



FEB 1976

ACTION MEMORANDUM FOR THE ASSISTANT ADMINISTRATOR (LA)

FROM: LA/DR, Charles Weinberg

Problem: Your signature on the attached cable which approves a four year project for the Evaluation of Rural Health Services in Guatemala. The DAEC reviewed the project on December 15, 1975.

Discussion: The Mission originally proposed six year funding for this health evaluation project. Per your instructions, the project life has been reduced to four years by dividing the project into two phases. The first phase, which the attached Project Paper describes, covers four years. Provided the results of the first phase are satisfactory, a two year follow-on project would be proposed at the end of the four years in order to complete the activities begun in phase one. A four year project will allow for: (1) the design, testing, and evaluation of survey instruments which generate the data for an information system and an impact assessment, to be conducted in one region in Guatemala; (2) sufficient observational period in which to begin to measure health status changes in one region, although completed changes in health status will not be observed until the follow-on project during the fifth and sixth years; and (3) the design and installation of an information system which will be fully operating in one region and will have been introduced to two additional regions by the end of four years.

The design and testing of survey instruments, which will be used to establish a baseline against which to measure health status changes, begin immediately after project approval. The actual tabulations and statistical correlations of health and nutrition changes for the first region will start at the beginning of the third year of the project and continue during the follow-on project. However, some preliminary impact data for the first region will be available after twelve months.

During the first few months of project implementation, the needs and objectives of the information system and the impact assessment will be developed. It will take approximately two years to design, test and implement the information system in Region V. During the next two years the system will be introduced to two additional regions, but will not be fully operational in all three regions by the end of four years. The benefits of an information system will be demonstrated to Ministry of Health personnel who will become accustomed to using it in Ministry programs in Region V.

The following revisions have been made in the project:

1. Purpose. Due to the reduction in project life, A.I.D. will finance the development and establishment of the information system in only three regions during phase one, thereby leaving the replication of the system in the remaining four regions to the follow-on project. The project will begin to improve the planning, monitoring, and evaluation capability in the MOH which will be further increased during the follow-on project.
2. Funding. The project provides \$804,000 from A.I.D. over a four year period to: (1) evaluate the GOG's rural health delivery system, and (2) to begin to improve the MOH's capability in planning, monitoring, and evaluation. This is a reduction of \$91,000 from the original Project Paper. The FY 1976 and IQ levels conform to the FY 1976 Congressional Presentation figures. The GOG contribution is 25%, or \$206,000, of total project costs. Changes in the budget reflect the need to utilize increased consultant inputs in the fourth year, which were originally planned for the sixth year, in order to facilitate the MOH's assuming increased responsibility for replicating the information system. The budget also reflects the addition of \$10,000 in the third year to help analyze and code data from the impact assessment. Thirty thousand dollars (\$30,000) was also added to the technical assistance budget in the fourth year to help evaluate progress under phase one and design activities for phase two.

3. Other Changes Resulting from the DAEC Review.
  - a. Clarification of the methodology to be used in the impact assessment of the GOC's rural health services on the health of the population.
  - b. Addition of a summary paragraph describing the specific outputs of the evaluation.
  - c. Addition of a short statement on the lack of interest of other donors in financing the project.

In addition, the DAEC recommended a provision in the ProAg that ensures A.I.D. would have access to all data and findings generated by the project. The project will be evaluated during the fourth and seventh months in the first year, and every six months thereafter. An in-depth evaluation is scheduled at the end of the second year.

Recommendation: That you sign the attached cable which approves the four year project and describes the basic changes in project design resulting from the two year reduction. These changes have already been discussed with the Mission.



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SUBJECT: DAEC REVIEW OF RURAL HEALTH SERVICES EVALUATION PP

REF: PARKER/HILL TELCON 1/26/76 RE REVISIONS

*HEW*  
THE ASSISTANT ADMINISTRATOR HAS APPROVED THE SUBJECT PROJECT FOR FOUR YEARS WITH THE FOLLOWING REVISIONS MADE IN THE PROJECT PAPER:

--A. REDUCTION OF THE FY 77 AND INTERIM QUARTER FUNDING LEVELS BY DOLS. 13,000 TO CONFORM TO THE FY 76 CONGRESS-  
IONAL PRESENTATION;

--B. CLARIFICATION OF THE METHODOLOGY TO BE UTILIZED IN

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ORDER TO CONDUCT AN IMPACT EVALUATION IN ONE REGION OF GUATEMALA;

WFO. REDUCTION OF SIX YEAR LIFE OF PROJECT TO FOUR YEARS WITH ATTENDENT REVISIONS IN BUDGET, GPOI, AND NARRATIVE TO REFLECT 2 YEAR REDUCTION. SPECIFICALLY, THE BUDGET WAS REVISED AS FOLLOWS:

(000'S DOLS)

INPUT DESCRIPTION	GRAND TOTAL	TOTAL AID FY/LC	GOG (LC)
LOCAL PERSONNEL	327	215 (-/215)	112
TECH. ASSISTANCE	230	230 (191/39)	-
TRAINING	61	5 (-/6)	55
SUPPLIES, RENTAL, --TRAVEL	36	36 (36/-)	-
VEHICLES	19	19 (19/-)	-
OTHER EQUIPMENT	11	11 (3/8)	-
INFLATION	76	49 (15/34)	27
CONTINGENCIES	44	32 (10/22)	12
-----TOTALS	804	596	205

(FY 000'S DOLS)

AID INPUTS	76	10	77	78	79
LOCAL PERSONNEL	47	10	55	55	48
TECH. ASSISTANCE	65	14	22	32	97
TRAINING	6	-	-	-	-
SUPPLIES, RENTAL, --TRAVEL	7	-	11	9	9
VEHICLES	13	-	-	-	6
OTHER EQUIPMENT	6	-	2	2	1
INFLATION	-	-	5	14	30
CONTINGENCIES	6	1	6	8	11
-----TOTALS	150	25	101	120	202

GPOI REVISIONS ARE:  
GOAL STATEMENT - NO CHANGE  
PURPOSE STATEMENT - NO CHANGE IN NO. 1, NO. 2 REVISED TO

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READ, "TO BEGIN TO IMPROVE THE MOH'S CAPABILITY IN PLANNING, MONITORING, AND EVALUATION OF ITS RURAL HEALTH PROGRAMS".

EGPS - NO. 1, 2A AND 2C - NO CHANGE; NO. 2B REVISED TO READ, "MOH STAFF OPERATING THE INFORMATION AND EVALUATION SYSTEM ON A PILOT BASIS IN AT LEAST ONE REGION."

2D REVISED, "CURRICULUM DESIGNED FOR MOH IN-SERVICE AND PRE-SERVICE TRAINING PROGRAM AND SOME TRAINING BEING CONDUCTED ON A PILOT BASIS."

MAGNITUDE OF OUTPUTS - NO CHANGE NO. 1A, B, C. NO. 2 REVISED AS FOLLOWS, "FIVE COMPONENT STUDY REPORTS WHICH DESCRIBE METHODS AND FINDINGS IN DETAIL. NO. 3 REVISED, INFORMATION SUB-SYSTEM PARTIALLY FUNCTIONING IN 3 DEPARTMENTS." OUTPUT NO. 4 WAS DELETED.

INPUTS - NO CHANGE IN NO. 1. LOCAL PERSONNEL - DELETE LAST TWO YEARS. NO. 2B TRAINING REVISED TO READ,

"PROGRAM DESIGNED BUT NOT ESTABLISHED IN MOH."

3. TECHNICAL ASSISTANCE. 10 OF 79 WORKER MONTHS IN A. B. REVISED TO READ, "10 MM FOR INTERNATIONAL CONSULTANTS AND 7MM FOR LOCAL CONSULTANTS."

--D. ADDITION OF A SUMMARY PARAGRAPH DESCRIBING SPECIFIC PROJECT OUTPUTS;

--E. ADDITION OF A SHORT STATEMENT ON THE LACK OF INTEREST BY OTHER DONORS IN FINANCING THE PROJECT.

2. IN ADDITION, THE DARC RECOMMENDED THAT THE PROAG CONTAIN A PROVISION THAT USAID WOULD HAVE ACCESS TO ALL DATA AND FINDINGS GENERATED BY THE PROJECT AND THAT THE MISSION ATTEMPT TO RAISE THE LEVEL OF THE GUG'S CONTRIBUTION TO THE PROJECT, CURRENTLY 25 PERCENT OF TOTAL PROJECT COSTS.

3. HENZDIII AND TAZH WILL BE ASSISTING THE MISSION IN DEVELOPING THE IMPACT ASSESSMENT ACTIVITIES. A DETAILED LETTER OUTLINING THE METHODOLOGY TO BE USED HAS BEEN FORWARDED UNDER SEPARATE COVER TO DR. LONG BY TAZH.

4. REVISED PP WILL BE POUCHED TO NYSSON ASAP. INCERSOLI

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B. Recommendation

Recommended is approval of a grant in the amount of \$598,000 over a four-year life of project to enable the Government of Guatemala to carry out an evaluation of its rural health system and to begin to develop a system for strengthening the Ministry of Public Health's capability to plan, monitor, evaluate, and control health programs.

C. Summary Description

The project is intended to gather qualitative and quantitative data on the rural health care delivery system in Guatemala that will permit an evaluation of the system and its impact on the health of the populations it serves in one region of Guatemala. The components to be examined include the activities of rural health medical auxiliaries, their relationship to the communities they serve, basic variables affecting community and individual health, and support systems, including interventions, logistics, and supervisors. Economic analyses will measure unit costs and multiplier effects and changes in personnel and activities. Epidemiological and other studies will provide data that will enable measures to be made of the impact of the health care delivery system on levels of community health.

Data from all of these studies will be used in the design of an information system. This system will only be partially institutionalized within the Ministry of Health by the end of the four-year project. The information system is designed to allow the continuous gathering of selected health data which will eventually be utilized for health sector planning and decision-making by the GOG. A follow-on project at the end of the four-year period is planned to complete the institutionalization process.

The evaluation effort will be focused on the services provided at health posts which are at the base of the organizational pyramid of the rural health system (i.e., specialized large city hospitals, regional hospitals, health centers and health posts). Health posts typically are staffed by a rural health technician (TSR) and a nursing auxiliary who supervise and direct the efforts of volunteer

health promoters and indigenous midwives. Physicians are located at the next higher level in the system (health centers). TSRs are being trained under a new (since 1971) GOG program being supported by two AID loans (520-L-020 and 021) which is seeking to extend health services throughout rural areas which typically have not had access to any type of modern health services. TSR activities emphasize preventive health measures rather than curative services.

As an integral part of the evaluation, designed to support national health services system planning and management, a decision-oriented information system will be developed for gathering, analyzing, interpreting, and using information at all levels of the Rural Health System. This information system under this project will only cover three health regions in Guatemala, but it will eventually cover the whole country in order to support the continuation of on-going evaluation activities.

Information gathered by the project will be concerned with the following general areas:

- Existing information regarding rural health and rural health services in Guatemala.
- Type, time, location and purpose of the activities of rural health workers.
- Studies of the rural communities served (including organization, demographic aspects, health needs and problems, health attitudes and behavior, and use of and relations with the Rural Health System).
- Analysis of the gathering and use of information within and by the Rural Health System.
- Studies of the functioning of the Rural Health System and its support systems.
- Economic analyses (including Rural Health Service finance studies; costs and multiplier effects of current and projected changes in the Rural Health System; unit costs; efficiency and cost effectiveness; rural family expenditures on health).

The project will be organized and carried out by the Academy of Sciences of Guatemala in association with the Ministry of Health and with the technical collaboration of the National Economic Planning Council of Guatemala. The Academy is a private non-profit association of Guatemalan professionals chartered under the University of San Carlos, Guatemala's national university. Its membership includes experts in various fields, working with INCAP and other institutions, both national and international. This overlapping membership enhances exchange of information and coordination of activities and provides access to important human resources.

AID will provide approximately 76 man-months of long and short term technical assistance as needed and requested by the Academy. This assistance is structured so as to provide the specialized expertise necessary to assist the Academy and the MOH in designing and carrying out the various studies listed above. Currently, little evaluation capacity exists within the MOH and the existing informational system is entirely restricted

to hospital and health center statistics of the most elementary kind. The table on page 26b illustrates input/output relationships and contributions of outputs to project purposes.

At the end of the project, reports describing the methods and results of the Rural Health System Evaluation will have been completed and distributed. The Rural Health Services Information System will have been introduced

by the Ministry of Health and will be partially functioning in three regions.

#### D. Summary Findings

In the judgment of USAID/Guatemala, the evaluation project is ready for implementation. The substantial amount of Guatemalan interest and work during the eight-month planning phase has demonstrated the depth of Guatemalan commitment to the project, and the quality of their work in planning demonstrates their organizational and technical capabilities.

The analyses presented in this document lead USAID/Guatemala to conclude that the proposed project is technically feasible and may be expected to yield evaluative information critical to improved operation of the Guatemalan Rural Health System and of interest to the international health community. The eventual establishment of an effective information system with the Rural Health System and the enhancement of the Ministry's capacity to plan, monitor, evaluate, and control program are expected to constitute a significant contribution to that system.

provided by consultants from the American Public Health Association (APHA), authorized under AID/CSD 3423. The Summary and Recommendations section of a November, 1974, consultants' report is appended as Annex B/A; that report reconfirmed an earlier consultant's recommendation that the Guatemalan Academy of Sciences would be the most appropriate agency to carry out the evaluation project, in cooperation with the Ministry of Public Health and the National Economic Planning Council.

Planning activities of the Academy, in addition to producing the project plan (see the final report of the planning activities, the Plan y Metodologia, presented in Annex B/B) have resulted in the necessary institutional preparedness while promoting a cooperative relationship between the MOH

and the Academy. In addition, the process has created a willingness to provide technical assistance inputs on the part of other agencies in Guatemala (e.g. INCAP, INAD, National Economic Planning Council). The Academy is willing and prepared to undertake the project, and both the Ministry of Health and the National Economic Planning Council agree with the USAID that the Academy is the appropriate institution to implement the project.

The ultimate beneficiaries of the project will be the rural poor who will benefit from improved rural health services. Throughout the planning phase, the Ministry of Health has been concerned that the evaluation should assess the extent to which the rural health system is sensitive to the needs of rural people and that it suggest ways to increase both this sensitivity and the efficiency of the system intended to meet those needs.

Because the evaluation project will improve the effectiveness of the rural health services delivery system, which clearly has as its objective the improvement of the lives of the rural poor, the project is fully in accord with AID's Congressional Mandate.

The project meets all applicable statutory criteria.

#### E. Project Issues

1. The complexity of the implementation arrangements for the evaluation project require that additional implementation planning take place during the initial months of the project (especially during the workshop) and continue throughout the life of the project. This is also necessary because the design of certain project outputs depends upon the results of previous project activities. A case in point is the information system to be implemented: because the design of the information system will be dependent on the systems analysis conducted during the project, it is impossible at this time to specify the features and resource requirements for implementing the system. The introduction of the system to new regions, and its expansion within regions, will require planning efforts and GOG decisions during the project which may cause the amount and timing of MOH resources estimates in this PP to vary substantially. The USAID has therefore proposed a system for monitoring the activity which calls for frequent formal review of project progress. (See Implementation Plan).

The evaluation project will assess the effectiveness of activities and programs which have been funded under AID Health Loans 020 and 021. Health Loan 021 contains a provision allowing expenditure of funds for the improvement of health sector planning capabilities within the National Economic Planning Council. This provision provides some assurance that the results of the information sub-system to be developed under this grant project and the evaluative conclusions on the operation and efficiency of the rural health efforts of the MOH will be integrated into the overall GOG planning and resource allocation process for the health sector. However, this aspect of the loans has not moved satisfactorily to date due to conflicts between the MOH and Planning Council over the scope and activities of the health sector planning unit. The Mission has been informed by the Planning Council and the Minister of Health that these differences have been worked out and that loan funds will be released for this purpose.

## II. PROJECT BACKGROUND AND DETAILED DESCRIPTION

### A. Background

#### 1. The Problem

Rural ill-health in Guatemala arises from the presence of a dispersed, largely illiterate, indigenous population, many of whom do not speak Spanish. The health deficits have their roots in poor sanitation, poverty and ignorance, and have been compounded in the past by the limited outreach and effectiveness of a health system based on hospital curative medical services. Materials and manpower too are short; and such resources as exist have been improperly distributed and utilized. Some health indicators are as follows (Ministry of Health data):

Life expectancy at birth is 45 years for Indians and 61 for non-Indians. Mortality rates are 89 per 1,000 live births for children under 1 year of age, 30 per 1,000 for those aged 1-4, and 16.4 per 1,000 for all ages. The major causes of death (with rates per 100,000) are:

Enteritis and diarrhea	329
Undefined	203
Influenza	131
Other pneumonias	104
Measles	44
Malaria	43
Anemia	40
Whooping-cough	40
Nutritional deficiency	37
Homicide	27

80% of all children under 5 have protein-energy malnutrition. Of the country's 1,200 doctors, 16% are abroad and 70% are in the capital city. In five of the political departments (accounting for a fifth of the population) the average is 1 doctor per 68,710 inhabitants. The country has 27 hospitals, 78 health centers and 329 health posts, with a total of 13,203 beds.

The Ministry of Public Health and Social Assistance and the Guatemalan Institute for Social Security are the two largest organizations in the health sector. The Ministry, with an annual budget of some \$36 million in FY/CY 1975, offers health services to the whole population of 5.5 million persons at low or no direct cost to the individuals served. The Ministry's budget represents 12% of total Government expenditure, amounting to \$6.55 a year per head. Of this, about \$5.00 a head goes to curative services. In 1974 the Guatemalan Institute for Social Security provided accident services for the whole country and also sickness and maternity care (including preventive medicine and rehabilitation) to some 500,000 insured workers and 163,000 others. Average per capita expenditure was \$33.20 a year, with 29% of the economically active population and a tenth of the total population eligible for services.

The problems of health-care delivery lie in three disparities: the disparities of expenditure and needs (curative versus preventive); the disparity between resources distribution and population distribution; and the disparity between the growth of the population and the rate at which services can be extended.

## 2. Responses to the Problem

With the assistance of AID's Rural Health Loans I and II (520-L-020 and 021), the Ministry of Public Health and Social Assistance embarked early in 1971 on a program intended to improve the level of health care to the rural population through a 4-level health-care delivery system. This envisages the training of two new levels of auxiliary personnel; at level 1, health promoters and native midwives minister to basic needs in the community; and at the level of health posts (level 2), rural health technicians and auxiliary nurses provide preventive, promotive, and some curative services. Levels 3 and 4 are the referral and back-up system, and include preventive and curative attention in health centers, as well as medical care in regional hospitals and specialist care in the national reference hospital.

To implement the program, a fully staffed office for improvement of rural health services has been organized by the Ministry to supervise training of staff and provide equipment and supervision for existing health posts. Training facilities developed under the program have now been functioning for three years and the two groups of Rural Health

Technicians (TSRs) which have graduated to date have been incorporated into the rural health system. Approximately 80 TSR graduates were working in the field as of June, 1975. Construction of a new training school for auxiliary nurses will begin in 1976. Auxiliary nurses already working in the rural health system are being given additional training to improve their abilities in public health and in simple curative medicine, with special focus on preparing them specifically to help meet rural health needs. Field supervisors are being trained and provided with vehicles. Health post construction continues with assistance of AID Loan 520-L-017, utilizing the services of the Guatemalan Institute for Municipal Development (INFOM), in conjunction with local municipal governments. Additional health post and health center construction will be financed under a proposed CY 1976 IDB health loan.

Training of village health promoters has also taken place, with the financial assistance of UNICEF. The Pan American Health Organization has provided technical assistance for developing a pilot program in maternal and child health care in one of the largest Indian departments, Huehuetenango.

The proposed project will begin to enhance the effectiveness of all of these efforts by eventually providing feedback at all levels of the Ministry's Rural Health System, encouraging appropriate use of the information made available internally, and by providing useful information regarding the new rural health system to those with needs for such information in Guatemala and elsewhere.

The present Project Paper is based on a plan produced by the Guatemalan Academy of Sciences through an AID grant and supported by technical assistance under an AID contract with the American Public Health Association. Representatives of the Ministry of Health (MOH) and the National Economic Planning Council participated along with local consultants from other agencies in all phases of the Academy's project planning activities.

### 3. Past Evaluation Efforts Within the Rural Health System

The series of feasibility studies carried out in 1971 which formed the basis for the new rural health system indicated that auxiliary health personnel would be accepted

in rural areas and would be able to provide services appropriate to the needs of the rural people. In the documents supporting the applications for Health Loans 020 and 021, it was contemplated that an evaluation of the rural health system would be carried out with financing from a private foundation. A proposal was developed and submitted to the Kellogg Foundation, but was not funded. The present proposal developed as a result of increased interest within AID in evaluation, coupled with developing awareness among the Guatemalans involved in rural health of the importance of evaluation and especially of the potential contributions of adequate feedback to more effective use of available resources within the Ministry's Rural Health System.

Guatemalan interest in obtaining information for use in guiding the development and refinement of the Rural Health System has already prompted several types of relatively informal evaluations.

In May of 1974, and again in May of 1975, seminars were held at the Training Institute at Quiriguá in order to learn more about the experiences, problems and concerns of the TSRs now working in rural areas. The seminars were attended by a majority of the graduates of the Institute (at their own expense), by the faculty of the Institute, and by other personnel from all levels of the Rural Health System. The resulting information was put to use, for example, in restructuring the TSR curriculum and in designing the evaluation project.

Faculty members of the Training Institute have carried out a pilot study of the use of a radio communications system installed at seven of the 19 training health posts located within a 35-kilometer radius of the Institute. They simultaneously studied the effects of several different patterns of supervision. These studies have already contributed information useful in modifying the training program and suggestions concerning supervision of the rural health teams. The results will be even more useful as a radio and telephone communications system links the rural health posts and centers to one another and to other levels of the rural health system. Such a system is now being tested in Quiché province, where TSRs have been most thoroughly integrated into the health system.

GUATEL, the Guatemalan telecommunications company, has carried out studies of technical telecommunications problems and made recommendations as to the design of the communications network for the health system.

The TSRs are trained to carry out community diagnostic studies in which they gather information regarding community composition, organization, health problems, etc. They then use this information in establishing their own working priorities. At present, little use is made of this information at other levels in the system, but there is much interest in ascertaining the validity of information gathered by the health workers themselves and in systematically using it at other levels of the health system. A preliminary questionnaire regarding these problems was distributed nationwide late in 1974. The health chief of Quiché province, together with several of the TSRs working in the province, developed an extensive report on the current health and health system situation there, based partly on the TSRs community studies.

