine construction, in subcontracts with NGO's for installation of these systems, in salaries of personnel working under the component (including headquarters, regional, and health district personnel), and in support costs for these field activities including vehicles and travel and per diem expenses. To date, water system and latrine construction has been completed in 38 communities, and is underway in a number of others. Water systems have been installed at a cost of approximately $70 per capita.

Assessment: Although this component is providing apparently high quality water and sanitation improvements to a limited number of communities, it is not clear how this component fits into USAID/Bolivia's health and child survival strategy. While the installation of water and sanitation improvements is always "good", and is an important underpinning for improving community health and well-being, viewed from a national perspective, the activities of this component will reach a vanishingly small proportion of the population, with attendant limitation in contribution to the national health.

A number of aspects of the component should be reconsidered in identifying the appropriateness of this activity and its implementation. First, as noted above, the rationale that effective community participation in addressing health problems must await infrastructure improvements has already been shown to be untrue in the rural Bolivian context, and this programmatic linkage hobbles the project's community health activities. It is not even clear how much the community organization associated with the water/sanitation installation component contribute to organization for maternal/child health, since experience in other countries has shown that while water system oversight and maintenance are characteristically male functions in the community, the key to improving family health is reaching women. Indeed, in a community visited where water and sanitation improvements had been completed, the community representatives demonstrated no sensitization to broader health improvements: although this was one of the project's model communities, these community representatives had never heard of such basic community-based health services as health promoters (RPSs).

A second aspect that bears reconsideration is the type of improvements installed under the project. The project apparently favors and installs in-house water systems; the argument is that people are more invested in and responsive to such direct improvements in their own homes. However, this is clearly the most expensive type of system to install, essentially a "cadillac" approach to water and sanitation. As with housing improvement, a key to this component seems to be the substantial financial investment in materials under the project.

A third issue to reconsider is the criteria by which communities

are selected. While technically the project responds to requests by the community, in at least some cases "sensitization" activities in the community appear to have been conducted to stimulate this request. In the community visited that had received in-house piped water, each household had already had wells. Although undoubtedly installation of the new system improved water quality, controlled international research has demonstrated that availability and quantity of water are more important health determinants that quality. Since many communities lack such in-house wells, the technical and other criteria for community selection needs to be questioned.

Recommendations:

-Given this assessment, and the forgoing analysis of A.I.D.'s comparative advantage in development activities, the appropriateness of this component should be reconsidered. If it is decided that for technical or political reasons the component should be maintained, it should be continued only after a systematic assessment of the options for delivering such improvements (e.g., entirely through NGOs without the project management interventions), the cost of such improvements under different agencies working in rural Bolivia, the type of improvements to be provided, and the criteria for site selection. This assessment should consider experiences in other countries, where many peripheral health facilities lack water and sanitation improvements (as did one visited by this team); if this deficiency is prevalent, it may be appropriate to give initial priority to providing basic water and sanitation to these facilities and the communities where they are located.

-As noted above, despite the recommendations of the mid-term evaluation, the linkage between water/sanitation improvements and community participation in health improvement should be broken, since this linkage slows health development and is not replicable on a national scale. Obviously, however, in accordance with international experience, wherever water/sanitation improvements are undertaken, they should be accompanied by appropriate community educational activities.

6. Administration.

Budget: A.I.D. $1,300,000
PL-480 $1,300,000

Design: Although the administrative and management support component of the project is budgeted, its design is not specified in the amended Project Description.

Implementation: The initial administration and management oversight arrangements under the project were apparently fairly

inadequate; this was undoubtedly complicated further by difficulties with the contractual arrangements under which the project was started.

Since that time, the project has developed an apparently very successful and effective administration and management structure. This structure in part responds to the peculiarities of the project's financing and support, providing required capabilities in financial reporting under both USAID and PL-480 requirements, contracting and procurement, and personnel management. The structure also apparently is effective in providing required inputs, both financial and material, in a timely and effective manner.

Assessment: The project's administrative and management capabilities appear to be excellent, and have been drawn on by other USAID/Bolivia-supported projects and by the mission itself. Some concern arises over because this capability is being provided through the development of a substantial and costly infrastructure, and has created its own bureaucracy. This infrastructure exists separate from, and parallel to that of the government of Bolivia.

Recommendations:

-This component should be systematically examined, considering the functions it performs, to determine whether the existing structure is the most economical and effective way to perform these functions, and to assess the implications of performing these functions through a parallel system. This assessment should be realistic in recognizing the substantial and unique administrative and management requirements that result from USAID and other (especially PL-480) regulations governing project implementation.

-Provision should be made immediately to assure continuity of capability in functions already recognized to be essential; this is especially true of the contracting function, whose incumbent is about to leave the project without a clearly identified process to replace his experience and knowledge of contracting procedures and requirements.

IV.A To improve the Coverage and Status of Maternal and Child Health Services

1. Expanded Program of Immunization

Introduction: With the attention of nearly all major donors and the government over the last three to four years, the EPI program has made impressive gains. Health personnel have been trained and materials and equipment put in place to support the program. Coverage in the key population groups has dramatically increased.

However, in Bolivia these gains have been based on a campaign strategy of massive mobile outreach. Already this year some erosion in the expected coverage has been seen. The government must recognize that its strategy to date has achieved short term results, but which are not sustainable, unless the strategy changes.

Policy: Major policy work leading to a shift in emphasis in the EPI program is needed urgently over the near term. The impressive gains in EPI coverage for all antigens (except tetanus toxoid as discussed below) are being threatened now by the lack of institutionalized and sustainable programs, and real community participation in seeking out vaccination services.

Community mobilization and participation must increase, and people must begin to take more responsibility for protecting their children. This must be based on increasing public awareness through IEC and mass media efforts. At the same time, the implementation of the EPI program through fixed facilities must be strengthened and emphasized. The door-to-door mobile team approach is not sustainable and presently detracts from other important services by taking health personnel off the job in an unplanned fashion. At the same time, high level policy emphasis must be put on the tetanus program to reach much higher proportions of women throughout the country. Finally, in response to recent outbreaks of measles, investigation protocols and case management procedures must be developed to provide a rational response.

Services: Much more emphasis is needed in promoting strategies that will increase the utilization of fixed facilities in reaching vaccination targets, as opposed to door-to door campaigns. In addition, a decentralized strategy to respond to reported outbreaks of vaccine preventible diseases should be developed, possibly using personnel trained under the DDM project. The emphasis should be on a well planned strategic response, and not simply putting out fires as they appear. This is particularly important in the case of measles outbreaks recently reported among populations who already had received vaccination.

Communications: The use of mass media and public information campaigns must be greatly strengthened in the near term to increase the responsibilities of communities and families to seek out vaccination services in the health facilities nearest them. Without this effort, the present unsustainable strategy will eventually begin to fail. In addition to mass media, community health education efforts undertaken by health personnel and community volunteers must increase using community development and outreach techniques presently being utilized by a number of PVOs working in the rural ares.

Health Financing: This presently doesn't require attention, but the issue of cross subsidization of vaccination services by other

curative services, and increased government participation in the future purchase of vaccines will have to be addressed over the long term.

Commodities: USAID should continue to provide the commodity support for vaccines, equipment and materials, without which the program would experience serious troubles. However, dialogue with the government must begin on ways to increase government support for these essential commodities. In addition, an examination of the present distribution and supply of vaccines from the central stores to the peripheral health facilities should be done to extract lessons learned to apply to the distribution of other commodities.

Training: This area is presently well in hand.

Research: This area is also being appropriately handled at the moment.

