

REPORT OF AN EXPERT REVIEW PANEL  
to The United States  
Agency for International Development

Regarding  
Andean Rural Health Care's  
Census-Based, Impact-Oriented Approach  
to Child Survival

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January, 1994

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January 19, 1994

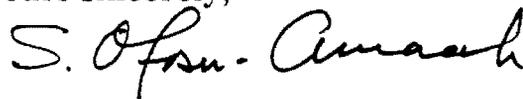
Dear Ms. Robinson,

Enclosed is the report of the Expert Review Panel established at the request of AID in December, 1992, to review the work of Andean Rural Health Care and the potential of its census-based, impact-oriented (CBIO) approach for enhancing child survival efforts in developing countries. The members of the Panel, all very busy people found the CBIO approach of interest and importance. Participation on the Panel gave members the chance to deliberate in detail on issues of community health care in developing countries and on the CBIO approach in particular.

This report and its recommendations, I believe, has the consensus of the Panel. We hope you, others at AID, and the PVO child survival community will find it useful.

The names of the Panel members are included in the report. On behalf of the Panel, I would like to thank you and AID for the opportunity to carry out this review.

Yours sincerely,



Dr. Samuel Ofosu-Amaah.

Encl.

## EXECUTIVE SUMMARY

The United States Agency for International Development (AID) provided support to Andean Rural Health Care (ARHC) for the child survival components of its health programs in Bolivia as part of AID's continuing search for the increasingly effective ways of improving child survival in developing countries. The census-based, impact-oriented (CBIO) approach of ARHC was thought to be worthy of study. AID appointed an Expert Review Panel to review the ARHC methodology and its implementation in Bolivia. The Panel's mission was to recommend whether or not the CBIO approach should be further supported and developed for child survival programs.

The Expert Review Panel met in plenary sessions four times between December, 1992, and May, 1993, and also sent two of its members to visit ARHC's projects in Bolivia in April, 1993.

The panel found the CBIO strategy to be an effective method for improving child survival and for dealing with other community health problems. The CBIO approach has achieved good service coverage and has developed an impressive system of information for monitoring, planning and evaluating its health programs. The panel recommended improvements to increase the prospects for sustainability.

The CBIO approach to health care, the Panel agreed, is a four-stage strategy which emphasizes community diagnosis, determination of health priorities within the community, program planning based on these priorities, and periodic program evaluation. Evaluation is based on an information system that makes possible the measurement of mortality impact and also ongoing adjustments in program activities. Routine systematic home visiting is used for updating census, epidemiological, and vital events information, for determining families at risk, and for providing health care and education in the home. The CBIO approach is being implemented in three areas: Carabuco (on the Northern Altiplano), Mallco Rancho (in the State of Cochabamba), and Villa Cochabamba (part of the city of Montero). The projects are expanding in all three areas.

The CBIO methodology assures virtual universal coverage of basic primary care and child survival services. In 1992, 73-86% of children 12 to 23 months of age in ARHC's established project areas were completely vaccinated with the standard six antigen series. The same order of coverage was also achieved for growth monitoring and other child survival strategies except for the mothers' use of oral rehydration therapy (ORT). The project has the capacity to target precisely persons at risk because of the virtually complete coverage of the community with primary care services through a combination of home visits and clinic-based activities. The impact of the projects on child mortality is not conclusive because of the small populations in each of the

project areas and small numbers of infant and child deaths, but the data are nonetheless suggestive of improvements in the desired direction. There was a 31-46% improvement in childhood mortality relative to comparison areas for which mortality data were available. Nevertheless, the evidence is clear that the projects are making a difference in the lives of children as well as in the lives of older members of the community.

The Expert Review Panel, concerned about some aspects of implementation, recommended that the projects could do more to involve the community so that they could become community-"owned" as well as census-based and community-based. The strategies for health education and the empowerment of families need strengthening. Also, the average annual cost of services per beneficiary (approximately \$9) was rather high and would need to be reduced in order to increase the prospects for sustainability. The current costs should be regarded in part as "start-up costs" and should come down with further expansion of the program.

ARHC should encourage and facilitate more clinic visits to reduce the numbers of home visits currently being provided. The frequency of home visits could be reduced after the first year of complete community coverage. Greater reliance could be placed on community volunteer health educators for specific tasks such as visiting families and encouraging the community members themselves to assist in the recording of vital events.

ARHC should further develop strategies for sharing epidemiological and other information with the community leadership. Community leaders should become involved in planning and in other project decision-making activities. Ways have to be found to increase the contributions of the community and the Ministry of Health to the local projects.

The Expert Review Panel finds the CBIO approach to be a worthwhile strategy and recommends that ARHC continue to improve its work in the areas suggested. The Panel also recommends that ARHC begin to share its experience widely.

ARHC should, with the support of AID-Bolivia, work together with Bolivian health authorities and other health agencies to adopt and to test the CBIO approach at the district level. AID should support the testing of the CBIO approach, with the enhancements suggested, in other countries.

## Preface

In 1992, Andean Rural Health Care received support from the PVO Child Survival Program of the United States Agency for International Development to document its progress in the implementation of its census-based, impact-oriented (CBIO) approach to child survival. In addition, an external Expert Review Panel was formed to provide an independent evaluation of this particular version of child survival programming and to recommend to AID and other international funding agencies whether and how this approach should be further developed.

The following report is the result of four, day-long meetings held in Baltimore between December, 1992, and May, 1993, along with a two-week field visit to Bolivia to review directly ARHC's application of the CBIO approach.

The panel members are listed on the previous page. The report is a summary of the Panel's conclusions reached after reviewing documentation provided by Dr. Henry Perry (ARHC Program Advisor), after group discussions, and after a field site visit by Dr. Ofosu-Amaah and Mr. Schaeffer. A complete report describing the CBIO approach and ARHC's progress in the application of the CBIO approach is available as a separate document (see below).

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Perry, H. The Census-Based, Impact-Oriented Approach and Its Application by Andean Rural Health Care in Bolivia, South America. Final Report to the USAID PVO Child Survival Program. October, 1993.

Members of the Expert Review Panel

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## CONCLUSIONS AND RECOMMENDATIONS

The Expert Review Panel identified at its first meeting the main issues to be addressed. These included the information system, the services themselves, the involvement of the community, and costs/sustainability. The Panel's observations and comments are meant to help strengthen the effectiveness and sustainability of ARHC's child-focused, but still comprehensive, primary health care projects. Because of the increased awareness within the United States Agency for International Development (AID) of the importance of sustained health development, it is now time for AID to provide major support for such projects. Such support would build on the successes of the child survival initiative where the 'easy' interventions are already underway. More comprehensive programs which are rooted in local community needs and aimed at community "ownership" will be the next phase of protecting the gains of child survival programs. This is a much more complex phase and will require a determined building of local capacity and a more flexible approach to program development. The ARHC projects are of this genre, and the Panel's conclusions and recommendations are meant to encourage efforts in this direction.

The Panel concluded that ARHC has successfully established a community health information system, based in part on routine home visitation. The data collection, analysis, and surveillance activities have been the basis for an effective health information system. The census-based, impact-oriented (CBIO) approach ensures that people at risk are easily targeted. The CBIO approach also enables constant refining of health risks and the appropriate program responses to those risks. There was an impressive precision and effective use of this information.

The ARHC projects have developed excellent and effective health information systems (HIS) but there is need for further simplification, better feedback to the community, and further utilization of the HIS to improve the projects' cost-effectiveness.

The services provided by ARHC's projects, while comprehensive, also have a clear child survival focus. They are devised so that there is virtual total coverage and interaction with each household. For these reasons, and since lack of financial resources is no barrier to services, there is a clear demonstration of equity.

Routine systematic home visitation is used for updating the census and epidemiological information, determining families at risk, and providing health care and education in the home. Home visitation is an integral part of the CBIO approach. It is a powerful instrument for improving the health of communities. The projects should continue to refine the home visitation strategy in an attempt to further reduce costs. Visits could be carefully

clustered to a given section of a project area. The projects should consider the possibility of charging for home visits, especially when services in addition to the basic home visit are provided, lest over-dependence be created.

ARHC's health education activities require further improvement through establishing a system that is appropriate to Bolivian circumstances. The Panel recommends that a health education methodology be adapted to the CBIO approach, making use of the considerable local bilateral and non-governmental organization (NGO) experience and resources which are available.

The ARHC auxiliary health nurses are well-motivated, professional and committed. They are well-supervised, and their salaries are better than those in the Ministry of Health (MOH). How sustainable is this? ARHC should continue to adjust its staffing pattern to arrive at a formulation that would be more replicable.

MOH workers could enhance their skills through being introduced to the training methods and experiences of the ARHC projects. Given their considerable and unique field experience, ARHC projects should be involved in augmenting the training of community health auxiliaries throughout Bolivia. In addition, they should be involved in the training of trainers of health auxiliaries and community leaders in health and related development activities. The newly-constructed training facility in Mallco Rancho could, for instance, be used as part of this strategy. An important development is the interest on the MOH's part in expanding the CBIO approach throughout the Quillacollo Health District in which the Mallco Rancho and Sipe Sipe projects are located. Expansion of program activities with the MOH to the district level will be of great interest because it will determine how far CBIO principles can be taken within the constraints of the Bolivian health system environment.

The Panel is of the opinion that, although the communities were approached to become involved with the projects and in some cases the communities took the initiative, this has not been systematic. Therefore, the communities were not prepared for any meaningful responsibility for the project in their area. Also, the program of volunteer health educators has not been very successful because of high attrition. The projects in all three areas have, however, assembled a great deal of community and epidemiological information. This information does not appear to be shared with or used by the community in any significant way. Community participation in the projects should be systematically intensified to increase the prospects for community "ownership" and sustainability. Community leaders should become more involved in program problems and decisions. Strategies should be devised that develop the pride of communities in their contribution to the health programs. Above all, the community (including women's groups) should be fully involved in the

processes of assessment, analysis, and planning of community action for health.

The Panel is convinced that home visitation is the foundation of the CBIO approach. It is a powerful instrument for improving the health of communities. The projects should continue to "fine-tune" the home visit strategy in an attempt to further reduce costs.

ARHC has effectively sought out and secured project financing from a variety of Bolivian and international sources. The project funds appear to be well-utilized and closely monitored. The Panel does not think that enough attention has been given to the issue of cost recovery and to the eventual assumption of responsibility for the expansion of the projects by the MOH and the communities. These issues should be given special attention in preparation for the eventual phasing out of external funding sources.

More investigation will be needed on the economic aspects of health care. The willingness and ability of the lower income populations in Bolivia to pay for health care services needs to be carefully assessed as part of an overall strategy for ensuring access to basic health services for all Bolivians. This is an issue that concerns all health NGOs, donors, and the MOH.

