

I. PROJECT IDENTIFICATION

1. PROJECT TITLE  
 Development and Evaluation of Integrated Delivery Systems (DEIDS) (Ecuador Sub-Project)

2. PROJECT NO. (M.O. 1025.1)  
 931-11-580-971

3. RECIPIENT (specify)  
 COUNTRY \_\_\_\_\_  
 REGIONAL \_\_\_\_\_  INTERREGIONAL TAB

4. LIFE OF PROJECT  
 BEGINS FY 1972  
 ENDS FY 1982

5. SUBMISSION  
 ORIGINAL  
 REV. NO. 8-1-74

APPENDIX ATTACHED  
 YES  NO 65p

CONTR./PASA NO. \_\_\_\_\_

II. FUNDING (\$000) AND MAN MONTHS (MM) REQUIREMENTS

A FUNDING BY FISCAL YEAR	B. TOTAL \$	C. PERSONNEL		D. PARTICIPANTS		E. COMMOD- ITIES \$	F. OTHER COSTS \$	G. PASA/CONTR.		H. LOCAL EXCHANGE CURRENCY RATE: \$ US (U.S. OWNED)		
		(1) \$	(2) MM	(1) \$	(2) MM			(1) \$	(2) MM	(2) COOP COUNTRY		
										(1) U.S. GRANT LOAN	(A) JOINT	(B) BUDGET
1. PRIOR THRU ACTUAL FY												
2. OPBN FY 75	1,021	550	962			97	374	1,021	962			234
3. BUDGET FY 76	523	298	481			26	199	523	481			413
4. BUDGET +1 FY 77	542	316	481			23	203	542	481			487
5. BUDGET +2 FY 78	566	334	481			24	208	566	481			595
6. BUDGET +3 FY												553
7. ALL SUBJ. FY												
8. GRAND TOTAL	2,652	1,498	2,405			170	984	2,652	2,405			2,182

9. OTHER DONOR CONTRIBUTIONS

(A) NAME OF DONOR	(B) KIND OF GOODS/SERVICES	(C) AMOUNT
Peace Corps	Training Personnel	\$200,000

III. ORIGINATING OFFICE CLEARANCE

1. DRAFTER TA/PM: CR Fritz TA/H: RD Newman / WE Evans	TITLE Director, TA/PM Health Advisors	DATE 7-31-74
2. CLEARANCE OFFICER TA/H: L Florio / J Hogard, M. Ds.	TITLE Senior Health Advisor/Dir.	DATE 7-25-74

IV. PROJECT AUTHORIZATION

1/ Conditions of Approval  
 1/ First five years only. Decision will be made by fourth year how much further experimentation is required.  
 Approve on condition that the Government of Ecuador be informed and agrees that any costs for the project after five years will be met by Ecuador except for those which are clearly required to obtain information necessary to the international application of DEIDS principles.

2. CLEARANCES

BUR OFF.	SIGNATURE	DATE	BUR OFF.	SIGNATURE	DATE
PHA/POP	V. Scott (memo)	7/26/74	LA/EP	S A Chernenkoff (memo)	7/30/74
			LA/DR	J R Breen (memo)	7/31/74
TA/PM	Carl R. Fritz	7-31-74	AA/PPC	Philip Birnbaum	8/5/74
			PPC/PRE	J Watty / Arthur Handly	8/2/74
AA/TA	Curtis Farrar	7/25/74	GC	A. R. Richstein (phone 7/30/74)	

3. APPROVAL AAS OR OFFICE DIRECTORS  
 SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_

4. APPROVAL A/AID (See M.O. 1025.1 VI C)  
 SIGNATURE: John E. Murphy DATE: 9/12/74  
 ADMINISTRATOR, AGENCY FOR INTERNATIONAL DEVELOPMENT  
 Deputy Administrator

## DEIDS Ecuador

### I. Introduction

The Development and Evaluation of Integrated Delivery Systems (DEIDS) project aims to develop an integrated delivery system of improved health, population, and nutrition services through which at least minimal services can be delivered to the majority of populations in rural areas within the means of less developed countries to support. Lack of an adequate delivery system is a major impediment to the success of population planning programs which currently reach only a minority of eligible populations in developing countries.

A number of experiments have been carried out to establish high-coverage low-cost health delivery projects among limited sections of population in India, Ghana, Thailand and elsewhere. The DEIDS project is intended to carry forward these experiments with a multipurpose design and with a large population base (about 500,000) in at least four representative LDC locations (see original PROP and Revision 6 which presented the Thailand DEIDS sub-project). Through such long-term experimentation (up to eight years) it is hoped that systems will evolve which a large number of LDCs can apply to their own situations.

This PRQP covers the first five years of the Ecuador sub-project, the second country sub-project, the first having been Thailand. The Ecuador plan is written in greater detail

in an eight-year proposal submitted by the intermediary, the American Public Health Association, entitled "Development and Evaluation of an Integrated Delivery System in Ecuador", dated March 12, 1974. Background material and other information are available in that document. Where details differ the contents of this PROP are governing. Decisions will be made by end of the fourth year whether to proceed with further experimentation on the basis of experience gained by that time.

## II. Goal Statement

### A. The Goal

The goal of the Ecuador sub-project is to achieve an improvement in the general level of health and family planning for the majority of the Ecuadorean rural population at a cost within the public and private resources of Ecuador.

This goal adheres to the national health policy and Five-Year Health Plan of the Government of Ecuador (GOE). Having recognized the lack of health services and medical care systems and the scarcity of human and economic resources in the rural areas which contain more than 60% of the country's population, the GOE has as one of its priorities the creation and organization of health systems which will distribute the resources and extend services to the rural areas of the country. Ecuador's priority areas include:

- (a) a reduction of deaths due to preventable causes
- (b) nutrition programs for vulnerable groups

- (c) basic sanitation programs in the rural areas
- (d) extension of services network for maternal and child care and family planning
- (e) development of statistical information systems needed for planning, evaluation and decision-making.

B. Indicators of Goal Achievement

Sub-project goals will be realized when the following is achieved in the project area, the Southern Ecuadorean provinces of Canar, Azuay and Loja:

1. Decrease in maternal mortality rate.

The maternal mortality rate in Ecuador, currently running at 2.3 per thousand, is among the highest in Latin America. This is mainly due to the fact that the vast majority of births (nearly 100% in rural areas) is unattended by trained personnel. Improvement of pre-natal, post-natal and midwifery services will help to lower this appalling mortality rate.

2. Decrease in maternal morbidity rate.

A lack of supervision in pregnancy and delivery causes many preventable conditions which take a toll of the mother. These include toxemia of pregnancy, anemia of pregnancy, and a generally poor state of nutrition all of which have a deleterious effect on pregnancy and its outcome. Provision of basic care and health services for these women will reduce the morbidity rate.

3. Decrease in infant and young child mortality rate.

The main causes of death are parasitic infestation, diarrheas and other gastro-intestinal diseases, malnutrition,

anemias, respiratory diseases (including pneumonia and tuberculosis) and other communicable and infectious diseases. Many of these conditions are preventable. By reducing the prevalence of these conditions, the mortality rate of infants and young children will be lowered.

4. Decrease in infant and young child morbidity rate.

Principal causes of morbidity in infants and young children parallel those of mortality. Reduction of these prevailing disorders is an expected result of project activity.

5. Decrease in fertility

The annual population growth rate of Ecuador is currently about 3.4%, among the highest in the world. Without attention the population will double itself within twenty years, and it is doubtful that economic growth will keep pace with this rapid growth in population. The family planning component of the project will be directed toward:

- a. reduction of age-specific fertility rates,
- b. having first pregnancy at later age, and
- c. prolongation of intervals between births.

C. Goal Targets

End-of-project targets are:

1. a reduction of 15% in the maternal mortality and morbidity rates.
2. a reduction of 24% of infant and young child mortality and morbidity rates.

3. a reduction of 35% of morbidity and mortality due to infections, communicable and other preventable diseases.

As yet there are no projections available for mortality and morbidity related to malnutrition, age specific fertility rates or any of the other family planning indicators. The MOPH expects to formulate targets in this area early in the operational phase in consultation with the US contractor. Interim targets for the other areas are indicated in the attached log frame.

D. Means of Verification

Verification will be achieved through continual project evaluation and review of records and reports. Comparisons will also be made with non-project areas.

E. Assumptions for Reaching Goal Targets

1. Achievement of the goal depends upon acceptance by rural people of the community health worker and the services offered.

2. The GOE will take action for national programs based upon findings of the DEIDS experiment.

III. Statement of Project Purpose

A. Purpose

The purposes are (1) to develop and demonstrate in three rural and poor provinces of Southern Ecuador a low-cost delivery system integrating health, family planning and nutrition services in a

form that will be accessible and acceptable to the total population and able to reach as a minimum 66% of the women of reproductive age and children under six at a cost which does not exceed public and private resources available to the three provinces, (2) to thoroughly test the system for cost effectiveness and replicability, and (3) to gain useful experience which can be applied to the establishment of low-cost integrated systems elsewhere in Ecuador and in other countries of Latin America. The three provinces chosen are Canar, Azuay and Loja which together contain nearly 850,000 inhabitants, mostly poor Quechua-speaking Indians engaged in subsistence agriculture and living in isolated small villages. Work will be initiated in Canar province in FY 1975 and will gradually spread to all three provinces by 1980. US inputs will be completed by 1982.