2. Control of Diarrheal Diseases/Cholera

Policy: Significant work remains to be done with regard to the most appropriate strategy to increase use and accessibility of oral rehydration salts (ORS). The strategy of using thousands of community level rehydration centers (UROs) which was developed and promoted over the last two years in response to the cholera problem needs to be seriously evaluated. The present status of the strategy is unknown, and a number of issues such as resupply and distribution, information system, quality of care being provided, and others, must be resolved. The URO strategy was assessed by the Ministry and PRITECH recently. The results of this assessment must be applied. In addition, a policy on the appropriate uses of ORS as opposed to the promotion of continued feeding, breastfeeding and use of home fluids must be developed and then disseminated. A last very important area for policy work is that of increasing use of social marketing techniques, and the commercialization of ORS through private sector channels. This area must be explored to dramatically increase the availability of ORS in the most remote rural areas, where residents now don't have ready access to health facilities, and probably not UROs either. Finally, central policy direction and technical assistance is needed to assist the regions and districts in developing operational strategies to set realistic population based targets for the program for monitoring and evaluation purposes.

Services: At the district and facility level, a methodology must be developed to set local population based targets for the program, and assure proper follow-up if the targets are not being met. This is one area where lack of national strategic direction is evident. Given the new government's interest in making this area a priority over the next few months, much work remains to be done to develop

a rational national strategy which can be implemented at the facility level. Much more emphasis must be given to outreach to the communities from the health facilities. Systems of quality assurance and evaluation of the present technical capacities of health personnel and community volunteers will also be very important if the proposed community mobilization campaign approach is to be successful.

Communication: As with the vaccination program, much more emphasis must be given to the use of mass media and community mobilization techniques to increase use of oral rehydration therapy (ORT) in the wider sense. This is exactly what the new government proposes to do between now and March 1994, since the diarrhea/cholera season is approaching. The major difficulty with this approach now is that many of the policy and strategic issues discussed above have not yet been resolved. This could lead to major problems in meeting the increased demand theoretically created by the coming campaign. A national technical commission, including donor technical assistance, is presently assisting the Secretariat in its planning for the national campaign. Finally, there is a potentially important role to be played by the PVOs at the community level in this program in mobilizing and informing the community about the problem and the program.

Health Financing: A high priority should be given to the pursuit of commercial sales and social marketing of ORS. This would supplement the public sector distribution of these commodities. ORS is a very good candidate for commercialization because of the relative ease of transport and storage. It could be sold at an attractive price, even in rural areas. The priority is getting the product out through existing commercial distribution channels.

The effect of charging for a consultation prior to the distribution of ORS in government health facilities should be explored. If the waiting time, or the money factor proves to be barrier to increasing use of ORS, other treatment options should be explored.

Commodities/Logistics: USAID should continue to buy ORS in support of the national program. At the same time, as discussed above, channeling this product commercially should be explored. USAID should also proceed on a priority basis with the proposed assessment of the public sector distribution system of ORS, and other important public health commodities, such as contraceptives, Vitamin A and iron and folic acid supplements.

Training: Once a national strategy is developed, a training needs assessment should be done to assure that peripheral level health personnel and volunteers understand the strategy, and their role in implementing it. One option would be to develop a training module in diarrhea/cholera control based on the DDM training methodology. At the district and facility level the only program which presently operates well is the vaccination program, mainly because a strategy

is in place, information systems are operating, and personnel have been trained in all aspects of the program. The diarrheal disease and cholera program needs to develop in the same manner.

Research: CDC has been working in Bolivia on the development of a local, community level technology for the production of chlorine, which can be used at the individual, household, or market vendor level to disinfect water. The use of a "dip cell," using water and ordinary salt to produce chlorine for this purpose has been tested on a pilot basis. Further research on the acceptability, costs and logistics of expanding this source of potable water at an individual household level would be warranted.

3. Acute Respiratory Infections

Policy The program to combat acute respiratory infections (ARI) needs to be reinforced. A national ARI policy and plan exists, however, it needs to be operationalized. Policy concerns include delegation of authority to lower level personnel to permit antibiotic provision by nurses and auxiliaries. In tandem, rational use of antibiotics needs to be standardized, e.g. appropriate use of injectable or oral antibiotics. Discussion of pricing policy entails whether the drugs should be provided free-of-charge, i.e. subsidized, or some cost recovered from the client.

Services A pilot model for service provision should be developed within the CCH Districts. Linkages with PVO activities at District and Area levels should be developed and reinforced. There should be follow-up to the REACH ARI assessment and activities with PROCOSI, PROSALUD, and the National Health Secretariat (SNS). Lessons learned from pilot activities need to aggregated, assessed, and policy implications extracted. Findings need to be forwarded to national level decision-makers for wider discussion. For example, service guidelines need to be developed. Lessons learned will have implications regarding training content and methodology, referral linkages, and appropriate drug use.

Communication Appropriate messages for community level activities need to be developed. The pilot model could reinforce community level (and community level provider) recognition of the signs and symptoms of ARI and appropriate action. This activity has potential implications for community participation in the health system.

Health Financing A major concern is the cost of drug treatment for ARI. Discussions regarding cost recovery need to be held. There may be an appropriate private/public sector linkage to be explored. A look at the various interests of the private pharmaceutical industry such as the retailers, producers, and pharmacists may indicate areas for joint efforts in the interest of public health.

Commodities/Logistics Since antibiotics are crucial for ARI

treatment, these essential drugs must be distributed to the lowest level possible. Quantity, distribution, and resupply aspects need to be assessed.

Training Lessons learned from pilot activities will indicate who needs to be trained and the technical content to be disseminated. As ARI program activities are increased at a national level, it is anticipated that community and peripheral health workers as well as health professionals will be required.

Research The pilot service provision model has implications for a series of Operations Research activities.

4. Maternal and Neonatal Health

Given the lag in decline in maternal and neonatal mortality statistics in Bolivia, the current government's interest in providing universal access to reproductive health services, and the successful demonstration maternal and neonatal health activities already carried out in rural and urban areas of Bolivia by MotherCare, maternal and neonatal health care should be a high priority in any future USAID child survival strategy. Recommendations for the future are as follows:

Policy A serious effort should be made to convince the SNS to reinstate the personnel category of professional nurse/midwife (*matrona*) for permanent placement at rural district hospitals in order to address obstetric emergencies. An appropriate training program for these nurse/midwives would also be needed (probably minimum 2 years). Likewise an effort should be made to introduce birth attendants as a category of community-based workers (partera), since traditional birth attendants generally do not exist in Bolivia. A prerequisite to assuring that these new nurse/midwives, as well as the existing nurses and auxiliaries in the rural health centers, are able to save mothers' and babies' lives is the delegation of authority by physicians to them for administering antibiotics in case of infection, oxytocin injections for hemorrhage, and manual extraction of the placenta. Advocacy with professional medical organizations will be needed.

The reproductive health policy of the SNS which integrates safe motherhood with family planning should continue to be pursued. However, reproductive health should be expanded to incorporate STD control, especially prenatal syphilis screening and treatment. Greater emphasis also needs to be placed within the immunization program on provision of tetanus toxoid to women of reproductive age. Policy dialogue and donor coordination should be used to link safe motherhood needs to available resources.

Services An assessment of all district level hospitals in the three departments (Unidades Sanitarias) in which AID and the World

Bank are working should be carried out by the CCH Project to determine to what extent they are staffed, equipped and supplied with medications to meet WHO standards for Essential Obstetric Functions at First Referral Level. A prototype for this assessment could be the assessment and consultancy report done by August Burns for the Save the Children Inquisivi project in 1991. Discussions should be held with the SNS and World Bank (PROISS) project to see to what extent resources under the World Bank loan could be used to meet the needs of upgrading the district hospitals to the level necessary for effectively handling referred obstetric emergencies. The referral system for obstetric emergencies from village to health post to district hospital needs to be made functional, including use of 2-way radios, and provision for emergency transport.

The effectiveness of the National Program for the Prevention and Treatment of Anemia needs to be assessed, including the adequacy of supplies of iron/folate tablets for prenatal supplementation and the coverage of pregnant women. An indicator needs to be added to the national health information system (SNIS) to measure the coverage of the program. Community-based distribution strategies (outside of health centers) for iron/folate tablets need to be explored.