At the national level, the Ministry of Health, the National Economic Planning Council and other key institutions see the need for evaluative information on an on-going basis. Interest at such levels will help to avoid duplication of efforts and will encourage appropriate use of feedback at all levels.

As part of the planning activities for the evaluation project, the Academy of Sciences sponsored, with the cooperation of the MOH, an evaluation workshop at Cobán, Guatemala, where Academy and Ministry leaders were able to meet with consultants and representatives from other agencies, and, most importantly, with rural health workers from all levels and from various parts of Guatemala. Three days of free exchange of ideas and experiences in plenary sessions, small working groups and casual conversations produced increased understanding of and interest in the functional problems of the Rural Health System. The final report of the workshop is included as Annex B/C.

The Ministry has recently initiated two more evaluation studies focusing on the TSRs and rural health activities: one will consider field performance of TSRs as related to their performance at the Training Institute at Quiriguá (INDAPS) and to admission information; the other will evaluate the most recent vaccination campaign and the participation of paramedical workers in it.

#### 4. Other Donor Interest

The possibility of obtaining funding for this evaluation project from other donors has been explored during the past five years. The Kellogg Foundation, which initially had expressed interest in the project in 1972, decided not to finance it due to a change in personnel and lack of interest. WHO/PAHO and Canada's ICDR are interested in the results of the evaluation, particularly as they pertain to the use of paramedical workers, but do not have the financial resources required to fund the evaluation. The IDB is also interested in the project's findings, particularly with regard to the relationships between the health posts and the IDB-financed health centers and hospitals. The IDB, however, is not interested in funding the evaluation. Therefore, there are no donors other than AID who are willing to fund this project.

## B. Detailed Description

### Summary

By assisting in the improvement of rural health services, this project contributes to achieving the GOG's overall sector goal of improving the level of health in Guatemala.

The specific purposes of the project are (1) to evaluate the Rural Health System, focusing on the system at the health post level and below; and (2) to begin to improve the Ministry of Health's (MOH) capacity for planning, monitoring, evaluating, and controlling Ministry programs.

At the end of the project, an overall report will assess the accomplishments and weaknesses of the rural health system; and the MOH will have begun to acquire an improved institutional capacity to plan, monitor, evaluate and control its programs by beginning to make use of improved rural health information system (operating in at least one region), as well as through the information developed and experience gained in the process of producing the evaluation.

The project outputs required in order to achieve these purposes include the establishment of the system in at least one region and various "component" studies focusing on key aspects of the Rural Health System and of the environment within which it operates. The component studies will begin with a review of existing information and of the information needs of the MOH, followed by studies of the activities and functions of the members of the rural health team, studies of the communities served, studies of the Rural Health System itself (including its support systems and the current patterns of gathering, flow and use of information), and economic analyses making use of data from all of the other studies. Based on all of these, an information system in keeping with the MOH's needs and resources will be designed, tested and implemented in at least one health region. Appropriately trained staff in the Academy (for both the central administrative unit and the field unit), critical to the accomplishment of the other outputs and to the attainment of the project purposes, constitutes another output.

Inputs necessary to accomplish the above will include international and local consultants, local staff

personnel, supplies and equipment for central and field operations, and training.

The Logical Framework Matrix, Annex D, summarizes the design of the Evaluation Project.

1. Goal

The Evaluation Project contributes to the goal of improving rural health services and thereby to the Government of Guatemala's (GOG) overall sector goal of improving the health of the Guatemalan people.

The GOG established a program for the strengthening of Rural Health Services in 1971. AID has provided financing through Loans 020 and 021 totaling \$5.9 million to effect this program. The Minister of Health and the Director General of Health Services support this project and expect that accomplishment of its purposes will assist them in providing improved rural health services.

At the end of the project life, it will be possible for planning, management, and public health experts to assess the extent to which the program has actually helped improve rural health services in one region in Guatemala. These findings will be included in the project's final report.

Since this project's contribution to the goal would occur through improvements in decision making, one assumption is that Guatemalan decision makers act upon the information coming directly or indirectly from the Evaluation Project.

Another assumption is that they will make rational resource allocation decisions based on this information in order to improve rural health services.

2. Purposes

a. The first purpose of the Evaluation Project is to evaluate the Rural Health System.

All parties involved in the planning efforts agree that the evaluation should focus on the most basic level of health services, those provided by personnel based at the health posts and by others working under their supervision. Services at that level are considered to be the most important links between the Rural Health System and the health of the rural people.

At the end of the project the combined outputs of component studies, final project analysis, interpretation and reporting will have defined and quantified the purposes, outputs and inputs of the GOG's program for strengthening rural health services, and will describe the extent of their attainment or non-attainment of objectives. In cases of significant non-attainment, remedial measures will be described. Verification of project purpose achievement at the end of the project will be done by reviewing project reports, to be carried out by outside consultants during the last year of the project.

The second purpose of the Evaluation Project is to begin to improve the MOH's capability in planning, monitoring, evaluation and control of its programs. One of the main contributions to this purpose will be the design of a Rural Health Information System which will be developed, tested and implemented in at least one region and introduced in two additional regions. Experience gained by MOH personnel who cooperate in carrying out the Evaluation Project will also contribute to achievement of project purposes.

At the end of the project, achievement of this second purpose will be indicated by the extent to which MOH operations in planning, monitoring, evaluation and control reflects use of (1) the results of the component studies; (2) the outputs of the information system from at least one health region; and (3) other recommendations made by the evaluation group. In addition, it is expected that the MOH will have begun to staff the planning and evaluation unit of the Ministry and are beginning to operate the information and evaluation system on a pilot basis. Interviews, questionnaires, site visits, and examinations/comparisons of MOH and project documents will be used in assessing the accomplishment of this purpose. This verification, the results of which will be included in the final report, will be carried out by local and international consultants during the last year of the project, paid for by funds budgeted for final analysis, interpretation and reporting.

Attainment of the project's purposes depends not only on prior attainment of project outputs, but also on several crucial assumptions. First, the MOH must remain committed to carrying out the evaluation and to establishing and maintaining a national information system. Second, the personnel who gain training and experience through the project must be retained by the MOH and their abilities employed properly.

Third, MOH personnel must be interested in information produced directly or indirectly by the project and must be able and willing to use it appropriately in making decisions.

### 3. Outputs

Four categories of outputs are listed in the logical framework for the Evaluation Project:

- Organizational Structure and Personnel for Evaluation.
- Component Studies Reports.
- Information Sub-System.
- Final Project Analysis, Interpretation and Reporting.

#### Output No. 1 - Organizational Structure and Personnel for Evaluation

The first category, Organizational Structure and Personnel for Evaluation, is dealt with more fully in the section on the Implementation Plan for the Evaluation Project, Section IV B. Interviews, observation visits, and reviews of project records will make it possible to verify the following outputs related to Organizational Structure and Personnel for Evaluation:

- One Administrative Unit organized in the Academy and staffed with 17 qualified workers.
- Eleven (11) Field Staff members hired and/or seconded from MOH with appropriate background and training for roles in project.
- Field unit organized, staffed (11 persons), equipped, and gathering data.

The most important assumption relating the inputs to this category of outputs is that the MOH will assign or release suitable personnel as needed for training and/or employment on the project.

### Output No. 2 - Component Studies

The second category of outputs, Component Studies, includes the following reports:

- Review and Integration of Existing Information and of MOH Information.
- Activities Analysis.
- Community Studies.
- Studies of the Rural Health System (including Support and Information Aspects).
- Economic Analyses.

The selection of information to be gathered in the studies leading to these reports is elaborated in Annex B/D. The reports and studies will be the result of joint efforts of the field unit and the administrative unit. The information generated will be discussed with Ministry representatives for their comment or action. These component studies and the MOH's acceptance of the recommendations contained therein will establish the bases for the development of the next output, the Information Sub-System which will be designed to be maintained and used by the MOH after this project terminates.

Verification of the Component Studies outputs will be accomplished by reviewing the reports and studies.

The most critical Inputs-to-Outputs Assumption related to the Component Studies is that the MOH will allow project personnel access to needed information.

Descriptions of the expected contents of each of the component studies and explanations of the planned activities for each component study are given in Annex B/D.

### Output No. 3 - Information System

The design and implementation of a system for gathering, analyzing, interpreting, disseminating and using information for design-making at all levels of the Rural Health System in one region and its introduction in two additional regions in Guatemala is the third output of the evaluation project. The information

system fully operating in one region should contribute to the achievement of the first purpose ( evaluation ) and be the basis for the initial improvements in the Ministry's capacity to plan, monitor, evaluate, and control its own programs.

The Academy, the Ministry and the National Economic Planning Council attach great importance to this aspect of the evaluation project. The Academy's and Ministry's rationale for the development of the information system as an integral part of the evaluation project is outlined in the following comments from the Academy's plan:

"Experience has demonstrated that an important limitation to effective evaluation is the insufficient amount and quality of available information, which makes it necessary, as a fundamental part of the evaluation itself, to organize an information-evaluation control sub-system within the health system.

Therefore, it is necessary to create the needed infrastructure so that the Ministry of Health can continually collect simple information (indicators) which, when analyzed periodically and used at the various levels of the system, will make it possible to determine whether the system is functioning adequately in cost/effectiveness terms and will indicate possible corrective measures.

To this end, this activity will:

- Select indicators for later routine collection at the national level,
- Train rural personnel in the collection and use of these indicators.
- Study and recommend necessary re-design of the system for information flow.

- Introduce the use of simple analytic techniques at each level; and
- Establish and promote the adequate and timely use of feedback systems."

The first step to be taken in the process leading to the design of the information sub-system will be an analysis of the Rural Health System's information needs for decision making. That analysis will begin during the first three months of the project, concurrent with the review of existing information and closely coordinated with it. An analysis of the present arrangements for information gathering, processing and use will be carried out as part of the studies of the Rural Health System. Those two studies will provide the basis for design changes to improve the system, expand its coverage and increase the utility of the information reported. Observations of the MOH's ability to make effective use of feedback from the project during the initial years of project activities will also guide the development and implementation of the information sub-system.

Plans for the expansion of coverage of the information sub-system are discussed in the Implementation Plan. By the end of the project, the information sub-system will only partially be functioning in three departments: verification of this will be accomplished by field visits, interviews and questionnaires and by reviews of project and MOH records and reports, including reports produced by the information sub-system itself. The key assumptions related to the sub-system are that the MOH will (1) allow project personnel access to information needed for its development; (2) assign or release suitable personnel for training; and, (3) include required reporting responsibilities in the tasks assigned to its operational personnel. A follow-on project is planned in order to establish the information system nation-wide.

Technical assistance will be required because MOH and Academy personnel with all of the knowledge, skills and experience needed for the development and execution of this complex project are not available. Local consultants will be used where possible, supplemented by international consultants as required. The timing, types, amounts and costs of technical assistance are shown in detail in the Implementation Plan and Financial Plan.

Input No. 1 - International Technical Assistance

A total of 45 man-months of international technical assistance will be needed during the four year life of the project. Assistance will be provided in the following areas:

- Rural Health System Planning.
- Information System Design and Management.
- Health Logistics and Support Systems.

These categories represent general areas in which project personnel and available local consultants are not expected to be able to provide fully for the project's needs. This assistance is further divided into long-term (20 man-months) and short-term (25 man-months).

The 20 months of long-term assistance will consist of 12 continuous man-months provided by one consultant resident in Guatemala during the first year of project implementation and eight man-months during the last year of the project; it is anticipated that the same consultant, who will

advise project personnel in the general areas of public health and evaluation, with special emphasis in project and health program management, epidemiology and research design, will provide both of these periods of long-term work and will also contribute approximately two man-months per year of consultation during each of the four interim years.

The 25 man-months of short-term international technical assistance will include, in addition to the anticipated eight man-months provided by the long-term consultant on a short-term basis, 17 man-months of short-term consultations in the areas of health logistics and support systems and information system design and management over the four years of project activities.

All consultants will need to be able to work in Spanish in order to be effective, although the nature of particular consultations will determine the importance of Spanish language fluency.

#### Input No. 2 - Local Consultants

Locally available experts will be used to provide needed assistance to project personnel. The amount of funds provided in the budget is expected to cover approximately 31 man-months of local consultant services. Many local experts from various Guatemalan and international institutions participated in the planning phase of the validation project and have expressed their willingness to make further contributions in coming years. Particular expertise will be required in:

- data processing and systems analysis,

- social sciences,

- training design.

Verification of the quantity and adequacy of consultant inputs will be accomplished by review of project records and consultant reports.

#### Input No. 3 - Vehicles

One two-wheel drive vehicle will be purchased in the first year of the project, and a replacement vehicle will be purchased in the third year. A trailer, to be purchased during the first year, is expected to last the

entire project lifetime, since it will not be subjected to the extensive bad-road use which the other vehicles will need to endure. It is needed in order to provide a base for field operations, a storage place for field equipment and supplies, and possibly also temporary sleeping quarters for one or more field personnel.

Verification of this input and of its proper use will be carried out by review of project records.

Input No. 4 - Training: Project Training and Orientation Workshop

A training and orientation workshop for the project, to be organized during the first month of the implementation phase, will take place during the following three months.

A similar workshop was held at the beginning of the training activities for TSR's under AID's two health loans and proved to be a very effective means of getting the project on the way to achieving its objectives.

The workshop will be held at Quiriquá (the TSR training center), where full participation of the institute's faculty will be possible, with contributions as needed from Ministry and other personnel from Guatemala City and elsewhere in the country. Workshops and meetings held in the capital have been found to be generally less productive than ones (such as the evaluation phase workshop held in Cobán) held elsewhere in the country. All key project personnel will attend the workshop.

Further discussion and plans for the workshop are presented in Annex B/E.

As the project is introduced to the two additional regions and expanded within all three regions (as discussed in the Implementation Plan), the MOH will design its own training program, but it will not be fully operational by the end of this project. A follow-on project will be proposed in order to complete this activity.

Input No. 5 - Supplies, Rentals, Travel and Other Equipment

USAID will finance limited quantities of:

- Office supplies and equipment for the project staff in the Guatemalan Academy of Sciences--\$23,000 over the life of the project.
- Medical supplies for project field unit necessary for measurement and testing and limited epidemiological work in carrying out the community studies--\$9,000 over the project life.
- \$11,000 of computer services for processing the results of community studies; and
- \$4,000 in per diem for in-country travel of project personnel.

### III. PROJECT ANALYSIS

#### A. Technical Analyses

The analyses and documents on which the present evaluation proposal is based were developed by the Academy of Sciences of Guatemala, working in close coordination with the MOH and assisted by AID consultants. The planning activities were carried out under an agreement between the GOG (MOH and National Economic Planning Council) and the Academy of Sciences. Planning was supported by an AID grant (\$20,000). Policy direction for the study was provided through a two man board consisting of the President of the Academy and the Director General of Health Services of the MOH. Planning activities were directed by a respected Guatemalan doctor who had worked with the MOH officials involved and who is an Academy member.

Local consultants were used extensively in order to bring to bear the required range of expertise during project planning. Many were Academy members. Others were obtained from Guatemalan and international organizations (such as INCAP) located in Guatemala City. The MOH participated fully in planning, providing access to needed information, special briefings by MOH personnel, and generous amounts of the time of high level MOH personnel. Representatives of the National Economic Planning Council also participated in all planning activities and wrote several sections of the final plan. The local consultants functioned as members of a technical advisory group. These patterns of organization and consultant use, which proved effective, will be continued during project implementations (see organization chart on page 38).

The planning group reviewed health service activities in rural Guatemala, including non-governmental services and research activities (e.g., INCAP) and members made observation visits to rural MOH facilities. In May of 1975 a three day project planning workshop was held in the highland town of Cobán, in one of the provinces where TSRs have been working. The workshop's main focus was on obtaining information directly from the rural health workers regarding their work and their views of the rural health system and its functioning. National and area level MOH officials made background presentations, and representatives of various other organizations were among the participants. After intensive discussion specific evaluation recommendations were

formulated by participants working in four internally heterogeneous groups. A consolidated report was produced and discussed, providing much useful material for the evaluation project planners. The workshop also served to bolster the mutual confidence of the agencies involved and to enhance communication and understanding among the various levels of the MOH.

The final report produced by the Academy went through several drafts, each of which was reviewed by MOH personnel and consultants, so that the resulting Plan y Metodología on which this proposal is based has the firm support of all involved.

The project is designed to gather relatively simple information of assured reliability and validity as a basis for the eventual establishment of a permanent information system which will provide feedback for area and central level administrators for use in decision-making. Where special analyses may be needed for central planning purposes, such information will provide a solid base which can be augmented by ad hoc studies and by information from other sources. The permanent information system, which will not be established during the four year life-of-project but during the follow-on project, will be designed to use two distinct but complementary sources of data: information routinely collected and reported by regular members of the health post teams, and supplementary, periodic sample surveys conducted by a specialized MOH team organized for that specific purpose

The parallel nature of the project staff in the Academy and the regular organization of the MOH is expected to facilitate the eventual absorption of the evaluation process into the MOH. The previous rural health experience of both Academy and MOH personnel will enable them to provide valuable advice on data collection instruments and techniques as plans for the various parts of the evaluation project are finalized and during field tests.

The focus on the health post level is expected to assist the Ministry of Health in decentralizing decision-making as a means of tailoring local services to local needs. The flow of evaluation information identifying problems and suggesting solutions will facilitate decision-making at the middle-management level, a critically important process in Guatemala as it is in most other developing countries.

By the end of the project the evaluation studies and the information sub-system will have achieved partial coverage in three department of Guatemala. With regard to the

Rural Health System, questions as to suitability for replication/diffusion and host country operation and maintenance of the system will be answered by the evaluation. The evaluation itself, as discussed immediately above, will use simple and reliable techniques which its planners and the planning phase consultants feel could readily be built into rural health services systems elsewhere.

The cost estimates for the project, in the judgment of USAID/Guatemala, are satisfactorily firm and represent reasonable costs for the planned activities and expected outputs of the project, especially in view of the anticipated widespread benefits which will arise from improved rural health services.

B. Financial Analysis and Plan

The budget for the proposed project is shown in tables on pages 26a - d.

To assure that project funds are properly controlled and utilized, the proposed budget provides funds for the recruitment of qualified administrative and technical personnel. Also the services of local and foreign short and long-term consultants will be used to supplement the capabilities of the core staff in specialized fields of health, economics and management.

RURAL HEALTH SYSTEM EVALUATION

Summary Cost Estimate and Financial Plan

(In 000's of \$)

<u>Input Description</u>	<u>Total Project Cost</u>			<u>A.I.D.</u>			<u>G.O.G.</u>
	<u>Grand Total</u>	<u>FX</u>	<u>LC</u>	<u>Total</u>	<u>FX</u>	<u>LC</u>	<u>LC</u>
Local Personnel	\$ 327	\$ -	\$ 327	\$ 215	\$ -	\$ 215	\$ 112
Technical Assistance	230	191	39	230	191	39	-
Training	61	-	61	6	-	6	55
Supplies, Rental, Travel	36	-	36	36	-	36	-
Vehicles	19	19	-	19	19	-	-
Other Equipment	11	3	8	11	3	8	-
Sub-Total	684	213	471	517	213	304	167
Inflation	76	15	61	49	15	34	27
Contingency	44	10	34	32	10	22	12
<b>T O T A L S</b>	<b>\$ 804</b>	<b>\$ 238</b>	<b>\$ 655</b>	<b>\$ 598</b>	<b>\$ 238</b>	<b>\$ 360</b>	<b>\$ 206</b>

RURAL HEALTH SYSTEM EVALUATION

Costing of Project Outputs/Inputs

(In 000's of \$)

<u>Project Inputs</u>	<u>Total Cost</u>	<u>Project Outputs</u>			
		<u>No. 1</u>	<u>No. 2</u>	<u>No. 3</u>	<u>No. 4</u>
<u>AID Appropriated</u>		(To be Revised by 6/30/76)			
Local Personnel	\$ 215	\$ 99	\$101	\$ 86	\$ 57
Technical Assistance	230	74	48	74	37
Training	6	2	2	2	--
Supplies, Rentals, Travel	36	5	30	7	12
Vehicles	19	5	8	6	--
Other Equipment	11	6	2	2	3
Sub-Total	\$ 517	\$191	\$191	\$177	\$109
Inflation & Contingency	81	68	65	59	35
TOTAL AID	\$ 598	\$259	\$256	\$236	\$144
<u>GOG Provided</u>					
Local Personnel	\$ 112	\$ 45	\$ 54	\$ 50	\$ 16
Training	55	35	7	17	7
Sub-Total	\$ 167	\$ 80	\$ 61	\$ 67	\$ 23
Inflation & Contingency	39	36	28	30	10
TOTAL GOG	\$ 206	\$116	\$ 89	\$ 97	\$ 33
 TOTAL PROJECT	 \$ 804	 \$375	 \$345	 \$333	 \$177

