

5040066-2

PD-AAF-447-61

192 p.

ACTION MEMORANDUM FOR THE ASSISTANT ADMINISTRATOR (LAC)

FROM: LAC/DR, Marshall D. Brown

DATE: JUN 19 1979

Problem: Authorization of the Guyana Rural Health Systems Project
(\$2.9 million loan and \$1.8 million grant)

5/1/79

Discussion: The project proposes to improve and expand primary health care services in rural Guyana by developing a nationwide rural health care delivery system based on the use of paraprofessional health workers outside the hospital setting. This project expands on a pilot program supported by the International Development Research Council (IDRC) of Canada and an IDB program emphasizing hospital improvement and the construction and equipping of health posts and stations. Key to this program is: (1) a midlevel para-medical worker called a Medex who is trained to provide promotive, preventive and curative health services at the local health posts and stations; and (2) community health workers (CHW) who are trained in preventive services and are supervised by the Medex but are selected by and live in rural communities.

The project will finance: (1) training and equipping of the Medex and CHW worker; (2) construction of rural housing for the Medex workers and water and sanitation facilities for selected health facilities; (3) a radio communication system to link health stations with district hospitals; (4) vehicles and boats; and (5) technical assistance and long-term training.

The total cost of the project is \$7.713 million, of which \$2.9 million will be financed by an A.I.D. loan and \$1.8 million by an A.I.D. grant. The host country contribution of \$3.013 million is 39% of the total cost, and thus exceeds the requirement of Section 110(A) of the FAA. A.I.D. loan funds will finance construction (\$1.143 million), commodities (\$1.108 million), local contract services (\$180,000), in-country training and associated costs (\$205,000) and contingencies (\$264,000). The A.I.D. grant will finance long and short-term technical advisors and participant training abroad.

The DAEC reviewed and approved the proposed project on May 31, 1979. The following modifications in the PP were made as a result of the review:

1. Inclusion of an Action Plan to develop baseline health data for rural Guyana thus providing service indicators and health status indicators to be used for evaluation of the program's impact over time.
2. Indication of sources of financing available to local communities which desire to replicate water systems/latrine demonstration projects.

3. Clarification of resources available (a) under a centrally funded DSB project for materials and guides supplied to health workers, and (b) through University of Hawaii for assistance in supply management.

4. Phasing of local salary costs so that the GOG will pick up all these costs by the end of the project.

The project appears on Page 709 of the FY 79 CP at a level of \$2.6 million loan and \$300,000 grant. Therefore, a Congressional Notification was forwarded to Congress on June 5, 1979. The waiting period expires June 19, 1979. The Initial Environmental Examination recommending a negative determination was approved by the AA/LAC.

Recommendation: That you sign the attached Project Authorization and Request for Allotment of Funds (PAF) for the Guyana Rural Health Systems project.

DEPARTMENT OF STATE
AGENCY FOR INTERNATIONAL DEVELOPMENT
WASHINGTON, D. C. 20523

**ASSISTANT
ADMINISTRATOR**

504-V-016
(AID/LAC/P-017)

PROJECT AUTHORIZATION AND REQUEST FOR ALLOTMENT OF FUNDS

Name of Country: Guyana
Name of Project: Rural Health Systems
Project Number: 504-0066

Pursuant to Part I, Chapter 1, Section 103 of the Foreign Assistance Act of 1961, as amended, I hereby authorize a Loan and a Grant to the Government of Guyana (the "Cooperating Country") of not to exceed Four Million Seven Hundred Thousand United States Dollars (\$4,700,000) (the "Authorized Amount") to help in financing certain foreign exchange and local currency costs of goods and services required for the project described in the immediately following sentence. The project consists of a program to expand and improve primary health care services for the rural population of Guyana (the "Project"). The Project will assist the Cooperating Country with the development of a functioning nationwide rural primary health care delivery system, training community health workers and medex, and utilizing them in an interlocking, tiered supervisory and referral structure. The Project will also provide certain facilities, improvements and transportation and communications equipment to improve the effectiveness of the trained medex and community health workers. Of the Authorized Amount, Two Million Nine Hundred Thousand Dollars ("Loan") will be loaned to the Cooperating Country to assist in financing certain foreign exchange and local currency costs of goods and services required for the Project. The entire Authorized Amount will be obligated when the Project Agreement is executed.

I hereby authorize the initiation of negotiation and execution of the Project Agreement by the officer to whom such authority has been delegated in accordance with AID regulations and Delegations of Authority, subject to the following essential terms and covenants and major conditions, together with such other terms and conditions as AID may deem appropriate:

A. Interest Rate and Terms of Repayment

The Cooperating Country shall repay the Loan to AID in United States Dollars within twenty-five (25)

years from the date of first disbursement of the Loan, including a grace period of not to exceed ten (10) years. The Cooperating Country shall pay to AID in United States Dollars interest from the date of the first disbursement of the Loan at the rate of (i) two percent (2%) per annum during the first ten (10) years, and (ii) three percent (3%) per annum thereafter, on the outstanding disbursed balance of the Loan and on any due and unpaid interest accrued thereon.

B. Source and Origin of Goods and Services (Loan)

Except for ocean shipping, goods and services financed by AID under the Loan shall have their source and origin in Guyana or in countries which are included in AID Geographic Code 941, except as AID may otherwise agree in writing. Ocean shipping financed under the Loan shall be procured in the United States or in Guyana, except as AID may otherwise agree in writing.

C. Source and Origin of Goods and Services (Grant)

Goods and services financed by AID under the Grant shall have their source and origin in the United States, except as AID may otherwise agree in writing.

D. Conditions Precedent to Initial Disbursement

Prior to any disbursement, or to the issuance of any commitment documents under the Project Agreement, the Cooperating Country shall, except as AID may otherwise agree in writing, furnish to AID, in form and substance satisfactory to AID:

- (1) A time-phased implementation plan for carrying out the Project;
- (2) Evidence that a Primary Health Care Coordinating Council has been established, comprised of representatives of the Cooperating Country responsible for implementing primary health care programs; and
- (3) Evidence that the Ministry of Health of the Cooperating Country has designated a manager for the Project.

E. Conditions Precedent to Disbursement for Construction (Loan)

Prior to any disbursement under the Loan, or to the issuance of any commitment documents under the Project

Agreement pursuant to which disbursement of the Loan will be made, for construction, the Cooperating Country shall, except as AID may otherwise agree in writing, furnish to AID, in form and substance satisfactory to AID:

(1) Plans and specifications, bid documents, cost estimates and time schedules for carrying out such construction;

(2) Executed contract(s) for construction activities with a firm(s) acceptable to AID; and

(3) Evidence that title to the selected site(s) is in the name of the Cooperating Country, and confirmation that medex will be deployed to such facility (or facilities).

F. Condition Precedent to Disbursement for Equipment and Materials

Prior to any disbursement, or to the issuance of any commitment documents under the Project Agreement, to finance the procurement of equipment and materials, the Cooperating Country shall, except as AID may otherwise agree in writing, furnish to AID, in form and substance satisfactory to AID, a list of the equipment and materials for which disbursement is requested.

G. Condition Precedent to Disbursement for Engineering and Other Technical Services

Prior to any disbursement, or to the issuance of any commitment documents under the Project Agreement, to finance engineering and other technical assistance, the Cooperating Country shall, except as AID may otherwise agree in writing, furnish to AID, in form and substance satisfactory to AID, an executed contract for such services with a firm acceptable to AID.

H. Covenants

Except as AID may otherwise agree in writing, the Cooperating Country shall covenant and agree to:

(1) adequately plan and budget for maintenance of facilities constructed under the Project; and

(2) furnish to AID, on an annual basis, evidence satisfactory in form and substance to AID that adequate resources have been allocated to provide the required counterpart funding for the Project.

Edward G. ...
Assistant Administrator
Bureau for Latin America
and the Caribbean

June 19, 1979
Date

Clearances:

GC/LAC, J. Kessler	<u>JK/276</u>	date	<u>6/13</u>
LAC/CAR, M. Withers	<u>W</u>	date	<u>6-17</u>
LAC/DR, L. Armstrong	<u>L</u>	date	<u>6-12</u>
LAC/DR, H. Bassford	<u>H</u>	date	<u> </u>
LAC/DR, M. Brown	<u> </u>	date	<u> </u>

GC/LAC:GMW/ter:ec:6/5/79:x29182

UNCLASSIFIED

DEPARTMENT OF STATE
AGENCY FOR INTERNATIONAL DEVELOPMENT
Washington, D.C. 20523

GUYANA

PROJECT PAPER

RURAL HEALTH SYSTEMS

AID/LAC/P-017

Project Number: 504-0066

UNCLASSIFIED

AGENCY FOR INTERNATIONAL DEVELOPMENT PROJECT PAPER FACESHEET	1. TRANSACTION CODE <input type="checkbox"/> A ADD <input checked="" type="checkbox"/> B CHANGE <input type="checkbox"/> C DELETE	PP 2. DOCUMENT CODE 3
--	--	--

3. COUNTRY/ENTITY Guyana	4. DOCUMENT REVISION NUMBER <input type="checkbox"/>
------------------------------------	---

5. PROJECT NUMBER (7 digits) <input type="text" value="504-0066"/>	6. BUREAU/OFFICE A. SYMBOL LAC B. CODE <input type="text" value="05"/>	7. PROJECT TITLE (Maximum 40 characters) <input type="text" value="Rural Health Systems"/>
---	---	---

8. ESTIMATED FY OF PROJECT COMPLETION FY <input type="text" value="8"/> <input type="text" value="3"/>	9. ESTIMATED DATE OF OBLIGATION A. INITIAL FY <input type="text" value="79"/> B. QUARTER <input type="text" value="3"/> C. FINAL FY <input type="text" value="79"/> (Enter 1, 2, 3 or 4)
---	--

A. FUNDING SOURCE	FIRST FY 79			LIFE OF PROJECT		
	B. FX	C. L/C	D. TOTAL	E. FX	F. L/C	G. TOTAL
AID APPROPRIATED TOTAL			4,700			4,700
IGRANT:	1,800	-	1,800	1,800		1,800
ILOAN:	1,170	1,730	2,900	1,170	1,730	2,900
OTHER U.S. 1.						
OTHER U.S. 2.						
HOST COUNTRY	-	3,013	3,013	-	3,013	3,013
OTHER DONOR(S)						
TOTALS	2,970	4,743	7,713	2,970	4,743	7,713

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	PRIMARY TECH. CODE		E. 1ST FY 79		H. 2ND FY		K. 3RD FY	
		C. GRANT	D. LOAN	F. GRANT	G. LOAN	I. GRANT	J. LOAN	L. GRANT	M. LOAN
(1) H	530	510	510	1,800	2,900				
(2)									
(3)									
(4)									
TOTALS									

A. APPROPRIATION	N. 4TH FY		O. 5TH FY		LIFE OF PROJECT		12. IN-DEPTH EVALUATION SCHEDULED
	Q. GRANT	P. LOAN	R. GRANT	S. LOAN	T. GRANT	U. LOAN	
(1)					1,800	2,900	MM YY <input type="text" value="01"/> <input type="text" value="81"/>
(2)							
(3)							
(4)							
TOTALS					1,800	2,900	

13. DATA CHANGE INDICATOR. WERE CHANGES MADE IN THE PID FACESHEET DATA, BLOCKS 12, 13, 14, OR 15 OR IN PRP FACESHEET DATA, BLOCK 12? IF YES, ATTACH CHANGED PID FACESHEET.

2 1 = NO
 1 2 = YES

14. ORIGINATING OFFICE CLEARANCE SIGNATURE TITLE Director, USAID/Guyana	15. DATE DOCUMENT RECEIVED IN AID/W. OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION DATE SIGNED MM DD YY <input type="text" value="05"/> <input type="text" value="11"/> <input type="text" value="79"/>
---	---

PROJECT PAPER
RURAL HEALTH SYSTEMS (RHS) PROJECT
(504-0066)

TABLE OF CONTENTS

	<u>PAGE</u>
Glossary of terms	i
PART I. Summary and Recommendations	1
A. Recommendations	1
B. Borrower/Grantee	1
C. Summary Project Description	1
D. Issues	2
PART II. Background and Description	5
A. Background	5
B. Detailed Project Description	6
1. Expanded Rural Primary Health Care Systems	6
2. Training Systems	13
3. Management Support Systems	22
4. Project Inputs	27
5. Project Outputs	32
PART III. Project Analysis	35
A. Technical	35
B. Engineering	36
C. Environmental	36
D. Population Impact	36
E. Social	37
F. Economic	39
G. Administrative	40
PART IV. Financial Analysis and Plan	43
PART V. Implementation Plan	45
A. Schedule of Major Events	45
B. Procurement and Disbursement Procedures	45
C. Contracting Responsibility	50
D. USAID Monitoring Requirements	50

	<u>PAGE</u>
PART VI. Evaluation Plan	51
PART VII. Conditions and Covenants	52
ANNEXES	
A. PID Approval Cable	
B. Government Loan Application	
C. Draft Project Authorization and Request for Allotment of Funds	
D. Logical Framework	
E. Detailed Project Background	
F. Inter-face relationships between AID and IDB projects	
G. Medex deployment and Support Plan	
H. Detailed Project Analyses	
1. Technical	
2. Engineering	
3. Environmental - IEE	
4. Social Analysis*	
5. Economic	
6. Administrative	
I. Community Development Aspects	
J. Technical Assistance Plan	
K. Section 611 (e) Certification	
L. Statutory Checklist	
M. Project Committee and Development Team	

* Available in LAC/DR and LAC/CAR (Guyana Desk)

GLOSSARY OF TERMS

The following terms are frequently used in this paper. Definitions given are project-specific.

Primary Health Care Services: Services provided at the individual's and community's first point of contact with the health system. These may be basic health care services provided by CHWs, or more sophisticated curative, preventive or promotive services provided by medex or doctors. These services also include health-related vertical program activities such as communicable disease case finding, development of safe water supplies, child spacing, malaria control, food preparation and preservation, and others.

Basic Health Care Services: Those primary health care services directed toward sustaining life and preventing premature death (e.g., first aid, treatment of fever and dysentery, oral rehydration, etc). These tasks, usually performed by CHWs and medex, also include specified preventive (e.g., BCG and tetanus immunizations) and promotive (e.g., nutrition education) activities.

MEDEX: An approach for designing improved and expanded health service coverage. The word is derived from the French and Spanish words for extension of the doctor (une extension du Medecin, un extension del medico) and describes a systematic design approach that utilizes new health practitioners to expand medical/health service coverage.

Medex: A generic term used to describe the category of intermediate or mid-level doctor extenders. The terminology varies from country to country. Such workers are called medical assistants, mid-level health workers, physician assistants, nurse practitioners, medex, wechakorn, assistant medical officers, etc. The word "medex" was created as a nonpejorative term to aid in the creation of a new image for this group of health practitioners, avoiding terms such as "assistant" which connote an inferior position.

Senior Medex: An experienced medex who has been given supervisory responsibility for other medex. In this project senior medex are also utilized as tutors in the medex training unit.

Community Health Worker (CHW): The provider of basic health care services in locations most peripheral or isolated from hospitals and rural health centers. The community where they work is usually a rural village.

Interlock: The close relationship that develops between CHWs and medex when the educational component of supervision continues with the administrative component. The term is used in this paper in describing how the medex first trains and then supervises the same CHWs. It also refers to further ties between these levels relative to referrals and information flow.

Competency-based training: A problem-oriented educational effort, with curriculum related directly to job performance, and excluding irrelevant educational material. Successful completion is based on attainment of specific pre-determined competencies.

Module: A functional component of a competency-based curriculum.

Protocols: Diagnostic handbooks using a decision tree format that helps the health workers successively narrow and finally identify the cause of a condition closely enough to allow action in the form of treatment or referral (or both) and outlines preventive measures.

Facilities: Rural health centers/stations/posts and staff quarters.

PART I. PROJECT SUMMARY AND RECOMMENDATIONS

A. Recommendations:

The Project Development Team recommends the following:

1. Approval of the Project described herein for a total cost of U.S. \$4,700,000.
2. Approval of an AID grant of \$1,800,000.
3. Approval of an AID loan of U.S. \$2,900,000.
4. That source origin waivers be approved as discussed in Part 5B of this Project Paper. Loan terms: 25 years, 10 years grace period, 2% per annum during the grace period, 3% thereafter.

B. Borrower/Grantee:

The borrower/grantee will be the Government of Guyana. The implementing agency for the GOG will be the Ministry of Health (MOH). In the MOH the Chief Medical Officer will be responsible for executing the project.

C. Summary Project Description:

The sector goal of this project is to improve and expand primary health care services, achieving 80% coverage of Guyana's rural population. The thrust of the undertaking is the development of a nationwide rural health care delivery system, training Community Health Workers and Medex, and utilizing them in an interlocking, tiered, supervisory and referral structure.

Mid-level paramedical workers called Medex are trained to provide promotive, preventive and curative health services using problem-oriented, competency-based training modules. In addition, they are taught how to train more peripheral Community Health Workers (CHW's) with similar but less complex modules. Each Medex is to train four or more CHW's in or near the village where the latter will work. The Medex also helps the villages to organize support for their new health service providers. The CHW's will have some curative skills but his/her work will emphasize preventive services. This project will thus provide for extension of basic health services from hospitals and health stations to the villages through a system whereby the intermediate level Medex is linked to the village-based CHW through a training/supervisory interlock. Conversely, the villages are linked with the larger health system through the referral capabilities of CHW's and Medex. In addition, vertical programs

such as nutrition, child-spacing and environmental sanitation will have greater potential for success if they operate through a permanent, tiered manpower infrastructure which reaches peripherally to the village level.

Essential elements of this project are Medex and CHW training, and building a relevant management structure appropriate for each level of the health system. Although supervision is critical to a newly configured manpower infrastructure such as this, this project also actively pursues the development of communications, transportation, supply, information, facilities development and health services management systems as necessary underpinning for attaining an operable and productive rural health delivery system.

The upgrading of facilities where the new health workers will live and work utilizes a large part of the loan component for this project. This is to include housing for the Medex, elevated water tanks, and latrines, where necessary. In all instances, however, consideration is given to the need for a location from which these health auxiliaries will operate effectively, a need which is basic to the permanent deployment of personnel into Guyana's rural areas.

Site preparation and manpower training for those sites are supported by appropriate management at the various levels. They are blended in a way that will effectively improve and expand the availability and accessibility of primary health services in the country.

D. Issues:

Throughout the development of this project, issues have been raised which relate to implementation, administration and consequences of the program. Included among these issues are the following:

1. What was the basis for selecting 72 Medex and 200 CHW's as the numbers of new health service providers to be trained?

--- The figures for Medex are derived from a ratio considered appropriate in Guyana, 1 per 5,000 to 10,000 population. It is also projected that Guyana will need one CHW for every 1,000 to 1,500 population but only 200 are to be trained under this project due mainly to uncertainties relating to speed and extent to which the various rural communities will participate, the CHW selection process, and method of remuneration. Insights

gained from the Dutch-assisted pilot CHW project now underway together with lessons learned with the 200 in this project will be utilized in considering future formalization of the CHW program and training of the full complement of CHWs required.

2. How will supervisory and logistical support of Medex and CHW's operate?

--- The tiered, interlocking system is described in both the Project Description and the Technical Analysis. Emphasis is being given to management training and support for all levels of the proposed system. The latter will facilitate the centripetal referral of patients and information as well as centrifugal referral of information, technical assistance and supplies.

3. What percent of Medex and CHW time will be spent on curative and preventive services?

--- Fifty percent of the Medex's time will be spent in clinical primary care (which includes promotive and preventive), 10% will be in management, and 40% will be in community health services (including supervising CHW's). The CHW's time will approximate 10% in curative and 90% in promotive and preventive.

4. What assurance is there that the Medex personnel will not be absorbed into the existing hospital system to replace emigrating physicians?

--- The MOH has stated that such a situation will not occur. The system is being set up to meet rural needs and programs selection, training, employment and deployment to fit rural needs only.

5. How can the recurrent costs for Medex and CHW's be borne by the GOG?

--- Medex are selected from a pool of people already occupying funded positions; thus; there is only a slight increase in funds needed for this category. The CHW's will be supported locally at the village level. This category and the feasibility of self-sufficiency is discussed under Institutionalization of Medex/Community Health Workers found in Annex R-6 (Administrative Analysis).

6. What provisions are being made to address the problem of rural water supply?

--- Exemplary safe water supplies for 200 villages are discussed in the Project Description.

7. What child-spacing capabilities are built into the roles of Medex and CHW's?

--- Child-spacing skills are learned with the modular training system. Special modules for this are used to train Medex, regular CHW's and CHW's who have been traditional birth attendants. (See Project Description). This permanent man-power infrastructure providing integrated services will provide child-spacing services over a larger area and longer time than most vertical programs in this field.

8. Is concern being given to the social structure within the country as well as the role of women in the Project?

--- This has been a priority concern and one that the Medex Demonstration Staff has handled well and with sensitivity. Project sensitivity to these issues is described in the Social and Administrative Analyses.

9. Has consideration been given to indigenous medicine?

--- Yes. Some thoughts on this subject appear in the Project Description.

10. What plans have been made to deal with potential role conflicts between Medex and Nurses?

--- As in each Medex-type program, this conflict arises. As in each preceding case, the problem subsides as the two groups learn to function as a team. The selection of Medex trainees from the nursing pool, Medex undergoing special training with Public Health Nurses and having the Principal Nursing Officer serve as a counterpart to one of this Project's long term advisors are steps taken to minimize this problem as it arises. (See Administrative Analysis).

PART II.

BACKGROUND AND DESCRIPTION

A. Background:

1. Summary Statistical Data:

a. Total Population (thousands, 1977)	826
b. Rural population	68%
c. Land area (Km ²)	214,968
d. Population per Km ²	3.8
e. No. villages (1978)	1,113
f. No. households	129,722
g. Crude birth rate per 1000 (1978)	27
h. Crude death rate per 1000 (1978)	6.9
i. Population growth rate (avge. annual % 1967-76)	2.0
j. Infant mortality rate per 1000 live births (1975)	38
k. Life expectancy at birth (1971)	
Male (years)	62.6
Female "	67.2
l. Physicians per 10,000 population (1977)	1.3
m. Hospital beds per 1000 pop. (General admission, 1977)	2.8
n. School enrollment rate % (1973)	63
o. Literacy rate % (1977)	87
p. Per capita GDP (US\$, 1977)	560

2. Background Summary:

Approximately 2/3 of Guyana's population of 826,000 is rural. Despite efforts by the GOG to provide every citizen with primary health care, these services remain significantly deficient in rural areas. In 1976, the Ministry of Health sought and received start-up assistance to lay the groundwork for a nation-wide primary health care system based on the MEDEX (doctor extender) approach. This assistance was provided by a collaborative effort involving the International Development Research Center of Ottawa (IDRC) and the Health Manpower Development Staff of the University of Hawaii (HMDS). This resulted in the establishment in Guyana of a new professional category, an intermediate level health worker called "Medex". Training began in 1977 and 65 Medex will have completed the course by the end of 1979.

The GOG's long-range strategy for provision of primary health care at the periphery also calls for a village-level worker, known as the Community Health Worker (CHW). Experience with this level worker thus far has been limited to a dozen "Medical Rangers" providing first aid, treatment of

common ailments and preventive/promotive services to Amerindians in hinterland areas. Pursuing its plan to enlarge this cadre of workers, the GOG has entered into a small pilot project, assisted by the Netherlands Government, for training and deployment of 30 CHWs, beginning in April 1979.

These initiatives are being complemented by a project developed in 1978 with the Interamerican Development Bank (IDB) providing \$9.2 million in loan and grant funds, mainly focused on construction/upgrading of district and regional hospitals. Construction and equipment of a small number of rural health posts and health stations are also included. Technical, consulting and training activities are being provided to assist the MOH in strengthening its central and regional organization and management infrastructure support systems.

While health conditions in Guyana are better than in many other areas of Central and South America, an inadequate reporting information system probably understates the poor health status of much of the Guyanese population, particularly the rural populations. Preventable communicable diseases account for almost one of every five deaths. One of every four deaths is an infant or child under five years of age. The great majority of the deaths (and morbidity as well) are preventable with only simple preventive and curative interventions. Among the major causes of morbidity and mortality are gastroenteritis, hepatitis, malaria, influenza, typhoid, measles, and sexually transmitted diseases.

Interacting synergistically with the infectious, parasitic, and chronic diseases indicated above are nutritional deficiencies prevalent particularly among infants and young children. The joint PAHO/FAO food and nutrition survey conducted in the early 1970s indicated that 61% of all children under age 5 suffered from some degree of malnutrition. This problem was even greater in rural areas where 22% of children under age five were moderately or severely malnourished.

Coupled with these health conditions are severe manpower constraints in all areas of health service delivery. In addition, an inefficient managerial capacity within the MOH characterized by an inadequate information system, a lack of permanent planning capability, and a resource allocation pattern that has historically been biased toward hospital based services, have all contributed to the problematic nature of health service delivery in Guyana.

By developing a nationwide rural health system (with a built-in information collection system) that will address many of the more serious health and nutrition problems facing the rural Guyanese population, it is expected that significant improvements in health and nutritional status can be achieved. (See evaluation plan and information system description.)

Annexes E and F provide more detailed background information. Also referenced is the excellent and recent report "A Preliminary Assessment of the Health/Nutrition Sector in Guyana, May 1978". Copies of this report are available at USAID/Georgetown and LAC/DR, AID/W.

B. Detailed Project Description

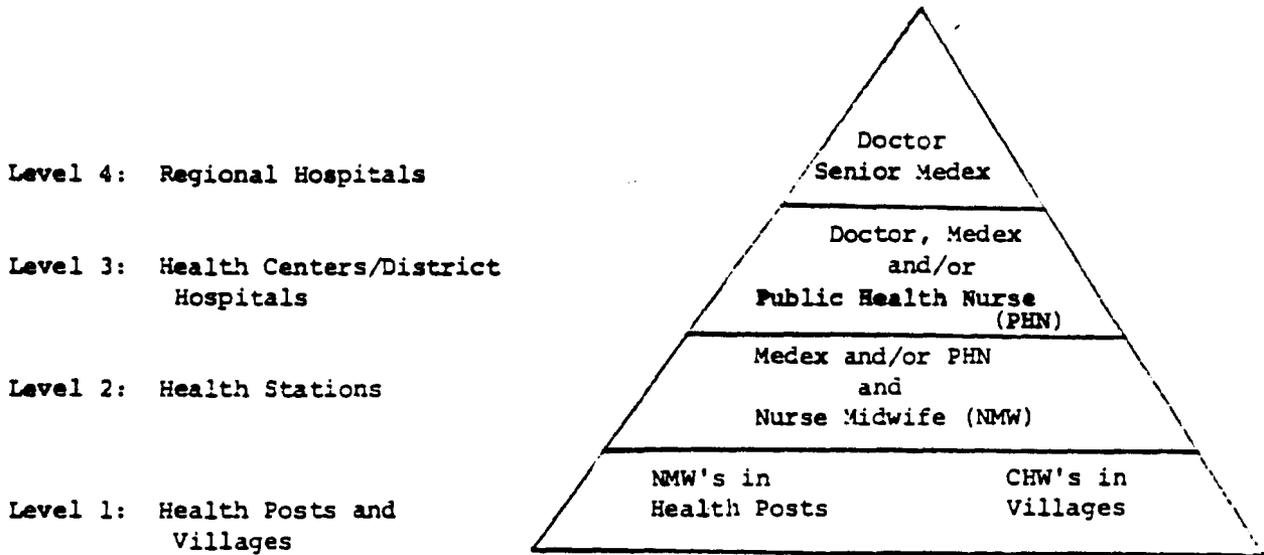
The major objective of this project is to improve and expand health care services; to achieve 80% coverage of the rural population with primary health care services. To accomplish this, the project assists with development of a functioning nation-wide rural primary health care delivery system, training Community Health Workers and Medex, and utilizing them in an interlocking, tiered supervisory and referral structure.

1. Expanded Rural Primary Health Care Systems

The GOG's expanded system for delivery of rural PHC services is to consist of five organizational levels, linking the central MOH, including the national referral hospital, with villages in the most isolated areas of the country:

- Level 1: Villages/Health Posts
- 2: Health Stations
- 3: Health Centers/District Hospitals
- 4: Regional Hospitals
- 5: Central MOH and National Hospital

The proposed personnel and facility configuration for the system is:



The Villages

The village councils and captains have responsibilities and interests regarding local development based on self-help concepts and objectives. Villages will be asked to support a CHW financially or in-kind, and those deciding to support a CHW will receive primary health care services offered by the CHW which are described below. In addition, each of these villages will receive appropriate technology support for improvement of its drinking water as an exemplary project. The CHW will be given the necessary materials not locally available to build or upgrade a latrine as another exemplary project to stimulate further development at the village level. (Community development aspects of CHW selection and support are discussed in Annex I.)

The Health Post is a facility being developed for a midwife working with a clinic assistant. This facility will be used for pre-natal, post-natal and delivery services including health and nutrition education. Community Health Workers may work out of this facility if one is present in the village.

The Health Station is the facility being developed for a Medex and/or Public Health Nurse and a Midwife. Broad primary health care services will be offered from this unit including those offered at the Health Post, plus child care, general clinics, training and supervision of CHW's and environmental sanitation.

The Health Center is a facility which, in addition to the services and staff present at a Health Station, will have a primary health care doctor and a Public Health Inspector.

The District Hospital: in addition to the services and staffing present at a Health Center, this facility will have 10-20 beds staffed by one or two doctors, staff nurses and support staff. Functions include obstetric services and surgery.

In most cases, higher level facilities will include lower level functions and services including the staff and the geographic and population coverage responsibilities of lower level units as well as their own.

While the District and regional levels are contributive to the support of the PHC System, they will not be addressed in this design except in reference to patient referral, and the administrative/management infrastructure for support of the PHC system.

Because of the geographic variability in the country, facility and personnel arrangements will vary considerably. The ratio of District Hospitals to Health Stations is expected to be about 1 to 4 and Health Stations to Health Posts about 1 to 3. It is estimated that each rural site with a deployed Medex will have on the average 2 villages with functioning CHW's. In future years this is expected to increase to 4.

Rural peoples and their communities are active participants as well as recipients of primary health care services. Their active involvement in the acceptance and modification of appropriate interventions offered by the health care system eventually allows for improvements in well-being. The rural community, if allowed, is able to contribute to the training/teaching component within this health system enabling the system to be more responsive to rural needs. The mechanism by which this can be accomplished is through the support and development of the Community Health Worker.

The Role of the Community Health Worker

This worker, selected by the community for the community is, first and foremost, a social link or boundary spanner between the rural community and the formal MOH health care system. This primary role takes precedence over any health development tasks he/she may be assigned. In fact, if the worker becomes more aligned with the formal health system than the community, a replacement may be necessary.