Qualitative research, similar to the study done by MotherCare in urban Cochabamba, is needed on reasons (cultural, lack of equipment and drugs) for low utilization of existing rural health services for prenatal care and delivery. Providers then need to be trained on how to change their practices to make them more culturally acceptable to mothers.

Communication/Social Marketing/Community Mobilization

The MotherCare/Save the Children "Warmi" project's process of forming of women's groups, autodiagnosis of maternity problems, and planning together to solve them should be expanded to as many communities as possible through PVOs, especially the members of PROCOSI, with additional USAID funding if possible. The safe motherhood educational materials developed by MotherCare for urban Cochabamba, and reproduced by USAID should be distributed widely to PVOs and government health services in urban areas. Qualitative research and materials adaptation should be done to mount a mass media campaign on maternal and neonatal health for rural areas.

Health Financing Innovative financing methods for transport to referral hospitals during obstetric emergencies need to be worked out including community financing, insurance and subsidies. Likewise work is needed on how to cover the costs of obstetric emergencies. To what extent should these services be free for low-income families or subject to cost-recovery or insurance schemes?

Commodities/Logistics The contraceptive distribution system to

rural public sector health facilities needs to be improved. An assessment of the adequacy of iron/folate supplies is needed and any deficiencies in supplies resolved. If *parteras* are introduced, then safe birth kits should be provided to them. Likewise at the district hospitals, systems should be designed for re-stocking medications and expendable delivery supplies needed by midwives or doctors.

Training If the government agrees to re-introduce nurse/midwives, then a training curriculum for them should be designed. The Maternal and Child Health Department of the Universidad Mayor de San Simon, Cochabamba has expressed interest in teaching such a course. Similarly, if *parteras* are introduced, training should be designed for them. MotherCare/Save the Children used the Fundacion San Gabriel in La Paz to train parteras for the Inquisivi project, and if deemed appropriate after review, perhaps the curriculum and manual used could form the basis for subsequent training. Whether or not nurse/midwives and *parteras* are introduced, existing nurses and health auxiliaries in the government's rural health system should also be trained in how they can take improve maternal and neonatal health, particularly in CCH districts.

Research A feasibility study should be done on prenatal syphilis screening and treatment. Operations research could also be used on how to effectively provide reproductive health services to adolescents. Progress in reducing maternal mortality could be possible to assessed from the follow-up DHS in 1993/94.

5. Nutrition and Breastfeeding

Given the high rates of malnutrition in Bolivian children and the fact that malnutrition is an underlying cause in most child deaths, nutrition interventions should be an integral part of USAID/Bolivia's child survival strategy.

Policy A national breastfeeding coordinator is needed in the MOH. There is currently a position for this, but the team heard that the new government may cut this post. The practice of distributing powdered milk supplements to pregnant and lactating women through the FIS and World Food Programs should cease because this milk is usually not consumed by mothers but gets used as a breast milk substitute. Perhaps PAHO and UNICEF are best positioned to take up a policy dialogue with the government on this issue. The national policies on combatting iodine and vitamin A deficiency are good. The team was less sanguine on the adequacy of the MOH policy on prevention and treatment of anemia, and would like to see a review of this national program. Recommendations from any recent evaluations of PL480 Title II food aid used for maternal and child feeding should be implemented to increase the child survival impact of these programs. Breastfeeding promotion should be integrated into national MOH programs for immunization, control of diarrheal diseases and acute respiratory infections.

Services Breastfeeding promotion should be incorporated into well baby care at government health centers. An effective counselling component on infant and child feeding should be incorporated into the ongoing growth monitoring program. In interpreting the growth curve, workers should focus on whether the child's weight has increased, stayed the same or declined and not on static grades of malnutrition.

Communication/Social Marketing/Community Mobilization Mother support groups need to be established to promote breastfeeding in the community. Qualitative research is needed on breastfeeding and weaning practices in different parts of the country in order to design an effective communication and social marketing strategy, and effective counselling materials. Messages should stress frequent feeding of nutritionally adequate home-prepared weaning foods along with continued breastfeeding. Counselling in the Lactational Amenorrhea Method (LAM) should be integrated into family planning programs.

Health Financing The financial feasibility of vitamin A and iron fortification of a commonly eaten, centrally processed foodstuff should be assessed.

Commodities/Logistics Adequate supplies and functioning distribution systems for the MOH's national micronutrient programs should be assured. UNICEF is assisting with vitamin A and iodine. A.I.D. assistance may be needed for iron/folate tablets.

Training Training in counselling for breastfeeding promotion and appropriate complementary feeding, in conjunction with growth monitoring, is needed for MOH health staff including nurses and auxiliaries, and parteras and nurse/midwives if these new workers are added. USAID support to COTALMA for training hospital staff in lactation management should continue. Likewise A.I.D technical assistance for training of health workers for the National Vitamin A Program should continue. Training may also be needed for the Anemia Program.

Research Research is needed on the prevalence of anemia in women of reproductive age, especially in pregnancy. There is concern about maternal depletion in Bolivia and inability of underweight women to produce sufficient breast milk. Studies should be done to determine if maternal undernutrition is an impediment to lactation performance. Likewise, research could be done on the iron status of exclusively breast-fed infants to see up to what age iron stores are adequate. COTALMA is interested in doing the latter two studies on breastfeeding.

6. Chagas Disease Control

Research The A.I.D.-supported research on Chagas Disease under

the CCH Project should continue until ongoing studies are completed, i.e. the seroprevalence surveys, the congenital transmission study, and more importantly, the intervention trials to control Chagas by an integrated approach of community education, housing improvement, and limited insecticide application. Support from USAID for recurring costs of the Chagas laboratory in Cochabamba as well as the INLASA national reference laboratory for diarrhea and STD research in La Paz should continue. However, care should be taken to avoid becoming involved in further costly biomedical studies or research requiring high-cost technologies. One additional research topic the team thought could be pursued is the relationship between anemia and Chagas, and whether the provision of iron or folate supplements to individuals infected by Chagas could ameliorate their pathology.

If the ongoing intervention trials prove to be successful for Chagas control, then the results should be disseminated widely in Bolivia, to the Secretariat of Health, other donors, PVOs and the community at large to leverage funding for further control efforts. A specific suggestion is that the CCH staff involved in Chagas research train staff of PVOs who could work with communities to replicate the control efforts, perhaps through PROCOSI. Once the existing research studies are done and the results disseminated USAID should apply its resources to more cost-effective child survival interventions, versus using the resources for an expanded control program or paying for further community housing improvements and spraying.

IV.B Recommendations for redesign of the CCH Project.

This team recommends that USAID/Bolivia undertake redesign of the Community and Child Health Project. This redesign process should take into consideration the recommendations regarding the current structure and activities of the project, and should add capabilities and mechanisms that improve the performance of the project and the likelihood that it can achieve its stated goal and purpose, which should remain unchanged.

Based on the foregoing analyses of the health and child survival situation in Bolivia, the country's capabilities and revised priorities, and A.I.D's comparative advantage, it is recommended that the end of project status be modified in the following manner:

1) Reduction in infant, child, and maternal mortality associated with: diarrheal diseases and cholera; vaccine preventable diseases; acute respiratory infections; complications of pregnancy, labor, delivery, and the post-partum period; and nutritional deficiency.

2) Improved planning, management, administration, supervision, and evaluation of child survival interventions leading to

increased access, use, and quality of interventions aimed at reduction of morbidity and mortality from diarrheal diseases and cholera; vaccine preventable diseases; acute respiratory infections; complications of pregnancy, labor, delivery, and the post-partum period; and nutritional deficiency.

and,

3) The development of Chagas disease control strategies and a National Chagas Disease Control Plan.

[Determination regarding maintaining an EOPS component in relation to water and sanitation improvement, and the quantitative target if such an EOPS is maintained, should await the results of the planned assessment of water and sanitation activities planned by the mission.]