B. End of Project Status

1. As a minimum, two-thirds of the women of reproductive age and children under six have ready accessibility to maternal and child health, family planning, nutrition and environmental health services in the three southern provinces comprising the project area from an integrated system which provides (a) for referral of difficult and serious cases from the community health post manned by local para-medical personnel to the rural public health sub-centers manned by a doctor and a nurse, (b) a capability in place for training and retraining to enable continued operation of the system, (c) improved public health organization and

administration and (d) effective evaluation. Organizationally, elements of the system will be functioning as follows:

a. An effective Provincial Health Office in the project area. In accordance with the plans of the Ministry the project will assist in developing capabilities for planning, programming and directing the development of health activities under the jurisdiction of the Provincial Health Office in the project area. The following steps will be taken to achieve this status in Canar by 1978, in Azuay by 1979 and Loja by the end of the sub-project:

(1) An installed program for continuous training and retraining of personnel. Apart from the professional staff, very little formal training is given at present to Provincial Health Office personnel. Even professionals are trained in separate unrelated institutions without much consideration to their subsequent roles. The project will establish training and retraining programs which are job-oriented and which foster a team approach. (Each individual member of the team knows what other members are doing and so is able to refer or defer responsibility to other members as appropriate). This would be accomplished by the relevant training of new personnel and setting up regular in-service workshops and seminars for existing staff.

(2) All levels of health personnel participating in planning and programming on the premise that such involvement better assures their cooperation and commitment in implementation activity.

(3) An installed effective system of budgetary programming and auditing: setting up programs consistent with budgetary restraints, guarding against preventable losses and promoting maximum output.

(4) Enhanced administrative effectiveness within all levels of the Ministry of Public Health. Although the Ministry of Public Health is committed to decentralization, the extent and the exact mechanism for attaining this goal are still in the process of formulation. In the project area, areas of responsibility and the chain of command will be clearly established from the national level through the regional, provincial, cantonal, parochial and communal levels.

(5) An effective functional system of personnel administration and supervision at all levels. As needed new job descriptions will be written for personnel in the project area. Supervision will ensure that minimum standards of performance are maintained.

(6) Cooperation with other health providers, including traditional health practitioners (midwives, curanderos, druggists, herb doctors, etc.) and western-oriented practitioners to try to integrate them into the delivery system. Every effort will be made to win the confidence of the traditional health practitioners. A working relationship would be established between the community health workers and the traditional health practitioners in such a way that rivalry will be minimized. The possibility of giving formal training to the traditional health practitioners will be explored.

(7) Coordination and cooperation with other agencies and institutions working in the health, family planning and nutrition fields in the same area. The Provincial Health Office will identify all such agencies and institutions and exert effort to coordinate activities of the project and other activities in the Province.

(8) Encouragement of community involvement in planning, programming and evaluation. A delivery system which attempts to effectively serve the community must have community participation.

b. An effective evaluation unit in the Provincial Health Office by 1978 in Canar, 1979 in Azuay and end of sub-project in Loja. At present provincial level evaluation of programs and services is non-existent. An evaluation component is needed to enable correction and adjustments in programs on a dynamic basis. This unit will be responsible for data collection, processing and evaluation of programs. Establishment of an evaluation unit will involve the following:

(1) Trained Staff

At present there is no personnel with the knowledge or skill in evaluation. Candidates within the Ministry will receive the requisite training in the concepts and skills of evaluation.

(2) System for health data collection

At present there is no systematic method of collecting health data. A standardized system for the collection of health information will be established. This system will

involve compatible data collection in health centers, health subcenters and health posts, although modified according to the kind and level of services offered. Pre-coded forms will be used as much as possible to permit automated data processing. Forms will be consistent with those used at the national levels.

Training of health personnel will include record keeping. Supervision will be maintained to ensure that records are kept up to date in all health facilities.

(3) Rapid data processing and provision of feedback information.

The evaluation unit will collect and analyze the data and provide rapid feedback information for planning and management.

c. Reorganization of rural health subcenters by 1979 in Canar, 1980 in Azuay and end of project in Loja. Existing subcenters are inadequate in terms of both numbers and scope of services provided. The project will reorganize the subcenters and retrain the personnel in order to improve the quality and quantity of services offered. The current Five-Year Health Plan proposes the building of Minimal Health Posts ("Puestos Minimos de Salud") which will be smaller editions of Health Subcenters ("Subcentros de Salud") designed for the smaller parroquias. However, establishment of the Community health worker category functioning in the community furnished health post may preclude the need for expensive large-scale construction of the Minimal Health Posts and training personnel to man them. Reorganization will include the following:

(1) Adequate supervision for the community health workers.

The subcenters will provide adequate supervision and support of community health worker activities. This requires training of supervisory staff, transportation, and other facilities. It is proposed that part of the stipulated duties of the doctor and nurse operating at the subcenters will be to make regular supervisory visits to the community health posts.

(2) Referral center for the community health workers.

The subcenters will fulfill this function for patients of the community health workers, the primary health care providers.

(3) Supplies for the community health workers.

The subcenters will distribute medicines and supplies to the community health workers who will account for their use.

(4) Emphasis on preventative services.

Greater emphasis will be given to preventative services, counselling and health education activities in place of current emphasis on curative services.

(5) Increased scope of services.

MCH, family planning, nutrition and environmental components will be added. Pre-natal and post-natal care and mid-wifery services for the uncomplicated cases as well as counselling, immunization and curative services will be included.

At present, family planning services are practically non-existent in the rural subcenters. As part of the integrated

health system, family planning counselling and services would be made available not only to post-partum or post-abortal women but also on a voluntary basis to all users of the health subcenter.

Nutrition counselling will include special attention to the needs of weaning children. Food donated by CARE and similar organizations will be distributed more discriminately, the malnourished children having the highest priority. In areas where malnutrition is prevalent, nutrition rehabilitation centers, (out patient and/or residential types), should be set up in connection with the health subcenters.

Environmental health information will include demonstrations on latrine construction and maintaining safe supplies of water.

d. Establishment of a network of 720 community health posts, each manned by a trained rural community health worker.

The most practicable means of taking health services to the majority of the rural population is through establishing rural community health posts manned by trained community health (outreach) workers integrated into the regular Ministry of Public Health system. The following steps are proposed:

(1) About 720 communities will be equipped with health posts.

The Ministry of Public Health stipulates that a health worker serve a population of about 1,000. On the average there would be five health workers per parroquia.

(2) A trained rural community health worker will direct each community health post.

Community health workers will be selected from the community by the community. By so doing the workers hopefully will stay in the community and be accepted and respected by its members. Training will be conducted at the local health subcenter rather than in the city to avoid high staff turnover created by the lure of city life and to help make training more relevant to rural needs. Functions will include home visits and the organization of Mothers' Clubs as a means of performing health counselling and health education. Community health workers will deliver the following services, limited, of course, by the level of competence they obtain from delivered training and supervision: (a) maternal and child health counselling and curative services to include pre-natal, post-natal care and midwifery services (for the uncomplicated cases), (b) child health counselling, (c) immunizations, (d) nutrition-related counselling and remedial services, (e) family planning information, motivation and services, (f) environmental health information, (g) minor curative and first aid emergency treatment, (h) referral to health subcenters and to the regular doctors of the patients and (i) general health education.

2. The GOE has information in hand on which to base decisions regarding replication of the system in other provinces. Hopefully it will have begun such replication outside the project area during the course of sub-project activity.

3. Information on project experience will have been disseminated to other Latin American countries to permit their replication of the system.

C. Performance targets

1. Within three years of project initiation in each province, the Provincial Health Office will be reorganized, functioning, and providing many of the aforementioned services through its subcenters and community health posts. This should take place in Canar province by the fiscal year 1977 and in Azuay and Loja provinces by 1979.

2. An effective evaluation unit in the Provincial Health Office will be operational in each of the three provinces by the end of the project.

3. The rural health subcenters reorganization in the project area will be completed within three years of the initiation of the DEIDS project in each province.

4. Rural community health workers will be progressively added to community health posts.

The first six months of project efforts will be directed to

project. In subsequent years, when training could be conducted throughout the year, the number would be 120 annually, with 720 community health workers trained by the end of the project. Promoters currently in service will be amalgamated into the system, paid a salary and provided supplementary training during the course of the sub-project.

The number of people served by health posts is calculated on the basis of one health worker per 1,000 population. Assuming that the health worker reaches 66% of the target population, it is estimated that at least 480,000 people will be reached.

D. Means of verification

1. The Provincial Health Office: observation visits, inspection of office activities and review of office records and reports.
2. Evaluation Unit: review of evaluation staff operations, inspection of health records and records and reports of the evaluation unit.
3. Health subcenter activities: field visits, observation of health center activities, inspection of records and review of reports.
4. Community Health Posts: field visits, observation of activities in the communities, inspection of records and review of reports.