The CHW health related tasks must be tailored to effectively meet specific needs at low cost. These often include a mixture of tasks involving specific health education such as encouragement of breast feeding of infants to the fourth month and of personal hygiene; some treatment-related tasks such as oral rehydration for diarrhea/dehydration, soaking of infected skin lesions, treatment of scabies, and specific

CHW Interventions

Causes of Fetal and Child Mortality*

Causes	Percent	Frequency N = 84	CHW tasks addressing causes of child mortality:
Miscarriage	31.0	26	Folic acid for pregnant women
Still-births	17.9	15	TBA training and referral
Gastro-enteritis	10.7	9	Oral rehydration, hygiene and sanitation
Prematurity	4.8	4	Folic acid for pregnant women
Pneumonia	4.8	4	Early rererral or Rx with PCN tablets
Suffocation	1.2	1	TBA training
Leukemia	1.2	1	
Malnutrition	1.2	1	Nutrition education
Drowning	1.2	1	Emergency and first-aid
Diphtheria	1.2	1	DPT immunization
Encephalitis	1.2	1	
Measles	1.2	1	
Brain Tumor	1.2	1	
Unknown	21.4	18	

* From Table 31 "The Prevalence and the Etiology of the Nutritional Diseases in Guyana" - a Cornell University Doctoral Thesis by Allan Alexander Johnson, May, 1978.

preventive tasks such as assisting in immunization campaigns, promotion of safe water supplies and use of latrines, as well as referral of illness to health facilities for emergency care.

Traditional Birth Attendants (TBA) already practicing in villages are taught methods to make their practices safer, such as hand washing before the delivery, boiling their traditional cord cutting implements before use, resuscitation of the depressed infant and early referral of high risk pregnancies.

Under this project, the CHW and the TBA/CHW will be trained in their own villages and in the Health Station nearest their village by a Medex or Public Health Nurse. The same Medex or PHN will be involved in the CHW's supervision and continuing education, providing a training/supervision interlock. The training will of necessity be two-way, for the CHW will know his/her community organization, traditions and health related customs and will be able to share this with the Medex or PHN.

The tasks for the CHW are selected on the basis of community health needs, combined with the actual existence or non-existence of effective low-cost interventions. Skills suggested for the CHW and TBA will address the leading causes of infant and child mortality in Guyana (which is estimated to be significantly under-reported).

The Role of the Midwife

The Midwife is a graduate nurse also trained to handle normal deliveries and assist with pre-natal, post-natal care and some child care. She works under the supervision of the Public Health Nurse or Medex.

The Role of the Public Health Nurse

The Public Health Nurse has been trained in hospital nursing, midwifery and public health, and is usually posted in rural facilities on the coastal plain. Her activities traditionally include maternal and child health care and supervision of the midwife. Clinical problems are referred to Sicknurse Dispensers (now being retrained as Medex and phased out), Medex or Doctors. Environmental problems are referred to the Public Health Inspector. It is anticipated that the PHN will continue to be trained and posted largely along the coast.

The Role of Vertical Health Program Specialists

Vertical health programs that exist in the country include Vector Control (mosquitoes), Dental, Veterinary Public Health, and Public Health Inspectors (environmental sanitation). The field staff of these

programs will share facilities with the above staff and, with the expanded program, will integrate and coordinate functionally with health staff at all of the various levels of the overall health services delivery system.

The Role of the Medex

The middle-level primary health care worker now being trained in Guyana was developed from experiences with the doctor-extender model used in the U.S., Micronesia, Thailand and Pakistan as well as other countries. This worker is trained in promotive, preventive and curative tasks and is able to handle approximately 80% of the common conditions often seen by a primary care physician. In addition, this worker is trained in middle level leadership and management skills including health team functioning. In the expanded program, Medex will be assigned additional Health Station management responsibilities and become the trainer and supervisor of CHW's located in the villages. This will expand the Medex's community health role and balance the present significant clinical role with the necessary promotive, preventive, management and training tasks of a broadly oriented primary health worker.

The functional role of the Medex will evolve into a balance of 50% clinical (including promotive and preventive), 10% management and 40% community health work which will include the training and supervision of CHW's.

The Role of the Doctor

The Primary Health Care Doctor (Regional and District Medical Officers) will serve as technical supervisor of primary health care workers, (Senior Medex, Senior PHN, Medex, PHN's, NMW's and CHW's). He/she is the referral person for more difficult clinical and public health problems.

Supervision/Continuing Education

The supervision - continuing education interlock of the system described herein is critical to the maintenance of quality services. Supervision is based on encouragement, including on-the-job evaluation and training. Supervisors, while evaluating performance, also lend a hand to demonstrate correct performance of skills and evolve specific continuing education approaches during their supervisory visits. The key supervisory personnel of the rural delivery system for whom special short-term courses and continuing in-service training will be provided are:-

- a) Medex and PHN's who will be the technical supervisors of the CHW's they have trained, while village councils/committees maintain support and administrative supervision of the CHW.
- b) Sr. Medex and Sr. PHN's, after receiving additional special training in supervision, continuing education, planning and health services management, become the field supervisors for Medex and PHN's at the District and/or Regional levels.
- c) The Medical Officer of the Region is the overall supervisor and chief administrator of the PHC regional system. This responsibility implies special training/orientation prior to assignment.

Medex and CHW Deployment

Although it is estimated that Guyana needs a minimum of at least 200 Medex for full country coverage, rural facility and infrastructure development is lagging and will require considerably more lead time to develop than time required to train Medex. Therefore, this project calls for training 24 Medex per year for the three years of the Project. With Medex trained under the IDRC project, this would result in a total of 130-140 Medex in the country at the completion of this Project, less some attrition which may be expected to occur.

Of the above, three will serve as tutors of the Medex Training Unit, ten will be trained and deployed as Sr. Medex for service at the District level to provide supervision and continuing education; seven will be trained and deployed at the Regional level for administration/management and supervision; and two will be trained and deployed at the central MOH level for administration/management and supervision. Allowing for some attrition, this leaves about 100-110 available for normal assignment.

After village councils/committees select the persons to be trained as CHW's and accept responsibility for their financial support, approximately 200 CHW's will be trained at the village level during the Project period by Medex and selected PHN's working out of their Health Stations.

Special Exemplary Village Projects

As part of his training by the Medex, the CHW will be assisted in constructing a family sanitary latrine if one is lacking or should be improved. The technology will be based on self-help principles and will be appropriate to the local situation. The latrine is viewed as exemplary

in nature and seen as a general encouragement to the community and as a prestige-identified, health related improvement for the CHW's family. The Medex will take the major role in guiding CHW latrine projects, sharing skills with CHW's so that they can assist other families in the community. Minimal but catalytic aid will be given by this Project, e.g. a saw for cutting wood necessary for a squatting platform, a shovel, or bricks for lining the pit.

Partially as an incentive for participating in the CHW program and as an exemplary health project, a drinking water supply in at least half the villages supporting a CHW will be improved in conjunction with the Medex training of the CHW. This also will be based on self-help principles and may include as necessary, the provision of equipment and supplies for a covered pump well, parapeting an existing well, or providing a simple filtration process. These skills are taught to the Medex in the Environmental Health Module of their training. Additional resources are available to villages wishing to replicate exemplary water supplies and latrines. These include ongoing or planned projects of AID (Special Development activities), the Netherlands Government, and IDB. The Primary Health Care Coordinating Council will provide the coordination necessary to bring donors and villagers together. If these resources prove inadequate to meet village demand, additional project funding (either amendment or new loan project) may be sought.

2. Training Systems

A modularized competency-based methodology which allows a graduate to perform at specified standard levels for all tasks and duties determined necessary by the Government has been used for Guyana Medex. This competency based methodology will be used for all levels of health worker training in this Project.

a) Medex Training

1. Training Unit

The basic training of Medex has been underway since 1977, assisted by the International Development Research Council of Ottawa. A special unit created for this purpose by the Ministry of Health, will continue the training program under this project. Plans are underway, however, to institutionalize all health staff training currently carried on by the Ministry of Health, including Medex, in the University of Guyana. The existing Department of Health Sciences is to be upgraded into a full Faculty by September 1980. At that time the Medex Training Unit will be transferred to the New Faculty of Health Sciences and AID funding for this project element will be phased out. Phase out is projected to begin in year 3 as shown in the table on page 29. The GOG will pick up the costs of the Medex Training Unit at that time. No interruption of the training program planned herein is anticipated.

2. Curriculum

The training curriculum of Medex under the IDRC project was adapted from a 1976 generation of HMDS prototype modules and a list of clinical problems seen in Guyana's hospital out-patient departments. (See IDRC

Project, Annex E). In late 1978 the Medex training staff assessed problems seen by Medex deployed to rural areas and more realistic task analysis tables are being designed to integrate these rural needs with expanded community health, management and new CHW training/supervision roles of the Medex.

The most current edition of HMDS prototype Medex modules, as described below, will be available for curriculum adaptation/revision workshops early in this Project. This is funded under a central AID contract with the University of Hawaii and made available at no cost to the project.

In addition to the curriculum revision, a restructuring of the 15 month Medex training program will provide more appropriate training experience for Medex who are to be better prepared for rural work with CHWs.

It is anticipated that the modular training phase of 6-7 months will remain unchanged in length but that internal reorganization of this phase will include a reduction of laboratory training, and a reduction in some clinical tasks more appropriate to hospital based practices than rural needs. Community health will increase in emphasis, as well as management training. The 5 month hospital rotation phase will be strengthened with the availability of resources necessary to deploy trainees to rural health stations for preceptorships. Although CHW training methodology and community interaction skills will take 4-6 weeks, the length of training may be expected to remain at 15 months.

b) Community Health Worker Training

HMDS prototype interlocking competency-based training (CBT) modules used for the training of CHW's by Medex are designed to capitalize on the oral learning abilities of rural people. The training modules use discussion, demonstration and integrating role-play techniques. The 1979 edition of prototype CHW modules consists of the following:

<u>For General CHW's</u>	<u>For CHW's who are TBA's</u>
Diarrhea and Dehydration	Clean and Safe Normal Delivery
Nutrition	High Risk Pregnancy (including child spacing)
Hygiene	Diarrhea and Dehydration
Community Cooperation	Nutrition
Common Clinical Problems	Hygiene
Environmental Sanitation	Community Cooperation

Medex Prototype Training Modules (STEM)

1976 Edition

Core Skills

Anatomy and Physiology
Medical History
Physical examination
Statistics
Causes of Disease

General Disease

Common Skin Disease
Dental Module
EENT Module
Respiratory and Heart Problems
Gastro-intestinal Problems
Gastro-urinary Problems
Chronic Disease
Generalized Infection
Other Medical Conditions

Maternal and Child Health

Obstetrics and Reproduction
Problems
Child Care
Problems of Infants and Children
Pre-natal and Post-natal care

Community Health

Environmental Health
Community Family Planning
Community Nutrition

Trauma and Emergency

Trauma
Emergency

1979 Edition

Core Skills

Anatomy and Physiology
History and Physical
Basic statistics
Caustion of Disease

Clinical

Common Skin Disease
DEENT Module
Respiratory and Heart Problems
Gastro-intestinal Problems
Gastro-urinary Problems
Infectious Diseases
Other Medical Conditions
Trauma and Emergency
General Procedures

Training CHW's

Diarrhea and Dehydration
Nutrition
Hygiene
Community Cooperation
Common Clinical Problems
Environmental Sanitation

Maternal and Child Health

Problems of Women
Problems of Infants and
Children
Pre-natal and Post-natal care
Child care
Family Planning (child spacing
Obsterical Deliveries

Community Health

Environmental Sanitation
Community Family Planning
Nutrition

1979 Edition

Management

Organization and Managing
Health Services
Utilizing Management
Support Systems
Evaluating and Planning
Work
Supervising Health Team
Members

Training CHW (TBAs)

Clean and Safe Normal
Deliveries
High Risk Pregnancy
(including child spacing)
Diarrhea and Dehydration
Hygiene
Community Cooperation
Nutrition

Basic task analyses and adaptation of-the prototype CHW modules' are done by a committee of Medex, Medex tutors and experienced PHN's. This results in a Guyana-specific national basic training of CHW's while encouraging regional and district variation of tasks. This will occur at the village level following deployment of Medex to their rural Health Stations. The methodology of training CHW's is taught to Medex during their 15 month course by using CBT techniques, and adapted modules based on the basic standard task list. CHW training modules are also made available under a centrally funded AID contract. This project will finance its cost of adapting these modules to local use as well as production of other training materials.

Once the Medex is deployed to a rural post, community selection of the CHW begins. Not all communities can be expected to participate in this program initially, though all will be encouraged to do so. Selection of CHW's will be done by the communities themselves assisted by simple criteria such as:

- a respected community member known for having an interest in community development.
- primary education, but this will not be required for granny midwives.
- preferably middle-aged.

These criteria will help the community select a person who can function as a mature social link to the community and one who is likely to remain with the community.

Once the CHW's are selected, training by the Medex begins. The CHW is trained as close to his/her home as possible in order that family and community life remains undisrupted and the training remains appropriate to local needs and conditions.

Half of the training of CHW's may occur at the Health Stations, and half in the CHW's communities. However, allowance for regional variability will include considering areas where villages are several hours or days from Health Stations. On the following page are provided some examples of optional training schedules.

The Medex will begin CHW training using the adapted materials and basic task list agreed upon initially and later expand to other tasks determined by the communities, CHW's and regional supervisors. They will use the same adult informal education methodologies.

Training and supervision will be intimately interrelated with continuing education so the time of training a CHW will, in fact, be continuous and on-going, and always related to the learning/teaching abilities of these workers as well as the time available in these rural seasonally dependent

ALTERNATIVE SCHEDULES FOR CHW TRAINING BY MEDEX

		First Week	Second Week	Third Week	Fourth Week	Fifth Week
<div style="border: 1px solid black; padding: 2px;">1/2 day every day</div>	AM					
	PM	CHW TRAINING Comm. Cooperation	Diarrhea/Dehydration Oral rehydration	Nutrition	Hygiene	Common Clinical Problems
<div style="border: 1px solid black; padding: 2px;">1 day a week</div>	AM	Mx. CHW Clinic Train. and Comm.	Comm.	Comm. Coop.	Diar.	Diar.
	PM	Management Coop. Duties	Coop.	Diar.	Diar.	Diar.
<div style="border: 1px solid black; padding: 2px;">DAILY</div>	AM	Mon.Tue.Wed.Thu.Fri. CHW TRAINING Comm.	Mon.Tue.Wed.Thu.Fri. Nutrition	Mon.Tue.Wed.Thu.Fri. Common Clinical	Mon.Tue.Wed.Thu.Fri. Env.	Mon.Tue.Wed.Thu.Fri.
	PM	Cooperation Diarrhea	Hygiene	PROBLEMS	SANITATION	

Mx handles only emergencies in this model

communities. For example, the basic task training may be completed in 4 weeks to 6 weeks if half days are committed to it, longer if one day a week, and shorter if full time.

The training/supervisory interlock between Medex and CHW encourages the cooperative team spirit required in rural work, ensures the on-the-job continuing education necessary to prevent decay of skills, encourages cultural adaptation of tasks and enables the addition of appropriate new tasks when indicated.

Training of CHW's under this project is planned to begin in project month 16. By this time, the Netherlands-assisted pilot study will have been completed with 3 batches of 10 CHW's each trained and deployed in 3 different parts of the country. It is anticipated that the experience gained with these initial CHW's will be of value in finalizing the larger CHW training component planned in this project.

A behavioral scientist is being added to the local project staff to assist with the teaching of community interaction skills as well as utilizing the results of the pilot CHW study in finalizing methodology to be used in this project for selection, deployment and support of the 200 CHW's.

c) Medex Tutor Training Workshop

A workshop for Medex Tutors will be held in conjunction with the curriculum adaptation and revision workshop in order to familiarize tutors with newer approaches in competency-based training methodology and materials. This will allow tutors to assess their present methods against truly competency-based training approaches. (The tendency to slip back to standard lecture approaches is a recognized failure of all training programs; continued reassessment of this is necessary.) Any built-in disincentives to competency-based methodologies should be addressed, such as financial incentives for lectures but not for assistance in self-instructional approaches. In addition, this tutor training workshop will include training in informal adult education methodologies based on oral skills. Cultural sensitivity to local health practices, traditional health practitioners, community structures and organization will also be addressed.

d) Medex - Additional Training for Training

In order to prepare all Medex with skills necessary for the training of CHW's, special training will be given to previously trained and deployed Medex and selected PHN's. This 4-6 weeks of training will use the adapted CHW training modules to teach CHW curriculum and the methodology of

informal adult education. The basic task list will be used for this training. Since there will be approximately 60 Medex who will require this training it could be done in three-four groups at the Medex Training Center, when a current class of Medex is on Health Station preceptorship or hospital rotation.

e) Medex and CHW Continuing Education

Data collected from deployed Medex and CHW's will determine the most appropriate methods of developing continuing education for these categories. Geared to prevent the decay of skills and to add new knowledge and competencies, the provision of continuing education for these health workers is built into the Project. The format and process of this tool for performance improvement will be derived from training, management and field operations experiences.

f) Senior Medex/Senior Public Health Nurse Training

Short-term training of 4-6 weeks will be given to a senior cadre of twenty Medex and Public Health Nurses to give them knowledge and skills in supervision and continuing education for district level work. The system combines supervision with continuing education and allows for on-going performance evaluation of health workers to feed into training programs. But more importantly it contributes to on-going continuing education for the Medex at the Health Station by the supervisor. This form of continuing education allows for the maintenance of knowledge and skills in essential areas such as:

Oral rehydration	Diagnosis and treatment of pneumonia
Hygiene deliveries	Environmental hygiene protocols
Nutrition surveillance	Village leader communication
Referral patterns	

It also allows for a) correcting skills that are not at standard; b) adaptation of interventions within the existing tasks such as the replacement of a non-effective drug with an effective one, or the replacement of a high cost intervention with a low cost and effective intervention (IV's replaced by oral rehydration); and c) adding additional skills and tasks.

g) Training in Administration and Management

Additional short-course training of 4-6 weeks will be given to 9 Medex and Public Health Nurses to equip them to become regional and central level administrators.

Seven of these Sr. Medex/Sr. PHN's will be assigned to work as assistants to Regional Medical Officers and two assigned to the central MOH Principal Health Officer (Community Health) or equivalent.

h) Medical Officer Orientation

Medical officers at district and regional levels will be oriented annually to health policies, to changes in organization and functions, to new and revised Operations Manuals for Health Posts, Stations and Centers, and to the training of primary health workers.

A one-week annual orientation workshop during each of the three years of this Project will communicate restructuring being made to the evolving system. It will also define the Medical Officers' responsibilities within the system and allow for their inputs regarding operational problems, and other solutions.

One week orientations for all new doctors will be designed to introduce health policies, organization, infrastructure and operations of the primary health care system. This will include a thorough introduction to the new peripheral primary health care providers - Medex and CHW's - their task assignments and the role of the Medical Officer in supporting these workers personally and technically.

i) Health Services Management Training

Short-term training courses will be given periodically to health workers in the primary health care system. Such courses will be based on Operations Manuals developed for each level of the delivery system plus basic management knowledge and skills to improve work performance. Medex training already incorporates mid-level competency-based management training in its curriculum and modifications of the curriculum will occur as Operations Manuals are developed. Medex trained prior to the development of Operations Manuals will be introduced to their Operations Manuals at regional workshops. Sr. Medex and Sr. PHN's will have management training, knowledge and skills incorporated into their administrative/management courses. Regional and central health officials will have higher level management courses of two weeks duration. This will include an introduction to the PHS infrastructure and to the Operations Manuals developed for Health Posts, Stations, Centers and District Hospitals. Their responsibilities in supervising, facilitating and supporting the rural health system will be high-lighted and emphasized.

j) Equipment Maintenance Technician Training

Equipment maintenance/repair technicians assigned to and working at the regional level will be given short-term training courses in the maintenance and repair of medical equipment, vehicles/boats and other equipment utilized at the various lower levels of the health services system.

These technicians will be taught to give practical on-the-job training to Medex and other personnel in order that common and easily corrected repairs can be made by peripheral workers on site and that proper procedures of equipment maintenance are followed. In addition, they will be given in-depth knowledge and skills in maintenance and repair of equipment provided under this Project together with the spare parts and repair equipment necessary for them to function effectively.

k) Supply Management Training

Officials based at the regional level will be trained in efficient, effective methods of managing and distributing drugs and other supplies to the rural periphery. This will include methods of protecting drugs and supplies from deterioration due to weather and other hazards found in rural Guyana and will link training provided to rural health workers on how to relate effectively to the supply system serving them.

1. District Supply Clerks

District supply clerks will be given short courses in simple, effective methods of supply management and distribution for supplying the rural periphery and responding generally to peripheral needs. These clerks will probably be posted at hospitals and will require special incentives and special training to meet the needs of more distant staff and facilities.

3. Management Support Systems

While this Project's major focus is on the basic training and continuing education of Medex and CHW's, the development of a permanent institutionalized management support infrastructure is considered essential to their effective utilization. While the IDB project mainly concentrates its efforts on the strengthening of central and regional administration, this Project will direct attention to the management support needs of the peripheral health workers in rural areas at levels 1, 2 and 3 of the primary health care delivery system, focusing on the following:

a) Supervision

Experience in LDC's throughout the world has amply demonstrated the absolutely essential need for careful attention to the development of a supervisory infrastructure to support the functioning of Community Health Workers in rural, semi-isolated and isolated work locations. This project will assist the MOH in building an appropriate supervisory infrastructure with an adequate number of qualified supervisory officials.

The MOH recognizes that the supervisor of primary health workers requires more than simply the knowledge and skills required to do the work that is being supervised. Supervisors of primary health workers at levels 1, 2 and 3 of the system will be assisted to develop their supervisory knowledge, skills and attitudes in order that they will more effectively function to provide socio-psychological support to subordinate staff working in rural, isolated locations; monitor and control, through performance evaluation and counselling, the quality and quantity of work productivity of subordinate staff; serve as an instrument of formal and informal continuing education to maintain and improve the knowledge and skill levels of subordinate staff; serve as a technical and administrative information resource which promotes professional and personal growth of staff; promote more efficient and appropriate use of health service resources while controlling against waste and abuse; contribute to the regional and central level planning process of the MOH; and serve as key communications links between the rural periphery and regional and central administration of the MOH.

b) Rural Communications

Experience with deployment of the first pilot class of Medex in Guyana has demonstrated the need for a reliable two-way radio or telephone communications linkage among themselves, with their supervisors and with patient referral points. Through much of the rural, semi-isolated and isolated areas of Guyana there are few telephone and short-wave radio facilities. Those that are currently in use are often in locations too remote and far from present and future Medex deployment sites. They could not provide a communications linkage with the Medex supervisor or patient referral point despite an attempt to coordinate health facility/health worker locations with existing communication facilities. Moreover, much existing communications equipment is old and difficult to maintain. Much of it is characterized by a high degree of unreliability either because of frequent breakdown or because higher priority use is given to its prime user, usually the police or military.

With PD & S funds the AID Mission is currently funding a feasibility study of a two-way radio communications system which links 10 Medex with supervisors and referral points. This study is expected to provide evaluation feedback prior to the installation of the overall rural health communications system. Using information obtained from the feasibility study, this Project will develop a two-way communications system linking Medex located at Health Stations with their supervisors at Health Centers/District Hospitals, and with Medex located elsewhere (including Regional and Central levels), for purposes of supervision/administration and continuing education. It is expected that communications between Medex and health workers at the village level will not require radio linkage since personal, face to face communications practices will be developed at that level. There will be exceptions for those isolated areas where village/health post personnel are inaccessible during lengthy rainy seasons or are distantly removed from Medex locations. In those cases other communications arrangements may have to be developed. While the rural communications system will be designed to give maximum support to the supervision and continuing education function, it will also provide means for improving the flow of information on patient status between referrer and referree. It should also facilitate improved administration of the overall rural health delivery system by providing a more reliable communications linkage for handling requests for emergency evacuation of patients or for reporting supply shortages and other breakdowns in management support systems.

Technical assistance to be provided by this Project in the form of a Long-Term Management Advisor and Short-Term specialist consultants in communications system design and implementation, will assist the MOH in developing an effective two-way radio/telephone communications system. Annex G, Part 4, provides information specifications and estimated costs of communications equipment.

c) Rural Transportation

To facilitate the supervision of Community Health Workers and Nurse Midwives located in villages, and the Public Health Nurse to work on health improvement in villages surrounding their duty stations, mobility and therefore transportation is required. A rural transportation system of land vehicles and boats will be developed, which will also serve to distribute supplies and to evacuate patients to referral points when air evacuation by Guyana Airlines or the Guyana Defence Force is not appropriate. Depending upon the locale and season of the year, transportation equipment will consist of motorbikes, 4-wheel drive and standard drive vehicles, and motor-powered boats.

The Long-term technical Management Advisor and short-term specialist consultants on rural transportation, will assist the MOH in developing a cost-effective transportation system. Annex G, Part 5, provides information on transportation equipment and estimated costs.

d) Rural Supply

A more appropriate and effective supply system for drugs, other medical supplies and administrative supplies, will be developed to support the rural periphery. Experiences elsewhere have demonstrated that, unless special attention is given to supply management at the rural periphery of health services delivery systems, drugs and other supplies do not reliably flow centrifugally. Chronic shortages seriously inhibit the delivery of health services, can create severe morale problems leading to attrition of health workers and create credibility problems with the population to be served. Without an appropriately designed and managed supply system, even when supplies are made available, there can be undue waste, abuse and loss of supplies.

The long-term technical advisor on management is expected to devote major attention to rural supply management, assisted by short-term consultants in this field. They will assist the MOH in coordination with supply management development activities of the IDB project, in developing a cost-effective rural supply system to support medex, PHNs, midwives and CHWs working at levels 1, 2 and 3 of the rural PHC delivery system. Details of this technical assistance are given in Annex J. If necessary, contingency funds included in the AID contribution to the Project will be used to increase technical assistance for rural supply management.

e) Information

The MOH recognizes the need for a cost-effective and appropriate health and management information system to support the MOH planning and management decision-making at the regional and central levels of the national system. Rural health workers at levels 1, 2 and 3 serve a data input function which if not carefully designed and managed can result in unreliable, invalid and inappropriate data, and more often than not, excessive time spent by peripheral workers in collecting and reporting data.

Technical assistance in the development of a data collection, collation and analysis system will be provided in the project by four sources: 1) the full time (36 pm) management advisor, 2) 1.5 months of TA in the grant portion of the project (specifically for information system development), 3) from management advisors

on the core staff of the University of Hawaii HMDS and 4) from centrally funded resources as the system develops and begins to function (e.g. BUCEN, VISITIM, CDC, AADS, etc.). Information collection modules for clinic and home visiting records have been developed by the HMDS staff and are presently in use with the pilot group of developed Medex. As the evaluation of deployed Medex provides greater experience in the strengths and weaknesses of the HMDS/Medex model in the Guyanese context, this collection system will be modified to improve the usefulness of the record system. Specific attention will be paid to ensuring that the data collected by the CHWs and Medex will be simple (requiring minimal amounts of their time) yet relevant for adequate supervision and national planning efforts. While this project is not designed to develop an entire health information system for Guyana, it will develop the base record system at the rural level and ensure its relevancy and compatability with the existing GOG health information system network.

f) Rural Facilities Development and Maintenances

There are some 190 health facilities in which Government health staff are currently working. Some are Government owned and others, including most health stations, occupy rented quarters. Annex G has a location analysis of 82 sites where Medex are either currently assigned or will be deployed upon graduation. While all these sites have some kind of building in which the staff can work, 34 require housing for Medex. As most Medex are married with families, adequate housing is considered an absolute pre-requisite for their posting to rural areas. Hence the project is undertaking the construction of 41 houses estimated to be needed in the 100 ultimate Medex locations. In addition, elevated water tanks and sanitary latrines are to be built at sites where these are lacking. This construction is estimated to involve 50 water supplies and 50 latrines. Details of all proposed construction are given in Annex H-2.

Though existing physical facilities are all usable, many are in need of renovation, including some expansion/upgrading. During year one of the project a survey will be carried out to identify the specific work required to ensure that each facility adequately provides suitable space to permit the Medex to operate effectively. This may include waiting/health education space, additional examining and consultation rooms, and a small laboratory. Financed by this project through contract with a qualified engineering firm, site visits will be made to all current and proposed locations, determination made of required construction/renovation, sketches prepared, and necessary cost estimates made. GOG and USAID will then consider the possibility of a supplemental loan to finance additional construction/renovation.

As described in the engineering analysis, Annex H-2, maintenance/repair during the life of the project will be supported in part by the project loan, with an appropriate covenant committing the GOG to ensure adequate maintenance on the long-term basis.

g) Rural Health Services Management

This Project will provide leadership and assistance to the MOH in developing its overall rural primary health services delivery system, assisting with coordinating the development of existing and new rural health personnel, the development of management support infrastructure and the reorganization and strengthening of the MOH at all of the levels of the national system which support rural primary health care. As part of this effort, MOH personnel will be assisted in developing their knowledge and skills of health services administration and management, and standardized Operations Manuals will be developed to guide health services management at levels 2 and 3 of the rural delivery system and to provide management resource and reference materials for project training activities already described in Part 2.