RURAL HEALTH SYSTEM EVALUATION

DETAILED BUDGET

		Total		(3/1/76 - 6/30/76)		(7/1/76 - 9/30/76)		(10/1/76 - 9/30/77)		(10/1/77 - 9/30/78)		(10/1/78 - 9/30/79)	
		FX	LC	FY-76		IQ		FY-77		FY-78		FY-79	
				FX	LC	FX	LC	FX	LC	FX	LC	FX	LC
<u>Technical Budget</u>													
International -- AID/W		120	-	53	-	7	-	20	-	20	-	20	-
Local	A	71	-	4	-	7	-	-	-	-	-	60	-
Total T.A.		<u>191</u>	<u>39</u>	<u>57</u>	<u>8</u>	<u>14</u>	<u>-</u>	<u>20</u>	<u>2</u>	<u>20</u>	<u>12</u>	<u>80</u>	<u>17</u>
<u>Supplies, Rentals, Travel</u>													
Office	A	-	15	-	3	-	-	-	5	-	3	-	4
Medical	A	-	9	-	2	-	-	-	3	-	3	-	1
Computer	A	-	8	-	1	-	-	-	2	-	2	-	3
Local Travel	A	-	4	-	1	-	-	-	1	-	1	-	1
Total	A	<u>-</u>	<u>36</u>	<u>-</u>	<u>7</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>11</u>	<u>-</u>	<u>9</u>	<u>-</u>	<u>9</u>
<u>Equipment</u>													
Office	A	1	7	1	3	-	-	-	2	-	1	-	1
Data Processing	A	2	1	2	-	-	-	-	-	-	1	-	-
Field Unit Trailer	A	7	-	7	-	-	-	-	-	-	-	-	-
Vehicles	A	12	-	6	-	-	-	-	-	-	-	-	-
Total		<u>22</u>	<u>8</u>	<u>16</u>	<u>3</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>2</u>	<u>-</u>	<u>2</u>	<u>6</u>	<u>1</u>
<u>Local Personnel</u>													
Admin. Unit	A	-	117	-	26	-	6	-	30	-	30	-	25
Field Unit	A	-	98	-	21	-	4	-	25	-	25	-	23
MOH-Evaluation	G	-	60	-	-	-	3	-	12	-	15	-	30
Total		<u>-</u>	<u>327</u>	<u>-</u>	<u>47</u>	<u>-</u>	<u>13</u>	<u>-</u>	<u>77</u>	<u>-</u>	<u>85</u>	<u>-</u>	<u>105</u>
<u>Training</u>													
	A	-	6	-	6	-	-	-	-	-	-	-	-
Total	G	<u>-</u>	<u>55</u>	<u>-</u>	<u>6</u>	<u>-</u>	<u>3</u>	<u>-</u>	<u>12</u>	<u>-</u>	<u>12</u>	<u>-</u>	<u>22</u>
<u>GRAND TOTALS</u>													
	A	213	304	73	71	14	10	20	70	20	78	86	75
	G	-	167	-	15	-	6	-	30	-	37	-	79
		<u>213</u>	<u>471</u>	<u>73</u>	<u>86</u>	<u>14</u>	<u>16</u>	<u>20</u>	<u>100</u>	<u>20</u>	<u>115</u>	<u>86</u>	<u>154</u>
Inflation	A	15	34	-	-	-	-	2	3	4	10	9	21
Sub-total	G	<u>-</u>	<u>27</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>3</u>	<u>-</u>	<u>8</u>	<u>-</u>	<u>16</u>
		<u>228</u>	<u>532</u>	<u>73</u>	<u>86</u>	<u>14</u>	<u>16</u>	<u>22</u>	<u>106</u>	<u>24</u>	<u>133</u>	<u>95</u>	<u>191</u>
Contingency	A	10	22	3	3	1	-	1	5	2	6	3	8
	G	<u>-</u>	<u>12</u>	<u>-</u>	<u>1</u>	<u>-</u>	<u>1</u>	<u>-</u>	<u>2</u>	<u>-</u>	<u>3</u>	<u>-</u>	<u>5</u>
TOTAL		<u>238</u>	<u>566</u>	<u>76</u>	<u>90</u>	<u>15</u>	<u>17</u>	<u>23</u>	<u>113</u>	<u>26</u>	<u>142</u>	<u>98</u>	<u>204</u>

## C. Social Analysis

### 1. Socio-Cultural Feasibility

Due perhaps in large measure to the traditional lack of health care services in rural areas, numerous private groups (primarily religious based), have attempted to fill this vacuum through provision of health services. These have ranged from operating U.S. style, doctor oriented medical clinics to training of paramedic personnel. The GOG's new program initiated in 1971 adopted the paramedic approach which has met with widespread acceptance in rural areas. The key to this acceptance has been the practice of drawing candidates for training from the rural communities where they will serve. This overcomes cultural and language problems, especially in the Indian highlands where "outsiders" are frequently viewed with suspicion. This approach also facilitates the organization of groups as a basis for transmitting preventive health information and undertaking community action to improve sanitary conditions. Analysis of disease incidence in rural areas indicates that paramedic personnel can be trained to treat the great bulk (estimated at 90%) of the medical problems encountered which increases the confidence level of the rural population in the system over time. The thrust of this project, while not designed to have a direct immediate impact on the rural poor, will make the rural health care system more effective as it evolves. Development of a feedback system for sector managers will be especially important in this respect.

This project will have a direct impact on the employees of the rural health system. Sessions held at the TSR training center with in-service TSRs have produced valuable baseline data to judge the effectiveness of training programs and receptivity of TSR efforts at the village level. Field participation in these sessions has been enthusiastic indicating a high degree of involvement and motivation. The Mission believes that the evaluation effort will be well received especially if it is perceived as reinforcing field personnel activities.

The evaluation project will be most active in Region V (mainly in Department of El Quiche), where TSRs have been most thoroughly integrated into the health services and where the Public Health Director of the area has demonstrated great interest in the project on his own part and on the part of his staff.

Early in the planning phase for this project the Mission was concerned that if the Ministry did not participate fully in the planning and implementation of the project, or did not have full confidence in project personnel or in the other organizations involved, Ministry personnel might fear that the evaluation would be used against them. Various representatives from high levels of the Ministry have been involved throughout the planning phase, and representatives from all levels participated in the Cobán Workshop (Annex B/B). Maintenance of the mutual confidence and respect which have been developed will require careful attention to communication and coordination.

Support of national health leaders for the evaluation project itself is expected because some of them are already directly involved in the project, because others are in the Ministry, or will participate in the project as consultants. The fact that various prominent physicians are among the members and leaders of the Academy helps to assure communication and a stable relationship with the medical community.

## 2. Previous Project Design and Execution

The history of the training and use of paramedical personnel in Guatemala actually goes back at least several centuries, to the attempts of a Spanish colonial physician to train Indians in the rudiments of medicine, which they then applied in their villages. Contemporary comments indicated that the program was considered to be successful. For the most part, with the exception of some of the Ministry's studies mentioned in the background section, Guatemalan rural health services evaluations have remained at that anecdotal level. Therefore, this section will consider several non-Guatemalan evaluations with which persons reviewing this project for AID are probably familiar in order to compare and discuss the approaches used.

INCAP has carried out several studies which involved the provision of health services in rural Guatemala. In one longitudinal study, observations indicate that infant mortality decreased substantially in villages where a protein-calorie supplement was provided in addition to medical care, as compared to villages provided with medical care and a (lower calorie) caloric supplement.

One of the problems which must be dealt with in any kind of study attempting to assess the effects of a health services project is that of first assuring that adequate inputs are being made and that they are being used and managed in ways which make it reasonable to expect that the hoped for effects on health might be produced. One of the planning phase consultants, Dr. Dirk Spruyt, encountered this problem in his evaluation work in Ethiopia and emphasized that priority should be given to study of these input and functional aspects of the Rural Health System. Such studies can contribute directly to the improvement of the system, in addition to providing useful information to those wishing to implement such systems elsewhere.

The Danfa (Ghana) Rural Health and Family Planning Project provides an example of a well designed study intended to test the effects of several additive combinations of health, health education and family planning services. It also provides evidence of the extreme difficulties encountered in locating initially comparable rural areas (needed for any kind of study requiring inter-area comparisons) and in preventing contamination (both external and by other areas' treatments) of the areas, even with the full cooperation and participation of the host country government. Much effort was required, during the first years of the Danfa Project, in order to staff the health services components of the project operating as specified in the study design; such efforts are all the more important when the system being studied is already being implemented, rather than being developed and

demonstrated, and when tight control of services is therefore more difficult to achieve.

Consideration of the projects discussed above, therefore, leads the consultants and AID-Guatemala to agree with the general approaches recommended by the Guatemalan developers of the Plan y Metodología.

### 3. Role of Women

To the greatest possible extent, women will be employed by the project at all levels and will be encouraged to advance to increasing levels of responsibility. The roles of women within the Rural Health System will be considered as part of the evaluation of the system, which employs women, at the health post level, both as TSRs and as Nursing Auxiliaries.

## D. Economic Analysis

### 1. Limitations of Benefit-Cost Calculation

Standard benefit-cost analysis is not appropriate for this project, at least not at this stage, for the following reasons:

a. The project itself has as its first aim the collection of data that would permit assessment of the new rural health program utilizing especially trained paramedical personnel. The assessment will include measurement of the program's impact on agricultural productivity, lost working time, incidence of various sicknesses, death and birth <sup>1/</sup> rates, and even on some qualitative factors such as the adoption of improved sanitary and dietary practices. This evaluation would thus provide the informational base that could permit calculation of the benefit-cost ratio and provide an indication as to the amount of resources that the GOG, AID and the IFIs would be justified in investing in the program over the long-term. The study would also help to identify the regions and areas of activity that require particular attention.

b. It must be recognized that, even when all relevant data required for the evaluation have been collected a benefit-cost calculation can never provide more than a

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<sup>1/</sup> The full demographic impact is part of the evaluation.

partial measure of the total benefits to be derived from a health service improvement project. One might be able to measure the increased output resulting from reduced rates of sickness and absenteeism, or even from the increased vigor of the work force. However, the benefits derived from a rural health program to encourage toward physical increases in output, the value that is placed on saved human lives and reducing suffering is, by its very nature, not subject to measurement as it cannot be reduced to economic terms. Good health is such a goal that a means to an end; it is an end itself.

2. Health programs which generate indirect social benefits that are practically impossible to quantify. How can one measure the number of people who would have fallen sick if a given water supply had not been demonstrated, or if a contagious disease had been allowed to spread?

Since a traditional benefit-cost analysis cannot be undertaken, we shall discuss the major elements of the justification in qualitative terms; we shall then make some observations on the cost-effectiveness of the project by examining the feasibility of two alternative ways of achieving the objectives of the evaluation phase of the project.

### 2. Project Justification

The project's basic justification rests on the deficiency of the current information base to assess the impact of a rural health delivery system in improving health of the rural population.

#### 4. Information to the Information Base

A thorough evaluation is needed to measure the new system based on the extensive use of paraprofessional personnel with the impact of the traditional health delivery system. The comparison will show whether the new system is indeed clearly superior to the traditional one. If that fact is confirmed, the data collected will serve to convince policy makers as well as the members of the medical profession who remain skeptical of the new system that the latter is not only workable, but has the potential for substantially improving health conditions in the rural areas at a reasonable cost within a reasonable period of time. The data derived

1/ Three to five years.

from the evaluation is thus essential to the future commitment of funds designed to improve the rural health delivery system. This applies both to on-going rural health programs and to new projects.

#### h. Shortcomings of the Traditional Health Delivery System

The data on the principal causes of mortality on pages 27 and 32a show that over half of the deaths from all causes that occurred in Guatemala in 1973 are attributable to diseases that can be cured or prevented. There is thus a considerable potential for reducing death rates through the application of known preventive and curative techniques.

The traditional health system has been unable to come to grips with the basic deficiencies of the rural health delivery system. This inability is evidenced by:

(1) The persistence of the problem and its dimensions: the rate of progress that has been achieved in reducing infant mortality rate and in improving the poor health condition of the rural population has been disappointingly slow. The discrepancy between the quality of medical care and health conditions in the capital city and the rural areas remains substantial and undiminished.

(2) The heavy concentration of physicians, registered nurses, and financial resources in the urban area. Between 60 and 65% of Guatemala's physicians, and some 85% of its registered nurses, are concentrated in the capital city. Available studies indicate that nutritional deficiencies are far more serious among the rural than among the urban population; that the rural population is much worse off with respect to the availability of drinking water; and that garbage disposal and sewerage systems are far more adequate in the capital city than in the rest of the country.

(3) The following features of the traditional health system suggest that it is unlikely to be more successful in the future than it has been in the past: (i) the high cost of training physicians and the long training

Source: E. Croft Long and Alberto Viau D., "Health Care Extension Using Medical Auxiliaries in Guatemala", The Lancet, January 26, 1974, page 4.

TABLE I

TEN MAIN CAUSES OF MORTALITY IN 1973  
Rate and Percentage per 10,000 Inhabitants

<u>Diseases</u>	<u>No. of Deaths</u>	<u>Rate for 10,000 Inhabitants</u>	<u>%</u>
Chronic Respiratory Diseases	14,593	25.37	20.83
Diarrheic Syndrome	13,063	22.71	18.64
Diseases Resulting from Nutritional Deficiencies	4,783	8.31	6.82
Peri-Natal Mortality	4,228	7.35	6.03
Intestinal Parasitism	2,306	4.01	3.29
Respiratory Diseases	2,210	3.84	3.15
Cancer	1,594	2.77	2.27
Heart Disease (Cardiopathy)	1,558	2.70	2.22
Senility	1,349	2.34	1.92
Whooping Cough	1,271	2.21	1.81
Other Causes	23,090	40.15	32.95
TOTAL CAUSES	70,045	121.81	100.00

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Source: Unidad de Planificación y Estadística.

period required, indicating that they will never be available in adequate numbers to meet the needs of the rural population; (ii) the substantial income that physicians are able to command in the capital city (\$30,000 to \$60,000 a year) with which the rural areas could never hope to compete; (iii) the limited amount of budgetary resources that can be channeled into the rural health system.

The GOG has elected to employ an alternative health delivery system of paramedical personnel supervised and supported by qualified medical teams in each area health center as a viable means of substantially improving the amount and quality of health care extended to the rural areas over a reasonable period of time.

Evaluation of the efficiency and effects of this alternative program is critical to demonstrating its viability and improving its responsiveness to rural health needs.

### 3. Cost-Effectiveness

Two alternative ways of accomplishing this evaluation project have been considered: to have the evaluation undertaken by the Ministry of Health (in lieu of the National Academy of Medical, Physical and Natural Sciences); and engaging an international consulting firm.

To give complete responsibility to the Ministry of Health for the evaluation amounts, in effect, to asking for a self-evaluation. Since the new system to be evaluated requires a radical departure from the traditional approach, the objectivity provided by an outside group is essential. Moreover, the Ministry does not have the types and mixes of skills required for this type of analysis. The Academy plans to employ the services of economists trained in systems analysis, as well as specialists in the areas of anthropology, nursing, medicine, nutrition, curriculum development and public health service planning. The Academy has professors and researchers with many of these skills, and will obtain foreign consultants on a retainer basis to provide for limited periods the experts that it lacks.

The second alternative we considered is the employment of an international consulting firm. This alternative must be ruled out on cost considerations. It is estimated that the cost per man-month would be in the order

of at least \$5,000 to \$6,000 for foreign technicians which compares with an average salary of about \$1,000 per man-month to be received by the top level managers of the project on the Academy's payroll and by the most highly qualified local consulting personnel that will be employed on a retainer basis. Thus, the difference is in the order of 5-6 to 1 under the most favorable assumption and could go considerably higher. Since the project involves a substantial effort spread over a four year period, the cost of this alternative is prohibitive, and the differential over the alternative proposed cannot be justified.

E. Environmental Considerations

This project will have no direct environmental impact. Eventually, the project is expected to make a positive contribution to the environment in that it will consider health-related environmental problems in community studies and will make recommendations for ameliorating these problems

IV. IMPLEMENTATION PLANNING

A. Analysis of the Recipient's and AID's Administrative Arrangements

The key Guatemalan organizations which will implement the evaluation project are the Academy of Medical, Physical and Natural Sciences of Guatemala and the Ministry of Health. The Academy which was founded in 1947, is a well established and prestigious organization of key senior scientists and physicians which in recent years has broadened its organizational interests and activities to include studies related to the social and economic development of Guatemala. Its basic purpose is to undertake and coordinate research in its areas of competence and particularly to relate research findings to the development process in Guatemala. It also serves as a center for diffusion of new knowledge acquired in Guatemala and other countries. Membership is by election and limited to 80; 20 elected from medicine, 20 from natural sciences including pharmacy, 20 from physical sciences and mathematics and 20 from dentistry, agronomy and veterinary medicine. Associate members, both national and foreign may be elected without numerical restriction. The Academy receives minor support (premises and secretarial salaries) from the National University of San Carlos. The Academy is not, however, subject to the policies of the University and independently decides on projects, programs to be undertaken and the funding to be sought.

During the last two years the Academy has increased its level of activities and has received grants from the Tinker Foundation of New York to undertake, in collaboration with the Ministry of Health, feasibility studies relating to improving nutrition among children through development of community gardens, organized by local Rural Health Technicians.

In May, 1975, the Academy under Pro-Ag 75-12 completed a study which formed the basis for the evaluation project proposed herein. The study involved members of the Academy, the Ministry of Public Health, INCAP and other national, public and private institutions and individuals. An effective administrative unit was established with appropriate secretarial and accounting services. This unit, with appropriate expansion, will be utilized to undertake the evaluation project.

Dr. Alberto Viau, a member of the Academy and Director Designate of the evaluation project, is a respected and influential Guatemalan physician who has recently completed a year's training program in health planning and evaluation at the Liverpool School of Tropical Medicine, under the supervision of Professor N. R. E. Fendall, Chairman of the Department of Tropical Community Medicine. Professor Fendall is the author of the recent book and many papers on the training and deployment of medical auxiliaries in rural health care extension. Dr. Viau is therefore well qualified to undertake direction of the evaluation project.

Presently, Dr. Viau, is working under contract with the Rockefeller Foundation to compile and collate available information relevant to the project especially those studies which formed the basis for the GOG's Rural Health Care program. Thus initial steps have already been taken to develop the Evaluation Unit within the Academy and a skeleton administrative staff has been hired and is working.

Within the MOH, the office responsible for implementing Loans 020 and 021 (Program for Strengthening Rural Health Service) will form the main channel for coordination of MOH participation in the project. An Evaluation Project Board will be created, composed of the Director of the MOH's Implementation Office and the President of the Academy. This board will be responsible for overall policy direction of the project and coordination of all inputs. The Minister of Public Health will be signatory to contracts for professional consultant personnel employed by the Academy.

A key element of the MOH responsibilities throughout the project will be insuring the appropriate use of information for decision-making and evaluation within the rural health system. At the central MOH level, its office of Planning, Evaluation and Statistics will receive information from the information system, which will be fully operating in at least one region, and will analyze and distribute it both within the MOH and to others (such as the National Economic Planning Council) needing it. At the health post level, and at other levels at which data will originate, MOH personnel will collect and report data both during and after the project. The evaluation project's workers will introduce MOH personnel in three areas to the information system; the MOH will have primary responsibility for expanding the system's coverage within these areas and for supervising data collection in the

one area where it has been fully established. At all levels of the MOH, the provision of feedback of useful information from the system and the encouragement of its appropriate use in decision-making during the project will accustom personnel to the benefits of accurate information.

Following signature of the evaluation project Pro-Ag by the Academy, the Ministry, the Planning Council, and USAID/Guatemala, a contract with the proposed project director will be negotiated and signed, consultants whose nominations are now awaiting preliminary approval by the MOH will be hired, and acquisition of equipment and supplies will be initiated. The MOH will assign three TSRs and one graduate nurse for full-time work with the study team. (See page 38 for the Project Organization Chart). The MOH will also assign roles and tasks to its own personnel as needed for the implementation of the project and provide all required documents, records and other information.

The basic approach to carrying out the project involves a phased approach. During the first three months existing information will be reviewed and integrated, pre-selection of indicators, drafting of instruments, orientation and training of personnel, field visits and other necessary preparations, many of which will be accomplished by a workshop at Quiriguá involving all key project participants, the evaluation project will formally begin to collect data in the field, first in two health areas of Health Region V. It is anticipated that as field experience is gained in Region V some indicators and methods will be deleted, added, or changed. To emphasize this need for flexibility, which will decrease over time, this 15 month period of implementation in Region V is called a "pilot phase" in the Plan y Metodología, although it will yield much useful information regarding areas of interest in the evaluation and will provide early and continuous feedback to the Ministry. During the last six months of this phase, personnel from other parts of Region V will be trained in the use of the instruments which they will use in their areas as project coverage expands within the region.

At the end of this "pilot phase" the trained personnel and the field tested indicators, instruments and methods will be ready for subsequent phases, in which the study and information system coverage will expand to cover the rest of Region V and be successively introduced and progressively expanded in two other regions. The planned progressive introduction and expansion are illustrated in the table on p. 39 and the series of three maps on the following pages.

