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EVALUATION REPORT

Project Concern International

BOLIVIA

PRIMARY HEALTH CARE
DEVELOPMENT AND TRAINING

June 1984

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TABLE OF CONTENTS

| | |
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| ABBREVIATIONS | iii |
| I. EXECUTIVE SUMMARY | 1 |
| II. BACKGROUND | 3 |
| A. Description of this Evaluation | 3 |
| B. Project Concern International, Inc. | 4 |
| C. The PCI Matching Grant | 5 |
| D. Program Environment in Bolivia | 6 |
| 1. Physical Setting | 6 |
| 2. Political and Economic Context | 7 |
| 3. Social and Cultural Factors | 8 |
| 4. Demographic and Epidemiologic Profile | 8 |
| 5. Host Government Policies | 9 |
| E. Relevant AID/USAID Policies and Strategies | 10 |
| III. THE PCI PROGRAM IN BOLIVIA | 11 |
| A. Proposal Development Process | 11 |
| B. Goals, Purposes, and Strategy | 11 |
| C. Planned Outputs and Inputs | 12 |
| IV. ACTIVITIES AND RESOURCE UTILIZATION | 14 |
| A. Summary of Activities | 14 |
| B. Actual Inputs | 15 |
| 1. Financial Resources | 15 |
| 2. Human Resources | 16 |
| 3. Material Resources | 16 |
| 4. Technological Resources | 17 |
| C. Agency and Community Contributions | 18 |
| 1. Interagency Relations | 18 |
| 2. Community Contributions | 18 |
| V. RESULTS TO DATE | 20 |
| A. Outputs by Component | 20 |
| 1. Program Planning | 20 |
| 2. Training | 20 |
| 3. Development of Administrative Systems | 22 |
| 4. Community Participation and Traditional Medicine | 24 |
| B. Program Impact | 25 |
| 1. Reduction in Common Morbidity | 25 |
| 2. Increased Access to Services | 26 |
| 3. Increased Utilization of Services | 26 |
| 4. Preventive and Promotional Activities at the Community Level | 27 |
| 5. Improvement in the Quality of Services | 27 |
| VI. ANALYSIS OF RESULTS | 28 |
| A. Discussion of Impact and Outputs | 28 |

| | | |
|------|--|----|
| B. | Planning and Design Process | 30 |
| C. | Program Management | 31 |
| 1. | PCI Field Activities | 31 |
| 2. | Home Office Support | 32 |
| 3. | Host Government Role | 33 |
| 4. | USAID/Bolivia Relations | 34 |
| 5. | Monitoring and Evaluation | 34 |
| D. | The Importance of Program Environment | 35 |
| E. | The Importance of Financial Constraints | 36 |
| | | |
| VII. | CONCLUSIONS AND RECOMMENDATIONS | 37 |
| A. | General Conclusions | 37 |
| B. | Special Areas of Interest | 38 |
| 1. | Benefit Distribution and Spread Effects | 38 |
| 2. | Sustainability and Replicability | 39 |
| 3. | Cost-Effectiveness | 40 |
| 4. | Traditional Medicine and Community Participation | 41 |
| C. | Recommendations | 42 |
| 1. | General | 42 |
| 2. | Program Impact | 43 |
| 3. | Planning and Design | 43 |
| 4. | Training: Level I | 44 |
| 5. | Training: Level II | 44 |
| 6. | Training: Levels III, IV, and V | 45 |
| 7. | Administrative Support Systems | 46 |
| 8. | Rural Drug Supply System | 47 |
| 9. | Traditional Medicine and Community Participation | 47 |
| 10. | PCI Program Management | 48 |
| D. | General Lessons Learned | 49 |
| | | |
| | APPENDICES | 51 |
| A. | Proposed MG Project Design | 52 |
| B. | Map of Bolivia | 53 |
| C. | Tables and Figures | 54 |
| D. | Task Forces for the Regionalization of Health Services in Oruro | 79 |
| E. | Educational Program Outlines | 81 |
| F. | Contributions of Participating Agencies | 87 |
| G. | Bibliography | 89 |
| H. | List of Persons Contacted | 93 |
| I. | Itinerary of the Evaluation | 96 |
| J. | Evaluation Protocol | 97 |
| K. | AID Health Program Strategy | 98 |

ABBREVIATIONS

| | |
|-------------|---|
| AID (AID/W) | Agency for International Development |
| CHW | Community health worker |
| CORDEOR | Corporacion Regional de Desarrollo de Oruro (Regional Development Corporation of Oruro) |
| CRHS | Cochabamba Regional Health Service (Unidad Sanitaria de Cochabamba) |
| DPG | Development Program Grant |
| FVA | Bureau of Food and Voluntary Assistance (dependency of AID) |
| GOB | Government of Bolivia |
| HSD | Health Services Department (dependency of PCI) |
| IBTA | Instituto Boliviano de Tecnologia Agropecuaria (Bolivian Institute of Agriculture Technology) |
| IDG | Institutional Development Grant |
| IRD | Integrated rural development |
| MCH | Maternal (or mother) and child health |
| MEDEOR | Action MEDEOR (Deutsches Medikamenten-Hilfswerk; German Medical Aid Organization) |
| MG | Matching grant |
| MOH | Ministry of Health (same as MPSSP) |
| MPSSP | Ministerio de Prevision Social y Salud Publica (Ministry of Social Welfare and Public Health) |
| MSH | Management Sciences for Health |
| NGO | Non-government organization |
| OPG | Operating Program Grant |
| ORHS | Oruro Regional Health Service (Unidad Sanitaria de Oruro) |

Abbreviations (cont'd.)

| | |
|----------------|--|
| PAHO | Pan American Health Organization |
| PCI | Project Concern International, Inc. |
| PHC | Primary health care |
| PVO | Private voluntary organization |
| RAN | Rural auxiliary nurse |
| TBA | Traditional birth attendant |
| TP | Traditional practitioner |
| UNICEF | United Nations Children's Fund |
| USAID/B | United States AID Mission to Bolivia |
| USC | Unidad Sanitaria de Cochabamba (Cochabamba Regional Health Service) |
| USO | Unidad Sanitaria de Oruro (Oruro Regional Health Service) |
| WHO | World Health Organization |

I. EXECUTIVE SUMMARY

Project Concern International effectively began a primary health care development and training program in Oruro, Bolivia in 1981. The program has been supported in part by two matching grants from the Agency for International Development (1979-1982 and 1983-1985). Support has also been provided by the Government of Bolivia, UNICEF, and, recently, the local USAID mission. Through December 1983, PCI has expended \$385,000 on the Oruro program, of which 42.9 percent was provided by AID. A formal Agreement of Cooperation was signed by Project Concern and the Ministry of Health in June 1981, committing the resources and participation of both institutions for a period of five years.

The basis of PCI's involvement in Bolivia is a regional plan for the extension of primary health care services in the Department of Oruro. This plan was developed and is being implemented jointly by the staffs of PCI and the Office of Planning and Supervision of the Oruro Regional Health Service. Project Concern has not introduced a new PHC system in Bolivia; rather it has been instrumental in putting into operation an existing MOH strategy. This strategy -- termed "regionalization" -- stresses the geographic decentralization of service levels and management functions and incorporates the utilization of paramedical and community health workers.

Project Concern, as an organization, focuses on the training of paraprofessional personnel, maximizing local resources, and encouraging "self-reliance" and host country replication. In Oruro, PCI has concentrated its resources in four areas: program planning and interagency coordination; training community health workers (CHWs), traditional birth attendants, rural auxiliary nurses and support personnel; the development of administrative support systems; and community participation and traditional medicine. All components and activities related to the regional health plan, however, are developed and coordinated within the Office of Planning and Supervision. From the start, PCI staff have been an integral and functional part of this office.

Total training activities have thus far exceeded the projections contained in the regional health plan. Three of the administrative subsystems have been established (patient referral, supervision, and drug supply); overall, however, the regional plan is about two years behind schedule. This has been partly due to over-optimistic programming, but more so because the MOH has failed to provide additional personnel as stipulated in the plan. The drug supply system has been implemented throughout the rural areas and, despite a persisting economic crisis, has been able to increase total assets while maintaining an adequate supply of medicines in rural service centers at less than commercial prices. PCI has also begun an innovative and promising process of integrating aspects of local traditional altiplano practices

and beliefs into the PHC program. This has resulted in specific benefits in the areas of community organization, the development of training materials, and health education.

The impact of the primary health care program in terms of improving health status of the target population could not be ascertained at this time, nor would it have been appropriate considering the severe natural disasters which have afflicted the region in recent years. Significant increases were detected regarding access to services and, more importantly, the utilization of services (by nearly 100 percent in the first target district). The quality of primary health care (PHC) services has also improved through training and the provision of basic equipment, medicines and supplies. Numerous preventive and promotional activities were realized at the community level in 1983 where none had existed previously.

The present evaluation has identified several areas of major importance which should be addressed by Project Concern and/or the Ministry of Health. The inability of the MOH to provide the required number of support personnel, particularly at the intermediate service levels, has considerably delayed full implementation of the administrative subsystems and related training activities. Another potential deterrent to regionalization is the current organizational structure of the Regional Health Service, which supports traditional patterns of centralized decision-making and categorical programs. Without improvements in both areas, the rural PHC system runs the risk of becoming another categorical program. The establishment of local community-based planning and unified information systems, as planned, will go far in furthering the regionalization strategy. The subsystems for planning and supervision currently provide only a minimal role for community participation.

In 1984, Project Concern's role in Bolivia has been expanding. Plans for replicating the program in Cochabamba are resolutely proceeding, and a contract is being signed to provide training and technical assistance in establishing rural drug supply systems in three other Departments. Additional PCI staff will be needed to adequately attend to the increased management and TA needs. Improvements are also needed regarding communications and broadening the decision-making process at the home office, as well as strengthening central technical support capabilities, as these relate to the Oruro program.

The above constraints notwithstanding, Project Concern is on the forefront in developing and extending primary health care services in Bolivia. It has succeeded in working effectively within the government structure and its staff has gained the respect and support of national counterparts and other private agencies in various parts of the country. Of particular significance are the establishment of a practical and functioning rural drug supply system based on local purchasing, the innovative applied research activities related to traditional medicine, and the coordination of strategies taking place with other regional health services.

II. BACKGROUND

A. Description of this Evaluation

The evaluation of the PCI primary health care training and development program in Oruro, Bolivia was undertaken in February and March of 1984. Prior to the field visit, preliminary discussions were held with the AID/W project manager and a visit was made to the PCI home office in San Diego, California for planning and initial interviews and data collection. These tasks were accomplished in June 1983. A special trip was made to Oruro by one of the evaluators to participate in a conference on traditional medicine in August 1983. Appropriate documents were obtained and reviewed. An advance request was also made to the PCI/Bolivia director for specific additional information.

A standard protocol was established and followed by MSH for the in-country evaluation activities (see Appendix J).

A second visit to San Diego was made immediately after leaving Bolivia for the purpose of debriefing PCI home office staff and obtaining additional information and feedback. Another debriefing was subsequently held with the PVO staff of AID in Washington. The initial draft of the completed country program report was submitted to MSH and the PCI home office and Bolivia director in June. The final revised report was submitted to Project Concern and AID/FVA in August.

The present evaluation was greatly enhanced in two ways. In response to MSH's request, the PCI/Bolivia staff had assembled a substantial notebook of documents, statistics and special reports which were presented on arrival. This saved at least several days work and accelerated the analytic process. Second, in spite of a strike of Ministry of Health employees, the staff of the Office of Planning and Supervision collaborated fully with the evaluation team, providing interviews and collecting additional data as needed. The above mentioned strike was one of at least eleven that took place while the evaluators were in Bolivia. At times these inconveniences threatened the evaluation process (blocked roads, cancelled interviews, lack of public transportation, for example), but not significantly. Foul weather and serious flooding did, however, prevent the team from visiting either of the two rural districts where Project Concern is working. Fortunately, two communities served by the rural drug system were accessible, and several rural auxiliary nurses and health promoters from the project districts were interviewed at the Regional Health Offices.

The principal evaluator and team leader for the PCI evaluation was James Becht, a public health evaluation and information specialist with fourteen years experience in Latin America, primarily in Bolivia. Assisting him was a second MSH consultant, Jaime Bravo, health and community development specialist with the Foundation for Integral Development (FIDES) of Santa Cruz, Bolivia.

This report focuses largely on activities in Bolivia, and primarily reflects the field project perspective. It was prepared by the two evaluators, who are solely responsible for its contents. Project Concern was represented during the field evaluation visit by Thomas Bentley, its Regional Program Director for Latin America and the Caribbean, and Gregory Rake, the Bolivia Program Director, both of whom took an active role and contributed significantly to the formulation of conclusions and recommendations. Consistent with the procedures established by MSH, field interviews occasionally required confidentiality, i.e. the absence of PCI personnel. Helpful comments on the draft of this report were received from Ralph Montee, PCI Health Services Department Director. A list of persons contacted and the itinerary of the evaluation are found in Appendices H and I respectively.

B. Project Concern International, Inc.

Project Concern International was founded in 1961, under California law, as an "independent, non-profit, non-sectarian" organization for the purpose of providing health services to underserved communities throughout the world. It initially channeled the humanitarian concerns of Dr. Jim Turpin by supporting clinical activities in Mexico, Hong Kong, and Vietnam. Gradually it was recognized that health needs are varied and health problems are multi-faceted. This led to greater flexibility in training and program design. Since 1975, PCI has shifted from relief agency providing curative, clinic-based services to a more community-centered development organization which promotes both the prevention and treatment of disease through organized health care systems.

PCI programs emphasize training and closely follow World Health Organization guidelines for promoting PHC systems. Preventive activities, the development of support systems, and community organization are also central to PCI's approach. Its program in Bolivia has been successfully innovative in bringing together traditional Andean medicine and "modern" medicine within the government's rural health program. The objectives of Project Concern's overall program are to:

1. "Bring an affordable, socially acceptable and accessible system of health care to underserved communities;
2. Demonstrate to the host country's central government the feasibility of a low-cost, effective primary health care system;
3. Develop host country capacity to assume responsibility for projects;
4. Provide financial and technical support within a given time frame;
5. Promote local responsibility for the development of future primary health care services;
6. Establish host country nationals as CHW trainers; and

7. Train Community Health Workers in basic curative health and, more important, preventive health education."

Project Concern International is governed by a Board of Directors and an International Board of Trustees. The organization has independent affiliates in Canada, Australia, Mexico, New Zealand, and Hong Kong. It currently has programs in seven foreign countries and in two areas of the United States. PCI maintains relations with the University of California at Los Angeles (School of Public Health), the University of California at Santa Cruz (Extension Division), the University of California at San Diego (Medical School), San Diego State University (School of Public Health), the Joint PVO/University Rural Development Center at West Carolina University and the East Carolina University (School of Medicine.) The strategies and operations of Project Concern are managed by an Executive Director who oversees five departments: Health Services; Public Information; Resource Development; Administration (including OPTION); and Finance.

The principal source of funding for PCI's programs comes by way of the "Walk for Mankind," an annual event drawing thousands of supporters throughout the U.S. In 1982, 1,132 volunteers contributed 7,500 hours of work at the office in San Diego, worth approximately \$200,000. Also in 1982, volunteer health professionals, placed overseas through OPTION, provided services valued at over \$1.2 million.

Project Concern has been the recipient of several grants from the Agency for International Development. From 1975 to 1978, a Development Program Grant (DPG) helped PCI to reorganize its central support office and develop a technical resource library.

PCI received its first Matching Grant (MG) in 1979, which supported the development of programs in the Gambia, Belize, Bolivia (Pando Department), Guatemala, and Mexico. While specific programs vary from country to country, they are all based on the shared hypothesis that "improved health status will result from greater accessibility of health services, from more appropriate services, and from a higher quality of services provided."

C. The PCI Matching Grant

The second, and current, Matching Grant awarded to Project Concern by the Agency for International Development became effective in January 1983 and committed a total donation of \$1.2 million for a three-year period. PCI's contribution to the grant program is projected at \$1.206 million, or 50.1% of the total estimated expenditures. Country programs begun under the previous MG were to be continued and expanded; in addition, several new programs were to be initiated. In Bolivia, work in the remote Pando Department had been phased out in 1980 because of logistics problems and incompatibility with the rural social (plantation) structure. A new program site was identified in the Oruro Department, where work began in earnest in 1981.

The ultimate goal of PCI programs is to attain "self-reliance", that is "the ability of the program to sustain itself indefinitely on in-country resources, without the need for personnel, money or

equipment from outside the country." The overall MG program goal is to "improve the health status of people living in underserved communities and areas by bringing an affordable and accessible system of health care to the population..." Health programs focus on the most vulnerable population groups and preventive health services are stressed. Four criteria are given as indicators of goal achievement: increased access to services; increased utilization of services; increased promotional and preventive activities at the community level; and a reduction in the incidence of common illnesses (see Logical Framework Appendix A).

The purpose of PCI's program, as expressed in the MG proposal, reflects the organization's objectives which were stated in the previous section. In addition, the proposal asserts Project Concern's intent to increase the capabilities of ministries of health and other levels of health service in planning, designing, implementing, and evaluating programs of Primary Health Care at the village level." PCI's primary health care strategy focuses on the training of villagers, the use of local resources, and encouraging self-reliance and host country replication.

The indicators of purpose achievement and the specific outputs of the program activities are somewhat overlapping in the MG proposal. Basically, these refer to the establishment of detailed plans and the development of support systems; the training of supervisors, trainers, and support personnel; the training of CHWs and traditional birth attendants (TBAs); and the establishment of functioning local committees and local sources of financing. To accomplish these objectives and activities, Project Concern commits itself to providing field staff of primary health care specialists to work with the ministries of health and funding for additional technical assistance, materials, equipment, and administrative support. Host governments are to provide counterpart personnel, physical infrastructure, and limited support funds.

D. Program Environment in Bolivia

1. Physical Setting

Bolivia is a diverse country, geographically and ecologically. Situated in the center of South America, its 424,000 square miles are bordered by Brazil to the north and east, Paraguay and Argentina to the south, and Chile and Peru to the west. Two ranges of the Andes Mountains cut across the southwestern third of the country; the remaining two-thirds form part of the vast lowlands of the Amazon and Plate river basins. Bolivia contains ten distinct ecological zones. These range widely from tundra in the high mountains to temperate valleys to tropical forests and savannas.

Transportation in Bolivia is very difficult. Buses and trucks serve all but one of the department capitals and most provincial towns in the highlands. There are about 500 miles of all-weather roads and secondary roads are often impassable during the rainy season (December to April). Airlines serve all departments and

private air taxis are indispensable in the lowlands. Modern telephone systems connect the major cities internally and internationally. The Ministry of Health maintains short wave radio communication among its eleven regional health offices.

Project Concern is working with the Ministry of Health in the Department of Oruro. This Department of 20,800 square miles is situated at an altitude of approximately 12,000 feet on the altiplano between the western and central ranges of the Andes Mountains. (See map, Appendix B.) Oruro is cold year-round (45° - 50° F. mean annual temperature) and the desolate, barren landscape is swept by high winds. There is little rainfall (12.6 in. annually), and there are few trees. The city of Oruro lies about 100 miles south of La Paz (3-1/2 hours by paved road). Transportation and communication systems in the rural areas, however, are very precarious. During the past year, the altiplano has been seriously affected by unusual drought and flooding.

2. Political and Economic Context

Bolivia has been characterized by a legacy of political instability. During the past six years alone the country has had eight presidents. In October of 1982 a democratically elected government took office after 18 years of military control. The current authorities represent a coalition of center-left political parties and have established a fractious system of co-government with the labor unions. Faced with virtual bankruptcy and rampant inflation, the country has been racked by more than 300 strikes during the past 18 months. (At least 78 work days have been lost thus far at the Regional Health Office in Oruro.) As a result, it has been extremely difficult for the government to establish and maintain rational and operable policies in any sector. Public administration continues to be hampered by corruption, inefficiency and political manipulation.

Stabilization of the democracy in Bolivia depends entirely, at present, on a dramatic improvement in the economy in order to calm the social turbulence and meet the basic needs of the population. The production of minerals, which traditionally has generated more than 60% of the foreign exchange, has been decreasing, as have prices for Bolivia's raw materials on the international market. In 1982, it took 80% of the country's exports to service its foreign debt. The gross internal product registered a ten percent decrease in 1983. Inflation last year was reported to be 348%, and is estimated to reach 1,000% to 2,000% in 1984. The government is reportedly on the verge of announcing a three-point plan of significant political and economic reform consisting of containment of inflation political, and administrative reorganization, and a national program of development and rehabilitation.

Sixty percent of the Bolivian population is engaged in non-mechanized subsistence agriculture. In Oruro, the proportion is 40%. Per capita income was estimated at \$630 for Bolivia in 1983. The gross internal product of Oruro in 1978 was \$174 per person. Because of the elevation of Oruro and the lack of water,

the main crops are tubers and some grains. Most rural families raise sheep and llamas. Oruro is one of the principal mining centers of Bolivia, employing eight percent (1976) of its economically active population in that industry.

3. Social and Cultural Factors

Bolivia is a multi-cultural country. The indigenous Aymara and Quechua-speaking Indian groups constitute more than one-half (55%) of Bolivia's 5.9 million (1983) inhabitants. The Aymaras are concentrated mainly in the Department of La Paz; the Quechua groups, descendants of the formidable Incas, are found throughout the Andean mountains and valleys. Less than ten percent of the population is of direct European heritage; while about one-third is mestizo, or of mixed ancestry. These groups reside primarily in the larger cities. In the eastern lowlands, there are also about 30 relatively small tribes of forest Indians, with extreme linguistic and cultural diversity.