To encourage further development of local "ownership", there needs to be further attempts to involve the MOH at the national, regional, and local levels with NGOs. A Bolivian NGO-MOH group could be set up to monitor progress, especially in the further involvement of communities in health programs.

The Panel found that the ARHC projects consulted the MOH regularly and made efforts to work closely with it. This was indicated in part by the MOH committing health workers and supplies to the projects. The projects regularly provide information to the MOH's new health information system.

The Panel is of the opinion that the CBIO approach is working well in Bolivia, but could improve in the areas of community participation and in reducing costs to assure sustainability. It was clear to the Panel that ARHC's projects are achieving health results well beyond the narrow GOBI\* expectations to the satisfaction of the communities.

The CBIO approach should be replicable as a logical and equitable way to deliver primary health care to achieve Health-for-All. However, there will need to be further simplification and adjustments in conformity with the projected Bolivian national capacity in order for the CBIO approach to be

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\*GOBI: growth monitoring, oral rehydration, breast feeding, and immunizations

sustainable and therefore fully replicable. The potential for the development of country-wide sustainable primary health care programs will eventually depend on the will of the government of Bolivia and the local communities.

The approach merits support by AID-Bolivia and by health development agencies in other countries as an important strategy for improving health, especially where child survival initiatives have increased community understanding of the effectiveness of modern health care.

## INTRODUCTION

Andean Rural Health Care (ARHC) is a US-based non-governmental organization working in Bolivia in the development of primary health care. ARHC adopted a census-based, impact-oriented (CBIO) strategy for improving the health of communities. Program priorities are based on epidemiological and community diagnoses.

While the CBIO approach encompasses the child survival target diseases so characteristic of poor developing countries, it also encompasses other key problems deserving of attention. The approach is able to differentiate the relative importance of particular diseases in the different socio-ecological zones of Bolivia.

ARHC obtained part of its funding for the implementation of the CBIO approach from the AID Child Survival Program. AID, interested in an assessment of the CBIO approach, constituted an Expert Review Panel (hereafter referred to as the Panel). The Panel members are listed in Appendix A.

Some of the key components of interest identified by AID were (a) local diagnosis of problems using cause of death data, (b) home visitation, and (c) community involvement. Concerns were raised regarding the high degree of dependence on external funding and the involvement of expatriate volunteers in program activities. AID requested analyses of the issues of cost, sustainability, replicability, and assurance of long-term quality.

AID's charge to the Panel was as follows:

- to determine if the CBIO approach in principle has merit for further development as one method of improving the effectiveness of child survival projects;
- to review the progress which ARHC has had in implementing this approach and to provide critical comments regarding the potential for other health programs to adopt this approach; and,
- to recommend to AID if funding should be provided to develop this approach further and to provide guidance as to how this funding should be directed.

ARHC was asked to provide the Panel with a detailed report on the progress of the projects. The Panel was able to meet with Dr. Henry Perry, ARHC Program Advisor, while he was in the process of preparing this report. Consequently, his report reflects some of the questions and interests of the Panel. This

report<sup>1</sup> should therefore be read in tandem with the Panel's report.

The Panel selected two of its members, Dr. Ofosu-Amaah and Mr. Schaeffer, to go to Bolivia to visit the three projects under review. The trip report and the conclusions of the visiting team are included as Appendix B. The following report to AID therefore reflects the thinking of the Panel members. It is based on information arising from the report of Dr. Henry Perry and the report of the visiting team to Bolivia.

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<sup>1</sup> Perry H. The Census-Based, Impact-Oriented Approach and Its Application by Andean Rural Health Care in Bolivia, South America. Final Report to the USAID PVO Child Survival Program. October, 1993.

The deliberations of the Panel as reflected in this report deal mainly with the principles and concepts of the approach rather than with all the intricacies of implementation and performance of the ARHC projects. The two Panel members that constituted the visiting team to Bolivia confirmed the contents of Dr. Perry's document. The following report discusses fundamental issues of primary care and child survival programming and how they pertain to ARHC's projects in Bolivia.

During the 1980s, many donor-supported health programs concentrated on child survival interventions such as immunization and diarrhoeal disease control programs. This approach, called "selective primary health care," focuses on "low-cost, effective" interventions rather than on systems that support the development of comprehensive primary health care. The issue of sustainability of the selective primary health care approach has become of increasing concern to policy makers.

There is no question that the child survival technologies dealing with the major proximate causes of child mortality make a difference to the children that are reached and, in the case of some vaccines, reduce disease in other children through the operation of the mechanism of herd immunity. Unfortunately, without major changes in the social and economic conditions that are the underlying determinants of most health problems, without sustained health promotive and health care systems, and without local capacity and empowerment to ceaselessly tackle the problems of morbidity and mortality, the effects of child survival programs will not be long lasting.

There are now many examples throughout the developing world of sustainable systems of health care which, in the words of the Alma Ata Declaration,<sup>2</sup> are "universally accessible to individuals and families in the community through their full participation and at a cost that the community and the country can afford to maintain...."

The Panel is convinced that the CBIO approach is a credible attempt to deal with the issues of child mortality in an effective, humane and epidemiologically precise manner that has the potential for genuine community empowerment and sustainability. The CBIO approach has the potential to contribute significantly to the reduction of the burden of disease, disability and death in developing countries.

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<sup>2</sup> WHO/UNICEF. "Alma Ata (1978): Primary Health Care". Health-for-All Series No.1. WHO, Geneva: World Health Organization, 1978.

## THE CBIO APPROACH

### A. Defining CBIO

The CBIO approach is a set of principles that form the conceptual basis of the work of Andean Rural Health Care's projects. The concepts are based on the previous experiences of various community-based health projects around the world. The CBIO approach is also a response to the impact-focused child survival concerns of many international agencies such as AID and UNICEF since the mid-1980s. The vision of the CBIO approach is to achieve the objectives of the child survival movement but within a more comprehensive and more sustainable community-based framework.

From the ARHC perspective, "CBIO" involves a determination of community health priorities from a scientific, epidemiological perspective as well as from the standpoint of the community. Using available resources, a program is developed which addresses these health priorities and evaluates the impact of program activities on the health status of the community. The approach is "census-based" because it involves community censuses covering all members of the community and identifies the most frequent, serious, preventable or treatable conditions in the community. It is "impact-oriented" because the over-arching goal of the approach, and the measure of its assessment, is the improvement of health and demonstration that this has, in fact, been achieved. An integral part of the approach is routine systematic home visitation. The 12 elements of the CBIO approach<sup>3</sup> are grouped into four implementation phases as follows:

#### Phase I: Community Diagnosis

- Engaging in dialogue with the community and establishing a trusting relationship.
- Conducting a census of the community.
- Ascertaining the health needs and priorities of the community.
- Establishing the baseline health status of the community and a system for regular updating of the epidemiological and vital events profile of the community.

#### Phase II: Program Planning

- Determining program priorities through an analysis of the epidemiological situation and the priorities of the community.
- Formulating a work plan based on program priorities and resource availability.

#### Phase III: Program Implementation

- Providing comprehensive and readily available primary health care services.

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<sup>3</sup> See footnote 1.

- Ensuring that basic services for priority epidemiological problems reach a high proportion of the program population through clinic and home visits.
- Identifying precisely the immediate and underlying causes of death and those groups at high risk of death.
- Assuring high coverage of essential services for the entire population, not just those who visit the clinics.
- Visiting all homes in the program area systematically and routinely with more frequent visits for those at high risk.

#### Phase IV: Evaluation and Community Rediagnosis

- Monitoring mortality impact and redefining periodically the leading causes of death and those at greatest risk of death.

Several advantages are claimed by ARHC for the CBIO approach. By conducting a census and community diagnosis of health problems as well as by recording all vital events, denominators and various numerators are obtained enabling the computation of morbidity and mortality rates. It also provides the opportunity for achieving high coverage of health interventions such as growth monitoring, immunizations, oral rehydration use, and the treatment of acute respiratory infection. This is because children are identified through the census and through ongoing home visitation.

The CBIO approach makes it possible to tailor health interventions to the important and prevalent local health problems. This approach creates strong local political support for the health program and therefore improves the prospects for sustainability.

The Panel identified additional strengths of ARHC's projects to be the following: the training of local community workers, systematic supervision, and the ability to adjust activities as needs change.

#### B. The Basis of the CBIO Approach

The CBIO approach consists of the provision of primary health care based on a careful understanding of the community's health needs and involvement of the community in the health care process. As such, it contains the basic precepts of primary health care enunciated at Alma Ata in 1978. These precepts include making essential health care available to all in the community, involving the community in decisions regarding their health, and continuously monitoring the effectiveness and impact of the program.

The CBIO approach rests near the mainstream of much recent thinking about the delivery of essential health services, such as expressed in the 1993 World Development Report of the World

Bank<sup>4</sup>, in the Bamako Initiative Project<sup>5</sup> and in other projects. These all attempt to combine community participation with a renewed focus on high priority epidemiological conditions using low-cost and effective technologies.

The CBIO approach emphasizes the collection and analysis of health and socioeconomic information, obtained largely through home visitation. The approach is therefore "community-focused," spanning participatory health development theory such as that of the community-based nutrition work in Iringa, Tanzania, with its 'Assessment-Analysis-Action' (Triple-A)<sup>6</sup> formulation, and in many others, especially in south Asia. The CBIO approach is also child survival focused. This program element is derived in part from the "selective primary health care" orientation to priority health problems in developing countries, and from the UNICEF Child Survival and Development Revolution which, while emphasizing priority childhood diseases, also has the objective of improving the total primary health care system.

The Panel thus did not regard the CBIO approach as a completely new model. The CBIO approach tries, nevertheless, to deal with some of the weaknesses in primary health care implementation. However, there is a need to emphasize the distinctive features of initial community consultations, conduct of local censuses, and home visitation. Though these may seem obvious components of primary health care, they have been seldom implemented because of the perception that they are not such a high priority and because of the sheer difficulty and the time requirements to carry them out. The Panel urges that the methods used in the implementation of various community-oriented approaches be documented so as to assist others who might wish to replicate these approaches.

The Panel discussed at length the time required to start a community-based health program and, for that matter, any community social development program. The general tendency of agencies to structure the development process according to their own judgment of the time required rather than on the basis of social acceptance and interest in the community has often been a source of great difficulty and even failure, particularly with respect to sustainability. The need is to remain flexible so as to take advantage of opportunities as they arise during interaction with communities.

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<sup>4</sup> World Bank. World Bank Development Report: Investing in Health. Oxford, England. Oxford University Press, 1993.

<sup>5</sup> S Jarrett and S Ofosu-Amaah. Strengthening health services for MCH in Africa: The first four years of the 'Bamako Initiative.' Health Policy and Planning 1992; 7:164-176.