4. PROJECT INPUTS

a) USAID Grant contribution: \$1,800,000

A contract for technical assistance with the University of Hawaii (See Technical Assistance Plan, Annex J) will involve:

1) Three long-term Advisors as follows:

Primary Health Care Advisor/Chief of Party	(36 PM)
Management Advisor	(36 PM)
Training Methods Advisor	(36 PM)

Total	108 PM	\$951,055
-------	--------	-----------

2) Administrative Support Staff as follows:

Contractor Headquarters:

1 Project coordinator	(36 PM)
1 Administrative Asst/Secy	(36 PM)

In-Country:

1 Administrative Assistant	(34 PM)
2 Secretaries	(68 PM)

Total	174 PM	\$192,977
-------	--------	-----------

3) Short-term consultants as follows:

HMDS/Medex Network: (Salaries paid by AID Medex Phase III Prime Contract with Univ. of Hawaii)

Curriculum Adaptation	(4 PM)
Tutor Training	(3 PM)
Preceptor Deployment	(3 PM)
Management	(4 PM)
Continuing Education	(3 PM)
Evaluation	(3 PM)

Total	20 PM	\$50,376
-------	-------	----------

Other

Management	(2 PM)
Non-formal Education	(1.5 PM)
Drug and Supply	(1.5 PM)
Communications System	(1.5 PM)
Transportation Equipment	(2 PM)
Information	(1 PM)
Medical Equipment	(1.5 PM)
Behavioral Science	(1 PM)
AV/Training Equipment	(1.5 PM)
PHC Evaluation	(1 PM)

Total	14.5 PM	\$89,716
-------	---------	----------

- 4) MEDEX Technology Materials developed by Health Manpower Development Staff:

20 Sets of Primary Health Care Guidelines
2 Sets of Workshop Manuals
2 Sets of Prototype Medex Training Modules
4 Sets of CHW Prototype Training Modules

(No charge to Project)

- 5) Participant training abroad for Guyanese health officials:

3 Persons/Primary Health Care and Planning	(54 PM)
12 Persons/Primary Health Care	(36 PM)

Total	90 PM	\$196,359
-------	-------	-----------

- | | |
|--------------------------------------|-----------|
| 6) Contractor Supplies and Equipment | \$63,645 |
| 7) Other Contractor Direct Costs | \$34,971 |
| 8) Contractor Overhead | \$128,484 |
| 9) Contingency | \$92,417 |

b) USAID Loan Contribution: 2,900,000

1) Local personal services: 180,000

- Contract with local engineering firms to perform (a) facility location analysis, identifying construction renovation needs at each place where Medex are to be located; and (b) provide administration and quantity survey services for construction financed herein 150,000
- Contract with local firm for installation, maintenance, and repair of two-way radios 30,000

2) Medex Training Unit (incl. 16% p.a. inflation rate)

<u>Item</u>	<u>Year:</u>	<u>1: 100%</u>	<u>2: 100%</u>	<u>3: 67%</u>	<u>4: 33%</u>	<u>5: 0%</u>	<u>Total</u>
Training Director		15,000	17,4000	13,523	7,726	nil	53,649
Two-way-radio Coordinator		5,000	5,800	4,508	2,575	"	17,883
Two-way-radio Technician		1,000	1,160	902	515	"	3,577
Social Scientist		7,500	8,700	6,762	3,863	"	26,825
Local travel of trainees		8,960	10,394	8,078	2,555	"	29,987
Operation and Maintenance of Transport		12,000	13,920	10,819	6,181	"	42,920
Production of local Training Materials		8,566	9,937	7,723	4,413	"	30,639
	TOTAL	58,026	67,311	52,315	27,828	"	205,480

3) Materials and Labor for construction of Medex housing, water and sanitation facilities, for selected health facilities where Medex are located; maintenance and repair. (For details see engineering analysis, Annex H). 1,142,889

4) Commodities as follows: (See Annex G for detailed commodity lists)	<u>1,107,086</u>
a) Basic Medex equipment and supplies @ \$3,657/100 Medex	365,700
b) Basic CHW equipment @ \$85/200 CHW's	17,000
c) Medex Training equipment & supplies	44,740
d) Equipment and Supplies for improved drinking water at CHW Health Posts and Villages	30,000
e) Materials for construction of village latrines	10,000
f) Transportation equipment and spare parts	409,450
g) Communications equipment, generators and spare parts	75,000
h) Hand pumps for 50 Health Station water systems @ \$100	<u>5,000</u>
SUB-TOTAL	956,890
Inflation Factor	<u>151,105</u>
COMMODITY TOTAL	1,107,995
Loan Sub-Total	2,636,364
5) Contingency (10%)	<u>263,636</u>
LOAN TOTAL	2,900,000
GRANT	<u>1,800,000</u>
TOTAL U.S. CONTRIBUTION	<u>\$4,700,000</u>

5. PROJECT OUTPUTS

A. Training:

- 1) One Medex Training Unit is staffed with fully trained tutors, has completed curriculum and training materials, and is fully operational, producing a maximum of 24 trained Medex per year.
- 2) Medex tutor training is completed by 3 Medex who are functioning as tutors; 3 Physicians who are functioning as tutors, and one Administrator/Manager who is functioning as a tutor.
- 3) A short-course in the training, supervision and continuing education of CHW's is completed by 60 previously deployed Medex who are functioning in rural areas training/supervising CHW's.
- 4) 70 Medex are trained and deployed.
- 5) 200 villages have selected and are supporting a CHW each, who has had basic training and is functioning under the supervision of Medex and/or PHN's.
- 6) Basic training in supervision and continuing education of Medex is completed by 20 Senior Medex and/or Sr. Public Health Nurses. 11 are deployed to the district level, and the rest at national or regional levels.
- 7) Additional training in regional and central administration/management is completed by nine Senior Medex and/or Sr. Public Health Nurses, with seven functioning as supervisors/administrators at regional level, and two functioning as administrators at central MOH level.
- 8) 100% of District and Regional Medical Officers and all new medical officers have attended orientation courses on the primary health delivery system.
- 9) 15 central and regional MOH officials are trained in administration/management of the rural primary health care system, and are functioning.
- 10) 7 Regional vehicle/boat equipment maintenance technicians are trained and functioning, and 7 Regional medical equipment maintenance/repair technicians trained and functioning.

11) 7 Regional officials are trained in peripheral/rural supply management and are functioning.

12) 20 District Supply Clerks are trained in peripheral/rural supply management, and are functioning.

B. Management Support Infrastructure:

1) 100 Health Facilities (where Medex located) are upgraded, including housing for Medex, safe drinking water supply, sanitary latrine, overhead water tank, where needed.

2) 100 villages supporting a CHW have at least one improved potable water supply.

3) 200 villages supporting a CHW have at least one exemplary sanitary latrine utilizing self-help methods and appropriate design and technology.

4) A Medex rural transportation system is developed and operating, with 90% of deployed Medex making supervisory visits to CHW's/villages twice a month.

5) A Rural Equipment Maintenance/Repair System is developed and operating, with 90% of all equipment (medical, vehicles/boats, radio) used by Medex in operating condition and regularly maintained.

6) A Medex Rural Communication System is developed and operating, with 90% of deployed Medex linked to supervisors and referral points by functioning radio/telephone communications.

7) A rural drug and supply system is developed and operating, with 100% of Medex-staffed Health Stations having 90% of required standard drugs and supplies.

8) A Rural information system is developed and operating, with 100% of deployed Medex submitting 90% of required reporting forms.

9) A rural patient referral system is developed and operating, in which 100% of deployed Medex have designated referral points, and are receiving 90% feedback on their referrals.

10) A Supervisory/continuing education system for Medex and Community Health Workers is developed and operating with 90% of deployed Medex making supervisory and continuing education visits to each CHW bi-weekly, and 100% of deployed Medex visited monthly by Senior Medex Supervisors for supervision and continuing education.

11) A central MOH focus for Primary Health Care is established and functioning, with short-term and continuing education training capability, with one Senior MOH health official permanently assigned to serve as Principal Health Officer (Community Health) at the central MOH level, and one senior MOH health official permanently assigned responsibility for short-term in-service and continuing education of Primary Health Care Workers, including Medex, PHNs, NMs, and CHWs.

PART III.

PROJECT ANALYSES (SUMMARIES):

A. Technical

This project has been designed using technology requested by the Government of Guyana that has already proved successful here on a small scale. Taking into consideration local resources available now and projected in the future the technology chosen is appropriate for the target purpose of developing a nationwide rural health delivery system. Strengthening this choice is a firm underpinning of management and management training to support the system.

The project proposes to develop a tiered system of primary health care services providers. These auxiliaries will be trained to provide basic health services considered essential by the GOG and its consultants and will be supported by management competence appropriate for each level of the manpower infrastructure. Mid-level health workers, trained with a modular curriculum developed specifically for Guyana, will in turn train Community Health Workers using similar competency-based training modules. The mid-level workers (Medex) subsequently supervise the CHW's that they train. Thus, a training/supervisory interlock allows a contiguous manpower infrastructure to be developed which links peripheral and often isolated villages with increasingly sophisticated facilities as problems are referred up the chain.

The project focuses on delivery of basic promotive, preventive and curative services by CHW's selected and supported by villages, and by Medex. Some capital investment will be made in construction of Medex housing and other facilities required at health stations where Medex are posted. The information and evaluation system proposed for the project utilizes the simplest, most available and retrievable data capable of yielding needed information for the project - much of the data will be collected by the auxiliaries themselves.

The project's focus on promotive and preventive health care in a scheme which will increase the number of primary health care providers by over 100% throughout the country should provide significant impetus towards developing a minimal cost national health system since it will be covering more than 80% of the rural population.

Previous demonstration and research programs, studies and policy discussions with GOG officials have led to the conclusion that

the design of this project is technically sound and suited to the particular needs and resources of the Government and people of Guyana.

B. Engineering

The project plans several activities designed to maximize the effectiveness of Medex in rural locations. Among these are some involving construction. Specifically, these include housing for Medex (similar to that provided for other GOG civil servants), water tanks and trestle stands, and latrines for the health facilities where Medex are to work. Appropriate designs and material requirement estimates have been drawn up and included in Annex H. A qualified engineering/quantity surveyor firm will be contracted with to provide necessary engineering and construction supervision services. The firm will also do a site-by-site study of all facilities where Medex are to be located (See Annex G) and identify renovation/upgrading required at each site.

Cost of these activities, including contingency and adjustment for inflation is estimated at \$1,468,000. Details are given in Annex H.

Based on this analysis, it has been determined that the applicable technical requirements of FAA Sections 201b and Section 611 have been met.

C. Environmental

Adverse environmental impacts of the project are considered minimal and of short duration during the construction period. There are, however, significant long-range beneficial impacts on the physical and human environment through the introduction of environmental sanitation facilities and through improved hygiene standards among the rural target population. An Initial Environmental Examination (IEE), recommending a negative determination, is included in Annex H.

D. Population Impact

The vital relationship between child-spacing and maternal and child

health is well recognized and accepted in Guyana. Methodology and advice are available as part of the Government's MCH services as well as through private health facilities. This project provides for support and reinforcement of this approach to building MCH services of the highest quality and effectiveness.

Little if any demographic impact is anticipated in the short run, though with wider and more dependable availability of child-spacing methods through the good offices of CHWs and Medex, appreciable reductions in infant and pre-school mortality could occur rapidly. This together with the improvement in quantity, quality and availability of other health services, will undoubtedly result in significant decline in the 0-4 mortality rates in the long run, with some slowing of the already declining birth rates.

Experience in several parts of the developing world suggests that parents who experience significant changes in the probability of child survival will gradually change their fertility behaviour accordingly. With increasing numbers of children surviving as a result of the better health services, including child-spacing, provided under this project, it is anticipated that this will also contribute to a long-run decline in total fertility here. How much this will be or how fast it happens depends on the speed with which the mortality decline occurs and the parental perceptions change.

E. Social

According to the 1970 Population Census there were approximately 478,000 persons in rural Guyana (68% of the total population). The Technical Analysis indicates that by 1983 about 80% of this population will be covered by the development of a low cost rural health care delivery system. After this date, the MOH will extend primary health services to the rest of the rural population, and full coverage should be achieved by 1986.

Amerindians who comprise 4.9% of the population are the most underserved and economically disadvantaged group. Their geographical isolation, their dispersed settlement patterns and transportation problems raise formidable barriers to the delivery of health care. Through the Medex and the CHWs trained by them, primary health care can be given to these isolated Amerindian communities.

The Amerindians welcome and increasingly seek modern health care. In Annex B. Section 4, has been discussed the fact that there are

no identifiable constraints imposed by their cultural system to the implementation of the project. Their traditional health customs do co-exist without interfering with modern medicine, and the traditional healer or piai man enjoys low status in the communities. Recent conversations held with leaders of 12 villages by MOH personnel have elicited positive responses in support of the CHWs and have pledged to pay their salaries.

Indo-Guyanese comprise the largest ethnic group in rural Guyana. Most of them are small rice growers with a strong cultural identity. The rural Afro-Guyanese communities are composed primarily of subsistence farmers and wage workers and many heads of households migrate in search of employment and higher wages. Afro-Guyanese are more community oriented and the degree of participation in organizations is high. For a number of years they have been told that health care is the responsibility of the Government and that it should be free for all. Since peripheral health care has been slow in coming, problems inherent in any cooperative effort such as community health worker supervision and training, may be outweighed by the desire of the population for better services.

As indicated in Annex H, Section 3, the traditional healers or obeah men serve both the Afro and Indo-Guyanese communities and there is no reason to believe that these curers would present any obstacles to the presence of CHWs in the villages.

The politico-administrative organization of the villages in Guyana is in a state of flux. Village councils have little power because local resources are minimal and there is a heavy degree of centralization. Village development councils were organized a few years ago for purposes of mobilizing the population at the grass roots but very few of them are active today. Contacts with the villages will have to be made through whatever organizations are acting as governing bodies. It is recommended that a social scientist study the organization of the communities, the racial composition, the presence of political cliques, etc., and then identify the best point of entry in order to mobilize the communities to support a CHW. It can be predicted that the support of the CHW by the community will develop and continue as long as the community perceives that the CHWs services are worth the money the community pays.

Role of Women and Benefits. In Guyana like in most other nations of the world women have more contacts with health practitioners than men. Increasing the availability of health services through the work of Medex and CHWs will undoubtedly make it easier for women to satisfy their health care needs.

The health care of children is primarily the responsibility of women. The work of Medex and CHW's in the villages will make it much easier for mothers to provide care for their children, reduce the waiting lines in the health care centers and posts and as a result free some time for women. It should be remembered that in Guyana rural women not only attend household responsibilities but in addition a large majority of them also help in the fields during various phases of the agricultural production cycle.

It is possible that in some communities birth attendants, all of whom are female, may be chosen as CHWs, though it is difficult to predict the sex composition of the CHWs because they will be selected by the communities.

F. Economic

As detailed in Annex H4, the proposed project has been analyzed from the following economic vantage points: internal efficiency, external efficiency, affordability to users, and affordability to the GOG. All four analyses found the proposal to be economically feasible.

1. Internal Efficiency: The major effects of the project on internal efficiency will be at the lowest level of facilities, the health post/village and the health station. The project is expected to build a system more efficient than at present, as summarized by the following data. While the data are not strictly comparable, they are indicative of the direction of changes the project will bring in the productivity of Guyana's primary health care system.

	<u>At Present</u>	<u>With Project</u>	<u>Percent Change</u>
a) <u>Cost per Attendance (G\$)</u>			
Health Post/Village (CHW)	2.24	2.13	-5
Health Station (Medex)	7.51	3.03	-60
b) <u>Attendances per Inhabitant</u>	1.85	2.05	+11
c) <u>Hours per Inhabitant</u>	1.09	2.96	+172

Source: Annex H, Section 4, Tables H4.9 and H4.10.

2. External Efficiency: The major effect of the project on external efficiency will come through greatly expanded health care coverage in rural areas -- up to 80 percent of the population within five miles of Medex-staffed facilities and closer to community health workers. Most of the health problems leading people to seek care impact on their short and medium term productivity, and available evidence indicates significant improvements are possible in community and personal environmental health.

3. Affordability to Users: The major cost to users of the system will be their community's support to the health worker. Communities desiring to participate must provide and support that person. Poor villages may be able to pay very little to recruit their CHW. Assuming the average contribution agreed upon between themselves is twice the per capita income (not the income per household or per wage earner), such support would amount to only 7 percent of the nationwide rural average per capita expenditure on medical care.

4. Affordability to the GOG: The alternative way of providing health care to the rural population would be to expand the present system proportionally. Annual operating costs in that case would be G\$3.29 million per year versus G\$1.60 million under the project. If depreciation of buildings and equipment are included in the calculation to reflect long-run system costs more accurately, the present system would cost G\$4.74 million per year versus G\$2.60 million under the Project, some 45 percent cheaper. Neither figure includes effects of the Project on higher echelon elements of the system, which are expected to add to the attractiveness of the Project.

5. Summary Conclusion: The Economic Analysis section of Annex H presents detailed examinations of these and related economic feasibility issues. In summary, the Project is found to be economically feasible on all accounts.

G. Administrative

The implementing agency for this Project will be the Ministry of Health (MOH), an organization which is characterized by many of the institutional/administrative problems of MOH's in other developing countries.

These are:

1. Under-staffed and overworked central officials.

2. Chronic shortage of skilled managers.
3. Chronic shortage of skilled health workers at intermediate and lower levels of the organization.
4. Vertical Programs operating semi-autonomously.
5. Differences in management/logistical support systems.
6. Over-utilization of urban hospitals.
7. Imbalance in allocation of MOH resources to urban hospitals.
8. Lack of data for planning and management purposes and lack of planning capability.

For a number of years now, the MOH has been addressing these problems in collaboration with foreign donors. Both the IDRC and IDB projects represent major steps forward. There is a strong leadership commitment to address these problems and the design of this Project will also assist in this objective. The following institutional/administrative issues were addressed in the design of this Project, and together with the policy and resource commitment of the MOH, as expressed in meetings with all key officials, there appears to be the capability to effectively implement the Project:

1. Institutionalization of the Medex Training Unit.
2. Roles/relationships of Medex and Public Health Nurses.
3. Integration of Curative and Preventive/Public Health Services.
4. Coordination with the Dutch CHW Project.
5. Institutionalization of Medex and CHW's.
6. Shortage of Medical Doctors.
7. Imbalance in allocation of MOH resources.
8. Coordination with IDB Project.

The design of the Project provides for the following coordinating mechanisms:

1. A Primary Health Care Coordinating Council consisting of the Permanent Secretary, Chief Medical Officer, IDB Project Director, Principal Nursing Officer, and Medex Training Director.
2. The establishment of a new senior MOH position, Principal Health Officer (Community Health) to assume responsibility for developing the national primary health care system.
3. The designation of MOH counterparts for the three long-term technical advisors as follows:

Chief Medical Officer (and Project Director) as counterpart to the Chief of Party/Primary Health Care Advisor; the Principal Nursing Officer as counterpart to the Management Advisor; and the Director of the Medex Training Unit as counterpart to the Training Advisor.

Analysis of MOH leadership, resources and commitment in terms of absorptive capacity and ability to manage the implementation of this Project; and an analysis of the IDB Project and the design of this Project indicate that the existing institutional/administrative weaknesses of the MOH can be sufficiently overcome to successfully implement the Project.

See Annex H, Part 5, for the complete detailed administrative analysis.

PART IV. FINANCIAL ANALYSIS

The total cost of this project will be \$7,713,000. AID financing will be \$4,700,000, of which \$1,800,000 will be from grant funds and \$2,900,000 from loan funds. The GOG will provide \$3,013,000 from the MOH budgetary funds and from participating villages. AID will fully fund its contribution to the project upon signing of the grant and loan agreement. The Summary Financial Plan is as follows:

	A I D		GOG	TOTAL
	FX	LC	LC	
	(US\$000)			
Technical Assistance	1,511			1,511
Training	196	206	404	806
Construction, Sites and Facilities		1,143	152	1,295
Equipment	1,064	44		1,108
Other Project Support Costs		180	2,183	2,363
Contingency	199	157	274	630
	2,970	1,730	3,013	7,713
	AID GRANT: \$1,800 AID LOAN : \$2,900			

AID will fund with the grant technical assistance and training. Loan funds will finance a portion of training, construction, equipment and some local contractual services. The foreign exchange component of the project is \$2,970,000 financed entirely with AID funds. The GOG's contribution is approximately 39% of total project cost. It funds salaries, facilities and utilities, supplies and materials, local travel and self-help labor. Expenditures have been projected over the life of the project in the attached table. AID funds have been projected to be disbursed over the first three years and the GOG funds will provide financing for four years.

USAID/GUYANA
RURAL HEALTH SYSTEMS PROJECT

PLANNED EXPENDITURES
(US\$000)

	YEAR 1		YEAR 2		YEAR 3		YEAR 4		YEAR 5		TOTAL	
	AID	GOG	AID	GOG								
Technical Assistance	400	-	650	-	530	-	-	-	-	-	1,580	-
Training	80	50	150	100	100	110	86	100	20	84	436	444
Construction	350	60	730	60	177	47	-	-	-	-	1,257	167
Equipment	615	-	307	-	307	-	-	-	-	-	1,229	-
Other Project Support Costs	165	400	5	550	10	666	18	686	-	100	198	2,402
	1,610	510	1,842	710	1,124	823	104	786	20	184	4,700	3,013

PART V.

IMPLEMENTATION PLAN

A. Schedule of Major Events

The following is a Schedule of Major Events throughout the life of the Project:

<u>Project Year 1</u>	<u>Project Month</u>
Submit PP to AID/W	-1
Project Agreement signed	
Initial CPs met	3
TA Contract signed with University of Hawaii	4
Engineering Contract signed	4
Receive and collage data from WFS and IDRC Medex Evaluation	6
Long-term advisors arrive in Guyana	7
MEDEX Training unit staffed	7
Primary Health Care Coordinating Council meets	7
Medex housing construction begins, including water tanks and latrines	7
Curriculum Adaptation Workshop for Medex held	8
Develop projected health status and health service related indicators (for project evaluation)	9
Tutor Training Workshop conducted	9
Medex curriculum materials drafted and ready	9
Maintenance materials and supplies for facilities ordered	9
MEDEX I begins training	10
Initial Continuing Education Workshop conducted	11
Curriculum Adaptation Workshop for CHWs held	12
MEDEX Deployment Plan finalized	12
Facilities remodeling and improvement plan finalized	12
<u>Project Year 2</u>	
First Evaluation Workshop held	13
Audio-visual and other training equipment and materials in-place	14
Participant Trainees identified	14
First Supervisory Training Workshop for Medex and Public Health Nurses held	15
First Participant Trainees leave Guyana	15
40 CHWs begin training (Group 1)	16
Maintenance supplies serviced	16
Rural Communications plan completed	17
First short-term management course for MOH conducted	18
Management Training Workshop for Snr. Mx and Snr. PHN conducted	18
Transportation plan completed	18

<u>Project Year 2 (cont'd)</u>	<u>Project Month</u>
First Medical Officer Orientation held	18
Health Station and Health Center/District Hospital Operation Manuals completed	18
In-depth evaluation completed	18
Supply system plan developed and approved by MOH	19
First Management Workshop conducted	19
Preceptor deployment workshop held	20
Village water supplies and latrine improvements initiated	21
Medical equipment maintenance and repair system developed and approved by MOH	21
Second Continuing Education Workshop conducted	22
Short-term courses initiated for equipment maintenance technicians and supply personnel	23
Communications system operating	23
Supply system operating	23
Revised Medex and CHW curriculum completed	24
MEDEX I complete training	24
90% of Housing and other construction completed	24
 <u>Project Year 3</u> 	
MEDEX II begins training	25
Second Management Workshop conducted	26
Forty CHWs in training (Group 2)	28
Second short-term management course for MOH conducted	29
Training in Administration/Management for 9 Mx/PHN completed	29
Second Medical Officer Orientation conducted	30
Second Evaluation Workshop held	31
Forty CHWs in training (Group 3)	34
Third Continuing Education Workshop conducted	35
100% Construction completed	36
 <u>Project Year 4</u> 	
Third Management Workshop conducted	38
Third short-term Management course for MOH held	38
MEDEX II completes training - 48 Medex deployed	39
MEDEX III begins training	40
40 CHWs in training (Group 4)	41
50 villages have improved water supplies and 100 have new or improved latrines	41
Third Medical Officer Orientation	42
40 CHWs in training (Group 5)	47

<u>Project Year 5</u>	<u>Project Month</u>
Evaluation of Project	53
MEDEX III completes training - 72 deployed	54
- 200 CHWs trained	
- 100 villages have improved water supplies and 200 have new or improved latrines	
- Support systems and training programs institutionalized and operational	
Final Report	54

B. Procurement and Disbursement Procedures

Procurement

Commodities and Shipping

Except for vehicles and motorcycles, all equipment and materials procured with loan funds will have as their source Geographic Code 941 (Selected Free World) and the cooperating country, except as AID may otherwise agree; for off-the-shelf procurement, countries will be limited to Geographic Code 935. Any equipment and material procured with grant funds will have as their source Geographic Code 000 (United States), except as AID may otherwise agree in writing. Ocean shipping financed with AID loan funds shall be procured from the United States (Code 000) or Guyana, except as AID may otherwise agree. Ocean shipping financed with AID grant funds shall be procured in Geographic Code 000 (United States), except as AID may agree in writing.

Services

All services procured with grant funding will have as their source and origin Geographic Code 000 (United States) and Guyana. Loan funded services will have as their source Geographic Code 941 (Selected Free World) and Guyana, except as AID may otherwise agree.

The University of Hawaii at Manoa was awarded a contract August 31, 1978 by AID/W to complete the development of the MEDEX technology started in Phases I and II, and to provide technical assistance to 8 selected LDC's in the design and operation of integrated MEDEX primary health care systems. This contract is centrally funded by the Development Support Bureau, AID/W but country specific implementation is required by the contract to be funded by the selected LDC's.

In response to the Government of Guyana's request, Guyana has been selected as one of the countries in which the program will be undertaken in view of the GOG's desire to improve and expand on a pilot project it has undertaken for Medex. Therefore, certain of the technical assistance and training for the Rural Health Systems Project will be provided or funded in part under the centrally fund contract. However, as required by the AID/W contract, the USAID Mission is required to provide the necessary funding to implement the country specific aspects of the technical assistance. Therefore, assuming project approval, the USAID Mission plans to issue a PIO/T requesting that SER/CM, AID/W, undertake the necessary contractual arrangements to carry out the training and technical assistance components of the Rural Health Systems Project with the University of Hawaii, drawing on the centrally funded contract and the grant funds made available in the PIO/T.

The Government will obtain the services of a private engineering firm to prepare any needed detailed construction plans and to supervise the construction of the houses for Medex personnel to be located in the rural areas. The GOG will solicit U.S. and local firms for this work. However, since the A & E services and construction are relatively small in value, IFBs are not expected to attract U.S. or other eligible foreign firms.

Disbursement Procedures

Standard AID disbursement procedures will be utilized.

For the purchase of commodities, payment will be made through the standard letter of commitment procedure or other approved forms of disbursement.

Disbursement for local currency costs will be in accordance with procedures established by the Mission for other loans.

C. Contracting Responsibility

Except for the procurement of the technical assistance/participant training services - where AID will be the authorized agent - procurement of goods and services normally will be made by the Government of Guyana. Basic responsibility for this procurement will rest with the Ministry of Health, although the Ministry may in certain cases delegate this responsibility to other entities in the Guyana Government.

D. USAID Monitoring Arrangements

A project committee will monitor the project and be composed of the Mission's Public Health Advisor, Capital Development Officer, Engineer, Program Officer, Assistant Program Officer, and Controller.

The Public Health Advisor will have primary responsibility (USAID Project Manager) for day-to-day coordinating efforts on all aspects of the project. The Capital Development Officer and Program Officer will play a supporting role to the Project Manager in monitoring provisions of the loan/grant agreement to assure that overall policies and objectives are being met. The Engineer has primary responsibility for coordinating all engineering and construction aspects of the project. The Controller will provide advice and assistance on financial matters. The Assistant Program Officer will provide advice and assistance on the participant training aspects of the project.

PART VI.

EVALUATION PLAN

Critical to any meaningful evaluation of the Guyana Rural Health System is an examination of serial data collected during the course of the project indicating quantitatively progress towards achievement of project objectives. Baseline data, essential to this evaluation process, is currently being developed in Guyana and should be available by month 9 of project implementation (see implementation plan). At that time data from the World Fertility Survey (demographics) and the IDRC study of Medex tasks and functions (service related indicators) should be available. In addition, it will provide sufficient baseline data to develop projection of improvements in health status (e.g. infant mortality, neo-natal tetanus reduction, reduced gastro-enteritis incidence) that are in some way causally related to the project input. The base-line data will also provide up-to-date information on present health status as well as service indicators (number of visits, treatments given, immunizations administered, etc.) of Medex operations.

The Rural Health Systems Project will be evaluated three times during the life of the Project. Two of the evaluations will be conducted by the AID Mission to Guyana and MOH personnel, as directed by the Project Coordinating Committee. In addition, an in-depth evaluation assisted by outside consultants will be conducted one year after technical assistance has been in place. An evaluation at that time should allow for any necessary reprogramming.

The USAID Evaluation Officer and Project Manager will be responsible for organizing and managing these evaluations.

Basic data inputs for each evaluation session will include:

- a) Annual data and statistics collected by the statistical unit of the MOH. In addition, each Medex will gather an informal health profile for the service (catchment) area to help gauge changes over time.
- b) Annual and on-going performance evaluations of deployed Medex and CHW's will be collected by the Medex Training Unit and the immediate supervisors of Medex.
- c) Project progress measured against the implementation plan and output targets.
- d) In addition, the coordinating committee may wish to instruct the MOH Planning/Evaluation Unit to conduct surveys regarding community satisfaction with the CHW component, and health worker/facility services.

The primary purpose of these evaluation sessions will lead to practical decision-making regarding necessary modification of the Project in order to meet its goal of improving and expanding primary health care services to the rural people of Guyana. A special examination regarding progress towards institutionalization and Guyanese self-sufficiency in providing these services will occur at each evaluation period but will be most critical for the third evaluation.

During these three evaluation sessions, questions of effectiveness, efficiency and significance will be of special importance to AID. The adequacy of coverage and accessibility has become the internationally accepted criterion for the present in primary health care systems development in the Third World which include isolated rural areas of Guyana.

Project Monitoring

Internal monitoring of each of the sub-systems of the PHC system will be promoted through the development of the Management Information System. On-going evaluation linked to planning is a program output of the entire Project focused on the coordinated planning and integration efforts of the Chief of Party and the Management Specialist.

PART VII. Conditions and Covenants

In addition to the standard conditions and covenants the Project Agreement will contain the following:

- A. Conditions Precedent to initial disbursement
 - 1) A time-phased implementation plan for carrying out the Project;
 - 2) Evidence that a Primary Health Care Coordinating Council is established comprised of representatives of the GOG responsible for implementing primary health care programs;
 - 3) Evidence that the Ministry of Health has designated a manager for the Project.
- B. Conditions Precedent to subsequent disbursement
 - 1) Prior to committing or disbursing funds for construction:
 - a) Plans and specifications, bid documents, cost estimates, and time schedules for carrying out the construction; and

- b) Executed contract(s) for construction activities with a firm(s) acceptable to A.I.D.
 - c) Evidence that title to the selected site(s) belongs to the GOG, and confirmation that medex will be deployed to that facility (or facilities).
- 2) Prior to committing or disbursing funds for procurement of equipment or materials the Ministry of Health shall furnish a list of equipment and materials satisfactory to A.I.D.
 - 3) Prior to disbursement or to the issuance of any commitment documents for engineering or other technical services the Ministry of Health shall furnish to A.I.D. in form and substance satisfactory to A.I.D. an executed contract for engineering or other services with a firm acceptable to A.I.D.

C. Special Covenants

Borrower shall covenant -

- 1) To adequately plan and budget for maintenance of the construction financed by this project.
- 2) To furnish to A.I.D., on an annual basis, evidence satisfactory in form and substance to A.I.D., that adequate resources have been allocated to provide the required counterpart funding to the Project.

INFO
 AIB
 DCM
 CHRON

INFO
 IN
 INR
 R
 TO
 ST
 UNCLAS SECTION 31 OF 32 STATE 323673/21

Jan 75 17529 Jan 75

AIDAC

D.O. 1265 1265: N/A

TAGS:

SUBJECT: DAEC REVIEW - GUYANA RURAL HEALTH SYSTEMS LOAN/
 GRANT PID

1. SUMMARY: THE DAEC REVIEWED PID ON SUBJECT PROJECT ON JANUARY 5, AND APPROVED THE BASIC ACTIVITIES PROPOSED. HOWEVER, WITH REGARD TO PROJECT FUNDING, THERE ARE NO GRANT FUNDS FOR THIS PROJECT IN EITHER THE FY 79 OYB OR FY 80 OP. WHILE THERE EXISTS A POSSIBILITY OF OBTAINING FUNDS TO FINANCE SOME PORTION OF PROPOSED FY 79 GRANT ACTIVITIES, AND CONCEIVABLY THE FY 80 GRANT COMPONENT, THE DAEC RECOMMENDED THAT THE MISSION CONSIDER FUNDING EITHER ALL OR AN INCREASED PORTION OF TOTAL PROJECT COSTS UNDER THE LOAN COMPONENT OF THE PROJECT TO ASSURE FUND AVAILABILITY.