E. Basic Assumptions about Achievement of Purpose

1. GOE continues to focus high priority attention to rural health services.

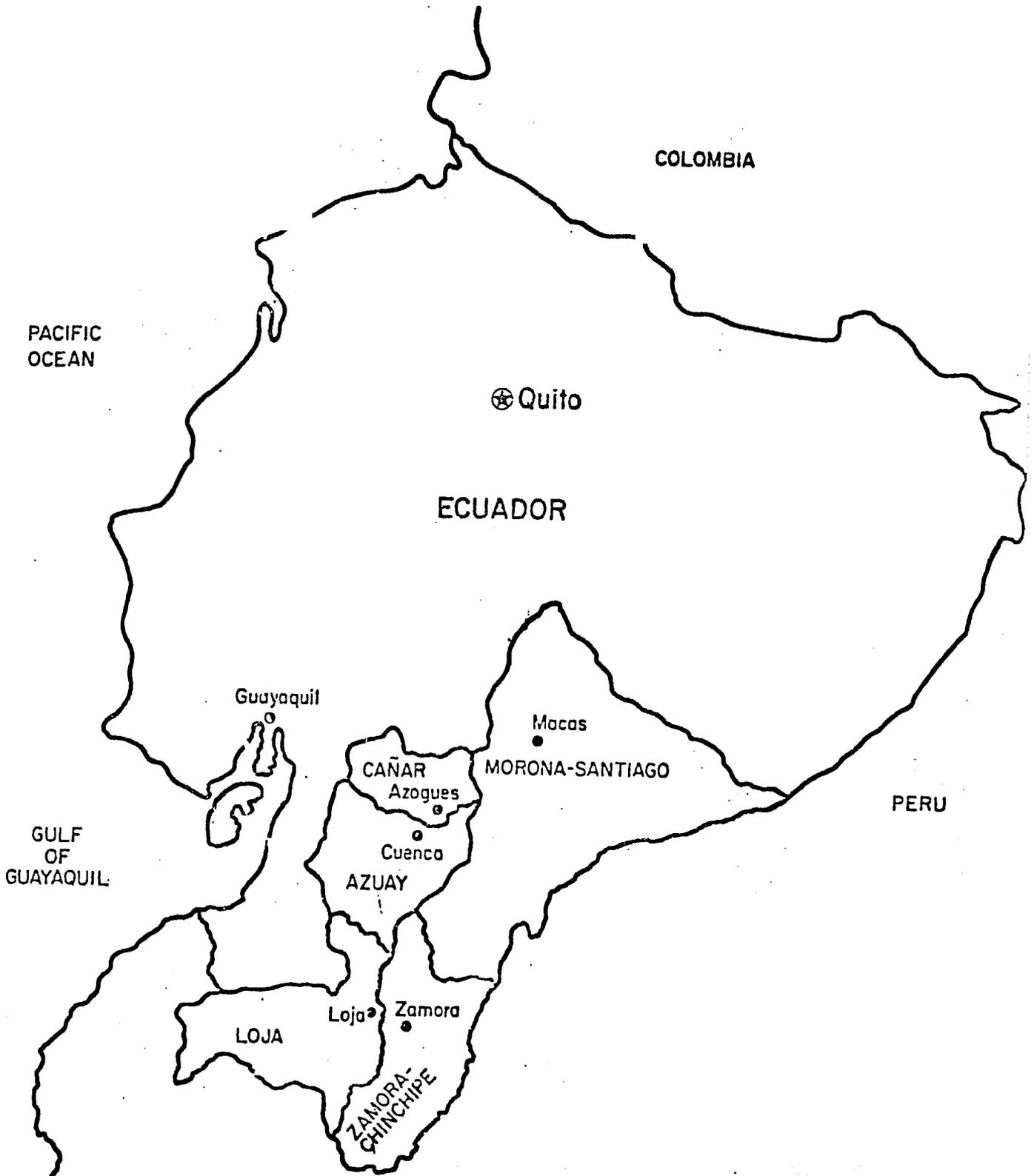
2. Continuation of relatively stable economic and political situation permits uninterrupted employment of necessary financial and manpower resources.

3. Rural communities will participate in and contribute to the sub-project as planned.

4. GOE will strengthen and improve its present policy of offering family planning as an integral part of general health services.

5. Professional personnel of Ministry of Public Health accept the legitimacy of paramedical personnel providing basic services.

# MAP OF ECUADOR



NAMED PROVINCES - SOUTHERN HEALTH REGION

DEIDS PROJECT AREA:  
PROVINCES OF CAÑAR (Initial Project Site)  
AZUAY

IV. Project Outputs

A. Outputs

The major kinds of results which can be expected from project inputs include: (1) baseline data collected, (2) training methods and materials developed, (3) personnel trained, (4) community health posts established and equipped, (5) specific service programs organized in community health posts, (6) Provincial Health Office and subcenter systems reorganized and personnel retrained, (7) cost analysis systems developed and (8) results evaluated.

B. Output Indicators - Magnitude of Output

1. Baseline data collected on 720,000 population by 1980

Health information presently available in Ecuador consists almost entirely of data taken from hospital records and in some cases, health subcenters. The records reflect the principal causes of death and illness in the hospital and clinic populations. No records for non-clinic rural populations, the principal target for the DEIDS project. It is therefore necessary under the project to collect careful and extensive baseline data against which project accomplishments can be measured. After each community is identified as a site for a health post and training of a community health worker, a team of field workers will be sent to collect data. Areas to be covered include the following:

a. Mapping of project area

There is no accurate information currently available about the number of communities or inhabitants in many rural

areas of Ecuador. The only exception is the area covered by the Malaria Eradication Program (SNEM), which covers only the extreme western tip of the project area bordering on the coastal geographical belt. The project area must be mapped.

b. Population census.

The first national census taken in 1950 recorded a population of 3,202,757. The 1962 census showed 4,476,007, and the 1971 estimate was 6,384,200, excluding nomadic Indians. Information needed on the numbers of inhabitants by community calls for a more thorough census in the project area.

c. Educational status of the communities

Needed information on the educational and literacy levels of the communities in the project area include proportions of the population who speak Spanish or Quechua or are bilingual. This information would influence the preparation of health education and family planning materials for use in the health subcenters and health posts. It would also influence the actual training program for community health workers. In largely Quechua-speaking communities, the selected community health worker must be bilingual in order to undertake training in Spanish and yet communicate with his or her people in Quechua.

d. Family income and occupational status, including land use.

This information will be used to assess the economic status of various communities which in turn would influence

the structure of health services established. Following the collection of demographic information detailed above, the project evaluation unit will undertake a more detailed study of the following:

e. Community organizations and community health councils.

The proposed health delivery system is community based, thus requiring adequate community support. Each community's organizational structure will be studied and leaders or potential leaders identified. Leaders could be found either through the Padre or the Teniente Politico or from some other source in the community. It will be necessary to ascertain whether the existing community organization will be a suitable base for health activities. If no community organization exists, or if the existing one is unsuitable for this purpose, it will be necessary to encourage the development of the community health councils. A health council should not only be given the responsibility but also some measure of authority for operating the health system in the community.

f. Mortality and morbidity survey.

The main causes of death and illness in the community will be determined at least on a sample basis

g. Each community's health beliefs, practices and attitudes to ill health and sources of health care will be determined.

h. Immunization status.

The immunization status will be determined.

i. Food habits and taboos.

Factors influencing nutrition will be identified with particular reference to child-weaning practices.

j. Family planning and fertility baseline data.

Information will be gathered about knowledge, attitudes, and practices (KAP).

k. Environmental status.

Information will be gathered about potable water, latrines and methods of waste disposal.

2. Training methods and materials developed within several months after project start.

This would be done in several stages:

a. Proposed functions of all personnel including community health workers will be clearly defined and followed by analysis of normal functions and tasks in order to formulate job descriptions.

b. A relevant training curriculum, based on these functions, will be designed.

c. Training techniques, audio visual aids, educational games and other training materials will be developed.

d. A training manual will be prepared to ensure standardized training for all of the training teams in the project.

e. An operational manual to be developed for personnel in the health subcenters and community health posts will lay down guidelines for their activities.

3. Training

a. Training staff selected.

Each of four training teams selected at the beginning of the project will consist of the following: 1 Ecuadorean nurse who will be a field professor from the School of Nursing, 2 nurses from the Peace Corps, 1 health educator or nutritionist from the Peace Corps, and 1 Ecuadorean community development worker. The teams, supported by other project staff, will function as trainers of trainers.

b. Trainers selected and trained.

A one-week orientation and training course for the trainers will enable them to understand project concepts and their duties. This course will be organized with assistance from CEMA (Centro de Evaluacion, Motivacion y Asesoría), which has a great deal of experience and success in motivation and fostering the team spirit.

c. Community health workers selected and trained.

Health workers will be selected from the community by the community. Duration of training will be based on the curriculum yet to be developed. However, an estimated 6 months requirement should provide adequate training in the various project components.