<sup>6</sup> Joint WHO/UNICEF Nutrition Support Programme in Iriniga, Tanzania. 1983-1988 Evaluation Report. Government of the United Republic of Tanzania, WHO, and UNICEF. Dar es Salaam, 1989.

## THE CBIO APPROACH IN PRACTICE

### 1. What is the CBIO approach in practice?

The CBIO approach, derived from community-based health programs, was developed at Andean Rural Health Care in the mid-1980s. In a sense, the CBIO approach gradually evolved into a coherent system of health care over a five-year period. Originally a "convenio" (agreement) was signed between the Ministry of Health (MOH) of Bolivia and Andean Rural Health Care in March, 1983, for the development of a health service on the Northern Altiplano to cover a population of 100,000 people living in communities between the towns of Achacachi and Escoma. The project was to have been centered around the MOH hospital at Achacachi. Bolivian political and other practical difficulties limited the initial project to a more restricted area around the town of Carabuco.

Since a major aim of the project was to measure program impact, it became essential to conduct censuses and to obtain other baseline information needed for a community health diagnosis. This began in mid-1983. Financial support was augmented by the AID PVO Child Survival Program starting in 1987. The community contributed their labor and other resources in the building of health posts in the Carabuco Health Area. Eleven of the twelve posts were built with the assistance of resources from the Social Emergency Fund of the World Bank. Fifteen local staff were trained as community auxiliary nurses. They took part in discussions with the communities, house numbering, the preparation of family folders and other community activities. Routine systematic home visitation started in mid-1988.

In 1989, projects were established in Mallco Rancho (Cochabamba State) and in Villa Cochabamba, Montero (Santa Cruz State). The Carabuco project on the Northern Altiplano has recently expanded to Ancoraimes. The Mallco Rancho project has expanded to Sipe Sipe, and the Montero project to neighboring communities near Villa Cochabamba.

Opinion among members of the Panel was divided regarding the strict definition for the "census-based, impact-oriented" approach. There was a great deal of discussion about the definition and the actual practice of the CBIO approach. Many on the Panel thought that the cornerstone of the CBIO approach is a health information system which is based on systematic home visitation to identify, monitor and respond effectively to health needs. This type of information system is required to achieve the four "implementation phases" of the ARHC projects, namely (1) community diagnosis, (2) program planning, (3) program implementation, and (4) program evaluation and re-diagnosis. The other view of the Panel was that the information system was developed to serve the needs of the projects and not the other way around.

The information system is the key element upon which project development is based. Other important elements of the projects include the following:

- incorporation of curative and preventive health services which respond to the community's felt needs
- an adequate number of qualified and well-trained health staff who are able to maintain the health information system as well as to provide preventive and curative care
- an adequate supply of drugs and use of a revolving fund for drug maintaining supply
- adequate management and supervisory capabilities
- capability of obtaining additional external funding
- limited cost recovery.

Certainly all three of the ARHC projects include a fairly comprehensive curative and preventive service delivery component. The extent to which these services are provided in the home as opposed to the clinic raised some concerns among Panel members about fostering community dependence on home service delivery. It can be argued, however, that it is the service component of ARHC's CBIO approach which strengthens the health information system. Community health workers are more likely to perform their jobs well if they are assured that they can offer something more than information to those in need of treatment. Also, community members are more likely to cooperate with home visitors if these visitors facilitate their access to health care.

2. In what way has the CBIO approach been successful and/or unsuccessful?

This section discusses the Panel's views on different aspects of the CBIO approach. These aspects include the information system, service delivery (including home visitation), equity and access to services, training and supervision, community participation, results and impact, financing, replicability, and sustainability.

a. information system

The information system is one of the strongest features of the project. This is not surprising since a key principle is to ensure that the population is covered and that impact can be measured. There was therefore, from the beginning, systematic implementation of an information-gathering system starting with the census, house numbering, and the preparation of household folders. Various household surveys provided additional epidemiological information which facilitated community diagnosis.

Careful attention was paid to routine service data, including data on the utilization of drugs and other supplies. The collection of data on vital events and causes of death,

granted that most of these were from "verbal autopsies," has provided information on mortality impact.

The project staff were involved in the design, collection, and interpretation of the information. They made use of it in their daily routines where necessary. For instance, this information was used in planning home visitation, in determining those in the community at risk, and in identifying pregnant women, malnourished children, and children who had not been immunized. In effect, the projects set up simple, goal-oriented information systems. They did not depend upon computers for tabulation and analysis in the field. Although the projects collected some detailed information not required by the government's national health information system, they also made certain that their data were completely compatible with it.

One problem, noticed particularly in Villa Cochabamba, Montero, was that the information system became so elaborate that it included virtually research-type information. The data collected were very interesting, but there is no real likelihood of replicability in the normal service situation.

Overall, the information system works well, and has proved to be highly useful for surveillance, for the determination of coverage, for assisting in patient care (including follow-up), and for administration. It is also useful for measuring impact, though factors such as the small numbers of infant and child deaths limit the extent to which the system to date has provided definitive results regarding impact.

The system developed by ARHC facilitates the collection of reliable health data that tends to be difficult to obtain. Periodic household surveys make it possible to assess population coverage of services. Registration of vital events makes it possible to obtain numerator data for mortality rates, while periodic censuses provide the denominator data required for mortality rate estimation. Because these data have been used to document programmatic progress, they have helped keep the project staffs informed and well-motivated. More importantly, the system has made it possible to identify the most pressing community health needs and to target those children in the community most at risk. The health auxiliaries plan their work more effectively by the daily updating of their wall charts which show the health status of the highest-risk clients. Routine home-based contact between project staff and the families helps foster the trust that must exist before project staff can use data appropriately.

In conclusion, the Panel is of the opinion that ARHC has successfully established a community health information system, based in part on routine home visitation. The HIS, however, is but a tool designed to improve community health, to promote equity in the use of health services, and to increase community involvement in project planning and management. It is important to review the information system regularly so as to prune it of

unnecessary data which might overwhelm the system, data that might be "interesting" but of no direct advantage in the day-to-day use of information for decision making.

b. service delivery:

The ARHC constellation of services is quite comprehensive. The services provided reflect the needs of the community and are not merely based on external technical considerations. The early identification of the importance of childhood pneumonia sprang from careful community epidemiological surveys. The surveillance system ensures that the projects are sensitive to new health problems and able to respond to them. The surveillance system prevents the projects from blindly focusing only on externally-established interventions.

The projects make certain at the same time that they emphasize immunization, the treatment of diarrhea, growth monitoring, and other child survival elements. They also give attention to women's health problems and to family planning. The projects therefore fulfill the mandate of the child survival initiative while also responding to other health problems of communities.

The training of health auxiliaries is based on the need to deal with all the major health problems of the communities. The projects assure the regular availability of drugs and other supplies. The technical quality and relevance of expertise provided to the projects is appropriate. The relative quality of the clinical services is adequate. The quality of services is comparable to other NGO-supported health programs and is possibly better than MOH-supported services outside the ARHC areas. ARHC's high level of staff motivation and the availability of drugs and supplies make this possible. Coupled with home visitation, which makes it possible to identify many health problems early and to respond to problems that might not be brought to the facilities, the overall quality and adequacy of services appears to be very high in relation to prevailing standards.

This higher quality of services results in relatively high costs. What needs to be done is to maintain quality while reducing the costs of providing services of acceptable quality.

Patient referral and administrative linkages appear to be good and represent the fruits of careful groundwork laid by the projects.

A stronger relationship is needed between the Carabuco project and the MOH supervisory office in La Paz. This has not been easy to develop because of the four-hour trip required for site visits from the MOH. In the other two project areas, distances between the MOH supervisory offices and project sites are much less. This has helped to facilitate the close and

cordial relationships which have developed in Mallco Rancho and in Villa Cochabamba/Montero with the MOH supervisory offices. Referral of patients for hospital services appears more than adequate in all three project sites, although patients from Carabuco frequently have to be transported four hours to La Paz in order to receive appropriate care.

Routine systematic home visitation is organized on a regular and sustained basis. Health auxiliaries have groups of families in the community that they visit at least once every six months. All those at high risk are visited more frequently. These include families with children under five years of age or with specific health problems. Children under one year of age are visited at monthly intervals, and those under two are visited bi-monthly. Epidemiological and vital events information is collected or updated during the home visit. Children under five years of age are weighed and their heights measured. The results are discussed with the mother. During the home visit, health education is provided concerning major health problems. If an illness is encountered during the home visit for which the health worker has competence, treatment is provided. If treatment cannot be provided in the home, referral is arranged to the health center or to the hospital. If the child needs a vaccination, this is provided in the home.

In the early years of the projects, almost all staff members found the home to be an unfamiliar context within which to undertake professional work. After a few years, most have discovered with satisfaction the new perspectives they have acquired by becoming well-respected and consistent visitors to every family in the community. The CBIO methodology, including home visitation, has provided the project staffs with a sense of professional pride and accomplishment which has proved to be a strong source of motivation.

The Panel discussed the value of routine systematic home visitation. In its defense, it was argued that it enables the specific identification of health problems in the home. It was recognized that the major health problems, especially those of young children, emanate from the physical environment of the home and from the health behavior of members of the household. Routine home visitation is therefore a sensitive way of determining health risk. It is also a reliable method for identifying and recording vital events.

In societies without telephones or other forms of convenient communication and in which, without encouragement, families would as a matter of convenience employ less effective traditional remedies, nothing encourages families more to receive modern health care than the visit of the health auxiliary. Home visitation, called also health visiting, has been a feature of ministry of health services in many countries. Through home visitation, trained nurses or volunteers try to ensure that

children and families at risk are identified early enough for health interventions to be successful.

While there is no question of the importance of home visitation to families with some health risk or a special need, the Panel felt that there is the potential of spending excessive amounts of time on routine visits. Though beneficial, routine visits might prevent the health worker from being present a sufficient amount of time in the health post to see other patients. The focus must remain firmly on families at risk. Home visitation which routinely takes health care to the home might encourage families not to trouble themselves with visits to the health clinic. Such a system would therefore be seen as unduly expensive and not the optimal use of health worker time.

There may be greater justification at the beginning of services to a new community to have more frequent home visits. Then, the frequency of routine visits could decline to a minimum, perhaps once a year, for monitoring vital events within a given family. It might also be possible to visit several families in the neighborhood in an appointed place such as a community center or a house with adequate room for such a gathering. These are often referred to as health rallies.

The benefits of home visitation may be greater in relation to costs in areas where the population is widely scattered and where the community has difficulty in transportation. In such a situation, it becomes cheaper for the health worker to travel to see many people than for individual community members to make visits to a distant clinic.

c. equity

Most of the residents of the communities in Mallco Rancho and in Villa Cochabamba live within a distance of a mile or less from the health center, so there is no really overwhelming problem of physical access. In the Carabuco area on the Northern Altiplano, communities are widely scattered over a mountainous terrain. The health posts were built to reduce the travel distance and to improve access. Even with these new health posts, there is still more effort required to go to a health post than in the other two project areas.