GUATEMALA RURAL HEALTH SYSTEM EVALUATION PROJECT

ORGANIZATION CHART

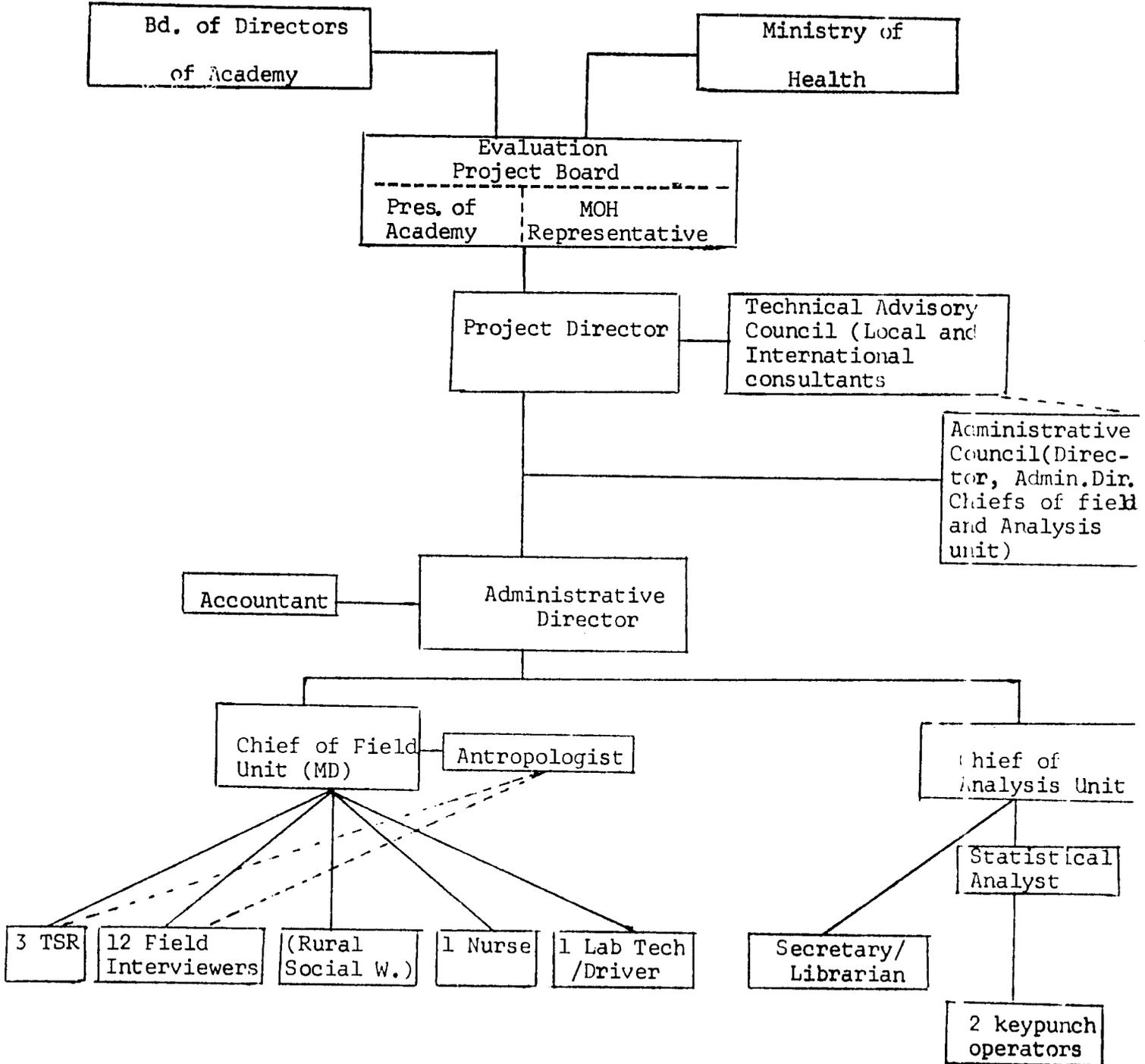
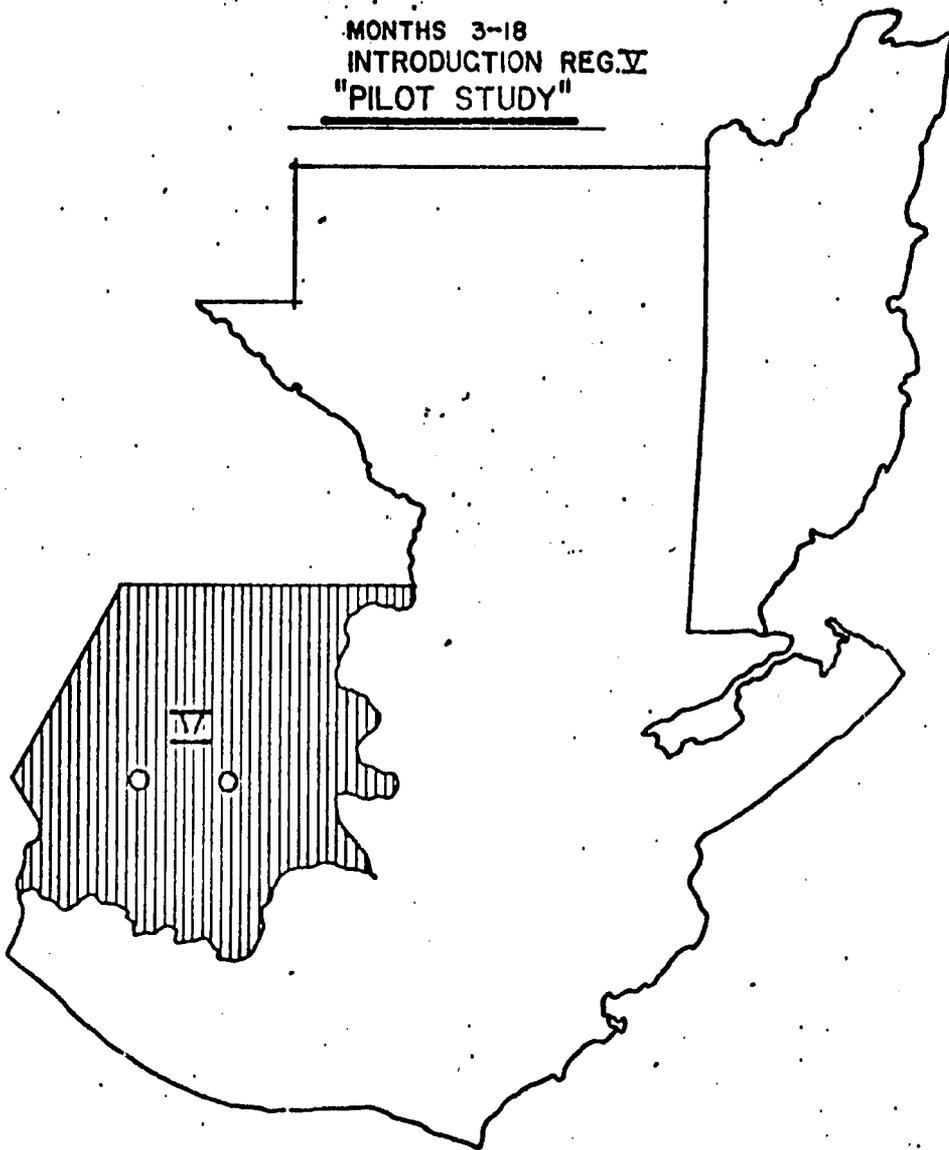


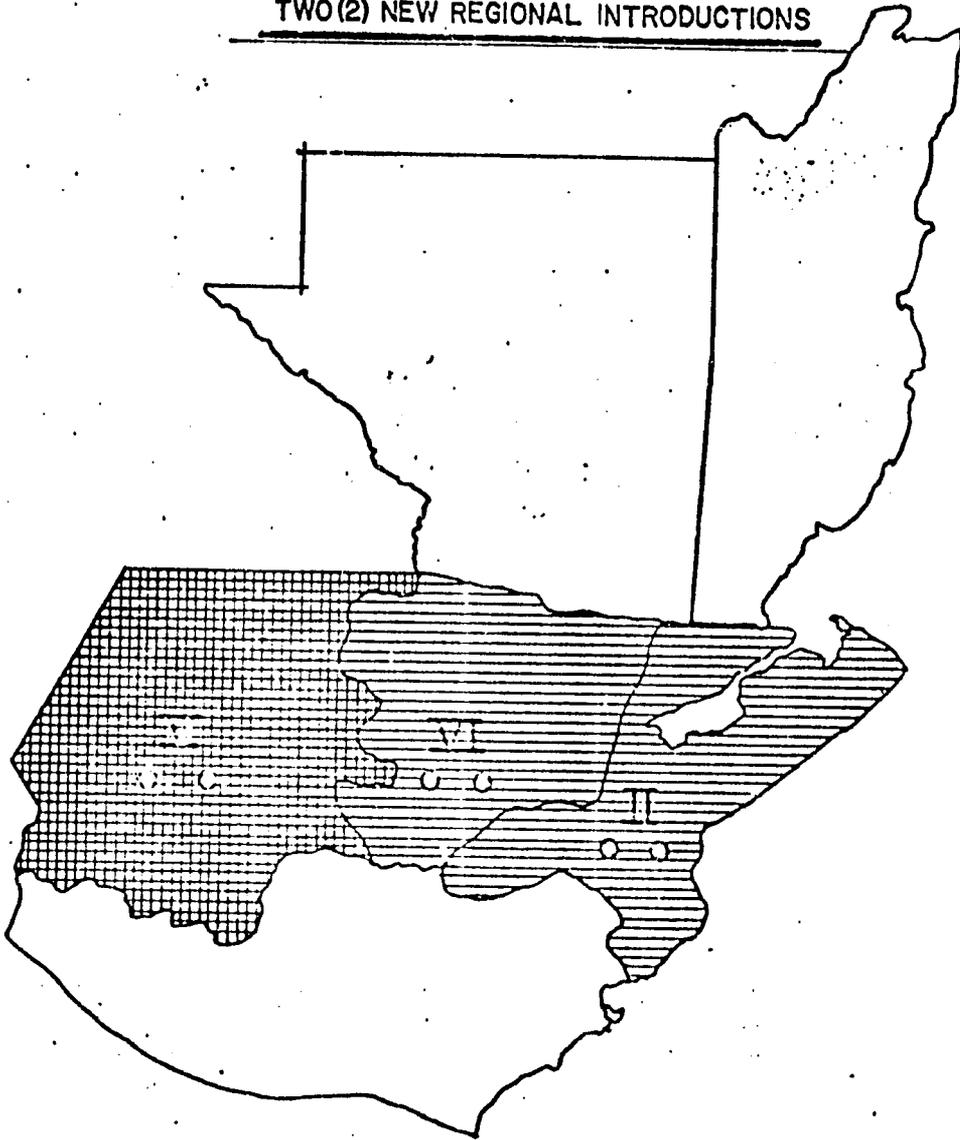
TABLE: Planned introduction and expansion of Information  
System by Regions

<u>By End of</u> <u>Month</u>	<u>New Regions</u> <u>Introduced</u>	<u>Regions</u> <u>Expanded</u>	<u>Total Regions</u> <u>Covered</u>
18	1	-	-
30	2	1	1
42	2	2	3

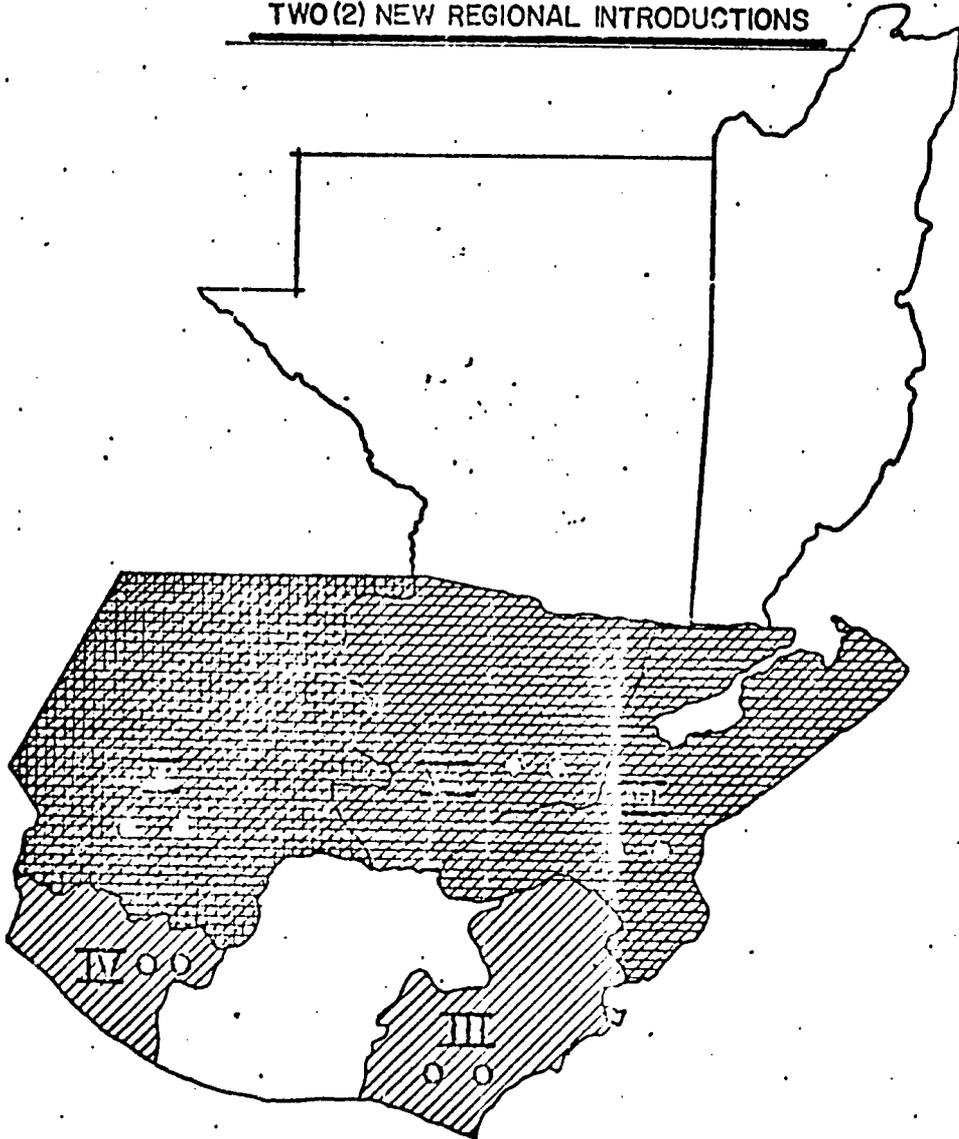
MONTHS 3-18  
INTRODUCTION REG. V  
"PILOT STUDY"



MONTHS 18-30  
REGIONAL EXPANSION  
TWO (2) NEW REGIONAL INTRODUCTIONS



**MONTHS 30-42**  
**TWO REGIONAL EXPANSIONS**  
**TWO (2) NEW REGIONAL INTRODUCTIONS**



USAID/Guatemala's analysis of the Academy's management capabilities based on planning phase experience indicates that it is capable of carrying out its assigned functions. The proposed mechanisms for coordination of functions (including joint Academy-MOH decision-making, sharing of information, establishment of good communications channels, joint participation in project activities, etc.) were also tested and established during the planning phase.

AID's monitoring role in the project will be performed by the USAID Public Health Division. No additional staff requirements will be necessary to perform this function. AID/Washington will be kept informed on project developments and results on an exception-reporting basis, using the project progress tracking network attached.

USAID/Guatemala's experience indicates that there are two critical points in the implementation of this project; an initial one when resources must be organized and mobilized, analyzed, interpreted and communicated at the same time that continuation of appropriate project activities need to be assured. The proposed full-time technical consultant who will be assigned to support the project during the first year of implementation and again during the last eight months of project activities will have a crucial role to play in this respect. This consultant will also support the work of the other (local and international) consultants while providing expertise in the formative stages of organization and design of sub-studies which will set the stage for continued implementation.

#### B. Implementation Plan

This section presents plans and schedules from project approval through completion of the project, including responsibilities, actions and relationships of the agencies involved.

The following charts are used in the presentation:

- Logical Framework Matrix for the Evaluation Project (Annex D ).
- Gant Chart of Evaluation Project Activities (Annex B/F).
- Planned Performance Tracking Network (Annex E ).

Final procedures for the evaluation of the evaluation project are presented in IV, C, "Evaluation Plan" below.

The Logical Framework illustrates the interrelationships among various aspects of the project. The Gantt Chart of Evaluation Project Activities shows the overall schedule of general activities which will be necessary for the attainment of the purposes shown in the Logical Framework. The Planned Performance Tracking Network indicates the timing of key events which must occur if project objectives are to be accomplished as planned without additional unplanned interventions.

There is agreement among the various agencies and individuals to be involved in the project as to the following division of responsibilities.

The Academy of Science will have overall responsibility for carrying out the project. The Academy will recruit, train and supervise field staff who will undertake data collection, prepare periodic reports and provide data and interpretative studies to the MOH, a Unit responsible for the Rural Health Program. In addition, it will compile, reproduce, collate and distribute the final project report.

Within a month following signing of the Project Agreement, the Academy will sign a separate agreement with the MOH which will set forth the terms of cooperation between the Academy and MOH especially in regard to MOH personnel who will be assigned to assist the Academy. During this period the Academy will recruit and hire the staff indicated in the preceding organization chart.

During the third and fourth months the Academy will:

Conduct a series of workshops at the TCH training center at ...

Academy staff will receive information about the project and their duties and responsibilities.

... ..

3. Existing information on active rural health programs (public and private) in Guatemala will be reviewed and initial survey formats for seeking additional information developed.
4. Detailed understanding of MOH organization and procedures will be developed and areas identified for field analysis of operations.
5. Survey design for assessing present allocations of time and effort by rural health team members will be prepared. Survey techniques will be identified and initial training of surveyors begun.
6. Design of instruments for community studies will be initiated.
7. Design of the study of current rural health information system will be initiated.

During second and third quarters of project:

1. Pre-test survey formats for community studies.
2. Analyze results of survey of other rural health services programs and establish procedures for the information bank.
3. Review, adjust and continue survey of rural health team activities.
4. Complete design for study of present rural health information system.

Beginning in the third quarter:

1. Begin to plan initial information system analysis to identify rural health information required for decision-making.
2. Approve survey design for and initiate community studies.
3. Identify aspects of rural health system for which studies in addition to the ones covering health team activities, community

analysis, and information system analysis, will be required. Begin study design for:

- a. Planning programming process.
- b. Epidemiological model.
- c. Resource use.
- d. Staffing-adequacy, training/recruitment requirements, etc.
- e. Logistics support, maintenance, etc. of rural health system.

These activities will continue through the fourth quarter.

During fourth quarter:

1. Begin systems analysis of support systems.
2. Summarize results of first community studies.
3. Summarize results of rural health team activities surveys.
4. Prepare first draft of description of existing rural health information system.
5. Prepare work plan for second year of project operations.

The major activities for the second year will include:

1. Conclude information system analysis. Begin design, testing and limited implementation of the rural health information system.
2. Conclude first round community studies.
3. Conclude systems analysis of support systems.
4. Begin training of local health post workers prior to initiating new information/evaluation system.

At the end of 30 months (the second year) and before initiating the expansion of the information/evaluation system, an overall review of the accomplishments and future plans will be conducted with MOH and CNPE as well as project staff and outside consultants.

C. Evaluation Plan

Means of verification and indicators for the evaluations of the Evaluation Project are shown on the logical framework matrix. Progress in project implementation will be noted by reviews of the reports and of evidences of the events indicated on the Planned Performance Tracking Network.

Formal evaluation reviews will take place in the fourth and seventh months of project activities and every six months thereafter. These dates were chosen to interdigitate with key dates of the financial plan. Members of the review group will include the following:

Academy of Sciences  
President  
Representative named by the Board of Directors

Ministry of Health  
Director General of Health Services  
Director of Rural Health Services  
Representative named by INDAPS faculty  
(faculty member)

National Economic Planning Council  
Representative named by Director

AID  
Director of Health Division, USAID/Guatemala  
Other representative(s) from AID

The review group will produce a written report by the end of each of the months noted, in order to provide a summary record of progress and to provide high level guidance to the project.

As described in the narrative explanation of the logical framework matrix, consultant experts will review and critique component studies reports in order

to provide judgments as to the extent to which those aspects of project purposes and objectives have been achieved.

Project personnel, consultants and AID personnel will review progress toward and attainment of end of project conditions for purposes and outputs and for timeliness, quality and quantity of inputs.

As indicated in the Implementation Plan, an indepth look at progress to date is scheduled at the end of the second year of project operations to summarize results and provide input for expansion of coverage to two additional regions by the end of the four year period.

## ANNEX "A"

The PROP for this project was originally scheduled for submission in the second quarter of FY 1975. Due to unavailability of TDY consultants on a timely basis and other unanticipated difficulties, it has been substantially delayed. Work on the PP was therefore at a fairly advanced stage before the new PID/PRP/PP cycle of project documentation came into effect. For this reason neither the Mission nor AID/W considered a PRP necessary for this project.

RURAL HEALTH SERVICES  
EVALUATION PROJECT  
- GUATEMALA -  
Preliminary Report

Report prepared by: \*Eugene Boostrom, M.D. & D.P.H.  
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During the Period: November 8-November 26, 1974

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In Agreement with the UNITED STATES AGENCY FOR  
INTERNATIONAL DEVELOPMENT

\*Authorized under

AID/csd 3423

**Summary and Recommendations:**

1. The Ministry of Public Health and Social Assistance of Guatemala (MOH) is expanding its rural health services, relying principally on lay workers (Rural Health Promoters), retrained midwives, auxiliary nurses, and a new type of paramedical personnel known as Rural Health Technicians (TSR). The TSR, with nine years of education and two years of paramedical and preventive health training, is recruited from the rural areas to which he will later be assigned. This innovative approach is of great interest to others concerned with rural health services in Latin America and elsewhere. Careful descriptions of the rural health services system, analyses of its functions, and selected measurements of its impact on the target population, will be useful in planning or improving rural health services not only in Guatemala, but also in many other developing countries.
2. Anticipated benefits of the proposed evaluation of the expanded rural health services system in Guatemala include direct improvements of the system, the institutionalization of evaluation, the application of planning and program development techniques, and systematic information gathering, particularly for impact assessments.
3. We endorse the idea that several institutions in Guatemala collaborate with the MOH in carrying out studies of the expanded rural health services system. The Guatemala Academy of Medical, Physical, and Natural Sciences (the Academy) can provide an organizational base and provide relatively unbiased and apolitical direction of the studies. Drawing upon its members and upon key professionals of other

participating organizations, the Academy can provide needed technical expertise in several areas. Other local sources of technical expertise include INCAP, which has had experience in designing and carrying out studies which include various elements of importance to the rural health program. For several reasons we see a particularly useful role for the Health Planning Unit of the National Economic Council. Collaboration by the Health Planning Unit could mean:

- a) the studies could provide the Unit with needed information;
- b) the Unit could provide needed expertise in economic, epidemiological, and technological areas relevant to the study;
- c) the Unit could focus some of its own studies and analyses on questions of importance to the study project;
- d) the Unit would be able to channel information from the studies to health sector and national authorities who make high-level decisions concerning the health services systems of the country.

4. Approximately six years of external assistance with evaluation efforts will be required if the evaluation project is to produce the expected benefits. We recommend that a commitment be made to such a long term evaluation project, and suggest that use of the organizations mentioned above could provide the required continuity. We also recommend that the evaluation be phased, as three two-year segments, with tasks spelled out for each phase, and with interim results to be available at the end of each phase. This plan should also provide a systematic framework for evaluating the feasibility and effectiveness of the program throughout its duration.

5. We recommend that the studies of the new rural health system focus on the role and impact of the TSR, whose training and deployment constitute the most innovative part of the program. Information on community and health services system relations, objectives, activities, problems and successes of the TSR would be of immediate use in strengthening the TSR training program, and in improving utilization of this new health personnel and of the related parts of the rural health services. The Rural Health Services System now being introduced in the Quichē area should be carefully studied during the planning phase, and the area should be considered as a site for evaluation studies.
6. We recommend that the evaluation studies directly involve and encourage explicit objective-setting and the development and use of feedback mechanisms at all levels of the rural health services system. This can be done within the context of setting overall goals for the improvement of rural health. In a young and dynamic program such as this one, overly restrictive or narrow definitions of objectives can impede program development and thereby lessen ultimate impact. The MOH, particularly through its TSR's and training personnel, is using a flexible, problem-solving approach in the rural areas; assistance in these efforts will be of direct benefit to the rural health services system, provide needed information about the use of new health services, and facilitate an early and extensive flow of information for the evaluation studies. Such information may be as important as that which will become available only near the end of the projected six years of external assistance with evaluation.

7. We recommend that very high priority be given to assisting the Academy immediately in its efforts to organize evaluation study planning, to set study objectives, to select approaches to attaining those objectives, to determine personnel and other resources needed, to investigate resources available for the studies, and to produce an adequate and useful study plan. We are impressed by the ability of the various institutions and persons involved to work together and to make good use of consultant's inputs. They have already produced and agreed to a document which describes their plans for intensive planning and study design efforts. If progress along these lines is to continue at a rate which will produce a project design in time for FY75 funding, further consultative assistance and adequate technical support funds must be provided. This assistance will insure that momentum is not lost and that the opportunity to study this innovative and promising program is not wasted.