Bolivia is a predominately rural country (54%), but the trend of rural-urban migration is steady. Seasonal and permanent migration are significant within Bolivia from the densely populated highlands to the agriculturally productive lowlands. Oruro also experiences seasonal migration with Chile and Argentina. Spanish is the dominant and official language, but most families speak two and sometimes three languages. Adult literacy, however, remains low at less than 50%. At least 90% of all Bolivians are nominally Roman Catholic, but most Indians interweave their traditional beliefs with the Christian elements of their religious practice.

Family size tends to be large (total fertility rate = 6.4 for Bolivia, and 6.6 for Oruro), and housing is inadequate in terms of numbers of units, living space and, in the altiplano, ventilation. The practice of dividing the family land among sons has caused the increasingly serious problem of the minifundio throughout the altiplano and high valleys. In rural areas of Oruro, less than half of the people obtain their drinking water from a protected source and less than one-third reportedly use latrines.

4. Demographic and Epidemiologic Profile

Bolivia is considered by some to be an underpopulated country; indeed, the overall population density is less than 14 people per square mile. The difference between the highlands and the lowlands, however, is considerable: roughly 30/sq. mi. and 6/sq. mi. respectively. It is a relatively young population, with almost half (44%) under the age of 15 years, and it is growing at a rate of 2.7% per year. According to the latest figures released by the National Institute of Statistics (1982), life expectancy at birth is 48.8 years, the crude birth rate is 44.8, and the crude death rate is 17.5. Infant mortality rates range from about 100 in the cities to more than 300 in some rural areas. Overall, it is reported to be 131/1000 live births (1981). Selected statistics

for the Department of Oruro are presented in Tables 1 and 2.

Specific causes of endemic morbidity vary widely among the different ecological zones. Malaria, Chagas and intestinal parasites, for example, are serious problems at lower altitudes, while tuberculosis and to a lesser degree typhus are prevalent in the highlands. The underlying pattern affecting children, however, is one of respiratory diseases, diarrhea and malnutrition. The principal causes of rural morbidity in Oruro (1980) were reported to be: respiratory diseases; accidents, violence, etc.; gastrointestinal diseases; nervous disorders; and diseases of the skin and conjunctiva. In the baseline survey conducted by the Oruro Regional Health Service and Project Concern, 46.4% of the children one to five years of age were found to be malnourished. More than one-third (36.5%) of those included in the survey reported being sick during the previous month, including 87.6% of the children under one year of age.

5. Host Government Policies

At present, the Government's highest priority is in finding a solution to the current economic and political crisis. Medium and long-term strategies center on regional development, consisting of two basic thrusts: identifying and developing centers, or "poles," of specific agriculture or industrial enterprises, which are coordinated by Regional Development Corporations in each Department; and a loosely structured program of integrated rural development (IRD), which promotes agriculture, health and sanitation, education, housing and road construction in rural areas. An important outcome of this strategy has been the application of spacial planning and the concepts of regionalization, decentralization and coordination of services.

The Ministry of Health has adopted the World Health Organization's strategy of primary health care (PHC) and in theory holds to the goal of "Health for all by the year 2,000." Previous USAID-financed activities -- the Bolivia Health Sector Assessment (1974) and the Montero Rural Health Project (1976-1980) -- helped to establish the concepts which are currently being promoted for the systematic extension of health services in rural areas. The regionalization of health services, as it is called, consists of three basic aspects: the integration of preventive and curative activities based on local needs; a hierarchy of medical and public health services according to levels of increasing complexity and geographic coverage; and the decentralization of administrative functions and authority by these same levels.

Unfortunately, the Ministry of Health has been increasingly unable to implement these policies. It is faced with constantly decreasing resources in real terms (by 70% in 1982) and a burdensome infrastructure of urban, curative facilities and heavy personnel costs. Simultaneously, the politicizing and "co-administration" of the public sector has created a general state of confusion, lack of coherence and instability of personnel, particularly at the national level. Several of the Regional Health Offices, those

with strong leadership and/or more local resources, have been able to forge ahead in certain areas of regionalization.

The Government of Bolivia, in general, and the Ministry of Health, in particular, have not formulated a specific policy regarding the role and operation of private voluntary organizations in the country. It is not known, in any comprehensive or systematic manner, how many PVOs are involved in health-related activities, where they are operating or what they are doing. For several years (1977-1982), the Ministry of Health had a special unit which coordinated external assistance projects, but it was disbanded under the present administration. If at all, PVOs maintain relations with the Regional Health Offices in the Departments in which they operate, but little supervision is done of their activities.

E. Relevant AID/USAID Policies and Strategies

The basic objective of AID's health programs is to assist developing countries to become self-sufficient in providing broad access to cost-effective preventive and curative health services. USAID's program in Bolivia has shifted since the military coup of 1980. Current strategy focuses on the economic and food production benefits of agriculture, rather than attempting to reach the "poorest of the poor." Emphasis has been placed on the development potential of foreign aid rather than on areas of greatest human need. Geographically, U.S. assistance is concentrated in the central corridor of La Paz - Cochabamba - Santa Cruz. Health sector activities are designed to be supportive of the agricultural focus, addressing the same target populations in general. Assistance based on epidemiological need and coordination with the Ministry of Health are minor aspects of the current program. The distribution of Title II food commodities is viewed as part of the health strategy. At present, disaster relief, including food and medicines, is a large component of the program.

While a specific policy has not been formulated by USAID/B, PVOs are viewed as important mechanisms to complement Mission activities. The Division of Health and Human Resources is currently initiating a \$1.8 million three-year grant program (OPG) to develop a self-financing primary health care system through three credit and loan cooperatives in the Department of Santa Cruz. Three private agencies are currently involved in P.L. 480 food distribution and an agreement has recently been reached with Project Concern to provide training, technical assistance and supervision for the establishment of a rural drug distribution system in four Departments.

III. THE PCI PROGRAM IN BOLIVIA

A. Proposal Development Process

Project Concern began its activities in Bolivia in 1977, working in the remote jungle region of the Pando Department. Some training of rural auxiliary nurses (RANs) was accomplished and equipment was provided to 19 rural health posts. Serious problems in logistics and supervision as well as lack of a stable, positive community structure within the plantation economy did not permit PCI's technical capabilities to be effectively utilized. An evaluation of the program was jointly conducted by Project Concern and the Office of Planning of the Ministry of Health in late 1979 and early 1980. It was decided to relocate PCI to another Department.

The MOH identified four underserved regions for potential program development within its regionalized primary health care plans. Criteria for site selection were defined and a team composed of the PCI program director and MOH staff visited each of the four areas by mid 1980. From its perspective, PCI was looking for a region of noted health need and relative accessibility. More important, however, was a Regional Health Office which would be open and supportive to primary health care, regionalization and collaboration with a PVU. The Oruro Regional Health Service was subsequently selected and a Letter of Intent to that effect was eventually signed with the Ministry of Health in March 1981.

As a result of the repressive coup of July 1980, PCI activities were suspended for several months. In late 1980, the PCI director, a health planner, worked with the ORHS/Office of Planning and Supervision in a review of a "Diagnostic of the Health Situation in the Department of Oruro" (sic, translated from the Spanish) This document became one of the principal bases for health planning in the region. Project Concern formally moved to Oruro in early 1981 and from the beginning its participation has been integrated into the Office of Planning and Supervision.

The first joint activity was to produce the regional "Plan for the Extension of Coverage, 1981-1986." As part of the process, 11 task forces were formed, involving 16 professionals from various divisions of the ORHS, to analyze and develop the management subsystems that would be necessary for regionalization. (See Appendix D for details.) The planning process was coordinated by the Regional Health Planner and the Director of Project Concern.

B. Goals, Purposes and Strategy

The regional health plan, as the above document has come to be known, was accepted and approved by the Ministry of Health in June 1981. In the same month, a formal Agreement of Cooperation was entered into by Project Concern and the Ministry of Health which legitimized PCI's role in Oruro and committed the resources

of both institutions to the implementation of the regional health plan. Thus, in Bolivia, Project Concern has not developed its own independent program, but rather has accepted, and been accepted for, a role as full partner in a venture of the Ministry of Health. PCI's participation is specific to the organization's areas of interest and capabilities, i.e. training and support systems development.

The ultimate goals of the regional health plan are stated in terms of reducing morbidity and mortality, particularly that of children and women. Specific rates or degrees of reduction are not provided. The purpose of the proposed program is to extend coverage of primary and secondary health care services in rural areas. The plan itself is not structured in terms of a "logical framework;" therefore, for the purpose of the present evaluation indicators of goal and purpose achievement are extracted from the MG proposal. As mentioned earlier, the strategy employed by the Ministry of Health is that of regionalization: integration of services; hierarchy of levels of attention; and administrative decentralization.

Regionalization in Oruro calls for the formulation of four health districts. (The plan originally indicated five districts, but four will be developed to be compatible with the master plan of the Regional Development Corporation.) Detailed projections are provided to meet the human and physical resources needs in each district over the six-year period. The plan also describes the various support subsystems to be developed and the training required to implement each. Considerable attention is given to the various permanent programs of the Ministry of Health: Maternal and Child Health; Nutrition; Environmental Sanitation; Epidemiology; Tuberculosis Control; and Dental Health. Objectives and proposed activities are given independently for each program. The epidemiological basis for the regional health plan is implied, or assumed throughout, but neither baselines nor goals are expressed statistically.

C. Planned Outputs and Inputs

Four specific areas were identified for the involvement of Project Concern. The first was program planning, including baseline surveys and interagency coordination. Second, the training of community health workers, rural auxiliary nurses and systems support personnel. Third, the development of six administrative subsystems: planning and administration; supervision; patient referral; purchasing and supplies; maintenance; and information and evaluation. The fourth area was community participation, which was subsequently expanded to include traditional medicine.

To carry out its portion of the Agreement, Project Concern committed itself to six years of technical and financial assistance. Two PHC specialists would be assigned the project, an administrator/planner for the full term and a nurse educator for two and one half years. Seven and one-half months of short-term TA was also contemplated. The total cost of technical assistance was estimated to be \$331,194. PCI is also committed to provide \$507,717 for

operational support. These two items represent 52.9% of the proposed six-year budget of the regional health plan (see Table 3 in Appendix C). The Ministry of Health planned to contribute \$207,564 (13.1%), over and above its current operating budget, for additional personnel and supplies. The projected personnel needs are presented in Table 9; a total of 57 new positions were anticipated. The proposed budget includes additional contributions from UNICEF, CORDEOR (for constructions) and other sources.

The budget approved under the AID Matching Grant provides a total of \$638,000 for the Bolivia program during the three years 1983 to 1985. This is almost forty percent more than the regional plan calls for during the same period, but about 24% less than PCI's total commitment of \$838,911. It is presumed that the first two years of operation (1981-82) were financed under the previous MG.

IV. ACTIVITIES AND RESOURCE UTILIZATION

A. Summary of Activities

(Note: The following outline indicates the year in which the activities began. Many activities continued in subsequent years.)

1. Year One: 1980 (second year of first MG)
 - a. Definition of site selection criteria; visits to Beni, Cochabamba, Oruro and Tarija; selection of Oruro.
 - b. Initiate contacts with the Oruro Regional Health Office; review and finalize "Diagnostic"; establish parameters of the regional health plan.
2. Year Two: 1981 (third year of first MG)
 - a. Integrate staff with the Office of Planning and Supervision; sign Letter of Intent with the MOH.
 - b. Prepare regional health plan; sign formal Agreement with MOH; conduct one training session on regionalization.
 - c. Prepare and implement first phase of community participation component; conduct three training courses.
3. Year Three: 1982 (final year of first MG)
 - a. Design and implement subsystem for patient referral; design subsystems for supervision and rural drug supply; conduct two training courses on referral and drug systems and three on supervision and coordination.
 - b. Conduct four training sessions on community participation and one on basic agriculture.
 - c. Design and carry out first course for CHWs in District C.
 - d. Develop and initiate traditional medicine component; conduct two training sessions.
4. Year Four: 1983 (first year of current MG)
 - a. Design and execute baseline studies in Districts C and E.
 - b. Implement rural drug supply system in total Department; provide in-service training to field personnel; implement supervision system in District C.

- c. Conduct second course for health promoters of Districts C and E; continuing education for first group of CHWs.
- d. Design and conduct course for traditional birth attendants (TBAs).
- e. Conduct four training courses on traditional medicine, two on supervision, and one each on referrals, community participation, equipment maintenance, and diagnostic and treatments.
- f. Prepare instruments for the evaluation of rural auxiliary nurses.

B. Actual Inputs

1. Financial Resources

Project Concern reports total expenditures of \$385,251 for the years 1981 through 1983. (Table 4 in Appendix C itemizes these expenditures by line item and year.) AID contributed 42.9% of these resources. The first year of activity in Oruro (1980) involved essentially the time of the program director, but that year's expenses were applied to the Pando program. Total expenses in dollars were roughly the same in each of the three years. In 1982 and 1983, the Bolivian peso was devaluated by about 250% over each of the previous years. This causes field operations to appear undervalued and the dollar-based technical assistance costs to be proportionately high.

Compared with the proposed regional health plan budget, PCI underspent its anticipated commitment of \$490,944 (1981-1983) by \$105,693, or 21.5%. Part of the decrease is undoubtedly attributed to devaluation of the local currency. A major expenditure in 1981 was the purchase of a vehicle, and in 1982 a large quantity of start-up equipment was required. In 1983, the PCI central office began to prorate support staff time to the various field programs.

Project Concern provided a little less than two-thirds (62.7%) of the total extension budget in 1983 (see Table 6 in Appendix C). UNICEF contributed 25.1%, primarily for training costs, the Ministry of Health provided 9.7% (over and above its regular operating budget), and community support was estimated at \$3,153 (2.5%). Total field costs represent a per capita expenditure level of \$1.79. Regular operating expenses of the MOH in Districts C and E (for field salaries and central support) are estimated at roughly \$50,000. By adding this and PCI's home office support costs to the itemized field expenses, the overall per capita expenditure for 1983 rises to \$3.21. In this estimate, total expenditures for 1983 amount to \$231,794, of which PCI contributed 57.6%, the MOH 27.0% and UNICEF 14.0%.

2. Human Resources

The Office of Planning and Supervision has been charged with coordinating and implementing the regional health plan in Oruro. As of February 1984, there were 13 permanent staff and one part-time consultant anthropologist directly associated with the program (see Table 8, Appendix C), including the PCI advisors and personnel paid by PCI. Three health professionals are responsible for planning and administration, four are involved in training and traditional medicine, and one (economist) manages the rural drug supply system. The program also has six support staff, including the PCI bookkeeper, secretaries, driver and pharmacy dispatcher. Figure 1 (Appendix C) describes the staffing pattern since 1980, by source of support. The staff is competent and remains highly motivated in spite of current economic and political hardships. The turnover and vacancy rates have been quite low to date, 21.4% and 6.2% respectively.

The PHC extension program is currently operating in two districts (C and E). While specific counts vary from year to year, the Ministry of Health has the following personnel assigned to these two areas: six physicians, 30 auxiliary nurses and two professional nurses, and about ten support staff. According to the projections in the regional health plan, the MOH was committed to creating an additional 41 positions during the first two years of expansion, but wasn't able to comply (see Table 9, Appendix C). Last year the program requested an additional five government salaries in order to transfer the costs of four employees currently paid by PCI and to hire a statistics clerk. In 1984, 11 more positions were required. Just prior to the arrival of the evaluation team, notice was received that 20 new positions for rural areas had been created for 1984. Thus, to date, the Ministry has been able to supply about one-third (35%) of the required positions, leaving a current deficit of 37 positions.

During 1982 and 1983, PCI and the ORHS selected and trained 36 community health workers. Thirty CHWs actually began work and continued to serve at the time of the evaluation. Fifteen traditional birth attendants (TBAs) were also given training to upgrade their skills and improve hygienic practices. None of these workers receive payment from the Ministry of Health or Project Concern; both are compensated in one form or other by their communities, often in kind. The health promoters (CHWs) provided a total of 274 months of service. Natural disasters and economic hardships caused some CHWs to migrate for varying periods of time, resulting in 23 months (7.7%) loss of service time.

3. Material Resources

The major contributor of material resources for the delivery of primary and secondary health care services has been the Ministry of Health. Currently 19 health posts, four medical posts and two rural hospitals are being used in the program (Districts C and E). The MOH also provides office and storage space and some

supplies and gasoline at the regional level. Project Concern, by virtue of its operating budget has purchased a vehicle (\$16,000), equipment (\$66,925) and medicines (\$9,753).

Rural communities have provided an undocumented amount of local building materials for the construction of their health posts. Often the ORHS contributes up to 50% of the cost of commercial materials (doors, windows, roofing, etc.) with the villagers financing the remainder. The Regional Development Corporation (CORDEOR) has financed, in part, the construction of larger medical and hospital facilities. In 1983, their estimated investment in rural health posts -- construction and equipment -- was about \$9,000.

For the four years 1984-1987, CORDEOR has budgeted \$684,000 for health sector activities (Table 7, Appendix). More than 90% of this amount is destined for facility construction; the remainder is to be used for radios and medical equipment and vehicles. As part of the same program, UNICEF will contribute \$394,000. The largest portion (\$165,000 or 41%) will be used for rural sanitation projects; \$229,000 will support the integrated rural development program (IRD). The USAID Mission in Bolivia has recently (1984) agreed to donate medicines and a vehicle, valued at approximately \$200,000, in support of the rural drug supply system.

4. Technological Resources

Project Concern has facilitated the incorporation of new technologies within the primary health care system in a variety of ways. Open fires for cooking and warmth within the small, poorly ventilated altiplano home have persistently caused respiratory and eye afflictions. The Lorena stove -- a table height, closed burner with chimney, constructed primarily from local materials -- has successfully been introduced to relieve these problems and improve the sanitation of the home environment. Above-ground latrines, which respect the sacredness of "mother earth" and respond to the problem of a high water table, have also been tested in conjunction with composting.

Andean traditional medicine, especially Aymara, has been considered by scholars as one of the most sophisticated in the world. Traditional medical practices include the use of thousands of medicinal plants and practitioners include bone setters, surgeons, psychiatrists, massagers, midwives and ritualists. They deal holistically with cultural, spiritual, and biological aspects of illness and disease. Consequently, "modern" health workers need to respect and utilize some of these practices for improving rural health services. Project Concern has successfully begun a process of integrating or meshing the two systems, through research and training and the production of educational materials. Similarly, community participation is being sought in terms of traditional social structures rather than through imposed "health committees" or external schemes for the compensation of CHWs.

Technological improvements have been introduced in program management through the development of appropriate subsystems to support the extension of health service coverage through regionalization. At the present time these include the rural drug supply system, and systems for supervision and patient referral. New concepts of patient care and reporting forms (utilizing pictures) have been introduced in the training of traditional birth attendants.

C. Agency and Community Contributions

1. Interagency Relations

A very close relationship has developed between Project Concern and the Regional Health Office in Oruro. Programmatic integration has been achieved with the Office of Planning and Supervision. Interaction with other ORHS departments has varied depending on the degree of common activities and/or perspective, but these are subject to traditional tensions within the Ministry of Health between strong categorical programs and regional autonomy. PCI maintained close communication with the Coordinating Unit for External Projects, of the MOH Planning Office in La Paz, until the unit was disbanded in late 1982.

Eleven government agencies and private organizations, including Project Concern and the Oruro Regional Health Service, have directly contributed to the extension of health services in Oruro. (The specific nature of their participation is detailed in Appendix F.) The agencies of the Government of Bolivia have provided training, personnel, technical assistance and some material support, in addition to legal sponsorship and the physical infrastructure. Local private organizations have been involved in the training of auxiliary nurses and the distribution of supplementary food commodities. The international organizations have been a source of pharmaceutical and medical supplies, food commodities, and some direct financial assistance.

2. Community Contributions

From the start, PCI and the ORHS have recognized that an active and organized role for the community is vital for the development and extension of health services. This concept has been strengthened by the flexibility of the program to change and adapt its strategies as more experience and knowledge of the socio-cultural environment is gained. As a result, rural auxiliary nurses have rediscovered their identity as a part of that society, be it Quechua or Aymara. Through a process of community meetings and self-analysis, CHWs have been selected by their neighbors to voluntarily provide PHC services.

The indigenous community, by various means, is enlightening the formal health system as to the resources, social structure and cultural prerogatives which are essential to assure relevancy and sustainability. The ecological concepts which integrate the

natural environment, health and disease in relation to family and community, are aspects which are being incorporated through applied research and local programming.

By showing respect and promoting the dignity of the indigenous population, which traditionally has been the object of exploitation and ridicule, the program has generated a dynamic response from the community. An outward sign of this reaction is the construction of health posts using local resources, the planting of vegetable gardens, the building of latrines and irrigation canals, and other projects designed to improve living conditions. The most significant contribution, however, is that of participating in the decision-making processes. Moreover, medical personnel have come to appreciate certain aspects of Andean culture, and consequently have been able to communicate more effectively with these people.

V. RESULTS TO DATE

A. Outputs by Component

1. Program Planning

In 1980, the PCI country director participated in a review and completion of an assessment of health and health-related conditions in Oruro. This was followed by the development of the regional health plan, which established the strategy and components for extending health services in rural areas. Household surveys were later (1983) conducted in Districts C and E to establish statistical baselines; only the former survey has been tabulated and published.

The above activities were important in determining the parameters of the PHC program. Equally as significant was the process by which they were carried out. From the start, an environment characterized by team work, open debate and joint decision-making was established. Project Concern has been accepted as an integral part of the Regional Health Office, and has become a catalyst, as well as a technical resource, in the planning and development of many health sector undertakings.