Overall access to health care is adequate in the project areas. Moreover, the home visitation system improves access to preventive services such as immunization and growth monitoring. Almost every person in the projects therefore has contact with the health system.

There is no social or financial barrier to the services that the projects provide. Patients pay for services but no one is turned away for lack of money. It is not clear how staff determine who is unable to pay the prevailing fees, however.

The ARHC projects have successfully promoted equitable use of health care services. It is impressive that even in the peri-urban project area of Villa Cochabamba/Montero with high levels of in- and out-migration, the project manages to include all community residents in its home visitation system. To be really certain that such a high degree of equity has been achieved, however, additional studies are necessary.

d. training and supervision

The levels of technical competence of personnel differ among the three project areas. In Carabuco, the most rural project area, community-selected persons who had mainly primary school diplomas were trained for a year to become community health auxiliaries. Given their educational background and the length of their health training, these health auxiliaries appear to be competent and to know when to refer their patients to a higher level of care.

The enthusiasm of the personnel could be due not only to the clarity of the objectives and methodology of the projects, but also to the fact that their salaries are generally 30% to 50% above what the Ministry of Health provides. ARHC personnel are also supported by an efficient administrative system and have regular in-service training. Another motivating factor is home visitation. Through home visitation, the auxiliaries keep close to the community, maintain a sensitivity to community needs, and feel first hand the appreciation and regard of the families in the community.

It is evident that project health staff feel much better taken care of than their counterparts in the Ministry of Health. A key to the project's effectiveness is an efficient administrative and supportive system. Is this level of effectiveness sustainable?

e. community involvement

The ARHC projects began after consultation and agreement with the Ministry of Health. Early problems restricted the original project to Carabuco with a population of 9,500. ARHC took appropriate steps to consult with the elected community leaders there and, after much discussion, agreed on an implementation plan. Local community leaders are elected annually. This limits longer-term political support and hinders the leaders' understanding of the project.

The Carabuco communities took part in the building of health posts, although most of the resources came from outside the community. From the beginning, the involvement of community leaders was evident. For instance, there was strong community participation in the selection of candidates for training as health auxiliaries and as volunteer health educators. The community leadership was interested enough to participate in the

house-to-house surveys and censuses as well as in the assessment of needs and priorities. Interest later dwindled, however, partly as a result of the annual rotation of leadership roles at the community level. Also, the community leaders are now not involved in the regular oversight or management of the project, although nothing stops them from contacting any of the health workers regarding an issue affecting the community.

Women's clubs, which were formed before the Carabuco project began for receiving food supplements, have continued to meet for health education. Not so successful has been the use of community volunteers as health educators. There has been a great deal of attrition. If attrition could be reduced, the volunteers could be of more assistance in home visitation (especially to low-risk families) and in the recording of vital events.

There were some difficulties in the interaction with the leadership in the Carabuco area because from the beginning the community was seeking a hospital and a potable water system as a "quid pro quo" for their support of ARHC. It was almost as if they thought they would be doing a good turn to the project. This is a phenomenon that occurs especially with externally funded projects because of a perception that the client community can get whatever it wants and that the external agents are under pressure to perform a program with a set deadline. Fortunately, this issue was resolved. The early contacts in Mallco Rancho and in Villa Cochabamba/Montero were different and more positive. In Mallco Rancho, there was a clearly felt need of the community for health care and there were Bolivian health professionals who could respond to this need. This was also the case for Villa Cochabamba/Montero.

There appears to have been no special mechanisms created to ensure continual dialogue and accountability to the community. The local village councils, which have health as one of their responsibilities, could routinely invite the project leadership for a meeting on any concerns that either side might have, such as the fees charged for services. In Mallco Rancho, the participation of health project leaders in community committees facilitated the sharing of information about the project with community leaders.

The available evidence indicates that the communities have not developed a sense of ownership for the projects. The communities are in no way hostile to them, however. The communities have no knowledge of the overall cost of the projects but are willing to pay for specific services since they appear to be satisfied with them. Some staff members are reluctant to share detailed financial information with the community leadership for fear of misunderstanding or even jealousy about the level of remuneration received by the staff.

It is not clear to what extent the projects are empowering communities for self-reliance in health. Community health

education was judged to be a weakness of the projects. Both sustained improvement in health status and sustained demand for health care services require that the members of the community be informed about protective health care behaviors and preventive health services.

Although the projects have consulted with the community and in some ways could be said to be in continual dialogue at the family household level, the community leadership does not yet have a clear ongoing oversight role. ARHC should be encouraged to work at strategies which foster the community ownership of health services.

#### f. results and impact

Over the past five years, ARHC has managed to extend coverage to virtually the whole populations in each of the three project areas, especially with the child survival interventions. For example, coverage of children between 12 and 23 months of age with the complete set of EPI vaccines was 88%, 73%, and 82% in 1992, for Carabuco, Mallco Rancho and Villa Cochabamba respectively. Children under 24 months of age had their weights and heights measured an average of 4.3 - 6.6 times during 1992. The numbers of home visits completed in Carabuco, Mallco Rancho and Villa Cochabamba in 1992 were 3,219, 6,018, and 6,504 respectively. The coverage with other services is equally impressive, as can be verified from the study of ARHC documents. This is particularly true when coverage rates are compared to baseline data for areas such as Sipe Sipe (near Mallco Rancho) and Ancoraimes (near Carabuco) where ARHC projects are just starting.

Only 50% of the mothers in the project areas knew how to prepare ORT, however. These results indicate the need for more work in the area of behavior change and health education.

As already indicated, the impact of the projects on child mortality is not conclusive because of the small populations in each of the project areas and small numbers of infant and child deaths, but the data are nonetheless suggestive of improvements in the desired direction. There was a 31-46% improvement in childhood mortality relative to comparison areas for which mortality data were available.

#### g. economic aspects and financing

Funds for the program have come principally from AID, the Methodist Church, contributions from individuals in the US, Rotary International, the Bolivian government (mainly in the form of drugs, vaccines and salaries), and fees paid by the patients.

There has been no attempt to fully recover the cost of the projects from the community. The fee structure is discussed and agreed to by the leadership of the communities, however. It was

not clear, however, what principle is used to determine the level of the charges. In Mallco Rancho, the fees charged were low compared to those for services in nearby areas. In Carabuco, from March 1992 to the end of February 1993, only 3% of project costs were met with locally-generated income. For the same period in Villa Cochabamba/Montero, it was 17%.

The projects so far have not had an intensive cost-recovery strategy, particularly in the two less isolated and somewhat less impoverished communities of Villa Cochabamba/Montero and Mallco Rancho. There is concern that the imposition of higher fees in Carabuco, where the families are poorer and more isolated, would discourage the use of services and lower community health status. Cost-recovery policies in a very poor area such as Carabuco need to encourage overall economic development so as to increase local resources to pay for services.

ARHC's report to the Panel included a comprehensive and careful cost analysis of the projects. The projects are somewhat expensive relative to other public health care programs. The average annual local recurring total per capita cost of the three projects was approximately \$9. The Ministry of Health in Bolivia spent on a national basis \$6.59 per capita in 1987<sup>7</sup>. Per capita costs in rural areas are significantly less. This raises concerns about the financial sustainability of the projects. Future applications of the CBIO approach by ARHC should try to reduce costs without reducing effectiveness.

In a sense, the Panel feels that the question of financial sustainability is being asked after the fact. The original aim of the projects was to implement a new approach. Funds have been available so far. The challenge now is to determine how adaptable the projects will be to a reduced level of external resources. Any changes, of course, will need to take into consideration the potential for increased community contributions to the health projects while at the same time reducing expenditures without damaging substantively the essence of the strategy. The general poverty of the Carabuco area is such that subsidies will be necessary until there are improvements in local income levels. At any rate, studies are needed on the issues of community willingness and ability to pay for health care.

#### h. replicability

All of the original three projects are in the process of expansion. On the Northern Altiplano, the Carabuco project has expanded to the Ancoraimes area. In Montero, there has been expansion to other areas bordering on Villa Cochabamba. In the Mallco Rancho area, extension to the Sipe Sipe area has already occurred at the request of the local health authorities. Further

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<sup>7</sup> Martin R, P O'Connor, O Wolowyna, et al. "Evaluation of AID Child Survival Programs -- Bolivia Case Study". AID Technical Report No. 5. 1992.

extension of the Mallco Rancho and Sipe Sipe projects to the entire Quillacollo Health District in the Cochabamba valley is now being contemplated.

The Bolivian governmental health authorities' requests for extension of the projects implies that there is the potential for replicability. What has to be considered is the additional costs for any extension or replication. Presumably these additional resources would not be provided by ARHC.

The Panel is of the opinion that replication of the CBIO approach by either the Ministry of Health or by community residents will require a reduction in the frequency of home visitation. What might be of interest would be an expansion of the CBIO approach to other test areas under the control of the MOH. It could then be determined how much of the original design is replicable. The present ARHC projects could be used as sites for training and practice for MOH workers from the new areas where project expansion is occurring.

i. sustainability

The sustainability of the program depends on many factors but particularly on political, financial and technical considerations in Bolivia. Currently, the total local recurring per capita costs are \$9 per year. This does not appear feasible for long-term sustainability without external resources. Costs could be pruned by perhaps 30-40 percent, however. If the MOH continues the standard support it provides to each health district and allows the health program to retain the fees collected there, the model might be more feasible and sustainable. This would require, of course, a reduction in staff and a reduction in some activities such as home visitation. In any case, successful long-term sustainability of the projects will require joint planning and coordination with the MOH and with its local health departments. This may be more practical in the two less isolated project areas where there is a stronger MOH involvement.

## PROSPECTS FOR THE DEVELOPMENT OF THE CBIO APPROACH

### a. developing the CBIO approach

Considerations regarding the further development of the CBIO approach depend in part on whether the principles developed are potential guideposts for other PVO projects in Bolivia and in other countries, or are to be possibly incorporated into services provided by a ministry of health. The relevance of this to AID is whether its objectives are to support health care experiments in developing countries whose results and lessons will be incorporated into the ministry of health system or whether the objective is to assist PVOs in the management of humanitarian projects in needy countries and communities. Such considerations will guide the style and use of funding and the degree of involvement with a given government's ministry of health. It would also be useful to contemplate in-country mechanisms for the dissemination of lessons learned and for the phased development of the "ownership" that is such a critical feature of sustainability.