**Proposed Time Table:**

December 1, 1974 - March 31, 1975	Planning Phase
April 1, 1975 - June 30, 1975	Obtain Funding for Implementation Phase
July 1, 1975 -	Begin Implementation

## ANNEX "B/B"

This Annex is the complete Plan y Metodología prepared by the Guatemalan Academy of Sciences, which formed the basic study for the evaluation plan. Copies (in Spanish) are available in LA/DR files, as well as USAID-Guatemala files. Other Annexes, which are reproduced and attached here, include translations of critical sections of Annex "B/B".

INFORME DEL TALLER PARA DESARROLLO DEL PLAN Y METODO-  
LOGIA DEL PROGRAMA DE EVALUACION DEL SISTEMA DE SALUD  
RURAL. ABRIL 11-13 / 75.

Este informe representa un intento de consolidación de los informes de los cuatro grupos de trabajo. En su presentación se sigue la estructura general de las guías de discusión presentadas al Taller.

TEMA I

EVALUACION DEL EQUIPO DE SERVICIO MINIMO

La evaluación del equipo de salud puede comprender: la evaluación del personal del equipo de salud como agente y/o la evaluación de las acciones de salud que éste realiza.

La evaluación de las acciones realizadas por los equipos de salud, deberá diseñarse en forma seriada en el tiempo y utilizar indicadores que permitan estimar estas acciones. Los indicadores deberán de ser específicos, sencillos, de bajo costo, que den máxima información y que puedan ser utilizados a nivel nacional; algunos de estos podrían ser: Indicadores de la cobertura alcanzada, de la concentración de servicios, del impacto logrado en la comunidad, expresado en cambios específicos y generales en la mortalidad y morbilidad y cambios en la aceptación y la "concientización". La información de éstos y otros parámetros deberá recogerse al principio y durante el desarrollo de las actividades.

La evaluación deberá aplicar estos indicadores en comunidades que reciben los beneficios del sistema y en otras que no los reciben. La comparación de los resultados obtenidos nos permitirán tener una estimación del logro de los objetivos del sistema.

Considerando que los cambios en salud demostrables obedecen a múltiples causas deben evaluarse los aspectos socio-económicos, culturales y ambientales, además de los puramente bio-médicos.

En todos los grupos de trabajo hubo consenso en aceptar que existe una serie de razones que justifica el creciente interés por la evaluación.

La metodología de planificación hace necesaria la práctica de investigaciones que sirvan para el diagnóstico de la situación de salud, para el conocimiento y análisis de los recursos y su productividad y para los análisis de costo de las acciones o programas de salud. Al analizar la utilización de los sistemas de apoyo se destacó la necesidad de la evaluación de la gestión administrativa, de los medios y de las técnicas. Se sugirió que estos sistemas no están siendo utilizados en su máxima capacidad y se consideró justificada una cuidadosa evaluación para determinar cuales son las áreas y las causas de su aparente deficiencia.

Finalmente se recomendó que se establezcan cuanto antes los índices y criterios de evaluación para el sistema de salud rural.

## TEMA II

### DETERMINACION DE SISTEMAS DE EVALUACION Y DE PLANIFICACION

Al diseñar un plan es preciso recolectar información, analizarla y llegar al diagnóstico. Luego se formula un pronóstico, y éste da la imagen "prospectiva" de cambio en forma de políticas. Estas se expresan en estrategias que se aplican a programas operativos y sus actividades.

La información sobre estas actividades y sus productos deberá ser recogida selectivamente, procesada e interpretada para que pueda evaluarse tanto los programas como su impacto sobre la comunidad.

Esta información ya consolidada tiene que compararse con la imagen "prospectiva," dada al inicio del plan, haciendo los ajustes necesarios y alimentando de esta manera el ciclo dinámico de la planificación.

La información analizada deberá satisfacer a cada nivel administrativo y en grados de complejidad diferente, para favorecer criterios en la toma de decisiones, los aspectos técnicos, biológicos, administrativos, económicos, de costo benéfico y costo eficiencia del plan.

Las actividades y programas deberán estructurarse en calidad y cantidad. Así mismo en función de las necesidades y los aspectos logísticos del sistema.

Es necesario crear un sistema básico de información que provea los datos, recolectados, organizados e interpretados sistemáticamente las acciones y actividades programadas.

Deberá dejarse bien establecido qué datos de cada se quiere recoger, y el tipo de indicador más apropiado de acuerdo a los objetivos predeterminados. A nivel de la comunidad se debe establecer la demanda y uso de servicios, el acceso físico a éstos, los patrones culturales y económicos, y las cifras de mortalidad y morbilidad por familia, a base de encuestas continuas que permitan la detección y referencia temprana de casos.

Se recomienda especialmente que en el uso de los índices de mortalidad y morbilidad se tengan presentes las numerosas variables que pueden afectarlas, ya que las tasas de mortalidad y morbilidad reflejan también el impacto de los factores ambientales, por tanto se hace necesario establecer los condicionantes en cuanto a las características de la población, sus costumbres y usos sociales, los sistemas económicos y los de mercado en la comunidad y la calidad de los recursos naturales como agua, suelo y vegetación.

La interacción de estas variables demandan que se les asigne un peso relativo para determinar su impacto sobre la variable salud.

Hubo consenso en los grupos de trabajo que dentro del proceso de administración en salud, en algunas comunidades ya se están cumpliendo las etapas de planificación, ejecución y evaluación preliminar descriptiva. Se notó además que la falta de preparación en muchas actividades, impide determinar hasta qué punto fueron acertadas las decisiones para los programas, tanto en la fase de planificación como en la ejecución.

### TEMA III

#### DETERMINACION DE LA EFICIENCIA DE LOS RECURSOS HUMANOS

En el sistema de Salud Rural las funciones, actividades o tareas de cada uno de los miembros del personal no están claramente definidas. Esto debe hacerse, permitiendo cierta flexibilidad de acuerdo con la realidad nacional, de modo que el personal logre un máximo de satisfacción en la realización de su trabajo. Las funciones y actividades deben estar registradas en un Manual que necesita revisión periódica.

Es necesario evaluar la eficiencia de cada uno de los miembros del personal que labora en el Puesto de Salud.

Para estimar el impacto de este personal deben considerarse los aspectos siguientes:

- 1.- En la comunidad
- 2.- En el sistema de prestación de servicios; y
- 3.- El impacto de las actividades sobre el propio personal.

En cada uno deben especificarse mejor y seleccionarse indicadores mensurables que puedan ser utilizados para la evaluación.

Las funciones de cada persona dentro del equipo son diferentes, por tanto debe existir una serie de indicadores específicos para cada miembro del personal de salud. Se consideró que estos indicadores podrían ser: la cantidad de servicios prestados, la cantidad de recurso humano adiestrado, las muertes en la morbi-mortalidad o la lesión de pacientes.

En relación a la acción del personal de salud en el saneamiento ambiental y su impacto en el ambiente, se sugirieron indicadores tales como: utilización de latrinas, introducción de agua, eliminación de excretas y disposición de basura.

Respecto a la formación de personal, se aceptó que es necesaria la determinación del nivel de preparación antes de principiar a trabajar; que la educación debe mantenerse en todos los niveles en forma longitudinal, como adiestramiento en servicio, y que este adiestramiento deberá promover la supervivencia del personal.

Se estimó que la supervisión es un medio de retroalimentación que ayuda a establecer el entronamiento continuado del personal; tomando en cuenta que éste debe ser adiestrado previamente a iniciar una nueva actividad.

La preparación del personal en general y en particular la de los Promotores de Salud debe ser integral por medio de los programas de educación extraescolar, con un contenido educativo multisectorial, y especialmente orientado hacia los aspectos ecológicos, con énfasis en la conservación y enriquecimiento del ambiente, respetando los patrones culturales de la comunidad.

#### TEMA IV

##### EVALUACION DE LA PARTICIPACION ACTIVA Y PASIVA DE LA COMUNIDAD

Se consideró que la participación activa, organizada, representativa, informada, responsable y continua de la comunidad es de capital importancia para el desarrollo de la salud. Esta participación debe ser promovida por medio de la motivación de la comunidad, de la creación de comités pro-mejoramiento de la comunidad y de la reorientación de los comités existentes en las comunidades. La participación de la comunidad mediante comités, estaría destinada a:

- a) Plantear y analizar los problemas de salud a nivel local
- b) Fijar prioridades para su resolución
- c) Participar en la solución de estos problemas

La participación del sistema de salud en los comités sería un proceso educativo continuo que permita organizar y asesorar a la comunidad. El proceso educativo debe estar coordinado, teniendo como principio básico el no dañar los valores culturales de la población. El lema debería ser trabajar con la comunidad y no para la comunidad. Las acciones específicas a ser iniciadas con la participación de la comunidad deben ser factibles e inicialmente de fácil realización. Habrá que seleccionar tareas que ellos solos puedan realizar y orientarlos después a programas de mayor envergadura.

Al presente no se ha organizado adecuadamente a la comunidad y debido a ello su participación es escasa. La causa de esta deficiente organización es aparentemente la falta de planificación y "estandarización" de sistemas de penetración al área rural. Existen comunidades en las que existe algún tipo de organización, pero su funcionamiento es poco efectivo y demasiado específico.

Las comunidades son generalmente dependientes de los sistemas de salud que actualmente funcionan. Un nuevo sistema que indujera la participación de la comunidad produciría menor dependencia, que probablemente se debe a la actitud paternalista de las presentes instituciones y a algunos factores de la herencia cultural.

Como recomendaciones generales se aprobó que:

- 1o. Deben aprovecharse la experiencia y aprender de aquellas comunidades que tienen algún tipo de organización.
- 2o. Deben unificarse los criterios para la implementación de programas de desarrollo rural.
- 3o. Deben fijarse objetivos específicos comunes, a nivel nacional, previamente a intervenir en el desarrollo rural.

DETAILS OF COMPONENT STUDIES

a. Review and Integration of Existing Information and Analysis of the Ministry's Information Needs

A recent attempt to catalog the rural paramedical training programs operating in Guatemala produced a list of 20 programs under 15 different auspices. INCAP and other institutions have carried out studies of some of these programs and of many other aspects of rural health in Guatemala. Use was made of such studies during the planning of this evaluation project, but during the first 3 months of the implementation phase special emphasis will be placed on the review and integration of existing information from these and other sources. This review will be carried out by the Project Director and by the members of the field and administrative unit staffs, assisted by local and international consultants and supported by a secretary/librarian who will later take over routine aspects of information bank maintenance.

To facilitate the continued use of the results of other projects in the course of the evaluation, an "information bank" will be established containing reference material (books, articles, data, etc.) and annotated indices to additional locally available material. These materials will be kept up to date during the evaluation project.

A special effort will be made to locate, evaluate and use information from rural health projects and studies carried out in Guatemala during the last five years. One of the principal reasons for intensifying the review of existing information during the initial months of implementation is the desire to learn what indicators and methods have been found to be most useful in other recent studies in Guatemala, in order to select those most appropriate for the present project.

Among the most important documents to be reviewed are ones containing information regarding the objectives and norms of the rural health system and its personnel. In the course of the planning phase it became evident that there is no one complete and unique set of norms and objectives for the rural health system. (Annex B/D1 presents some currently unenforced norms as examples). In some areas of concern, norms and objectives have not been defined, while in others they have been defined in several conflicting ways. Resolution of such discrepancies and definition of appropriate norms and objectives for the rural health system are Ministry objectives to which this project has already contributed by focusing attention on the problems. Information gathered during the evaluation is expected to contribute to an iterative process which will relate needs, experiences and resources in defining realistic and measurable objectives and useful norms.

This report will include discussions of the findings, methods and indicators of other studies, detailed recommendations regarding specific indicators for other component studies within the Evaluation Project, and a report on norms and objectives for the Rural Health System. A draft of the report will be completed by the end of the third month of project operations.

#### Study of the Existing Rural Health Information Sub-System

##### Objectives

The overall objectives of the information system analysis are to determine the extent to which the system presently in use meets the needs of the Ministry of Public Health (or of the health sector) for timely, appropriate, exact and effective information.

##### Procedure

In order to carry out a logical and broad evaluation of the processing of data, the technique of systems analysis will be used:

##### Steps

1. Determine the objectives of the present information system.

2. Study the institution or institutions, compile and determine functions, study the flow of data through the organization, determine the relationships among units within the organization and understand the informal organization.
3. Analyze the existing output information and determine the nature and frequency of the data collected and processed. Who contributes and who receives the set of data; who uses it; and for what? Discover if another source of data exists. Identify its originator and receiver; for this objective, the currently used reports (reported vs. observed), forms, registries, etc., will be collected and evaluated.
4. Investigate the existing procedures. Is the system (or parts of it) manual, mechanical, or automatic? Study the present flow of procedures, determining times and schedules and noting any present quality controls.  
  
Gather quantitative data regarding time consumed, personnel, costs, materials costs, etc.

5. Identify the input data: its origin, physical form, format, volume, and frequency.
6. Evaluate effectiveness, in terms of:
  - a. Correct quantity of information, at the right time and at the right levels for decision making.
  - b. Compare the systems objectives with data available.
  - c. Uniformity of procedures.
  - d. Establishment of controls.
  - e. Duplication of functions, purpose, operations, data, forms, procedures.

This analysis should establish:

- a. What goals or objectives has the system set.
- b. What is to be accomplished by the process.
- c. What decisions should be "fed".
- d. What decisions ought be made.
- e. What information is needed to control operations.
- f. What data and indicators are required.

The next step in the analytic phase should graphically present and document the system currently in use, thereby

assuring that the total system is known in detail from the collection of information and desk procedures through the machine operations, the consolidation of the information, its interpretation and its use. That is, the schematic design of the procedures. During this phase of analysis, another flow diagram will also be used, showing the operations which the system carries out. (See Annex B/D2 for illustrative diagrams).

This analytic procedure will be coordinated with the other activities so that it will be completed by the time indicators have been selected, and defined. Before an information system is designed the kinds of data which are desired and their usefulness at various decision levels will be determined.

b. Activities Analysis

There was general agreement among those involved in the planning efforts that high priority should be given to a more exact determination of what the various members of the rural health teams are actually doing in the rural areas at present. The Ministry has an especially great interest in this information. Therefore, the activities analysis will be the first formal field study to begin, with data gathering

activities to be initiated during the second quarter of the project, using daily self-reports of activities by all health workers at selected health posts.

A draft of one form proposed for these activities reports is shown in Annex B/D3.\* Cross checks will be done by direct observation, by interviews with clients and with other health team members, and by comparison with previously reported activities, where available. Such studies are expected to promote the interest and participation of the various members of the health post team and to provide them with early feedback.

There is special interest in learning the extent to which the TSR's and other personnel focus on promotive, preventive, and community development activities in their work, because such activities are given great emphasis in the training of the TSR's and are considered to be of central importance by the Ministry.

Some of the specific analyses to which the activities data will be subjected are discussed in the section on economic analysis.

Lists of functions prescribed for the various members of the rural health team in several areas of health services have been officially approved and published, but apparently

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\*Annex B/D3 also contains a flow diagram for the Activities Analysis.

have had little effect in the field; Annex B/D1 presents examples of these lists. Comparisons of such norms with activities data will be made.

The first report on the activities analyses will be issued before the end of the first year of project operations; it will include objectives, methodology, instruments, data and initial analyses, comparisons and conclusions. Detailed plans for follow-on activities analysis studies, if necessary, will also be presented in the report.

c. Community Studies

Studies in selected rural communities will determine the extent to which the services of the Rural Health System match the needs, demands, and expectations of the people and are accepted, used and effective. Information will be gathered by means of discussions with community members and leaders, structured and unstructured interviews, observation, and collection of basic anthropometric data. Relationships of MOH personnel with other providers of health care, including traditional practitioners of folk medicine, are one focus of interest for the community studies.

The intensity with which such studies will be pursued will vary from community to community, since some information

need not be gathered in all communities and also because in that way project resources will be conserved and disruptions of community life and behavior minimized.

An outline of the topics to be considered in the community studies is given below. (Narrative details and a list of indicators are presented in Annexes B/D4 and B/D5.)

In each region two groups of communities will be selected for initial study and as the regional bases for implementation of the information subsystem. The first two groups of communities studied will be in Region V, in the Departments of El Quiché and Totonicapán, and each group will have the following characteristics:

1. Formed of communities of from 500 to 2,000 inhabitants each, for a total population of 10,000 persons.
2. Mixed ethnic-cultural composition.
3. All communities within the coverage area of and with access to one health post with a fully constituted health team (TSR and nursing auxiliary).

Annex B/D6 presents the discussion of the use and measurement (including suggested data collection form) of the indicator "weight".

Community and Macro-Environment

- A. Environment: Ecology  
Dwelling (micro-environment)  
Environmental Sanitation
- B. Community:
  - a. Social Class (cultural aspects of health)
  - b. Organization formal community leaders  
organizations and agencies  
informal impact of empirical services
  - c. Demographic Aspects population mortality Demographic  
dynamics fertility growth
  - d. Economic Aspects occupation  
income: 1. income by categories  
of activity  
2. income per capita  
3. distribution of family  
income (expenditures  
for health, food,  
housing, etc.)
  - e. Needs: felt  
induced  
real
  - f. Participation
    - 1. knowledge of problems
    - 2. attitudes
    - 3. solutions

d. Studies of the Rural Health System  
(Including Support and Informational Aspects)

The studies of the Rural Health System will determine whether the system, at the health post level:

1. Responds to the needs and demands of the community (also using information from the community studies).
2. Has sufficient installed capacity to meet the community needs and demands.
3. Makes optimal use of the installed capacity in terms of:
  - a) quantity and quality of physical facilities
  - b) supplies and equipment
  - c) personnel
  - d) economic resources
4. Has satisfactory cost-effectiveness relationships.

Analyses to which each of the data gathered will be subjected are discussed below in the section describing the economic analyses which constitute the final component study (Output 2).

The overall objective of the studies will be to determine the factors presently limiting the system's

effectiveness so as to be able to improve the system internally and also to be able to better fit the system itself to the communities which it serves. Studies of the support and information systems are expected to provide critical information regarding present limiting factors.

The following are brief summaries of some of the major topics to be studied (from the Plan y Metodologia):

Studies of the support systems which are necessary for the operation of the rural health posts will take advantage of data from the other studies of the Rural Health System, plus their own data, using a systems analysis approach to the problems of support services.

The support systems to be studied include:

1. Planning

The presence and nature of local and central plans will be studied, particularly in order to determine whether they are realistic.

2. Programming

Investigations will determine: if central and local programs exist; if they are based on community demands and needs; if priorities

have been established; if programs are realistic in terms of available resources, if programs and subprograms are clearly defined; if each aspect of health has a specific program.

3. Epidemiological Model

An epidemiological model must be verified, which can serve as the basis for preventive programs.

4. Resources

This category is extremely important. Attention must be paid both to resources potentially usable in a time of need (e.g., special campaigns, disasters) and to the capacity of already installed resources, in terms of utilization and productivity. Personnel should be considered as to their qualifications and training, and programming of their activities, and their productivity. Finally, the level of organization for the fulfillment of organizational objectives and policies will be studied. At the local level the studies will focus on physical facilities, personnel, supplies and equipment, and on the degree of organization of these resources.

5. Utilization

The analysis of resources to determine installed capacity will be done later, in terms of available instruments and in accordance with established norms, studying reported activities, estimating actual activities, and translating these into costs per instrument and activity. Direct observations will be used to establish relationships between actual and reported activities.

The rural Health System will be considered in terms of organization, hierarchy, functions, authority and responsibilities.

6. Supervision

Within the Rural Health System studies will be done of the extent and type and value of existing supervision. Determinations will also be made as to definitions of functions, activities, procedures, norms and regulations in order to allow the establishment of terms of comparison or of indicators for measuring functioning, productivity, effectiveness of services, etc.

7. Training

The analysis of supervision will determine the type of training required. Existing training programs will be studied and analyzed.

8. Evaluation

The system itself should be periodically evaluated according to a definite plan, so as to reflect as completely as possible the functioning and effectiveness of the system.

9. Modifications

This evaluation should lead to modifications of the system in order to better meet the needs and demands of the communities served.

The examination of the existing rural health information system, which will cut across all of the nine categories listed above, is outlined separately.

e. Economic Analyses

The comprehensive discussion of economic analyses from the Plan y Metodología is presented below. Some of the analyses are currently being done for the National Economic Planning Council, using data which recently became available. Other economic analyses will, as noted, utilize data from all of the studies discussed above.

The various economic analyses will determine the amount of government spending on rural health services and the cost structure and cost effectiveness of the rural health team.

Analyses of the multiplier effects (on cost services and personnel requirements) of the rural health team and of its individual members will help estimate the future costs of operating the rural health system with increased coverage and changes in team composition. Studies of the cost-effectiveness of the rural health team will compare the effects achieved in communities with the costs of providing health services, while efficiency studies will attempt to determine what "bottlenecks" decrease the quantity of services of various types which the rural health workers can provide. Establishment of the regional unit costs of health service activities will make possible inter-regional comparisons and together with cost-effectiveness estimates will provide information useful in selecting alternate mixes of service activities. An analysis of the distribution of family expenditures for health services by family income level will be done in order to estimate the coefficient of elasticity of demand for health service with respect to income, which in turn will allow estimation of the increased demand for health services which is expected to accompany increased incomes.

Elements of the economic analyses are:

1. Determine the importance given to the Rural Health System, measured by investments and

current operating costs assigned  
to it.

2. Analysis of the cost structure of the RHT and  
of its multiplier effects.
3. Analysis of the economic efficiency of the RHT.
4. Cost/effectiveness analysis of the RHT.
5. Analysis and study of health expenditures by  
families.

For purposes of this presentation, each of the  
topics has been divided into three parts:

1. Purposes of the analysis
2. Indicators for carrying out the analysis
3. Sources of data

First Topic: Financial analysis of the  
Rural Health System

- (1) Purpose: To determine the importance  
given to the Rural Health System within  
the capital investment program and  
within the operating budget.

- (2) Indicators for the financial analysis
- (3) Indicators for the analysis of capital investment:
  - (a) Percent of total health investment dedicated to Rural Health programs.
  - (b) Percent of national investment dedicated to rural health programs.
  - (c) Percentages of investment in rural health by programs: Prevention, Curative Care, Maternal and child health, etc.
  - (d) Percentage of investment in rural health which is internally financed, in comparison with percent externally financed.
  - (e) The investment variables indicated above, expressed as percentages of the Gross National Product (GNP).
- (4) Indicators for the financial analysis of current expenditures:
  - (a) Percentage of the health sector budget dedicated to rural health.