2. Training

Total training activities have exceeded, thus far, the projections contained in the regional health plan, except where required personnel have not been hired and subsystems have yet to be developed. From September 1981 through December 1983, 36 courses comprising a total of 175.5 days of training were conducted for rural and regional support personnel, students and community representatives. Because many individuals attended more than one course, it was not possible to determine the exact number of persons trained according to level or position. The number of persons trained in each subject area is presented in Table 10 (Appendix C). A total of 3,623 participant-days of training has been accomplished. Areas receiving most attention have been the training of health promoters (31.9%), community participation (23.5%), traditional medicine (14.5%), and support systems operations (12.1%).

a. Level I - CHWs and TBAs

By virtue of a community-based process, led by rural auxiliary nurses, the residents of 36 villages selected 105 candidates to be trained as health promoters. From an initial course in community participation, one person from each village was selected by the PHC team to receive further training. Thirty health promoters were working at the time of the evaluation. Traditional birth attendants were likewise selected by their communities. The target was to train 30 TBAs in 1983, but only 15 could be recruited. All are currently working. It is too early to evaluate the stability and effectiveness of the CHWs.

The CHW curriculum, or study plan, developed by the Office of Planning and Supervision in Oruro is based for the most part on the national plan established by the Ministry of Health. It has been modified, however, to incorporate ideas from other experiences and to reflect local needs, particularly traditional medicine and community participation (Appendix E). A comparison between the national curriculum and the one used in Oruro is given in Table 11 (Appendix C). The ORHS plan contains one-third more training time, with substantial increases where health is related to the environment and the community. Maternal and child health and aspects of administration are also more detailed. A national curriculum also exists for training midwives; its focus was found to be too theoretical and "scientific." The plan developed by the ORHS is basically problem-oriented.

b. Level II - Rural Auxiliary Nurses

Without question, the rural auxiliary nurse (RAN) is a key element in the extension of health coverage, community participation, and the supervision of CHWs, and TBAs. Many auxiliary nurses have complained that their initial training had been insufficient. The responsibility of Project Concern has been limited to preparing existing RANs to adequately implement the process of selecting health promoters and to put into operation the various support subsystems. Almost one-fourth (23.9%) of the total participant-days of training has been directed at Level II (Table 10). Of this amount, the focus has been on support systems (42.0%), community participation (15.6%) and traditional medicine (13.3%).

By virtue of an agreement with the Ministry of Health, the Catholic Sisters of Jesus Maria have been authorized to prepare auxiliary nurses in Oruro since 1962. A total of 637 auxiliaries have been trained, responding primarily to the demands of the urban and mining areas. In 1982, a course was given exclusively to provide personnel for the rural areas, but with little change in the curriculum. Through 1979, the course consisted of one year of preparatory work and orientation, and a second year of basic nursing.

The current course has been reduced by the Ministry of Health to six months with a nationally standardized curriculum, to which the "Jesus Maria" school has added three months of orientation (Appendix E). The allocation of training time is presented in Table 12 (Appendix C). While considerable time is devoted to practice (80%) and a majority of hours (53%) are provided for primary "prevention," there is little flexibility in the plan for adapting to regional needs, in spite of the considerable ecological and cultural differences in Bolivia.

In 1982, the school received more than 1,000 applications, and in 1983 over 300, for a maximum of 50 places. "Jesus Maria" is well provided with classrooms, laboratory, library, pharmacy, a vehicle for field practice, and six teachers. The operating budget

was \$3,200, excluding the salaries of three volunteer teachers; student fees accounted for almost one-half of the total amount. In 1978 and 1979, the ORHS, with funds from UNICEF, conducted parallel courses for preparing auxiliary nurses. The ORHS has very inadequate training facilities and few supplementary resources.

In both institutions, the ORHS and "Jesus Maria," there is a need to improve communications and coordination in order to improve the training of rural auxiliary nurses. At the initiative of Project Concern, a joint evaluation is being designed which will analyze in depth the preparation and effectiveness of the rural auxiliary nurses and make recommendations for developing appropriate training programs without duplication of resources. In another attempt to improve PHC services in rural areas, the ORHS, with financial support from PCI, has sent 14 RANs to the Technical School of Health in Cochabamba to further their preparation as rural supervisors.

c. Levels III, IV, and V

Personnel requiring training at Levels III, IV, and V are those physicians, professional nurses and administrative staff who are expected to assume the training, supervisory, support, and mid-level executive functions within the rural PHC system in the future. The training directed at these levels is also detailed in Table 10; most of the training to date (17% of total participant-days) has been for support systems (32.3%), community participation (31.6%), and traditional medicine (20.6%). Seriously curtailing the training at these levels is the failure of the Ministry of Health to allocate the supplementary positions required by the regional health plan (Table 9).

At Level V, the Regional Health Office, coordination among the various technical and administrative divisions is characterized by personal relationships more than institutional prerogatives. While both areas are important to effective management, neither has been adequately addressed to date by training or technical assistance. The lack of a plan for developing an organizational structure conducive to supporting the regionalization strategy has hampered such an effort.

3. Development of Administrative Systems

The Regional Health Plan refers to the development of six administrative support systems: planning and administration, supervision, patient referral, purchasing and supplies, maintenance, and information and evaluation. A seventh "system" was mentioned regarding human resources development, which was to encompass training as well as personnel administration. Three of the above systems have been designed and implemented. The patient referral system was implemented on schedule in April 1982; the supervision and supply systems were implemented one year behind schedule in April 1983. Subsystems for planning and

administration, maintenance, and information and evaluation are currently two years behind schedule. The major factors causing these delays are unrealistic initial programming and a lack of timely and appropriate policies and guidance from the central MOH.

Manuals and guides have been written for each level of the supervision system. Its organization and procedures are well adapted to the regionalization scheme, but, as mentioned previously and like the rural drug supply system, it is currently being managed directly from the Office of Planning and Supervision (Level V) to Levels II and I. In spite of the recognized importance of community participation, no formal, active role for the community has been contemplated in either the planning or supervision systems.

Also, related to both of these areas is the large amount of information currently being required of the auxiliary nurses, primarily by the uncoordinated categorical programs of the MOH. Each month rural personnel must present five or more reports in Oruro to obtain the required 12 signatures from various offices of the ORHS in order to collect their wages. This process often takes up to one week in lost time and unreimbursed expenses.

The system of purchases and supplies (rural drug supply system) is one of the most important developments in the PHC system. From the start it was implemented in all of the districts of the ORHS, for economic as well as ethical reasons. In spite of a highly unstable and inflationary economic situation and while not yet reaching its full capacity, the system has been able to triple the value of the initial capital investment (in local currency) while maintaining consumer prices in rural areas at levels substantially below those of commercial retailers (see Table 13).

Adequate forms and controls have been established for purchases, inventory, distribution of drugs, and the recuperation of funds. Most pharmaceuticals are purchased locally; about a third have been ordered from MEDEOR, a German medical aid organization; in 1984 a major donation is expected from USAID/Bolivia. Prices for redistribution are pegged to the local wholesale market and provide a modest markup to hedge against inflation and cover administrative costs. The markup (difference between the consumer outlet price and the wholesale purchase cost) is shared equally between the regional administration and the rural service facility. The system currently handles 139 items and 83 distribution outlets; 119 drugs and medications and 20 supply items are provided to Levels III and IV; 85 and 19 respectively to Level II (RANs); and 21 and 16 respectively to Level I (CHWs). Requests from the field are made as needed and distribution is made on credit. Purchasing and accounting procedures for the rural drug system conform to the norms of the MOH and GOB. At present, the system is managed from the Office of Planning and Supervision and separate from the ORHS Department of Pharmacy and Laboratories, a much smaller and urban-oriented operation.

4. Community Participation and Traditional Medicine

The component on community participation was initially developed to prepare the rural auxiliary nurses to plan and execute group activities in the villages within their areas. A primary emphasis was to recruit candidates for the health promoter and traditional birth attendant courses. Later, the courses in community participation were used to orient mid-level and regional personnel towards providing appropriate direction and support for community-based activities. (This training is summarized in Table 10). The curriculum for training health promoters (CHWs) includes units covering the role and function of the CHW within the community and the role and function of the community vis-a-vis the health system.

The basis for the initial orientation in community participation was a manual prepared by the Division of Social Work of the Ministry of Health. It soon became apparent that this manual and its corresponding materials were not appropriate for the socio-cultural reality of rural Oruro in terms of perspective, content or methodology. As contact and understanding increased, the PHC staff realized that the form and process of community participation depends on the socio-cultural structure of the community itself, and not necessarily according to external criteria. As a result, the team has begun to define its own methodology and materials for promoting community participation.

A second aspect of this socio-cultural approximation concerns the relationship between the regional health care system and traditional medical beliefs and practices. The incorporation of a traditional medicine component within the PHC program was the result of a recognized lack of understanding about the area and the knowledgeable and effective assistance of a consultant anthropologist. This undertaking has been supported, financially and institutionally, by both Project Concern and the Regional Health Office by assigning a very conscientious full-time physician educator as coordinator of research and training in this area.

Research is systematically conducted to increase understanding about indigenous social structures and the conceptual framework, practices and practitioners of traditional medicine. A list of standard practices and procedures for the treatment of common illnesses and afflictions has been compiled. A herbal manual written by Joseph W. Bastien was also reproduced. This manual documents the use of medicinal plants by Callawaya Andeans and is based on ten years research by Bastien. This manual is used in the training of the CHWs and RANs and is gradually and partially being incorporated into the available resources at Levels I and II. The division of labor among the various traditional practitioners is also being studied in relation to physiological and psychological concepts of individual-community-environment. Attempts are gradually being made to establish mutually supportive relationships between CHWs and RANs and traditional healers in order to promote better patient care as well as prevent illness.

The PHC program has successfully applied the results of its research in other aspects of training and health education, notably in the production of educational materials and methodologies. Traditional legends, symbols and characters from Andean mythology have been incorporated into pamphlets, skits and posters promoting interventions such as immunizations and oral rehydration therapy. Likewise, comparisons have been systematically developed between the traditional and modern concepts, names, symptoms, causes, and treatment of common illnesses. The teaching methodology emphasizes the differences and similarities for the purpose of discovering and promoting ways of integrating the two systems.

By studying the social structure and cultural prerogatives of the indigenous community, the PHC staff is also searching for ways to assure the continuity and support, financial and social, of the community health workers. The investigation centers on understanding traditional means for compensating community service and responsibilities, and on finding an appropriate method for transferring or applying these structures to the CHW concept.

The predominant culture in Oruro is Andean: native Aymara or Quechua or often mestizo. Unfortunately, the modern education system -- to which health promoters, auxiliary nurses and health professionals have been progressively exposed -- has systematically disparaged traditional medical practices and instilled attitudes of disrespect towards native Andeans. As a result, the modern health worker is often, to varying degrees, alienated from the rural community, his ancestry and at times his own family. By placing a high value on indigenous customs, beliefs and practices, and by eliciting participation in these terms, the program has brought about a reawakening of personal identity, self-esteem and cultural pride in many promoters and auxiliary nurses and in some of the professional staff. Likewise, an attitude of respect and tolerance towards indigenous people and rural values has been instilled in a number of the regional health staff.

B. Program Impact

1. Reduction in Common Morbidity

The impact of the primary health care development and training program in Bolivia, in terms of improving the health status of the target population, cannot be estimated at this time. In early 1983 a household survey was conducted in District C to determine baseline rates for morbidity and mortality (Table 2). Significant differences should be ascertainable from a similar survey in 1986. A baseline survey was also conducted in District E, but the results have not yet been tabulated. The development of health information system, which would produce periodic statistics on institutional morbidity and mortality from rural areas, has also been delayed.

The regional health plan concentrates on the extension of health services, interventions, and resources while providing little basis for an epidemiological evaluation. This position is compatible with the premise stated by Project Concern in its Matching Grant proposal, that "improved health status will result from greater accessibility of health services, from more appropriate services, and from a higher quality of services provided.

2. Increased Access to Services

Tables 14 through 16 provide statistics on the number and utilization of government health facilities in Districts C and E. The number of functioning rural hospitals and medical posts has remained the same (six) since 1975. In 1982, four new health posts were opened in District C as part of the extension plan. This was accomplished by transferring auxiliary nurses from health posts having two RANs in other regions, resulting in an increase of 50% in Level II operating facilities in District C.

Of the 29 health promoters trained from District C, 26 began work in 1983; subsequently, three more withdrew. All seven of the CHWs who completed training from District E are presently working. Thus, by the end of 1983, thirty rural villages were being served by CHWs. Economic hardships caused some of the promoters to migrate from time to time, resulting in a 7.7% loss of service time. The quantity of specific services provided by community health workers in 1983 is presented in Table 17. These services were previously unavailable in the respective rural communities.

3. Increased Utilization of Services

The utilization of MOH health services by the residents of Districts C and E can graphically be appreciated in Figure 2 (Appendix C). Between 1981 and 1983, the number of consultations provided by auxiliary nurses at Level II increased by 43.8%. While some of this increase can be attributed to the increase in the number of functioning health posts, the average number of consultations per post per month also increased by 15.6% during the same period. It is highly significant that almost all of the increased utilization can be attributed to the health posts in District C where the program concentrated most of its efforts during the past two years. In that District, Level II utilization increased by 91.9% and consultations per post increased by 31.0% between 1981 and 1983.

Overall utilization of health services was 58.5% higher in 1983 than in 1981. Services provided at Levels III and IV accounted for 33.3% of the total utilization; Level II and IV accounted for 44.7% of the total; and, for the first time, by calculating adjusted annual services by CHWs, 22.0% was provided at Level I. Again, the results from District C are somewhat higher and reflect the impact of direct program intervention. Overall utilization rose by 63.6%; and the proportion of services provided by Levels III and IV, II, and I were 29.9%, 45.8% and 24.4% respectively.

4. Preventive and Promotional Activities at the Community Level

Community health workers were engaged in numerous activities during 1983 which have the potential for preventing illness and promoting health status. These include home visits (685), educational talks to women's and other groups (547), and community meetings (363). The adjusted rates for talks and meetings (1.5 and 1.3 per month respectively) were quite good, while the annual rate for home visits (1.3/household) was relatively low. Average attendance at community meetings was 25.6. The CHWs promoted various kinds of community and family projects which, during the first year, were not systematically recorded. These included vegetable gardens, latrines, irrigation canals and wells.

CHWs also referred many patients to RANs and physicians, and they served as liaisons between health personnel and community members, thereby making these services more accessible to peasant communities.

5. Improvement in the Quality of Services

Improvements in the quality of health services were not specifically cited as an indicator of goal achievement; they were implied, however, in both the Matching Grant proposal and the Regional Health Plan for Oruro. Towards this end, the program provided needed equipment, supplies and drugs to all levels of the rural system. Training was provided to upgrade the quality of services provided by 15 traditional birth attendants and to improve the diagnostic and treatment capabilities of 29 auxiliary nurses. The introduction of the patient referral and supervision systems should also contribute to an improvement in the quality of services.

VI. ANALYSIS OF RESULTS

A. Discussion of Impact and Outputs

Measures of intended impact and the focus of programmed activities are determined during the planning phase. The regional health plan for Oruro is a plan for the extension of primary and secondary health services. It concentrates primarily on physical and human resources projections, support systems development, training needs, and the requirements of the various categorical programs of the Ministry of Health. Specific interventions were not ranked according to epidemiological need or geographical distribution. Neither was adequate attention given to developing an appropriate organizational structure within the ORHS to support the regionalization strategy.

The impact of the PHC development and training program is most graphically demonstrated to date by the increased utilization of services at Levels I and II in District C (Table 14 and Figure 2, Appendix C). Overall utilization statistics began to increase in 1978 because of improved reporting and supervision. Utilization of medical facilities varies widely depending on the attitude and availability of visiting physicians. Through 1980, the utilization of medical facilities was substantially and consistently greater than that of health posts (RANs). Since 1982, the third year of PHC program development and the first year that program activities were introduced in the rural districts, the utilization of health posts became significantly higher than that of the medical facilities (58.6% in 1982 and 34.0% in 1983).

In 1983, the PHC services provided by community health workers at Level I accounted for about one-fourth of the total utilization in District C. This is significant in that 1983 was the first year in which these health workers were functioning and that they were serving only 23 villages out of an estimated 150 in those two Provinces. Undoubtedly, additional training courses for CHWs, and continued regional support, could substantially increase overall utilization through direct services and referrals.

Although the initial indications of success are encouraging, the overall rate of utilization of modern health services (387/1,000) remains quite low. This means that there are fewer than four consultations for every ten people during the course of a year. While this rate can and should be increased substantially, it is not known what an appropriate rate for the utilization of modern services might be in a system which consciously encourages the utilization of traditional practitioners. In this area, Project Concern can provide valuable insights in the future.

Several important factors will directly affect the continuity of services provided by CHWs. These include the degree to which they are incorporated and compensated within the community structure; the prestige and satisfaction they receive from their work; and the level of continuing education, support and supervision they receive

through the formal health system. The initial training of the auxiliary nurses and criteria for selection for rural posts can have a positive or negative effect on the results of the program. The RAN is often caught in the middle between the demands of MOH program managers and community expectations for which he or she is inadequately prepared.

Physicians, because of their professional status as much as their technical contribution, are important elements in rural health systems, especially in the areas of disease surveillance, medical consultations and supervision. Unfortunately, physicians and professional nurses in particular are very inadequately prepared to work within the socio-cultural and environmental reality of rural areas; neither are they prepared to carry out the required administrative functions. This situation is further aggravated by frequent and irregular rotation, and often absence, of personnel.

Through appropriate selection procedures and criteria, in-service orientation and training, and the implementation of effective support systems, many of these shortcomings can be alleviated. Full implementation of the administrative subsystems, however, depends on the allocation of adequate support personnel at all levels of the rural health system, to which the MOH has not been able to respond (Table 9). Without intermediate support personnel, at Levels III and IV particularly, the regionalized PHC system runs the risk of becoming one more categorical or vertical program.

Systems for supervision and information/evaluation, and to some extent those for financial administration and drug supply, will depend in large part on the design and outputs of the planning and programming system. Traditionally, planning within the Ministry of Health has been accomplished from the top down. The Regional Health Offices of Oruro and Cochabamba, recognizing the importance of local ecological and cultural variations and community participation, have proposed to formalize planning from the bottom up, with emphasis at the district level. Independently, the UNICEF integrated rural development program, based in La Paz and executed through the Regional Development Corporations, has elaborated its own system for community-based planning. The system anticipates the active participation of rural auxiliary nurses and school teachers; it is scheduled to be introduced in District C in 1984.

The success experienced thus far in the development of the rural drug supply system is in large part due to the administrative and analytic capabilities of the economist who directs this component. The low salary level currently assigned by the MOH, however, does not correspond to the level of responsibility or qualifications required in the position. This places in doubt the possibility of attracting and retaining capable personnel for replicating the system in other regions. The positive results obtained to date are tempered by the real threat of decapitalization due to runaway inflation; nevertheless there is a strong reason to believe that the drug supply system may eventually be able to generate sufficient revenue to partially support other rural health and support activities.

B. Planning and Design Process

Project Concern's decision to work with and through the GOB health structure, while at times frustrating, has been effective in significantly increasing the prospects for sustaining and replicating the program. The Ministry of Health has major responsibility in attending to the health needs of the population but has increasingly insufficient resources. An expanding number of MOH personnel have received training and experience in planning and implementing the rural primary health care system. The selection of Oruro as the site of the program was a joint effort with the Planning Office of the central MOH. The process involved the establishing of appropriate criteria, site visits and the analysis of results.

PCI staff and center of operations have been completely integrated with the Office of Planning and Supervision of the Oruro Regional Health Service. Together, a regional plan for the extension of PHC services was developed and accepted by both parties as the basis for coordinated action. Both PCI and the MOH/ORHS give priority to primary health care services as defined by the World Health Organization. Likewise, PCI supports the general strategy in Bolivia of "regionalization" -- the geographic decentralization of service levels and support functions -- and the maximum utilization of paramedical and community health workers.

Project Concern concentrates its resources on particular areas of activity -- training, support systems, traditional medicine, etc.; all components and activities, however, are developed and coordinated by group process in the Office of Planning and Supervision. Similar coordination takes place with participating agencies. Efforts were made to assure that the regional health plan would be compatible with the regional development plan elaborated by the Regional Development Corporation of Oruro (CORDEOR). UNICEF has collaborated with training community health workers and is at present being consulted for the purpose of standardizing local planning methods. The staff of the "Jesus Maria" School for Auxiliary Nurses and the Department of Continuing Education of the ORHS have been brought together to conduct a joint evaluation, with the Office of Planning and Supervision, of rural auxiliary nurses, as a first step towards adapting training programs to current regional needs.

Less success has been obtained in integrating the categorical program offices -- maternal and child health, environmental sanitation, epidemiology, and tuberculosis control, in particular -- into the planning and development of the regionalized system. Interdisciplinary task forces were formed during the development of the regional health plan (see Appendix D); subsequent coordination, however, has been minimal. Another attempt towards maximizing ORHS resources by concentrating on priority problems at the local level will begin shortly with the development of the community-based planning system. At the same time increased coordination will be pursued for the design and implementation of a unified information and evaluation system.

C. Program Management

1. PCI Field Activities

The management of PCI resources for Bolivia is conducted by the Bolivia Director from the Office of Planning and Supervision. Checking accounts are maintained in dollars and local currency; accounting follows a standard PCI system. Personnel regulations and office systems for filing, security, records, etc. were upgraded in 1983 during the visit of PCI's Director of Administration. Only one other non-Bolivian staff person (the nurse trainer) and the part-time PCI bookkeeper/bilingual secretary are subject to PCI policies and direct supervision. Three Bolivian program staff currently paid by PCI are subject to MOH regulations and salary scale.