2. PROJECT DESIGN:

-- 1. THERE WAS CONCERN THAT ALTHOUGH THE PID STATED THAT SOME 350,000 PEOPLE WOULD BENEFIT FROM THE PROJECT, THERE WAS INSUFFICIENT INFORMATION AS TO THE NATURE OF THE INTERVENTIONS AND SERVICES TO BE PROVIDED AS WELL AS HOW THE LEVEL OF TARGET BENEFICIARIES WAS REACHED. THE MISSION IS THEREFORE URGED IN THE DESIGN PHASE, TO ANALYZE, (1) THE NUMBER OF PEOPLE WHICH CAN BE SERVED BY THE COMMUNITY HEALTH

WORKERS (CHWS AND MEDEX), (2) THE NATURE OF THE SERVICES TO BE PERFORMED AND, THEIR RELATIONSHIP TO END OF PROJECT INDICATORS. TO ACHIEVE THE ABOVE, THE MISSION SHOULD UNDERTAKE A LOCATION ANALYSIS THAT WOULD TAKE INTO CONSIDERATION SUCH CONCERNS AS AVAILABLE HEALTH RELATED LOCAL INFRASTRUCTURE, POPULATION DENSITY, AND COMMUNICATION CONSTRAINTS. THIS ANALYSIS WOULD FACILITATE PLACEMENT OF MEDEX AND CHWS IN AREAS OF GREATEST POTENTIAL IMPACT. ADDITIONALLY, THE MISSION SHOULD ANALYZE THE TASKS TO BE PERFORMED, TIME REQUIRED TO PERFORM EACH TASK, AND THE MEDICAL SUPPLIES TO BE PROVIDED TO THE CHWS AND MED X. FINALLY, THE MISSION IS URGED TO COLLECT BASELINE DATA ON HEALTH INDICATORS AS WELL AS DEGREE TO WHICH SERVICES FROM MEDEX CURRENTLY IN PLACE ARE BEING UTILIZED, AND FEED INTO THE PROJECT DESIGN A DATA COLLECTION AND REPORT-

THE SYSTEM THAT WOULD ENABLE THE MISSION AND THE GOG TO EVALUATE IMPACT OF PROJECT INTERVENTIONS ON THE HEALTH STATUS OF THE TARGET POPULATION.

-- B. AS THERE ARE MEDEX WORKING PRESENTLY, THE MISSION SHOULD UNDERTAKE AN EVALUATION OF THE DEPLOYED MEDEX AS PART OF PROJECT DESIGN AND RELATE THAT EVALUATION TO PREPARATION OF THE CURRICULUM TO BE USED UNDER THIS PROJECT.

-- C. BECAUSE THE PID DID NOT PROVIDE INFORMATION ON THE CONSTRUCTION COMPONENT OF THE PROJECT, THE MISSION SHOULD DEVELOP A COMPREHENSIVE ENGINEERING ANALYSIS THAT DESCRIBES THE CONSTRUCTION/RENOVATION ASPECTS OF THE PROJECT AND PROVIDES AN ADEQUATE BASIS FOR THE ESTIMATED CONSTRUCTION COSTS.

-- D. DUE TO THE REMOTE NATURE OF MANY OF THE PROPOSED CHW SITES, THE MISSION SHOULD EXAMINE THE ADEQUACY OF LOGISTICAL SYSTEM TO BE USED TO SUPPORT THE CHW IN SUCH AREAS AS DISTRIBUTION OF DRUGS, COMMUNICATION, MOBILITY, AND PATIENT REFERRAL. THE MISSION MAY WISH TO ANALYZE PAST EFFORT OF THE GOG IN SUPPLYING THE REMOTE AREAS OF GUYANA WITH COMMODITIES AND SERVICES.

3. ECONOMIC FEASIBILITY

--A. FROM THE PID AND THE DAEC DISCUSSION, IT WAS APPARENT THAT THE GOG IS POLITICALLY COMMITTED TO PROVIDING HEALTH SERVICES TO BOTH THE REMOTE/RURAL HINTERLAND AND LESS REMOTE RURAL COASTAL AREAS. GIVEN THE ECONOMIC PROBLEMS THAT CURRENTLY PLAGUE THE GOG, WHICH ARE EXPECTED TO CONTINUE FOR THE NEXT SEVERAL YEARS, IT IS IMPORTANT THAT THE GOG BE AWARE OF THE CONSEQUENCES OF ITS VARIOUS

INVESTMENT DECISIONS. HENCE, DURING THE DESIGN PHASE OF PROJECT DEVELOPMENT, THE COSTS OF PROVIDING SERVICES TO THE TWO DISTINCT GEOGRAPHIC AREAS SHOULD BE ESTIMATED AND COMMUNICATED TO THE GOG TO ASSIST IN THE SITE SELECTION PROCESS. IT WOULD BE EXPECTED THAT THE PER CAPITA COST FOR PROVIDING SERVICES TO THE REMOTE/ RURAL HINTERLAND AREAS WILL BE SUBSTANTIALLY HIGHER THAN FOR THE COASTAL AREAS. THE PP SHOULD THEREFORE PRESENT A CAREFULLY REASONED ARGUMENT TO JUSTIFY LOCATIONAL SELECTION FOR PROJECT INTERVENTIONS THAT DIFFER FROM THOSE SUGGESTED BY THE LEAST COST CRITERION.

-- B. ALTHOUGH A COST BENEFIT ANALYSIS FOR THE PROJECT WILL NOT BE REQUIRED IN THE DESIGN STAGE DUE TO THE NON-AVAILABILITY OF QUANTIFIABLE BENEFIT DATA, THE MISSION IS HOPED, DURING IMPLEMENTATION, TO GATHER DATA THAT WOULD ENABLE IT TO ASSIGN COSTS AND MEASURE BENEFITS OF THE VARIOUS PROJECTS INTERVENTIONS FOR BOTH TARGET GROUPS.

4. RECURRENT COSTS: DAEC DISCUSSION WITH REGARD TO

29 JAN 79 14 32z

UNCLAS
REF ID: A67374
R 261249Z JAN 79
FM SECRETARY WASHDC
TO AMEMBASSY GEORGETOWN 4485

UNCLAS FINAL SECTION OF 22 STATE 225673/22

AIDAC

RECURRENT COSTS FOCUSED ON THE GOG ABILITY TO SUPPORT BOTH THE IDB FACILITY BASED HEALTH SYSTEM AND THE AID-FINANCED RURAL HEALTH DELIVERY SYSTEM. DURING THE COURSE OF PROJECT DEVELOPMENT THE MISSION SHOULD UNDERTAKE TO ASSIST THE MINISTRY OF HEALTH (MOH) IN AN ANALYSIS OF THE RECURRING COST REQUIREMENTS OF OPERATING ITS HEALTH SYSTEM. THIS WOULD ENABLE THE MOH TO PLAN MORE EFFECTIVELY AND ALLOCATE SCARCE RESOURCES ON A RATIONAL BASIS.

5. SOCIAL SOUNDNESS: A NUMBER OF SOCIAL SOUNDNESS CONCERNS WITH REGARD TO ENSURING PARTICIPATION OF THE PRIMARY BENEFICIARY GROUP WERE EXPRESSED AT THE DAEC AND NEED TO BE ADDRESSED IN THE PP. IT WAS AGREED THAT A SOCIAL SOUNDNESS ANALYSIS WOULD BE UNDERTAKEN.

-- THE SOCIAL SOUNDNESS ANALYSIS SHOULD INCLUDE:

-- A. A DISCUSSION OF COMMUNITY INVOLVEMENT IN SUCH ASPECTS OF THE PROJECT AS COST SHARING FOR THE HEALTH SERVICES TO BE PROVIDED, AND IN THE SELECTION OF CHWS.

-- B. A DISCUSSION OF THE CRITERION TO BE USED IN THE SELECTION PROCESS OF MEDEX AND CHWS.

-- C. A DISCUSSION OF THE HEALTH BELIEFS AND PRACTICES OF THE BENEFICIARY (I.E. DISPOSITION TOWARD MODERN MEDICINE OR INDIGENOUS, DOCTORS OR LOCAL CURERS, ETC.).

-- D. A DISCUSSION WITH REGARD TO THE INCENTIVES TO ATTRACT BENEFICIARIES TO PARTICIPATE IN THE PROJECT.

-- E. AN ANALYSIS OF THE CULTURALLY DEFINED NORMS AND BEHAVIOR PATTERNS WHICH COULD INHIBIT PARTICIPATION IN THE PROJECT.

-- F. THE ESTABLISHMENT OF A MECHANISM THAT WOULD PROVIDE AN INCENTIVE TO THE CHW AND MEDEX TO REMAIN IN THE RURAL AREAS AND NOT BE ABSORBED INTO THE URBAN HOSPITAL SYSTEMS.

-- G. IF THE MISSION DETERMINES THAT THE SERVICES OF A SOCIAL SCIENTIST WILL BE REQUIRED TO CARRY OUT THIS ANALYSIS, AID/W WILL SEEK TO IDENTIFY SUITABLE CANDIDATES WITH WHOM THE MISSION CAN ENTER INTO A CONTRACTUAL ARRANGEMENT. VANCE

BT

6573

ACTION



MINISTER
OF
HEALTH, HOUSING AND LABOUR

2nd May, 1979.

Dear Director,

On behalf of the Government of Guyana, I hereby apply to the United States Agency for International Development for a development grant of approximately one million, eight hundred thousand U.S. dollars (US\$1,800,000) and a development loan of approximately three million, two hundred thousand U.S. dollars (US\$3,200,000), that will help finance:

1. development of a primary health care services delivery system;
2. training of Medex and Community Health Workers;
3. development of management support systems;
4. construction of housing, overhead water tanks and latrines at Medex deployment sites;
5. provision of transport, communications, and technical equipment required by Medex;
6. technical assistance to the Ministry of Health and the Medex training unit.

The proposed project evolved from a pilot study of Medex training undertaken by the Government of Guyana in 1977 with assistance from the International Development Research Council of Ottawa. The project is based on discussions among Government of Guyana officials, and those of the Inter-American Development Bank, Pan American Health Organisation, University of Hawaii's Health Manpower Development Staff, U.S.A.I.D., and others concerned with primary health care services. The components of the Project are contained in the attached summary financial plan.

/The.....

Miss Edna A. Bocrady,
Director,
Agency for International Development,
65 Main Street,
GEORGETOWN.

- 2 -

The total cost of the project components eligible for joint Government of Guyana - U.S.A.I.D. financing amounts to approximately 7.9 million U.S. dollars. Project implementation is estimated to require four years. Our understanding is that the Agency for International Development is prepared to consider financing five million dollars (US\$5,000,000) of the total project cost. The Government of Guyana will contribute 2.9 million U.S. dollars from its own funds and from local sources toward the cost of the project. The Government's contribution will be met from existing and new budgetary allocations.

It is our understanding that the loan will be for 25 years including a ten year grace period, with interest at 2% per annum during the grace period and 3% per annum thereafter.

Cooperatives

Hamilton

PROJECT AUTHORIZATION AND REQUEST FOR ALLOTMENT OF FUNDS

GUYANA: RURAL HEALTH SYSTEMS

PROJECT: 504-0066

Pursuant to Part 1, Chapter 1, Section 103 of the Foreign Assistance Act of 1961, as amended, I hereby authorize a Loan of not to exceed Two Million Nine Hundred Thousand United States Dollars (\$2,900,000) and a Grant of not to exceed One Million Eight Hundred Thousand United States Dollars (\$1,800,000) to the Government of Guyana, the "Cooperating Country", to help in financing certain foreign exchange and local currency costs of goods and services required for the project as described in the following paragraph.

The Project consists of a program to expand and improve primary health care services for the rural population of Guyana. The Project will assist the Government of Guyana with the development of a functioning nation-wide rural primary health care delivery system, training community health workers and medex, and utilizing them in an interlocking, tiered, supervisory and referral structure. The Project will also provide certain facilities, improvements, and transportation and communications equipment to improve the effectiveness of the trained medex and community health workers.

I hereby authorize the initiation of negotiation and execution of the Project Agreement by the officer to whom such authority has been delegated in accordance with A.I.D. regulations and Delegations of Authority subject to the following essential terms and covenants and major condition, together with such other terms and conditions as A.I.D. may deem appropriate:

A. Interest Rate and Terms of Repayment

The Cooperating Country shall repay the Loan to A.I.D. in United States Dollars within twenty-five (25) years from the date of first disbursement of the Loan, including a grace period of not to exceed ten (10) years. The Cooperating Country shall pay to A.I.D. in United States Dollars interest from the date of first disbursement of the Loan at the rate of (a) two percent (2%) per annum during the first ten (10) years, and (b) three percent (3%) per annum thereafter, on the outstanding disbursed balance of the Loan and on any due and unpaid interest accrued thereon.

B. Source and Origin of Goods and Services

(a) Except for Ocean Shipping, goods and services financed by A.I.D. for the Project under the Loan shall have their source and origin in countries included in A.I.D. Geographic Code 941 and/or Guyana except as A.I.D. may otherwise agree in writing. Ocean Shipping will be financed under the Loan only on vessels under flag registry of the United States or Guyana, except as A.I.D. may otherwise agree in writing.

(b) Goods and services, including Ocean Shipping, financed by A.I.D. for the Project under the Grant shall have their source and origin in the United States, except as A.I.D. may otherwise agree in writing.

A. Conditions Precedent to Initial Disbursement - Loan and Grant

Prior to any disbursement, or to the issuance of any commitment documents under the Project Agreement, the Borrower shall furnish in form and substance satisfactory to A.I.D.:

1. An opinion of a legal representative of the Borrower acceptable to A.I.D. that the Project Agreement has been duly authorized and/or ratified by the Borrower and executed on its behalf and that it constitutes a valid and legally binding obligation of the Borrower in accordance with all of its terms;

2. A statement and specimen signature of the person or persons acting as a representative of the Borrower for purposes of the Project Agreement;

3. A time-phased implementation plan for carrying out the Project;

4. Evidence that a Primary Health Care Coordinating Council is established comprised of representatives of the GOG responsible for implementing primary health care programs;

5. Evidence that the Ministry of Health has designated a manager for the Project.

B. Conditions Precedent to Subsequent Disbursement - Loan

1. Prior to disbursement under the Loan, or to issuance by A.I.D. of documentation pursuant to which disbursement will be made for construction, the Borrower will, except as the Parties may otherwise agree in writing, furnish to A.I.D. in form and substance satisfactory to A.I.D.:

- a) Plans and specifications, bid documents, cost estimates, and time schedules for carrying out the construction; and
 - b) Executed contract(s) for construction activities with a firm(s) acceptable to A.I.D.
 - c) Evidence that title to the selected site(s) belongs to the GOG, and confirmation that medex will be deployed to that facility (or facilities).
2. Prior to disbursement or to the issuance of any commitment documents for equipment and materials, the MOH shall furnish a list of equipment and materials satisfactory to A.I.D.
 3. Prior to disbursement or to the issuance of any commitment documents for engineering or other technical services, the MOH shall furnish to A.I.D.: an executed contract for engineering or other services with a firm acceptable to A.I.D.

C. Special Covenants - Loan

Borrower shall covenant -

1. To adequately budget for maintenance for the health facilities where medex are deployed.
2. To furnish to A.I.D., on an annual basis, evidence satisfactory in form and substance to A.I.D., that adequate resources have been allocated to provide the required counterpart funding to the Project.

D. Waiver

The procurement of 35 vehicles and 35 motorcycles is to be financed by A.I.D. under the Loan for use by supervisory staff and medex and community health workers of the Ministry of Health. Waiver of the source requirement for the procurement of vehicles is authorized on the grounds of custom and safety, and, because of lack of spare parts and maintenance capability for U.S. vehicles; Code 935 procurement authorized.

Since the requested motorcycles are not of the type presently manufactured in the U.S., Guyana or countries included in A.I.D. Geographic Code 941, procurement of these motorcycles from A.I.D. Geographic Code 488 (Japan) is hereby authorized.

Assistant Administrator

Date

**PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK**

Annex D

Life of Project:
From FY 1979 to FY 1983
Total U.S. Funding \$4,700,000
Date Prepared: _____

Project Title & Number: Rural Health Systems - 504-0066

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p>Program or Sector Goal: The broader objective to which this project contributes:</p> <p>Overall goal: To improve the Health status of Guyana's population</p> <p>Intermediate goal: To improve and expand primary health care services for the people of Guyana.</p>	<p>Measures of Goal Achievement:</p> <p>80% of rural population covered by primary health care services. (Note: Coverage is defined as that population within 5 mile radius of a deployed Medex, plus that population in villages served by a Community Health Worker.</p>	<p>Pre-Project and Post-Project Evaluation</p>	<p>Assumptions for achieving goal targets:</p> <ul style="list-style-type: none"> - Health coverage will contribute to improved health. - GOG maintains existing or higher level of political and financial support to health sector. - Other Donors continue existing support. - Economic and political conditions remain stable.
<p>Project Purpose:</p> <p>to develop a functioning nation-wide rural primary health care delivery system.</p>	<p>Conditions that will indicate purpose has been achieved: End of project status.</p> <ol style="list-style-type: none"> 1. One permanently institutionalized Medex Training Unit capable of producing a maximum of 24 trained Medex annually. 2. 100% of trained Medex deployed to permanent positions with 85% assigned to duty stations in rural areas where they are training/supervising CHW's. 3. Trained CHW's providing basic health services at the village level. 4. 15% of Medex trained as Senior Medex Supervisors/Administrators deployed to permanent supervisor administrative positions at the District, Regional, and Central levels of the MOH. 5. 50% of covered rural population have at least one direct contact with Medex and CHW's annually. 	<ol style="list-style-type: none"> 1. Inspection Site Visit Personnel Records Post-Project Evaluation 2. Personnel Records Annual Budget 3. Personnel Records Supervisory Reports 4. Personnel Records Annual Budget 5. Monthly Medex Activity Reports Medex Supervisor's Reports Health Station and Clinic Registers Post-Project Evaluation 	<p>Assumptions for achieving purpose:</p> <ul style="list-style-type: none"> - MOH re-organizes central and Regional Administration to integrate delivery of curative and preventive programs. - MOH continues to increase resources allocated to rural areas. - University of Guyana formally establishes new faculty of Health Sciences, including Medex Training Unit in it. - MOH provides permanent positions for Sr. Medex/Sr. PHN Administrators at Region and Central levels. - Medex are deployed to locations which improve rural populations' accessibility to primary health care services. - Villages develop systems for supporting CHW's. - MOH selection of candidates to be trained as Medex and community selection of CHW's emphasize social criteria that maximize retention of trained workers in rural areas.

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORKAnnex D
Page 2Life of Project:
From FY 1979 to FY 1983
Total U.S. Funding \$4,700,000
Date Prepared:

Project Title & Number: Rural Health Systems - 504-0066

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Outputs: 1. Training a) Medex Training Unit operational b) Medex Tutor Training accomplished c) Medex Short-course on CHW training/supervising given d) Medex Long-Term Training (15 mos.) e) Program implemented - Community Health Workers (CHW's) trained f) Courses for Sr. Medex and Sr. PHM's in supervision and continuing education given g) Sr. Medex and Sr. PHM's taught Administration & Management h) Medical Officers Orientation completed i) MOH Officials in Administration & Mgmt j) Equip. Maint./Repair Technicians course k) Supply Officials Training implemented l) Supply Clerks training implemented	Magnitude of Outputs: a) Staffed with trained tutors, has completed curriculum & training materials & producing 24 Medex/class. b) 3 Medex, 3 MD's, 1 Adm./Mgt. Specialist trained & functioning as tutors c) 60 Medex/PHM's trained for CHW training, continuing education and supervision. d) 70 Medex trained & deployed e) 200 CHW's trained & operating f) 20 Sr. Medex/Sr. PHM trained in supervision & cont. education g) 7 Sr. Medex/Sr. PHM (Reg), 2 Sr. Medex/Sr. PHM (Central) with additional training h) 100% of MO's, RMO's & new MO's oriented to new system i) 15 MOH officials (Regional Central) with Mgmt. Training j) 7 trans./equip.; 7 med. equip. trained and functioning k) 7 Regional technicians trained and functioning l) 20 District Supply Clerks trained and functioning	Personnel Records Monthly Medex Activity Reports Medex Supervisor's Reports Inspection Site Visits In-Service Training Records Sr. Medex/Sr. PHM Administrator Reports	- MD's are made available on timely basis by MOH for tutor training. - Students are made available by MOH on timely basis for Medex/PHM & Sr. Medex/Sr. PHM training. - Rural villages are willing to financially support CHW's. - Medical Officers are made available by MOH on scheduled basis for orientations. - MOH Regional & Central Officials and technicians/clerks are made available by MOH on scheduled basis for short-course and in-service training. - Medex and Sr. Medex/Sr. PHM's are listed in GOG current and capital estimates. - No more than 1% failures to complete the Medex Course.
2. Management Support Infrastructure a) Facilities development accomplished b) Village drinking water improved c) Exemplary latrines built d) Medex Supervision/Continuing Education of CHW's underway e) Equipment Maintenance/Repair System operating f) Communications System operating g) Supply System operating h) Information System operating i) Patient referral system operating j) Supervision/Continuing Education of Medex underway k) Central MOH Community Health Services Unit established l) Operations Manuals developed	a) 41 Medex residences; 50 elevated water tanks & 50 latrines built b) 100 improved village water supplies c) 200 new or improved village latrines d) 90% Medex bi-weekly visits to CHW's. e) 90% Medex equipment operating f) 90% Medex with functioning radio/phone g) 100% Medex with 90% of Std. supplies h) 100% Medex reporting 90% of req. info. i) 100% Medex have referral points with 90% feedback from said refs. j) 100% Medex visited monthly by Sr. Medex/Sr. PHM k) PHO (Community Health Services) assigned and functioning l) Operations Manuals for Health Stations and Health Center/District Hospital completed and in use.	Inspection Site Visits Monthly Medex Activity Reports Medex Supervisor's Reports Personnel Records Printed Operations Manuals	- MOH willingness to maintain assigned counterparts for Long-Term Advisors. - MOH maintains continuing coordination among various donor projects. - Building materials and supplies continue to be available. - Output of training programs given priority within health system.

**PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK**

Annex D
Page 3

Life of Project:
From FY 1979 to FY 1983
Total U.S. Funding \$4,700,000
Date Prepared: _____

Project Title & Number: Rural Health Systems - 504-0066

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Inputs:	Implementation Target (Type and Quantity)		
1. <u>USAID Grant for Technical Assistance</u>			
a) Personnel	a) \$ 537,815	TA Contractors Records	- AID Inputs will be available in a timely fashion.
b) Fringe Benefits	b) 126,555	Project Director's Reports	- TA contractor is able to employ/deploy Long-Term Advisors per schedule.
c) Consultants	c) 42,960	AID Mission Monitoring Activity	- AID approves fees and international travel of short-term consultants selected by TA Contractor.
d) Travel & Transportation	d) 250,265		
e) Allowances	e) 326,529		
f) Equipment & Supplies	f) 63,645		
g) Other Direct Costs	g) 34,971		
h) Participant Training	h) 196,359		
i) Contractors Overhead	i) 128,484		
j) Contingency	j) 92,417		
	Total \$1,800,000		
2. <u>USAID Loan</u>			
a) Construction	a) \$1,042,889	MOH Financial Records	- AID waiver obtained covering purchase of non-USA mfg. transportation/other equipment and spare parts.
b) Commodities	b) 1,107,995	MOH Personnel Records	- Qualified construction supervisors for local employment are available on a timely basis.
c) Personal Services	c) 180,000	Project Director's Reports	
d) Training	d) 205,480	Inspection Site Visits	
e) Facilities Maintenance & Repair	e) 100,000		
f) Contingency	f) 263,636		
	Total \$2,900,000		
3. <u>MOH Contribution</u>			
a) Personnel (Salaries & Enrollments)	a) 676,136	MOH Financial Records	- MOH continues to re-allocate increasing numbers of health personnel and permanent positions to Medex training, and deployment of Medex to rural areas.
b) Facilities & Utilities	b) 226,800	MOH Personnel Records-	
c) Equipment & Supplies	c) 1,198,400		
d) Local Travel	d) 143,808		
e) Contingency	e) 224,514		
	Total \$2,469,658		
4. <u>Village Contributions</u>			
a) Personnel/Labor/Materials	a) 493,500	Monthly Medex Activity Reports	- Villages will provide a stipend in cash or kind, or both, to support a CHW.
b) Contingency	b) 49,350	Medex Supervisor's Report	
	Total \$ 542,850		

DETAILED PROJECT BACKGROUND

Historical Development of the Health Sector

Following Independence, Guyana began moving away from the vertical model characterizing colonial health services. In the late sixties, the Ministry of Health and Housing initiated an integrated health service program. The objectives of the program were to reorganize the structure of health services and extend them at both regional and local levels; to integrate both preventive and curative services; to train health personnel and improve facilities for communicable disease control, environmental sanitation, statistical services and health education. The 1966 Development Plan called for the expenditure of G\$13.7 million to implement these objectives (G\$20 per capita). Actual GOG health expenditures in 1977 amounted to G\$36.1 per capita. (1979 estimated expenditures raise this to \$46). It should be noted here that these expenditures are still mal-distributed in favor of the urban/curative subsector. Further, these expenditures represented 6.8% of overall government outlays in 1977, a reduction in priority for health when viewed in the context of expenditures for health over the past decade.

There are, however, some significant steps being taken to improve Guyana's health situation. Particularly impressive is an effort to increase the role played by paraprofessional health workers outside the hospital setting. This Project builds upon a pilot program in this area, the LDRC supported MEDEX Demonstration Training Program discussed in the next section, "Donor Activities". The MOH has also taken advantage of an opportunity provided by Guyana's recent membership in the Inter-American Development Bank to obtain a loan to make major alteration in its health delivery system. This is also discussed in the next section.

The current reported infant mortality rate for Guyana is 38.0 per thousand live births. This is considerably below the average infant mortality rate for Latin America and is a vast improvement over the rate of 141 per thousand only 40 years ago. Life expectancy now is 67.2 years. The causes of the lower infant mortality rate are not yet clearly known; some authorities credit extensive anti-malaria campaigns, but others believe these can account for less than half of the improved rate. Since it is known that there has been slight improvement in reporting, the exact figures may not be known until a comprehensive reporting system is established.

In 1967 there were 147 medical centers of various kinds including

rural maternal and child health units. Ten years later there were 174 such centers. In addition there were 24 public or private general hospitals and 12 "cottage" and "sugar estate" hospitals. In 1977 there was a 28% reduction in such institutions with a 50% reduction in the number of hospital beds (to 2.7 beds per 1,000 population).

Just prior to independence, there were 233 doctors registered in Guyana. This provided a doctor/population ratio of about one to 2600. There were also two dentists, 227 midwives, 144 nurses, and a number of sanitary officers and medical technicians. In 1977 there were 109 doctors (a doctor/population ratio of one to 7692). There are now 90 doctors, 11 dentists, 298 midwives and 832 nurses.

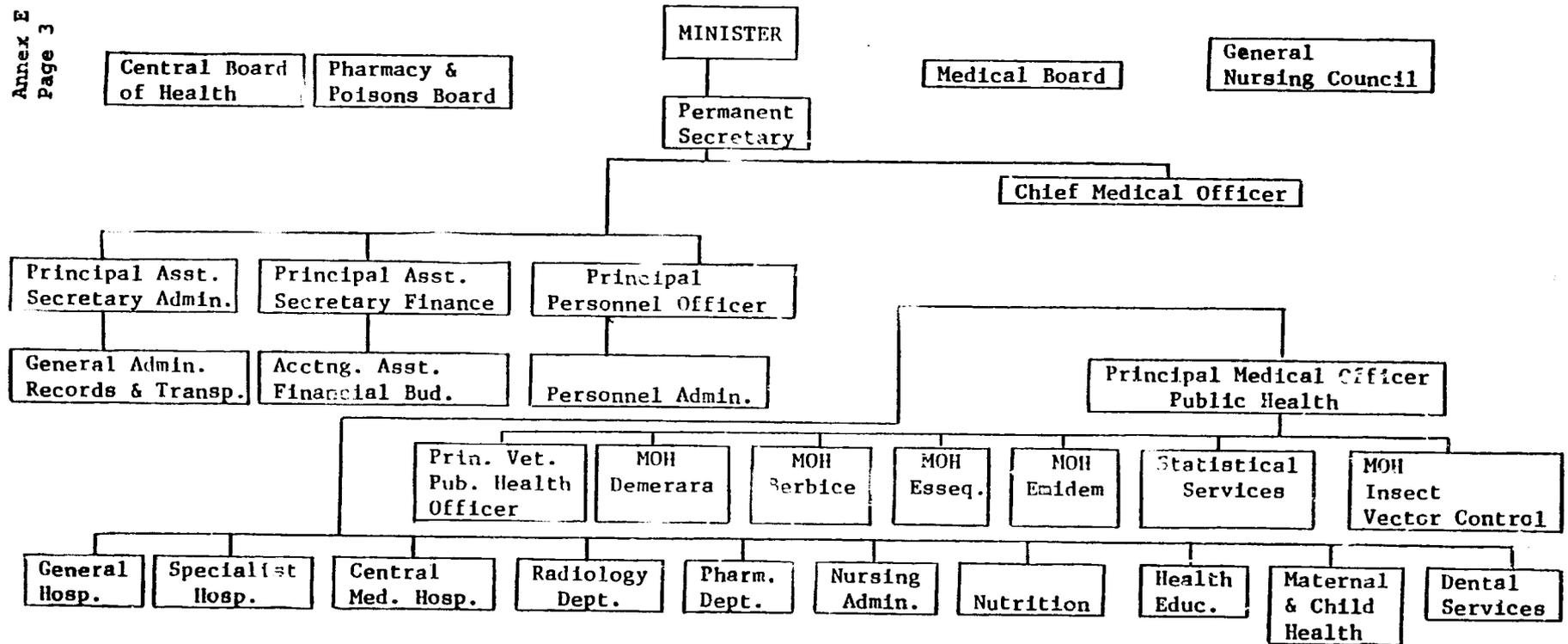
Although there is still an urban/curative bias evident in the nation's health activities, Guyana has taken bolder steps than many countries to offset the present imbalances. This project represents one such step.

The 3 tables that follow describe the organization of the Ministry of Health, and the types of facilities and health personnel available in the public sector.

Further background information on population characteristics, the health status, present delivery system, etc. is available in the report "A Preliminary Assessment of the Health/Nutrition Sector in Guyana, May 1978".