4. Establishment of 720 community health posts.

a. A community organization, if not already existing, will be formed to focus attention on health matters.

b. Physical facilities for health posts will be identified or, where necessary, built by the community.

c. The health facilities will be equipped with minimal initial supplies and medicines by AID with subsequent replenishments to be furnished by the MOPH.

d. Working relationships will be established between Community Health Workers and traditional health practitioners.

5. Specific service programs organized in sub-centers and health posts:

a. Maternal health including pre-natal, post-natal and midwifery services.

b. Child health services

c. Family planning information, motivation and services.

d. Immunization services

e. Nutrition counselling and curative services

f. Environmental health information

g. Home-making and home economics.

6. Reorganization in Provincial Health Office and sub-centers.

a. Job descriptions developed and necessary tasks reassigned to achieve DEIDS objective.

b. Staff retrained and integrated into planning and evaluation activities through program which is job oriented and fosters a team approach.

c. Personnel administration and supervision.

Operational procedures for effective and functional system at all levels developed and approved by the Ministry.

d. Contents and methodology in teaching health education defined for (1) health services personnel and (2) communities.

e. Community outreach and follow-up health services programs developed.

f. Budgetary programming and auditing systems developed.

7. Cost analysis system developed in the following stages

- a. Development costs determined
- b. Training costs determined
- c. Start-up costs separated from continuing costs
- d. Data collection, evaluation and analysis undertaken.

e. Component parts of the project will be redesigned to include cost effectiveness ratio and to determine feasibility of expanding project to other parts of the country.

8. Results evaluated

The evaluation system will include study of planning and programming questions (e.g. which elements of the program are accomplishing their objective of altering health behavior and what program changes) and longer-run questions of cost and replicability. The American Institutes of Research, from funds outside this sub-project, is working on evaluation guidelines for DEIDS as a whole, using the Ecuador sub-project as a model in consultation with APHA and consultants. It is expected, however, that the following items would be included in the evaluation system to be

devised, and would be integrated with the budgetary, auditing and cost analysis systems described above:

- a. Standardized health information system
- b. Vital registration system
- c. Six-monthly sample surveys
- d. Data processing
- e. Results interpreted
- f. Recommendations from project results in changes

in the Five Year Health Plan.

9. Joint Project Reviews in Ecuador and the US.

C. Output Targets

1. Collection of baseline data.

Paralleling the targets of health post establishment, sixty community interviews will be done in the first year of the project and 720 communities at the end.

2. Compilation of training methods and materials

In the first few months of the project.

3. Selection and Training of training staff.

To be completed during first six months of the project.

Community health worker training will commence at the beginning of the second six months.

4. Community Health Posts established and equipped.

Sixty in the first year and 720 by the end of the project.

5. Initiation of specific service programs in sub-centers and community health posts.

To keep pace with establishment of posts and training of health workers.

6. Provincial Health Office and sub-center organization.

In each province this will be completed within three years of project initiation.

7. and 8. Evaluation Activities.

To be completed by end of the sub-project.

9. Joint project reviews every six months during first three years, once annually thereafter.

D. Means of verification

1. Baseline data: Review baseline study records and reports.

2. Development of training methods and materials:  
Review and inspect training records and reports and training and operational manual.

3. to 6. Reorganization of sub-centers, Provincial Office, training and setting up services in health posts

a. Field visits

b. Review and analysis of administrative policies and procedures in provincial health office, health sub-centers, health posts and community.

c. Inspection of records in the sub-centers and health posts.

d. Review of reports.

7. and 8. Evaluation: Review and analysis of health records in health sub-centers and community and routine statistical reports.

9. Joint Project Reviews: APHA and AID participation, reports

E. Assumptions regarding Outputs

MOPH flexibility will allow for reorganization and personnel retraining.

2. GOE meets project commitments.
3. MOPH modifies rural health delivery system in accordance with project findings which prove cost effective.
4. Communities participate in and contribute to the program as planned.

V. Inputs

A. A.I.D.

1. Total Project Costs

The annual US costs of this sub-project will exceed \$500,000. A.I.D. will obligate \$1,021,000 to cover US costs for the first two years of operation, one-third to derive from Title X funds. Annual US costs for the first five years of the project are expected to increase somewhat to reflect normal cost of living increases. A.I.D. budget estimates for the first five years are included in the table found at the end of/ <sup>the Inputs Section.</sup> Estimated US costs for the initial year of operation follow:

2. <u>Manpower</u>	<u>MM</u>	<u>\$1,000</u>
a. <u>US</u>		
(1) Subcontractor Staff in Ecuador, includes Chief of Party (physician), a Public Health Nurse-midwife and a Training and Evaluation Officer, all bilingual.	36	71.5
(2) Subcontractor Staff in USA		
(a) Academic	15	30.1
(b) Non-academic	45	55.6
Total US Staff	96	157.2

In addition subcontractor will furnish consultants for specific aspects of project work estimated at 12 manmonths per year. Estimated costs are covered under Travel.

b. Ecuadorian Staff

Mainly recruited by GOE but paid  
by sub-contractor

(1) Organization and Administration

Project Coordinator (12) 4.0

Topping of GOE salary for  
official who will spend 100% of time in  
supervision of project and facilitating  
liaison between GOE and subcontractor.

- Accountant, 2 bilingual 48 7.1  
secretaries and driver. To run sub-  
contractor office in Cuenca.

(2) Training 108 22.8

- Four field professors, one  
sociologist, and four community  
development workers. To conduct  
training courses and seminars for  
training of trainers. Collaborating  
with Peace Corps, four project training  
teams will conduct training for  
community health workers in four separate  
areas simultaneously, four courses the  
first year and eight annually thereafter,  
each estimated to last six months with  
about 15 students per course. Also to



	<u>\$1,000</u>
g. Supplemental equipment and supplies for health subcenters and community health posts	14.2
Total Commodities	<u>70.5</u>
4. Other Services and Expendables Related to Training	9.2
5. Travel by project staff and consultants	24.1
6. Other Direct Costs - includes communications, reproduction, computer rental, conference costs, shipping and fees	68.7
7. Indirect Costs	78.1
Total A.I.D. costs	<hr/> 520.3

B. Government of Ecuador

1. Total Project Costs

The Ministry of Public Health will be expending at least \$233,700 for DEIDS in its first year. This does not cover non-DEIDS health costs in Canar, which are more fully described in Appendix A. On the whole, however, DEIDS does not require the addition of new high-paid personnel, thereby burdening the Ministry with unexpected costs, but rather the appointment to DEIDS of personnel already on duty in the region. The DEIDS Project Coordinator is a newly created post. This man will be mobile as DEIDS extends. The others will remain in Canar Province after DEIDS extends to other provinces. Community Health Workers, 120 in the first year and rising to 720 when all three provinces are covered, will be paid low wages, about \$40 per month, thus amounting to \$345,600 when the project reaches its peak.

This estimate does not include costs related to service facilities and replenishment of medicines and other supplies which will continue and increase from year to year. These will be provided from regular Ministerial budgets allocated to the project area. Many of the family planning commodities will be supplied through other projects by AID and other donors, but the MOPH will be responsible for their delivery. The estimate also does not include costs of personnel in hospitals, health centers and subcenters who will perform a referral and logistical base and support for DEIDS and who will spend a range of a small to a large fraction of their time on DEIDS. It also does not include the inputs by the local communities each of which will donate an existing building or construct a new one for the use of community health workers, as

well as give their time to serve on committees, in Mothers' Clubs, etc. A prior plan to build health posts from Government funds carried an estimate of \$15,000 each. Hopefully these expenditures will be found unnecessary.

The Minister of Health has expressed willingness to raise projected budgets for the DEIDS area for any one year to the total projected prior to DEIDS for that same area in the subsequent year. This allows a small cushion for extraordinary expenses.

All expenses assumed for Year I by the Ministry would be continued and increased in ensuing years as project activities move to the second and third province. Most staff personnel are regular civil service employees now in situ. The Community Health workers will be new, but the Ministry is committed to integrating them into the service and paying them a small wage.

2. <u>Manpower</u>	<u>MM</u>	<u>\$1,000</u>
a. <u>Administration and Supervision</u>	96	15.7
Project Coordinator (physician), nurse, social worker, statistical assistant, health educator, auditor, secretary, driver.		
b. <u>120 Community Health Workers</u>	1,440	57.6

MOPH has indicated it will fully integrate these workers into health services structure and pay salaries and other costs. About 60 of these will be recruited from existing community health promoters.