All PCI activities related to the implementation of the Oruro regional health plan are coordinated and managed within the framework of the Office of Planning and Supervision. The recently expanded PCI role in Bolivia, including the PHC development activities in Cochabamba and the provision of training and technical assistance for rural drug supply systems in three other Departments, is managed by the Bolivia Director. This expansion of activities will increase PCI's management needs, particularly for accounting, reporting, logistics and record keeping. Likewise, the PCI administrator/planner will have less time for training and technical assistance in Oruro.

Annual field budgets and program projections are prepared in Bolivia in September and October each year. These are based on the regional health plan and modified as local circumstances (natural, political, social and economic) demand. It is acknowledged, however, that field budgets and cash flow projections seldom determine the amount and timing of disbursements. Deposits by the central office to the field bank account are primarily based on the availability of funds and perceptions of field needs at the central level. Considerable delays in disbursements from funding agencies have compounded the problem of maintaining adequate cash flows from San Diego. The major deficiency, in the view of the evaluators, however, is one of communication between the two offices (compounded by serious delays in Bolivia's unreliable postal system.) Often field budget decisions have been made by the PCI Executive Director with little or no consultation with the Bolivia Director. Country programming has become more and more difficult because the availability of resources has not been known in advance. Creative and adept fiscal management by the Bolivia Director, coupled with continuing devaluation of the Bolivian peso, has so far circumvented serious problems in program implementation.

There is little doubt that the success of the program in Oruro to date is due in large part to the technical and administrative capabilities of the PCI staff. Training and technical assistance has not only been appropriate but delivered within the local cultural and institutional context. The program has also benefitted from the high caliber of personnel provided by the MOH to the Office of Planning and Supervision. To the credit of both organizations, the staff has functioned as an effective and mutually supporting team.

Several areas are apparent, however, where local capabilities could be strengthened through periodic technical assistance. These include (i) proposal writing to secure complementary funding; (ii) the design and analysis of baseline activities; (iii) non-formal education and human relations training sessions, particularly for integrating categorical programs; and (iv) administrative analysis and organizational development at the regional level. While these needs were expressed by the Bolivia Director, and confirmed by the evaluators, the PCI home office maintains that no specific requests for technical assistance in these areas have been made. Again, improved communications appear to be needed in both directions.

2. Home Office Support

The central staff of Project Concern in San Diego numbers about 25 persons, of which 80% are involved with administrative and fund raising functions. The Health Services Department (HSD) is comprised of a 3/4-time director, two regional program directors and one secretary. The permanent staff has been supplemented by one volunteer public health physician who has considerable public health experience both in the US and overseas. He spends two days a week at PCI. The HSD is also supported by an International Health Advisory Committee (IHAC) and recently by a graduate intern from the University of California at Los Angeles School of Public Health. The intern has been assisting with the development of an organizationwide information/evaluation system.

The PCI Executive Director, the HSD director and the regional director for Latin America have joined the organization within the past two years. The current Executive Director was brought on to deal with serious financial problems facing PCI at the time; these have apparently been surmounted. Decision-making regarding budgets and disbursements is centralized in the person of the Executive Director. The central staff has considerable strength and overseas experience in rural development; only the Regional Director for Africa, Asia, and the Pacific and the part-time physician have extensive experience and specialized training in areas related to PHC program development. However, the benefit of this experience as well as that of the IHAC, has not been felt in Oruro. PCI has plans for adding a technical health services specialist to the HSD staff as soon as adequate funds are available.

In numbers and time alone, the central technical staff can improve its ability to effectively backstop eight field programs. Of the permanent and supplementary health staff, including the Executive Director, only the Regional Director for Latin America and the Director for Administration and Personnel have visited the Oruro program. Aside from the PCI newsletter, Field Notes, there are few formal exchanges of information, workshops or site visits among the various PCI country programs to discuss and analyze mutual problems, views and needs. Although PCI supports such strategies in principle, in practice resources are a continual constraint on implementation.

The PCI home office, like most PVOs, cannot and does not neglect the necessary and time consuming myriad of details of generating

resources and maintaining the organizational structure. These constraints and pressures bear directly on the staff of the Health Services Department, correspondingly limiting the time and energy of the four individuals responsible for the technical backstopping of PCI's eight field programs. The central staff, however, does not feel that there are a major communications, decision-making, or support problems regarding the program in Bolivia.

3. Host Government Role

The Ministry of Health has a direct role in managing GOB resources and activities related to the implementation of the regional health plan. Personnel, financial and material resources are administered by the ORHS; the central MOH has no direct role, other than paying personnel and monitoring, albeit minimally, program developments. The purchasing of pharmaceutical and medical supplies for the rural drug system follows standard GOB procedures and is the responsibility of the administrative staff of the ORHS. The management of the Office of Planning and Supervision is at present conducted on a rotating basis with the Director of Planning, the Rural Supervisor, the Physician Educator and the PCI Director each taking charge for six-month periods. The office is directly responsible to the Regional Health Director.

One of the major barriers confronting the development of the regionalized rural health care system is the organizational structure of the Regional Health Service. The current structure responds to traditional management patterns which are based on centralized decision-making and the relative autonomy of the categorical programs. These patterns do not lend themselves to the decentralized and horizontal needs of regionalization. The administrative support systems being developed by the Office of Planning and Supervision and Project Concern have tentatively organized the extension of services throughout the rural areas (Levels I to IV); but full implementation has not been realized because of this incompatibility at the regional level and the lack of sufficient administrative personnel at the intermediate levels.

The basic management problems of the current structure are illustrated in Figure 3 (Appendix C). Strategies and directives from the central level MOH are often uncoordinated, unclear and conflicting. Categorical program heads at the regional level are responsible to two chiefs: their national counterparts, who provide the resources and program mandates, and the Regional Health Director, who is charged with coordinating and directing all activities within the region. The Regional Health Director has an excessively broad and unmanageable span of control, which includes 14 divisions plus all field facilities. Currently, all rural facilities are at the same level administratively and relate directly to the regional office; physicians/hospitals report to the Regional Director and auxiliary nurses are responsible to the Director of Nursing. Categorical program divisions plan and conduct specialized and generally uncoordinated activities to essentially all facilities. Field personnel are often confused and frustrated by the myriad demands on their time.

One possible alternative structure, which would respond to the requirements and needs of regionalization, is provided in Figure 4 (Appendix

C). The planned PHC system provides for a decentralized hierarchy of rural facilities by geographic area and service levels. Program and administrative divisions are organized into functional groups for the purpose of enhancing coordination and increasing the effectiveness and efficiency of control by the Regional Health Director. A unity of command is established between the national and regional levels, on the one hand, and the regional and field (district) levels on the other. However, until the Ministry of Health adopts a regionalized system of programming, budgeting and resource management, these changes are unlikely to occur.

4. USAID/Bolivia Relations

USAID/Bolivia has no direct role in managing or monitoring the PCI program in Oruro. Intermittently the PCI director has informed the mission about activities, progress and constraints. On one occasion the Chief of Health and Human Resources briefly visited the project site. Recently, based on the experience in Oruro, Project Concern was granted a fixed price contract by the mission to provide training and technical assistance in establishing rural drug supply systems in the Departments of La Paz, Chuquisaca and Potosi.

5. Monitoring and Evaluation

Continuous monitoring and evaluation of program activities takes place as a group process within the Office of Planning and Supervision, but without benefit to date of a systematic data collection. The information and evaluation subsystem contemplated in the regional health plan has not yet been established. In 1983, PCI/Bolivia initiated an annual process of "evaluation by objectives". Specific evaluations have been or shortly will be conducted for the rural drug supply system, the training of rural auxiliary nurses, and traditional medicine.

A monitoring and evaluation scheme is described in PCI's matching grant proposal; this system, however, was not put into practice in Oruro. Statistical counts of various program activities are regularly collected by the central office, and these are duly reported to the PCI Board of Directors and funding agencies. In several matching grant projects, PCI's reporting system has led to modification of field program strategies. From the Oruro perspective, however, there have been some instances when field reports were not systematically analyzed for the purpose of evaluating and modifying field program strategies and activities or identifying implementation and technical assistance needs.

Monthly activity reports from the field are heavy on narrative and supplemented with expenditure reports. The Bolivia Director took the initiative to submit quarterly reports in 1983 as a means of broadening the perspective of program development and review. Recently the HSD graduate intern has been working on a standardized information system for the organization. Progress has been good, but the diversity of the various country programs has mitigated against the development of

a detailed instrument with sufficient specificity to serve individual program needs. The Bolivia program, for example, needs a practical community assessment instrument, specific operations research studies, and an efficient method for evaluating training activities.

D. The Importance of Program Environment

The progress made thus far in Oruro is all the more admirable considering the unusual and complex number of constraints and events over which PCI and the Office of Planning and Supervision have had no control. Natural, cultural, economic, social, political and institutional factors have combined to complicate program strategies and development, thereby demanding adept management skills on the part of the staff. Under the best of circumstances, rural Oruro is a harsh and desolate environment. The population is widely dispersed and systems of communication and transportation are precarious. In 1982-1983, severe drought affected the region -- the result of "El Nino" -- causing economic and social misfortune. In some areas, health workers and even whole villages were forced to migrate. Within a year, the same region was hit with devastating floods, which destroyed crops and villages and periodically closed roads and isolated all but the capital city.

The strength and resilience of the indigenous population, based in part on the concept of unity with nature and community, has provided the foundation for recovery. For the primary health care program, these traditional social structures have required new approaches to community participation, CHW compensation and acceptable medical practices. In some cases, traditional beliefs and practices have necessitated new technologies, e.g., above-ground latrines and lorena stoves. In others, they have provided effective solutions, for example adapting folktales and legends to health education themes.

Rampant inflation has taken a serious toll on the purchasing power of the Ministry of Health, and has been particularly devastating on the livelihood of marginal families. The official consumer price index has increased approximately 1,500 percent during the past two years. Rural incomes and the salaries of public health workers have not risen nearly as fast as the cost of goods and services. The continuous devaluation of local currency, more than 7,000 percent during the same period, has disproportionately, and almost incomprehensibly, affected the cost of imported goods, including medical and pharmaceutical supplies, vehicles and construction materials.

The economic crises, combined with a seemingly uncontrolled restoration of "democratic" processes in Bolivia, has threatened the stability and effectiveness of the present government. The politicization of government agencies has produced confusion, conflict and lack of direction. More than 300 strikes, since October 1982, have virtually paralyzed transportation, commerce, banking, public service and other sectors for extended periods of time. These constraints have compounded traditional administrative and resource deficiencies within the Ministry of Health. Often there exists an incompatibility between programmatic policy and institutional structure -- notably, the autonomy of

categorical programs and centralized fiscal management vis-a-vis the regionalization of health services. Similarly, a significant gap persists between political/technical pronouncements and the Ministry's ability to deliver at the field level.

E. The Importance of Financial Constraints

Financial constraints have been apparent within both Project Concern and the Ministry of Health. The major limitation in terms of program development is manifest in the inability of the GUB to provide the required increases in personnel called for by the regional health plan. In real terms, the operating budget of the MOH has decreased by more than 70 percent in each of the last two years. Recent salary demands by public employees, to counteract the increased cost of living, and the precarious economic crisis facing the government (and country) as a whole, have strained the national treasury. The prognosis for improvement in the near future is not good.

Local operating costs have also increased drastically due to inflation. Fortunately for PCI, currency devaluation has provided greater purchasing power for U.S. dollars. This alone has prevented serious constraints regarding the availability of resources from Project Concern. Cash flow constraints at the home office have threatened to adversely affect local programming efforts. Had the MOH been able to provide its personnel as scheduled, it is quite likely that the financial assistance from PCI would have been insufficient.

VII. CONCLUSIONS AND RECOMMENDATIONS

A. General Conclusions

1. Project Concern has successfully contributed to the extension of primary health care services in the rural areas of Oruro. Community health workers (CHWs) have been trained and are currently providing basic curative services and carrying out health promotional activities in thirty villages where such activities had previously not existed. The skills and techniques of fifteen traditional birth attendants (TBAs) have also been upgraded through training and the provision of supplementary equipment. The utilization of services provided by rural auxiliary nurses (RANs) has increased significantly in the first implementation district.
2. Administrative support systems have been designed and partially implemented for patient referral, supervision, and most significantly, drug supplies. Development of the systems has been a joint effort within the Regional Health Office, which strongly favors sustainability, and effectively reaches the village level. Implementation at the district level has been delayed by the lack of sufficient support personnel and adequate policy guidelines from the central Ministry. As a result of these shortcomings as well as over-optimistic programming, the implementation of the regional health plan is approximately two years behind schedule.
3. Program integration has been achieved between Project Concern and the Oruro Regional Health Office. A joint planning process produced a regional health plan which has been accepted by both agencies as the basis of their activities. Operationally, PCI personnel and resources are incorporated into the Office of Planning and Supervision. Thus far, a spirit of teamwork and group decision-making has prevailed, in which PCI staff often serve as a catalyst. The tenor and substance of relations between the field and home offices of PCI, however, have been less congruous. From a field perspective, there is insufficient communication, inadequate technical support, and prejudicial delays in responding to field needs.
4. A very significant innovation in the Oruro PHC program is the effort to bring together the traditional Andean and Western societies through a process of research and training. Project Concern and the Regional Health Service have begun a process aimed at increasing awareness and understanding of traditional beliefs and practices regarding health and illness, social organization, and indigenous cultural values, and applying these concepts to improve the utilization of health services and the effectiveness of community participation. This process of reconciliation between cultures is in a firm but incipient stage of development, and if forced, its potential achievements on alleviating cultural barriers may be threatened by real social, political and institutional confrontations.

5. The strategy of regionalization of health services -- the geographical decentralization of planning and executive authority is currently facing three significant obstacles in Oruro. Sufficient human resources have not been assigned by the Ministry of Health to the intermediate support and services levels. Functional integration among categorical programs and administrative divisions has not been accomplished in a manner conducive to coordination and unity of command. Despite a policy to the contrary, political disarray and a lack of coordination have continued to favor the preeminence of categorical programs and to undercut effective support and guidance for regionalization.

6. Three factors are also working in support of regionalization in Oruro. The regional health plan for the extension of coverage is compatible with the Regional Development Plan; close communication and coordination exists between the ORHS and CORDEOR. Common goals, joint planning and reciprocal assistance exists with several other Regional Health Services, notably Cochabamba. The regionalization scheme has had the explicit support of the Regional Health Director.

B. Special Areas of Interest

1. Benefit Distribution and Spread Effects

The benefits of the PCI/ORHS program have been felt at different levels. Most important, the resulting primary care system has directly reached the intended residents of rural communities. Thirty villages, comprising approximately 7,500 people, are currently being provided with basic first aid and health promotional services by community health workers and trained traditional birth attendants. Sixty-two rural facilities, 82% of the total ORHS facilities, are being supplied by the rural drug system. Utilization of services provided by auxiliary nurses in District C has increased by 92% in the past two years. It is very unlikely that these accomplishments would have been achieved without the presence of Project Concern.

The formal training and administrative systems development activities, which have taken place within the ORHS structure, are positive steps to insure that the benefits will continue to spread throughout the Department of Oruro, providing that support for the strategy and activities of regionalization continues at the regional level. A major obstacle to the extension of PHC services, other than climatic conditions, is the inability of the Ministry of Health to provide the necessary personnel. Curricula have been designed for training CHWs and TBAs; supervisory and training staff have been trained at the regional level and in some districts; support systems are being developed which are applicable to the whole Department. A regional plan has been designed and approved to guide expansion of the program into the remaining districts. As this expansion is undertaken, and particularly as the community-based planning and integrated

health information systems are implemented, a second obstacle or counterforce will become increasingly present: resistance by the categorical programs to the regionalization strategy.

In a less tangible manner, PCI's presence as a catalyst and promoter of a team approach has had a noticeable effect on the counterpart staff of the Office of Planning and Supervision. Positive attitudes and working relationships are reflected not only among team members, but also their respect and consideration for indigenous villagers is genuine. Continuing social and political strife in Bolivia, however, threatens to undermine the will and efforts of even the most dedicated public servants. The effects of the PHC program in Oruro are also spreading beyond the limits of the Department itself. Seminars for teachers and students have been held in Cochabamba; PCI has been awarded a contract to implement rural drug supply systems in La Paz, Chuquisaca and Potosi; and steps have been taken to coordinate the development of support systems in Cochabamba and Santa Cruz.

2. Sustainability and Replicability

PCI has been highly successful in integrating its staff and resources within the ORHS and in supporting the regional health plan. The sustainability of the regionalized system of primary health care services has been enhanced by the group process which has been employed to develop training curricula, administrative support systems, and in utilizing the results of socio-cultural research. PCI's presence often bolsters ORHS positions on innovative or controversial issues, such as those related to regionalization and traditional medicine. If Project Concern were to leave in the near future, some aspects of the program would likely succumb to traditional organizational and political interests.

PCI-supported activities, while at times met with resistance or controversy, do not contradict current MOH strategies. The controversies involve internal debates which are inherent to all bureaucracies -- i.e., personality differences, jurisdictional struggles, ideological differences, etc. They would be present regardless of the kind of program being implemented. The key factor, which is significant and positive for sustainability, is that the debate is being waged within the Ministry of Health and not between it and an outside, independent organization.

The progress being made regarding the intercultural aspects of the program is considered to be unique in that it relates to rural Oruro communities specifically. Thus, whether the results can or should be replicated is debatable. The generic process of research, analysis and application, however, is universal and sound. Specific applications in the areas of community organization and participation, and culturally-adapted training and educational materials and methods are likely to remain as long as resources are available for these activities. Historically,

these are low priorities within the MOH budget; financial support, and thus sustainability, would most likely have to come from private sources.

There is strong indication that the major focus and initiatives for expanding rural health services and developing operational support systems will be forthcoming from the regional health services. The central MOH is plagued by incoherency and politicization. The regions, those with strong leadership, are moving ahead to the extent that resources and creativity permit. The ORHS and PCI are in the forefront of this movement.

Sustainability and replicability are interconnected to the extent that delivery mechanisms and support systems within the various RHSs are compatible and communications between the regions are enhanced. The interchange of technical assistance improves the chances of compatibility, and through coordination the position of one RHS can provide valuable support to the endeavors of others. PCI has been requested to expand its program into Cochabamba, while the CRHS staff has provided guidance in establishing a community-based planning system in Oruro. PCI has also been given a contract for implementing a rural drug supply system in three other Departments. Initial contacts have been made to coordinate strategies and systems with a local PVO which is providing technical assistance to two health districts in Santa Cruz.

Project Concern is not incorporated in Bolivia, but has indicated a desire to work in Oruro for at least five more years and in Cochabamba for perhaps longer. It has gained the respect and support of MOH and local officials. PCI's two non-Bolivian staff members are well assimilated into the local culture. The chances for long term sustainability of PCI efforts, i.e., institutionalization, are greater the longer PCI remains involved. This is not because implementation is dependent upon PCI, but rather because the development of human systems is a long and deliberate process which requires constant, if diminishing, reinforcement.

3. Cost-Effectiveness

Almost seventy percent of total PCI expenditures of \$385,251 has directly benefitted field operations. Table 5 (Appendix C) reclassifies these expenses by program component. Of the \$260,170 spent on field operations, 30.1% was used for primary health care, 10.3% for training and traditional medicine activities, and 7.6% on planning and administration for the overall regional health plan. Technical assistance and support costs averaged about one half of total field expenditures. The Project Concern field director divides his time more or less equally between the development of support subsystems for the regional plan, and PCI business and interagency coordination. PCI's nurse educator spends most of her time on training (up to 90%) and the remainder on subsystem development.

The calculation of per capita expenditures on PCI's total investment is somewhat arbitrary due to the broad and integral nature of the program and the difficulty in defining the target population. The regional health plan calls for implementation and extension of coverage in stages, beginning in District C. The provision of equipment, additional rural personnel and their training is directly related to the size of each District. However, the resources applied to the development of the plan, support subsystems, training of regional personnel, purchase of drugs, research on traditional medicine and the production of educational materials benefit not only the target districts but the rest of the Department as well.

The result is that per capita costs tend to peak in the second or third year (after the initial planning and start-up phase), then will decrease as more recipients (districts) are added. (The effects of inflation and currency devaluation are other significant factors which will vary from country to country). PCI per capita expenditures in Bolivia rose from \$2.39 in 1981 (the second year of operation) to \$2.91 in 1982, based on the population of District C, then dropped to \$1.85 in 1983 when District E was added to the program.

4. Traditional Medicine and Community Participation

Frequently, indigenous cultures are viewed as a bastion of conservatism, offering little possibility for achieving innovative change. The experience in Oruro is on the forefront in uncovering the means by which traditional mechanisms of communal interaction, culturally established roles and institutions, and indigenous value systems can become factors of change. Innovations are often rejected not because of a lack of intrinsic worth in terms of function, but because the vehicle or process employed is inappropriate. Requiring the formation of a health "committee" to facilitate community participation is not an uncommon example.

Employing a health care strategy which is based on or compatible with local cultural prerogatives permits a more rapid and effective introduction of new knowledge, techniques and attitudes. This is a two-way process. Legends and beliefs may provide a vehicle for health education; local herbs may find an accepted place in the rural pharmacy. The health professional searches for an effective channel of communication; the CHW may obtain community support by being accepted in a traditional role. In this manner, culture becomes the vehicle of and not an obstacle to change; while change is not disruptive of society and culture but rather enhances it.