EOPS should be verified by national information and surveys, and project reports that include measurement of progress against clearly defined performance indicators related to system capability improvements AND to access, use, and quality of services. Identification of such performance indicators should draw heavily on the 1991 report of USAID consultant Sharon Benoliel, and on additional technical input.

To achieve this EOPS, the following guidelines are offered for redesign of the project:

-The important provision of critical commodities such as vaccines, syringes and needles, cold chain equipment, oral rehydration salts, and other supplies and commodities, as well as support for critical operational activities such as training and logistics, should be continued.

-The project should increase its provision of technical assistance, both at the national level and in its district, unidad sanitaria, and community level activities; technical assistance, drawing on both Bolivian and international resources, should be provided as required in the following areas, in support of improved CDD/cholera, EPI, ARI, Safe Motherhood/peri-neonatal health, and nutrition activities:

-Policy
-Service delivery and administration
-Communication/social marketing
-Community participation
-Training
-Commodity planning, logistics, and supply
-Applied and operations research.

-Artificial boundaries between the project's technical activities related to these critical health and child survival

interventions and the systems strengthening component should be removed. The district strengthening component should be implemented with a clearly defined focus on developing models and approaches that improve management, information, and planning capabilities in order to improve access, use, and quality of essential services. Applying this focus must include improved support of and quality of services provided by all levels of service that depend on the strengthened districts, with emphasis on the most peripheral health workers. This focus will also require implementing approaches to increase community involvement in identification of health problems and in generation of appropriate responses, including the manner in which services are delivered within the districts. (Note that both these elements - increased support for the peripheral health worker and emphasis on community participation were included in the amended project description, but have not been implemented).

This component should draw heavily on technical assistance, both from Bolivian and external sources, and on the methodologies and experiences gained from PVO activities and from the PROSALUD program.

-Models and approaches developed under the district development component should be designed to be replicable in the national health system. These models and approaches should be extended to other districts in the departments where the pilot districts are located. Mechanisms should also be established that permit the experience, methodologies, approaches, and materials developed and tested in pilot districts to feed into improvement of the national health system's capabilities.

-The "parallel bureaucracy" established in implementation of the project should be reduced as quickly as possible, maintaining as unique to the project those administrative and management functions that are not relevant to the national system but that rather exist in response to USAID or other requirements (e.g., USAID and PL-480 reporting and financial reporting requirements, contracting and procurement functions subject to the FAR and AIDAR). Personnel identified as essential to improved health system function should be phased into the government system as rapidly as possible, in accordance with the existing design and agreements with the GOB.

-The research capabilities established under the project in support of Chagas disease and infectious disease (diarrheal diseases, sexually transmitted diseases: INLASA) control should continue to be supported. This support should assure that these capabilities continue to provide support to essential applied research and public health service

activities.

To implement this modified design, the following roles are anticipated for the USAID mission, the CCH project itself, and USAID/Washington:

USAID/Bolivia

-Carry out and make available the results of the following assessments through contract services:

-National logistic and supply system capabilities for vaccines, ORS, antibiotics, micronutrients, and other essential drugs, and contraceptives;

-Cost and effectiveness of varying approaches to water and sanitation improvement in rural Bolivia;

-Comparison of the different donor-funded approaches to strengthening of decentralized health systems in Bolivia, with recommendations on how these activities can be coordinated and can support development of a coherent national system.

-Participate in donor coordination activities related to key technical programs for improved health and child survival (EPI, CDD/Cholera, Reproductive Health and Safe Motherhood) as well as in related to improving the health system function and coordinating such improvement with that of infrastructure and provision of essential equipment.

-Support long-term resident experts to provide technical assistance at the national level in the following areas:

-Communication/social marketing;
-Health service administration and program development.

It is anticipated that the latter long-term advisor will act as coordinator of external technical assistance activities and will provide the technical vision, leadership, and oversight required to keep CCH Project activities focused on their EOPS and purpose, complementing the administrative and political capability existing in the present CCH leadership.

-Provide essential health and child survival related commodities and operational support.

-Support expanded application of successful elements of the CCH Project (with appropriate modification, as previously noted), such as expanded DDM training in epidemiology, information, and management for additional health system officials and a broader range of health personnel (especially

nurses), and replication of the district level revolving drug supply approach (with appropriate management procedures).

-Provide arrangements for technical assistance and cooperation with the project by other A.I.D-supported organizations in Bolivia, including PVO's, PROCOSI, and PROSALUD.

CCH Project

-Provide management and administrative support and services required under USAID and other requirements unique to the project (financial management and accounting, personnel management, contracting, procurement).

-Increase the utilization of project technical resources (e.g., in CDD/cholera) in support of both national programs and its own activities.

-Continue the district development component, increasing the technical support for activities in this component; receiving and applying technical assistance from sources external to the project and implementing the approaches developed with such technical assistance; developing approaches that focus on increasing access, use, and quality of CDD/cholera, EPI, ARI, maternal/peri-neonatal health, and nutrition services, and monitoring and reporting on performance in this component in relation to clearly defined process and output indicators.

-Provide assistance and support in transferring methods, materials, and approaches developed to other districts.

-Develop and implement mechanisms for feeding into the national health system methods, materials, and approaches developed under the project.

-Conduct studies, in some cases with external assistance, using applied and operations research to improve national policy, service delivery, communication, and training, subject to approval of priorities established in consultation with the USAID project manager.

-Continue applied research in Chagas disease, keeping these activities focused on developing national policy and transferring knowledge and technologies gained to other organizations for implementation.

-Continue support for reference laboratory capabilities through INLASA.

USAID/Washington

Through a combination of central and mission buy-in funds, provide technical assistance and support to project activities in the technical and operational areas identified:

Technical: CDD/cholera, ARI, EPI, maternal/peri-neonatal health, nutrition, Chagas disease.

Operational: Policy; service delivery and administration; health financing; communication/social marketing; community participation; training; commodity planning, logistics and supply; applied and operations research.

IV.C. Assessment Team's Response to Mission's Proposed Guidelines and Questions Concerning Re-design of the CCH Project

See Annex E for the Guidelines (Page 2 of Scope of Work):

1. The team felt that the CCH Project should continue to work primarily with the public sector, but adapt lessons learned in the private sector--PROSALUD and PROCOSI-- to improve government systems. Furthermore, ideally the Mission should make additional funds available through the PROCOSI Project for community mobilization, and through PROSALUD for extension of services in urban areas (extending to rural areas, if possible), and technical assistance to government on cost recovery and quality of care in the 3 departments in which CCH is working, as a complement to CCH funds, it would be ideal. One private sector linkage we thought CCH should pursue is the commercial marketing of ORS.

As for shifting to an urban or peri-urban focus, the team felt that the CCH Project should retain its 6 rural districts as model districts for testing various health services strengthening systems, but not as sites for direct community implementation of activities by the Project. Additionally, in the 3 departments in which CCH works, i.e. La Paz, Cochabamba, and Santa Cruz which contain 70% of Bolivia's population, the Project should take on a department-wide (urban and rural) technical assistance focus for health system strengthening in areas such as training, communication and social marketing, and health information systems (data for decision-making). This would complement the infrastructure-strengthening focus of the World Bank PROISS Project in the urban areas of the same 3 departments. Dialogue is proposed with the World Bank to see if their resources for equipment can be used to strengthen district hospitals, in return for which USAID would apply its resources to strengthen training and management in the urban facilities built with World Bank assistance.

2. The team agrees with reducing the size of the CCH Project Management Unit (PMU) and more importantly getting the MOH to absorb CCH staff into its system at each level as soon as possible.

The parallel administrative CCH structure in separate offices must be reduced and merged into the MOH, with the exception of a small core unit. The team is unable to advise on a reorganized structure for the remaining staff of the PMU. This will take further review by the new Project Officer of existing job descriptions, unit functions and needs of the re-designed project. The team had doubts about the utility of an epidemiology unit.