	<u>MM</u>	<u>\$ 1,000</u>
3. <u>Training</u>		
Facilities in hospitals and health sub-centers. Supervisory staff from health sub-centers when needed and available (cost not included). The latter may be a problem, as there is a severe shortage of trained staff at sub-centers.		106.5
<p>In addition the Peace Corps will supply 8 nurses, 2 health educators, 2 nutritionists, 1 audio-visual specialist and 1 statistician. As Ecuadorean nationals are trained, Peace Corps role will diminish.</p>		
4. <u>Other</u>		
a. Project office in Cuenca - space and telephone		2.4
b. Provincial Health Office - space and telephone		1.5
c. Construction of five new health sub-centers		50.0
		<hr/>
Total GOE Costs		233.7

First Five Year Costs of DEIDS Ecuador

(\$1,000)

	FY 1975		FY 1976		FY 1977		FY 1978		FY 1979	
	AID	GOE	AID	GOE	AID	GOE	AID	GOE	AID	GOE
1. <u>Total</u>	<u>520.3</u>	<u>233.7</u>	<u>501.0</u>	<u>412.6</u>	<u>532.9</u>	<u>487.4</u>	<u>542.3</u>	<u>495.0</u>	<u>566.0</u>	<u>552.6</u>
2. <u>Manpower</u>	<u>269.7</u>	<u>73.3</u>	<u>280.4</u>	<u>146.6</u>	<u>298.3</u>	<u>219.9</u>	<u>315.7</u>	<u>277.5</u>	<u>334.4</u>	<u>335.1</u>
a. US in US	85.7		92.0		99.7		107.2		115.2	
b. In Ecuador										
US	71.5		76.9		82.7		88.9		95.6	
Ecuadorean										
- Admin., Supervision	45.9	15.7 <sup>1/</sup>	45.9	31.4	49.3	47.1	53.0	47.1	57.0	47.1
- Training, Eval.										
- Comm. Health Workers		57.6 <sup>2/</sup>		115.2		172.8		230.4		288.0
c. Fringe benefits and allowances	66.6		66.6		66.6		66.6		66.6	
3. <u>Commodities</u>	<u>70.5</u>	<u>110.4</u>	<u>26.2</u>	<u>216.0</u>	<u>26.2</u>	<u>217.5</u>	<u>23.2</u>	<u>217.5</u>	<u>23.2</u>	<u>217.5</u>
a. Project Office	6.6	2.4 <sup>3/</sup>								
b. Provincial Health Office	1.0	1.5 <sup>3/</sup>	1.0	3.0	1.0	4.5		4.5		4.5
c. Training	5.5	106.5 <sup>3/</sup>		213.0		213.0		213.0		213.0
d. Transportation (vehicles, horses, maint.)	35.3		10.0		10.0		8.0		8.0	
e. Health sub-centers and health posts	14.2		14.2		14.2		14.2		14.2	
f. US Campus	7.9		1.0		1.0		1.0		1.0	
4. <u>Other Costs</u>	<u>180.1</u>	<u>50.0</u>	<u>194.4</u>	<u>50.0</u>	<u>198.4</u>	<u>50.0</u>	<u>203.4</u>		<u>208.4</u>	
a. Other Training Costs	9.2		18.4		18.4		18.4		18.4	
b. Construction		50.0		50.0		50.0				
c. Travel - proj. staff and consultants	24.1		25.0		25.0		25.0		25.0	
d. Other direct costs	68.7		70.0		70.0		70.0		70.0	
e. Indirect costs	78.1		81.0		85.0		90.0		95.0	

<sup>1/</sup> Includes only provincial health employees designated for full-time work on DEIDS, not employees in hospitals, health centers or rural health sub-centers who will spend a range of a small fraction to most of their time on DEIDS.

<sup>2/</sup> 120 first year, adding 120 per year

<sup>3/</sup> Facilities and telephone

VI. Rationale

Ecuador has been chosen as the site for the Latin America DEIDS sub-project. Ecuador was one of several LA countries where the USAID responded to an AID airgram that governmental counterparts had expressed an interest. A subsequent visit by APHA determined sufficient local interest, need and chances for success compared to other LA countries visited such as to warrant fuller development of a proposal. Thereafter a plan was developed by MOPH personnel and consultants from UCLA under the APHA contract with AID. APHA submitted the proposal on March 12, 1974 in a report which stated the Ecuadorean MOPH was prepared to institute an innovative program to demonstrate feasibility of providing acceptable and effective health services to rural populations at a nationally affordable cost. It also reported that examinations of previous and current programs in Ecuador, including several relevant to the provision of rural health, family planning and nutrition services, indicated a high probability of success.

The Ecuador proposal offers an alternative pattern to the Thailand sub-project. Planned community contributions to health post construction, for example, offer a means for minimizing central government costs. In addition, the GOE has found it possible to reassign presently employed health staff to DEIDS, again minimizing costs but also indicating a strong commitment to the DEIDS approach.

The three southern provinces of Canar, Azuay and Loja were chosen as the area of operation because (1) the total population of 850,000 conformed to DEIDS demonstration criteria (over 500,000), (2) its poverty and rural nature, (3) the almost complete lack of meaningful health, family planning and nutrition outreach services at present, particularly outside the main towns, and (4) indications that improvements in the delivery system should bring about easily measurable changes in these conditions. In addition, the University of Cuenca Medical School has cooperated with the MOPH in conducting rural health field studies and has expressed an interest in collaborating with DEIDS. Canar and Azuay have already had small innovative training programs for voluntary community selected health promoters who after training engage in preventive services in the community and work out of small pharmacies equipped with medicines and drugs. These volunteers will be amalgamated with the DEIDS community health workers and paid a small wage, probably \$40 a month. Finally, the area also has Mothers' Clubs which will be a useful medium for DEIDS community health, nutrition and family planning activities.

More detailed information on Ecuador, its economic, social and health conditions and other data bearing on this sub-project can be found in Sections IV and VI of the APHA proposal.

The strategy proposed is to provide integrated services, emphasizing maternal and child health in the widest sense,

and including applied nutrition, family planning and environmental health. This strategy is based on the premise that there are mutual benefits to the integration of nutrition, environmental health, and family planning in the delivery of information and services.

This strategy conforms with GOE policy. An alternative strategy considered was the provision of maternal and child health, nutrition, family planning and environmental sanitation as separate services. This would have been more expensive, with duplication of facilities and personnel, and unacceptable to the Government of Ecuador.

The planned delivery system will be community based, and the primary health care deliverers will be selected by and from the community. They will then undergo training by the DEIDS project team, including GOE and Peace Corps personnel, in the particular locale in which they will be working. After training they will be based in a community health post, the building provided by the community initially equipped with basic materials and medicines by the project with replenishment a responsibility of the MOPH. They will be paid by the Ministry, and will function as community health workers under the supervision and control of the doctor in charge of the local health subcenter. Their functions will be primarily preventive, but they will also undertake minor curative and first aid procedures both in the health posts and through home visits. Much of their work will be directed through community organizations including the Mothers' Clubs and they will seek the cooperation of traditional practitioners and voluntary workers.

There are well-demonstrated synergistic interactions between malnutrition and infections in producing high infant and child mortality and in causing growth retardation. Immunization activities of the provincial Chief Vaccinator and his teams are therefore expected to be of added benefit when offered with nutrition and environmental sanitation activities.

The community health workers will introduce their communities to the basic ideas of environmental sanitation, stressing water supplies and waste disposal, with emphasis upon practical measures. The community organizations, formed as part of the DEIDS program, will organize and carry out water supply and sanitation projects, with increasing activity as financial and technical assistance becomes available from the government for such projects. Sanitary inspectors retrained under another national program, as well as other environmental health government workers will provide continuing guidance.

The health of mothers, infants and young siblings is adversely affected by the common rural pattern of frequent repeated pregnancies and births. A reduction in the frequency of births would provide direct health benefits to both target groups. Integration of family planning information and services with pregnancy and delivery care and other services will make this possible. Family planning activities of the community health workers will be an integral part of their services and

will be coordinated with the activities of other voluntary and government agencies. The Ministry's Department of Population has expressed strong interest in using community health workers to provide basic family planning information and services to the rural population. In designing family planning aspects of the community health workers curricula and activities, full advantage will be taken of the experience gained in using malaria eradication personnel and other similar workers in family planning programs. Use will also be made of materials used in disseminating family planning and health information by radio during the last four years.

Emphasis is on broadening and strengthening the base of the health care pyramid by increasing the number of persons in rural areas who have basic health services available to them. However, the functions of the community health workers must be integrated with the rest of the system, through the health sub-center, in such a way as to maximize efficiency of all parts of the system.

Thus the project plan will tackle the two main barriers to health services delivery in the rural areas, namely lack of a service infrastructure and lack of integration of the main components of health services.

Another aspect of the strategy which deserves special mention is the flexibility envisaged to allow for changes and use of new approaches in response to feedback from the concurrent evaluation of the operation. Some of the project innovations are:

1. Extensive use of community health workers as primary deliverers of multipurpose information and care.

2. Active community involvement and participation, to be accomplished through health councils and agricultural cooperatives. The communities will be organized and motivated to select and support their health workers, and will provide physical facilities for the health posts.

3. Utilizing parish priests, school teachers and local government leaders in the organization and delivery of health services.

4. Establishing a working relationship between the community health worker and local traditional health practitioners. Some of these practitioners may be selected by the communities for training as community health workers.

5. Developing methods and materials appropriate for training individuals with as little as 2-4 years of formal education to function as health workers, and evaluation of the training program.

6. Taking health services to rural communities and homes instead of waiting for clients to come to health facilities.

7. Extending scope of rural health services, with emphasis on prevention, through the integration of maternal and child health, nutrition, family planning and environmental health, and with evaluation of the integrated services.