- (b) Percentage of GNP dedicated to operating costs in rural health.
  - (c) Percentages of rural health budget by programs:
    - Prevention
    - Curative Care
    - Maternal and child health, etc.
  - (d) Percentages of rural health budget by categories:
    - Personnel compensation
    - Support services and supplies
    - Maintenance of facilities and equipment, etc.
- (5) Sources of data:
- (a) National Budget (Receipts and Expenditures). Ministry of Housing and Finance, Budget Office.
  - (b) Ministry of Public Health and Social Assistance, Budget Analysis of Expenditures.
  - (c) Information concerning actual expenditures, available in the Ministry of Health's Planning and Statistics Unit.

- (d) Data on IGSS, Municipalities, Community Development Service, Dept. of Public Works, etc., obtainable from financial registers available in Guatemala City.
- (e) Data concerning distribution of expenditures among preventive, curative and rehabilitative activities will have to be calculated (prorated) through a study of times and locations of activities (mentioned in third topic).

Second Topic:

Analyses of the costs of the Rural Health Team (RHT), of the costs of each of its members (TSR, Auxiliary nurse, local midwife, health promotor), and of the multiplier effects of the RHT within the health sector.

(1) Purposes:

- (a) To determine the cost structure (or expenditures by category) of the RHT, in order to see if expenditures are balanced among personnel compensation, support services and supplies, etc.

- (b) To determine the costs of each member of the RHT to the central government, both in direct compensation and in supervision and other general services, in order to determine the public spending which will be required when the numbers of certain members of the RHT increase.
- (c) To determine the multiplier effect of the cost of the RHT on the operational budget of the Ministry of Health, in order to plan and program necessary future funding.
- (d) To determine the multiplier effect of the TSR on the need for qualified personnel (Auxiliary nurses, retrained local midwives, health promoters) in order to plan and program the training activities needed for the RHT and for personnel to attend RHT-referred patients.
- (e) To determine the multiplier effect of the RHT on supervisory and general administrative services, and especially on the personnel of these services, for planning and programming purposes.

- (f) To determine the multiplier effect of the RHT on the referral system, in order to plan the later expansion or construction of the existing health services infrastructure (health centers, hospitals, etc.)
  - (g) To determine the multiplier effect of the RHT on the demand for preventive sanitation services, to plan services to meet this increased demand.
  - (h) To determine the multiplier effect of the RHT on the demand for curative services and, therefore, for added personnel to meet that demand.
- (2) Indicators for the analyses of costs and of multiplier effects:
- (a) Direct costs of the RHT and of each of its members (TSE, nursing auxiliary, trained local midwife, health promotor) will be obtained under the following categories:
    - Direct compensation
    - Per diem

**Supplies**

Prorated costs of supervision, etc.

- (b) The multiplier effect of the RHT on the Ministry of Health budget will be obtained by multiplying the result of the preceding analysis by the number of RHTs to be established in the country (for example 365, or one per municipality).
- (c) The multiplier effect of the RHT on requirements for qualified personnel will be obtained by multiplying the number of teams desired by the number of TSRs, nursing auxiliaries trained local midwives and health promoters which each team should have.
- (d) The multiplier effect of the RHT on the referral system will be measured by the increases in patientes referred from health posts to health centers and/or hospitals.
- (e) The multiplier effect of the RHT on the supervisory and general administrative services will be

measured by the increases necessary to satisfy the needs of the RHT's.

- (f) The multiplier effect of the RHT on preventive and curative services will be obtained through long term regional observations (Three or more years).

(3) Sources of data:

- (a) The direct costs of the RHT should be listed in national financial records and probably in the Health Centers.

- (b) The prorating of the cost of supervision, administration, etc., should be based on:

- Costs of compensation, transportation, etc., of supervisory and administrative personnel.
- Field studies to determine the time dedicated by these workers to the RHT and its members.

- (c) Data for the calculation of the multiplier effects of the RHT on the Ministry of Health budget will be derived from the cost of each RHT and the goals

of the National Five Year Health Plan, which indicates the required total number of RHTs.

(d) The data for the calculation of the multiplier effects of the RHT on the needs for qualified personnel will be attached as described immediately above.

(e) The data for the calculation of the multiplier effect of the RHT on the infrastructure will come from the field study, in which the increase in referrals will be determined; the number of referrals should be compared with that in regions where the RHTs still don't exist, in order to determine differential rates.

(f) The data for the calculations of the multiplier effects of the RHT on the demand for preventive and curative services will come from the field study.

Third Topic:

Analysis of the Efficiency of the RHT

(1) Purpose:

- (a) To determine the bottlenecks which decrease the number of activities which the RHT members can carry out, in order to remove those obstacles and permit the RHT to function without such limitations outside of the health system or inside the health system but out of the control of the RHT.
- (b) To determine the unit costs of the activities of the RHT and of each RHT member, in order to permit regional comparisons and analyses of the causes of interregional differences in costs, thereby making possible the replication of those approaches which yield the lowest unit costs.
- (c) To determine the unit costs of the activities within the area of RHT influence, so that the RHT may program its activities with awareness of the opportunity costs attached to the various available alternatives.

- (2) Indicators for the efficiency analysis:
- (a) Number of supply service orders placed by the RHT which were not filled in time.
  - (b) Availability of transportation for RHT.
  - (c) Availability and rapidity of communication with higher levels.
  - (d) Applicability of training provided to the realities of everyday work.
  - (e) Unit costs of activities, which require a study of time and location of activities, comparing costs of activities at different locations provided with services from the health post. That is, the health post is a geographic focus and a center of Rural Health System activities; a study of the distribution of work time among nearby and more distant points will provide indications of the opportunity costs inherent in attending to a larger number of cases (or homes) near the health post or a smaller number farther away.

(f) Utilization indices: Number of patients per hour, etc.

(3) Sources of data:

(a) The study of the bottlenecks will be based on data collected at the levels of health posts and health centers, and also at the regional and central levels, in order to detect those points in the system at which retardations of work progress occur.

(b) The data for the unit cost study will come from the study of the time and location of activities, in which the RHT will indicate the time required (or used) in attending the various homes which are within the area of influence of the health post. These data studies will be collected in selected communities during the first year of the study and later at the national level.

Fourth Topic:

Cost/effectiveness Analysis.

(1) Purpose:

To determine the cost of effects achieved in the communities in order to justify expansion or modification of the Rural Health System. The Rural Health System combines certain components or production factors, and the analysis of cost/effectiveness will indicate whether the combination produces the desired effects at an acceptable cost.

(2) Indicators:

- (a) The cost of the Rural Health System will be given by the results of the previous topics, but especially of the second topic, the analysis of the costs of the RHT.
- (b) The effect of the Rural Health System should be measured by indicators derived from other disciplines such as epidemiology, nutrition, etc.

(3) Source of data:

- (a) The sources of numerator data are given in the second topic.

- (b) The sources for the denominator are given in the other chapters.

Fifth Topic:

Analysis and study of the distribution of family expenditures for health services.

(1) Purpose:

To determine the demand for health services by family income level, in order to predict and satisfy the increased demand which will accompany increased family income and to determine the coefficient of elasticity of the demand for health services with respect to income.

(2) Indicators:

Family expenditures in medicines, curative services and preventive services (latrines, potable water, etc.) by income levels.

(3) Sources of data:

- (a) Household survey which will be carried out by the SGNFE, Human Resources Division, through the National Statistics Department.

- (b) Data collected in the communities studied during the first year of the evaluation project.
- (c) Information regarding the incomes of local health workers in the area (traditional practitioners, physicians, pharmacists, etc.) and of local establishments (pharmacies and stores, etc.) selling medicines and health supplies. The latter will provide information regarding health spending through the private sector.

Attachment I contains detailed formats and notes for implementing this output.

CUADRO No. 1  
(Ver Primer Tópico)

100.1

Año	PPE	Inversión Pública		Inversión en Salud		Inversión en Salud Rural		Inversión en Salud				Inversión en Salud Rural				
		Int.	Ext.	Int.	Ext.	Int.	Ext.	Preven- ción	Cura- ción	Rehabi- lit.	Otro	Preven- ción	Cura- ción	Rehabi- lit.	Otro	
1970																
.																
.																
.																
1974																



100.3

Notas a los Cuadros 1 y 2.

Ítems:

1.- La inversión incluye datos de las siguientes entidades:

- Dirección General de Obras Públicas
- MSP y AS
- IGSS
- Municipalidades
- Desarrollo de la Comunidad
- Otros
- Sector Privado

De preferencia, cada institución llenará la información en cuadro separado.

2.- Los gastos de funcionamiento incluye datos de las siguientes entidades:

- MPS y AS
- IGSS
- Municipalidades
- Desarrollo de la Comunidad
- Otros
- Sector Privado

De preferencia, cada institución llenará la información en cuadro separado.

## CUADRO No. 3

(Ver segundo tópico)

Año	Asignación de Gastos corrientes al Equipo de Salud Rural	Por rubros o renglones:			Por programas:			Prorateo del gasto de:				*
		Sueldos	Suministros	Etc.	Prevención	Curación	Etc.	Supervisión	Admon.	Inf.	Etc	Total
1970												
.												
.												
.												
1974												

Asignación de gastos corrientes más prorrateo del gast. de supervisión, administración, etc.

100.5

Notas al Cuadro No.3

1.- Las variables a proratear son:

- Tiempo que dedica el Centro de Salud a los Puestos de Salud
- Tiempo que dedica el Hospital o Jefe de Area a los Puestos de Salud
- A nivel nacional el prorrateo se puede hacer de varias maneras:
  - a) Porcentaje según sea el número de personas atendidas en el área urbana o en el área rural
  - b) Porcentaje del monto del presupuesto dedicado al área urbana o al área rural

2.- El efecto multiplicador se puede analizar de la siguiente manera:

- a) Sobre el presupuesto MSPAS:
  - Columna 1 por número de puestos de salud o ESR a establecerse.
  - Columna 5 por número de puestos de salud o ESR a establecerse (asume constancias en prorrateo: ni economías y deseconomías de escalas en servicios de supervisión, etc.)
- b) Sobre la infraestructura:
  - i) analizar los lugares donde existe exceso de capacidad instalada para referencia de pacientes
  - ii) analizar los lugares donde no existe exceso de capacidad instalada para referencia de pacientes

El segundo determinará el monto de inversión necesaria.

PROGRAMA: CONTROL DE ENFERMEDADES TRANSMISIBLES

## 1. ACTIVIDAD: INMUNIZACIONES

Funciones que corresponden a cada uno de los integrantes del equipo:

Aux. Enfermería	T.S.R.	Promotor
1. Participar en la planificación, organización, implementación y evaluación del programa.	1. Participar en la planificación, organización, e implementación del programa.	1. Colaborar en la promoción del programa y en la organización de la comunidad.
2. Es responsable del mantenimiento, preparación y conservación del equipo, materiales y productos biológicos.	2. Es responsable de la promoción del programa y de la organización de la comunidad.	2. Participar en la planificación, organización, implementación y ejecución del programa.
3. Participar en la aplicación de la vacuna.	3. Participar en la aplicación de la vacuna.	
4. Es responsable de recopilar y ordenar la información pertinente a la aplicación de la vacuna.	4. Participar en la recopilación y ordenamiento de la información.	
5. Participar en la promoción del programa y la organización de la comunidad.	5. Participar en el adiestramiento de personal voluntario.	
6. Participar en el adiestramiento de personal voluntario.	6. Adiestrar a los Promotores.	

## PROGRAMA: SALUD MATERNO INFANTIL Y FAMILIAR

## 2. ACTIVIDAD: CONSULTA INFANTIL

Funciones que corresponden a cada uno de los integrantes del equipo:

Aux. Enfermería	T.S.R.	Comadrona
1. Preparar clínica 2. Realizar Preconsulta: control de peso, talla, temperatura, etc. 3. Realizar Post Consulta. a) Interpretar y efectuar tratamiento proscrito. b) Indicaciones a la madre. 4) Realizar consulta niño sano delegada. 5) Colaborar en la organización de grupos familiares. 6) Llevar el registro adecuado de los sobres clínicos y su clasificación	1. Organización de grupos familiares. 2. Promoción del programa. 3. Visitas domiciliarias para detectar casos no inscritos o faltantes. 4. Ayudar a Auxiliares de Enfermería en actividades de Pre y Post-consulta. 5. Referencia de casos al servicio. 6. Realizar consulta niño sano delegada.	<u>Tradicional</u> 1. Inscribir lo más pronto posible a los niños que atiendan.  <u>Promotor</u> 1. Actividades propias de promoción. 2. Visitas domiciliarias para convencimiento de madres renuentes.

## 3. ACTIVIDAD: CONSULTA MATERNA

Funciones que corresponden a cada uno de los integrantes del equipo:

Aux. Enfermería	T.S.R.	Comadronas
1. Participar en la planificación, Programación y Promoción. 2. Atención de Pre y Post-Consulta. 3. Delegación de funciones según normas. 4. Educación Materna. 5. Visita Domiciliaria. 6. Referir al T.S.R. madres faltantes. 7. Archivo.	1. Participar en la planificación, Programación y Promoción. 2. Educación Materna. 3. Referencia de casos. 4. Supervisión de comadronas. 5. Visita domiciliaria.	Asistencia en clínicas médicas y referir casos.  <b>PROMOTOR DE SALUD:</b>  Promoción, educación y referencia de casos en su área.

## PROGRAMA: SALUD MATERNO INFANTIL Y FAMILIAR

## 4. ACTIVIDAD: ADIESTRAMIENTO DE COMADRONAS EMPÍRICAS:

Funciones que corresponden a cada uno de los integrantes del equipo:

Aux. Enfermería	T.S.R.	Promotor Rural de Salud
<p>Realizar la encuesta previa. Participar en la planificación del adiestramiento.</p> <p>Participar en el adiestramiento con contenidos delegados por el E.F.S. a través de la planificación.</p> <p>Participar en la evaluación del adiestramiento.</p> <p>Supervisar la acción de las comadronas adiestradas.</p> <p>Atender consultas de las comadronas y realizar actividades de seguimiento dentro del Centro de Salud y en las comunidades rurales.</p>	<p>Detectar y seleccionar a comadronas empíricas.</p> <p>Participar en la evaluación del adiestramiento.</p> <p>Supervisar la aplicación de los conocimientos a nivel de aldea.</p> <p>Ilustrar, sensibilizar e informar a las comunidades rurales acerca de la labor de la comadrona adiestrada.</p> <p>Realizar actividades de seguimiento a nivel de aldea.</p> <p>Participar en la encuesta.</p> <p>Participar en el adiestramiento, especialmente en lo relacionado a concientización.</p>	<p>Participar en la detección y selección de comadronas empíricas.</p> <p>Colaborar en el reclutamiento de participantes en general.</p> <p>Participar en el adiestramiento, supervisión y programa de seguimiento como intérprete.</p> <p>Participar en la organización y sensibilización de la comunidad.</p> <p>Coordinar sus actividades con las comadronas.</p> <p style="text-align: center;"><u>Comadronas</u></p> <p>Recibir el adiestramiento sustentar las pruebas de evaluación respectivas.</p> <p>Referir casos fuera de su competencia al Centro de Salud.</p>

## PROGRAMA: SALUD MATERNO INFANTIL Y FAMILIAR

5. ACTIVIDAD: RECOLECCION DATOS E INFORMACION ESTADISTICA		
Funciones que corresponden a cada uno de los integrantes del equipo:		
Aux. Enfermería	T.S.R.	
<p>Obtener y recolectar datos estadísticos en la cabecera municipal.</p> <p>Manejo de archivo clínico y estadístico.</p> <p>Llenar en la ficha de cada Paciente, lo concerniente a Signos Vitales.</p> <p>Mantener suficiente existencia de toda la papelería necesaria.</p> <p>Procurar que toda la información sea despachada oportunamente.</p> <p>Colaborar en la elaboración de informes.</p>	<p>Obtener y recolectar datos estadísticos en las aldeas y caserios.</p> <p>Promoción.</p> <p>Llenar papelería en caso de recargo de trabajo, así como cuando se haga campañas masivas de Vacunación.</p>	<p>Promotores de Salud y miembros de la Municipalidad. Colaborar con el equipo de salud en la obtención de datos.</p> <p><u>Comadronas</u></p> <p>Proporcionar datos precisos y claros sobre nacimientos, partos y defunciones en los casos atendidos.</p>

## PROGRAMA: SANEAMIENTO AMBIENTAL

## 6. ACTIVIDAD: LETRINIZACION

Funciones que corresponden a cada uno de los integrantes del equipo:

Aux. Enfermería	T.S.R.	Todo el equipo
<ul style="list-style-type: none"> <li>- Sugiere al equipo la colocación de letrinas a las casas de familia que acusen mayor morbilidad por enfermedades entéricas.</li> <li>- Educación a la comunidad.</li> </ul>	<ul style="list-style-type: none"> <li>- Integración de comités y grupos de trabajo de la comunidad.</li> <li>- Supervisión y coordinación de actividades de los beneficiarios del programa.</li> <li>- Coordinación de actividades con la sección de Saneamiento ambiental del nivel superior.</li> <li>- Control constante del programa.</li> <li>- Es el responsable directo</li> </ul>	<ul style="list-style-type: none"> <li>- Educación sanitaria propia al programa de instalación de letrinas.</li> <li>- Investigación de recursos propios de la comunidad de tipo material.</li> <li>- Complementación e integración de este programa en programas de desparasitación y otros.</li> </ul>

## PROGRAMA: ATENCION MEDICA

7. ACTIVIDAD: CONSULTA EXTERNA		
Funciones que corresponden a cada uno de los integrantes del equipo:		
Aux. Enfermería	T.S.R.	Promotores Rurales
1) Preparación de pacientes para examen.	1) Atención de Pacientes a nivel de aldea, caserio o parclamiento, dentro de sus limitaciones.	1) Referir los casos detectados al Centro de Salud tipo C.
2) Preparación de áreas de trabajo, material y equipo.	2) Referir los casos detectados al Centro de Salud tipo "C".	2) Cumplir indicaciones médicas.
3) Cumplir indicaciones Médicas.	3) Cumplir indicaciones Médicas.	3) Hipodermia y Curación subsecuentes.
4) Hipodermia, curaciones subsecuentes.	4) Hipodermia y curaciones subsecuentes.	4) Atención mínima de pacientes en aldeas y cacaríos de acuerdo a terapéutica dirigida del T.S.R.
5) Llevar archive de historias clínicas.	5) Supervisar actividades de Promotores de Salud Rural.	

## PROGRAMA: ATENCION MEDICA

## 8. ACTIVIDAD: REFERENCIA DE CASOS

Funciones que corresponden a cada uno de los integrantes del equipo:

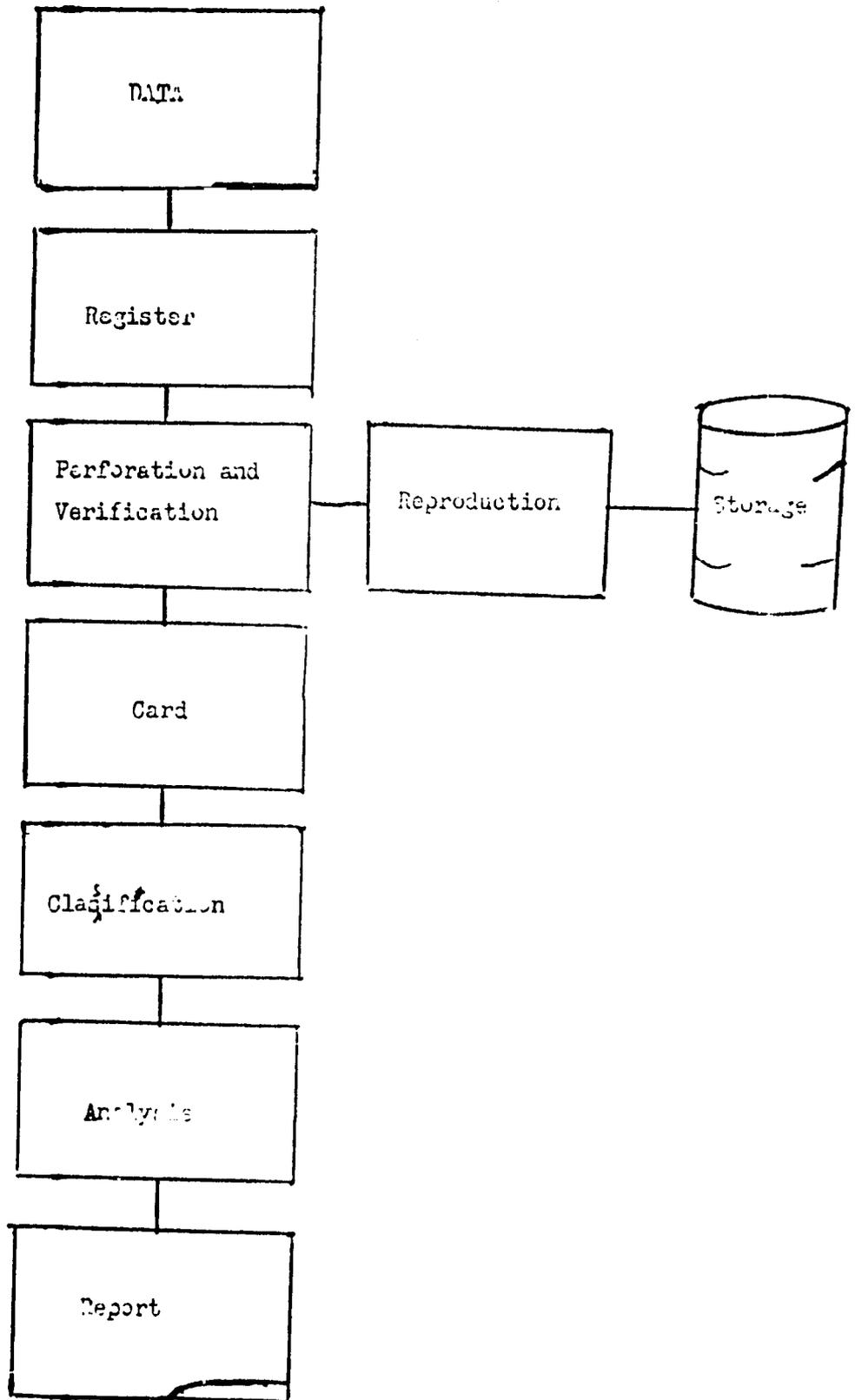
Aux. Enfermería	T.S.R.	P.S.R.
<p>1) Referir casos encontrados en la visita domiciliaria al E.P.S.</p> <p>2) En ausencia del E.P.S. referir al paciente siguiendo los lineamientos anteriores.</p> <p>NOTA: Nombre de la institución a que refiere al paciente, sus datos generales, firma y sello del centro.</p> <p>3) Colaborar con el E.P.S. en la preparación adecuada del paciente para su traslado.</p> <p>4) Ayudar al paciente en la necesidad de su traslado.</p> <p>5) Buscar recursos para el traslado del paciente cuando no se encuentre el T.S.R.</p>	<p>1) Detectar todo caso de enfermedad que no pueda tratar y hacer promoción para que la gente vaya al Centro, cuando se encuentre visitando las comunidades de su municipio.</p> <p>2) Participar en la organización de la comunidad con el objeto de obtener los recursos necesarios para el traslado de pacientes.</p> <p>3) Atender los pacientes que esté dentro de sus capacidades que le sean referidos por el Promotor de Salud y Comadrona.</p> <p>4) Ayudar al paciente en la necesidad de su traslado.</p>	<p>1) Referir casos que no puedan atender al T.S.R. o al Centro de Salud.</p> <p>2) Divulgación en su comunidad para que la gente asista al Centro.</p>