3. The team feels that the most effective way to coordinate centrally-funded technical assistance in addition to the role of the USAID Project Officer, would be to hire a long-term Health Administration Resident Advisor who would have this responsibility, and who would preferably sit in the MOH. Past experience of placing technical assistance within (or under) the CCH Project Management Unit has not been satisfactory. The team also recommends that a long-term Communication and Social Marketing Advisor be hired to work on all components of the CCH Project, again not placed within the PMU, but rather in the MOH.

4. The team agrees that the administration unit within the PMU would build on the current accounting, contracting, and personnel capabilities of CCH but be reduced significantly.

5. The team agrees that policy dialogue at the national Secretariat of Health should be an important new component of the CCH Project. The timing is extremely opportune for such an emphasis given the interests of the new government which are very concordant with USAID's new interests. A major component of the policy activity at the national, macro-health care reform level in the CCH would be based on the proposals of the Harvard Data for Decision Making Project (Sachs, Walsh, Wolowyna). However, we feel that there are key, intervention-specific policy activities as we have described in Section IV of the report that will also need to be carried out, not through DDM-Harvard, but through technical assistance from other RD/Health central projects which specialize in each of the relevant interventions, e.g. BASICS and MotherCare.

6. The team agrees with the priority interventions listed in guideline #6, but as stated in our reply to #2 above, we are not convinced of the utility of an epidemiology unit and would advise that decisions on types of units needed in a re-organized PMU be made after a thorough review of existing functions and the needs of the re-designed project.

The following are direct responses to questions posed in the team's scope of work:

1. The technical areas identified in the scope of work correspond almost exactly to those identified by the team (see section II), with the exception of the DDM epidemiology research training, which is viewed as an important <u>activity</u>, but not as a technical area for

intervention.

2. (See section III.A. for team's evaluation of A.I.D.'s comparative advantage in Bolivia).

3. The proposed orientation of the project takes advantage of USAID's comparative advantage by linking the development, implementation, and evaluation of strategies and interventions in the field with policy input based on these essential experiences. As noted, one critical issue facing the project is operationalizing an approach to implementation that systematically evaluates, documents, and informs activities in other locales and policy at the national level.

4. The proposed redesign of the project does not include an epidemiology component per se. The emphasis is on program development and management, linked to policy dialogue. The recommendations in sections III.C. and IV. identify specific activities that should - and should not - be carried out under the project.

5. (See response to question 3).

6. The redesign proposed identifies complementary roles for centrally-funded projects, for USAID/Bolivia outside the CCH Project Management Unit, and for the CCH Project within the Project Management Unit (see section IV and appendix F [list of activities for each party])

7. It is expected that emphasis countries will now be defined in accordance with new USAID global strategies; it is likely, but not certain, that Bolivia will be a child survival and reproductive health emphasis country. It is important to note that being an emphasis country has not recently been necessarily associated with availability of central funds. The most important factors in availability of central funds are likely to be overall availability of central resources, definition of emphasis countries and of the relation of emphasis countries to funding, and agreements reached between the central bureaus (most likely at the level of individual projects) and the Mission.

8. As noted in the analysis and recommendations, a number of A.I.D.-supported organizations (PROCOSI, Save the Children, other PVO's) have important experience in effective community participation, and this experience and the methodologies derived therefrom (e.g., the "autodiagnosis") should be applied in the project's activities and further transferred as they are proven effective in other settings.

9. As noted (see question 3), the proposed redesign includes field implementation activities executed in a way that permits evaluation

and documentation, linking this process to policy development. Indicators should and - based on the project's past deviation from its intended pathway associated with failure to develop and monitor such indicators - must be developed and used that describe the assumed pathway by which project inputs lead to effective outputs, which in turn lead to important changes and finally to impact. Examples of such indicators, and of the thinking that underlies them, were provided in the 1990 report of consultant Sharon Benoliel, and referred to in the mid-term evaluation. This thinking and such indicators were not incorporated in the 1992 amendment to the project.

10. The team believes it to be important that control of technical assistance from central projects and other sources outside the CCH PMU should respond to the project manager. This will be possible only if the project provides the centrally-located long-term technical advisor in program development and administration identified in the recommendations.

11. Yes. Important potential areas for private sector work include, among others, collaboration in CDD/cholera activities (with the Jaycees and other groups), commercial marketing and other support for ORS and other commodities (e.g., ARI antibiotics), interaction with advertising and marketing companies (possibly through an "Advertising Council" model that allows public service participation of commercial advertisers), and collaboration with PROSALUD.

12. If budget restrictions appear, it is the team's estimation that it is preferable to prioritize and terminate specific components and activities, rather than debilitating all activities. The team's recommendations for such cutting, based on assessment of public health needs and likely impact, are that the water activities and the Chagas disease control components (especially the house improvement interventions) are those that would be cut in a first round of reductions.

13. It is difficult to identify the Secretariat of Health's management capability at this time of continuing change of personnel and organizational structure. However, the answer is important, and the mission should offer its input in this respect. One important area of discussion is the location and responsibility of the SNS counterpart within the revised organizational structure of the SNS, since this will directly affect the channels by which the project and the mission have access to decision and policy makers.

In addition to these responses to specific questions, it is worthwhile to reiterate the response to two points that arose

repeatedly in discussions of the project:

-First, while it might be worthwhile (if project resources permit) adding a small number of peri-urban districts to the rural districts where the project is presently working, these rural districts, and the principally rural focus of the project, should be maintained. [Maintaining the rural focus responds to public health needs, issues of donor coordination, and priorities of the government).

-Second, the principal constituent for the project is the government of Bolivia and specifically the public health authorities; while the project will be involved in implementation activities at the district and even the community level, the overreaching objective of these activities is to develop and assess strategies, methodologies, materials, and information that can inform and improve health services at a national level.

V Lessons Learned

1. A complex project with many components may be difficult to implement effectively. USAID should try to limit the number of project components to those in which it has a comparative advantage.

2. Higher utilization of health facilities lowers unit costs and makes cost-recovery programs more effective. Access and quality of care impact on utilization.

3. The development of an efficient logistics system for the distribution and delivery of medical supplies and pharmaceuticals is necessary to provide adequate care in isolated, rural areas. Adequate supplies also improve the quality of care provided which attracts more users to outlying facilities.

4. In a project directed at improving medical care in outlying areas, coherent and unified strategies are needed to improve health intervention delivery at the community level. This helps the project achieve real health impact. These strategies should be developed through interactive planning with local health workers and communities. The planning process, accordingly, brings project personnel closer to the rural community populations targeted for assistance.

5. Sustainable training for health workers in the public sector assumes that the personnel will remain in their institutions after the training. The lack of a civil service, and arbitrary changes in personnel accompanying

changes in government, weakens the impact of such training.

6. When a project is directed towards strengthening administrative and management capacities at different institutional levels, i.e. central, regional, district, and outlying, activities must be tailored towards each level. If most of the project resources are channelled to the higher levels, impact at lower level facilities which purport to serve the targeted population, will be less. That is why pilot activities should be designed at the district levels to provide model responses to upgrade the quality of child survival interventions for the targeted population.