8. Reorganizing services and retraining health workers including reassignment of tasks to existing health personnel in keeping with rural health realities and project philosophy.

9. Instituting close and effective supervision of health activities at all levels.

10. Establishing standardized health information and vital events registration systems.

11. Establishing an evaluation unit at Provincial Health Office level to monitor health services and provide rapid feedback for better management.

12. Evaluating the total project and its integral parts to assess cost-effectiveness, and provide the basis for replication of the project throughout the country. Results of the DEIDS project may preclude the need for the much more expensive health posts (Puestos Minimos de Salud) now contemplated in the Five Year Health Plan.

#### VII. Course of Action

The course of action and time phasing is shown in the bar chart and PERT chart found at the end of this section. Many activities, for example, baseline data collection and initial Knowledge, Attitude, and Practice (KAP) studies, extend over periods of 4 to 5 years but in different parts of the project area. This is because the project will start in an area of Canar Province and will progressively extend to other parts of the Province and eventually to Azuay and Loja Provinces. Before each area is added to the project these activities will be carried out until the entire project area is covered. Such data collection and studies, to be undertaken by field workers as soon as a community is

identified as a site for a health post and training, include the following:

1. Mapping of project area
2. Population census
3. Educational status of the communities
4. Family income and occupational status, including land use
5. Community organization and community health councils
6. Mortality and morbidity survey
7. Each community's health beliefs, practices, and attitudes to ill health and sources of health care.

The first six months of the project will be directed toward the preparation of curricula, manuals and job descriptions, recruiting staff, equipping health posts and selection and training of trainers. Training of community health workers will begin the second half of the year. The training effort described under Inputs above will produce 60 such workers within the first year. An additional 60 will be recruited from existing community health promoters and provided a wage by the GOE. In succeeding years, the number will be increased to 120 annually, so by the sixth year of the project 720 workers will have been trained.

Establishment of sixty community health posts, organization of specific services programs and initiation of supervisory activities to the periphery will be undertaken after initial training efforts produce the 60 health workers needed to reach approximately 60,000 people. It should be noted that 60 existing health promoters and their 60 communities will be integrated into DEIDS.

Community involvement will begin at the outset with their participation required for the carrying out of special studies, data collection activities and the selection of community health workers. Such community efforts will continue throughout the life of the sub-project.

During the second six months of the first year, reorganization of the Provincial Health Office and health sub-centers system and personnel retraining will take place. Data processing will also begin at this time and the existing vital events registration system will be strengthened.

Except for task analysis/job description, and training methods/material development, all other activities will continue as the peripheral health services are developed and replicated within the experimental area through FY 1980.

Resurveys on health and family planning will be conducted in the third project year and continue as the program expands.

Continual monitoring, assessment and evaluation of project data to determine cost-effectiveness will begin when the Evaluation Unit becomes operative during the first year. Results will provide a basis for a GOE decision on replication in other areas outside the experimental region.

Regular project review sessions will be scheduled as an integral part of the project. Such sessions should be held every six months for the first three years of the project and annually thereafter, with representatives attending from all participating agencies - AID, UCLA, APHA, Peace Corps, the GOE Ministry of Health and GOE officials responsible for finance and planning. Most of these sessions should be held in Ecuador.

Annually, the MOPH will convene meetings at which the activities, progress, and problems of DEIDS will be discussed. These meetings will have in attendance MOH personnel from non-participating provinces and regions. Ecuadoreans outside the Ministry and representatives of neighboring countries will be invited to participate as well as APHA and AID staff involved in DEIDS. Such meetings will provide for on-sight observation of activities in progress.

Within three years of project initiation in each of the three provinces, the provincial health office will be reorganized, functioning and providing services through its sub-centers and community health posts. This should take place in Canar province by the end of FY 1977 and in Azuay and Loja provinces by the end of FY 1979.

An effective evaluation unit in the provincial health office will be operational in each of the three provinces by the end of the project.

Rural health sub-center reorganization will be completed within three years of the initiation of DEIDS in each of the three provinces.

Rural community health workers will be progressively trained and added to community health posts.

In accordance with Ministry plans the project will assist in developing capabilities for planning, programming and directing the development of health activities under the

jurisdiction of the Provincial Health Office and rural health sub-centers in the project area. The steps to be taken in this regard are described in III. B.1. and IV. B. 6-8 above.

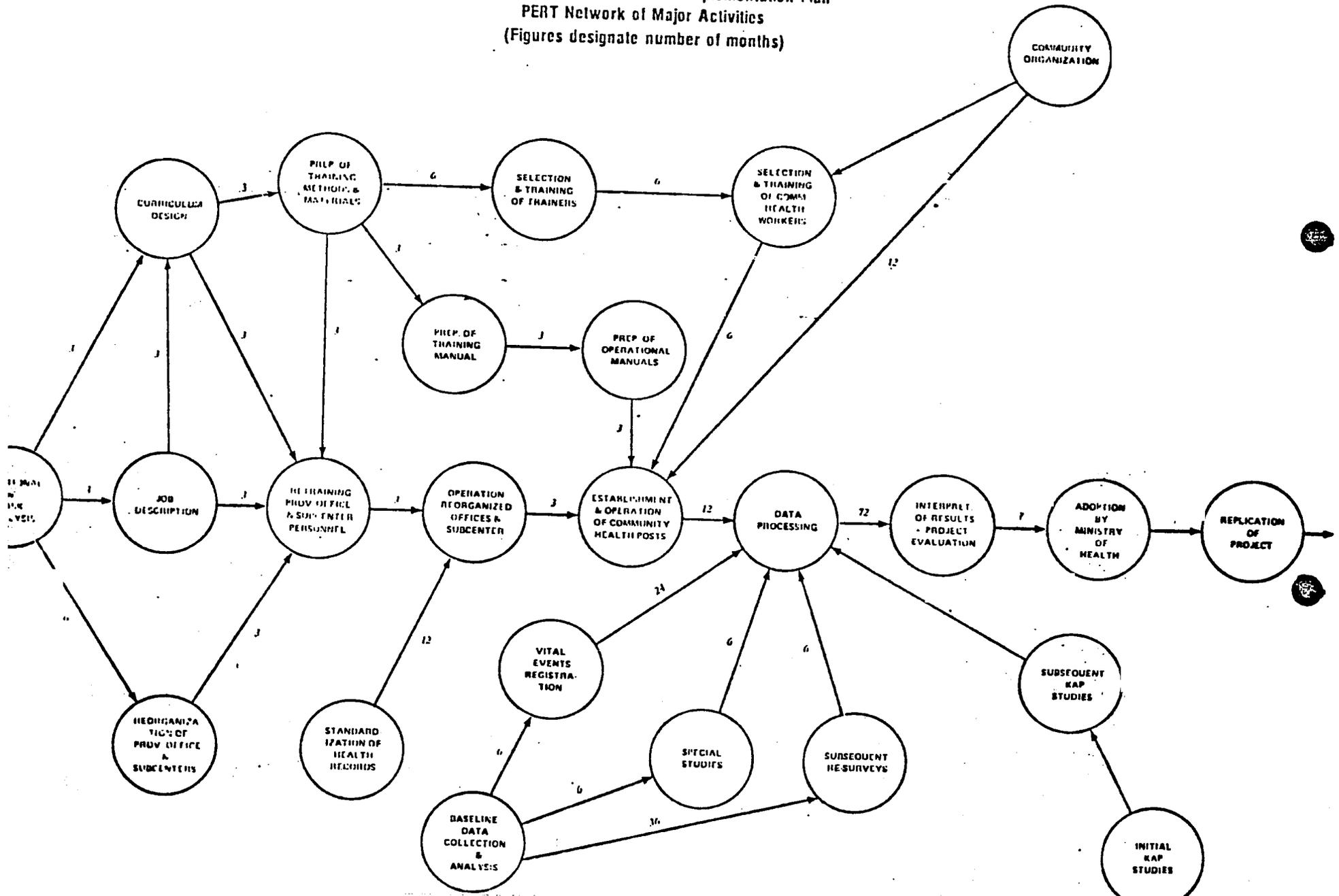
Appendix A analyzes cost implications of the project prior to implementation and Appendix B delineates some requirements for an agreement between Ecuador and the contractor.

# COURSE OF ACTION

	FISCAL YEAR								
	1975	1976	1977	1978	1979	1980	1981	1982	1983
Baseline Data Collection and Analysis									
Initial KAP Studies									
Functional and Task Analysis and Job Description									
Curriculum Design									
Training Methods and Materials Development									
Selection and Training of Trainers									
Training Manual Preparation									
Operational Manuals Preparation									
Community Organization									
Selection and Training of Community Health Workers									
Establishment of Community Health Posts									
Organization of Specific Service Programs									
Standardization of Health Records									
Vital Events Registration Procedure									
Reorganization of Health Subcenters and Personnel Retraining									
Reorganization of Prov. Health Office and Personnel Retraining									
Subsequent Health and Family Planning Re-surveys									
Subsequent KAP Re-surveys									
Special Studies									
Data Processing									
Interpretation of Results									
Adoption of Project by Ministry of Public Health									
Replication									

2.4.1.1

**COURSE OF ACTION — Implementation Plan**  
**PERT Network of Major Activities**  
 (Figures designate number of months)



Analysis of DEIDS Ecuador Cost Implications

It is desirable to examine some of the budgetary figures of the Government of Ecuador, its Ministry of Health and of the Province in which DEIDS will be initiated relative to possible replication in other parts of the country. It must be understood that each region of the country is different when considering the terrain, accessibility, density of population, degree of rurality, etc. If one were to consider health delivery in areas encompassing Guayaquil and Quito, the two major cities of the country, the costs of health services would have to include large hospital centers that have more sophisticated curative facilities serving people from all parts of the country. Thus, in talking of replication of the delivery system utilizing the DEIDS concept developed in the Southern Region of Ecuador, it should be understood it would be for an area similar in its rurality, accessibility, etc. This would actually encompass a large part of Ecuador.