Discovering the socio-cultural bridge between two societies may be the most important step in increasing service utilization and improving health status. Certainly, the rediscovery of one's own identity and ancestry, as in the case of auxiliary nurses, will not only improve communication and understanding, it gives meaning to life itself and one's place in society. These are immeasurable

contributions which PCI is promoting and supporting in Oruro, Bolivia.

C. Recommendations

1. General

1. Firmly continue the current strategy of "regionalization" of health services to extend coverage in rural areas. Vast ecological and cultural differences within Bolivia require flexibility at the regional and district levels in program planning and execution. This policy also tends to strengthen local management capabilities and to diminish central political manipulation.

2. Firmly continue and expand the development of primary health services in small rural villages (Level I) through the training and support of community health workers (CHWs) and traditional birth attendants (TBAs). These activities must be accompanied by support for the process of socio-cultural adaptation between the traditional and modern health systems.

3. The interagency agreement (MOH-PCI) governing Project Concern's participation in Oruro should be extended until at least 1989. An extension is necessary because of delays in program implementation and in order to adequately develop and install the administrative support systems. Due to the "savings" produced by recent local currency devaluations, this extension could be accomplished with relatively little increase in PCI's overall dollar budget for the program.

4. The Ministry of Health must substantially improve its compliance with the provision of necessary human resources as required in the Regional Health Plan. In particular, the successful implementation of the plan depends on the allocation and training of adequate numbers of support personnel at the intermediate levels (II, III and IV) of the rural health system.

5. Relationships with other Regional Health Services and organizations working with the RHSs should be strengthened for the purpose of coordinating strategies and standardizing essential aspects of the administrative support systems. The MOH-PCI agreement should be amended to permit PCI's participation in the Department of Cochabamba to support the regionalization of health services through the CRHS. Complementary activities with the two regional health offices would be mutually supportive. In light of the current political and economic crises, consolidation and expedition of development activities appear much more feasible at the regional, rather than national, level.

Program Impact

6. The planning and execution of specific interventions for the promotion and protection of health should be based on local demographic disease patterns as determined at the district level. The technical and financial resources of categorical programs should be directed to support these interventions where they apply.

7. Project Concern should actively promote the incorporation of intersectoral or extrasectoral activities within the primary health care strategy, especially towards the improvement of nutritional and economic status. Expansion of family vegetable gardens (with IBTA, et al.) and small animal production (with Heifer Project) should be explored. Likewise, a more concerted effort should be made to promote the provision of safe water supplies in rural villages. These activities do not necessarily have to be supported with major outlays of money or direct technical assistance; coordination with other agencies may be more advisable.

8. The household survey which was conducted in District E in 1983 should be tabulated and analyzed in order to establish baseline indicators for that district. Similar surveys could be repeated in Districts C and E in 1986. This should be sufficient time, barring further delays or natural disasters, to evaluate program impact on health status.

9. A simple system should be established at the village level to record basic vital events -- births and deaths, and perhaps permanent migrations. Such a practice would overcome the deficiencies of recall in household surveys to determine birth and death rates. The transfer and tabulation of data could be incorporated into the regular health information system. By recording births, deaths and community size, the community health worker may also be providing a recognized social service.

10. Project Concern should carefully monitor the selection of traditional practitioners as community health worker candidates and the degree to which traditional community roles are assigned to CHWs by the village hierarchy. These would appear to be excellent indicators of acceptance by the Andean communities of the modern health system. Service utilization rates at the village level should also be systematically recorded as an important contribution to the future establishing of norms for a system which interfaces with traditional practices.

3. Planning and Design

11. Due to the delays by the Ministry of Health in providing the required number of rural health personnel, the implementation schedule of the Regional Health Plan should be updated. The plan should also be modified to consider the implications of

local epidemiological patterns on the planning and execution of specific interventions.

12. A complementary plan and strategy needs to be formulated to design and implement an appropriate organizational structure within the RHO (Level V) to accompany and support the regionalization of health services. Field services and administrative subsystems are being developed according to one strategy (i.e., regionalization), while the Regional Health Service is currently organized to support another (categorical programs).

4. Training - Level I

13. PCI and the ORHS should continue their efforts to adapt the training curricula of health promoters (CHWs) and TBAs to the local socio-cultural situation and disease patterns. Training should be oriented even more toward specific problems and should focus on practice as much as possible.

14. The program should resolutely continue its process of research and analysis aimed at discovering appropriate mechanisms by which the functions of the health promoter might be incorporated and supported within the traditional social structures of the community. The fruits of this search will effect not only compensation for the CHW but also sustainability of the system as a whole.

15. In 1985, PCI and the ORHS should evaluate the stability and productivity of the health promoters in Districts C and E, in order to establish realistic selection and training requirements. It is possible that the selection process, coverage per CHW and functions of the CHW, as well as training curriculum, may need to be modified.

16. The ORHS must continue to give high priority to providing the incentives necessary to assure the continuity and effectiveness of the community health workers. These include recognition and status, continuous supervision and a constant supply of drugs and medications.

5. Training - Level II

17. The proposed joint evaluation of rural auxiliary nurses is extremely important for providing the foundation for developing appropriately trained personnel and also for bringing together the two organizations involved. It is recommended that the evaluation team include a third, independent party, to increase objectivity and reduce tensions, but that PCI personnel not be directly involved in order to protect their neutrality.

18. The results of the above evaluation, together with the adaptation of national norms to regional and local needs, should provide the basis of a new curriculum, in terms of content, methodology and length of studies. The evaluation should also identify the deficiencies of current rural auxiliaries and provide the basis for designing and executing of continuing education courses.

19. In order to conserve resources, a single organization should be designated to prepare auxiliary nurses for rural areas. This organization should demonstrate technical capacity, socio-cultural sensitivity towards indigenous communities, and possess adequate teaching facilities. External resources, e.g., from UNICEF, should be directed in support of this program.

20. Adequate criteria and procedures for the selection and placement of auxiliary nurses for rural positions need to be developed and observed at the regional level. These criteria should take into account the candidate's training, social and cultural orientation, and administrative capacity; the intended community should have an active role in the selection of its nurse.

6. Training-Levels III, IV and V

21. Approximately two weeks of training should be given to incoming physicians and graduate nurses to orient and prepare them for work in rural areas. This training should include a survey of local demographic-disease patterns, social, cultural and economic considerations, the regionalization of health services, and the management of support subsystems.

22. Adequate criteria and procedures for the selection and placement of district medical officers urgently need to be developed and observed at the regional level. These criteria should include a knowledge and understanding of rural conditions, demonstrated support for the regionalized system of health services delivery, and administrative and supervisory capacity.

23. Because physicians and nurses are rotated in and out of rural posts throughout the year, and often one at a time, adequate orientation and training has been very difficult to provide. The ORHS might consider placing those health professionals who arrive during the first quarter of the year in one district, and so on. Thus, training could be adapted to and conducted in each district and could be done within three months of the individual's arrival.

24. To overcome current communication and coordination problems among the various divisions of the regional health office, a process of group analysis and problem solving should be developed and initiated at the regional level in the areas of organizational development, human relations, group dynamics, and nonformal education.

7. Administrative Support Systems

25. High priority should be given to the design and implementation of a system for field level planning (local programming) to determine the appropriate health interventions and activities in each district. The planning/programming system provides the basis for the interrelated systems of supervision, information, and continuing education.

26. A separate system of personnel administration should be developed based on the requirements of regionalization. The system should be accompanied by a manual of regulations and norms which respond and adhere to legal and programmatic dispositions.

27. Participant communities merit a formal and significant role in the processes of defining local problems, planning health activities, and supervising health personnel. The formal systems being developed by the ORHS should make provision for this participation.

28. Information requirements for monitoring and evaluating program activities should be simplified, integrated and rationalized within the context of local and district programming and regionalized planning and administration. The current number of reporting forms and time spent on data collection need to be significantly reduced. The data should be consolidated by service levels and the information made directly useful to each level of operation.

29. As a temporary measure to reduce the amount of unproductive time the auxiliary nurses and other rural personnel spend in Oruro to collect their monthly pay, the ORHS director should seriously consider appointing one office to collect and certify the submission of reports. This office, which could appropriately be the Office of Rural Supervision, would then distribute the reports to the respective technical divisions.

30. The evaluation results strongly support current requests for the assignment of a statistics clerk to the Office of Planning and Supervision to process and tabulate data concerning rural health activities. This person will become indispensable with the implementation of the rural information system.

31. The ORHS needs to monitor and assure the compatibility of independent but related activities, which compromise health personnel and other resources in rural areas, with the norms and systems established for regionalization. Of particular concern at present are the UNICEF initiative in "community-based planning" and PAHO criteria for information systems and training.

8. Rural Drug Supply System

32. A more thorough orientation and understanding in the management of the rural drug supply system is required at the higher levels of the ORHS. Eventually, these management functions should be transferred from the Office of Planning and Supervision and incorporated into a single supply system serving both rural and urban facilities. This transfer would be advisable only when an adequate analytic and administrative capacity has been developed within a revised (see Recommendation 12 above) regional support structure.

33. The continued expansion of the rural health system, by levels and increased utilization, will require an additional capital investment over the next several years in order to avoid decapitalization due to high inflation. The proposed donation of pharmaceuticals may satisfy this need depending on the kinds of drugs received and pricing/repurchase conditions imposed.

34. In order to assure the stability and cost/effectiveness of the rural drug supply system, all donations of drugs and medications or capital must comply with the norms and policies established for the management of the system. This is particularly important concerning pricing, distribution and purchasing of commodities.

35. Because of the large and increasing amount of data which is being managed and the need to make timely decisions (vis-a-vis inflation and prices, for example) a study should be undertaken to determine the feasibility of computerizing the data processing component. It is also necessary at this time to make some macro and micro economic projections, under various conditions, for medium and long-range planning.

36. Based on early results, the rural drug supply system shows promise of being able, under good management, to not only resupply itself under difficult circumstances but also to generate excess funds while providing necessary drugs at reasonable and competitive prices. As a result, it is necessary to elaborate appropriate norms and regulations governing the use and destination of these excess funds at the various levels of the system.

37. The magnitude and complexity of the drug supply system will require the control provided by an independent, external audit. The audit should be conducted on an annual basis and can be financed from the proceeds of the system itself.

9. Traditional Medicine and Community Participation

38. The ORHS should proceed cautiously but firmly with its activities in socio-cultural research and training, and the diffusion and application of knowledge about traditional medicine

and the structure of Aymara and Quechua communities. It would be, at present, premature to consider the institutionalization of traditional medicine within the formal health care system.

39. The initial process and framework for promoting community participation should be reviewed and modified to reflect the social structure and cultural perspective of the rural community. The ORHS/PCI rural health care team has the experience and capacity to undertake this analysis and the necessary revisions.

40. The ORHS should continue to give support and encouragement to the innovative and promising activities in traditional medicine and community participation by guaranteeing the necessary personnel and material resources.

10. PCI Program Management

41. The evaluation supports the placing of an additional primary health care specialist in Bolivia. It is suggested that this individual have skills in organizational development or epidemiology or anthropology in addition to management capabilities. The recently expanded role of PCI will create more management needs and will permit the current director less time to provide needed technical assistance in Oruro.

42. From the perspective of the program in Bolivia, there is a real need to improve communications between the field and home office. There is particular concern, shared by the evaluators, regarding an effective appreciation of and timely response to field concerns.

43. The field director would benefit greatly by having at least one month advance notice of available resources to be able to effectively and reliably program activities. PCI might eventually consider a system of quarterly budgeting and cash flow allocations. The efficiency of program planning and management in Bolivia would also be enhanced if money transfers to the field program bank account could be made on or about the same date each month.

44. It is the opinion of the evaluators that technical support capabilities of PCI in PHC specialty areas could be enhanced in terms of bringing existing and supplemental skills and knowledge to bear directly on problems identified in the field. Specific unmet needs of the Bolivia program have included epidemiological and operational research design, training methods (non-formal) and evaluation, program monitoring and evaluation, organizational analysis and development, and proposal development to secure supplementary funding.

45. PCI might consider holding annual regional conferences to provide a means for sharing experiences and identifying and resolving common problems of both a technical and administrative nature. The site of these conferences could be rotated between

the central office and the various countries within each region. Interproject visits would also be an effective way of transferring tested technologies from one country to another. The Oruro project, for example, has much to offer regarding drug supply systems and traditional medicine; on the other hand, the Bolivia staff might benefit from seeing how the information systems have been developed in the Mexico program.

46. PCI needs to pay close attention to enhancing staff morale and in furthering the professional growth and development of its field personnel in Oruro. In addition to the above two suggestions (regional conferences and interproject visits), incentives for both U.S. and local hire staff might include paid leave and expenses to seminars and conferences, and arranging and supporting work/study programs leading to advanced degrees. Another consideration for long term or career staff might take the form of granting sabbatical leave.

D. General Lessons Learned

1. The effectiveness and impact of external support for primary health care programs appear to be more contingent on commitment rather than money. A moderate amount of funds spent locally and spread over a decade has a more lasting benefit than several millions of dollars spent on foreign commodities and technologies within two or three years. The development of administrative or service systems requires patience rather than mandates.
2. There appears to be a general lack of understanding and organization within host ministries of health regarding the role and activities of PVOs and relationships with them. Private organizations tend to avoid central bureaucracies; ministries of health often lack resources and perspective for effectively coordinating with PVOs. Keeping an arm's length from political manipulation and organizational inefficiencies may be desirable. Host governments, however, have a legitimate need to keep individual efforts within national strategies. Communications between and among institutions are generally weak, particularly at the central level.
3. Cash flow is a serious problem with most PVOs. Fund raising is generally cyclical and not tied to program needs. AID/W has contributed significantly to the cash flow problem by delaying disbursements ostensibly because of organizational inefficiencies. PVOs in general have not diversified their funding sources sufficiently to level off income patterns. Field programs suffer directly and often seriously from both conditions. It should be added that PCI took steps to deal with the delays in receiving funding in the 1983-84 period, and that AID/Washington has responded positively and helpfully in trying to improve the availability of funds for the 1984-85 period.

4. Maintaining adequate communications and participatory decision-making processes are, under the best of circumstances, very difficult between home offices and overseas field programs. Exceptional efforts are therefore required in resource management and attitudes to meet these organizational needs. Mutual trust and confidence, as well as administrative and technical decentralization, are indispensable but must be consciously nurtured.

| | |
|---|-----------|
| APPENDICES | 51 |
| A. Proposed MG Project Design | 52 |
| B. Map of Bolivia | 53 |
| C. Tables and Figures | 54 |
| D. Task Forces for the Regionalization of Health Services in Oruro | 79 |
| E. Educational Program Outlines | 81 |
| F. Contributions of Participating Agencies | 87 |
| G. Bibliography | 89 |
| H. List of Persons Contacted | 93 |
| I. Itinerary of the Evaluation | 96 |
| J. Evaluation Protocol | 97 |
| K. AID Health Program Strategy | 98 |

APPENDIX A

Proposed Project Design

| Project Title & Number: <u>Project Concern International - Primary Health Care Training & Development</u> | | LIGICAL FRAMEWORK | |
|--|---|--|--|
| NARRATIVE SUMMARY | | OBJECTIVELY VERIFIABLE INDICATORS | MEANS OF VERIFICATION |
| <p>Program or Sector Goal: The broadest objective to which this project contributes:</p> <p>Improve health status of people living in underserved communities & areas by bringing an affordable & accessible system of health care to the population, especially focusing on the most vulnerable groups & stressing preventive health services.</p> | <p>Measures of Goal Achievement:</p> <ol style="list-style-type: none"> 1. Increased access to effective health care. 2. Increased utilization of community health facilities, PHC services, & other health services. 3. Increase in promotive & preventive health activities at the community level. 4. Reduced incidence of common illnesses. | <ol style="list-style-type: none"> 1. Increased numbers of clinics/PHC posts in operation & providing PHC in underserved areas. 2. Records of patient attendance & treatments, referrals, etc. 3. Records & observation of community health projects undertaken & completed; records & observation of health education activities. 4. Comparison of incidence of selected illnesses with benchmarks & other survey data to determine morbidity trends (reservoirs & analysis of clinic records & reports periodically throughout life of project). | <p>Life of Project: From FY1982 to FY1985 Total U.S. Funding: \$3,151,825 Date Prepared: October 15, 1981</p> <p>IMPORTANT ASSUMPTIONS</p> <p>ASSUMPTIONS for achieving goal:</p> <ol style="list-style-type: none"> 1. Host Governments have made the necessary commitments to a system of primary health care; funds will be available. 2. Communities accept & utilize PHC services provided by CHMs & other trained local providers. 3. Communities participate in community health projects (water supply, environmental sanitation, nutrition improvement, etc.); communities participate in health education activities. 4. Benchmark & other surveys can be carried out & produce reliable data; reservoirs & health information system will provide reliable follow-up & comparison data. |
| <p>Project Purpose:</p> <ol style="list-style-type: none"> 1. Increase capabilities of NCH & other levels of health service in planning, designing, implementing, & evaluating PHC and public health programs. 2. Develop host country capacity to assume full responsibility for PHC & community health projects. 3. Promote local responsibility & participation in PHC & community health projects. 4. Demonstrate to host governments the feasibility of low-cost, effective PHC & encourage its replication. | <p>Conditions that will indicate purpose has been achieved: (end of Project Phase)</p> <ol style="list-style-type: none"> 1. Establishment of host country plans & support necessary to carry out PHC & community health programs. 2. Trained host country health personnel that can train & supervise CHMs & support PHC & community health programs. 3. Local health committees or equivalent established & functioning; local financing of PHC. 4. Application of PHC projects to other areas of the country. | <ol style="list-style-type: none"> 1. Monthly narrative reports of progress in phaseover of project activities to local counterparts responsibility. 2. Increased assumption of training, planning, & other responsibilities as documented by reports & observation. 3. Local health committees & committees undertaking community health projects; local financing systems for PHC established & functioning - CHM reports & site observations. 4. Reports & observation of PHC services established & functioning in new areas. | <p>ASSUMPTIONS for achieving purpose:</p> <ol style="list-style-type: none"> 1. Effective & continuing relationships can be established with key host government officials, NCH & other health counterparts. 2. Necessary NCH & other health staff are available for training on trainers & supervisors. 3. Communities understand importance of participation in their own health care system & accept trained CHMs from their communities as providers of PHC. 4. Host countries will provide the necessary health personnel & funds for expanding PHC. |
| <p>Outputs:</p> <ol style="list-style-type: none"> 1. Assist in development of host country health staff as trainers & supervisors of CHMs & other local health care providers. 2. Train CHMs in basic curative health care & preventive health measures. 3. Train THAs in more complex delivery techniques & identification & referral of complicated cases. 4. Assist in development of health subsystems & activities necessary to support PHC. | <p>Measures of Outputs:</p> <p>At end of three years:</p> <ol style="list-style-type: none"> 1. 110-125 trainers & 125-130 supervisors of CHMs & THAs trained. 2. 1,000 to 1,050 CHMs trained. 3. 375 to 450 THAs trained. 4. Supportive health subsystems established & functioning: drug & treatment protocols; referral procedures; information & reporting procedures; logistics; equipment maintenance; drug & equipment supply; supervisory system; training & in-service training; etc. | <ol style="list-style-type: none"> 1. Reports of numbers trained; observation of trainers by PCI & others; actual content of training program; observation of supervisors of CHMs, THAs, & other community health providers. 2. Reports of numbers trained; review of pre & post-tests for knowledge retention; observation of treatment & other health activities for proficiency. 3. Same for THAs. 4. Review of records, reports, protocols, & procedures relating to health subsystems for compliance and accuracy. | <p>ASSUMPTIONS for achieving outputs:</p> <ol style="list-style-type: none"> 1. Sufficient & acceptable personnel for training as trainers & supervisors will be available. 2. Satisfactory performance of CHMs, THAs, & other community health workers to assure retention of community respect & confidence as their health providers & the PHC approach to health care. 3. Health subsystems will function as designed & will be implemented & sustained by counterparts & host country health personnel including CHMs & others. |
| <p>Inputs:</p> <ol style="list-style-type: none"> 1. PCI field program staff of PHC specialists & other skilled health professionals to work in close relationships with NCH & other counterpart health staff in respective countries. 2. Program funding for technical assistance, materials & equipment, & administrative support within a given time frame according to projects. | <p>Implementation Target (Type and Quantity):</p> <ol style="list-style-type: none"> 1. a. PCI primary health care & other health technicians onsite & functioning (13 - 20). b. Host country counterparts appointed & effectively working with PCI staff (to be determined). 2. \$3,151,825 in technical assistance, materials & equipment, & support services over life of project. | <ol style="list-style-type: none"> 1. a. Monthly review of project activity reports, on-going program monitoring, & periodic evaluation. b. Same 2. Monthly PCI financial reports; Quarterly Financial Reports to AID. | <p>ASSUMPTIONS for providing inputs:</p> <ol style="list-style-type: none"> 1. a. Continued availability in the U.S. & other countries of experienced, skilled, & highly motivated community health technicians & professionals willing to work in 3rd World countries. b. Availability of highly motivated & skilled health counterparts interested in training & working in PHC development. 2. PCI will be successful in raising funds from private sources & AID Matching Grant will be available. <p>* AID amount \$1,375 \$10</p> |