ORGANIZATIONAL CHART OF THE MINISTRY OF HEALTH

Annex E
Page 3



TYPE OF FACILITIES IN PUBLIC SECTOR* AND NO OF INHABITANTS PER FACILITY - BY REGION, 1977

REGION	REGIONAL HOSPITALS	DISTRICT HOSPITALS	HEALTH CENTERS	HEALTH STATIONS	DISPENSARIES	MEDICAL OUTPOSTS	TOTAL NO. OF FACILITIES BY REGION	POPULATION	INHABITANTS PER FACILITY REGION
1 A	-	2	1	4	1	-	8	21,623	2,401
B	-	1	6	8	3	-	18	94,261	5,237
2	1	2	7	20	-	2	32	65,588	2,050
3	1	5	24	32	12	-	74	437,923	5,918
4	1	3	6	16	9	-	35	177,311	5,066
5	-	2	-	5	4	7	18	14,971	832
6	-	1	-	3	-	4	8	16,755	2,094
COUNTRY TOTAL	3	16	44	88	29	13	193	826,014	4,280

* Excluding specialized hospitals, but including government, corporation, and municipal owned facilities

PERSONNEL OF HEALTH SERVICES*

MINISTRY OF HEALTH, CORPORATIONS AND MUNICIPALITIES - JUNE 1977

GUYANA

TYPE OF PERSONNEL	MINISTRY OF HEALTH	CORPORATIONS	MUNICIPALITIES	TOTAL
COMMUNITY HEALTH WORKER	12	-	-	12
MIDWIFE	287	11	-	198
PUBLIC HEALTH NURSE	52	-	12	64
NURSE/NURSE MIDWIFE	774	47	11	832
NURSE ASSISTANT	552	42	2	596
NURSE-AIDE	70	58	-	128
MEDEX-DISPENSER	49	24	4	77
MEDICAL DOCTOR	92	15	2	109
DENTIST	11	-	-	11
MEDICAL TECHNOLOGIST	64	-	1	65
PHARMACIST	11	1	-	12
RADIOGRAPHER	8	3	-	11
DENTAL AUXILIARY	-	-	-	-
LAB. TECHNICIAN	-	5	-	5
X-RAY TECHNICIAN	11	-	-	11
DENTAL AID	14	-	-	14
DISPENSARY ASSISTANT	21	2	-	23
FOOD SERVICE SUPERVISOR	5	-	-	5
STATISTICAL CLERK	-	-	-	-
PUBLIC HEALTH INSPECTOR	44	-	28	72
HOSPITAL ADMINISTRATOR	2	1	-	3
OTHERS	897	75	4	976
TOTAL	2976	284	64	3324
	89.5	8.6	1.9	100%

It includes part-time, full-time personnel and students working in services; it does not include personnel of specialized hospitals

Donor Activities

1. Prior years U.S. Assistance

Health related AID assistance to Guyana in the past has been minimal, and occurred during the period 1965 - 1970. Two grants were made as follows:

- a) Health Operations Project (1965-1969) providing health assistance and advisory services to the Georgetown Hospital by the Albany Medical College. \$463,000 was expended for this activity.
- b) Health Facilities Project (1965-1970). A capital grant project of \$93,000 to construct a health center at Parika and an obstetrical wing on the hospital at Suddie.

Currently, USAID has two health-related projects underway. One provides a grant of \$250,000 over a 3 year period to the American Leprosy Missions Inc., to sponsor the MOHs Leprosy Unit in its efforts to improve diagnostic and treatment services, early diagnosis among schoolchildren, integration of leprosy into general health services, and initiate phaseout of institutionalized care.

The other ongoing project is also a grant, assisting the Guyana Pharmaceutical Corporation in the development, manufacture, marketing and promotion of widespread use of a cheap and palatable weaning food. A \$500,000 grant has been made by AID for this 3 year project. Title II Commodities worth US\$349,000 are also provided.

2. IDRC Project

In 1975 the MOH established a task force group to design a strategy for delivering improved and expanded health services to needy areas of the country. As a result of this study, a decision was made by the MOH to train middle-level health workers utilizing the MEDEX design approach. As AID support for this effort was unavailable in 1975, the GOG requested and obtained financial support from the International Development Research Center (IDRC) of Ottawa, Canada.

The purpose of the IDRC Project was to:

- a) establish a demonstration program for the training and

deployment of a new middle-level health personnel following the MEDEX approach.

b) strengthen the health infrastructure within which Medex would perform.

c) set the stage for the ultimate training of Community Health Workers.

The main research objectives of the project were:

to evaluate the effectiveness of the MEDEX program and to assess the impact of the MEDEX manpower system in altering the conceptual structure of health services delivery.

The Project was designed to cover the period Jan. 1977 to Jan. 1980, with the IDRC contributing C\$275,500 and the MOH \$307,890 equivalent.

Project activities were scheduled in 3 phases:

Stage 1: Project Initiation: This stage included recruitment of core staff; their orientation in the MEDEX methodology; incorporation of Medex into the MOH Personnel System including legislation to authorize their practice of medicine within the public service; task analysis to define the specific role that Medex graduates would play on the health team; data gathering to provide base-line data for project evaluation purposes and other data upon which to base the training; and a variety of other pre-planning activities.

Stage 2: Training Program: This stage included curriculum development, selection process, the actual training of the Medex, the deployment of the Medex, and continuing education.

a) Curriculum development. Upon their return from the training program in Hawaii, the project core staff completed the adaptation to the Guyanese situation of the early drafts of clinical and preventive health modules initially developed by HMDS.

b) Selection process. Two types of personnel were selected: the Medex and instructors to supervise the Medex during their field training period. The first group of Medex students were drawn from existing paramedical personnel in order to ensure a smooth transition to the new manpower system. Selection was based on competency, concern for the health of

the community and motivation to serve in areas of need.

c) Training of Medex. This was planned and implemented according to the System for Teaching Essentials to Medex (STEM), developed by the University of Hawaii, which focuses on a competency-based and problem-oriented methodology. The training was divided into two consecutive parts. The first part took place in a classroom, where the various modules in preventive and curative health are presented, and lasted approximately six months. The second part was supervised field training lasting eight months.

d) Deployment of Medex. This is being done by government directive into government jobs, as full-time, salaried employees of the Ministry of Health. These assignments are to locations previously identified such as remote medical outposts, health stations, health centers, and district hospitals. Initial priority is given to the interior of the country and to inadequately served coastal regions.

e) Continuing Education. Since the Medex are located in remote areas, a continuing education program is considered essential to counteract the erosion of skills and motivation which would otherwise occur rapidly.

Stage 3: Final Evaluation and dissemination of project results:

At the end of the three-year project, a final survey will be carried out. Results will be compared with those obtained from initial baseline data, and an evaluation of the effectiveness of the program will be made by the research staff of IDRC. In addition, a cost-benefit analysis will be conducted, as well as a review of the changes introduced by the MEDEX project within the health delivery structure.

3. The IDB Project

The objectives of the Inter-American Development Bank Project which began in August 1978 and which will be implemented over a 4 year period are as follows:

- a) To expand and improve the coverage of health care by the addition of new health facilities and through the better utilization of existing infrastructure.

- b) To reorganize the Health Care Delivery System, on the basis of a regionalized system of accessibility and referrals, in order to provide basic services as well as to be able to refer more complex cases to the more specialized health facilities, especially in the scattered rural and interior communities.
- c) To develop various levels of human resources in the quantity and quality required to cope with the health needs of the country.

To achieve the above objectives, the IDB Project will:

- a) Construct and equip new health facilities:
 - Approximately 11 Health Posts with an area of about 608 sq. ft. each.
 - Approximately 7 Health Stations with an area of about 2,630 sq. ft. each.
 - 1 Health Center with an area of approximately 6,585 sq. ft. each.
 - Approximately 6 District Hospitals: four of 10 beds and two of 20 beds, each of them with an area of about 18,935 sq. ft. and 19,772 sq. ft. respectively. The 10-bed hospitals will be located in Regions 1, 2B, 5 and 6; while the 20-bed hospitals will be located in Regions 3 and 4.
- b) Expand and equip existing facilities:
 - 1 District Hospital in Leonora with an area of about 4,343 sq. ft.
 - 1 Regional Hospital in Best with an area of approximately 45,496 sq. ft.
 - 1 Regional Hospital in Suddie with an area of about 25,352 sq. ft.
- c) Train Senior MOH personnel abroad:
 - Nursing Administration. Two professional nurses for one year each, possibly in Canada.
 - Health Statistics. One professional for one year, possibly in Jamaica.

- Supervision of food services. One professional for four months, possibly in Barbados.
 - Hospital Administration. Two professionals for one year each, possibly in England.
 - Equipment maintenance. One professional for one year, possibly in the United States of America.
- d) Train middle and lower level MOH personnel in-country:
- Hospital Administration. Seven courses, each of three months duration, would be organized with ten participants per course.
 - Accounting. Seven courses, each of six months duration, would be held with ten participants per course.
 - Statistics. Four courses, each of four months duration, would be provided, with ten participants per course.
 - Food Preparation. Eleven courses, each of one month duration, would be conducted, with eight participants per course.
 - General Development of personnel. The purpose of which would be to familiarize physicians and nurses with the implications of the system for the regionalization of health services. Twenty courses, each of five days duration, would be organized, with twenty participants per course.
- e) Provide technical assistance to the MOH, as follows:
- Health systems administration: one expert with experience in the administration of health systems at the national level, for 12 months.
 - Managerial information system: one expert in hospital statistics, for 8 months.
 - Cost accounting: one expert with experience in health systems accounting, for 12 months.
 - Organization and methods: one expert in health service systems and operations, for 8 months.

- Development of regionalized health systems: two experts in health sciences with experience in the development and design of regionalized systems, for a total of 16 months/consultant.
 - Hospital administration: one expert in hospital organization and administration for a period of 6 months.
 - Development of specific medical standards: two physicians with experience in the establishment of standards and medical care and services, for a total of 12 months/consultant.
 - Maintenance of building and equipment: two experts in maintenance of health facilities and equipment, for a total of 8 months/consultant.
 - Health legislation: one lawyer with experience in health legislation, for a period of 4 months.
- f) Conduct a feasibility study of the Georgetown Hospital in terms of its functions as the national referral hospital of Guyana: (\$77,000 (U.S.) Grant):
- 1 health planner, for 4 months.
 - 1 economist with experience in health project analysis, for 3 months.
 - 1 expert in hospital administration, for 3 months.
 - 1 financial analyst with experience in health projects, for 3 months.
 - 1 architect with experience in the design of health facilities, for a period of 2 months.
 - 1 expert in defining and selecting hospital equipment, for a period of 2 months.

A \$9,232,000 budget has been provided by the IDB with the following breakdown:

Construction and Equipment of Facilities (Loan)	US\$8,800,000.
Technical Assistance (Grant)	355,000.
Georgetown Hospital Feasibility Study (Grant)	77,000.

TOTAL US\$9,232,000.

A table, indicating the proposed interface between the IDB project and the Rural Health Systems Project appears as Annex F.

4. The Netherlands Pilot CHW Project

In 1977 the Netherlands Government sent a mission to Guyana to explore possible areas of cooperation with the MOH. Out of this emerged a small pilot project which is to begin in mid-1979. This project is to train 30 CHWs over a two-year period. The MEDEX program staff and the Netherlands staff have met and worked out a cooperative arrangement whereby the two projects will work in concert to pave the way for the larger expanded primary health care system. As part of these arrangements the MEDEX staff will collaborate with the two tutors and others in the pilot scheme to work out a converging curriculum. Since the Netherlands project begins a year before CHWs are to be trained under the AID-funded project, the Medex staff will have the benefits of their curriculum and training experience. In addition, although the MOH's preparatory discussions with exemplary villages indicated that villages are willing and desirous of supporting their CHWs, further experience of the pilot program will add significantly to this project's later and larger efforts in community organization for management and support of CHWs. The groundwork laid by the pilot demonstration has already proven to be timely and encouraging to this project's efforts.

5. Other International Organizations

Guyana's health programs have benefited from assistance from several other international organizations, including the Pan American Health Organization; Canadian International Development Agency; United Nations Development Program; World Food Program; the United Nations Children's Fund; International Bank for Reconstruction and Development (World Bank); and others. Details of this assistance are available in the aforementioned Preliminary Assessment of the Health/Nutrition Sector in Guyana.

INTER-FACE RELATIONSHIP BETWEEN AID AND THE IDB PROJECT

Annex F

Donor Supported Activities	Levels of Re-organized Health Services Delivery System:				
	Level 5: Central	Level 4: Region	Level 3: Health Center/ Dist. Hospital	Level 2: Health Station	Level 1: Health Post/Village
A. Facilities Development:					
1. Feasibility Study - Georgetown Hospital	IDB	-	-	-	-
2. Constructing and equipping new facilities	-	-	IDB: 1 Health Center IDB: 6 Dist. Hospitals	IDB: 7 Health Sta.	IDB: 11 Health Posts
3. Expanding and equipping existing facilities	-	IDB: 2 Regional Hospitals	IDB: 1 Dist. Hospital		
4. Renovating & equipping existing facilities	-	-	-	-	-
5. Improving village water supplies	-	-	-	-	AID
6. Improving village sanitary facilities/ latrines	-	-	-	-	AID
B. Training Abroad:					
1. Health Planning (1 yr.)	AID	-	-	-	-
2. Health Statistics (1)	IDB	-	-	-	-
3. Health Services Administration:					
a) Hospital Admin (2)	IDB	IDB	-	-	-
b) Nursing Admin (2)	IDB	IDB	-	-	-
4. Hospital Support Services					
a) Food Services (1)	IDB	IDB	IDB	-	-
b) Equip Maintenance (1)	IDB	IDB	IDB	-	-
5. Training Staff Development					
a) MPH/Primary Health Care	AID	-	-	-	-
b) Primary Health Care	AID	-	-	-	-

	Level 5:	Level 4:	Level 3:	Level 2:	Level 1:
C. Training In-country					
1. Health Statistics	IDB	IDB	IDB	AID	-
2. Health Services Administration					
a) Hospital Administration	IDB	IDB	IDB	-	-
b) Primary Health Services Management	AID	AID	AID	AID	-
c) Supervision of MX and CHW	-	AID	AID	AID	-
d) Orientation on reorganization and regionalization	IDB	IDB	IDB	IDB	IDB
e) Orientation of Medical Officers	AID	AID	AID	-	-
3. Management Support Specialists					
a) Equipment maintenance technicians	-	AID	AID	AID	-
b) Supply Technicians	-	AID	AID	-	-
c) Accounting	IDB	IDB	IDB	-	-
d) Food Preparation	IDB	IDB	IDB	-	-
4. Training of Tutors:					
a) Tutors of Medex	AID	-	-	-	-
	-	-	-	-	-
5. Rural Health Workers:					
a) Medex	AID	-	-	-	-
b) CHW's	-	-	AID	AID	AID
D. Developing Organization and Management Support Services					
1. MOH Planning System					
a) Health Statistics	IDB	IDB	IDB	IDB	IDB
b) Information System	IDB/AID	IDB/AID	IDB/AID	IDB/AID	IDB/AID
c) Planning System	IDB	IDB	IDB	IDB	IDB

	Level 5:	Level 4:	Level 3:	Level 2:	Level 1:
2. Organizational Development and Administration/Management					
a) General	IDB	IDB	IDB	AID	AID
b) Hospital	IDB	IDB		-	-
c) Primary Health Care	AID	AID	AID	AID	AID
3. Financial Accounting and Control System	IDB	IDB	IDB	IDB	IDB
4. Building and Equipment Maintenance System	IDB	IDB	IDB	IDB	IDB
5. Supply Systems	IDB	IDB	IDB	IDB	IDB
			AID	AID	AID
6. Communications Systems Including equipment/spare parts	AID	AID	AID	AID	AID
7. Transportation Systems Including equipment and spare parts	IDB	IDB	IDB		
			AID	AID	AID
8. Start-up equipment and supplies for Medex and CIW's	-	-	AID	AID	AID
E. Technical Advisors - Long Term					
1. Management Advisor for Primary Health Care	AID	AID	AID	AID	AID
2. In-Service Training Advisor	AID	AID	AID	AID	AID
3. Training Methods Advisor for Medex and CIW's	AID	AID	AID	AID	AID
F. Technical Advisors - Short Term					
1. Feasibility Study team: Georgetown Hospital (6)	IDB	-	-	-	-

	Level 5:	Level 4:	Level 3:	Level 2:	Level 1:
2. National Level Planning/Administration (1)	IDB	-	-	-	-
3. Regionalized Health Systems (2)	IDB	IDB	IDB	AID	AID
4. Health Legislation (1)	IDB	-	-	-	-
5. Medical Standards (2)	IDB	IDB	IDB	-	-
6. Hospital Statistics (1)	IDB	IDB	IDB	-	-
7. Cost Accounting (1)	IDB	IDB	IDB	IDB	-
8. Organization & Methods (1) IDB (1) AID	IDB	IDB	IDB AID	AID	AID
9. Hospital Administration	IDB	IDB	IDB		
10. Maintenance of buildings and equipment (2) IDB (2) AID	IDB	IDB	IDB AID	IDB AID	IDB AID
11. Curriculum adaptation and development (Medex and CHW's)	AID	-	-	-	-
12. Training of Tutors	AID	-	-	-	-
13. Rural Mgt. Support Systems a) Communications b) Transportation c) Supply d) Information	AID AID	AID AID	AID AID AID AID	AID AID AID AID	AID AID AID AID
14. Management Training of: a) MOH Central and Regional Officials b) Supervisors of Medex and CHW's c) Medex	AID - AID	AID AID -	- AID AID	- AID AID	- - -

Annex G

MEDEX DEPLOYMENT AND SUPPORT PLAN

Planning for deployment sites of Medex should be considered tentative for two major reasons. The GOG's Ministries of Regional Development and Economic Development, both of which have responsibility for rural settlement and re-settlement, have not yet identified a pattern sufficiently clear to earmark locations 3 or 4 years from now with finality. In addition, health personnel rationalization by the MOH as part of its re-organization and regionalization program is just beginning and must consider carefully such other factors as availability of other members of the primary health care team, physical facilities, and other vital infrastructure support, before sites can be finalized.

The Medex Unit of the MOH has, however, begun a serious study of the deployment of Medex, in consultation with the IDB health loan implementation unit. This effort has resulted thus far in a list of 82 rural deployment sites, including 17 places where Medex are currently located, and 65 more tentatively earmarked for Medex posting in the next 4 years. It is planned to finalize this list for all existing and proposed Medex by the end of the first project year.

On the following pages are provided:

1. Medex deployment and support plan
2. Map of Guyana giving tentative Medex deployment sites
3. Basic Medex and CHW equipment
4. Radio Communications equipment
5. Transportation equipment
6. Medex training equipment
7. Miscellaneous equipment

PART 1, MEDEX DEPLOYMENT AND SUPPORT PLAN

Medex Location	Deployment Date	Facility	PROJECT INPUTS				
			Housing	Radio	Boat	UTV	Motor Cycle
Kamarang	1/7/78	DH		X			
Mahdia	"	DH		X		X	
Wineperu	"	HS				X	
Schepmoed	"	D		X			X
Moruca (Acquero)	"	HC		X	X	X	
Bush Lot, Corentyne	"	HC	X	2X			
Crabwood Creek	"	HC	X		X		X
Leguan	"	DH					X
Kuru Kururu	"	HS				X	
Buxton	"	HC				X	
Better Hope	"	D					
Non Pariel	"	D					
Kwakwani	"	DH					
Kimbia	"	MC					
Tumatumari	"	MC					
Wismar	"	DH					
Timehri	"	MC					
Waramuri	1/8/79	HS		X	X		
Mabaruma	"	DH		2X		X	
Port Kaituma	"	HC		X		X	
Charity	"	DH		2X			
Wakenaam	"	HS		X			X
Kabakaburi	"	HS	X	X		X	
Mahaicony River/ Wash Clothes	"	HS	X	2X	X		
Cane Grove	"	HS					X
Grove, EBD	"	HC	X				
Mahaica River	"		X	X	X		
Rosignol	"	HC	X			X	
Orealla	"	HS		2X			
Ebini	"	HP	X	X			
Kurupung	"	D		2X		X	
Aishalton	"	HS		X		X	
Lethem	"	DH	X	X		X	
Annai	"	HS	X	X		X	
Kato	"	HP		X		X	
No. 64 Corentyne	"	HC	X				
Williamsburg	"	HC	X				
SUB-TOTAL			12	26	5	14	5

*Utility Type Vehicle

PART 1, MEDEX DEPLOYMENT AND SUPPORT PLAN

Medex Location	Deployment Date	Facility	PROJECT INPUTS				
			Housing	Radio	Boat	UTV*	Motor Cycle
Supply	March '80	HC	X			X	
No. 48/Eversham	"	HC	X				X
Whim	"	HS	X				X
Vryheid	"	HS	X				X
Mibicuri	"	DH		X		X	
Ida Sabina	"	D		X	X		X
Ithaca	"	HC	X				X
Fort Wellington	"	DH	X				X
Golden Grove	"	HC	X				
Soesdyke	"	DH			X	X	
Long Creek	"	HS		2X		X	
La Grange	"	HC	X				X
Leonora	"	HC	X			X	
Parika	"	HC				X	
Anna Regina	"	HC					X
Kwehana	"	HS	X	X	X		
Supenaam	"	HC		X			X
Canal No. 1	"	HS	X				X
Canal No. 2	"	HS	X			X	
Jawalla, Maz/Potaro		HS		X	X		
Paramakatoi, Rupununi		HS	X	X			
Den Amstel		HC	X				X
Sisters, EBB'ce		HS	X	X			
Strath Campbell		HC					X
Bonemia		HC	X				X
Woodley Park		HC					X
Litchfield		HC	X			X	
Clonbrook		HC	X				X
Windsor Forest		HC	X				X
Craig		HC					
Beterverwagting		HC					
Helena		HC	X			X	
Calcutta		HS	X				
Bush Lot, WCB'ce		HC					X
Hackney		HS					X
Albion		HS					
SUB-TOTAL			21	9	4	9	18

*Utility Type Vehicle

PART 1, MEDEX DEPLOYMENT AND SUPPORT PLAN

Medex Location	Deployment Date	Facility	P R O J E C T I N P U T S				
			Housing	Radio	Boat	UTV	Motor Cycle
Fryrish		HS	X				X
Wales		D					X
Good Intent		DH					
Cumberland		HC					X
Huist-Dierin		HC					
Lan-liv-man		HS					X
Windsor Castle		HC					X
Handsome Tree		HS					
Ann's Grove		HC					
TOTAL		82	34	35	9	23	28
ESTIMATE FOR 100 RURAL LOCATIONS			41	41	12	28	34
Other Project Locations:							
Medex Headquarters				X		X	
Ministry of Health (Project Director)						X	
Regional - Bartica						X	
- Suddie						X	
- Berbice						X	
TOTAL			41	42	12	33	34
PD&S FUNDED			-	12	-	-	-
RHS FUNDING REQUIRED			41	30	12	33	34

Key: DH - District Hospital
D - Dispensary
HS - Health Station
HC - Health Center
MC - Medical Clinic

PART 3 - BASIC MEDEX AND CHW EQUIPMENT AND SUPPLIES

A. MEDEX:

No.	Item	Quantity per Medex
1	Mouth mirror with handles	2
2	Explorer, dental double end	2
3	Cotton tweezers	2
4	Excavator, double end	2
5	Spatula and Mixing slab	1
6	Upper & Lower Root forceps (adult)	1
7	Upper & Lower Root forceps (child)	1
8	Upper Incisor forceps (adult)	1
9	Lower Incisor forceps (adult)	1
10	Upper Bicuspid forceps (adult)	1
11	Lower Bicuspid forceps (adult)	1
12	Upper Molars forceps right & left (adult)	1
13	Lower Molars forceps (adult)	1
14	Cryer's elevators left & right	1
15	Zinc Oxide	½ oz. powder & ½ oz. liquid
16	Ugenol	1 vial
17	Suture Needles Size 000	1 pkt.
18	Zinc Phosphate Cement	1 box powder & 1 box liquid
19	Syringes, Hypodermic	2
20	Needles, Hypodermic	4 doz.
21	Cotton Holder	1
22	Applicator sticks	1 doz.
23	Simpson's Epistaxis Bag	3
24	Foley's Catheters	3
25	Diagnostic set (Oroscope & Ophthalmoscope - small)	3
26	Lack's tongue depressors	1
27	Tiley's Nasal forceps	1
28	Torchlight 3 cell/5 cell	1
29	Nasal dropper with ½ oz. bottles	3
30	Ear dropper with ½ oz. bottles	3
31	Syringes, ear	1
32	Centrifuge	1
33	Urinometer	2
34	Test tube racks	2
35	Centrifuge tubes	12
36	Microscope slides	1 box

No.	Item	Quantity per Medex
37	Cover Glass	1 box (1 oz.)
38	McCarthy Bottles	12
39	Glass rod	12
40	Drop bottles clear	6
41	Drop bottles dark	12
42	Reagent bottles 500 ml.	6
43	Swabs	
44	Stool containers	50
45	Sputum containers	50
46	Platinum loops & holders	2
47	Alcohol Lamps	2
48	Water bath - 37°C	1
49	Stains (all colours)	250 cc of each
50	Test tubes 3 x ½ & 4 x ½	1 box each
51	Test tubes 16 x 150	1 box each
52	Filter paper 12.5 cm 15.0 cm	1 box each 1 box each
53	Litmus paper	1 box
54	Hellige sets - 6 only	
55	Colorimeter - Battery/Electric	1
56	Colorimeter tubes	12
57	Counting Chamber	2
58	E.S.R. Stand	1
59	E.S.R. tubes	4
60	Pipettes 10 ml, 5 ml & 1 ml	3 each
61	Sahli Hemoglobin Pipette	3
62	Lancets	1 box
63	Flasks 1 litre	2
64	Flasks 2 litre	2
65	Flasks 5 litre	2
66	Flasks 500 ml	2
67	Flasks 250 ml	2
68	Flasks 150 ml	2
69	Autoclave	1
70	Cylinders 1000 ml	2
71	Cylinders 500 ml	2
72	Beakers 1 litre	2
73	Beakers 500 ml	2
74	Markers	2
75	Blood giving & taking sets	25 each
76	Blood grouping slides	1 box
77	Syringes, disposable 2 cc	1 box
78	Syringes, disposable 5 cc	1 box each
79	Syringes, disposable 10 cc	1 box each
80	Needles, disposable	2 boxes each

No.	Item	Quantity per Medex
81	Counter scale	1
82	Mortar & pestle	1
83	Weight sets	1
84	Dispensing Measuring glass (1 drachm)	2
85	Dispensing measuring glass (1 fl. oz.)	2
86	Dispensing measuring glass (4 fl. oz.)	2
87	Dispensing measuring glass (20 fl. oz.)	2
88	Dispensing measuring glass (100 fl. oz.)	2
89	Dispensing measuring glass (500 fl. oz.)	2
90	Glass funnel (large)	2
91	Glass funnel (small)	2
92	Enamel funnel (large)	1
93	Enamel funnel (small)	1
94	Sterilizer (medium)	1
95	Metal spatula 10"	2
96	Stirring rod (Bakelite)	2
97	Ointment jars 40 (earthenware)	5
98	Undine	2
99	Eye baths	2
100	Artery forceps 6"	2
101	Artery forceps 4"	2
102	Artery forceps 8"	2
103	Cheatles forceps	1
104	Receiver for Cheatles forceps	1
105	Needle holding forceps (large & small)	2 prs. each
106	Needle holding forceps	2
107	Needle holding forceps	2
108	Bowl holding forceps	1
109	Sinus forceps	2
110	Dressing forceps	2
111	Episiotomy scissors	2
112	Bandage scissors	1
113	Dissecting forceps 6" & 4" (toothed & non-toothed)	2 prs. each
114	Glass syringe 2 cc	12
115	Glass syringe 5 cc	12
116	Glass syringe 10 cc	12
117	Glass syringe 20 cc	2
118	Bladder syringe	1
119	Hypodermic needles	2 doz.
120	Intramuscular needles	2 doz.
121	Clinical thermometer	12
122	Rectal thermometer	12
123	Metal spuds (removal of F.B. from eye)	2
124	P.O.P. Shears	1

No.	Item	Quantity per Medex
125	P.O.P. Scissors	1
126	P.O.P. knife	1
127	Woolwich breast shield	2
128	Breast pump	2
129	Ryle's Tube	1 doz.
130	Gastric lavage pump & tube	2
131	I. Gastric tube	3
132	Polythene Tubing	3
133	Airway all sizes (plastic)	3
134	Ambubag	2
135	I.V. Set	2 doz.
136	Scalp vein set	2 doz.
137	Drip stand	1
138	Nasal Catheter	6
139	Urethral Catheter sizes 14-22	3
140	Rectal Catheter	3
141	Disposable gloves, sizes 6½, 7, 7½	3 doz. each
142	Oxygen cylinder (large)	2
143	Oxygen cylinder (small)	2
144	B.L.B. mask	2
145	Glass trolley	1
146	Staybrite trolley	1
147	Instrument cabinet	1
148	Examination couch	1
149	Stirrups	2 prs. each
150	Instrument tray on stand	1
151	Cutting down set	1
152	Enema can	1
153	Portable lamp (electric or battery)	1
154	Sterilizing drum	2
155	Metal dish for syringe (large)	2
156	Metal dish for needles	2
157	Probe	1
158	Dressing scissors	2
159	Knife blades	2 doz.
160	Knife handles Bard Parker	2
161	Scale for weighing babies	1
162	Kidney dishes (large)	4
163	Kidney dishes (small)	2
164	Gallipots (large)	2
165	Gallipots (small)	2
166	Staybrite trays	2
167	Staybrite bowls (small with cover)	2
168	Staybrite bowls (medium with cover)	2
169	Protoscope	1
170	Cuscow's vaginal speculum	1 set
171	Sim's vaginal speculum	1 set
172	B.P. Apparatus	1
173	Stethoscope	1
174	Midwifery kit	1

No.	Item	Quantity per Medex
175	Post Natal Kit	1
176	Safety razor set	1
177	Razor blades	25
178	Nylon suture)	
179	Catgut) all sizes	
180	Black silk)	
181	Atraumatic catgut	
182	Atraumatic Black silk	
183	Cutting edge needles	6 pks.
184	Round bodied needles	6 pks.
185	Stretcher	1
186	Rubber tubing (for tourniquet)	
187	Venous cut down set	1
188	Intra venous catheters (INTRACATH)	1 doz.
189	Underwater seal bottle & tubes with clamps	2

At anticipated 1980 costs of the above, the total per Medex is estimated to be U.S.\$3,657.00. This x 100 Medex = US\$365,700.00.

B. CHW

Clinical:

1. Bandages - 2 rolls each
2. Thermometers - 3 each
3. Kidney dishes - 1 each
4. Gauze - 2 yards each
5. Forceps - 2 each
 - dressing
 - artery
6. Gallipots - 2 each
7. S.S. bowls - 1 each
8. Syringes - 3 each
9. Needles - 12 each
 - Sub C
 - Int MS

Other:

- 1 stretcher each
- 1 slide projector

At anticipated 1980 costs of the above, the total per CHW is estimated to be US\$35.00. This x 200 CHWs = US\$17,000.00.