Government of Ecuador Budget, 1974 (US\$)	480,000,000
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Ministry of Public Health Budget, 1974 (Public Sector only. Does not include Social Security or private medical care)	32,800,000
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The MOH 1974 Budget represents:	6.9% of Total GOE Budget
---------------------------------	-----------------------------

DEIDS/Ecuador is to be carried out in the Southern Region (Zona Austral) of Ecuador which has a population of approximately

900,000 people (in five Provinces). It is contemplated that it will be developed in three contiguous Provinces of the Region, starting in Canar and then extending to Azuay and Loja during the eight years of the project, with a final coverage of about 500,000 persons.

ZONA AUSTRAL: THREE - PROVINCE AREA OF DEIDS

<u>Province</u>	<u>Pop.</u>	<u>Total Health Budget</u> (US\$)	<u>Amount for Hospitals</u> (US\$)	<u>Amount Non-Hospital</u> (US\$)	<u>Expenditure Per Capita</u> (US\$)
Canar	138,400	584,000	325,360	258,640	4.20
Azuay	320,000	1,267,480	957,440	310,040	4.00
Loja	389,000	1,063,440	639,240	424,200	2.80

(From the MOH Five Year Plan (1973-77) the per capita expenditure for health in 1970 (latest year given) was \$7.28 (including monies spent through Social Security, CARE, etc.) and up to \$8.17 if the activities in Sanitary Engineering were included. This was extremely low in comparison to most other developing countries in Latin America.)

Since it is in Canar Province where DEIDS will be initiated and from which it will be extended, all further discussions relate to it.

Of the 138,400 total population of Canar, 110,000 (approximately 80%) live in rural conditions. This rural population as defined by the Ecuadoreans is that which lives outside of the towns of Azogues, Biblian, and Canar, although in many ways only Azogues, the Provincial Capital, has services and facilities common to the usual definition of urban.

In this Province it is almost impossible to measure directly the health status of the rural population and almost as difficult to gauge the characteristics of their health problems. For want of data, morbidity and mortality rates (especially among infants) are the usual indices of relative lack of health. Since less than 12% of deaths are medically certified (and the accuracy of diagnosis in these cases is questionable) and since only 3-5% of the rural population benefit from any medical attention in health centers or hospitals, such data cannot be too meaningful. This indicates the need to accept the above figures on health expenditure per capita with a great deal of caution, since only a relatively small part of the population (mainly in the towns) is receiving the health services.

Projected 1975 Government of Ecuador Health Budget in Canar  
Province Including DEIDS Costs 1/

(\$1,000)

	1975		Continuing Cost <u>2/</u>	Replication Cost <u>3/</u>
	APHA	GOE		
Salaries:				
UCLA Residents in Ecuador California based staff	71.5	0	0	0
Overseas Allowance - Housing, Education, etc.	85.7	0	0	10.0 <u>4/</u>
Fringe Benefits (U.S. & Ecuadorean nationals)	33.3	0	0	0
Ecuadorean Salaries	33.3	0	13.0	13.0
DEIDS Organization and Administration (Ecuadoreans)	0	182.4	190.0	190.0
DEIDS Training Staff (Ecuadoreans)	11.1	15.7	21.0	
DEIDS Evaluation Staff (Ecuadoreans)	22.8	0	0	25.0
Community Health Workers (120)	12.0	0	0	12.0
	0	57.6	57.6	57.6

	<u>PHA</u>	<u>GOE</u>	<u>Continuing Costs 2/</u>	<u>Replication Cost 3/</u>
Travel and Per Diem (U.S. to Ecuador and return - consultants)	24.1	0	0	
Transportation in Ecuador for DEIDS (includes 5 vehicles)	35.3	2.0	0	20.0
Training Costs (including facilities used)	14.6 <sup>7/</sup>	106.5	50.0	75.0
Equipment (& Replacement)	20.1	341.6 <sup>5/</sup>	200.0	200.0
Maintenance	2.5	187.0	200.0	200.0
Medicines	4.6	43.2	50.0	50.0
<u>Other Direct Costs:</u>				
Communications	3.6	.7	1.0	1.0
Computer Processing	5.0	0	0	2.0
Cost of Office Space	0	3.9	0	4.0
Conference	2.0	0	0	0
Educational Materials	8.5	1.0	1.0	1.0
Office Supplies (Stationery, shipping, reproduction)	29.4	1.2	2.0	2.0
Legal and Accounting Costs	3.3	0	0	0
Miscellaneous	26.3			
TOTAL	<u>520.3</u>	<u>233.7</u>	<u>785.6</u>	<u>862.0</u>
	=====	=====	=====	=====
		1,175	1,727	

1/ This budget includes all expenditures for health in Canar Province. DEIDS budgets for years 2-5 have been estimated elsewhere. Small increases due to steadily rising costs will be evident. In the transportation item there are fluctuations brought about when vehicles are replaced. APHA costs in this table do not include campus supporting costs or indirect costs included in 5-year table found at end of Inputs Section.

2/ The continuing costs are those that will remain in the Province after the DEIDS system has been established and is functioning.

3/ Replication costs are those required for the MOH of Ecuador to install the DEIDS system to other Provinces of about the size as Canar. Since the above annual costs really represent work being applied in more than a single Province after the first year, replication costs will probably be lower than estimated.

4/ This would be used for Ecuadorean Consultants (i.e., Contro de Evaluación, Motivación y Asesoría).

5/ \$50,000 of this is for construction of 5 new health sub-centers. All community health posts used by the new category of Community Health Workers are to be constructed or made available by the communities.

6/ The total expended in the Province is larger than the sum allocated by the Ministry of Health since there is income from other sources international vaccinations, use of operating rooms, medical certificates, use of various services by persons covered under other health systems, fines, contributions from the larger municipalities, funds from foreign sources, etc.

7/ Commodities \$5,500; Other costs \$9,200.

In the Five Year Plan of the Ministry of Public Health and in its special Rural Health Plan, there has been contemplated the construction of Minimal Health Posts, one for each Parroquia (Parish usually having approximately 1,000 - 1,500 people. These would be peripheral to the already existing category of Health Sub-centers Each post is to be staffed by one auxiliary nurse and one sanitary inspector. It is hoped that under DEIDS, the use of community health workers as deliverers of primary health services will preclude the need for the Minimal Health Posts. It is interesting to compare the estimated costs of these two systems for Canar which has 28 Parroquias.

Minimal Health Posts

Construction Cost - 28 MHP x \$15,000 each = \$420,000, if all were to be constructed at the present cost. Amortized over 20 years, the cost would be \$21,000/year.

Personnel Costs - 56 employees @ \$5,000 per month = \$60,000.

Thus: Yearly cost for buildings	21,000
Yearly cost per employee salaries	60,000
	<u>\$81,000/yr.</u>

DEIDS

The community health posts would be the responsibility of the communities. No cost to MOH for construction.

Considering 120 community health workers for Canar at \$40/month,  
 $120 \times \$40 \times 12 = \$57,600$

The community health workers will reach almost all persons in the peripheral communities through Mothers' Clubs and home visits; the Minimal Health Post system will reach mainly those people who go to the post, outreach not being the basis for the system.

This presentation does not include the cost of training, supervision, maintenance, etc. In the full budget presentation, only the DEIDS system is included since it is hoped this will preclude the need for the Minimal Health Posts.

Peace Corps Volunteers

As seen on Page 97 of the Ecuador Plan, it is contemplated that 14 Peace Corps volunteers will be utilized in the DEIDS program for training purposes. This will add 168 man/months of professional services to the project<sup>per year</sup>. Throughout the project, Ecuadoreans will be trained to take over these functions with the expectation that they will replace the Peace Corps volunteers as soon as possible. These volunteers have already arrived in Ecuador.

We have estimated the Peace Corps contribution at approximately \$200,000.

Contraceptive Demand

DEIDS/Ecuador will begin in the Province of Canar (Southern Region) with a population of approximately 140,000. Of this number, approximately 28,000 will be women in the reproductive age group. If we consider the optimum situation in which by the end of eight years 66% of them are using family planning pills, we can estimate the number of cycles of pills needed as  $18,000 \times 12 \times 4 = 864,000$  cycles. "Four" is used instead of "eight" as an averaging factor in doing the calculation since utilization will start near zero and will build up within the eight-year period. The cost of these pills at the current rate of 14¢/cycle is \$120,000 over eight years, or \$15,000/year. Of course, it would actually graduate from much less than \$15,000 the first year to much more at the end of the period.