The original aim of the ARHC projects was to develop a model that was feasible, sustainable, and useful to the Bolivian Ministry of Health. The two considerations before the Panel were how relevant the ARHC model is to Bolivian circumstances and how it could be adapted to other situations and other countries, even by other PVOs.

### b. keeping an open mind

The Panel urges open-mindedness regarding possible options. The CBIO approach is an important variant of the community-based approaches used by other international PVOs, especially those which carry out child survival projects. The CBIO approach incorporates the internationally recognized diseases of significance for child survival into its program planning. Its epidemiological approach to community health problems, however, provides a flexibility that should not be deemed a weakness but rather a strength.

The relative costs among CBIO components, particularly the balance between service delivery costs and health information systems costs, should be carefully weighed. An overly expensive health information system would hinder replicability. It is important to determine the minimum levels of human and material resources, as well as the minimum level of governmental, external and community support that must be included to attain both impact and sustainability. It is especially important to determine the extent to which home visitation increases program effectiveness as well as costs in different settings. It is equally important to determine the degree and type of community involvement needed for the attainment of community "ownership" of the program.

c. financial sustainability

There is a need to more carefully assess the financial sustainability of the CBIO approach and to determine whether reduced levels of project personnel and home visitation might help make the projects more sustainable. As the ARHC projects and others with similar community approaches continue, it is important to analyze costs more carefully. A financial management information system should be established which would allow a) monitoring of costs over time as the projects continue, b) adjustment in the methods for allocation of joint costs to specific interventions, c) improved precision of cost estimates, and d) generation of cost information which could be used internally by management to identify more cost-effective ways of achieving the same health impact.

Other projects might investigate whether a different balance between service delivery and community outreach/health information is appropriate. As mentioned earlier, it is difficult to evaluate these two components separately in the ARHC projects, either in terms of health impact or financial sustainability. Since the goal of the CBIO approach is to improve community health status, the approach requires a basic knowledge of the health needs of all groups in the population, including groups that are often neglected. ARHC has chosen to obtain this knowledge by registering all residents and by monitoring them periodically to note vital events and changes in health.

It seems that any type of effective project planning requires a complete community census to enumerate all age groups and to identify those at high risk. Whether it is equally necessary to conduct periodic monitoring through home visits to all community residents is more debatable. If resources are limited, might it be better to assess the impact of the project through a sample survey? As the project areas and their populations grow, the development of "sentinel sites" for in-depth information collection representative of the whole area should be contemplated. Should monitoring be only for high-risk groups? Should this be done less frequently than currently practiced by ARHC for the remaining population?

Alternative monitoring systems should be investigated. If the purpose of monitoring is to connect people to needed services as well as to collect data, one cost-efficient method might, for example, be to conduct community-wide sweeps every six months to identify pregnant women at least once in the course of their pregnancies. They could be referred to appropriate prenatal/obstetric services. The outcome of their pregnancies could be determined and routine newborn care could be provided at subsequent bi-annual visits.

Besides planning reduced levels of staffing and home visitation from the start of a project, some thought should be

given to whether a project might "graduate" from a more intensive phase (which includes frequent home visits with home-based service delivery) to a less intensive phase (with fewer home visits and more clinic-based service delivery). Such a transition would also rely on the increased use of volunteers with appropriate training and support.

d. the need to recognize that one single system may not be appropriate to all settings

It seems that the question of essential inputs from external donors must be handled differently in different settings. The Mallco Rancho and Villa Cochabamba sites are less isolated and slightly less impoverished than Carabuco. In areas where the MOH's local health program is a viable presence and where residents are not so desperately poor that they cannot contribute any of their resources toward care, it is perfectly logical (and necessary) to choose cooperation with the government and cost recovery as a means to achieve sustainability. In isolated rural areas such as Carabuco, however, where the very poor population is quite distant from MOH services and where the government may not be able or willing to institute readily accessible comprehensive services for many years, it may be necessary to view the role of private organizations differently. It is necessary to recognize that in such areas, private organizations will have to maintain a presence for many years to supplement the limited attention which the government is able to provide.

e. the need to involve the community more fully in program planning and implementation

It is essential that the community's prioritization of needs be respected even if professional staff have a different viewpoint. There needs to be careful attention given to the strategies for social mobilization and for education of families and communities in health. Although ARHC staff do provide curative care for problems experienced by the community, greater emphasis appears to have been placed on addressing epidemiological problems identified by ARHC. This may have made it difficult for the projects to recruit and retain reliable volunteers.

Also, while there appears to have been adequate communication between project personnel and community leaders, it is not as clear that all community decision-makers were engaged in program planning. Because of the frequent rotation of community leaders, it is important for the projects to devote ongoing attention to maintaining local community political commitment. Defining a standardized and systematic approach to establishing community relationships and to encouraging more community responsibility for health would be a useful addition to the further development of the CBIO approach.

The ARHC projects should do more to share health information with the communities and to help them use this information themselves. It would therefore be advisable to develop well-defined and easily-implemented procedures for sharing health information with the community and for enabling them to interpret and use this information.

APPENDIX A

Members of the Expert Review Panel

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Members of the Expert Review Panel

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APPENDIX B

Report on the Visit of Representatives of  
the Expert Review Panel

to

Andean Rural Health Care's  
Projects in Bolivia

April/May 1993

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## APPENDIX B

### EXECUTIVE SUMMARY

We have visited three Andean Rural Health Care project sites in Carabuco, Montero, and Mallco Rancho between April 23 and May 5, 1993, to observe the census-based impact-oriented (CBIO) approach. This approach involves a five stage process of a) establishing a relationship with the community, b) community diagnosis (i.e. census, house numbering, epidemiological surveys), c) designing health activities after analysis and determination of the health priorities, d) regular monitoring and surveillance and e) refinement of the project based on the ongoing analysis of the data collected to measure impact.

Each project site is distinctive in geography, population distribution, level of poverty, and the provision of basic services. The Carabuco project site, by Lake Titicaca on the Altiplano in the Department of La Paz, serves 10,000 people in 31 disperse farming communities living at near-subsistence levels. It has a health center and 10 health posts, with a doctor and 11 community health auxiliaries (CHAs). The second project is in Montero in the Eastern lowlands in the Department of Santa Cruz and serves a peri-urban neighborhood "Villa Cochabamba," with a population of 12,000. The third project site is in Mallco Rancho in the Cochabamba Valley in the Department of Cochabamba, serving 11 communities and 6,125 people. This project is expanding into a neighboring health area, Sipe Sipe that has 18 communities and 9,000 people.

All three projects follow the basic principles of the CBIO approach with the health programs emphasizing child survival interventions, home visiting, and the maintenance of an intensive health information system. The totality of these primary health care activities makes it possible to provide comprehensive basic care services to the entire community and to measure their impact.

The project activities, we found, were quite faithful to the CBIO approach and we were impressed by the professionalism and commitment of the project staff at all levels. In all three areas the leadership is quite strong. Our observations and comments we hope will help to strengthen the quality and sustainability of the program.

We felt that, although the communities were approached to become involved with the projects and in some cases the communities took the initiative, this has not been systematic. Therefore, the community was not prepared for any meaningful responsibility for the project in their area. The impression created was that the projects are an "external gift" to the communities that could last indefinitely. Secondly, although volunteers were selected from the communities, this aspect of the projects has not been very successful. It was apparent that health information is not being appropriately shared with nor used by the communities. The programs in all three areas have, however, assembled a great deal of community and epidemiological information, enabling the project staffs to effectively plan

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and carry out health interventions in a professional manner. But it was not apparent to us that the communities were receiving or using this information to any great extent.

The data collection, analysis, and surveillance activities have been the basis for effective health information systems (HIS). The HIS ensures that people at risk are easily targeted. This is a dynamic process that allows constant refining of risk and the appropriate responses. We were impressed by the precision and effective use of this information. In two of the three areas there appeared to be a good working relationship between ARHC and the Ministry of Health(MOH).

We found that the projects consulted the MOH regularly and made efforts to work closely with it. This was indicated in part by the MOH committing health workers and supplies to the projects. The projects regularly provide information to the MOH's new HIS. The relationship with the MOH is evidently strong in Mallco Rancho and Montero. We are hopeful that the MOH openness we encountered at a seminar and in other meetings are a sign of the willingness and capacity of the MOH to become a prime mover in the CBIO approach to primary health care in Bolivia. It is our expectation that the approach would be tried at the district and regional level.

The ARHC managers have effectively sought out and secured project financing from a variety of Bolivian and international sources. The project funds appear well utilized and closely monitored. We did not think that enough attention has been paid to the issue of cost recovery with a view to eventual assumption of responsibility for the expansion of the projects by the MOH and the communities. This should be in preparation for the eventual phasing out of external funding sources.

We believe that the CBIO approach is working well except in the area of community participation. It was clear to us that the program is achieving health results well beyond the narrow GOBI expectations to the evidently greater satisfaction of the communities.

The CBIO approach should be replicable as a logical and equitable way to deliver primary health care and Health-for-All, but there will have to be further simplification and adjustments for it to be replicable in closer conformity to the projected Bolivian MOH capacity. The potential for sustained development of country-wide primary health care programs will eventually depend on the will of the Government of Bolivia and the local communities.

### PRELIMINARY RECOMMENDATIONS

1. Since the MOH at the district and regional levels appears to have a high regard for ARHC's projects and for the CBIO approach, it would appear an obligation on the part of ARHC to pursue planned negotiations with the MOH taking into consideration the limited resources and the need for additional funding from the MOH.

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Any future expansion of program activities with the MOH to the district level will require careful negotiation so as not to dilute the quality of services or to violate the CBIO principles.

2. Community participation and involvement in the projects should be systematically intensified to increase the possibility of community "ownership" and sustainability. Community leaders should become more involved in program decisions and problems. Strategies should be devised that develop the pride of communities in their contribution to the health projects. Above all the community, including women's groups, should be fully involved in the processes of assessment, analysis, and planning of community action for health.

3. The ARHC projects have developed an excellent and effective HIS but there is need for further simplification, better feedback to the community, and further utilization of the HIS to improve the cost-effectiveness of projects. An example would be not to carry out EPI coverage surveys since the projects obviously have a superior immunization data base and could easily provide the required information.

4. Home visiting, we are convinced, is the foundation of the CBIO approach. It is a powerful instrument for impacting on the health of communities. The projects should continue to fine-tune the home visit strategy and attempt to further reduce costs. Visits could be carefully clustered to a given section of a project area. The projects should consider the possibility of charging for the visit, especially when more than the basic home visit routine is performed, lest over-dependence be created.

5. It is important to continue to monitor the numbers of staff and the mix of staffing skills. Obviously, there is a need for more than the basic staff of one doctor and one CHA for a population of 10,000 (as is often the case in Bolivia), but one doctor and ten or more health auxiliaries (as in the case of the Carabuco project) might be considered excessive. The raising of the competence level of staff should be a continuous effort in improving effectiveness and increasing personal motivation.