PART 4 - RADIC EQUIPMENT, GENERATORS

30 transceivers, channels, spare kit, antennas, batteries, @ \$1,500 each	-	45,000
Shipping, handling charges 25%	-	<u>11,250</u>
		<u>56,250</u>
30 generators and spares @ \$500 each	-	15,000
Shipping, handling charges, 25%	-	<u>3,750</u>
		<u>18,750</u>
TOTAL	-	<u>75,000</u>

PART 5 - TRANSPORTATION EQUIPMENT (LANDED COST)

No.	Description	Unit Cost	Total
34	Motorcycles, 125 c.c.+ spares	850	28,900
17	Jeep Station Wagons + spares, 2WD	8,400	142,800
16	Jeep Station Wagons + spares, 4WD	12,000	192,000
12	16 ft. boats + spares	1,900	22,800
17	Outboard motors (mini - 50HP) + spares	1,350	<u>22,950</u>
	TOTAL		<u>409,450</u>

PART 6 - MEDEX TRAINING EQUIPMENT AND SUPPLIES

1. Audio Visual Equipment:

1	Screen - DA-LITE VIDEO A 84" x 84"	US\$	170.00
1	P.R.O. VELDON Tripod Model 136E		35.95
20	Carousel Slide Trays - \$6.50		130.00
20	Super 8 - 400' empty reels with cans - \$1.65		32.00
4	Cotton gloves Kodak 10/box - \$2.50		10.00
1	K & E Leroy 11 Set #61-2901		200.00
1	K & E Leroy Pen Holder #61-0055		20.00
1	Dazor Lamp - Universal 34" floating arm Fluorescent, Model #66-0075		65.00
	Varifont Assorted Software		

1	AV Table - Adjustable - H. Wilson Corp. Model 4-Hi 11E	US\$ 85.00
1	P.R.O. Zoom Slide Duplicator	37.95
	- With T Mount for Minolta Camera	4.35
4000	Paper Slide Mounts - 35 mm. 2" x 2" format	20.00
50/yr	Slide film 35 mm. - \$3.00	450.00
50/yr	Slide film 110 cartridge - process paid - \$4.00	600.00
50/yr	Super 8 Sound Movie Film - \$6.00	900.00
24	Batteries Size AA - 1.25 V Sanyo N - Rechargeable - \$5.00	100.00
	With Charger	15.00
1	Olivetti LEXIKON 83 DL - Portable Electrical Typewriter	390.00
3	Typing elements - 77310/77405/77410	45.00
	Typing Cartridge - 7336079/7336179/7336379/7336479	
	- \$27.00 per dozen	128.00
1	Transformer 220 - 120V. step down type - portable	
1	Bell & Howell Attache 35 TM	350.00
	- with 100 Film Cartridge	
	- with 12 spare projector lamps @ \$19.92 each	239.04
1	Bell & Howell Autoload 1552	
100	Crusader film strip portable projectors - 30.00	3,000.00
36	Design Art Markers - assorted set - fine tip & Broad	150.00
1	3 hole refer punch	
1	heavy duty guillotine	150.78
200	files for storing AV Material	
6/yr	Bottles White Opaque Fluid @ \$2.50 each	15.00
2 doz./yr	Phillips Photolita Bulbs NM 115V 500W ES7	
	Type PF 215E/49 @ \$4.98 each	119.52
		<u>US\$7,662.59</u>

2. Office and Classroom Furniture:

6	Desks @ \$807.50 each	G\$ 4,845.00
6	Executive Chairs @ \$355.00 each	2,130.00
2-2	Drawer Filing Cabinets @ \$507.00 each	1,014.00
2-4	Drawer Filing Cabinets @ \$1,153.00 each	2,206.00
2 doz	Sitting Chairs @ \$140.00 each	2,880.00
1	Hermes Electrical Typewriter 18"	4,502.25
3	Examination Couches @ \$245.00 each	735.00
		<u>G\$18,312.25</u>

3. Teaching Materials:

	Xerox paper	G\$ 3,060.00 (PY)
	Typewriting paper	680.00
	Typewriting ribbon (carbon)	132.00
	Typewriting ribbon (manual)	66.00
5,000	File Jackets (Hawaii type)	6,750.00
	Correcting Fluid	48.00
	Miscellaneous	1,500.00
		<u>G\$12,236.00</u>

4. Supplies	G\$ 1,000.00
5. Reference Books and Journals	6,000.00
6. Teaching materials, supplies and references required for years 2, 3, and 4	<u>57,000.00</u>
	G\$ 94,548.25
	(US\$ 37,078.00)
TOTAL	US\$ 44,740.00

PART 7 - MISCELLANEOUS EQUIPMENT

50 handpumps for selected health station water systems @ \$100 each	\$5,000.00
--	------------

TECHNICAL ANALYSIS

A number of technical issues have been considered in designing this Project. These include:

- The viability of the overall national health services strategy
- The use of doctor extenders (non-physician primary health care providers) for expanding basic health services
- Potential problems of doctor extender programs
- General feasibility issues
- The effect of the project on other variables of Guyana's socio-economic structure

a. Health Services Strategy

This project is based on the Government of Guyana's Four Year Development Program enunciated in May 1978 by the Permanent Secretary of the Ministry of Health¹. The basic strategy of that program is to:

- 1) Reorganize the health services system to provide varying levels of care with emphasis on improving the level of peripheral services.
- 2) Rationalize training programs with greater emphasis on the training of community health workers and middle-level personnel in order to correct present imbalances.
- 3) Establish a statistical unit as the first step towards setting up a Planning Unit within the MoH.
- 4) Develop an appropriate and responsive administrative support system through in-service training programs.
- 5) Develop a system of maintenance and replacement for facilities and equipment.

¹ Four Year Development Plan 1978-81, Ministry of Health, Georgetown, Guyana, May 15, 1978.

This project gives impetus and support to that strategy by offering services through a multi-tiered system that can greatly increase the accessibility, outreach and quality of primary health care services at reasonable cost. The project is aimed at providing integrated basic health services to 80% of the rural population, people who are receiving either inadequate or no primary health services at this time.

Health status is a function of a variety of socio-economic variables. Simply providing curative services will not significantly alter morbidity and mortality patterns. Because the project emphasizes preventive and promotive care with maximum outreach, a major public health impact can be achieved on maternal mortality, prenatal and infant mortality and mortality of children under five. Additionally, vertical programs (such as nutrition, child-spacing and environmental sanitation) will have greater potential for success if they operate through a permanent, tiered manpower infrastructure which reaches peripherally to the village level. It is fundamentally for these reasons, combined with the evidence of public and Government support for this strategy (see below), that this design and implementation approach can be viewed as a feasible and justifiable means of improving the health status of Guyana's rural poor. Although very ambitious, the project targets are technically achievable. Further, they are justified on the basis of support demonstrated throughout the country for the early graduates of the MEDEX training demonstration program.

b. The Doctor-Extender Approach (MEDEX)

Evidence from a wide variety of countries in both the developed and developing world has clearly established that the use of doctor-extenders is an effective means of providing good quality health care^{2,3,4}. The experience with Medex in the United States, Micronesia and Thailand indicates that these workers can significantly increase the productivity of doctors and the health system and thus reduce the cost per unit of service⁵. The dramatic achievements of China's "Barefoot Doctors"; national programs in the USSR, Ethiopia, Tanzania and Nepal; and

² Flahault, Daniel "An Integrated and Functional Team for Primary Health Care", WHO Chronicle, 30:442-446, 1976.

³ Abdulla, F. G. "Nurse Practitioners and Nursing Practice", Am. J. of P. H., Vol. 66, No. 3, March 1976.

⁴ Smith, Richard A. "MEDEX", Lancet, July 14, 1973.

⁵ Lawrence, D.; Wilson, W.; and Costle, H. "Employment of MEDEX Graduates and Trainees: Five Year Progress Report for the United States", JAMA, vol. 234, no. 2, 1975.

numerous demonstration programs using Medex (mid-level workers) and community health workers in Asia, Latin America and Africa are evidence of the effectiveness of deploying large cadres of appropriately trained health auxiliaries within a well defined, well managed operating system⁶. When used in the Guyana context, health auxiliary workers have achieved good social acceptance when logistically supported. When these programs have failed in some countries it was largely because of administrative and financial problems; these have been addressed in the current project design⁷.

Recent policy discussions in Guyana have concluded that the use of medical auxiliaries is necessary if there is to be any hope of achieving desired coverage targets for the rural population. The country is presently experiencing a significant out-migration of doctors, exacerbating rural recruitment problems for such professionals. Like other developing countries, Guyana wisely has decided to maximize doctors' skills by restricting their activities to those which only a doctor can perform. Using the MEDEX approach to introduce mid-level and community-level health workers will relieve some of the pressure to have the more expensive approach of medical doctors ONLY providing a broad spectrum of primary health services.

The Government's decision to train cadres of mid-level Medex and community health workers is appropriate, given the magnitude of the country's health problems and the present health manpower configuration.

c. Potential Problems of a Doctor Extender Program

1) Assuring a Broad Base of Support

The long-term viability of having MEDEX programs train mid-level and village-level auxiliaries is possible only if all major interest groups in the health area are involved in planning and implementing the program. The Medex Training Demonstration Program (funded by IDRC in 1976) has set the stage for this more comprehensive MEDEX Primary Health Care System project which capitalizes on that positive experience. The Ministry of Health and the private medical establishment solidly support the doctor extender concept. There has been positive evidence of

6 Smith, Richard A. "Designing an Appropriate Approach to Improved Health Service Coverage", Chapter 2 in Manpower and Primary Health Care, University Press of Hawaii, Honolulu, 1978.

7 Rondinelli, Dennis A. "Why Development Projects Fail: Problems of Project Management in Developing Countries", Project Management Quarterly, 7:10-15, 1976.

public support of the concept all the way from rural populations who have expressed willingness to locally support community health workers to the National Assembly which has passed a law creating a new cadre of health worker called Medex (see below).

2) Development of the Receptive Framework

Lack of desired success in doctor-extender programs can frequently be traced to inadequate preparation of the graduate, the health services system and the community for this new approach to health care. This project outlines clear job descriptions and roles for each of the primary health team's principal providers. The place in society for Medex was established on October 18, 1978 when the Parliament of Guyana enacted the MEDEX Act of 1978, reflecting a desire to expand a successful demonstration training program into a system of national coverage. In order to strengthen the institutional foundation for this project, a significant level of resources is directed towards enhancing intra-sectoral linkages and management support sub-systems.

The communities will select and make preparations for their CHWs, ensuring greater community support. The feasibility of this aspect of the MEDEX system was increased by recent visits to villages in the interior by MoH staff. They found enthusiastic concurrence for the MEDEX approach in which the villagers would actively participate in the planning, management and support of the CHWs that would serve them.

3) Management

The strengthening of the management support infrastructure is perhaps as essential to the success of this project as the training of health workers. To this end resources are being directed to critical pillars of the system including the assignment of a long-term technical advisor in management systems and management training.

Supervision of health workers will have appropriately important resources devoted to it. Failure to give adequate attention to supervision has been the single most important cause of program failure in peripheral worker programs⁸. Helping the MoH build a relevant supervisory structure with an adequate number of qualified personnel is an essential element of this approach. In addition to mid-level management training given to Medex during their formal training, short training courses in administration and management will be given to senior Medex and Public Health Nurses as well as regional and central health officials.

⁸ Iwamura, Noboru "Health by the People - Village Health Volunteers in Nepal", unpublished manuscript, 1976.

The attention this project is paying to communications, transportation, supply, information, facilities development/maintenance, and health service management systems in rural areas, as well as short-term training for equipment maintenance technicians and supply managers, round out the management inputs woven into the project to facilitate meeting its objectives.

4) Training

The Government has elected to use a competency-based, problem-oriented modular curriculum which they will adapt from both the IDRC-funded Medex Training Demonstration Program and newer revised prototype modules for training Medex and CHWs. This adaptation process will reduce the time required for module preparation from approximately 36 person-months to 12 person-months and allow trained personnel to be in the field earlier.

Most of the promotive, preventive and curative problems the mid-level and village-level health workers will face can be treated without extensive knowledge of body systems and specific disease processes. Training health workers to deal with health problems rather than disease processes is therefore appropriate. Competency-based training material emphasizes the development of skills and knowledge to meet set levels of performance that can easily be standardized at the national level. The protocols taught in the modules are used as field manuals for preventive and curative care.

Although the proposed beneficiaries use both traditional and modern health modalities (with a preponderant preference for the latter), the training staff has not found traditional medicine methods that they want to include in the project's curriculum. However, they maintain open minds on this matter since they are aware that traditional practitioners may be selected by some villages to become their CHWs.

The adaptation of presently available curricular materials is technically sound from the stand-point of ultimate training material quality, time expended in curriculum design, cost of curriculum development and competence of program graduates.

5) Recruitment and Deployment

Recruiting Medex trainees from the pool of sick-nurse/dispensers and ultimately from nursing and other "qualified" categories, with or without prior health backgrounds, provides a solid and available base of applicants. Students will be selected on the basis also of their willingness and commitment to be posted after graduation to predominantly isolated rural settings. These posts will be determined and assigned before Medex trainees begin training. In some instances, the trainees will be re-assigned to those areas where they are presently working.

Since all Medex trainees in this project will already occupy full-time Government positions, there are no problems anticipated in paying their salaries (although moderate salary increases are usually involved) and relatively few problems in their deployment into areas of need.

Community Health Workers will be selected by their fellow villagers, will come from the villages and will be expected to remain in their communities as health workers. Methods of village supported financial or in-kind remuneration appear to be feasible, judging from early discussions with community leaders by MoH officials (see above). However, the methods of community participation in CHW support may vary from one area to another. Information on workable alternatives will be available from a small CHW pilot program being initiated in mid-1979 through a collaborative effort of the GOG and the Netherlands Government.

Sensitive and appropriate consideration was given to the selection of early Medex trainees relative to ethnic divisions existing within the country. Even though the racial distribution in the early classes does not mirror the population makeup, sensitivity to this issue will continue to impinge on selection of Medex as well as CHWs. In some cases, CHWs may also be traditional practitioners. Over time, these health workers may help to introduce traditional health practices into the system since they will be an integral part of it. This method of bringing traditional healing into a Westernized health care system is preferable to injecting uncritically selected tradition methods into a usually hostile environment in its early development.

6) Continuing Education

The brevity of this project's training component is a function of competency-based training methodology and continuing education, both built into the project. Not only does this design approach use continuing education to add new skills and knowledge longitudinally, it is also used to prevent the decay of acquired skills. Since patterns of primary health care service delivery have not been established yet in rural Guyana, the project will design the continuing education formats and processes after appropriate numbers of Medex and CHWs are at work in their sites.

d. Integration of Project into National Health System

Locating the long-term technical advisors in the Ministry of Health administratively, the project will also be institutionalized there, within the purview of the majority of health services in the country. Health professionals who work for the Government as well as in private practice will be intimately involved with the personnel and management operations of this project.

Doctors, nurses and other health related personnel will participate in the curriculum development and teaching of Medex and CHWs. They have already demonstrated their acceptance of these new categories onto the health team. Stories abound in Georgetown about the performance of the first Medex in the field and the pride with which some physicians relate stories of timely and appropriate referrals of patients by Medex in isolated areas to better equipped hospitals and physicians. Passage of the MEDEX Act of 1978 has firmly established doctor-extenders as part of the nation's health system.

Vertical program directors within the MoH have described the potential for strengthening existing programs through a permanent, tiered manpower infrastructure - always in place and at some of the most isolated of locations. It is intended that this new infrastructure will strengthen programs in nutrition, child-spacing and environmental sanitation.

Not only is it anticipated that more appropriate medical referrals will emerge from the village level centrally at some savings; it is also believed that by moving the first line of health defense peripherally, high risk patients will receive attention earlier through appropriate referrals. Screening for referrals and effecting referrals are part of the training of Medex and CHWs. Preparation of hospitals and physicians to handle these referrals from rural areas is part of the orientation planned for district and regional medical officers.

The project will develop close ties with the University of Guyana to promote cooperating linkages between the MoH and the training umbrella under which the project operates. Further, health training and management training capabilities of the project will be shared with the IDB project and with nursing and other related components of the country's health operations so as to foster integration of the project with the national health system.

e. Integration of Vertical Programs

When the proposed health service infrastructure is fully established, the Government will be able to move closer to fully integrating its vertical health programs. Since the proposed system calls for one CHW per village, the GoG should have sufficient manpower to carry out the functions of the existing vertical programs throughout the country. Because the CHW will be in place in the village, and his/her performance already closely monitored, travel and administrative costs would be lower when all programs are integrated. If additional training is necessary for Medex and CHWs to perform the tasks of vertical program workers, such training can be given through the continuing education program. On the other hand, vertical program workers in the field can also apply for Medex training or receive continuing education training in the field.

f. Technical Cost/Design Analysis

A detailed Financial Plan and Analysis are presented elsewhere in this paper. Detailed project-related research and development studies have been conducted by PAHO, IDB and other organizations in recent years. The MoH has developed numerous task forces and had consultants reviewing Guyana's health needs, manpower requirements and training needs. Technical discussions have been held with GoG officials specifically identified by the MoH to work with USAID in developing this project paper. These efforts have all led to the conclusion that the project design is a technically sound one, suited to the problems, needs, resources and wishes of the Government and rural population of Guyana.

g. Summary Conclusions

The project as designed is technically and economically sound and cost estimates are reasonable. The project meets the requirement of FAA Section 611(a).

ENGINEERING ANALYSIS

1. Background

The Ministry of Health presently has some 100 or so health facilities of differing degrees of acceptability at which it proposes to station a Medex. (A partial listing of these is given in Annex G).

Some of these facilities are well suited for the "Medex" program while others are lacking in many of the amenities. However, all stations are basically adequate and a MEDEX program can be carried out at all of these without any major alterations or renovations. In spite of this, there is a vital requirement for housing for the Medex as well as provisions for a dependable supply of water and sanitary latrines in many of the locations.

2. Design Standards

The design of the simple facilities to be financed under this project is simple, functional and Guyanese in concept. Briefly, these are discussed as follows:

a) Housing:

There are 41 units planned to be built under the project. All are identical except for the slight modification required by the individual sites. Basically, the house is composed of three bedrooms, one bath, living room and kitchen which approximates 850 square feet of living space. (This is below minimum USA FHA requirements standards but is adequate and normal for Guyanese use).

Actually, the basic house is somewhat larger than the staff house as designed by IDB project team for midwife's quarters in its Health Stations project, but because of the projected requirements of the "Medex" and his family, as well as probable remoteness of the station, the larger house was chosen. The basic plan of this house is attached.

b) Water Tanks and Trestle Stand Units:

These are simple two stage elevated tanks with a hand pump which will allow the rain water to drain into the lower tank and then be pumped into the upper tank for gravity distribution to both the "Medex" staff house and the health station. It will also enable the lower tank to be filled from the public piped supply which even if available at the site, is undependable as the piped water is at insufficient pressure and is normally only available during short periods of the day. This piped water can also be hand-pumped to the upper tank for gravity supply as needed.

There are 50 tanks and stand units planned to be erected under the project.

In some 50% of the health stations, water is available only from shallow wells or streams. The same simple system will likewise be adequate for supply from these sources, allowing the station to be supplied from the upper tank by gravity. Details of Tank and Stand Units are attached.

c) Latrines:

Some 50% of the stations lack sanitary facilities and are presently being served by inadequate and unsanitary pit latrines. As proposed under this project these will be replaced by sanitary pit latrines. These latrines will serve the public only as proposed basic staff house will have a modern toilet with septic tank disposal system. Details of Latrines are attached.

3. Engineering Services and Construction Supervision Implementation Plan

The Ministry of Health as the executing agent of the GoG through its designated Project Manager will have the responsibility for selection of a qualified local engineering/quantity surveyor firm (with USAID assistance) and the subsequent contracting with this firm for the necessary preparation of the bid packages, assistance in the construction tendering and contracting, and contract administration and construction supervision.

Design work required will be very minimal since all work required is based on basic existing plans of simple construction. The consultant firm will have to put these in bid package forms and make certain minor alterations as necessary for the individual sites. Existing bills of quantities will also have to be reviewed and modified as necessary by the consultant.

The selected Engineering/Quantity surveyor consultant is expected to begin his services approximately 4 months after the signing of the loan agreement and furnish the majority of his required services during the first 18 months of this contract.

Since as noted in "1 - Background" of this analysis, some of the stations are lacking in facilities, the consultant will also as part of his services, visit all of the stations with a knowledgeable MoH staff member and list (with line sketches as necessary) all of the desired alterations and additions necessary for each station. This work should be accomplished early in the contract stage of the consultant.

4. Construction Implementation Plan

With the assistance of the consultant and USAID, the MoH will be responsible for the contracting for the staff houses with qualified local construction firms. However, due to the widely spread and remote locations

of the sites, there may be a problem obtaining qualified contractor interest in a few of the sites. These may well be constructed by the Ministry of Works, Building Construction Division, but these also will be under the supervision of the consultant. The decision on construction of these will be made during implementation by the MoH, USAID and the consultant.

The latrines and Tank Units are of standard MoW design and construction and these are proposed to be constructed by and under the supervision of the MoW/Construction Division.

5. Maintenance of Facilities

As typical of all present GoG maintained facilities, normal routine and required major maintenance for health centers has been non-existent for all practical purposes. Only necessary survival maintenance has been done on a minimum level. (The District Chief of one of the District's Construction Divisions stated to USAID that his District is budgeted G\$500 per month for maintenance of 300 Government facilities. This works out to G\$1.67 or US\$0.67 per month per facility). Therefore, it is recommended that the project grant/loan agreement contain a special covenant that the GoG will adequately maintain, or cause to be maintained, all Medex resources and other structures assisted under the project.

Since maintenance has been so neglected, this project proposes to furnish the sum of US\$100,000 for basic maintenance supplies such as paint, electrical wiring and fittings, plumbing supplies, nails and hardware, screening, etc., for a stepped-up maintenance program over the 3-year life of the project by the GoG labor forces responsible. (Also see Section 2 B.2.g. for proposed project technical assistance in this area).

6. Methodology of Project Costing

a) Staff Housing:

This is a major portion of the proposed project construction and is composed of a minimum basic house unit to be constructed at some 41 of the health stations. Costs for this unit has been estimated from a detailed quantity survey which has been costed at current prices for material and labor. Detailed cost/quantity estimates are attached.

b) Financing, Water Tanks and Latrines:

The remainder of the construction proposed under the project, i.e., water tanks and latrines are basic MoW/Construction Division items of construction. These have been estimated at current Guyanese costs.

c) Contingencies and Effect of Inflation/Escalation:

USAID has added a 10% contingency figure to all costs under Engineering and Construction.

The cost increase due to inflation and other cost escalation factors such as POL increases have caused much speculation among "experts" here in Guyana. Escalation has been estimated from a low of 8% per annum to as high as 22%. The AID project economist has accepted a compromise figure of some 16% per annum. For purposes of construction costs, USAID has used an arithmetical rate of 10% per annum over the 3-year period of the project or some 34% overall. Since the bulk of the construction will be completed approximately 2 years from date of the preparation of this paper (see Section 3 of this analysis) this inflation factor will work out very closely to the 16% annual rate accepted by the AID economist.

7. <u>Summary of Engineering/Construction Costs (all costs in US\$)</u>	
a) 41 basic housing units at \$16,421.37 each	\$673,276.17
b) 50 each Water Tank Units @ \$1,600.00 each	80,000.00
c) 50 each Latrines @ \$500.00 each	25,000.00
	<hr/>
	\$778,276.17
Engineering and Quantity Surveyor Services (including alteration/renovation survey)	150,000.00
	<hr/>
TOTAL	\$928,276.17
Add 10% Contingency	92,827.62
	<hr/>
	\$1,021,103.79
Add 34% Inflation/Escalation	347,175.29
	<hr/>
TOTAL	\$1,368,279.08
Add sum for basic Maintenance Supplies	100,000.00
	<hr/>
TOTAL PROJECT AMOUNT	\$1,468,279.08
	<hr/>

8. Engineering Technical Certification

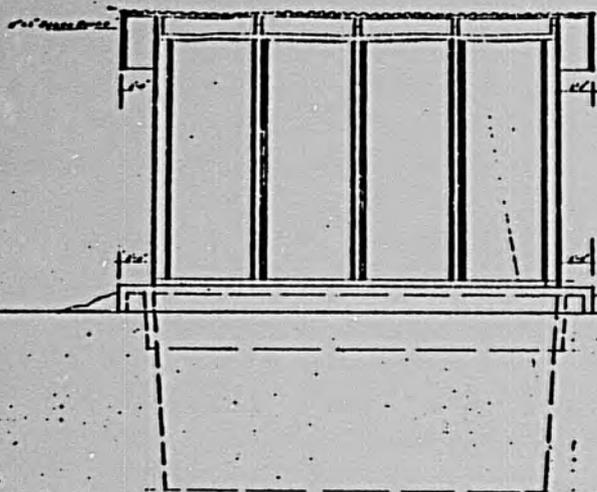
As evidenced by the material contained in this Analysis and as supported by the Engineering Annex to this Analysis, the applicable technical requirements of FAA Section 201 b, 2 and Section 611 have been met.

UNIT QUANTITIES, MATERIALS AND LABOR COSTS - MEDEX HOUSING

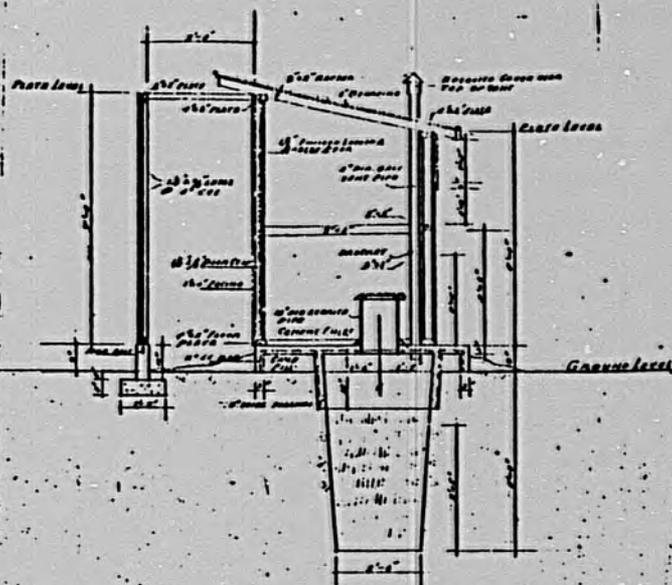
<u>DESCRIPTION AND LOCATION</u>	<u>QTY.</u>	<u>UNIT</u>	<u>MATERIAL</u>		<u>LABOR</u>		<u>TOTAL</u>
			<u>UNIT</u>	<u>TOTAL</u>	<u>RATE</u>	<u>TOTAL</u>	
<u>EXCAVATION</u>	9	cb. yds.				125.00	125.00
<u>FOUNDATION</u>	9	cb. yds.			80.00	720.00	720.00
CEMENT	51	sacks	10.00	510.00			510.00
SAND	9	tons	8.00	72.00			72.00
STONE	10	tons	50.00	500.00			500.00
STEEL: 12MM BARS	46	lengths	8.00	368.00			368.00
COLUMNS	3	cb. yds.			80.00	240.00	240.00
CEMENT	16	sacks	10.00	160			160.00
SAND	3	tons	8.00	24.00			24.00
STONE	4	tons	50.00	200.00			200.00
STEEL: 16 MM BARS	34	lengths	11.00	374.00			374.00
10 MM BARS	19	lengths	6.00	114.00			114.00
SHUTTERING	684	ft. BM	.80	547.20		70.00	617.20
<u>CONCRETE BEAM</u>	4.3	cb. yds			80.00	344.00	344.00
CEMENT	25	sacks	10.00	250.00			250.00
SAND	4	tons	8.00	32.00			32.00
STONE	5	tons	50.00	250.00			250.00
STEEL: 12 MM BARS	41	lengths	8.00	328.00			328.00
8 MM BARS	17	lengths	4.50	76.20			76.20
SHUTTERING	513	BM	.80	410.40		60.00	470.40
<u>CONCRETE SLAB</u>	12	cb. yds			80.00	960.00	960.00
CEMENT	72	sacks	10.00	720.00			720.00
SAND	12	tons	8.00	96.00			96.00
STONE	15	tons	50.00	750.00			750.00
B.R.C. FABRIC	14	roll	500.00	750.00			750.00
<u>SAND FILL</u>							
SAND	65	tons	8.00	520.00	3.00	195.00	715.00
<u>SCREED, MORTAR & RENDERING</u>						1,300.00	1,300.00
CEMENT	106	sacks	10.00	1,060.00			1,060.00
SAND	24	tons	8.00	192.00			192.00
<u>EXT. WALLS</u>							
CLAY BLOCKS 16" x 18" x 4"	1,700	blocks	.45	765.00	.30	510.00	1,275.00
				<u>9,068.80</u>		<u>4,524.00</u>	<u>13,592.80</u>

DESCRIPTION AND LOCATION	QTY.	UNIT	MATERIAL		LABOR		GRAND TOTAL
			UNIT	TOTAL	RATE	TOTAL	
	Brought forward			\$9,068.80		\$4,524.00	\$13,592.80
<u>INT. WALLS</u>							
CLAY BLOCKS							
16" x 8" x 4"	940	blocks	.45	423.00	.30	282.00	705.00
<u>ROOF</u>							
RAFTERS, 20 pieces)							
18 ^s long 2" x 4")							
TIES, 10 pieces)							
25 ^s long 2" x 4")	3,100	FT. BM		2,702.06			2,702.06
CLOSE BOARDING)							
1" x 4" Vee joint)							
FASCIA: 1" x 6" (edge)							
10 ^s lengths	232	FT. BM	.85	197.20			197.20
	61	sheets	20.00	1,220.00			1,220.00
CORRUGATED SHEETS							
9 ^s lengths	61		18.00	1,098.00			1,098.00
PLAIN SHEETS: 3 ^s x 6"	7	sheets	12.00	84.00			84.00
PLATE, 4 pieces)							
25 ^s long 2" x 6")							
STUDS, 2 pieces)							
5 ^s long 2" x 4")	409.43	BM		348.02			348.02
GABLE, END BOARDS)							
1" x 6" LAP EDGE)							
<u>WINDOWS AND DOORS</u>							
DOOR FRAME, 10 pieces)							
7 ^s long 2" x 4")							
DOOR HEAD, 5 pieces)							
3 ^s long 2" x 4")							
WINDOW FRAME: 14")							
7 ^s long 2" x 4")							
WINDOW FRAME: 2")							
3 ^s long 2 x 4)	201	BM		170.85			170.85
WINDOW FRAME: 4")							
2 ^s long 2 x 4)							
WINDOW HEAD: 10")							
3 ^s long 2 x 4)							
WINDOW SILL: 17")							
3 ^s long 2" x 8")							
DOORS: TIMBER PANEL							
	7	no.	65.00	455.00	10.00	70.00	525.00
CASEMENT WINDOWS							
	185	sq. ft.	5.50	1,017.50	.50	92.50	1,110.00
LOUVRE BLADES:							
1" x 6" edge	157	ft. BM	.85	133.45			133.45
				<u>\$16,917.88</u>		<u>\$5,653.50</u>	<u>\$22,571.38</u>