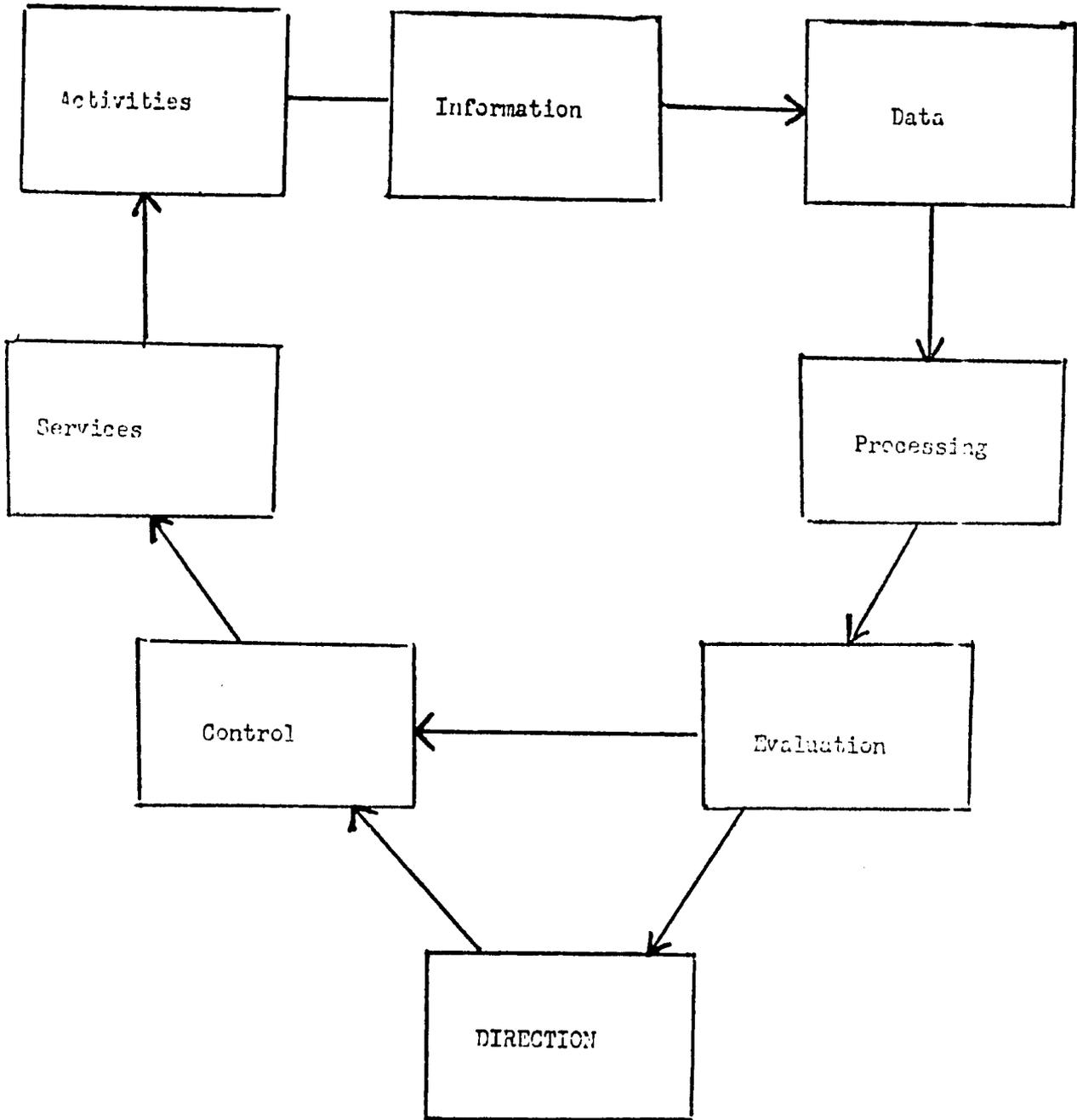
## PROGRAMA: OTRAS ACTIVIDADES

9. ACTIVIDAD: ORGANIZACIÓN Y DESARROLLO DE LA COMUNIDAD		
Funciones que corresponden a cada uno de los integrantes del equipo:		
Aux. Enfermería	T.S.R.	Promotor
<ol style="list-style-type: none"> <li>1. Participa en la investigación, planificación, organización, ejecución, supervisión y evaluación de los programas.</li> <li>2. Promover y organizar grupos de usuarios a nivel de Centro.</li> <li>3. Promover reuniones de información y otra índole.</li> <li>4. Participa en la jerarquización de los proyectos.</li> <li>5. Informa en forma periódica de sus actividades a donde corresponda.</li> </ol>	<ol style="list-style-type: none"> <li>1. Participa en la investigación, planificación, organización, ejecución, supervisión y evaluación de los programas.</li> <li>2. Organización y mantenimiento de grupos de apoyo a nivel de aldea, caserío y paraje.</li> <li>3. Detección de líderes y de voluntarios.</li> <li>4. Informar a donde corresponde sus actividades.</li> <li>5. Es el responsable del adiestramiento de Promotores Sociales.</li> <li>6. Jerarquizar los diferentes proyectos que le sean presentados.</li> <li>7. Supervisa y Asesora a los promotores líderes y grupos de apoyo en su trabajo.</li> <li>8. Es el responsable de la organización de la educación, promoción y divulgación de los programas de salud.</li> </ol>	<ol style="list-style-type: none"> <li>1. Participación en la planificación de programas.</li> <li>2. Colabora con el TSR en la organización y mantenimiento de grupos de apoyo a su nivel.</li> <li>3. Colabora en la detección de líderes y de voluntarios.</li> <li>4. Informa al TSR de sus actividades en forma sistemática.</li> <li>5. Presentar proyectos de trabajo al TSR para coordinar acciones.</li> </ol>

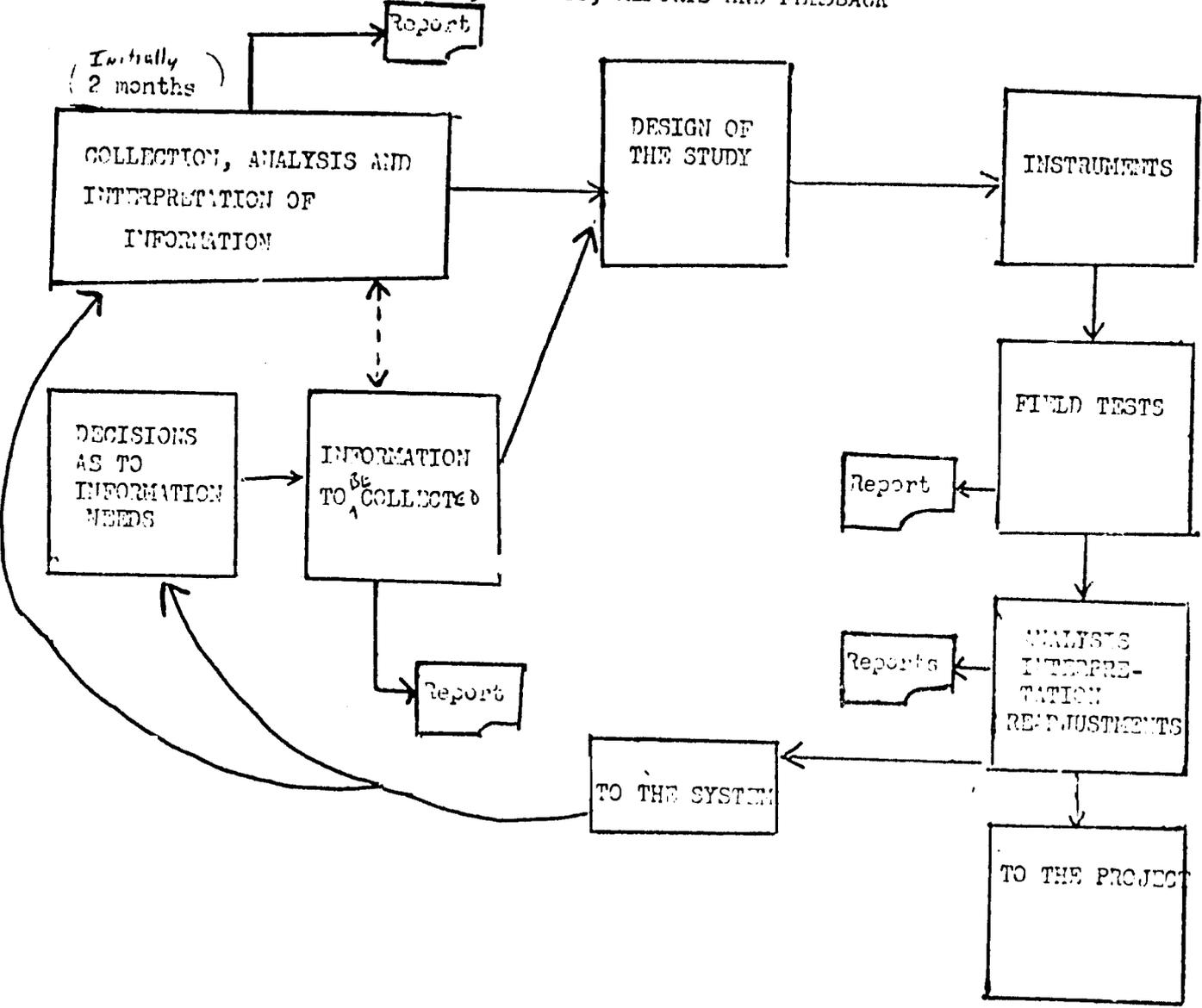
ANNEX "B/D2"

THREE FLOW DIAGRAMS TO BE USED IN STUDIES  
OF THE RURAL HEALTH INFORMATION  
SYSTEM





PHASES OF THE PROJECT, OUTPUTS, REPORTS AND FEEDBACK



Personal del

DIARIO DE ACTIVIDADES DEL PUESTO DE SALUD

H.	Día	Mes	Año	Puesto de Salud	Trabajador:																
	Saneamiento					Nutrición					Prevención y atención de casos					Administración					Donde- Comentarios
	Agua	Agua Negras	Control de Vectores	Control de Alimn- tos	Otros	Cosechas	Animales	Selección y Prep. de Alimentos	Otros	Niños	Adultos	Imunizaciones	Temizaje	Servicios Curativos	Otros	Interna	Externa	Desarrollo de Serv.	Tiempo Libre	Otros	
6h.																					
8h.																					
10h.																					
12h.																					
[Hatched area]																					
14h.																					
16h.																					
18h.																					
20h.																					

A. AMBIENTE: en el que se analizarán los aspectos:

ANNEX "B/D4"

Page 1 of 4

- a) ecológicos
- b) habitacionales, y de
- c) Saneamiento ambiental

a) Ecológicos:

El objeto de analizar este aspecto es contar con indicadores ambientales que sirvan para reconocer el marco general dentro del cual interactúan la comunidad y el sistema de salud rural con todas sus características.

b) Habitacionales:

Se tratará de averiguar: cuál es el micro-ambiente en que convive la familia y sus miembros y sus interrelaciones con lo físico; biológico y social.

c) Saneamiento General:

Los indicadores del saneamiento general evidencian cuantitativa y cualitativamente los daños o noxas a que están sujetos los miembros de la comunidad en términos de contaminación biológica, química y física.

## B. LA COMUNIDAD

Las variables que se han juzgado indispensables para tipificar una comunidad son:

- 1) su nivel cultural
- 2) la organización existente
- 3) la dinámica de la población
- 4) el nivel económico
- 5) el reconocimiento de sus necesidades
- 6) la participación en la solución de sus problemas

### a) Aspecto Cultural

En referencia a nivel cultural se piensa en variables determinantes en el campo de salud, tales como uso de servicios, creencias y costumbres en relación a salud, educación formal, etc., ya que son factores influyentes en el nivel de salud.

### b) Organización

Existen diferentes formas de organización de la comunidad, por un lado la organización formal en la cual se toma en cuenta la participación directa y efectiva de sus líderes y la utilización de otro tipo de organizaciones y agencias que estén trabajando en diferentes campos en cada comunidad; y la organización informal que es la interrelación que existe entre unas y otras agencias, el surgimiento de líderes eventuales y la utilización de los servicios tradicionales propios de la comunidad.

### c) Aspecto Demográfico

En el aspecto demográfico se toma en cuenta la dinámica de población, se trata de determinar cuáles son los factores que provocan ésta dinámica desde el punto de vista de salud, y que se traducen en mortalidad-natalidad (fertilidad) y migración, que en última instancia van a dar el crecimiento demográfico de la comunidad. Los índices mencionados indican por un lado la calidad de servicios que se está brindando y por otra las necesidades que sirven de base a las demandas de la comunidad a la cual están sirviendo. Al hacer un balance esta debería mostrar la efectividad o ineffectividad del sistema.

d) Aspecto Económico

El aspecto económico es sumamente importante ya que determina la capacidad adquisitiva de la familia y la comunidad. Esta capacidad adquisitiva está en relación directa con la preparación técnica de sus miembros y el nivel ocupacional que tengan los individuos de esta comunidad, dentro del cual debemos considerar no sólo, el tipo de ocupación, sino el porcentaje de empleo y desempleo, ya que a medida que aumenta el desempleo, el nivel económico baja lo que trae como consecuencias diferentes tipos de problemas entre los que figuran preponderantemente los de salud. Dentro del aspecto económico es muy importante el producto geográfico bruto, determinado en términos de producción, del cual es consecuencia el ingreso bruto total de una comunidad.

En relación al ingreso se deben tomar en cuenta:

- 1) Ingreso por rubro de actividad, lo que determina cuáles son los mayores ingresos en esta comunidad consecutivos a todo tipo de actividad.
- 2) El ingreso per capita o mejor al de un individuo que sostenga una familia, determina la capacidad adquisitiva de esta familia y las posibilidades que tiene de obtener la satisfacción mínima de sus necesidades.
- 3) La distribución del presupuesto familiar, en relación a esto se debe considerar el porcentaje de gastos en alimentación, vivienda y salud. El último debería disminuir en relación inversa a la calidad de los servicios de salud.

e) Necesidades

Otro aspecto muy importante en el estudio de la comunidad, es el reconocimiento que ésta tiene de sus necesidades. Las necesidades sentidas podrían definirse como las que se satisfacen con los usos, costumbres y hábitos, independientemente que se derivan o no de una necesidad real. Las necesidades inducidas serían aquellas que traducen un cambio de actitud provocado por un proceso educativo encaminado a satisfacer una necesidad real, por medios de servicios técnicos y métodos diseñados para tal fin.

Si no hay una preocupación por determinar exactamente las necesidades de la comunidad, estos medios educativos pueden producir efectos desfavorables.

f) Participación:

Por último es muy importante la participación de la propia comunidad en la solución de sus problemas de salud. Esto debe enfocarse desde dos puntos de vista:

a) Conocimiento del problema, ya que de ellos depende la acción que ha de tomarse.

b) Acción tomada, que puede ser: activa, pasiva o indiferente según la efectividad del trabajo ejecutado por el equipo de salud en esta comunidad.

La acción de la comunidad puede traducirse en resoluciones favorables o desfavorables, lo que también dependerá de la forma en que haya sido guiada.

## Indicadores Demográficos

Tasa anual bruta o cruda mortalidad general	No. total de defunciones ocurridas en <u>un área dada en un año dado</u> x 100 Estimación a mitad de año de la población de la misma área el mismo año.
Tasa anual de mortalidad por causa	No. de defunciones por una causa específica ocurridas en una zona geográfica <u>dada en un año dado</u> x 100.00 Estimación a mitad de año de la población de la misma zona geográfica en el mismo año.
Tasa anual de mortalidad específica por edad	No. total de defunciones en un grupo de edad específica de la población de <u>una zona geográfica dada en un año dado</u> x 1000 Estimación a mitad de año de la población del grupo de edad específica en la misma zona el mismo año.
Razón de mortalidad anual	No. de defunciones con una característica especial ocurridas en una zona <u>dada en un año dado</u> x 100 No. total de defunciones ocurridas en la misma zona y en el mismo año.
Tasa de mortalidad Infantil	No. de defunciones de menores de 1 año de edad ocurridas en una zona <u>geográfica dada durante un año dado</u> x 1.000 No. total de nacimientos vivos ocurridos en la población de la misma zona durante el mismo año.

Tasa de mortalidad Neonatal	<p>No. de defunciones de niños de menos de 28 días de edad ocurridas en una zona geográfica dada durante un año dado <math>\frac{\quad}{\quad} \times 1.000</math></p> <p>No. total de nacimientos vivos ocurridos en la misma zona durante el mismo año.</p>
Tasa de mortalidad Infantil de 1 a 11 meses (mortalidad Infantil tardía)	<p>No. de defunciones de niños entre 28 días y 11 meses de edad ocurridos en un área dada en un año dado <math>\frac{\quad}{\quad} \times 1.000</math></p> <p>No. total de nacimientos vivos ocurridos en la misma área durante el mismo año.</p>
Tasa anual de mortalidad maternal	<p>No. de defunciones por embarazo, parto o puerperio ocurridas en mujeres de un área dada en un año dado <math>\frac{\quad}{\quad} \times 1.000</math></p> <p>No. total de nacimientos vivos ocurridos en la misma área durante el mismo año.</p>
Tasa anual de mortalidad fetal o tasa de mortinatalidad (razón de mortalidad)	<p>No. de defunciones fetales tardías (más de 28 semanas de gestación) ocurridas en una zona geográfica dada en un año dado <math>\frac{\quad}{\quad} \times 1.000</math></p> <p>No. total de nacimientos vivos ocurridos en la misma zona durante el mismo año.</p>
Tasa de mortalidad perinatal (1)	<p>Suma de defunciones fetales tardías y número de defunciones menores de 7 días de edad ocurridas en una zona dada durante un año dado <math>\frac{\quad}{\quad} \times 1.000</math></p> <p>No. total de nacimientos vivos en población de la misma zona durante el mismo año</p>
Tasa anual bruta o cruda	<p>No. total de nacimientos vivos ocurridos en una zona dada durante un año dado <math>\frac{\quad}{\quad} \times 1.000</math></p> <p>Estimación a mitad de año de la población de la misma zona en el mismo año</p>

(1) El numerador de esta tasa no ha sido aún aceptada internacionalmente inclusive han sugerido modificaciones.

Tasa de letalidad o Morbo- letalidad	$\frac{\text{No. de defunciones por una enfermedad X en una zona dada en un tiempo dado} \times 100}{\text{No. de enfermos de la misma enfermedad en la misma zona y en el mismo tiempo}}$
Tasa de prevalencia	$\frac{\text{No. de enfermos de una afección X existentes en una fecha dada en un área determinada} \times 100}{\text{Estimación de la población para la misma fecha en la misma área.} \times 100.000}$
Tasa de incidencias	$\frac{\text{No. de enfermos nuevos de una afección X aparecidos durante un tiempo dado en un área dada} \times 100.000}{\text{Estimación de la población de la misma área para la mitad del período considerado.}}$
Tasa de ataque secundario <del>(2)</del>	$\frac{\text{No. de casos nuevos de una enfermedad que aparecen en contacto de un caso primario de la misma enfermedad durante un período de tiempo dado} \times 100}{\text{No. total de contactos del caso primario durante el mismo período}}$

2. Indicadores epidemiológicos

- Número de casos nuevos de enfermedades infectocontagiosas
- Mortalidad específica

3. Indicadores de Utilización de servicios

- Número de personas que acuden al puesto de salud
- Número de consultas por habitante en la comunidad por programas
- Número de pacientes referidos.

4. Participación de la comunidad

- Número de organizaciones que se dediquen a actividades de salud y desarrollo comunal
- Número de horas, hombre de trabajo voluntario en salud y desarrollo comunal.

5.                   Cambios de actitud
  - Porcentaje de familias que hierven el agua
  - Porcentaje de familias que cuentan con una letrina y la utilizan
  
6.                   Indicadores de estado nutricional
  - Perímetro del brazo
  - Perímetro del brazo/talla
  - Talla
  - Peso
  - Peso/talla
  
7.                   Indicadores de hacinamiento
  - Personas/cuartos
  - Personas/dormitorios
  - Personas/lechos
  
8.                   Índice habitacional
  - Número de familias en la población/número de viviendas.

Indicador: Peso

El programa de salud Materno Infantil y Familiar comprende una serie de actividades; entre ellas las de nutrición.

Desde el punto de vista de nutrición se considerarán dos actividades= Educación nutricional y alimentación complementaria.

En cada una de estas actividades el personal integrante del equipo cumple una serie de funciones, se describirán las que cubren en alimentación complementaria el promotor de salud y la enfermera auxiliar.

El promotor debe detectar, los posibles beneficiarios para su selección y debe hacer promoción a nivel local para aumentar la cobertura de los programas. En la fase de detección, el promotor debe utilizar instrumentos que le permitan seleccionar los grupos en riesgo de desnutrición. La detección será más/o menos eficiente de acuerdo con la sensibilidad y especificidad de estos instrumentos de tamizaje.