Annex A

List of Persons Contacted

Secretariat of Health (SNS)
Dr. Guillermo Seoane
Dr. Javier Torrez Goitia

SNS -- Unidad Sanitaria La Paz
Dr. Carlos Peréz Guzmán

SNS -- Unidad Sanitaria El Alto
Dr. Zamora

USAID Mission to Bolivia
Sigrid Anderson, Director, HHR Office
Earle Lawrence, Health/Population Officer
Ann Beasley, Acting Evaluation Officer

Community and Child Health Project
Dr. Alvaro Muñoz-Reyes, Executive Director
Andrés Yale, Administrator
Edward Olney, Contracts Administrator
Maité Loaiza, Personnel
José Luis Baixeras, Deputy Director, Districts Compone
Ing. Filiberto Ojalvo, Director, Water & Sanitation
Carmen Casanovas, Director, Chagas Component
Oscar Gonzales, Consultant, Diarrhea/Cholera
Antonio Gomez, Monitoring and Evaluation Unit

CDC, TAACS Advisor
Dr. Joel Kuritsky

CCH Project/SNS -- Altiplano Valle Sud Health District
Dr. Alberto Tenorio, Director
Miguel Conde, Administrator
Cesar Choque, Water and Sanitation Tecnician
Teresa Ibañes, Educator
Norma Rivera, Statistician
María Elena Anarosa, Logistics Manager

CCH Project/SNS -- Capinota Health District
Director
Educator

CCH/SNS -- Chagas Control Project
Dr. Fanor Balderrama

Donor Organizations

Dr. Alan Court	UNICEF
Dr. Kristovich	PAHO

Non-Governmental Organizations

Pamela Putney	PROSALUD
Dr. Oscar La Fuente	PROSALUD
Pilar Sebastian	PROSALUD
Dr. Franklin Bustillos	PROCOSI
Lisa Howard-Grabman	Save The Children
Bill Bower	Columbia University
Andrew Arata	Tulane University
Ana Maria Aguilar	COTALMA, PRITECH
Jack Antello	former Director General, MOH

Annex B

List of Central Projects Active in Bolivia

598-0786 Accelerated Immunization

936-3030 Strategies for Improving Services Delivery

936-3031 Family Planning Training for PAC IIB

936-3035 Population Policy Initiatives OPTIONS II

936-3038 Family Planning Logistic Management

936-3045 Training in Reproductive Health JHPIEGO

936-3046 Demographic Data Initiatives

936-3049 Association for Voluntary Surgical Contraception

936-3050 Population Council Program Grant

936-3051 Contraceptive Social Marketing

936-3052 Population Communication Services

936-3054 International Population Fellows Program

936-3055 Family Planning Management Development

936-3057 Central Contraceptive Procurement

936-3061 Initiatives in Natural Family Planning

936-5116 Vitamin A for Health

936-5600 Computer Aided Identification of American Sandflies

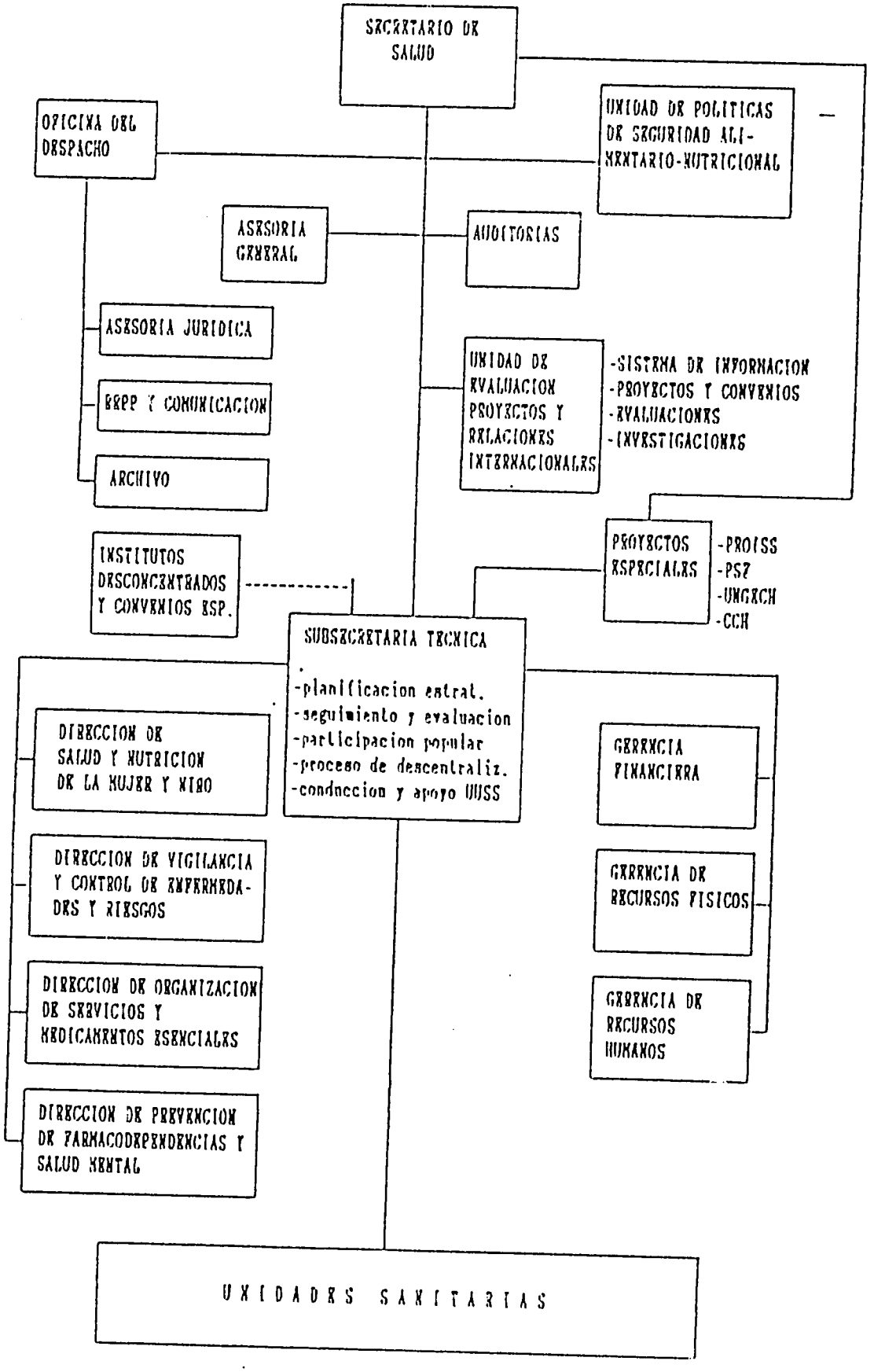
936-5948 Vector Biology and Control

936-5966 Mothercare/JSI

936-5970 T.A. in AIDS and Child Survival

936-5991 Data for Decision Making

Annex C


SECRETARIO DE SALUD
OFICINA DEL DESPACHO
UNIDAD DE POLITICAS DE SEGURIDAD ALIMENTARIO-NUTRICIONAL
ASESORIA GENERAL
AUDITORIAS
ASESORIA JURIDICA
RRPP Y COMUNICACION
ARCHIVO
UNIDAD DE EVALUACION PROYECTOS Y RELACIONES INTERNACIONALES
-SISTEMA DE INFORMACION
-PROYECTOS Y CONVENIOS
-EVALUACIONES
-INVESTIGACIONES
PROYECTOS ESPECIALES
-PROISS
-PSZ
-UNGECH
-CCH
INSTITUTOS DESCONCENTRADOS Y CONVENIOS ESP.
SUBSECRETARIA TECNICA
-planificacion estral.
-seguimiento y evaluacion
-participacion popular
-proceso de descentraliz.
-conduccion y apoyo UUSS
DIRECCION DE SALUD Y NUTRICION DE LA MUJER Y NIÑO
DIRECCION DE VIGILANCIA Y CONTROL DE ENFERMEDADES Y RIESGOS
DIRECCION DE ORGANIZACION DE SERVICIOS Y MEDICAMENTOS ESENCIALES
DIRECCION DE PREVENCION DE FARMACODEPENDENCIAS Y SALUD MENTAL
GERENCIA FINANCIERA
GERENCIA DE RECURSOS FISICOS
GERENCIA DE RECURSOS HUMANOS
UNIDADES SANITARIAS