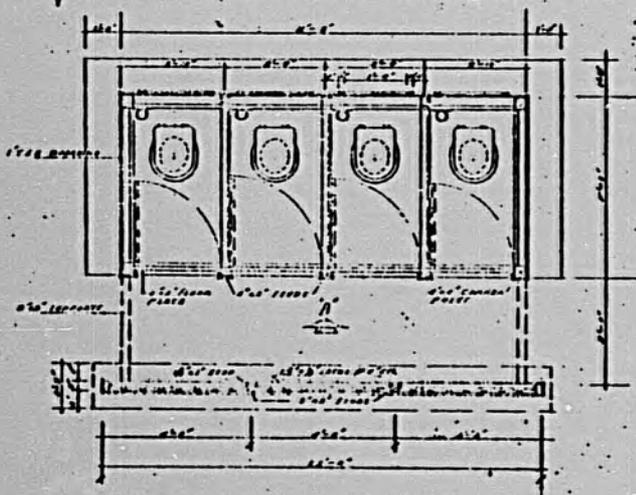
DESCRIPTION AND LOCATION	MATERIAL			LABOR		GRAND TOTAL	
	QTY.	UNIT	UNIT	TOTAL	RATE		TOTAL
	Brought forward			\$16,917.88		\$5,653.50	\$22,571.38
ARCHITRAVE							
3/4" x 3" edge	164	ft. BM	.85	139.40			139.40
DOOR STOP: 1/2" x 3"	68	ft. BM	.85	57.80			57.80
<u>JOINERY</u>							
KITCHEN AND BEDROOM CUPBOARDS	Provisional sum			1,000.00		600.00	1,600.00
<u>HARDWARE</u>							
MIXED NAILS	128	lbs.	1.30	166.40			166.40
BUTTS, HOOKS & EYES, BOLTS, SCREWS	Provisional sum			400.00			400.00
DOOR LOCKS	4	no.	30.00	120.00			120.00
CERAMIC TILES	400	tiles	.90	360.00	.40	160.00	520.00
THERMOPLASTIC TILES	80	tiles	1.20	96.00	.30	24.00	120.00
						800.00	800.00
<u>PLUMBING</u>							
KITCHEN SINK	1	no.	250.00	250.00			250.00
LAV. BASIN	1	no.	290.00	290.00			290.00
W. C. SUITE	1	no.	400.00	400.00			400.00
PIPES, TEES, COCKS, BENDS				500.00			500.00
<u>FLOOR FINISH</u> (LIVING ROOM)							
WOOD BLOCKS AREA COVERAGE	800	sq.ft.	4.00	3,200.00	.75	600.00	3,800.00
						1,100.00	1,100.00
<u>PAINTING</u>							
PUTTY	140	lbs.	1.10	154.00			154.00
LINSEED OIL	5	pts.	3.00	15.00			15.00
OIL PAINT	30	gls.	25.00	750.00			750.00
EMULSION PAINT	25	gls	23.00	575.00			575.00
CONC. FILLER	2	boxes	3.00	6.00			6.00
LACQUER	7	gls.	60.00	420.00			420.00
<u>SANDING & POLISHING</u>	Provisional sum					1,500.00	1,500.00
				\$25,817.48		\$10,437.50	\$36,254.98
MATERIALS				\$25,817.48			
LABOR				10,437.50			
TRANSPORT - 5% materials				1,290.87			
N.I.S. - 5% labor				521.88			
TOTAL				\$38,067.73			
10% Waste & Cutting loss in materials				3,806.77			
GRAND TOTAL				G\$41,874.50			
				US\$16,421.37			



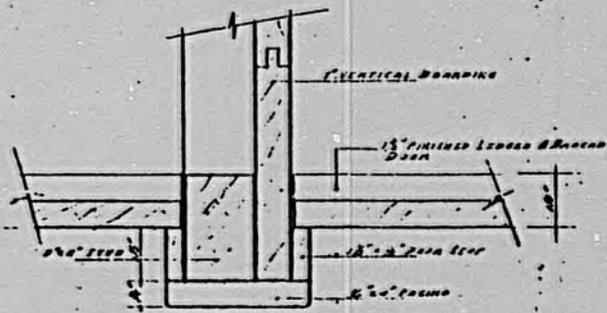
ELEVATION A
Scale 1/4" = 1'-0"



CROSS SECTION
Scale 1/4" = 1'-0"



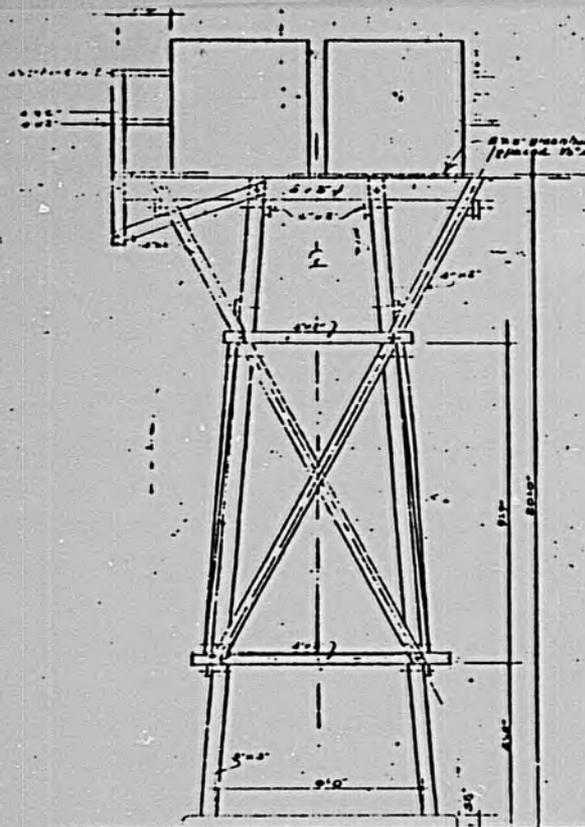
PLAN
Scale 1/4" = 1'-0"



DETAIL AT C
Scale 1/2" = 1'-0"

15° -
The latrine
is similar

PUBLIC WORKS DEPT BRITISH GUIANA	
STANDARD TYPE 4-UNIT PIT LATRINE	DRAWING NO. DQ/420
ELEVATION, SECTION, PLAN & DETAIL	
SCALE	1/4" = 1'-0" & 1/2" = 1'-0"
DATE	5th June 1981
APPROVED	RESIDENCE ENGINEER
DATE	
APPROVED	ARCHITECT
DATE	

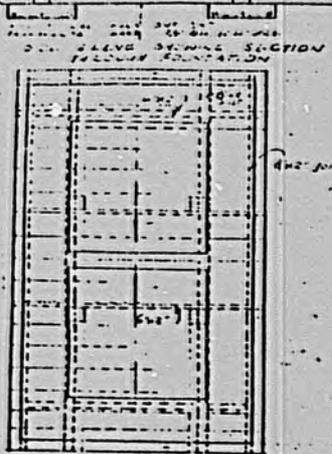
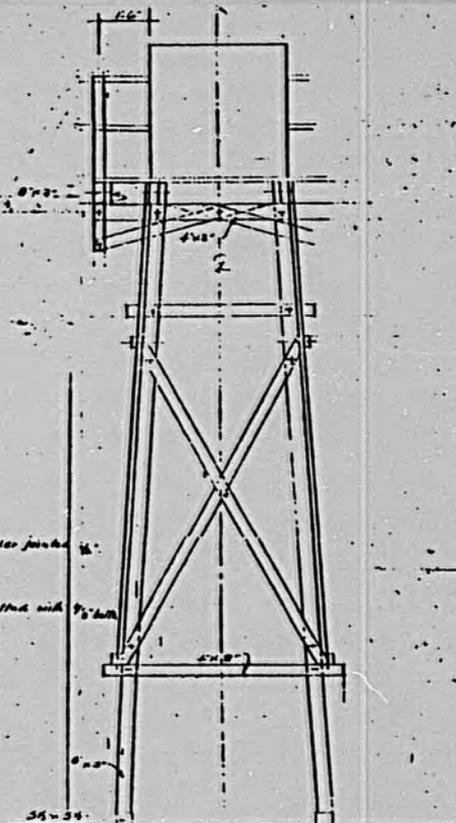


FRONT ELEVATION



FOUNDATION PLAN

SCALE 1/2" = 1'-0"



PLATFORM PLAN

Note:
1. Tank may be installed
at lower level where
water pressure requires.

NOTES

DATE 10-1-1965

MANAGER OF WATER PLANT
BUILDING DIVISION
PROPOSED TRESTLE
FOR WATER TANKS

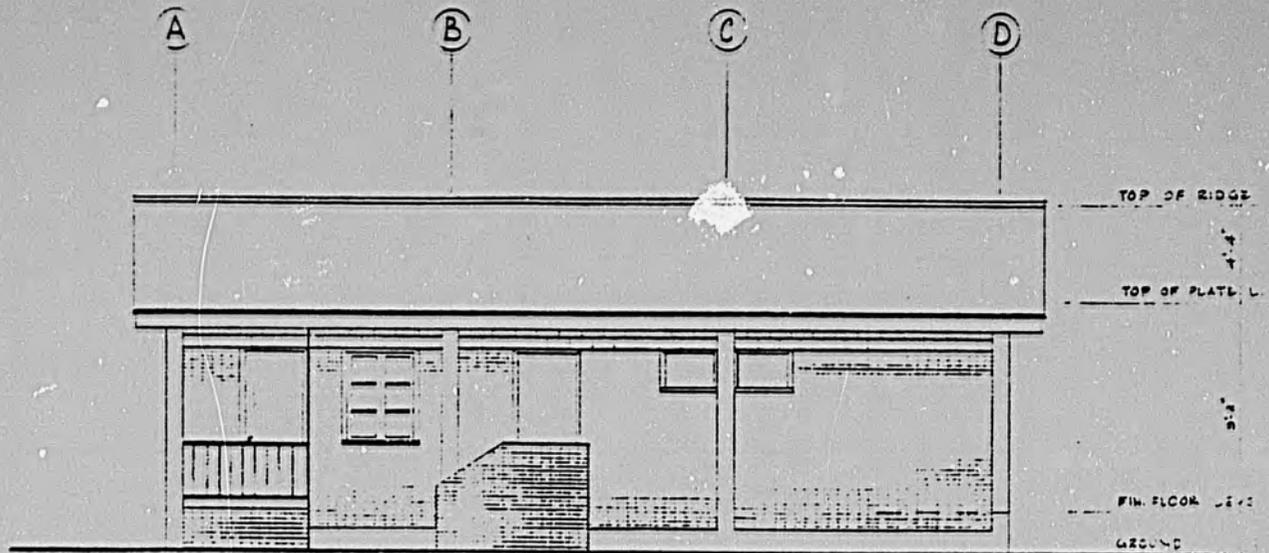
PLANS & ELEVATIONS

SCALE 1/2" = 1'-0"
DATE 10-1-1965
DRAWN BY [Signature]
CHECKED BY [Signature]

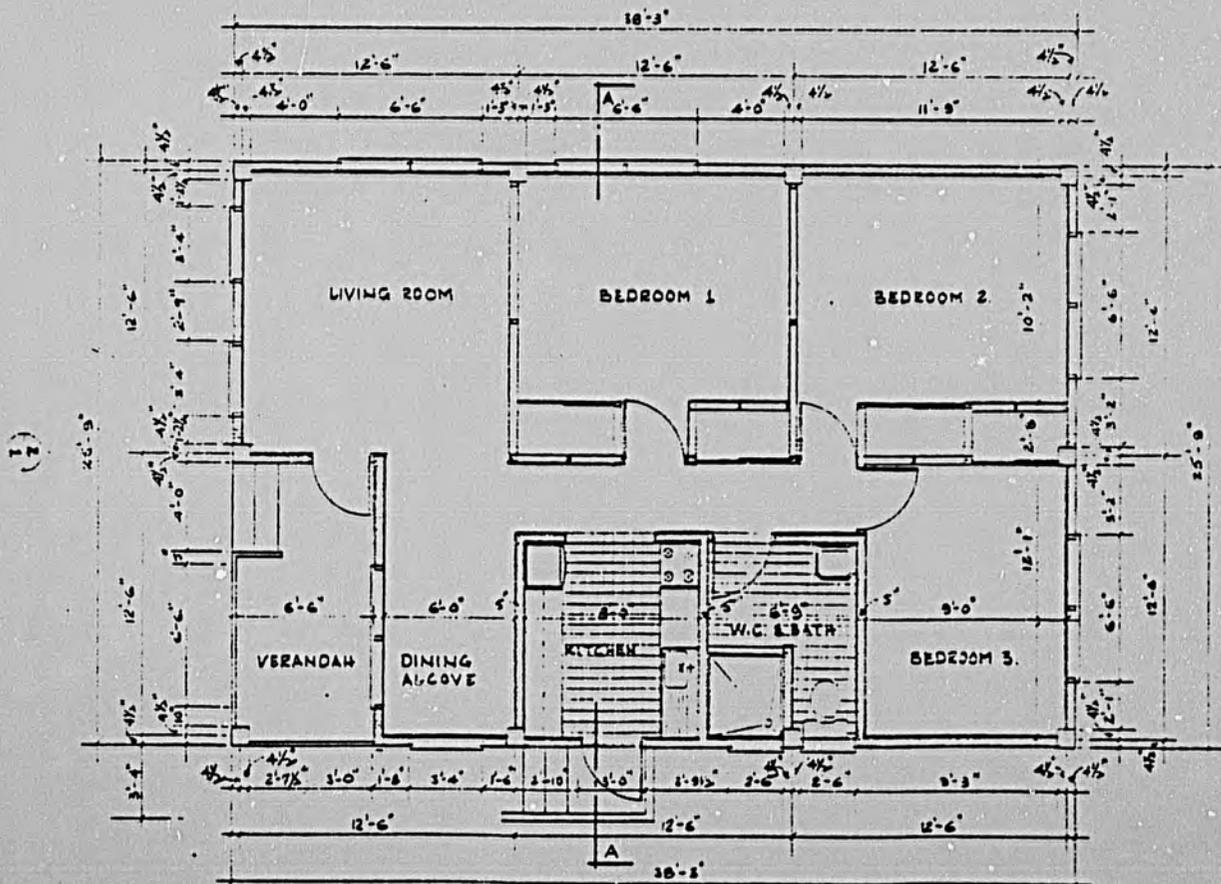
10-1-1965

APPROVED DATE

DATE



ELEVATION $\frac{1}{1}$



FLOOR PLAN

2

1000

10

20

TOP OF PLATE

TOP OF PLATE

TOP OF PLATE

TOP OF PLATE



Annex H
PART 3

DEPARTMENT OF STATE
AGENCY FOR INTERNATIONAL DEVELOPMENT LAC/DR-IEE-79-5
WASHINGTON, D. C. 20523

ASSISTANT
ADMINISTRATOR

DEC 17 11 11 AM '78

ENVIRONMENTAL THRESHOLD DECISION

Location : Guyana
Project Title : Rural Health Systems Project No. 504-0066
Funding : \$2,700,000 Loan; \$1,300,000 Grant; \$1,500,000 G.O.G.
Life of Project: Three Years

Mission Recommendation:

Based on the Initial Environmental Examination, the Mission has concluded that the project will not have a significant effect on the human environment and therefore recommends a Negative Determination.

The Latin America and the Caribbean Bureau's Development Assistance Executive Committee has reviewed the Initial Environmental Examination for this project and concurs in the Mission's recommendation for a Negative Determination.

AA/LAC Decision:

Pursuant to the authority vested in the Assistant Administrator for Latin America and the Caribbean under Title 22, Part 216.4a, Environmental Procedures, and based upon the above recommendation, I hereby determine that the proposed project is not an action which will have a significant effect on the human environment, and therefore, is not an action for which an Environmental Impact Statement or an Environmental Assessment will be required.

Edward W. Co.
Assistant Administrator for
Latin America and the Caribbean

Dec 5 1978
Date

Clearances:

DAEC Chairman: MBrown _____
LAC Environmental Advisor: ROtto ROtto

INITIAL ENVIRONMENTAL EXAMINATION

Project Location: Guyana

Project Title: Rural Health Systems
Project No. 504-0066

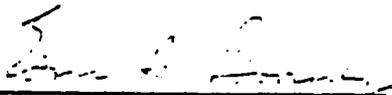
Funding: \$2,700,000 Loan
\$1,300,000 Grant
\$1,500,000 G.O.G.

Life of Project: Three Years

IEE Prepared By: Dan F. Miller, Jr.
Chief Engineer, USAID/Georgetown

Environmental Action Recommended:

Based on the Initial Environmental Examination (see Page 3 of IEE), the Mission has concluded that the project will not have a significant effect on the human environment and recommends a Negative Determination.



Edna A. Boorady
Director

Date: November 16, 1978

Clearances:

HLTH:APHaynal (in draft)
PRM:NMariani (in draft)

INITIAL ENVIRONMENTAL EXAMINATION (IEE)

Rural Health Systems Project Project No. 504-2066

I. Examination of Nature, Scope and Magnitude of Environmental Impact:

Description of Project:

Purpose: To establish a functioning low-cost delivery system providing basic health services.

Background: The extension of basic health services to the remote rural areas of Guyana has been of high priority to the Government of Guyana (GOG) since Independence. After an unsuccessful attempt in 1975, the GOG received assistance from the University of Hawaii and the International Development Research Center (Ottawa) in starting or laying the groundwork for a nation-wide primary health care system based upon the Medical Extender (Medex) approach. This project will continue this previous successful effort.

Objectives of the Project:

1. Continue, strengthen and expand Medex training, producing 90 graduates during the period 1979-1981.
2. Develop a training program for Community Health Workers, producing approximately 300 during this three-year period.
3. Provide material support for the effective utilization of Medex through construction/renovation of health posts and health centers where they are to be stationed, and provision of appropriate commodity assistance to ensure effective operation, supervision and communications.
4. Strengthen the management capability of the MOH required to adequately support and supervise Medex.

ENVIRONMENTAL ANALYSIS

Identification and Evaluation of Environmental Impacts
(Also see Impact Identification and Evaluation Form attached)

I. 1. General Discussion

Much of this project is devoted to training, improvement and extension of the Guyana-Medex program and its staff. In addition, the project will improve selected existing health stations as necessary for extending the Medex services. This will include new construction and provision of necessary equipment for wells and elevated water tanks, adequate latrines, and new adequate staff housing as required.

In addition, two-way radio equipment for necessary communication for both Medex and its clients and Medex headquarters will be provided, as will be 4-wheel drive vehicles and motor-powered boats for travel in very remote areas.

Since this project is a continuation of an ongoing Medex Program, the environmental impacts are fairly well known. Although the activities of this project will be of larger scope and magnitude they are still widely scattered and are not intensified. We know from experience thus far in the Guyana Medex Program that the impacts in the socio-economic and health areas are considerable and beneficial. We also have learned that the construction of Medex housing, elevated water tanks and latrines may have some localized physical impacts to the environment during relatively short periods of construction.

These physical impacts during construction activities could consist of some soil erosion, lower water quality, noise level increases and some air pollution. Since the proposed activities would consist of localized and relatively small amounts of grading and filling, well and latrine construction, and simple building construction, all indigenous to Guyana, these impacts will be very minimal and of short duration. In addition, there will be some very minor noise pollution caused by the noise of the vehicle or boat engines in the opened-up remote areas.

2. Detailed Examination and Comments of Impact Identification and Evaluation Form (See attached form)

A. Land Use

There is little or no impact from the project in this area. As noted, there is minimal impact due to the small amount of clearing necessary to locate and build the houses and other structures.

B. Water Quality

Impact will be very minimal and of short duration during construction activities.

C. Atmospheric

Impacts will be very minimal and of short duration during construction activities.

D. Natural Resources

Impacts will be little or none during construction activities.

E. Cultural

None.

F. Socio-economic

There will be moderate impacts due to improved agricultural productivity, expected to result from improved health of farmers but these are beneficial.

G. Health

There are considerable impacts but these are all beneficial.

H. General

None.

II. Recommendation for Environmental Action

Based on the known results and impacts of the Medex program, and examination of the possibilities of expanding it in this project, the Mission concludes that adverse environmental impacts of the project are minimal and of short duration during the construction period and there are moderate, long-range, beneficial impacts in the socio-economic impact area and considerable beneficial impacts in the health area.

The Mission therefore recommends a Negative Determination of Environmental Impact.

IMPACT IDENTIFICATION AND EVALUATION FORM

<u>Impact Area and Sub-Areas</u> ^{1/}	<u>Impact Identification and Evaluation</u> ^{2/}
A. <u>Land Use</u>	
1. Changing the character of the land through:	
a. Increasing the population _____	L _____
b. Extracting natural resources _____	N _____
c. Land clearing _____	L _____
d. Changing soil character _____	L _____
2. Altering natural defences _____	N _____
3. Foreclosing important uses _____	N _____
4. Jeopardizing man or his works _____	N _____
5. Other factors	
_____	_____
_____	_____
B. <u>Water Quality</u>	
1. Physical state of water _____	L _____
2. Chemical and biological states _____	L _____
3. Ecological balance _____	N _____
4. Other factors	
_____	_____
_____	_____

^{1/} See Explanatory Notes for this form.

^{2/} Use the following symbols: N - No environmental impact
 L - Little environmental impact
 M - Moderate environmental impact
 H - High environmental impact
 U - Unknown environmental impact

C. Atmospheric

- | | | |
|--------------------------|-------|---|
| 1. Air additives _____ | _____ | L |
| 2. Air pollution _____ | _____ | L |
| 3. Noise pollution _____ | _____ | L |
| 4. Other factors | | |
| _____ | _____ | |
| _____ | _____ | |

D. Natural Resources

- | | | |
|--|-------|---|
| 1. Diversion, altered use of water _____ | _____ | N |
| 2. Irreversible, inefficient commitments _____ | _____ | N |
| 3. Other factors | | |
| _____ | _____ | |
| _____ | _____ | |

E. Cultural

- | | | |
|--|-------|---|
| 1. Altering physical symbols _____ | _____ | L |
| 2. Dilution of cultural traditions _____ | _____ | L |
| 3. Other factors | | |
| _____ | _____ | |
| _____ | _____ | |

F. Socio-economic

- | | | |
|---|-------|---|
| 1. Change in economic/employment patterns _____ | _____ | L |
| 2. Changes in population _____ | _____ | L |
| 3. Changes in cultural patterns _____ | _____ | L |
| 4. Other factors: | | |
| Increased productivity due to better | | |
| health conditions | _____ | M |
| _____ | _____ | |

G. Health

- | | | | |
|-------------------------------------|-------|-------|---|
| 1. Changing a natural environment | _____ | _____ | N |
| 2. Eliminating an ecosystem element | _____ | _____ | N |
| 3. Other factors: | | | |
| Better health of dwellers | | _____ | H |
| | _____ | _____ | |

H. General

- | | | | |
|---------------------------|-------|-------|---|
| 1. International impacts | _____ | _____ | N |
| 2. Controversial impacts | _____ | _____ | N |
| 3. Larger program impacts | _____ | _____ | N |
| 4. Other factors | | | |
| | _____ | _____ | |
| | _____ | _____ | |

I. Other Possible Impacts (Not listed above)

_____	_____
_____	_____
_____	_____

Annex H
PART 4

SOCIAL ANALYSIS

The Social Soundness Analysis, "A Social Feasibility Study of the Development of a Low-Cost Rural Health Program for Guyana" by Dr. Antonio Ugalde (Contract No. AID/lac-C-1326, March 28, 1979) is available in LA/DR and in LAC/CAR (Guyana Desk).

ECONOMIC ANALYSIS

1. Introduction

Economics is often defined to be the study of the efficient allocation of scarce resources among alternative uses. As such, it is concerned with both investment and consumption expenditures. When studying investments, economists try to determine whether the returns to expenditures are worth the resources (or inputs) needed to achieve them, given the level and timing of these returns (or outputs) and given alternative uses of those resources. A benefit/cost or internal rate of return analysis ties these elements together. A similar examination of worth and cost is applied to consumption expenditures. In both cases, the productivity of resource utilization is key. Because health expenditures involve elements of both investment and consumption, and since it is rarely possible to determine the split between them, at least two kinds of analyses are required.

The first of these is usually called an analysis of internal efficiency. This analysis seeks to determine how efficient a system is in producing outputs it defines as important. For example, in education, decreasing the number of years of primary schooling given for each sixth-grade graduate might be an important test of internal efficiency, as might reducing drop-out rates. In health, the traditional measures of internal efficiency revolve around service delivery, such as the system's cost per hospital stay, expenditure per person in the service area, or manhours per treatment.

The second analysis is often called an analysis of external efficiency, which seeks to determine the effectiveness with which a system meets objectives larger in scope than the system alone. Using the field of education again for an example, external efficiency would examine how well the system matches skills in its graduates to those being demanded by the marketplace. In health, measures of external efficiency usually include such items as decreases in morbidity and mortality rates or the corollary measures of increased life expectancy or decreased days lost to sickness.

The above analyses assume that resources are available, or can be made available, without limitation over the possible range of resource requirements. Since this may not be a valid assumption, further analyses from the points of view of both direct beneficiaries and implementing agents are advisable to examine the likelihood that the assumption will prove valid.

From the standpoint of affordability to users, the most common resource utilizations are of time and money. This analysis, which compares user situations with and without the project, must look specifically at gross expenditures of time and money (to see if there are constraints) as well as offsetting savings (to see if the project on balance is likely to be

seen as worthwhile). It is, of course, easier to evaluate a situation in which net expenditures of time and money move in the same direction than it is to evaluate situations involving trade-offs between the two.

From the standpoint of affordability to implementing agent, the resource utilizations most commonly subject to constraints are those of money and trained manpower, especially administrative personnel. While the same concerns that frame the above analysis must be evaluated in this analysis - gross expenditures and offsetting savings - this analysis must look at recurring expenditures for project maintenance as well as installation costs.

2. Internal Efficiency

a. Situation Without Project

The health care delivery system in place in 1977 is characterized in the Health and Nutrition Sector Assessment.* In brief, that assessment showed a heavy concentration of human and financial resources was being dedicated to providing centralized medical treatments, usually on a vertical basis. At the same time, central facilities were the most heavily used. This situation is described in much greater detail in the GOG/MoH application for IDB financing of a project to re-structure the health care delivery system,** especially pages 45-54 of Chapter II, which present the best data available then, and now. (The statistical base for information provided therein was weak, but the picture painted is regarded as being essentially true). Of special note is the table reproduced below as Table H4.1, which summarizes physical resource allocation, and gives several key service statistics and measures of internal efficiency as they were in 1977. (A map in Annex E defines the regions referred to in this table).

Since 1977, the basic structure has not changed very much, although the number of medical doctors in the country has been estimated to have dropped to as few as 90 (versus 109 two years ago) and there are about 45 vacancies for doctors in the public sector. A number of professional nurses have been added to the staff and other professional nurses have been trained and deployed as Medex. In 1979, moreover, the MoH hopes to expand the number of permanent funded positions significantly (see Table H4.2 and H4.3).

* Linda Haverberg, John Gallivan and Gregory G. Blevins, A Preliminary Assessment of the Health/Nutrition Sector in Guyana. May, 1978.

** Government of Guyana, Ministry of Health, Development of the Health Care Delivery System of Guyana. September, 1977 (hereafter called "IDB project application").

TABLE H 4.1
ANALYSIS OF HEALTH SERVICES COVERAGE 1977 BY REGION
POPULATION, TYPES OF FACILITIES, RESOURCES, PRODUCTION, PRODUCTIVITY
AND COVERAGE INDICATORS
GUYANA - 1977

REGION	HEALTH SERVICES SYSTEM			RESOURCES			PRODUCTION				PRODUCTIVITY				COVERAGE				
	POPULATION	INHABITANTS PER SQUARE MILE	STRUCTURE	NUMBER OF FACILITIES (TOTAL)	MANPOWER HOURS	NUMBER OF BEDS	ATTENDANCES	ADMISSIONS	TOTAL ATTENDANCES	TOTAL ADMISSIONS	TOTAL ATTENDANCES PER MANPOWER HOUR	OCCUPANCY RATE	AVERAGE LENGTH OF STAY	NUMBER OF ADMISSIONS PER NUMBER OF BEDS	INHABITANTS PER FACILITY	MANPOWER HOURS PER INHABITANT	BEDS PER 1000 INHABITANTS	ATTENDANCES PER INHABITANT	ADMISSIONS PER INHABITANT
			TYPE OF FACILITIES AND NUMBER																
I	19,705	2.5	II. STAT. 4 DISP. 1 II. CENT. 1 DIST. HOSP. 2	8	74032	62	49,522	1923	258	2.0	51	6.0	31	2,401	3.96	3.23	2.58	0.10	
II IIA	159,896 94,261	53.7	II. STAT. 8 DISP. 3 II. CENT. 6 DIST. HOSP. 1	18	73920	18	100203	693	144.6	1.7	74	7.0	39	5,237	0.78	0.19	1.04	0.01	
IIIB	65,583	-	M. HUT. 2 II. ST. 20, II. CENT. 7 DIST. HOSP. 2 REG. HOSP. 1	32	133,744	153	105,167	6,382	16.5	1.4	69	6.0	42	2,050	2.80	2.33	1.60	0.10	
III	437,923	66.9	II. STAT. 32 DISP. 12 II. CENT. 24 DIST. HOSP. 5 RRH I	74	3,151,204	1207	921,046	56,548	16.3	1.5	89	6.9	47	5,918	7.20	2.76	2.10	0.13	
IV	177,311	10.8	II. STAT. 16 DISP. 9 II. CENT. 6 DIST. HOSP. 3 R. II I	35	1205952	382	350,644	13,072	26.8	1.7	69	7.4	34	5066	6.80	2.15	1.98	0.07	
V	14,971	0.7	MED. HUT. 7 II. STAT. 5 DISP. 4 DIST. HOSP. 2	18	71808	48	98669	1,115	68.8	3.4	38	5.0	30	812	4.80	3.21	6.29	0.10	
VI	16,755	0.6	MED. HUT. 4 II. STAT. 3 DIST. HOSP. 1	8	33016	29	30446	658	46.3	1.8	37	6.0	23	2094	2.27	1.73	1.82	0.04	
Total	826,014	10.0	MED. HUT. 13 II. ST. 84 DISP. 29 IIC 44 DII. 16 R/12 RRH	193	4800576	1899	1,655,688	80,711	20.5	1.6	79	6.3	43	4,230	5.81	2.30	2.00	0.10	

MH - Medical Hut
II. ST. - Health Station
D - Dispensary

IIC - Health Center
DII - District Hospital
RH - Regional Hospital
RRH - Regional Referral Hospital

Table H4.2

MoH Funded Positions: 1977-79

	<u>1977</u>	<u>1978</u>	<u>1979</u>
Central Offices	114	116	135
Medical	627	627	645
Pathological	100	100	119
Radiological	50	50	55
Hospitals and Dispensaries	3160	3249	3753
Analysis	39	39	39
TOTAL	4090	4181	4736

Source: Government of Guyana, Estimates
Current & Capital of Guyana for the Year 1979
(hereafter referred to as GOG 1979 Budget)

Table H4.3

Main Permanent Personnel Changes in MoH

	<u>1978</u>	<u>1979</u>
Medex	23	-
Staff Nurse/Midwife	51	110
Nursing Student	-51	-13
Nursing Assistant	-	135
Midwife	48	85
Dental Nurse	-	24
Pharmacist	10	17
Medical Technologist	-	19
Hospital Attendant	-	21
Statistician	2	17
Constabulary	-	97
Other	8	43
	—	—
TOTAL CHANGE	91	555
	—	—

Source: GOG 1979 Budget

If the Ministry is able to move rapidly in recruitment and training, personnel levels will increase significantly in 1979 - by perhaps 10 percent - because people with the needed skills are not expected to be in such short supply as to prevent this build-up in personnel, except that the supply of doctors is expected to remain critical.