Para evaluar la actividad de "Alimentación Complementaria" y en la función de "detectar posibles beneficiarios" se necesitarán otros indicadores. Como se mencionó anteriormente, esta función del promotor y el resultado programa en general se pueden evaluar por medio de medidas antropométricas. Se sugiere que una de las medidas a utilizarse con este objeto sea el peso. El peso, es una medida útil para determinar la adecuación biológica de la ingesta nutricional y puede ser un buen indicador para seleccionar la población en riesgo y para evaluar el programa de alimentación complementaria. El peso está influenciado por una serie de factores tales como, sexo, medio intrauterino, peso al nacer, embarazos

sencillos y múltiples, estatura de los padres y constitución genética, infecciones, factores ambientales como clima, estación, nivel socioeconómico, nutrición, factores culturales, etc.; una de las variables más importantes que influyen sobre el peso de los niños de las áreas rurales de países en vías de desarrollo es la nutrición.

El peso como indicador, debería medirse en niños menores de 5 años de edad, puesto que éstos constituyen el grupo más vulnerable a la desnutrición proteico-calórica y debería utilizarse como indicador de detección de casos y para evaluar el programa de alimentación complementaria. El peso es una medida relativamente fácil de tomar y podría obtenerse fácilmente por promotores de salud a nivel del hogar y en el puesto de salud para la fase de detección de casos a riesgo. Con este fin a los promotores se les enseñará a manejar técnicas estandarizadas en la toma de medidas y se les adiestrará a usar una balanza infantil de tipo sencillo y a pesar al niño (con la menor ropa posible o con una bata provista por el proyecto). Es necesario mantener el peso estándar y exacto de las balanzas en las diferentes comunidades, para lo cual se mantendrá una rutina para calibrarlas, se llevará una hoja de control del peso de las balanzas y se tendrá pilones adecuados.

Toda la información obtenida por el promotor será incluida en formularios (Formulario 1) que lleven identificación del niño, sexo, edad, grupo étnico y las medidas de peso y otras variables antropométricas contempladas en el proyecto. La información de peso-edad puede ser posteriormente presentada como gráficas que permitan mostrar en cada niño ó a nivel de la comunidad la relación de las normas de crecimiento con los valores encontrados. Además es posible obtener límites que permitan que los promotores seleccionen mejor a la población en riesgo.



En aquellos casos en los que la edad del niño no es segura, puede utilizarse el número de dientes como estimación aproximada de la edad. La obtención periódica cada 6 meses de medidas antropométricas permitirá estimar las tendencias locales y finalmente las tendencias nacionales de crecimiento físico.

En el programa de Alimentación Complementaria la auxiliar de enfermería que distribuye alimentos a los beneficiarios, debe utilizar el peso como un indicador para evaluar el impacto de esta alimentación en la población beneficiaria.

Estos indicadores deberán validarse y verificarse. Aunque las medidas antropométricas son en general estimaciones válidas de crecimiento corporal pueden fácilmente verificarse, para ello será necesario exámenes clínicos seccionales del estado nutricional que determinen si las medidas antropométricas, dentro de ciertos rangos, son estimaciones confiables del estado nutricional.

El impacto de las funciones del personal depende de la adecuada detección de casos en riesgo y de la distribución alimentaria o puede estimarse por medio de tasas de cobertura, incidencia, referencia, retención y recuperación.

	Tasa de cobertura	$\frac{\text{Niños examinados de 0-5}}{\text{Niños de 0-5 años}} \times 100$
		* según Gómez
Promotor	Incidencia	$\frac{\text{Niños diagnosticados}}{\text{Niños examinados}} \times 100$
	Tasa de referencia	$\frac{\text{Niños inscritos}}{\text{Niños referidos Dx Grado II y III}} \times 100$
	Tasa de retención	$\frac{\text{Niños tratados}}{\text{Niños inscritos}} \times 100$
Auxiliar Disp lugar Disp cultural Disp económica	Tasa de recuperación	$\frac{\text{No. caso recuperados}}{\text{No. de tratados}} \times 100$

Es necesario analizar aspectos relacionados con sistemas de salud en general, sistemas de apoyo y logística, características ambientales (disponibilidad de alimentos), aspectos económicos y sociales y cuestiones culturales, como tradiciones y costumbres. Es el estudio de la interacción de todas esas características, por medio de indicadores, lo que permitirá evaluar el impacto del programa y de las funciones del personal.

Proyecto del Taller para efectuar la selección final de indicadores que utilizará el sistema de información y adiestrar al personal que tendrá a su cargo la obtención de los mismos.

## 1 Objetivos Generales

- 1.1 Enseñar a un grupo representativo del personal de salud que compone el equipo humano encargado de los programas de salud rural, los conocimientos, destrezas en el ambiente necesario, para que en el mismo taller efectuen, dentro de los índices ya elaborados por los consultantes nacionales e internacionales, la selección final de los indicadores que serán utilizados.
- 1.2 Adiestrar a este mismo personal en observar, recoger, analizar, tabular, codificar, archivar o remitir los índices comunitarios, demográficos, económicos, epidemiológicos y administrativos que se seleccionen.
- 1.3 Readiestrar a los diferentes miembros del equipo humano de la atención de la salud rural, que tendrán a su cargo la colección de indicadores en aquellas tareas/funciones médicas y administrativas que vayan a ser evaluadas; con el propósito que ellos los puedan efectuar optimamente y se refrenden/validicen la calidad de las tareas efectuadas por el personal que trabaja en los puestos de salud.
- 1.4 Desarrollar en cada categoría del personal que participa en el taller la capacidad para que puedan analizar y ponderar aptitudes, conocimientos y destrezas necesarios para que el personal en servicio ejecute optimamente las tareas y funciones que tiene asignadas.
- 1.5 Enseñar al personal que participa en el taller la metodología, para que de acuerdo a los resultados del análisis de tareas y funciones puedan efectuar el rediseño del contenido curricular del T.S.R., auxiliar de enfermería, promotor de salud y comadrona, o poder reasignar algunas tareas en el auxiliar que de acuerdo al adiestramiento recibido las pueda ejecutar más adecuadamente.

## 2. Objetivos Específicos

- 2.1 Que los participantes comprendan el propósito de la evaluación del sistema de información del Programa de Salud Rural.
- 2.2 Que los participantes comprendan el papel de la Salud Rural en el desarrollo del país.
- 2.3 Desarrollar en los participantes la capacidad para trabajar en equipo y que aprendan a promover esta práctica.
- 2.4 Que los participantes desarrollen la capacidad de expresar los resultados de sus análisis sin crear resistencias y herir susceptibilidades.
- 2.5 Que los participantes comprendan la necesidad de tratar la información confidencialmente.
- 2.6 Desarrollar en los participantes la capacidad de organizar su mismo trabajo y autoevaluación del mismo.
- 2.7 Capacitar a los participantes en los métodos y procedimientos que utilizan en los puestos de salud.
- 2.8 Capacitar a los participantes en los exámenes clínicos y de laboratorio que utilizarán.
- 2.9 Capacitar a los participantes en técnicas epidemiológicas sencillas.
- 2.10 Capacitar a los participantes en métodos estadísticos sencillos  
ejem: %, proporciones, etc.
- 2.11 Capacitar los participantes en análisis de tareas y funciones.
- 2.12 Suministrar a los participantes conocimientos elementales sobre diseño curricular.
- 2.13 Impartir a los participantes teoría y práctica del adiestramiento a nivel de mano de obra calificada.

2.14 Capacitar a los participantes en el diseño de formular cuadros, tablas, gráficas, proyectos de manuales operativos sencillos.

2.15 Desarrollar en los participantes la capacidad de análisis.

### 3. Organización del Taller

En el taller se tendrá los siguientes componentes:

- 1) alumnos
- 2) Dirección
- 3) Catedráticos
- 4) Consultantes

3.1 Alumnos: serán las personas que terminado el adiestramiento recogerán y analizarán la información en el campo. Pueden ser candidatos para alumnos cualquier categoría de personal profesional y auxiliar que esté reconocido por el Ministerio de Salud Pública y Asistencia Social. Debido a que el mejor analista es la persona que conoce el trabajo, tendrán preferencia los promotores de Salud Rural. Estos serán seleccionados entre los diferentes programas que existen ya en el país.

3.2 Dirección: La dirección del Taller estará a cargo del que será el jefe de la Unidad de Campo de la evaluación; éste recibirá supervisión y apoyo directo del Director General del Programa de Evaluación.

3.3 Catedráticos: serán las personas que por sus conocimientos o posición sean los más indicados. Tendrán preferencia los catedráticos de INDAPS y el personal del Ministerio de Salud Pública y Asistencia Social. Los catedráticos serán contratados a medio tiempo y serán los ejecutores del taller. Deberán residir en el lugar en que se desarrolle el taller.

**3.4 Consultantes:** Serán personas de experiencia y reconocido prestigio. Tendrán preferencia las personas que colaboran en la promoción de Catedráticos del INDAPS. Podrán ser contratados por servicios individuales o institucionales. Serán consultantes de obligación los siguientes:

Director General de Servicios de Salud

Director del Programa de Fortalecimiento de Salud Rural

Director del INDAPS

Experto en dinámica de grupo

Experto en educación médica

Experto en análisis de tareas y funciones

Experto en SPSS

Experto en salud rural comunitaria.

Los servicios profesionales de los consultantes serán pagados por contrato cerrado o por dieta.

#### **4. Plan de Acción**

El taller tendrá las siguientes fases:

**4.1 Primera fase:** Contratación de Director del taller, identificación de consultantes, contratación de los mismos y segundo diseño de indicadores, primer diseño de papelería, tarjetas; revisión de bibliografía.

**4.2 Segunda fase:** Identificación de catedráticos. Primer laboratorio de formación de grupo. Adiestramiento de catedráticos en métodos de enseñanza, exámenes clínicos, de laboratorio, Técnicas de encuesta, Análisis de tareas y funciones. Primer diseño de los paquetes del SPSS. Selección de alumnos y contratación de los mismos. Lugar: Ciudad de Guatemala.

**4.3 Tercera fase:** Ejecución del adiestramiento. Lugar: INDAPS

**4.4 Cuarta fase:** Informe en INDAPS resultados taller jefes area Región V.

5. Plan Cronológico de las acciones a desarrollar

Primera fase:	2 semanas
Segunda fase:	6 semanas
Tercera fase:	4 semanas
	<hr/>
	Total 12 semanas = 3 meses

6. Presupuesto6.1 Gastos fijos

1 Director tiempo completo, 900 mensuales x3 =	Q. 2,700.00
4 Consultantes medio tiempo, 500 mensuales x3 =	4,000.00
1 Consultante medio tiempo, 500 mensuales x3 =	1,500.00
5 Consultantes por hora laborada Q20.00 por 1 hora, 240 horas en 3 meses =	4,800.00
4 Catedráticos tiempo completo, 450 mensuales por 2	3,600.00
12 Promotores de Salud, 150 mensuales x2 =	3,600.00
1 Secretaria, 150 mensuales x 2 =	300.00

Nota: El personal que vaya al laboratorio de INDAPS, de su salario tendrá que pagar su transporte, alojamiento y comida.

6.2 Gastos Variables

Material, correo, teléfono	1,000.00
Viáticos	1,500.00
Transporte	1,000.00
Bibliografía	800.00
	<hr/>
	24,800.00

6.3 Imprevistos 10%

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2,480.00

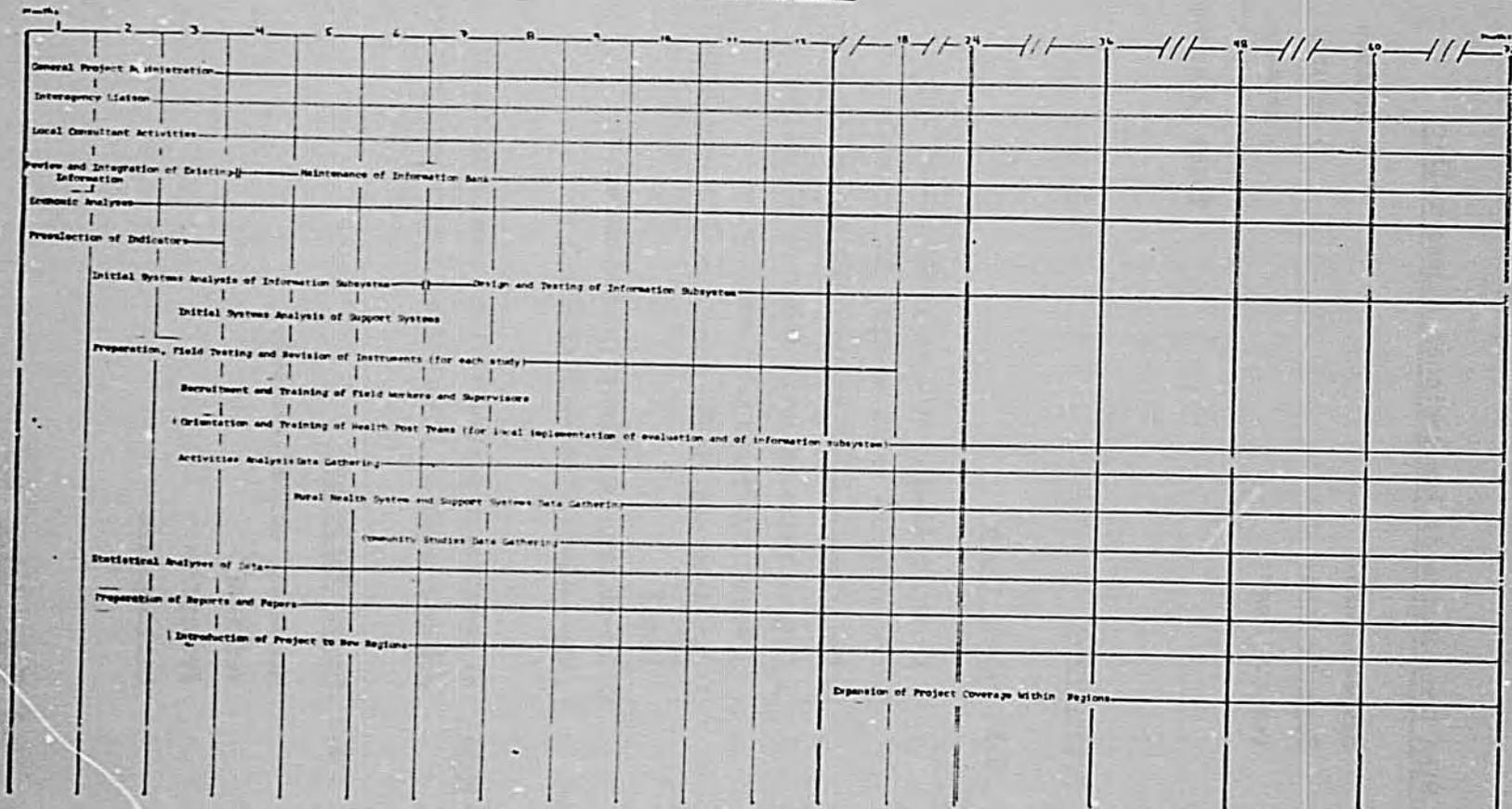
**TOTAL**

Q. 27,280.00

DRAFT GANTT CHART OF EVALUATION PROJECT ACTIVITIES

ANNEX "B/F"

EVALUATION PROJECT ACTIVITIES



Baseline 32617

PROJECT DESIGN SUMMARY: EVALUATION OF RURAL HEALTH SERVICES SYSTEM

1

2  
Indicators

3  
Means of Verification

4  
Assumptions

Goal:

Improve Rural Health Services

Improved decisions, based on evaluation results and on Rural Health Information System's output, leading to increased resource allocation to Rural Health System.

Interviews.  
Reviews of records and plans.  
Expert judgments re decisions and re use of information.

Decision makers make or are given appropriate interpretations of implications of information and attempt to make rational resource allocation and management decisions using them.

Purposes:

1. To evaluate the Rural Health System.

EOPS:

1. The combined output of component studies, final project analysis, interpretation and reporting will have defined and quantified the purposes, outputs and inputs of the GOG's program for strengthening rural health services, and will describe the degrees of their attainment and remedial measures necessary in cases of significant non-attainment.

1. Critiques of reports by experts outside of project.

2. To begin to improve the MOH's capability in planning, monitoring and evaluation.

2.a. MOH proposals and/or activities in planning, monitoring evaluation and control clearly reflect use of component studies information and of outputs of information sub-system.

2.a. Comparisons of MOH documents with project reports and outputs of information sub-system.

b. MOH staff operating the information and evaluation system on a pilot basis in at least one region.

b. Interviews, questionnaires, site visits.

c. Job descriptions of MOH Rural Health System personnel include description of their role in the information and evaluation system, employees complying with that description.

d. Curriculum designed for MOH in-service and pre-service training program and some training being conducted on a pilot basis.

Ministry remains committed to evaluation and to information system.

Personnel trained are retrained and their training is employed

Outputs:

1. Organizational structure and personnel for evaluation.
  - a. Fully staffed and operating Administrative Unit within Academy.
  - b. Trained field staff.
  - c. Operating Field Unit.
2. Component Studies Reports.
  - a. Review and integration of existing information and of MOH Information needs.
  - b. Activities analysis.
  - c. Community Studies.
  - d. Studies of the Rural Health System (including Support and Information Aspects).
  - e. Economic Analyses.
3. Information Sub-System.

Magnitude of Outputs:

1.
  - a. One Administrative Unit organized in Academy and staffed with 17 qualified workers.
  - b. Eleven field staff members hired and have appropriate background and training for roles in project.
  - c. Field Unit organized, staffed (11 persons), equipped and gathering data.
2. Five component study reports which describe methods and findings in detail.
3. Information Sub-System partially functioning in 3 departments.

Status at End of Year Four

1. The organizational structure and personnel for evaluation would be established within the Academy, but personnel of the MOH would not yet have sufficient experience to enable them to expand and operate the information subsystem with full effectiveness and, especially, to make full use of the outputs which the subsystem would provide.
  2. Component studies, carried out and analyzed for three areas fully covered to date.
  3. Evaluation project and information subsystem introduced in five (of seven) regions, but expanded coverage in only three regions.
1. Interviews, observation visits and record reviews by project personnel and consultants.
  2. Critiques of reports by consultants.
  3. Review of information produced by RHS. Information System; field visits; interviews; reviews of project and MOH records and reports; questionnaires.

Decision makers are interested in information and can and will use it in making decisions.

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MOH allows project personnel access to needed information and assigns or releases suitable personnel for training and project employment.

Inputs:

		CY-(Non-Cumulative)					
		<u>76/77/78/79</u>					
1. Local Personnel		1. Local Personnel				1. Record reviews, inter-views and observations by USAID/Guatemala.	
a. In Administrative Unit		a. Six (6)	6	6	6	6	
b. In Field Unit		b. Eleven (11)	11	11	11	9	
c. Office of Evaluation (MOE)		c. Three (3)	3	3	4	6	
2. Training		2. Training					2. Record reviews, inter-views and observations by USAID/Guatemala.
		a. Quiriguá & El Quiché	20				
		b. Program designed but not established in MOH			1		
3. Technical Assistance		3. Technical Asst.					3. Record reviews, inter-views and observations by USAID/Guatemala.
a. International Consultants		a. (mm)	20	10	5	10	
b. Local Consultants		b. (mm)	12	10	2	7	
4. Vehicles		4. Vehicles					4. Record reviews, inter-views and observations by USAID/Guatemala.
(One 4-WD and one trailer in 1st. yr.; one 4-WD in 3rd.)		a. 4-WD	1			1	
		b. Trailer	1				
5. Equipment		5. Equipment					5. Record reviews, inter-views and observations by USAID/Guatemala.
a. Office		(See Budget Detail)					
b. Data Processing							
6. Supplies & Rentals		6. Supplies & Rentals					
a. Office		(See Budget Detail)					
b. Medical							
c. Data Processing							

RURAL HEALTH SERVICES EVALUATION IMPLEMENTATION

PLAN NETWORK NARRATIVE

Event No.

- 1 Pro-Ag signed  
15 Jan. 1976
- 2 Hire Long-Term Consultant  
01 Feb. 1976
- 3 Staff hired by Academy  
15 Mar. 1976
- 4 Staff completes Training  
15 July 1976
- 5 Pre-Test Survey Formats for Community Studies  
15 Oct. 1976
- 6 Start Community Studies  
15 Nov. 1976
- 7 Establish Info Bank  
15 Oct. 1976
- 8 Start Rural Health Service Survey  
15 Nov. 1976
- 9 Complete Design of Information System  
15 Jan. 1977
- 10 Initiate Information System Analysis  
15 Feb. 1977
- 11 Summarize results of Rural Health Team Activities Surveys  
15 July 1977
- 12 Conclude Systems Analysis  
15 Jan. 1978

Event No.

- 13 Conclude First Round of Community Studies  
15 Mar. 1978
- 14 Conduct an overall review of the accomplishments  
and future plans redesign where necessary to  
prepare for expansion into other departments.  
15 May 1978
- 15 Based on the overall review begin expansion of  
the information evaluation system  
15 June 1978 and begin an impact assessment in  
Region V on an experimental basis.



## SOME PREREQUISITES FOR IMPACT ASSESSMENT

In order to carry out a fair test of the effects of the restructured rural health program, including the TSR, on the health of a population, it would be necessary to satisfy a number of requirements, some of which are included in the following list. Some of these problems and needs were considered during the November consultant visits and again in February. Whatever the extent of impact assessment finally included in the evaluation project, some of these requirements are being fulfilled now, and others will be met during the initial year of project implementation. Fulfillment of some of these requirements is, in itself, expected to be of direct benefit to the rural health system.

Adequate definition of the objectives of the health services system.

Specification of the expected characteristics and functions of the system and of its components.

Ascertainment that the system is operating according to specifications.

Provision of sufficient funds and of human and other resources required for continued operation of the system during the study period according to specifications.

Selection of objectives of interest for the evaluation.

Selection of a study design which will make possible the attribution of any changes found to the effects of the health services system by controlling (using control populations or other types of design) for the influences of variables outside of the system being evaluated which might also produce changes in the indicators selected (including effects of the evaluation activities).

Reasonable assurance that the study will be continued for a long enough time to allow the expected changes to be produced by the health services system and to be measured.

Provision of sufficient funds and of human and other resources required for the evaluation study.

Selection of appropriate measurable indicators.

Decisions as to what amounts of change in the indicators will be accepted as evidence of success over a given time period.

Selection of a population for study which will allow generalization of results to other populations, as required, on the basis of similarities in health problems, health behavior and other characteristics.

Testing of the reliability and validity (under use conditions) of the data gathering instruments to be used in the study.

Gathering of needed baseline data against which to measure change.