6. ARHC should take a more vigorous approach to coordinating with other development efforts and, where possible, integrate health activities with related development interventions such as water, housing, sanitation, agriculture, education, and youth programs. In this sense, the Montero and Mallco Rancho initiatives are commendable.

7. ARHC's health education activities require further improvement through establishing a system that is appropriate to Bolivian circumstances. We recommend that a health education methodology be adapted to the CBIO approach, using the considerable bilateral and NGO experience and resources available in Bolivia.

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8. We had evidence that persons in some of the communities could well afford to pay more for services. Other programs and services appear to charge more than ARHC. More investigation will be needed on the economic aspects of health care. Such an investigation should explore particular issues of poverty (such as willingness and ability to pay) and develop strategies for ensuring that the poorest receive appropriate subsidization to ensure the receipt of basic health care services. This is an issue that all health NGOs, donors, and the MOH in Bolivia should be interested in pursuing.

9. ARHC should systematically involve the MOH and other health organizations in the CBIO approach through seminars, visits to the project sites, and so forth. These activities should also include a coordinated effort between the staff of the three project areas to produce a how-to manual for the development of the CBIO approach in other parts of Bolivia.

10. ARHC should be involved in augmenting the training of CHAs in Bolivia, given its considerable field experience. In addition, ARHC should be involved in the training of trainers of health auxiliaries and community leaders in health and related development activities. The new Mallco Rancho educational facilities, for instance, could be used as part of this strategy.

11. After reviewing financial data for the three ARHC project sites, we found that the data and the analysis of data require a more simplified approach to ensure accuracy and clarity.

12. We were impressed with what we saw and believe that these projects have the potential for influencing primary health care and Health-for-All throughout the region. We see no real alternative to the CBIO approach for basic comprehensive primary care. In the care of individual patients, one cannot be vague about the diagnosis and the effect of the intervention. Similarly, community health programs, whatever their objectives, must carry out an accurate community diagnosis and develop a system for monitoring progress and impact. Moreover, the home as the common site for the origin of health problems, especially in the case of children, cannot be neglected. We will remain vigorous advocates of the CBIO approach as a result of this experience.

We wish to thank all of those who assisted us in this effort, especially Mr. Nathan Robison (ARHC Bolivian National Director) and his staff, for their untiring efforts during our visit.

Samuel Ofosu Amaah, M.D., M.P.H., UNICEF (retired)  
Curtis Schaeffer, M.A., CARE

La Paz, Bolivia  
May 5, 1993

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### ARHC EXPERT REVIEW PANEL BOLIVIA TRIP REPORT

The Expert Review Panel has been meeting since December, 1992 to review, discuss, and ultimately make recommendations to AID/Washington on the Andean Rural Health Care (ARHC) methodology for primary health care as it has been applied in Bolivia. The panel was charged with sending two members to Bolivia for two weeks to take a first hand look at the ARHC projects with the following objectives:

- to validate that ARHC, in fact, provides primary health care services to different Bolivian communities as detailed in the documents, and
- to investigate and study the ARHC CBIO five-step methodology and collect information for the panel and its final report.

Dr. Samuel Ofosu-Amaah and Mr. Curt Schaeffer were the Panel members who undertook the field trip. They were supported in Bolivia by ARHC National Director, Nathan Robison. In addition, two Bolivians joined Amaah and Schaeffer to help out and to provide a strong national perspective. The Bolivians were Dr. Jorge Velasco, a private consultant who directs a non-governmental development organization (NGO), and Mr. Antonio Gomez, a health information specialist working for a large-scale Ministry of Health child survival project.

The following is a chronological trip report that presents the information as we observed or heard it. In some cases, information is followed by comments. This report is intended to provide the reader with additional information to be read in conjunction with information that Dr. Henry Perry has provided to the Panel.

The Bolivia team arrived on Saturday April 24 and went out to the Carabuco project site on Sunday afternoon. We commenced work on Monday morning by asking Nathan Robison to explain the Andean Rural Health Care CBIO five-step methodology as it had been applied in Carabuco.

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ARHC CBIO FIVE STEP METHODOLOGY:  
CARABUCO - DEPARTMENT OF LA PAZ  
April 26 - 28, 1993

### STEP ONE - Familiarization with the Community

The Ministry of Health and ARHC worked out a plan for the NGO to work with the MOH in providing health care coverage to the entire Northern Altiplano area. ARHC wanted to work out of the MOH District Hospital in Achacachi and use that as a base of operations. It was decided that this plan was too ambitious for a fledgling NGO. Therefore, it was decided to focus on a smaller coverage area. Carabuco and 31 surrounding communities were chosen.

ARHC staff were, for the most part, recruited locally and, in the case of the auxiliary nurses, came directly from the coverage area. Staff selection was often problematic in the early years due to political conflicts, funding shortfalls and other difficulties associated with initiating and sustaining a project.

Nathan Robison explained that the community is defined by those people who "seek out services." ARHC originally made contact with the communities through their formally recognized leaders. In most of rural Bolivia, this meant contacting the representatives of campesino organizations, called syndicates.

The process with each of the 31 communities was to meet initially with the General Secretary of the local syndicate. If he was in agreement with the ARHC program, he would then call a general meeting of the community to present the project with ARHC representatives present.

ARHC explained the five-step primary health care program and talked about what it could mean to the community. Development problems in general were discussed in the initial meetings and ARHC found that communities were most interested in having a functioning health post and a potable water system. Building a health post for two to four communities was promised along with the commitment to bring in other resources and NGOs to address the water problem. It was thought that communities would not accept having their children immunized unless ARHC could produce on the health post and water system.

For the most part, it appeared that local officials welcomed the project. The Methodist Church had operated in the area for some 50 years and was well respected-the relationship was helpful. It appeared that since Nathan Robison grew up in the area, played soccer with the locals and spoke Aymara, he brought a great deal of credibility to the ARHC project.

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ARHC staff continued to negotiate with the communities by explaining that health problems could best be addressed by: 1) taking census of the community 2) tracking children on their health status, and 3) work with mothers to prevent deaths.

The ARHC staff was originally opposed to the idea of a census. They believed that it would be an impossible task. The MOH was indifferent to the census and chose not to participate. The first census in Carabuco was undertaken by ARHC staff who were accompanied by community leaders. The leaders quickly lost interest and stopped participating.

The census process began with a full explanation to the community of what was involved, including the fact that ARHC staff would be comprised, in part, of local community members. During these explanations with the communities, suspicions which had developed earlier about family planning conspiracies and the use of health information were cleared up. ARHC did not proceed until the community accepted the project as proposed and agreed to participate. The census results were given to the syndicate leaders who, in turn, asked that they be stored at the health posts.

### *Comments:*

1. The interaction with the communities was long and drawn out and not very systematic. Formal leaders were approached and in some cases included in the census activities, but it does not appear that informal leaders were identified and included.

2. The syndicate authorities changed every year. This made it difficult to work with them and lend any continuity to the project-community relationship. At the same time, a revolving door of authorities can be used as an advantage to involve more people in taking responsibility for the health of a community. The role of municipal authorities in Carabuco and other towns is not clear.

3. The MOH Health District took little interest in the preliminary activities of the project, including the community census.

4. The community leadership did not fully follow through in their participation with the census activity. It is not clear why this happened nor what could be done in the future to better involve authorities in this crucial first step into their communities.

5. It is interesting and important that the communities wanted copies of the census results. There is a need to find means of feeding project information back into the communities beyond providing the authorities with documents.

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6. The community leaders would not agree to participate in the census nor allow health services like immunizations without a commitment by ARHC to build health posts. Why is there a need to bargain? Is not the provision of health services enough? ARHC should expect more from the communities in terms of paying more for services and assuming more responsibility for the project activities.

### **STEP TWO-Determination of Most Frequent, Serious, Preventable/Treatable Diseases**

The principal activities for learning about health problems in a community are:

1. census
2. home visits
3. verbal autopsies of under-fives and women who died during fertile period

#### *Comments:*

1. Each community is different and must be addressed according to its strengths and weaknesses. A project of this kind cannot take a "cookie cutter" approach to implementation and indeed, the five-step process guarantees against it.

### **STEP THREE-Establish Health Priorities and Develop Appropriate Programs of Intervention**

#### Criteria for Determining Health Priorities

- Staff engage in formal level morbidity/mortality analysis
- MOH policies (especially immunization and diarrheal disease control)
- In Carabuco area, acute respiratory infection (ARI) was added to the priority list in spite of not being a GOBI intervention initially. ARI turned out to be the most important health issue for under-fives.
- Noted that maternal deaths were important
- Neonatal deaths had not been seen as problematic
- Noted changing attitudes toward family planning. ARHC now provides family planning services

The actual decision-making process for determining community health priorities starts with the CHAs. Given their experience in their own communities through census taking, home visits, and other data collection, they are readily capable of making the first list of priorities. General community meetings are held every six months to address a variety of community issues. Among them is a discussion of health problems and the status of the project.

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### *Comments:*

1. The project could do more to involve the community in health by spending more time on explaining this process and reviewing and re-adjusting the priorities over time.

### **STEP FOUR-Conduct a Health Surveillance System**

The surveillance of service outcomes is done through:

- On-going HIS system-monthly monitoring of results
  - all vital events recorded
  - includes regular drug monitoring; cotrimoxazole (for ARI),ORS,iron tablets, and vaccines
- Cluster sample survey-every 18-20 months
  - knowledge, attitudes and practice/verification through on-going monitoring

The HIS in Carabuco includes and monitors over 95 percent of the children in the coverage area. In addition, monthly reporting conforms with the new MOH HIS although ARHC information is more complete and probably more accurate.

### OTHER INFORMATION ON THE ARHC CARABUCO PROJECT

The CHAs are the key players in the project. We were impressed by their technical ability as well as the strong relationship they have developed and maintained with the communities. They handle themselves in a professional manner, they understand and follow the CBIO approach, they know their communities and those who require attention. Technically they are well-trained, competent and highly motivated. The home visits we participated in revealed the following:

- CHAs are welcomed into the homes
- they follow standard GOBI routine, then treat common ailments and finally give advice/educate
- home visits have reduced the demand at the Carabuco Health Center as well as at the health posts
- CHAs learn more about health problems from home visits than from treating patients in the health post because they work with the entire community, they are able to collect and maintain complete and accurate data and they see health problems that might not get to the health post (or hospital).

### *Comments:*

- 1.CHAs could pay more attention to the sanitary conditions of the home, make suggestions related to health and sanitation, and include more education
- 2.Charge for all home visits
- 3.Strengthen health education in the home

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### INTERVIEW WITH DR. WILLIAMS-CARABUCO HEALTH CENTER

Dr. Williams has been seconded by the MOH to ARHC and continues to receive a MOH salary that is supplemented by ARHC. Immediately upon finishing medical school, he left for his one year rural service as required by the MOH. He is now in his second year with ARHC by mutual choice.