DIRECCIONES TECNICAS

DIRECCIONES ADMINISTRATIVAS

SALUD Y NUTRICION DE LA MUJER Y DEL NIÑO

ADMIN (*) RRHH

- -EMBARAZO/PARTO/PUERPERIO
- -SALUD REPRODUCTIVA/CA CERVICO-UTERINO
- -IRA/EDA/PAI
- -CRECIMIENTO Y DESARROLLO
- -VIGILANCIA NUTRICIONAL
- -EDUCACION NUTRICIONAL
- -YODO/HIERRO/VITAMINA A

VIGILANCIA Y CONTROL DE ENFERMEDADES Y RIESGOS

ADMIN (*) RRHH

- -VIGILANCIA EPIDEMIOLOGICA
- -VECTORES
- -ETS/SIDA
- -TBC/LEPRA
- -ZOONOSIS
- -SALUD OCUPACIONAL
- -RIESGOS AMBIENTALES
- -CONTROL DE ALIMENTOS Y BEBIDAS
- -COLERA

ORGANIZACION DE SERVICIOS Y MEDICAMENTOS ESENCIALES

ADMIN (*) RRHH

- -NORMATIZACION DE LA RED
- -SILOS
- -HOSPITALES
- -SALUD ORAL
- -ATENCION DE ENFERMERIA
- -LABORATORIOS/BANCOS DE SANGRE
- -MEDICAMENTOS ESENCIALES
- -REGISTRO DE MEDICAMENTOS
- -ACREDITACION DE SERVICIOS

PREVENCION DE FARMACODEPENDENCIA Y SALUD MENTAL

ADMIN (*) RRHH

- -PREVENCION DROGADICCION
- -PROMOCION SALUD INTEGRAL
- -PROMOCION SALUD ADOLESCENTE
- -SALUD MENTAL

GERENCIA FINANCIERA

- -PROGRAMACION PRESUPUESTARIA
- -CONTROL EJECUCION
- -COOPERACION INTL.
- -CONTABILIDAD
- -PAGADURIA

GERENCIA RECURSOS FISICOS

- -COMPRAS
- -BIENES Y INVENTARIO
- -MANTENIMIENTO
- -TRANSPORTES
- -IMPRENTA
- -SERVICIOS GRALES

GERENCIA DE RECURSOS HUMANOS

- -MOTIVACION/DESARROLLO GERENCIAL
- -CARRERA ADMIN.
- -FORMACION BASICA
- -CAPACITACION CONTINUA
- -MOVIMIENTO PERSONAL
- -BIBLIOTECA Y DIFUSION CIENTIFICA

(*) UNIDADES DE APOYO DE LA GERENCIA FINANCIERA Y DE RECURSOS HUMANOS

Annex D

CHILD SURVIVAL ASSESSMENT TEAM

STATEMENT OF WORK

BACKGROUND

Evaluation of AID child Survival Programs: Bolivia Case Study

CCH Grant Agreement Amendment #9

Summary of CCH Evaluation

CCH HISTORY

Briefing - Sigrid Andersen

ASSESSMENT OBJECTIVE

The purpose of this assessment is to (1) evaluate the overall child survival situation in Bolivia, (2) identify specific interventions or management improvements that could be implemented by the Secretariat of Health to have the greatest impact in saving lives and improving health over the next five years, (3) determine which program interventions represent a comparative advantage for USAID, (4) analyze ways in which USAID can make a significant contribution to institutionalizing Secretariat of Health implementation of those interventions, and (5) develop recommendations for redesign of the CCH project to strengthen its assistance to the MOH in the identified areas. The required product will be a concept paper, on potential USAID assistance to the GOB child survival program from 1994-1998, from which a project amendment can be developed.

ASSESSMENT STRATEGY

A team planning meeting will be held at the start of the in-country assessment activities to review the SOW, identify team member responsibilities, and review the tentative agenda.

POTENTIAL MODEL

The CCH project has had a mixed performance due to a combination of personnel and design problems. Unsustainable pilot or demonstration activities have taken resources and energy away from technical assistance aimed at helping the Secretariat of Health achieve and implement projects with a national impact.

HHR plans to redesign the CCH project to have greater impact and sustainability. Any new components or activities in the redesign or modifications to the present design would take effect during 1994, meaning that the next year would be a transition between present activities and future directions. The redesigned project might follow these guidelines:

1. It would concentrate on assisting both the public and private sector health systems to work in the urban and peri-urban areas of La Paz, El Alto, Cochabamba, and Santa Cruz, beginning 9/30/95 through 9/30/98.

2. The present project staff might be reduced to a small core unit with three components: administration, policy, and epidemiology.

3. The CCH core unit could then coordinate technical assistance from a number of Office of Health central projects.

4. The administration unit would build on the current accounting, contracting, and personnel unit of CCH, but staff would be reduced significantly.

5. The policy activity would be centered around the Data for Decision-making (Julia Walsh-Harvard) proposal facilitated by the continuing relationship of Jeffery Sachs with the highest levels of government. Lessons learned from the research, training, and information/outreach activities of the epidemiology unit will be translated into policy recommendations for Ministry of Human Resources and Secretariat of Health national programs.

Policy dialogue would represent a new component for the CCH project, taking advantage of an excellent opportunity to assist the new government with decentralization, while strengthening the Health Secretariat's ability to set policies, guide programs, and determine public health priorities.

6. The epidemiology unit would conduct research and training and engage in dissemination and outreach to facilitate development and strengthening of national programs in these areas:

a. Immunization. The current project makes a significant contribution to the multi-donor national immunization program (PAI). Technical assistance and policy dialogue are needed to help the Secretariat of Health move from campaigns to an institutionalized national effort. The USAID contribution far outweighs other donor efforts, and should be leveraged for more policy input.

b. Chagas Control. Efforts in Chagas disease research would continue. Training and education efforts would intensify. Efforts to disseminate results at the policy level would be increased. Policy work will focus on cultivating the support of international donors and assisting the Secretariat to develop safe, economical, and effective interventions. Current technical assistance is provided through the CDC TAACS Advisor and a contract with Tulane University which provides the services of Chagas specialist Andy Arata.

c. Cholera and Diarrhea. Current efforts are limited to supplying the GOB with ORS packets. Efforts must continue to improve distribution and promote use. Training and education efforts should be increased. Additional technical support might be provided through BASICS or other mechanisms.

The CDC has researched the potential of household disinfection of water. They have developed inexpensive production of chlorine and are experimenting with local production of containers. Given Bolivia's urban population and access to mass media, a social marketing effort through PROSALUD could be successful in controlling cholera, diarrhea, and a host of water-borne diseases. Technical and financial support from the HEALTHCOM unit of BASICS would be needed.

d. Acute Respiratory Infection. Current activities are limited despite the significant contribution that pneumonia makes to infant/child mortality in Bolivia. USAID support would have to be built from the ground up. Significant technical assistance in project design and training would be needed from BASICS to launch the Secretariat on a program of mother education supported by appropriate treatment. Appropriate interventions in this area still need to be defined.

e. Safe Motherhood/Child Survival. The Mothercare project and Save the Children have demonstrated that community education can make an important contribution to improving maternal and child health. Unhealthy birthing practices are particularly prevalent in Bolivia and account for a large proportion of preventable deaths. Large numbers of births are not supervised by any trained medical personnel. Breastfeeding is not exclusive. Technical assistance from the new Mothercare

project, or other entity, will be essential to develop recommendations for policy-makers and for training master trainers.

f. Nutrition. Through the centrally-funded Reach Project, a start has been made on the micro-nutrient problem in Bolivia. Vitamin A and iron are lacking. Technical assistance from OMNI is needed to institutionalize efforts in the Secretariat of Health.

g. Epidemiology Research Training. The CDC, through the Data for Decision-making project, has trained a core of epidemiologist in research methods and computer skills. The program has been very successful and should be continued and expanded.

QUESTIONS

1. Are the interventions (a-g) described in the model likely to make the greatest possible impact on improving maternal child health in Bolivia?