APPENDIX C

TABLES AND FIGURES

| | |
|----------|--|
| Table 1 | Selected statistics on the Department of Oruro, Bolivia. |
| Table 2 | Selected health-related statistics on District "C", Oruro Regional Health Service, 1983. |
| Table 3 | Planned budget for the extension of rural health services in the Department of Oruro by source of financing and year, 1981-1986. |
| Table 4 | Program expenses by line item and year, 1981-1983. |
| Table 5 | Field expenses by program component and year, 1981-1983. |
| Table 6 | Program costs by source, 1983. |
| Table 7 | Proposed budget for health sector activities, CORDEOR/UNICEF, 1984-1987. |
| Table 8 | Personnel utilization by program component, September 1980 to April 1984. |
| Figure 1 | In-country staffing pattern, Project Concern and ORHS/Office of Planning and Supervision, 1980-1984. |
| Table 9 | Personnel requirements and positions allocated for the extension of rural health services, by year and personnel categories, Oruro Regional Health Service, 1982-1985. |
| Table 10 | Human resource training accomplished by service level and subject matter, 1981-1983. |
| Table 11 | Comparison of the allocation of time for training health promoters (CHWs) by sponsor and type of training and subject matter, Oruro, 1983. |

Appendix C (cont.)

| | |
|----------|---|
| Table 12 | Allocation of time for training rural auxiliary nurses (RAN) by type of training and subject matter, Bolivia, 1983. |
| Table 13 | Financial movement of the rural drug supply system by service level, Oruro Regional Health Service, April to December 1983. |
| Table 14 | Number and utilization of health facilities by level and year, District C, Oruro Regional Health Service, 1975-1983. |
| Table 15 | Number and utilization of health facilities by level and year, District E, Oruro Regional Health Service, 1975-1983. |
| Table 16 | Number and utilization of health facilities by level and year, Districts C and E, Oruro Regional Health Service, 1975-1983. |
| Table 17 | Community health workers (CHW) activities reported for Districts C and E, Oruro Regional Health Service, 1983. |
| Figure 2 | Cumulative rate of utilization of health services by level and year, Districts C and E, Oruro Regional Health Service, 1975-1983. |
| Figure 3 | Current administrative organization of the Oruro Regional Health Service, February, 1984. |
| Figure 4 | Alternative organizational structure for the regionalization of rural health services. |

TABLE 1

Selected Statistics on the Department of Oruro, Bolivia

| <u>Geography and Climate</u> | | <u>Principal Causes of Rural Morbidity</u> | |
|--------------------------------|---------------------------------|---|--------------|
| Area: | 53,988 sq. km. (20,765 sq. mi.) | 1. Respiratory diseases | |
| Average altitude: | 3,700 meters (12,300 feet) | 2. Accidents, violence | |
| Mean annual temperature: | 7° - 10° C. (45° - 50° F.) | 3. Gastrointestinal diseases | |
| Relative humidity: | 20% - 40% | 4. Nervous disorders | |
| Mean annual precipitation: | 320 mm. (12.6 in.) | 5. Diseases of the skin and conjunctiva | |
| <u>Population</u> | | <u>Languages Spoken by Adults</u> | |
| Total population: | 385,000 (1984 est.) | Spanish - Quechua: | 248 |
| Density (total): | 7.1/sq. km. (18.5/sq. mi.) | Spanish: | 228 |
| Rural population: | 223,000 (58%) | Spanish - Aymara: | 168 |
| Density (rural): | 4.2/sq. km. (10.9/sq. mi.) | Spanish - Quechua - Aymara: | 118 |
| Population less than 20 years: | 204,000 (53%) | | |
| Population less than 5 years: | 54,000 (14%) | | |
| Women, 15-49 years: | 92,000 (24%) | | |
| <u>Vital Statistics</u> | | <u>Occupation of Economically Active Population</u> (1978) | |
| Expectation of life at birth: | 48 years | Agriculture: | 40% |
| Crude birth rate: | 40/1000 population | Public services: | 17% |
| Total fertility rate: | 6.6 births/woman | Industry: | 11% |
| Crude death rate: | 14.7/1000 population (urban) | Commerce: | 9% |
| Infant mortality rate: | 104/1000 live births (urban) | Mining: | 8% |
| Maternal mortality rate: | 2/1000 live births (urban) | | |
| | | <u>Gross Internal Product per Person</u> | \$174 (1978) |

Source: Ministerio de Prevision Social y Salud Publica, Unidad Sanitaria de Oruro, Diagnostico de la situacion de salud en el Departamento de Oruro, Oruro, Bolivia: 1980.

TABLE 2

Selected health-related statistics on District "C,"
Oruro Regional Health Service, 1983

Population

| | | |
|--------------------------------|--------|-------------------------|
| Total population: | 48,000 | |
| Population less than 21 years: | 26,100 | (54.4%) |
| Population less than 6 years: | 10,100 | (21.1%) |
| Women, 11 - 45 years: | 11,300 | (23.5%) |
| Age-dependency ratio: | 1.2:1 | (< 16 + 55 < : 16 - 55) |

Housing and Sanitation

| | | |
|---------------------------|-------|------------------|
| Persons per household: | 4.8 | |
| Rooms per household: | 3.8 | |
| Windows per household: | 1.3 | |
| Source of drinking water: | 46.7% | protected source |
| Treatment of water: | 33.2% | boil water |
| Disposal of human wastes: | 31.4% | use latrines |
| Disposal of rubbish: | 12.2% | burn or bury |

Family Gardens 23.4% of households

Nutritional Status of Children*

| | |
|---------------|-------|
| Nourished: | 53.6% |
| Borderline: | 35.7% |
| Malnourished: | 10.7% |

* One to five year olds, using Morley-Shakir upper arm circumference measurement tapes.

TABLE 2 (cont.)

Age-Specific Morbidity and Mortality Rates

| | <u>Morbidity*</u> | <u>Mortality#</u> |
|--------------------|-------------------|-------------------|
| Less than one year | 876.3 | 139.8 |
| One to five years | 414.2 | 86.1 |
| Six years and over | 325.5 | 26.1 |
| Total | 365.2 | 41.3 |

* per 1000 persons, during previous month

per 1000 persons, during previous year

Leading Causes of Morbidity

| <u>Under six years</u> | | <u>Six years and over</u> | |
|------------------------|-------|---------------------------|-------|
| Diarrhea | 23.8% | Cold/flu | 25.6% |
| Fever | 19.2% | Toothache | 12.7% |
| Cold/flu | 16.7% | Fever | 10.9% |
| Cough | 9.3% | Cough | 10.1% |

Source: Oruro Regional Health Service, Office of Planning and Supervision. Benchmark study report - District C. Oruro, Bolivia: 1983.

TABLE 3

Planned Budget* for the extension of rural health services in the
Department of Oruro by source of financing and year, 1981-1986 (in U.S. \$)

| Source | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | Total | Percent |
|---|----------------|----------------|----------------|----------------|----------------|---------------|------------------|--------------|
| Ministry of Health | -- | 35,610 | 72,285 | 41,356 | 38,313 | -- | 207,564 | 13.1 |
| Project Concern Operations | 74,030 | 118,276 | 124,525 | 70,486 | 94,470 | 25,930 | 507,717 | 32.0 |
| Project Concern Technical Assistance | 53,300 | 57,530 | 63,283 | 47,463 | 52,206 | 57,412 | 331,194 | 20.9 |
| Construction | 32,130 | 83,540 | 45,467 | 71,036 | -- | -- | 232,173 | 14.7 |
| UNICEF | 51,956 | -- | -- | -- | -- | -- | 51,956 | 3.3 |
| Other Sources | 86,190 | 51,430 | 57,294 | 58,564 | -- | -- | 253,478 | 16.0 |
| TOTAL | 297,606 | 366,386 | 362,854 | 288,905 | 184,989 | 83,362 | 1,584,082 | 100.0 |

Source: Ministry of Social Welfare and Public Health, Oruro Regional Health Service. Plan for the extension of coverage, 1981-1986. Oruro, Bolivia; June 1981.

*Note: While the Plan covers the whole Department of Oruro, this budget reflects only new financial requirements each year. Recurrent costs of the MNH (except for the first year of new salaries) are not included.

TABLE 4

Program expenses by line item and year, 1981-1983

| Object of Expenditure | 1981 | 1982 | 1983 | Total | Percent |
|-------------------------------------|------------|------------|------------|---------|---------|
| Field Expenses | | | | | |
| Salaries & housing: U.S. personnel | 36,897 | 32,487 | 39,570 | 108,954 | 28.3 |
| Local salaries & temporary services | 6,142 | 8,467 | 8,911 | 23,520 | 6.1 |
| Operating expenses (a) | 5,378 | 7,331 | 11,582 (b) | 24,291 | 6.3 |
| Local travel & accommodations | 4,117 | 10,412 | 5,190 | 19,719 | 5.1 |
| Drugs and medicines | -- | 5,187 | 4,566 | 9,753 | 2.5 |
| Small equipment (c) | 4,954 | 33,538 | 9,980 | 48,472 | 12.6 |
| Capital expenses | 20,230 (d) | 4,778 | 1,445 | 26,453 | 9.0 |
| Sub-total | 85,716 | 102,200 | 81,252 | 269,170 | 69.9 |
| Direct Support Costs | | | | | |
| Home office salaries | -- | -- | 19,212 | 19,212 | 5.0 |
| International travel | 2,515 | 5,994 | 3,711 | 12,220 | 3.1 |
| Sub-total | 2,515 | 5,994 | 32,923 | 41,432 | 8.1 |
| Indirect Support Costs | | | | | |
| Overhead @ 28.16% | 24,846 | 30,467 | 29,336 | 84,649 | 22.0 |
| Total Costs | 113,079 | 138,661 | 133,511 | 385,251 | 100.00 |
| Percent of total | 29.3 | 36.0 | 34.7 | 100.0 | -- |
| Target population | 47,284 (e) | 47,651 (e) | 72,176 (f) | -- | -- |
| Per capita expenditures | 2.39 | 2.91 | 1.85 | -- | -- |
| A.I.D. contribution | -- | 98,907 (g) | 66,548 | 165,455 | -- |
| Percent contribution | -- | 59.3 | 49.8 | 42.9 | -- |

Source: Project Concern International, field and central office records.

- (a) Includes: office expenses, supplies, maintenance, etc.
 (b) Includes approximately \$2,000 for building improvements and \$4,500 for replacement salaries while RAMs were in training.
 (c) Less than \$100 for 1981-1982; less than \$300 for 1983.

- (d) Includes new vehicle at \$16,000.
 (e) District C only
 (f) Districts C and E
 (g) Includes final quarter of 1981.

TABLE 5

Field expenses by program component and year, 1981 - 1983

| Program Component | 1981 | 1982 | 1983* | Total | Percent |
|--|---------------|----------------|---------------|----------------|----------------|
| Primary health care | 22,151 | 43,053 | 15,791 | 80,995 | 30.1 |
| Training & traditional medicine | 2,472 | 12,552 | 12,727 | 27,751 | 10.3 |
| Planning & administration | 8,935 | 6,128 | 5,285 | 20,348 | 7.6 |
| Sub-Total Operations | 33,558 | 61,733 | 33,803 | 129,094 | 48.0 |
| Technical assistance & support | 52,160 | 40,467 | 47,449 | 140,076 | 52.0 |
| Total | 85,718 | 102,200 | 81,252 | 269,170 | 100.0 |

Source: Project Concern International, field and central office records.

* In 1983, the Bolivian peso was devalued by approximately 260%. This caused field operations expenses to appear low in dollar terms, while the dollar-based technical assistance appears relatively high, as compared with 1982 expenses.

TABLE 6

Program costs by source, 1983

| Agency/Source | U. S. Dollars | Percent |
|--------------------------------|---------------|-------------|
| <u>Ministry of Health</u> | | |
| Salaries & benefits | 5,238 | 4.0 |
| Office space | 1,410 | 1.1 |
| Supplies, etc. | 5,944 | 4.6 |
| Sub-Total | <u>12,592</u> | <u>9.7</u> |
| <u>Community Support</u> | | |
| Construction | 563 | 0.5 |
| Personnel (CHW time) | 2,590 | 2.0 |
| Sub-Total | <u>3,153</u> | <u>2.5</u> |
| <u>U.N.I.C.E.F.</u> | | |
| Drugs & medicines | 3,236 | 2.5 |
| Training | 29,302 | 22.6 |
| Sub-Total | <u>32,538</u> | <u>25.1</u> |
| <u>Project Concern (field)</u> | | |
| Operations | 33,803 | 26.1 |
| Technical assistance | 47,449 | 36.6 |
| Sub-total | <u>81,252</u> | <u>62.7</u> |
| Total Inputs | 129,535 | 100.0 |

Source: Project Concern International, field records.

Note: In 1982, the Ministry of Health provided an estimated \$13,209 in salaries, space, and operating supplies. These sums reflect only the costs related to the Office of Planning and Supervision.

In 1984, USAID/Bolivia is donating pharmaceutical supplies and a vehicle, worth approximately \$200,000, for the rural drug supply system. Also the Mission has provided \$2,000 for printing locally developed educational materials on traditional medicine.

TABLE 7

Proposed budget for health sector activities,
CORDEOR/UNICEF, 1984-1987 (in U.S.\$)

| Project | CORDEOR | UNICEF (a) | Total | Percent |
|--|------------|------------|-----------|---------|
| Regional radio communication system | 17,000 | 14,000 | 31,000 | 2.8 |
| National Food and Nutrition Plan for Infants | — | 15,000 | 15,000 | 1.4 |
| Mass media health education | — | 10,000 | 10,000 | 0.9 |
| Medical and dental equipment | 21,000 | 53,000 | 74,000 | 6.8 |
| Vehicles | 20,000 | 42,000 | 62,000 | 5.7 |
| Construction | 626,000(b) | 95,000(c) | 721,000 | 66.8 |
| Rural sanitation: portable water & latrines | — | 165,000(d) | 165,000 | 15.6 |
| Total | 684,000 | 394,000 | 1,078,000 | 100.0 |

Source: Regional Development Corporation of Oruro (CORDEOR), Planning Department.

(a) Corresponds primarily to the Integrated Rural Development program.

(b) Includes SU.S. 580,000 requested from the National Treasury.

(c) Authorization pending.

(d) Administrated separately from the IRD program.

TABLE 8

**Personnel utilization by program component,
September 1980 to April 1984**

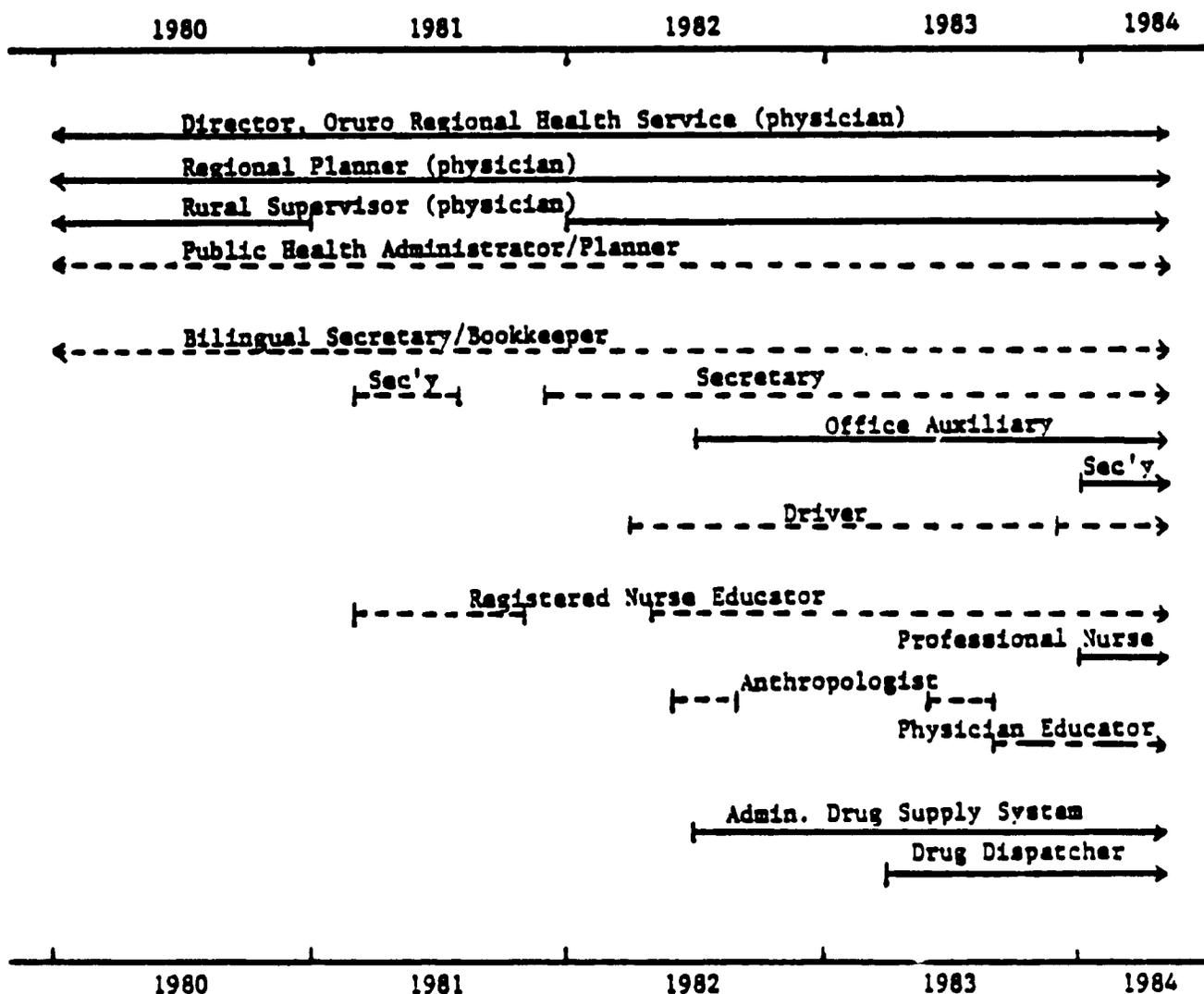
| Program Component | Number Positions | Total Months Occupied | Percent Allocation | Date Activity Initiated | Number Months Vacant | Percent Time Vacant |
|--|-----------------------------|--------------------------------------|-------------------------------|--|-------------------------------------|------------------------------------|
| Planning & Administration | 3 | 120 | 35.9 | 8/80 | 12 | 9.1 |
| Training & Traditional Medicine | 4* | 50 | 15.0 | 3/81 | 6 | 10.7 |
| Drug Supply System | 2 | 35 | 10.5 | 7/82 | 0 | 0 |
| Support Staff | 5 | 129 | 38.6 | 8/80 | 4 | 3.0 |
| Total personnel | 14 | 334 | 100.0 | -- | 22 | 6.2 |

Source: Project Concern International, field records.

***Includes one part-time consultant anthropologist.**

FIGURE 1

In-country staffing pattern, Project Concern and
ORHS / Office of Planning and Supervision, 1980-1984



Source: Oruro Regional Health Service, Office of Planning and Supervision

Source of funding: |—————| Ministry of Health
 |-----| Project Concern Int'l

TABLE 9

Personnel requirements and positions allocated for the extension of rural health services, by year and personnel categories, Oruro Regional Health Service, 1982-1985

| Personnel Categories | 1982 | | | | 1983 | | | | 1984 | | | | Feb. Allocated | 1984 Deficit | 1985 Planned |
|--------------------------|---------|-----------|-----------|----------|---------|-----------|-----------|----------|---------|-----------|-----------|----------|----------------|--------------|--------------|
| | Planned | Allocated | Requested | Transfer | Planned | Allocated | Requested | Transfer | Planned | Allocated | Requested | Transfer | | | |
| Physicians | - | - | - | - | 2 | 2 | - | - | 1 | 2 | - | - | 0.00 | 3 | - |
| Dentists | - | - | - | - | 3 | 2 | - | - | 1 | 1 | 1 | - | 25.00 | 3 | - |
| Professional Nurses | - | - | - | - | 2 | 1 | - | - | 1 | - | 1 | - | 33.00 | 2 | 1 |
| Auxiliary Nurses | 9 | 9 | - | 4 | 8 | 29 | - | - | 4 | 15 | 13 | - | 61.90 | 8 | 4 |
| Sanitation Technicians | 3 | 3 | - | - | 1 | 1 | - | - | - | - | 1 | - | 25.00 | 3 | 1 |
| Administrative | 2 | 2 | - | - | 2 | 2 | - | - | 1 | 2 | - | - | 0.00 | 5 | 2 |
| Lab. & X-ray Technicians | 1 | 1 | - | - | 2 | 3 | - | - | 1 | 1 | 2 | - | 50.00 | 2 | - |
| Other rural (e) | 4 | 4 | - | - | 2 | 6 | - | - | 2 | 4 | 2 | - | 15.40 | 6 | 2 |
| Support, Level V | - | - | - | 1(b) | - | 5(c) | - | - | - | 5(c) | - | - | 0.00 | 5 | - |
| Totals | 19 | 19 | - | 5 | 22 | 51 | - | - | 11 | 30 | 20 | - | 35.10 | 37 | 10 |

Sources: Oruro Regional Health Service, documents and records.

(a) Includes: drivers, housekeeping, cooks, etc.

(b) Planner I (an economist/administrator of the rural drug supply system).

(c) Includes: 1 pharmacy auxiliary; 1 secretary; 1 statistics auxiliary; 1 rural nurse supervisor; and 1 driver. (4 of these positions are currently being financed by Project Concern.)