According to Dr. Williams, the MOH system contrasts with the CBIO approach because the MOH has a limited role in the community, no census collection, and no impact orientation. The MOH prefers immunization-type campaigns and quick follow-up. He has found the CBIO approach to be thorough and effective.

He further explained that the fees in the health center are not fixed by the MOH. Each health center has autonomy in fixing prices. ARHC prices are lower than in similar areas under MOH control. There is a 70 percent cost recovery for the drugs. Price changes are discussed with the communities and the authorities before adjustments are made.

#### Job Responsibilities of Dr. Williams:

- Run the health center with one CHA who functions as a pharmacy assistant
- Attend 5-6 patients per day (prior to the CBIO approach including health posts, there was always a long line of patients at the health center)
- Provide supervisory support to the CHAs in the field and visit health posts
- Share supervisory duties with half-time project MD director

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Comparison of Carabuco Health Area (ARHC)  
with neighboring Ambana Health Area (MOH)

	CARABUCO (9,048 people)	AMBANA (5,200 people)
<i>STAFF</i>	1 doctor, 12 auxiliary nurses	1 doctor, 3 auxiliary nurses
<i>INFRASTRUCTURE</i>	1 health center, 11 posts	1 health center, 3 posts
<i>NUTRITIONAL STATUS</i>		
under 2 years	207	13
2-4 years	291	8
<i>PRENATAL CARE</i>		
before 5th month	5	0
after 5th month	14	0
<i>FERROUS SULFATE TABLET DISTRIBUTION</i>	390	60
<i>HOME BIRTHS</i>	3	1
<i>EXTRA CONSULTATIONS</i>		
under five	52	2
over five	285	21
TB treatment	5	1
<i>COMMUNITY MEETINGS</i>		
mothers clubs	17 mtngs (221 mothers)	0
general meetings	10 mtngs (363 partic)	0
school authorities	3 mtngs (16 partic)	0

VISIT TO HUARINA MOH HEALTH CENTER

In order to further compare and contrast the ARHC Carabuco project with MOH programs in the same area, the team visited the Huarina Health Center operated by the MOH. The health center there, staffed by a doctor and auxiliary nurse, serves 20 communities with a population of approximately 7,000 people.

The health center has three beds. It was clean and relatively well-maintained with most basic equipment. The doctor and auxiliary nurse must purchase medicines with their own money. This requires a trip to the capital each month. The MOH will not provide medicines other than Vitamin A, ORS packets, growth charts, iron supplements and vaccines.

A review of the patient register showed that the health center attends on the average 3-4 patients per day. Home visits are carried out by the two staff members only as a means of ensuring more complete vaccination coverage after a national campaign. The MOH conducts four national immunization campaigns per year.

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The staff attend one training session per year and do provide basic health training to representatives of the 21 communities in the coverage area in coordination with the Catholic Church.

### COMMUNITY LEADERS

It was apparent that the ARHC staff did not expect the Bolivia Field Visit Team to ask to meet with community leaders. This came as a surprise to them and as a result community leaders were difficult to locate and interview.

The ARHC relationship with the communities in Carabuco gives one the impression that the project is doing the community a favor without expecting much in return other than to participate in the project activities. This seems to fit into the historical pattern of food assistance in Bolivia in which communities received food rations in exchange for participating in various types of work and nutrition programs. It seems to the Field Visit Team that ARHC has failed to share the realities of running a health project with the communities. As a result, the communities are merely clients, not partners.

We met with two community leaders:

1. Nicolas Quispe Salazar-Secretary of Health/Syndicate of Carabuco and Rural Professors, Village of Karkapunco
2. Secretary General, Central Agrario Sacuco

### INTERVIEW WITH SECRETARY OF HEALTH/SYNDICATE OF CARABUCO

The Secretary stated that health is a priority for the communities, but there is a need for greater education/consciousness raising of the people. He was well aware that the project may finish up its external funding this year and is very concerned about the area losing its services. He stated that the services of the project provide a certain security to the area and he is afraid to lose it.

We discussed the possibility of local financing of a portion of the project costs. He said there may be some possibility for financial support from the town of Carabuco, but probably not from the outlying communities that are much poorer.

As Secretary of Health, he is responsible for promoting health in the community particularly with those at greatest risk. He said that community volunteers have not worked out and for that reason the position of Secretary of Health was created on the boards of all the syndicates in the project area.

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### INTERVIEW WITH SECRETARY GENERAL, CENTRAL AGRARIO-SACUCO

The Secretary understood that funding for the health post in Challapata Belen is from external sources. He never thought about what would happen if the funding terminates. He personally participated in the construction of the health post along with other community members using local materials and local labor.

He stated that he visited the local health post three times in the last year and spent a total of 10 pesos bolivianos (approximately \$3 US). This seemed like a reasonable cost to him. It is worth noting that he has no children. When asked what he would do as a community leader if the funding for the health post terminates, he stated that he and other leaders would exhaust all options through the MOH and other institutions before looking at the possibility of local financing. Again, he had never thought about this happening.

#### *Comments:*

1. It was pointed out to us that syndicate leaders rotate each year which means there is little continuity in their leadership and a great deal of variation in the quality of leadership.

2. The two leaders we spoke to had an idea about the project and what it does, but they did not understand the issues surrounding the establishment and operation of the health project.

3. It does not appear that there is any systematic attempt to engage community leaders in the issues related to the establishment and running of health projects. One is looking forward to the time when community leaders and community members at large will be partners with health workers.

4. The process of creating this partnership is not an easy one. It will require great effort on the part of the project to raise the capacity of community leaders to be fruitful partners in health.

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### VILLA COCHABAMBA/MONTERO DEPARTMENT OF SANTA CRUZ April 29, 1993

Director, Dr. Dardo Chavez, formerly served for eight years as Public Health Officer for the Montero District.

Dr. Chavez founded and developed the project because of demand from the Villa Cochabamba neighborhood which had no services, no water, and no sanitation. In addition, the population was growing rapidly.

#### COMMUNITY INVOLVEMENT

The initial contacts were made with the Juntas Vecinales (neighborhood councils) who at first demanded a hospital until they understood that it was not realistic since there was a hospital nearby. Juntas were told of the census and agreed to participate in data collection. After services were established, the Juntas no longer participated in the governance of the health center. They still receive progress reports, but have no involvement in the day-to-day running of the center.

The Juntas were developed as a counterbalance to the syndicates and now function as local representatives of interest groups for the community. They are democratically elected in contrast to the syndicates which assign leadership off a rotating list. The Juntas may be politically manipulated and Junta leaders often lack leadership skills. They seek services to satisfy the demands of the people. After services are established they do not remain involved.

The community leaders know where the funding comes from but do not know what the operational costs of the health center are. Dr. Chavez did not want them to know at this time. The prices for services are established by the project in negotiation with the community leaders. They also look at corresponding costs in surrounding communities.

We met with the President of the Junta Vecinal (neighborhood council). He said that the main needs of the community were water and latrines as well as the treatment of diarrhea and TB. His neighborhood is an abandoned area and one cannot walk from there to the health center in the rainy season.

He has only been recently appointed after a seven-year reign by the previous chairman. He admitted that he does not know much about the health center although he did go there twice in the last year seeking treatment for cholera and a stomachache. He spent 800 pesos bolivianos on health care for himself and his wife in the last year. When asked about average family expenditure on health he stated that a family could easily spend

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up to 1,000 pesos bolivianos and as little as 200-300 a year. One peso boliviano is about 25-30 US cents.

The project is also working with the Catholic Church in the area in several different forms. Children who are attending the church kindergarten are being vaccinated regularly. More importantly, the project is training two nuns in the CBIO approach so that they can take over a small coverage area that currently has no services.

### PROJECT DESCRIPTION

The principal coverage area in Villa Cochabamba consists of 33 blocks. There are four other areas that are being serviced less intensively at this point. The project has followed the CBIO approach including the census, home enumeration, home visits, HIS monitoring and focus on child survival interventions. Services also include maternal health care and family planning.

The clinic is well equipped and standards appear to be high. While we did not gather specific data, it was clear that the facility and services are well used.

There are three modalities for immunizations:

1. daily at the clinic
2. during home visits as needed
3. a concentration program held every other Saturday

School children are encouraged to inform parents about dates for vaccinations. We happened to meet a financial auditor for USAID who had the opportunity to go on several home visits. He was impressed by the comprehensiveness and the quality of services.

The Montero project has taken a more integrated approach to working with the community by working with the community and local authorities to establish water and sanitation services. Through a Rotary grant, the project provides credit at no interest to families that pay back the loan over five years through their water bills. The services are managed by a water cooperative and the families are required to do all the basic digging for the laying of pipe.

### HEALTH INFORMATION SYSTEMS

The project has developed an elaborate and dynamic HIS. They do satisfy MOH needs and their data collection is 90 percent compatible with the MOH. One major difference between the two systems is the age group distribution. The MOH uses 0-11 months and 12 months to 59 months. ARHC uses four groupings: 0-11, 12-23, 24-35, and 36-59 months.

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All staff are involved in the development and analysis of HIS. They meet every 15 days to discuss the system, the data and better alternatives. Eighty percent of all the forms being used were developed by project staff. Their involvement in the HIS has helped them be more efficient in their work.

The project staff recognize that the HIS is not perfect and there are several problems which are:

- too many forms
- duplication of information
- mechanical problems in assembling and analyzing information

The population fluctuation also creates problems for the HIS. The last census showed that 30% of the population had lived there less than one year and that 40% of the people do not own their own homes. Moreover, there is a 5% increase in population annually making denominators very unstable.

MOH officials have visited the health center and reviewed the HIS. They are convinced of its value and are experimenting with its implementation in two other health areas.

### *Comments:*

1. We found that a great deal of effort goes into collection and analysis of data. Part of the reason for this is that the HIS is much too elaborate and could benefit from some simplification.

### RELATIONSHIP WITH MOH

Relations are strong and cordial. In fact, Dr. Chavez functions as a replacement for the District Health Officer some three times a year. This is a goodwill gesture on the part of Dr. Chavez since he receives no pay. The project coordinates closely with the MOH Montero Hospital, particularly through referrals both to and from the health center. Cases referred from the health center receive reductions in prices for births and other treatments.

Dr. Vaca, the Director of the Hospital, stated that Villa Cochabamba is poor but has improved considerably. One of the reasons is that there is a strong focus on public health and the hospital is mostly focused on secondary care. The hospital responds well to the problems of the surrounding communities even though it has few resources.