At the present time, condoms are not very popular in Ecuador as a whole. There are now 1,000 gross stockpiled in Ecuador with little indication of rapid utilization. Under optimum conditions a man might use one gross/year. The total number of men in the Canar Province who might be considered as users would be the same number as the women - 18,000. However, with the present prejudice against condom utilization, and with the unlikelihood that the husband and wife would both use contraceptives, it would be difficult to venture an estimate of needs, especially since the target groups for DEIDS are the women and children (in conformity with the Ecuador Strategy). With condoms costing on an average \$5/gross, the cost would be negligible.

One cannot consider IUDs as a significant contraceptive device in the more rural areas. Since, at the present time, IUDs would have to be inserted by a doctor or, at least, under his supervision, a person would have to go the subcenter for such service. The IUD will be considered in the informational program, but from a practical standpoint only a negligible number would be necessary.

Contraceptives will be supplied through the Department of Population of the Ministry of Public Health.

Cost for Replication Throughout Ecuador

One cannot make meaningful projections of costs of extension of DEIDS throughout the country by merely multiplying the costs in Canar, by a population factor. The MOH is a relative new one and its expenditures relative to the GOE expenditures have been constantly changing. Also, at the present time, the per capita expenditure of the MOH varies greatly in different parts of the country. In a larger urban area, large sums of money go into more sophisticated medical attention facilities and into higher level personnel. A high-cost experimental region still exists, set up with UN help many years ago. There is also a three-province program under way with UNICEF support and involvement of six to seven ministries.

One must consider the likely effects of the DEIDS program in Ecuador which is based on a radical increase (creation) of

infrastructure in terms of community health workers. This outreach will educate people in terms of health and will obviously bring about a greater demand upon the services at the top of the health service triangle and at intermediate points as well. On the other hand, it is possible that with a successful program in the peripheral areas with the prevention of a large number of communicable, infectious, and diarrheal diseases as well as those due to malnutrition, and with the delegation of primary health attention to the outreach personnel, the increased demand at more central facilities may not be so high.

Essential Elements of an  
Agreement Between the Government of Ecuador (GOE)  
and the American Public Health Association

Set forth below are the essential elements of an Agreement to be concluded by the Government of Ecuador and the American Public Health Association, or by delegation, its designated subcontractor, to set the stage for Phase III operations. It is expected that USAID/Ecuador will provide advice and assistance to APHA and/or its subcontractor in concluding the Agreement.

1. The US plans to assist GOE experimentation in this Project for an initial period of five years subject to the availability of funds for that purpose. Subsequent assistance will depend upon review in the fourth project year of results obtained and further experimentation requirements. US commitments under this Agreement are limited to the first two years of Project operations.
2. The purposes of the Project are (1) to develop and demonstrate in three rural provinces (Canar, Azuay and Loja) a low-cost delivery system integrating health, family planning and nutrition services in a form that will be accessible and acceptable to the total population and able to reach as a minimum 66% of the women of reproductive age and children under six at a cost which does not exceed public and private resources available to the three provinces, (2) to thoroughly test the system for cost effectiveness and replicability, and (3) to gain useful experience which can be applied to the establishment

of low-cost integrated systems elsewhere in Ecuador and in other countries of Latin America. The three provinces chosen are Canar, Azuay and Loja which together contain nearly 850,000 inhabitants, mostly poor Quechua-speaking Indians engaged in subsistence agriculture and living in isolated small villages. Work will be initiated in Canar province in FY 1975 and will gradually spread to all three provinces by 1980. US inputs will be completed by 1982.

3. In order to accomplish this purpose the parties agree to develop the activities set forth in Sections III-VII of the AID Non-Capital Project Paper (PROP) dated 8- 1-74 and entitled Development and Evaluation of Integrated Delivery Systems (DEIDS) Ecuador.

4. The parties hereto agree to participate jointly in designing an evaluation system for the project, including evaluation of cost implications and the feasibility of replication, and will jointly agree on items to be measured. Further the parties agree to review progress, problems and lessons learned including system costs each six months after the initiation of this agreement for three years and each twelve months thereafter to recommend adjustments to the system as may be necessary or desirable in light of evaluation results and further development work performed by the GOE and/or the contractor. In such reviews the parties agree to consider costs of services rendered with a view to evolving a system which can be replicated

in other provinces within GOE resources. Such considerations would include relationships between the various parts of the rural delivery system and between this system and other parts of the curative and preventive health systems including existing and planned construction, equipment and staffing programs. The review group will include the evaluation components of DEIDS, APHA, the subcontractor, AID, the GOE health, finance and planning authorities and may, as the parties agree, include others with an interest in project experience. The GOE also agrees to publish data and experience so that other parties interested in developing health delivery systems will benefit from the experience gained.

5. Individually the respective parties to the Agreement will provide the following:

I. APHA (U.S.)

A. U.S. Personnel in Ecuador

1. Chief of party with an M.D. degree and with experience in management of public health programs, a Public Health Nurse - Midwife and an Evaluation and Training Officer. All are to be fluent in the Spanish language. APHA will nominate individuals selected for these positions, and the GOE will accept their nominations before the personnel travel to Ecuador in this assignment.

B. U.S. Backstopping Personnel at UCLA

1. Academic

A project coordinator and a deputy project coordinator and a health records specialist (full-time).

2. Non-Academic

An administrative assistant, secretary-stenographer, editing and report writing officer, statistical clerk, fiscal officer, and expediter-personnel officer (full-time).

C. U.S. Consultants

Up to 12 man-months a year, to provide varying inputs as required including consultation on MCH/Nutrition, Population/Family Planning, Survey Research, Health Education and Training, Data Processing/Computer Technology and Health Records Systems.

D. U.S. Funding for Ecuadorean Personnel

1. An incentive topping up of the GOE salary paid the Project Coordinator to guarantee his full time to this activity. This will not exceed \$4,000 per year.

2. Salaries of the following personnel from U.S. purchased sucre in consideration of their proposed contribution to the innovative and demonstration features of the project. Their primary concerns will be with administration, data gathering, interpretation and analysis, experimentation, evaluation, training and demonstration.

- a. Accountant (1)
- b. Bilingual secretaries (2)
- c. Driver (1)
- d. Field professors (School of Nursing) (4)
- e. Sociologist (1)
- f. Community Development Workers (4)

- g. Evaluation Officer (1)
- h. Field Workers (16)
- i. Statistical Clerk (1)

3. Consultant services will be purchased in Ecuador to the extent possible to allow broad local institutional involvement in the project activity.

E. Commodities

1. Office equipment for the Project Officer in Cuenca, for the Provincial Health Office (limited to \$1,000), and for program materials needed in the U.S. and in Ecuador to support the project. The Provincial Health Office is manned by Ecuadorean personnel including those designated by the GOE to work full-time on the DEIDS project.

2. Five vehicles and four horses to be used by APHA supported personnel for the duration of this project.

3. Classroom equipment and materials.

4. Field quarters equipment for training teams.

5. Supplemental equipment and medicine for the health sub-centers and community health posts during the beginning phases of the programs.

6. Health Education and Family Planning materials.

7. Certain other direct and indirect expenses including:

- a. Services and expendables related to training,
- b. Travel by APHA project staff and consultants
- c. Computer rental and conferences.

II. The Government of Ecuador

The Government of Ecuador will contribute \$233,700 for the first year of the DEIDS project and further agrees that the contribution of the GOE will be at least 25% of the annual cost of the project. These contributions do not include the ordinary health expenditures budgeted for Canar Province or personnel costs of individuals who have less than full-time responsibility for the DEIDS project. The financial contribution of the Government will be for the following purposes:

A. Salaries for the Project Coordinator who is to be an M.D. with experience in the management of Public Health programs, and seven other academic and non-academic personnel.

B. Training facilities for hospitals and health centers, and facilities for convening conferences.

C. Salaries for Community Health workers including existing volunteer health promoters who are to be integrated into the system.

D. Office facilities, telephone installation, and commodities in Project Office and Provincial Health Office in Cuenca.

E. Construction costs of new centers as deemed necessary in support of the project.

The Ministry of Public Health agrees to reorganize the Public Health and health center system of Canar Province to expedite DEIDS implementation, to maintain and operate the system in accordance with existing plans so that expenditures remain within the ability of the government to support, and to retrain existing personnel.

The Ministry of Public Health agrees to convene meetings at which activities, progress, and problems of DEIDS will be discussed. These meetings will have in attendance MOH personnel from other provinces and regions, Ecuadoreans outside the Ministry of Health, and representatives of neighboring countries as deemed appropriate, as well as U.S. staff involved in DEIDS.

The Ministry of Public Health will undertake responsibility for delivery to the Project of all family planning and other supplies required by the Project whether these supplies are financed from GOE budgetary resources or by AID or other donors.

The Government of Ecuador has concluded arrangements for U.S. Peace Corps participation in the training elements of the DEIDS project.