TABLE 10
Human resource training accomplished by service level and subject matter, 1981-1983

| Subject Matter | Number Courses | Average Length (Days) | Number of Participants by Service Level | | | | | | Total Participation | Participant-Days | |
|--|----------------|-----------------------|---|----|-----|----|-----|-------|---------------------|------------------|---------|
| | | | V | IV | III | II | I | Other | | Number | Percent |
| Health promotor (CHW) course | 2 | 30 | - | - | - | - | 36 | - | 36 | 1080 | 29.8 |
| CHW refresher course | 1 | 5 | - | - | - | - | 15 | - | 15 | 75 | 2.1 |
| Community participation | 8 | 4.5 | 17 | 13 | 13 | 30 | 105 | 11 | 189 | 850.5 | 23.5 |
| Traditional medicine | 5 | 3.5 | 17 | 15 | 4 | 33 | 15 | 66(a) | 150 | 525 | 14.5 |
| Drug supply system (b) | 4 | 2 | - | - | - | 89 | 23 | - | 112 | 224 | 6.2 |
| System coordination | 2 | 3 | - | 2 | 1 | 17 | 36 | - | 56 | 168 | 4.6 |
| Diagnosis & treatment | 1 | 4 | - | 2 | 3 | 24 | - | - | 29 | 116 | 3.2 |
| Use of care & equipment | 1 | 3 | - | 3 | - | 14 | 21 | - | 38 | 114 | 3.1 |
| Referral & drug systems | 2 | 3 | - | 6 | 3 | 24 | - | - | 33 | 99 | 2.7 |
| Supervision system | 3 | 3 | 24 | 11 | 4 | 21 | - | - | 60 | 90 | 2.5 |
| Supervision, coordination and traditional medicine | 1 | 4 | - | 5 | 2 | 12 | - | - | 19 | 76 | 2.1 |
| Basic agriculture | 2 | 3.5 | - | - | - | 19 | - | - | 19 | 66.5 | 1.8 |
| Midwifery (TBA) course | 1 | 4 | - | - | - | - | - | 15 | 15 | 60 | 1.7 |
| Sanitation improvements | 1 | 4 | 4 | 6 | - | - | - | - | 10 | 40 | 1.1 |
| Referral system | 1 | 1 | 25 | - | - | - | - | - | 25 | 25 | 0.7 |
| Regionalization | 1 | 1 | - | 2 | 12 | - | - | - | 14 | 14 | 0.4 |

Source: Oruro Regional Health Service, Office of Planning and Supervision.

(a) Includes 51 students and faculty in Cochabamba.

(b) In addition, in-service training of personnel from Levels II, III & IV was provided on drug system management, for an average of one hour per person during six months.

Note: A total of 36 courses for 175.5 days of training was given over a period of 28 months; total participant-days=3623.

TABLE 11

Comparison of the allocation of time for training health promoters (CHWs) by sponsor and type of training and subject matter, Oruro 1983.

| Subject Matter | Ministry of Health (Hours) | | | | PCI/ORHS (Hours) | | | |
|--|----------------------------|-----------|------------|-------------|------------------|-----------|------------|-------------|
| | Theory | Practice | Total | Percent | Theory | Practice | Total | Percent |
| Area I - Attention to the Environment | | | | | | | | |
| Unit A - Family and Community Health | 8 | 26 | 34 | 19.5 | 10 | 36 | 46 | 19.8 |
| Unit B - Basic Situation | 3 | 7 | 10 | 5.8 | 9 | 16 | 25 | 10.8 |
| Unit C - Agriculture and Nutrition | 6 | 14 | 20 | 11.5 | 10 | 25 | 35 | 15.1 |
| Sub-Total | <u>17</u> | <u>47</u> | <u>64</u> | <u>38.6</u> | <u>29</u> | <u>77</u> | <u>106</u> | <u>45.7</u> |
| Area II - Attention to Individuals | | | | | | | | |
| Unit A - Mother and Child | 14 | 30 | 44 | 25.3 | 19 | 46 | 65 | 28.0 |
| Unit B - Adults | 11 | 24 | 35(a) | 20.1 | 5 | 19 | 24(a) | 10.4 |
| Unit C - First Aid | 7 | 15 | 22 | 12.6 | 5 | 12 | 17 | 7.3 |
| Sub-Total | <u>32</u> | <u>69</u> | <u>101</u> | <u>58.0</u> | <u>29</u> | <u>77</u> | <u>106</u> | <u>45.7</u> |
| Area III - Administrative Support | | | | | | | | |
| Unit A - Elements of Administration | 3 | 6 | 9 | 5.2 | 6 | 14 | 20 | 8.6 |
| Total Hours | 52 | 122 | 174 | 100.0 | 64 | 168 | 232(b) | 100.0 |
| Percent Distribution | 29.9 | 70.1 | 100.0 | | 27.6 | 72.4 | 100.0 | |

Sources: Oruro Regional Health Service/Project Concern. Training program for promoters of District C. Oruro: 1982.
Ministry of Health. Training plan for health promoters. La Paz: 1981.

- (a) The MOH training plan includes a section on tropical diseases, the PCI/ORHS plan does not.
(b) The PCI/ORHS plan contains 58 hours (33.3%) more training than the MOH plan. The Oruro program is executed in 30 working days over a period of 8 weeks.

TABLE 12

Allocation of time for training rural auxiliary nurses (RAN)
by type of training and subject matter, Bolivia 1983.

| Subject Matter | Hours Theory | Hours Practice | Total Hours | Percent Hours | Total Weeks |
|--|-----------------|-------------------|----------------|------------------|----------------|
| Area I -<u>Primary Prevention</u> | | | | | |
| Unit I -Community Participation & Health Education | 34 | 138 | 172 | 16.4 | 5 |
| Unit II -Maternal & Child Health & Epidemiology | 90 | 295 | 385 | 36.7 | 11 |
| Sub-Total | 124 | 433 | 557 | 53.1 | 16 |
| Area II -<u>Secondary and Tertiary Prevention</u> | | | | | |
| Unit III-First Aid | 20 | 40 | 60 | 5.7 | 1.5 |
| Unit IV -Common Diseases of Children & Adults | 55 | 133 | 188 | 17.9 | 5.5 |
| Sub-Total | 75 | 173 | 248 | 23.6 | 7.0 |
| Area III-<u>Rural Area</u> | | | | | |
| Unit V -Health Post Administration | 16 | 19 | 35 | 3.3 | 1 |
| Unit VI -Practicum in Rural Health | -- | 210 | 210 | 20.0 | 6 |
| Sub-Total | 16 | 229 | 245 | 23.3 | 7 |
| Total Time | 215 | 835 | 1050 | 100.0 | 30 |
| Percent Distribution | 20.5 | 79.5 | 100.0 | | |

Source: Ministry of Health. Training plan for the formation of rural auxiliary nurses. National School of Public Health. La Paz: 1983

TABLE 13

Financial movement of the rural drug supply system by service levels,
Oruro Regional Health Service, April to December 1983 (in Bolivian pesos)

| | <u>Level V</u> Regional Administration | <u>Level IV</u> District Hospitals | <u>Level III</u> Medical Posts | <u>Level II</u> Health Posts | <u>Level I</u> Community Health Workers | Total System |
|-----------------------------|--|--|--------------------------------------|------------------------------------|---|-----------------|
| Number Establishments | - | 3(a) | 8(a) | 51(a) | 21 | 83 |
| Initial investment | 2,288,497 | - | - | - | - | 2,288,497(b) |
| Drugs distributed | - | 355,420 | 1,086,828 | 2,442,307 | 257,033 | 4,141,588 |
| Payments effected | - | 171,805 | 605,619 | 1,007,900 | 159,148 | 1,944,472 |
| Payments per establishment | - | 57,268 | 75,702 | 19,763 | 7,578 | 23,427 |
| Balance in cash and stock | 4,839,711 | 183,615 | 481,209 | 1,434,407 | 97,885 | 6,236,827(c) |
| "Profits" from sales | - | 42,693(d) | - | 98,335 | 12,706 | 145,734(e) |
| "Profits" per establishment | - | 3,881(d) | - | 1,771 | 605 | 1,756 |

Source: Oruro Regional Health Service, Office of Planning and Supervision.

- (a) In 1983, there were a total of 76 establishments (Levels II, III & IV) in the ORHS, 81.6% (62) participated in the rural drug supply system.
- (b) Equivalent to \$U.S. 7,811. Limited quantities of medicines existed in some hospitals and posts at the onset; these were not inventoried, but are thought to be of small value.
- (c) Equivalent to \$U.S. 12,381. This represents an increase of 172.5% over the initial investment in local currency (pesos), but only a 57.5% increase in value to the dollar equivalent.
- (d) Levels III and IV combined.
- (e) 7.5% of sales (payments effected); current policy gives 50% of markup to service establishments and 50% to the regional supply administration.

TABLE 14

Number and utilization of health facilities by level and year,
District C, Oruro Regional Health Service, 1975-1983.

| Year | Estimated Population | Health Posts - Level II (a) | | | | Health Centers - Levels III & IV (b) | | | |
|------|-------------------------|-----------------------------|-------------------------|-----------------------|--------------------------------|--------------------------------------|-------------------------|-----------------------|------------------------------------|
| | | Number Posts | Total (c) Encounters | Rate per 1000 pop. | Ave. Encount. per mon./post | Number Centers | Total (c) Encounters | Rate per 1000 pop. | Ave. Encounters per mon./center |
| 1975 | 43,798 | 7 | 1254 | 28.6 | 15 | 3 | 1606 | 36.7 | 45 |
| 1976 | 44,138 | 6 | 1284 | 29.1 | 18 | 3 | 1984 | 44.9 | 55 |
| 1977 | 44,480 | 7 | 1438 | 32.3 | 17 | 3 | 1501 | 33.7 | 42 |
| 1978 | 44,826 | 7 | 2271 | 50.7 | 27 | 3 | 2348 | 52.4 | 65 |
| 1979 | 45,174 | 7 | 2571 | 56.9 | 31 | 3 | 5503 | 121.8 | 153 |
| 1980 | 45,525 | 7 | 3116 | 68.4 | 37 | 3 | 6550 | 143.9 | 182 |
| 1981 | 47,284 | 8 | 4045 | 85.5 | 42 | 3 | 6338 | 134.0 | 176 |
| 1982 | 47,651 | 12 | 6392 | 134.1 | 57 | 3 | 4275 | 89.7 | 119 |
| 1983 | 48,021 | 12 | 7880 | 164.1 | 55 | 3 | 5151 | 107.3 | 143 |

Sources: Oruro Regional Health Service, Biostatistics Department.

(a) Staffed by an auxiliary nurse.

(b) Staffed by a physician and an auxiliary nurse.

(c) Includes: curative services; well child, prenatal, and postpartum clinics; and deliveries. (Curative services predominate.)

TABLE 15

Number and utilization of health facilities by level and year,
District E, Oruro Regional Health Service, 1975-1983.

| Year | Estimated Population | Health Posts - Level II (a) | | | | Health Centers - Levels III & IV(b) | | | |
|------|-------------------------|-----------------------------|------------------------|-----------------------|--------------------------------|-------------------------------------|------------------------|-----------------------|------------------------------------|
| | | Number Posts | Total(c) Encounters | Rate per 1000 pop. | Ave. Encount. per mon./post | Number Centers | Total(c) Encounters | Rate per 1000 pop. | Ave. Encounters per mon./center |
| 1975 | 21,784 | 5 | 1091 | 50.1 | 18 | 3 | 906 | 41.6 | 25 |
| 1976 | 22,067 | 5 | 1223 | 55.4 | 20 | 3 | 1167 | 52.9 | 32 |
| 1977 | 22,354 | 6 | 1354 | 60.6 | 22 | 3 | 1191 | 53.3 | 33 |
| 1978 | 22,644 | 7 | 2643 | 116.7 | 31 | 3 | 1999 | 88.3 | 56 |
| 1979 | 22,939 | 7 | 3100 | 135.1 | 37 | 3 | 2421 | 105.5 | 67 |
| 1980 | 23,237 | 6 | 3836 | 165.1 | 53 | 3 | 4051 | 174.3 | 113 |
| 1981 | 23,539 | 7 (d) | 4467 | 189.8 | 53 | 3 | 2441 | 103.7 | 68 |
| 1982 | 23,845 | 7 | 5013 | 210.2 | 60 | 3 | 2917 | 122.3 | 81 |
| 1983 | 24,155 | 7 | 4599 | 190.4 | 55 | 3 | 4159 | 172.2 | 116 |

Sources: Oruro Regional Health Service, Biostatistics Department.

(a) Staffed by an auxiliary nurse.

(b) Staffed by a physician and an auxiliary nurse.

(c) Includes: curative services; well-child, prenatal, and postpartum clinics; and deliveries. (curative services predominate.)

(d) One additional health post has been operated by a religious group since 1981, but has not reported to the Regional Health Service.

TABLE 16

Number and utilization of health facilities by level and year,
Districts C and E, Oruro Regional Health Service, 1975 - 1983

| Year | Estimated Population | Health Posts - Level II (a) | | | | Health Centers - Levels III & IV (b) | | | |
|------|-------------------------|-----------------------------|-------------------------|-----------------------|--------------------------------|--------------------------------------|-------------------------|-----------------------|------------------------------------|
| | | Number Posts | Total (c) Encounters | Rate per 1000 pop. | Ave. Encount. per mon./post | Number Centers | Total (c) Encounters | Rate per 1000 pop. | Ave. Encounters per mon./center |
| 1975 | 65,582 | 12 | 2,345 | 35.8 | 16.3 | 6 | 2,512 | 38.3 | 34.9 |
| 1976 | 66,205 | 11 | 2,507 | 37.9 | 19.0 | 6 | 3,157 | 47.6 | 43.8 |
| 1977 | 66,834 | 11 | 2,792 | 41.8 | 17.9 | 6 | 2,692 | 40.3 | 37.4 |
| 1978 | 67,470 | 14 | 4,914 | 72.8 | 29.3 | 6 | 4,347 | 64.4 | 60.4 |
| 1979 | 68,113 | 14 | 5,671 | 83.3 | 33.8 | 6 | 7,924 | 116.3 | 110.1 |
| 1980 | 68,762 | 13 | 6,952 | 101.1 | 44.6 | 6 | 10,601 | 154.2 | 147.2 |
| 1981 | 70,823 | 15 | 8,512 | 120.2 | 47.3 | 6 | 8,779 | 124.0 | 121.9 |
| 1982 | 71,496 | 19 | 11,405 | 159.5 | 50.0 | 6 | 7,192 | 100.6 | 99.9 |
| 1983 | 71,176 | 19 | 12,479 | 172.9 | 54.7 | 6 | 9,310 | 129.8 | 129.3 |

Source: Oruro Regional Health Service, Biostatistics Department.

(a) Staffed by an auxiliary nurse.

(b) Staffed by a physician and an auxiliary nurse.

(c) Includes: curative services; well-child, prenatal and postpartum clinics; and deliveries. (Curative services predominate.)

TABLE 17

Community health worker (CHW) activities reported for
Districts C and E, Oruro Regional Health Service, 1983

| Service/Activity | District C Jan.- Dec. | District E Oct. - Dec. | Total Reported Attentions | Adjusted (a) Annual Attentions | Estimated Population at Risk | Annual Adjusted Rates |
|--------------------------------|--------------------------|---------------------------|---------------------------------|--------------------------------------|------------------------------------|-----------------------------|
| Well child control (0-5 years) | 910 | 173 | 1083 | 3010 | 1050 (c) | 286.7 (c) |
| Number referred | 20 (2.20) | 0 | 20 (1.80) | 34 | - | - |
| Immunization promotion (b) | 581 | 130 | 711 | 2085 | - | - |
| Prenatal control | 68 | 11 | 79 | 208 | 300 (d) | 69.3 (d) |
| Home deliveries | 29 | 2 | 31 | 67 | 300 (d) | 22.3 (d) |
| Postpartum control | 39 | 1 | 40 | 75 | 300 (d) | 25.0 (d) |
| Number referred | 12 (8.80) | 1 (7.10) | 13 (8.70) | 29 | - | - |
| Curative: 5 yrs & under | 525 | 21 | 546 | 1073 | 1050 (c) | 102.2 (c) |
| Number referred | 11 (2.10) | 1 (4.80) | 12 (2.20) | 27 | - | - |
| Curative: 6 yrs & over | 890 | 22 | 912 | 1706 | 6450 (c) | 26.4 (c) |
| Number referred | 56 (6.30) | 5 (22.70) | 61 (6.70) | 138 | - | - |
| Home visits | 618 | 67 | 685 | 1619 | 1250 (e) | 1.3 (e) |
| Educational talks | 527 | 20 | 547 | 1069 | 720 (f) | 1.5 (f) |
| Community meetings | 320 | 43 | 363 | 908 | 720 (f) | 1.3 (f) |
| Cumulative attendance | 7425 | 1257 | 8682 | 23255 | 908 (g) | 25.6 (g) |

Source: Oruro Regional Health Service, Office of Planning and Supervision

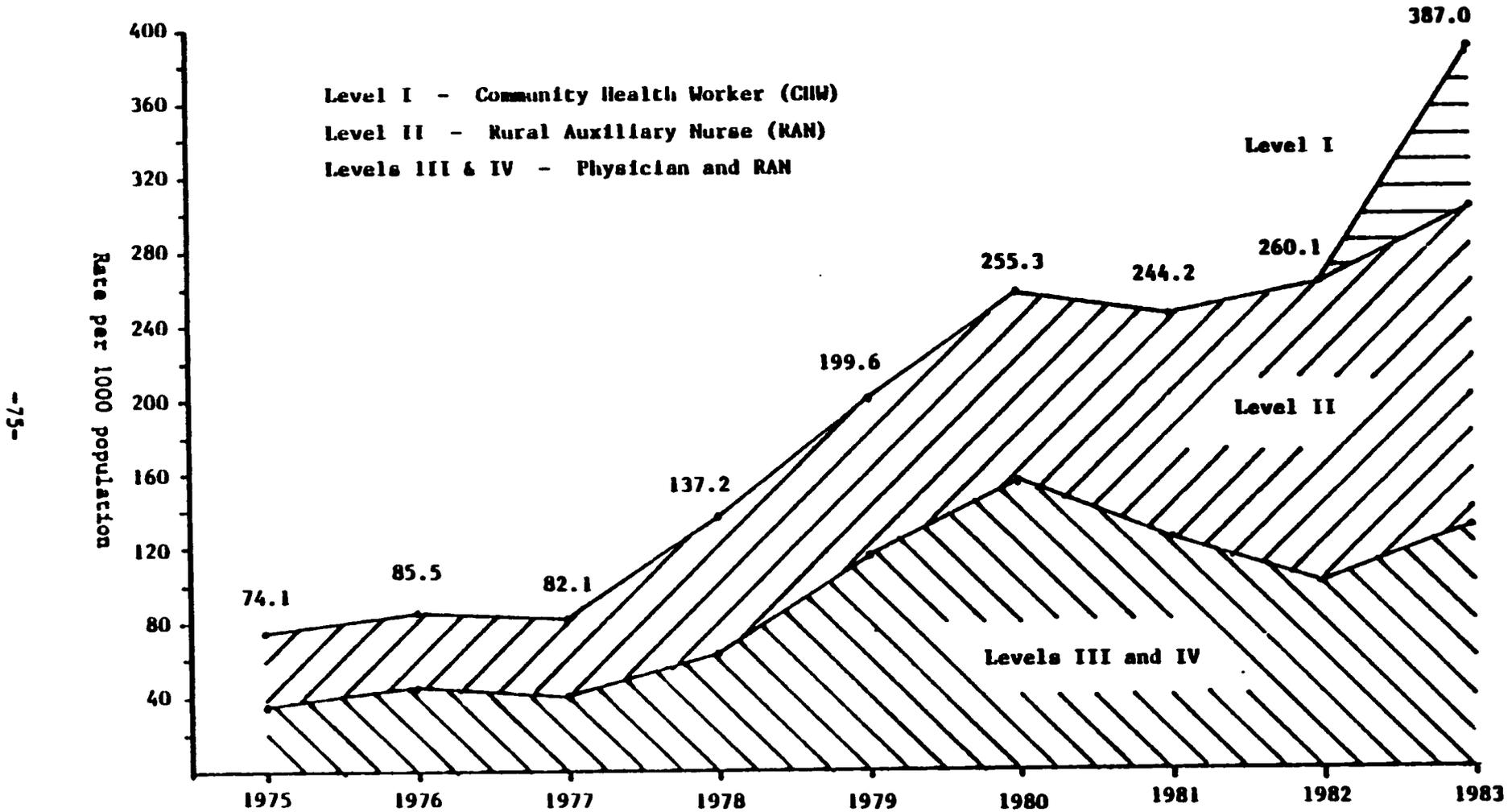
(a) Reports were received for 57.8% of the total months that CHWs were working (58.5% in District C, 47.6% in District E). Adjustments assume similar performance during unreported months and 12 months projection in District E.

(b) Includes promotional activities as well as actual immunizations.