The hospital's awareness of community health was made manifest through its activities in immunizations, reproductive health and pap smear programs, TB, and cholera. The hospital serves a population of 22,000 but the MOH District Office is encouraging it to take responsibility for more.

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Although the hospital was funded initially with private external resources, this ended in 1973. Currently the hospital receives 35% of its funding from the MOH and the balance from the community and private sources.

The MOH District coordinates with NGOs through their network of health services. There is coordination of costs/prices and district-wide coordination of services. The district includes seven rural and four urban areas. In one area of the district, supervised by the Bolivian Red Cross, there are three health posts, including one belonging to the Catholic Church. However, these posts are severely short of staff. The Villa Cochabamba/Montero project has just started home visits to this area.

### FINANCING/LOCAL RESOURCES

ARHC's Villa Cochabamba/Montero project does not receive AID/Washington central funding, but has been successful at attracting a variety of local and external funding sources. One of the more notable sources of support is the donation of the property the health center is built on. This was provided by the Municipality of Montero. The construction of the center was supported by a variety of sources and the labor of community members.

Another important local contribution comes from the Rotary Club of Montero in conjunction with the Waynesville, NC Rotary Club and Rotary International. Other sources are PROCOSI, the Methodist Church, and ARHC. A Rotary official explained to us that Rotary would like to establish a foundation with an endowment to support the project in the future.

### *Comments:*

1. The Villa Cochabamba/Montero project should take the community and its leaders more seriously in terms of sharing information on problems and issues including operational costs. This is essential for creating a partnership between the community and the project with a view to long-term sustainability.

2. It would be an important step to publicly recognize the contribution of the community in terms of their resource contribution and labor to the health center. This will increase the pride of the community and its feeling of ownership in the success of the project.

3. Even though the Villa Cochabamba project is still developing, it has had a great deal of success and, in fact, is visited regularly by professionals who are interested in replicating the project. The MOH is attempting to replicate the

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HIS, and in coordination with the Catholic Church, the project is being replicated in a nearby health sector. In addition, there is a strong inter-institutional coordination network between NGOs and the MOH throughout the Health District. Having documented the approach, the Villa Cochabamba/Montero project should systematically share its information and methodologies with the MOH and other health organizations. One way to do this is to hold seminars for medical students, MOH officials, the international health community and so forth.

4. The project, together with the other two ARHC projects, should meet to develop a "how-to" manual in Spanish on the CBIO approach taking into consideration the unique characteristics of Bolivia.

5. We recommend that the project staff look at the reduction of the complexity of the HIS and make it more efficient.

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### MALLCO RANCHO-DEPARTMENT OF COCHABAMBA

April 30, 1993

The Director, Dr. Orlando Taja, formerly worked for the MOH as the National Director for Health and as the Director for the National School of Public Health in Cochabamba.

This project started during the 1980s when several mothers clubs in the Mallco Rancho area began collecting contributions from the members in order to hire a physician. The health post had been previously abandoned and the MOH was providing no services in the area at that time. The initiative of the community is what attracted Dr. Taja to work with them.

#### COMMUNITY INVOLVEMENT

As mentioned, this project was born in the community of Mallco Rancho when local mothers clubs hired a physician with their own money. Since then the project has worked with a variety of community organizations including the school parents committee, mothers clubs, the municipality of Mallco Rancho and the syndicates.

Dr. Taja is convinced that the community will be more able to assume responsibility for its health problems if agricultural productivity is increased. As a result, he has taken a more integrated approach to health. While maintaining the focus on the CBIO approach, the project has also helped the community develop a potable system for consumption and irrigation. The availability of water has assisted local farmers to have two to three harvests a year as opposed to one previously. The project has provided small farmers with new varieties of seeds and is currently seeking mechanisms such as technical assistance and credit to help them further develop their productive capacity.

The project has also worked with the community to remodel the schools and build bathrooms and showers. According to Agustin Almanza, the Mayor of Mallco Rancho, Dr. Taja and APSAR have helped raise the level of health, education, and agricultural production in the area. He also pointed out that the community was actively involved in the construction of the hospital and adjoining buildings by providing labor and materials.

Another community leader, the Secretary General of the Syndicate for Mallco Rancho, stated that the community is happy with the services. He refused to respond to questions about the possibility of losing external funding. He also is actively involved in organizing the community on health issues.

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Dr. Taja work directly with 11 different community organizations and is an active, highly respected person. A committee of committees exists, which coordinates the activities of the 11 organizations. Dr. Taja is a member of this group as well.

### RELATIONSHIP WITH MOH

Relations with the district office of the MOH are excellent. The MOH provides salaries for one physician and two auxiliary nurses who work with the Mallco Rancho project. Supplies such as rabies vaccines, immunizations, iron supplements, and so forth are received regularly from the District Health office.

The local MOH officials opposed the CBIO approach for a number of years. Slowly though, through demonstrating the value of CBIO activities such as the census and the home visits, the MOH has not only come to recognize the CBIO approach, but has also encouraged Dr. Taja to implement it in other health areas. The major bone of contention was over the MOH immunization campaigns. APSAR refused to participate in them because, in the words of Dr. Taja, the vaccination campaigns represent a "quick fix", and are not necessary if a strong home visitation program is underway.

### PROJECT DESCRIPTION

Dr. Taja was attracted to working with Mallco Rancho because of the community's initiative and because of its proximity to the departmental capital of Cochabamba. With no resources initially, it made little sense to start a project in an inaccessible area. Project activities commenced in 1987 with one staff member and an agreement with the Health District to be responsible for a coverage area of 11 communities and 6,125 people. The project has always been directed by the Bolivian NGO known as APSAR (Asociación de Programas de Salud del Area Rural), with financial and management support provided by ARHC.

The CBIO approach was instituted in Mallco Rancho and was instrumental in documenting the demographics of the area for the MOH. The project has grown to include a staff of 16. Among them are the Director (Dr. Taja), a Field Coordinator, a physician, three rural health technicians, a dentist and two auxiliary nurses. There is also an arrangement with the Cochabamba School of Medicine to provide a medical student intern on a regular basis. The MOH supports the costs of two of the auxiliary nurses and one physician with the project supplementing their salaries.

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The Mallco Rancho Hospital Health Center provides comprehensive services. In-patient care is provided with the exception of major surgery. The quality and cost of services has created a demand in the community. The health center is a busy, around-the-clock facility that is well used. The quality of care is good and the community seems to be appreciative of having this service.

Home visits are diligently carried out again using the CBIO approach of numbering homes, mapping out the community and collecting epidemiological data during each visit. The entire population receive services in the 11 communities of the coverage area.

The home visits have served to establish a strong referral system both to the Health Center and to larger health facilities in the Cochabamba area.

The project offers a reproductive health clinic every Saturday and the demand seems to be growing. A local obstetrician/gynecologist from Cochabamba volunteers his time for four hours each Saturday.

Malnutrition is a problem in the Mallco Rancho area in spite of the abundance of food production. The project recently established a nutrition rehabilitation center next to the health center for severely malnourished children. The center will admit up to eight children for treatment. This will include nutritional education for the parents and stimulation activities for the child. The center will be staffed by a part-time psychologist, part-time supervising pediatrician, nutritionist, and community volunteers.

The Mallco Rancho project has a large training facility that is just being completed. Training will be offered to health workers and community volunteers and has the potential for becoming the Mallco Rancho School of Public Health.

During home visits, mothers routinely receive health education. The health promotor we talked with was well versed in explaining basic primary health care interventions, but seemed to be lacking in pedagogical skills. In addition, she commented on the lack of educational materials for health promotors. There appears to be no health education for waiting patients at the health center.

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### HEALTH INFORMATION SYSTEMS

We did not have enough time to thoroughly review the Mallico Rancho HIS. Nevertheless, it appears to be functioning adequately and identifying patients at risk. The auxiliary nurses had complete files on all those families they visited in the home with up-to-date information.

### FURTHER PROJECT DEVELOPMENTS

Dr. Taja, under the auspices of APSAR, recently assumed full responsibility for the management and operation of a hospital in the adjoining health area of Sipe Sipe. This area includes 18 communities with a total population of 9,000 people. It is significant that the project took on this responsibility at the invitation of the community, civic committees, and the Regional Health office of the MOH.

Included in the agreement with the MOH is funding for six health professionals including one doctor, one dentist, one graduate nurse, two auxiliary nurses and one cleaning person. APSAR/ARHC then added the following positions: one administrator, one driver, one nurse, two technicians, and one auxiliary nurse. The project is in the process of providing CBIO training to the MOH personnel.

The MOH Health District has asked a group of local and international NGOs working in health in the area to take over the management and operation of health services for the entire district of Quillacollo. This includes a population of 100,000. ARHC is reluctant to become involved at this point because of the size and complexity of the operation.

### LOCAL RESOURCES

There is a system of cost recovery which includes a fee of 2.5 pesos bolivianos per service. This is approximately \$1 US. We found out that they consider the health services good and inexpensive. In fact, the basic consultation cost of 2.5 pesos bolivianos is very low considering that the cost of transport to Quillacollo is 2.6 pesos and the cost of basic consultation at a private clinic is 10 to 15 pesos. Taking all of this information into consideration, the mothers said they would gladly pay 5 pesos for a consultation.

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### *Comments:*

1. The MOH at the district and regional level has high regard for this project and the CBIO approach. Any future expansion of project activities with the MOH will require careful negotiation so as not to dilute the quality of services or to violate the CBIO principles. Negotiations should take into consideration limited resources and additional funding from the MOH.

2. The size of the training facility and program is likely to place a burden on health center operations. This should be carefully monitored so that CBIO principles are not distorted.

3. Health education requires more attention both in the training of health promoters to teach others and in the provision of sound, effective materials. The project could take advantage of the captive audience of patients to provide basic message reinforcement while people are waiting to be seen at the health center.

4. As noted, nutrition is a serious problem in the area. The need for a nutrition rehabilitation center is clear, but we have a concern about long-term inpatient care for malnourished children. Given the intensity of home visits, more attention should be paid to appropriate nutrition education particularly in a community with an abundance of food resources. It was suggested that a nutrition study be conducted to investigate the real causes of malnutrition, including a review of those families with healthy children and why they are healthy.

5. The relationship between the community and the project is strong and positive. Nonetheless, it is essential that the community be made aware of the costs of running a health center and their contribution to it.

6. APSAR will need to broaden its funding base by seeking out local and government resources. This could also include working with the community to increase their contribution.

7. The comments of community members given above indicate the need for studies on family income and the ability and willingness of the community to pay for health services. Such a study should also determine the needs of the poorest in the community so that a mechanism for cost recovery that is equitable can be developed.

8. Under the leadership of Dr. Taja, we are confident that these comments and recommendations will be appropriately utilized by the Mallco Rancho project.