2. Given the role of other donors, are the areas listed USAID's areas of comparative advantage?

3. Is the emphasis on policy dialogue justified and realistic? Will that approach lead to the greatest degree of institutionalization and sustainability?

4. Should the emphasis in the epidemiology component be on research, training, and information and outreach? Are there other activities which should be given priority?

5. The model favors the approach of convincing leaders to adopt the optimal policies and providing training, education, and information to Secretariat of Health and NGO implementors versus direct implementation of demonstration projects. Is this a prudent and necessary choice? Should selected activities in pilot districts be implemented directly by the CCH project?

6. The proposed redesigned project relies heavily on centrally-funded projects for technical assistance. Do the advantages of this approach outweigh using an institutional contract?

7. While the CCH budget will allow for some buy-ins, LAC regional bureau funding is almost certain to be reduced. To meet the challenges of this project, central funding would be required for experimental activities, such as the social marketing of chlorine, start-up activities for ARI interventions, and nutrition.

For new efforts needing extensive development, such as ARI and nutrition, mission/Global Programs Bureau cost sharing would be optimal. Will Bolivia's child-survival emphasis country status help insure a financial partnership?

8. The Secretariat of Health plans revitalization of community health committees. What role might those committees play in the redesigned CCH project? Should the project itself get involved in training at this level?

9. Under the proposed redesigned project, CCH would be a step removed from direct implementation. What indicators could be used to measure impact, guide implementation, and contribute to meaningful evaluation?

10. Management of the diverse activities proposed under the model project poses special difficulties for the USAID project manager. Can the project design incorporate staff or systems to help alleviate the management burden?

11. Should CCH work with both the public, (Secretariat of Health, Social Security Hospitals) and private sectors?

12. If the project and centrally-financed inputs face budget restrictions, should CCH do less or at a slower rate on all activities or reduce activities? Which should be eliminated first?

13. What is the present management capacity of the Secretariat of Health. Could or should the redesigned project be involved in improving this capacity?

CENTRAL PROJECT SUPPORT

BASICS

STTA: Intermittent - ARI policy/model development with MOH/PVOs/PROSALUD.

STTA: Measles outbreak assessment (also could be done w/CDC).
STTA: To IEC/Communications (technical input to Cientifica and future national program).
STTA: To CDD Policy/model development in District and Unidades Sanitarias.
STTA: 6 months contract with Ana Maria Aguilar (outside system for national CDD development) - Cable to LAC for Cholera support.
STTA: Strategic Assessment of CDD program/training needs.

STTA: Development of private sector role in promotion of ORS, ARI anti-biotics.

WELLSTART

STTA: Breastfeeding promotion at health posts - training communications support for mothers support groups.

GEORGETOWN IRH

Lactational Amenorrhea Method/FP Training
LAM/FP TRNG

MOTHERCARE

STTA: Training needs assessment - (SMI)
STTA: Working with professional associations to affect policy to create professional midwives/parteras. Promote delegation of authority for prescription to non-medical personnel for obstetrics/ARI.
STTA: Anemia assessment/program development (if necessary).
STTA: IEC/Communications (SMI).
STTA: Financing study to spread cost risk of high risk births.
STTA: Pre-natal STD treatment study/protocols.
STTA: Design for study of obstetric capacity at district hospitals for referral.

PATH

Feasibility of Sodium hypochlorite dip cell idea for community/household level chlorination.

OMNI

STTA: Vit. A/Iron fortification study.
STTA: Training needs assessment (nutrition).

VITAL

STTA: Vit. A Program.

DDM/CDC

Expanded training focused on CDD and institutionalization of training capacity.

QA

Quality Assessment of CDD practices in health facilities.

DDM-HARVARD

Assessment of District Health Strengthening Approaches by donors.

A I D

(1). Long Term Technical Advisor Health Policy and Administration - Overall technical Coordinator for CCH (Expatriate) at Central Level. Tasks: SNIS; Revolving Drug fund systems; Policy; Donor Coordination within Secretariat of Health.
Options: PASA, PSC, TAACS (CDC), STAR (Johns Hopkins).

(2). Long Term Technical Advisor in IEC/Communications; (Expatriate or Bolivian) Located in Secretariat at Central Level.
Options: Buy in, PSC.

(3). Willie has requested M. Castrillo; will JHU pay? What role? Connection with CCH?

Link STD/AIDS - detection with prenatal care service improvements (Rep. Health Project?).

Work through PROCOSI to extend community level autodiagnosis to promote community participation - (Rep. Health Project exploring).

PL 480 Title II - look at evaluations to improve CS/impact in feeding centers/mothers clubs.

Assessments

- Experience of Donors/PVOs in water system improvement
- Evaluation of public sector commodity distribution system.

C.C.H.

- Conduct study to determine source/reasons/follow up/case management of recent measles outbreaks - use DDM trainees.

- Continue purchase of vaccines/supplies/materials and provision of logistics support/training for the EPI program at national level.

- Continue ORS procurement for national distribution.

- Participate in operational research related to CDD*/EPI/ARI - district models to improve services and expand access, use, and quality.

- Develop models for service delivery extension to communities to improve CDD*/EPI/ARI/SMI/NUT (focus on community needs assessments, and community participation.

- Do assessment of obstetrical facilities at the district level (referral points) to determine whether quality referrals can be made.

- Develop training modules in CDD/SMI/ARI with technical input from central projects to improve technical/logistics aspects of these programs.

- Do research on connections between Chagas and anemia.

- Chagas - define CS impact of Chagas more precisely for Bolivia and hyperendemic areas.

- Disseminate research results oriented toward operational recommendations.

- Continue applied research in other key areas of Chagas control, but de-emphasize operational interventions such as more house improvement.

- Continue support to INLASA to maintain national quality laboratory support for AIDS/STD/CDD/etc.

ASSESSMENTS

1. NATIONAL TRAINING NEEDS AND STRATEGY (MAY NEED TO FOCUS ON PRIORITY INTERVENTION AREAS SUCH AS CDD FIRST) SOURCES OF TA: OMNI, BASICS, MOTHERCARE.

2. COMPARISON OF COSTS, CONSTRUCTION TIME, MAINTENANCE ISSUES AND COMMUNITY INVOLVEMENT, FOR WATER AND SANITATION PROJECTS IMPLEMENTED BY DONORS AND PVO'S (SOW EXISTS AT USAID FOR '93 PD&S STUDY WHICH WAS NOT CONTRACTED).

3. ASSESS AVAILABLE STAFF, EQUIPMENT, AND DRUGS AGAINST WHO ESSENTIAL LISTS FOR OBSTETRICS AT FIRST REFERRAL LEVEL IN ALL DISTRICT HOSPITALS IN THE THREE UNIDADES SANITARIAS OF CCH. SOURCE OF TA: CCH, MOTHERCARE.

4. NATIONAL ASSESSMENT OF DISTRICT HEALTH STRENGTHENING PROJECTS SUPPORTED BY DONORS. (COMPARE, CONTRAST AND LESSONS LEARNED FOR HARMONIZING EFFORTS).
   SOURCE OF TA: DDM/HARVARD.

5. ASSESSMENT OF IEC/COMMUNICATION STRATEGIES ALREADY DEVELOPED FOR EVENTUAL STRENGTHENING.
   SOURCE OF TA: PROPOSED LT TECHNICAL ADVISOR AT NATIONAL LEVEL.

6. ASSESSMENT OF PUBLIC SECTOR COMMODITY DISTRIBUTION SYSTEM (CEASS) FOR IRON/ANTIBIOTICS/ORS/CONTRACEPTIVE.
   SOURCE OF TA: USAID REPRODUCTIVE HEALTH PROJECT PROPOSED STUDY.

7. ASSESS STATUS OF NATIONAL ANEMIA PROGRAM - IS IT WORKING?
   SOURCE OF TA: MOTHERCARE, OMNI.