(c) Number children 0-5 yrs.; rate per 100
(d) Number live births; rate per 100 women
(e) Number households; rate per household
(f) Number community-months; rate per c-m
(g) Number meetings; average attendance

FIGURE 2

Cumulative rate of utilization of health services by level and year, Districts C and E, Oruro Regional Health Service, 1975-1983

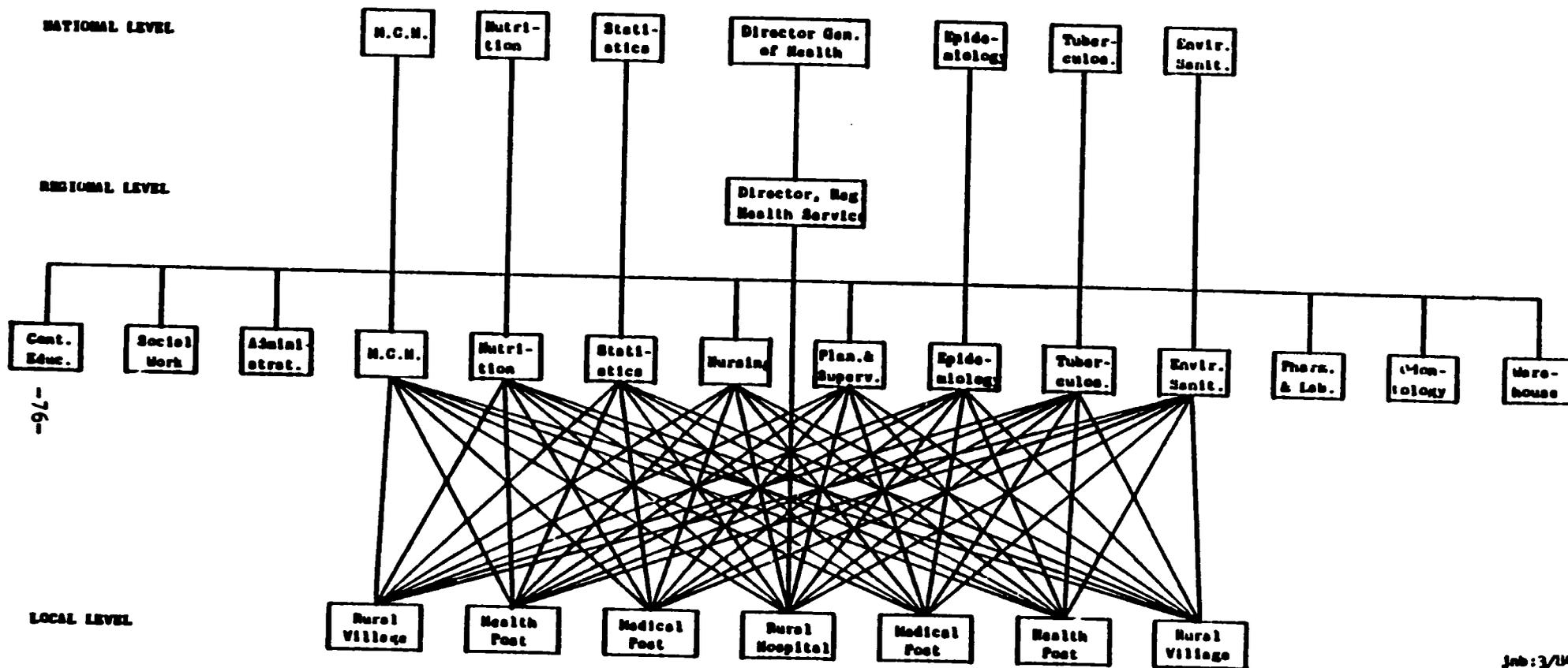


Source: Tables 16 and 17.

Note: Rates are based on total population of Districts C and E.

FIGURE 3

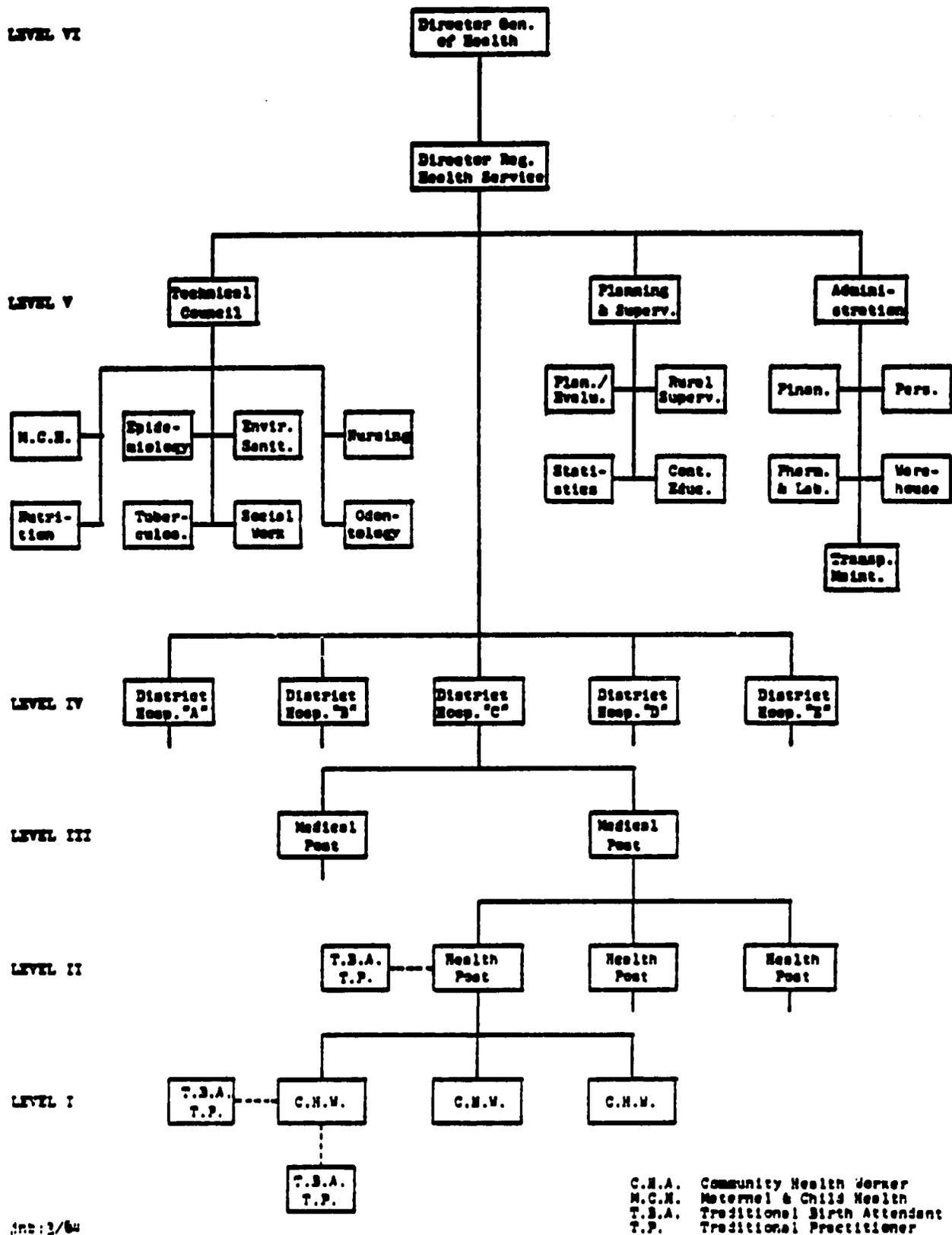
Current administrative organization of the Oruro Regional Health Service, February 1984



-76-

FIGURE 4

Alternative organizational structure for the regionalization of rural health services



Ind: 2/64

APPENDIX D

TASK FORCES FOR THE REGIONALIZATION
OF HEALTH SERVICES IN ORURO

Administration and Planning

Director, Regional Health Service
Administrator, Regional Health Service
Director of Nursing
Nurse Educator, Project Concern

Supervision

Director of Nursing
Chief, Environmental Sanitation
Nurse Educator, Continuing Education
Chief, Odontology
Director of Epidemiology
Director of Maternal and Child Health
Nurse Educator, Project Concern

Maintenance

Chief, Transportation
Director, Regional Health Service

Referral of Pathology

Director of Nursing
Director of Tuberculosis Control
Nurse Educator, Project Concern

Purchasing and Supplies

Director of Nursing
Chief, Pharmacy and Laboratories
Nurse Educator, Continuing Education
Chief, Warehouse
Administrator, Regional Health Service
Nurse Educator, Project Concern

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Appendix D (cont.)

Information and Evaluation

Director of Nursing
Chief, Statistics
Director of Maternal and Child Health
Nurse Educator, Project Concern

Human Resources

Director of Nursing
Nurse, Maternal and Child Health
Nurse Educator, Continuing Education
Chief, Environmental Sanitation
Nurse Educator, Project Concern

Physical Infrastructure

Director, Regional Health Service
Chief, Environmental Sanitation
Administrator, Regional Health Service
Director of Nursing

Coordination

Director, Regional Health Service
Director of Nursing
Nurse Educator, Project Concern

Health Education

Director of Nursing
Nurse Educators, Continuing Education
Social Worker, Maternal and Child Health
Nurse Educator, Project Concern

Community Participation

Director of Nursing
Social Worker, Maternal and Child Health
Nurse Educator, Continuing Education
Nurse Educator, Project Concern

Note: The Regional Planner and the Director of Project Concern
will coordinate the task forces.

APPENDIX E
EDUCATIONAL PROGRAM OUTLINES

CURRICULUM FOR THE TRAINING OF HEALTH
PROMOTORS (CHWs), 1982-1983.

AREA I - ATTENTION TO THE ENVIRONMENT

UNIT A - Family and Community Health

- Objectives:
1. Situate the health promotor within the context of his environment.
 2. Describe the problems existing in his community.
 3. Critically analyze the health situation of the community.
 4. Analyze the role of the promotor within his community.
 5. Utilize the methodology of community participation in the work of the promotor.
 6. Establish a basic diagnostic survey of the community.
 - *7. Integrate the concepts of traditional medicine with those of modern medicine.

UNIT B - Basic Sanitation

- Objectives:
1. Introduce the concepts of basic sanitation, related to water and the disposal of human wastes and rubbish.
 2. Orient the family regarding hygienic housing and the control of insects and rodents.
 3. Orient the family regarding the hygienic handling, conservation and protection of food.
 4. Coordinate activities with sanitation technicians for the solution of problems in basic community sanitation.

Appendix E (cont.)

- *5. Learn to build a latrine in order to teach villagers.
- *6. Learn to build a Lorena stove using local materials.

UNIT C - Basic Elements of Agriculture and Their Relationship to Nutrition and Health

- Objectives:
- 1. Orientation regarding the better utilization of local food products to improve family nutrition.
 - 2. Orientation regarding appropriate technologies for planting, irrigation and harvesting in the community.
 - 3. Orientation regarding the raising of poultry and small animals.
 - *4. Promote and demonstrate the establishment of family gardens.

AREA II - ATTENTION TO INDIVIDUALS

UNIT A - Mother and Child

- Objectives:
- 1. Identify the indications of pregnancy and delivery for referral.
 - 2. Provide education regarding maternal and child nutrition.
 - 3. Identify signs of diseases preventable by vaccination for notification and referral.
 - 4. Promote community participation in immunization activities.

UNIT B - Adults

- Objectives:
- 1. Orientation regarding hygienic habits of the family and community.
 - 2. Identify the principle indicators of common diseases in adults for primary attention and timely referral.

Appendix E (cont.)

UNIT C - First Aid

Objective: Provide first aid attention in emergency cases.

AREA III - ADMINISTRATIVE SUPPORT

UNIT A - Basic Elements of Administration

Objective: Apply the basic principles of administration in the promotor's area of work.

Note: Curriculum developed by Project Concern/Bolivia and the Oruro Regional Health Service, Office of Planning and Supervision. See Table 11 for detail of training time allocated for each unit. Several sections (*) are not contemplated in the Ministry of Health standard plan, but were incorporated by PCI/ORHS in 1983.

Appendix E (cont.)

CURRICULUM FOR THE TRAINING OF RURAL
AUXILIARY NURSES (RANs), 1983.

AREA I - PRIMARY PREVENTION

UNIT I - Community Participation and Health Education

- Objectives:
1. Identify and analyze health problems of the country and in particular of rural areas.
 2. Identify the socio-economic needs of the community.
 3. Realize primary health care and health education activities in the community.
 4. Participate in basic sanitation activities.

UNIT II - Maternal and Child Health and Epidemiology

- Objectives:
1. Provide basic care to mother and child during pregnancy, and normal delivery and postpartum.
 2. Orient individuals, family and community regarding a balanced diet.
 3. Detect danger signs of abnormal pregnancy, delivery and postpartum for immediate referral.
 4. Effect health control of children up to five years old.
 5. Participate in activities of epidemiological surveillance and immunizations.

Appendix E (cont.)

6. Participate in school health activities in coordination with teachers.
7. Detect signs and symptoms of danger in children for prevention and referral.

AREA II - SECONDARY AND TERTIARY PREVENTION

UNIT III - First Aid

- Objectives:
1. Identify the steps to be taken with emergency patients.
 2. Provide first aid attention in emergency cases.
 3. Teach organized community groups about accident prevention.
 4. Refer patients to corresponding medical facility.

UNIT IV - Common Diseases of Children and Adults

- Objectives:
1. Identify the most common diseases in the community, applying measures of prevention and treatment.
 2. Inform and refer patients according to their needs to the appropriate medical facility.
 3. Provide nursing care to children and adults in health facilities and rural communities.

AREA III - RURAL AREA

UNIT V - Health Post Administration

- Objectives:
1. Carry out basic activities of administration, organization of the work environment, and economic movement.
 2. Carry out and coordinate activities with other members of the health team and community groups.

Appendix E (cont.)

UNIT VI - Practicum in Rural Health

- Objectives:**
- 1. Reinforce acquired knowledge by developing skills and abilities in the realization of nursing activities in rural areas.**
 - 2. Apply knowledge of comprehensive nursing in health services and selected rural communities.**

Note: Curriculum developed by the Ministry of Social Assistance and Public Health, National School of Public Health. See Table 12 for detail of training time allocated for each unit.

APPENDIX F

CONTRIBUTIONS OF PARTICIPATING AGENCIES

Government Agencies

Bolivian Institute of
Agriculture Technology (IBTA)

Provides agriculture technicians
and extension workers for courses
and follow-up assistance.

Cochabamba Regional Health
Service (USC)

Counterpart agency in the Depart-
ment of Cochabamba; provides
technical assistance and training.

Ministry of Social Assistance
and Public Health (MPSSP)

Sponsoring agency since 1978;
coordination through Planning
Office to October 1982.

Oruro Regional Health
Service (USO)

Counterpart agency in the Depart-
ment of Oruro; provides personnel,
limited supplies, and partial
financing for construction of
rural facilities; coordination of
health, nutrition and sanitation
activities.

Regional Development
Corporation of Oruro (CORDEOR)

Coordination of regional planning
activities; execution of Integrated
Rural Development Program; financial
assistance for facilities construc-
tion and equipment.

Local Private Organizations

CARITAS Bolivia

Distribution of supplementary
food commodities (P.L. 480) to
more than 300 rural villages,
5 rural hospitals, and over 350
tuberculosis patients; minimal
coordination with USO/PCI.

"Jesus Maria" School for
Auxiliary Nurses

Formation of auxiliary nurses
for urban and rural areas; co-
organizer and participant in
evaluation of rural auxiliary
nurses (1984).

Appendix F (cont.)

International Organizations

Action MEDEOR
(Germany)

Source of low-cost pharmaceutical supplies (mail order).

United Nations Children's Fund (UNICEF/Bolivia)

Source of medical supplies and equipment (mail order, New York); partial financing of drugs and training in District E; technical and financial assistance for Integrated Rural Development Program; financing rural sanitation projects.

United States Government
(USAID/Bolivia)

P.L. 480 food commodities; donation of drugs, medicines and vehicles (1984)

APPENDIX G
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APPENDIX H

LIST OF PERSONS CONTACTED

Project Concern International, Inc.

| | |
|-------------------|---|
| Henry Sjaardema | Executive Director |
| Ralph B. Montee | Director, Health Service Department |
| Thomas W. Bentley | Regional Program Director, Latin America/Caribbean |
| Will Adams | Regional Program Director, Africa, Asia and Pacific |
| Truett Frank | Coordinator of Accounting Services |
| Andrew Krefft | Program Director, Mexico |

Office of Planning and Supervision, Oruro Regional Health Service

| | |
|---------------------|---|
| David Choque, M.D. | Director of Planning |
| Jorge Quiza, M.D. | Rural Supervisor |
| Gregory Rake, M.A. | P.C.I. Program Director |
| Angela LuTena | P.C.I. Nurse Educator |
| Oscar Velasco, M.D. | Educator, Coordinator Traditional Medicine |
| Gricel de Bellot | Economist, Administrator Drug Supply System |
| Lucy Sarmiento | Nurse Educator |
| Hugo Aguilar | Dispatcher, Drug Supply System |
| Elsa Cala | Secretary |
| Miriam Romano | Planning Auxiliary |
| Caterina Bellot | Secretary |
| Justino Calani | Driver |

Rural Health Personnel

| | |
|--------------------------|--|
| Juan de Dios Condori | Auxiliary Nurse, Penas (C-II) |
| Rogelia Choque de Alconz | Auxiliary Nurse, Paria (A-II) |
| Fermin Gabriel | Health Promoter, Tutuni (C-I) |
| Valerio Gonzalez, M.D. | Physician, Huari (C-III) |
| Dario Gutierrez | Sanitation Technician, T. Barron (A-III) |
| Ana Maria Lorono | Auxiliary Nurse, Cruce Culca (C-II) |
| Rodolfo Martinez, M.D. | Physician, Pasma (A-III) |
| Julia Morales | Auxiliary Nurse, Poopo (A-III) |
| Waldo Oropeza, M.D. | Physician, Poopo (A-III) |
| Ruth Plata | Auxiliary Nurse, Poopo (A-III) |
| Inocencio Yucra | Auxiliary Nurse, Corque (B-II) |

Appendix H (cont.)

Oruro Regional Health Service

| | |
|-----------------------|----------------------------------|
| Humberto Herbas, M.D. | Regional Director |
| Marina de Antezana | Director of Nursing |
| Mary de Flores | Director of Nutrition |
| Nilda de Gutierrez | Nurse, Maternal and Child Health |
| Juana de Loayza | Nurse, Continuing Education |
| Jorge Murillo, M.D. | Director, Tuberculosis Control |

Ministry of Public Health (central level)

| | |
|-------------------|---|
| Eunice Zambrana | Nurse, Office of Planning |
| Julio Mantilla C. | National Coordinator of Planning and Development |

Cochabamba Regional Health Service

| | |
|------------------------|--------------------------------------|
| Fernando Mendoza, M.D. | Regional Director |
| Rosario Andre, M.D. | Director, "Viedma" Regional Hospital |
| Evaristo Maida, M.D. | Rural Supervisor |
| Teddy Penafiel, M.D. | Director of Planning |

Regional Development Corporation of Oruro (CORDEOR)

| | |
|-----------------|---|
| Wilfredo Ramayo | Director of Planning |
| Raul Olivares | Health Specialist, Planning Department |
| Victoria Perez | Economist, Planning Department |
| Rene Mendoza | Accountant, Integrated Rural Development Program |

Related Interviews

| | |
|-----------------------|---|
| Joseph Bastien, Ph.D. | Consultant Anthropologist |
| Luciene Hache Savoie | Director, "Jesus Maria" School for Auxiliary Nurses, Oruro |
| Laura de Camarlinghi | UNICEF, Integrated Rural Development Program |
| Graciela de Quiroz | UNICEF, Integrated Rural Development Program |

Appendix H (cont.)

Leovigildo Aguirre S.
Rufino Copa E.

Director, CARITAS/Oruro
Rural Promoter, CARITAS/Oruro

USAID Mission to Bolivia

Lee Hougen, Dr.P.H.
Katherine Jones-Patron

Chief, Health and Human Resources
Deputy Chief, Health and Human
Resources

Arnulfo Penaloza
Sonia Aranibar

Food for Peace Officer
Development Planning Division

APPENDIX I

ITINERARY OF THE EVALUATION

| | |
|---------------------|---|
| 27 June 1983 | Visit to PCI home office in San Diego, California |
| 21-24 August 1983 | Oruro, Bolivia (Traditional medicine seminar) |
| 13-14 February 1984 | Santa Cruz, Bolivia |
| 15 February 1984 | La Paz, Bolivia (USAID/B) |
| 16-27 February 1984 | Oruro, Bolivia (field visit) |
| 28-29 February 1984 | La Paz (debriefing USAID & MOH) |
| 1-7 March 1984 | Santa Cruz (analysis, writing) |
| 8 March 1984 | Cochabamba, Bolivia (field visit) |
| 9-18 March 1984 | Santa Cruz (analysis, writing) |
| 20-21 March 1984 | San Diego (debriefing PCI) |
| 23 March 1984 | Washington, D.C. (debriefing MSH and AID) |

**APPENDIX J
EVALUATION PROTOCOL**

- Orientation and planning with the country program director to finalize arrangements.
- Introduction meetings with appropriate USAID/B officials. (Similar meetings were scheduled with Ministry of Health officials, but at the time of the team's arrival all public employees were on strike.)
- Initial meetings with the program staff to (i) brief the staff as to the purpose and methodology of the evaluation, (ii) obtain a brief history and description of the program and participating communities and agencies, and (iii) finalize the selection and schedule of field visits and persons to be interviewed.
- Conduct interviews, visit field sites and review documents; tabulate and analyze results.
- Detailed debriefing with program staff prior to departure; leave copy of draft conclusions and recommendations and important tables.
- Summary debriefings with Ministry of Health and USAID/B officials; leave copy of draft report.

APPENDIX K

AID HEALTH PROGRAM STRATEGY

Program assistance concentrates on: improving the effectiveness of health programs through improved program design, management and implementation; promoting self-financing of health programs; and increasing biomedical research and field testing in LDC settings. The Agency is giving increasing emphasis to private sector approaches to providing health care and health-promoting measures and private resources to cover the costs generated by health programs. The Agency continues to support indigenous institutions, including women's groups, universities and research institutions, village-level health committees, private sector health practitioners and enterprises, and voluntary organizations.

The objectives of AID's policy governing PVO relations and contributions are: to increase the economic development impact of PVO programs through increased program integration and focussing resources on field programs; to discourage dependence on U.S. Government financing of the international development programs of PVOs; to reduce the administrative cost to both AID and PVOs by simplifying management and administrative procedures; and to insure that AID funds are used in ways that reflect AID's legislative mandate, yet take full advantage of the unique capabilities of voluntary agencies.