In addition, the physical structure of the health services delivery system is expected to begin changing soon, as work is starting under agreements signed with the Inter-American Development Bank and the Peoples' Republic of China, the latter involving a new 250 bed hospital in New Amsterdam. The IDB project (see Annex E) is designed to reorganize the system partially and add services at the Regional and District level so as to generate a higher proportion of referrals, and have those referrals involve problems requiring a higher degree of technical skills, even though the absolute workload at central facilities may not decrease.

Major cost increases have occurred since 1977 as inflation in Guyana, both domestic and imported, has decreased the buying power of budgetary resources. This has affected only non-salary current expenditures since the general salary scale has not risen in the public sector since 1977 (but some workers had their wages raised to conform to minimum wage standards). The following table shows the course of the current budget of the MoH from 1977 to 1979 in Guyanese and U.S. dollars, in nominal terms and adjusted for inflation. Two 1979 figures are shown because budgeted and actual expenditures traditionally have diverged, with non-salary items usually falling below budgeted levels and salary items usually coming very close to budgeted levels.

In real terms, then, manpower resources by the end of 1979 probably will be about 10 percent above 1977 levels, and supplies and other non-salary current cost items will probably be about 10 percent below the 1977 level.

Table H4.4

MoH Current Budget

		<u>G\$ Millions</u>		<u>US\$ Millions</u>	
		<u>Current</u>	<u>1977</u>	<u>Current</u>	<u>1977</u>
		<u>Prices</u>	<u>Prices</u>	<u>Prices</u>	<u>Prices</u>
1977	Actual	29.9	29.9	11.7	11.7
1978	Revised	31.9	29.8	12.5	11.7
1979	Budget	39.7	34.9	15.6	13.7
	Likely	35.0	31.4	14.5	12.3

Source: GOG 1979 Budget and USAID Estimates

b. Situation with Project

With so many factors already known to be changing, ex-post selection of those changes due to the proposed project will necessarily involve a good deal of judgement as well as first-hand knowledge. For example, data in the IDB project application, which covered a larger portion of the overall system than the approved project but still excluded specialized hospitals, predicted much greater efficiency in the future than at present - more services at the same cost per inhabitant. The various measures are set forth below:

Table H4.5

Expected IDB Project Benefits: 1987 versus 1977

<u>Indicator</u>	<u>1977</u>	<u>1987</u>	<u>% Change</u>
Attendances per inhabitant	2.00	4.74	+137
Admissions per inhabitant	0.10	0.10	0
Beds per 1,000 inhabitants	2.30	2.11	- 8
Man-hours per inhabitant	5.81	5.48	- 6
Total Cost of System (G\$ 000)	19,723.9	25,541.3	+ 29
Cost per inhabitant (G\$)	23.89	24.24	+ 1
Cost per attendance (G\$)	2.82	1.26	- 55
Cost per admission (G\$)	186.5	188.5	+ 1

Source: Derived from p. 20, IDB Project Application

The present proposed project would share some benefit characteristics with the IDB project. In project areas, the number of attendances per inhabitant would increase dramatically, certainly more than the average of 137 percent given above, simply because virtually no services are provided in many project areas at present. The project would make services available at a lower unit cost than for comparable facilities in the system as a whole. One should keep in mind that it is likely to cost more per medical attendance at the health station echelon of service than at most other echelons. The IDB paper calculates cost per attendance in 1977 as follows:

Table H4.6

Average Non-capital Cost per Attendance: 1977

<u>Type of Facility</u>	<u>Cost (GS)</u>	
	<u>a</u>	<u>b</u>
Health Post (Med. Hut))		1.60
Health Station)	2.99	5.15
Dispensary	NA	0.90
Health Center	NA	4.69
District Hospital	1.62	1.58
Regional Hospital	5.00	5.04
Referral Hospital	2.87	2.96
WEIGHTED AVERAGE	2.82	NA

Note: Does not include cost of hospital admissions.

Source: IDB project application: (a) p. 142; (b) p. 123

NA = Not given in source

This anomalous situation springs from two factors. First, staffing: the first echelon (health post/village) will be staffed almost exclusively by community health workers or birth attendants, whereas the second echelon (health stations) will have a mix of relatively higher paid technicians. Second, definitions: "attendances" are defined differently for community health workers, who spend relatively more time on preventive care and educational activities, more time outside their facilities and more time with groups, than for health station personnel, who spend relatively more time on treatment, more time in their facilities and almost all of their time dealing with individuals.

Because capital costs such as depreciation and training are not included in the above data, average total costs per attendance would be higher, with differential effects. Including depreciation of buildings and equipment would affect costs, approximately as in Table H4.7.

Table H4.7

Average Cost per Attendance, Excluding Training: 1977

(G\$)

	<u>Non-capital</u>	<u>Depreciation</u>	<u>Total</u>
Health Post	1.60	.64	2.24
Health Station	5.15	2.36	7.51
Health Center	4.69	2.61	7.30
District Hospital	1.58	3.80	5.38
Regional Hospital	5.04	2.62	7.66

Source: Table H4.6 and USAID Estimates

The addition of annualized training costs would undoubtedly close the range in cost per attendance even more for the higher echelons, but factoring in hospital admissions would lower the capital cost of attendance at hospitals. By 1987, utilization rates are expected to change because the community health workers will be deployed in 400 villages of about 500 inhabitants each, on the average, and Medex will be deployed to health stations in 100 locations and serving about 5,000 people each, including those served at the village level. It is estimated that half of the 500,000 population will be contacted once by project-supported personnel, about one-fourth an average of three times and one-tenth an average of eight times. This adds up to over one million contacts per year (see Table H4.8).

Table H4.8

Estimated Project Contacts by Agent

A.	<u>Number</u>	<u>Contacts Per Year</u>	<u>Total Contacts</u>
	250,000 people	1	250,000
	125,000 people	3	375,000
	50,000 people	8	400,000
		TOTAL	1,025,000
B.	<u>Agent</u>		
	400 Posts/Villages	1400	560,000
	100 Stations	4650*	465,000
		TOTAL	1,025,000

*Note: Graduates of the first Medex group are having about 400 contacts per month. See Thomas G. Coles, Jnr., MEDEX/Guyana Class I Graduate Job Performance and Assessment Tools used by Supervisors. March, 1979 (hereafter referred to as Medex/Guyana I Report).

Source: USAID Estimates

The impact of this change on the system's internal efficiency will be far-reaching. As shown in Table H4.9, average cost per attendance will drop with the project. Although the decrease in the average cost per attendance cannot be calculated because coverage expected with the project is not strictly comparable to that at present (but see part 5a below), if they were the same, the drop would be 19 percent. At the health post/village level, served by the community health worker, the cost savings per attendance will amount to only 5 percent (and that result is due to the MoH not having to pay CHW salary costs). However, at the health station level, served by the Medex, the cost savings per attendance will be 60 percent. This last result is made possible by an increase in attendances to a rate 2½ times that at present. In addition, of course, the quality of medical services rendered will increase dramatically, as will the amount of preventive services. The major benefit will thus be qualitative in the form of much improved coverage, which will overshadow the importance of the cost savings, as impressive as they are. Table H4.10 presents three measures of internal efficiency with the project. Unfortunately, data to describe the 1977 situation at this echelon of service are not available. The closest data lumps health posts, dispensaries and stations all together. This distorts the picture by including low-cost dispensaries and health posts. These data are also presented in H4.10, even though they are not strictly comparable.

Table H4.9

Cost per Attendance With and Without Project

(G\$)

	<u>Cost Without Project</u>			<u>Cost With Project</u>			% Change in total Cost
	<u>Current</u>	<u>Depr.</u>	<u>Total</u>	<u>Current</u>	<u>Depr.</u>	<u>Total</u>	
Health Post/Village (CHW)	1.60	.64	2.24	1.13	1.00	2.13	-5
Health Station (Medex)	5.15	2.36	7.51	2.08	.95	3.03	-60
AVERAGE (but see text)			3.16			2.57	-19

Source: Table H4.7 and USAID Estimates

Table H4.10

Measures of Project Internal Efficiency

	<u>At Present</u>	<u>With Project</u>	<u>Percent Change</u>
Attendances per inhabitant	1.85	2.05	+ 11
Man-hours per inhabitant	1.09	2.96	+172
Cost per attendance (G\$)	3.16	2.57	- 19

Source: USAID Calculations. See text for explanation of non-comparability

Increased coverage is recognized to be a major project benefit, but the project will not make services available to all rural residents. Some will continue to be covered by corporate facilities, mainly by the public sector sugar and bauxite companies which took over private enterprises traditionally having their own medical services. (These may be integrated) into the MoH system in the future). Still others will be outside the geographic areas directly served by any source of primary health care. The intention, however, is to deploy Medex and related health care personnel nationally over the rural area, as described above. (See also Annex G on deployment plans).

It is difficult at this point to predict the impact of the project on the quantity and nature of referrals. According to the first formal evaluation of deployed Medex (cited in Table H4.9), some 230 referrals were made by the group in their first three months, an average of about 7 per month per Medex. Given the relatively high medical training of the Medex workers, screening probably improved. It is clear that the referred cases should have required higher technical skills than the average attendance at district and regional hospitals. In the short run, hospital admissions may actually go up, with only slight changes in technical skills required. The effect in the long run, however, would clearly be to have fewer cases coming from project areas than at present, but each more costly to treat than at present. In fact, if only 4% of all cases can be saved from hospital admission, and even if three attendances are required for such cases, the Project will have been an efficient intervention from the point of view of hospital care costs.

3. External Efficiency

Little can be said about the external efficiency of this specific project because reliable background data are not available for the country as a whole or for the rural sector, much less for specific project areas, on such measures as disease-specific morbidity and mortality rates, infant/child/total mortality rates, age at death, life expectancy at birth and at present age, and average length of time lost per sickness/debilitation, including travel and treatment time. However, ample evidence* exists in the literature of public health economics to demonstrate that positive changes can be expected in all of the above measures.

It is quite possible that the systematic improvements to be wrought in primary health care at local, regional, district and central levels by the combination of the IDB and AID-supported projects, and their predecessors and contemporaries, will yield a level of well-being significantly above the present. This project is aimed at rural people, who are usually farmers, mostly commercial farmers, but including subsistence farmers and livestock operators. Their productivity can be expected to increase as health status improves. The value to them and to the society of productivity increases will be determined only after experience and time allow a data base to be built.

The data base for empirically judging the external efficiency of this project is being built at present in two ways. First, the IDB project is improving both the data on medical treatment and the system to extend the statistical base. Second, this project will collect community level health data. In fact, the first formal evaluation of the MEDEX/Guyana I program, cited above, contains a list of the 314 conditions reported by the first dozen Medex in their first three months of being deployed at MoH sites. While rates per 10,000 or per 1,000 people for specific conditions of interest cannot be calculated from data in that report, it is clear that, of the most common conditions for which people sought care, the majority impact directly on the short-term and medium-term productivity of the population, even the conditions not caused by major diseases. The top fifteen conditions are given here as Table H4.11. Of course, this and similar lists do not record events, such as births and deaths, but only treatments. They allow a better picture of health status than was known before, and will be useful in constructing the needed data base.

* See, for example, Wilfred Malenbaum, "Health and Productivity in Poor Areas", in Empirical Studies in Health Economics, Baltimore: The John Hopkins Press, 1970, pgs, 31-54; Jennifer A. Roberts, "Economic Evaluation of Health Care: A Survey", British Journal of Preventive and Social Medicine, No. 28 (1974); and Teh-wei Hu, "Health Care Services in China's Economic Development", a paper presented at the San Juan, Puerto Rico Research Conference on the Lessons of China's Development Experience for the Developing Countries (January 31 - February 2, 1976).

Table H4.11

Frequency of Conditions Attended by Medex

<u>Conditions</u>	<u>Absolute Frequency</u>
Upper respiratory tract infection	765
Hypertension	639
Anemia	442
Lower urinary tract infection	431
Diabetes Mellitus	326
Acute bronchitis/emphysema	318
Scabies	313
Osteo arthritis	312
Parasitic worms	311
Wounds/traumas	292
Eye problems	272
Anxiety states	261
Gastro-enteritis	232
Abscess/furuncles	214
Congestive cardiac failure	190
Other	4,358
	<hr/>
TOTAL	9,408
	<hr/>

Source: MEDEX/Guyana I Report, p. 17

The scope for improved community environmental health practices is also evident from this small sample. As shown in Table H4.12, a total of 1,306 cases (14%) were of types usually found to have been caused by poor personal or community environmental health. This means that the community health worker will have ample work to do on community environmental health as well as other aspects of education/prevention and treatment.

Table H4.12
Environmental Health Related Problems

Personal Hygiene/Lack of water	622
Water-borne Diseases	330
Soil-transmitted worms	312
Water-related Insect Vectors	42
	<hr/>
TOTAL	1,306
	<hr/>

Source: MEDEX/Guyana I Report, p. 22

4. Affordability to Users

The key factors in judging affordability of the system to users are the absolute expenditures of time and money expected to be made by beneficiaries with the project in comparison with medical and health expenditures at present.

a. Expenditure of Financial Resources

According to the current consumer price index weights given below as Table H4.13, which were based on a consumer expenditure survey undertaken in 1969 and 1970, the urban and rural populations spend an average of 4.02 and 4.36 percent, respectively, of their total annual expenditures on medical care. (These figures may slightly overstate today's figures). At today's prices, and taking into account the differences then in the average incomes in urban and rural places, the official weights would imply expenditures of about G\$50 per urban person and about G\$30 per

rural person per year*.

Table H4.13

Relative Medical Expenditures:
Weights in the CPI

<u>Item</u>	<u>Urban</u>	<u>Rural</u>
Doctors' fees	1.52	1.87
Liquid prescriptions	.27	.30
Liquid patent medicines	.39	.86
Hospitalization	.76	.53
Tablets and pills	.35	.32
Ointments	.05	.06
Nurse/midwife	.02	.07
Sanitary articles	.37	.16
Spectacles	.16	.12
Injections	.13	.07
	<hr/>	<hr/>
TOTALS	4.02	4.36
	<hr/>	<hr/>

Source: Government of Guyana, Ministry of Economic Development,
Household Expenditure Survey, 1969-70, Part I, (n.d.)

* However, the National Food and Nutrition Survey of Guyana (PAHO Scientific Publication No. 323, 1976) as cited on p. 14 of Kenneth A. Jameson's Income and Land Distribution in Guyana (USAID/Guyana, 1978), shows the equivalent of about G\$45 and G\$40, respectively.

The weights in and of themselves reveal a very interesting picture. First, doctors' fees in both cases are twice as significant as the next most important expenditure item, showing that private doctors are often consulted (even MoH doctors are permitted to have a private practice). Second, whereas urban residents spend relatively much more on hospitalization, rural residents have to use liquid patent medicines much more often. Third, and the most important conclusion for this project that one could draw from this table, people are accustomed to paying for medical care even though it is Government's policy to provide free medical care for everyone. Thus, the prospect of community health care could well be a strong enough incentive for a village to support a CHW from among its members.

The Project is premised on the proposition that the community's primary and first link with the health care system is its CHW, just as the CHW is the system's first link with the community. The community must provide a reasonable level of support to the CHW. While the level of support some CHWs may require could be low, and the support other communities may feel necessary to offer could be high, in general, support from the community will vary with the relative richness or poverty of the community, since that in part determines the CHWs needs. At present, it is thought that about twice the per capita income would be the average. According to one recent survey*, average annual rural earned income was G\$2,627 per household, ranging from G\$1,875 to G\$3,099 for different zones. While village income levels would vary widely, the average per capita earned income would be G\$461. Thus, the average community would be asked to contribute collectively about G\$920 per year (G\$75, or US\$30, per month) towards the support of the CHW. Since the average community would contain about 500 inhabitants, this works out to approximately G\$0.15 per individual, or G\$0.85 per family, per month. On an annual basis the figures are G\$1.80 and G\$10.20. This is only about 7 percent of present medical expenditures and should thus be readily affordable financially to even the poorest of villages.

b. Expenditure of Time

The present system requires ailments to be of a rather serious nature before people make the effort to seek out medical attention. While it minimizes the personal expenditures of time, it also means that people put up with pain, suffering and debilitation longer than necessary. And, because the conditions are more serious when help is finally sought, their alleviation requires more time of the patient and more financial and human resources of the system.

* Government of Guyana, Ministry of Economic Development, Guyana Labor Force Survey II, unpublished preliminary data, Table 3.

The Project design calls for the health station to serve a five mile radius, including villages also served by CHWs. This should mean that medical care will be within 20 to 40 minutes travel by vehicle, depending on topography, roads and reason. This design was chosen because it is well known that attendance rapidly decreases as time and distance increase.

This appears to be an affordable system to users in terms of time. Although more but smaller expenditures of time will be called for than at present, the long time expenditures should decrease significantly as the system attends cases before they call for evacuation.

It should be pointed out here that should air evacuation become necessary, and it is necessary in Guyana in a surprisingly large number of cases*, the radio communications link built into the Medex system can significantly reduce time waiting for an airplane.

c. Likelihood of Contribution

Although the community financial contribution may be but a small fraction of present expenditures for health care, certain classes of expenditures will not be reduced simply as a result of this project (such as nurse/midwife or even liquid patent medicines). Indeed, some classes of expenditure may increase in importance (such as for sanitary articles and glasses). It is thus worth examining the likelihood that communities will in fact contribute to the support of the CHW.

The Social Analysis (Section 3 of this Annex H) describes project beneficiaries according to a number of significant characteristics, including typical village organization. It notes that many village organizations are of a voluntary type formed for specific purposes. The GOG, in its Second Development Plan**, indicates that it is the intention of the Government to stimulate community development through self-help techniques basically in the form of community participation in the selection of activities and through community labor contributions to activities for which other resources are provided by the Government. That document notes the growth of cooperatives in the country and that cooperativism is the cornerstone of the Government's socio-economic development program, even appearing in the

* One hinterland medical man reports sending out about one person per week by air evacuation, out of a population of 3,630. See S. J. Loretz's undated report (available in the USAID/Guyana Memory Bank) on the medical operation at Aishalton. Another is that a Cuban doctor at Lethem told Mission personnel that he air evacuated eight patients per week to Georgetown. One other indication of how often air evacuation is used is that the 1979 GOG budget (folio 160), op. cit., estimates the cost of all evacuations at G\$30,442 in 1978 and G\$42,722 in 1977. The average cost of such a trip is an estimated G\$60, judging from available information, while the cost of surface evacuation must be slight. Even if half of the cited expenses were for surface travel, then over 300 air evacuations were needed annually.

official name of the country.

The Mission is aware of successful cooperative activities, for specific purposes, undertaken by formal village councils as well as ad hoc groups. It is believed that the prospect of community health care will be a sufficiently strong incentive to obtain the low degree of community support absolutely necessary at the village level.

5. Affordability to the Government of Guyana

The installation and recurring costs to the GOG of the proposed system involve the commitment of managerial/administrative resources as well as financial resources. The financial costs of installation of the Project will be financed mostly by external resources, either through the AID loan and grant, or the local currency generations of the present IBRD commodity import loan forming part of the Caribbean Development Facility financing package; financial resources should not be a constraint to Project installation. The AID Grant and Loan package will also finance the importation of a large amount of technical and administrative manpower. Nevertheless, the concurrent implementation of the several large health sector projects (financed by IDB and the Peoples Republic of China, as described earlier in this and other sections) means it is important to examine whether or not the Ministry's human resources will be a constraining factor to Project installation. Human resources should not be a constraint to Project operation. With the expiration of special outside financing after Project installation, the ability of the GOG, to provide continuing financial support might also come into question and should be examined. Thus, there seem to be only two possible constraints: manpower now and financing later.

a. Financing after Project Installation

Although it is clear from Part 2 above that the proposed system would be significantly cheaper on a per attendance basis than a proportional expansion of the present system to achieve the same coverage targets, it does not necessarily follow that the MoH could expect to have the funds to operate the proposed system if that were to imply an unduly large share of budgetary resources.

Expansion of the present system at present costs and personnel configurations would imply a need for G\$3.29 million per year for the 255 health stations and 247 health posts/villages that would give a total of 1,025,000 contacts per year (see Table H4.8), based on the cost of operations shown in Table H4.0 (Cost per Attendance). The Project will

** Government of Guyana, Ministry of Economic Development. Second Development Plan 1972-1976 (Draft), n.p., n.d., pgs. 62-3 and 115-48.

make the same level of population coverage available for only G\$1.60 million annually, less than half the above amount. Including depreciation costs for buildings and equipment would more accurately reflect the total long-range costs of the system. In that case, comparable figures would be G\$4.74 million and G\$2.60 million per year, respectively, the latter being cheaper by 45 percent. In neither case is the amortized cost of training included. (Its inclusion would likely close the gap somewhat, but leave the major conclusion unchanged: the proposed system is eminently affordable if the alternative way of achieving the same population coverage is an extension of the health station/village and health post portions of the present system). Nor does either figure include the costs or savings in other parts of the health system. It is thought, however, on the basis of experience in other countries, that the proposal will mean a lower relative rate of usage of upper level facilities, and with time, perhaps even a lower absolute rate.

Although the coverage could be extended along present lines, the quality of services would be lower and of a different nature. An expansion providing services at least equal to those to be provided under the proposal could not be accomplished using personnel less adequately trained than Medex. In fact, it would require doctors to provide services at least equal in quality to Medex. On that account, the present shortage of doctors rules out a simple expansion of the system. Although doctors could be recruited from abroad (Korea, Cuba and the Philippines now provide the bulk of foreign doctors, and there are an estimated 1,000 Guyanese doctors working abroad), the cost would be prohibitive, at least as long as there are foreign exchange shortages.

Of note is the relative foreign exchange component of the proposal vis-a-vis an expansion of the present model. Once the Medex training facility is established (and institutionalized), Medex training will have no foreign exchange component beyond equipment and texts, or paper to print them. There would also be a slightly higher foreign exchange component to Medex work facilities because of better medical and communications equipment and medicine needs, now largely imported, would increase. But the absolute level of foreign exchange requirements implicit in the Medex mode is thought to be less than the present system if foreign doctors were allowed to remit part of their earnings to their home country. The fact that such remittances were recently prohibited is cited as a major reason for the present exodus of foreign doctors and the continuing problems in recruiting replacements for them.

b. Manpower During Project Installation

This analysis is handled in the Institutional Analysis and Detailed Project Background (especially Part 8, Other Donors) sections of the PP. The Mission recognizes this as a problem but is satisfied that it is adequately addressed in the project design.

Bibliography

1. Coles, Thomas G., Jnr. MEDEX/Guyana Class I Graduate Job Performance and Assessment Tools Used by Supervisors, March, 1979.
2. Government of Guyana Estimated Current and Capital of Guyana for the Year 1979.
3. Ministry of Economic Development, Guyana Labor Force Survey II (preliminary data).
4. Household Expenditure Survey, 1969-70, Part I, (n.d.)
5. Second Development Plan 1972-1976 (Draft), (n.p., n.d.)
6. Ministry of Health, Development of the Health Care Delivery System of Guyana, September, 1977.
7. Haverberg, Linda; John Gallivan and Gregory G. Blevins A Preliminary Assessment of the Health/Nutrition Sector in Guyana, May 1978.
8. Hu, Teh-wei "Health Care Services in China's Economic Development", a paper presented at the San Juan, Puerto Rico Research Conference on the Lessons of China's Development Experience for the Developing Countries (January 31 - February 2, 1976).
9. Loretz, S. J. "Report on Medical Operations at Aishalton", no date, (available in USAID/Guyana Memory Bank).
10. Malenbaum, Wilfred "Health and Productivity in Poor Areas", in Empirical Studies in Health Economics, Baltimore: The John Hopkins Press, 1970, pgs. 31-54.
11. Pan American Health Organization National Food and Nutrition Survey of Guyana (PAHO Scientific Publication No. 323, 1976) as cited in Kenneth A. Jameson's "Income and Land Distribution in Guyana", USAID/Guyana, 1978).
12. Roberts, Jennifer A. "Economic Evaluation of Health Care: A Survey", British Journal of Preventive and Social Medicine, No. 28 (1974).

ADMINISTRATIVE ANALYSIS

The implementing agency for this Project will be the Ministry of Health (MOH). An organization chart is provided in Annex E, detailed Project Background. The MOH benefits from a long standing and mature organizational structure which has served the traditional needs of the Ministry; however, the MOH is characterized by many of the usual problems found in a developing country:

1. Under-staffing with overworked staff at the central level of the MOH.
2. A chronic shortage of skilled management staff at all levels of the organization.
3. A chronic shortage of skilled health workers at intermediate and lower peripheral levels.
4. MOH programs operating on a vertical semi-autonomous basis with minimal coordination among them, particularly between curative/hospital and preventive/public health programs.
5. Serious deficiencies in the management support infrastructure with chronic breakdowns in supply/logistical systems, transportation and communications, serving the lower levels of the MOH including rural areas.
6. Over utilization of the central national hospital by rural residents who either by-pass outlying peripheral and intermediate facilities when their experience has shown that such facilities are often without skilled staff, drugs and supplies, or who reside in areas without health services facilities.
7. Imbalance in the allocation of MOH resources, with curative/hospital services given first priority and a disproportionate amount of the annual MOH budget over preventive/community health services.
8. A serious lack of reliable and valid data required for effective evaluation and the lack of planning capability to rationalize health services delivery and resource allocation on a continuing basis.

All of the above problems were recognized by health leaders of Guyana, as long ago as 1974, when there is evidence that serious efforts began to solve these problems. The current IDB Project (Described in Annex E and

F) which began in September 1978, has resulted from many years of planning by MOH officials in collaboration with Pan American Health Organization (PAHO) consultants and IDB officials to specially address the above problems. The IDB project approach is intended to bring about a reorganization, regionalization and decentralization of the MOH to relieve pressures on the central level of the MOH. That project is also intended to strengthen management infrastructure sufficiently to support among other things, the development and operation of a nationwide primary health services delivery system.

The IDB project with PAHO technical assistance is expected to function for the next three to four years and will operate in concert with this Project.

The commitment of the MOH to the objectives of the IDB project is best illustrated, not by the amount of dollar contribution by the MOH to the project (\$2.1 million (US)) but by the fact that the MOH has selected and seconded as counterparts to the IDB Project, talented key senior officials of the MOH including the former Medical Officer of Health (Maternal and Child Health) who is serving as Project Director, and the former Health Education Officer, who is serving as Director of Training. The Project Director has been given considerable freedom to work with all members of the MOH and external agencies, without the usual formal protocol clearances to facilitate achieving the objectives of the IDB Project.

In addition to the above problems, and the IDB/PAHO/MOH effort to address them, the following administrative/institutional problems exist and will need to be addressed by this Project:

1. The MEDEX special demonstration training unit, funded by IDRC, Ottawa, needs to be institutionalized. The IDRC project which will be completed in Jan. 1980, was established and staffed by personnel seconded from the MOH to a special training unit which was established outside the formal organization of the MOH. It has continued to function without any formal organizational relationship with either the MOH or the University of Guyana. The Director of the Medex Training Unit, who does not have an official government appointment, carries such professional and personal stature and respect among his health colleagues, the health leaders of Guyana, that through his informal relationships with them he has been able to perform an effective leadership role in permanently establishing the MEDEX program. He has been able to go so far as to stimulate the legislative mandate required by Medex to perform the role upon completion of training. Nevertheless, if Medex are to be a permanent cadre of health workers in Guyana, the permanent institutionalization of the training unit, either within the MOH or within the University of Guyana should be achieved prior

to the end of this Project, with continuing education of primary health workers within the MOH and workers within the supervisory network.

2. The roles and relationships of Medex and Public Health Nurses, their relative ranking and salary within the Public Service System and their career ladder opportunities have yet to be rationalized, and as a result, there are conflicts and misunderstandings among and between Medex, PHN's and other health workers. While the IDB project will be studying and recommending appropriate roles and relationships of all health personnel, public service rankings, salary and career mobility, there will need to be special attention paid to this problem.
3. The organizational integration of curative with preventive/public health services is essential for the development of a rural primary health system and for the role of Medex and CHW's if their roles are not to be pulled or distorted in one direction or the other such as has happened with the IDRC. This requires reorganization of the MOH which the IDB project is addressing. Because this problem is one of the most resistant to solution, whatever assistance this Project can give, will be important to a successful outcome in developing a functioning rural delivery system.
4. The small Netherlands funded pilot project for training CHW's needs to be coordinated with CHW training under the AID Project. (See description of the pilot project, Annex E). The Netherlands pilot project, while not conforming to the conceptual model for training and supporting CHW's utilizing the Medex approach, will provide useful evaluation data that will become available in late 1979 and early 1980. The problem of institutional linkage and coordination with this Project is being addressed.
5. There is need to institutionalize Community Health Workers and complete the institutionalization of Medex into the formal career system of the MOH. Although legislation authorizing the licensure/certification of Medex was approved in 1978, and the classification of Medex positions by the Public Service Commission was approved with appropriate higher career rankings assigned, funds have not yet been made available to provide the salary increase to Medex earned upon graduation and deployment from the Medex Training Unit, which would reflect their change from a Sick Nurse Dispenser, Public Health Nurse, or Staff Nurse salary. Only the first class of Medex to be trained are deployed at the time of this writing with the added compensation yet to be paid for the up-graded training and greater responsibilities that the Medex job entails; there is some disappointment and morale problems.

6. The continuing decrease of medical doctors, and their unavailability to serve in essential supervisory positions responsible for Medex and other primary health workers of the rural primary health delivery system is a serious problem. The number of medical doctors, both Guyanese and others, serving in Guyana has dropped from 170 in 1974 to approximately 90 at present, while there are about 36 Guyanese undergoing medical training at present outside the country; however, not all are expected to return upon completion of their training. Three are due to return in June 1979 with credentials to practice; however, the severe doctor shortage problem is expected to continue.
7. The imbalance of MOH resources allocated to curative/hospital services, while being addressed by the IDB Project, remains of critical importance to developing a rural primary health system. The strategy of reallocating MOH resources previously allocated to curative/hospital services also needs to be addressed by this Project, particularly in view of the IDB project's commitment of the largest portion of its resources to hospital construction and hospital oriented training and technical assistance.
8. Finally, and probably most critical of all, is the problem of coordinating the development activities to be carried out under this Project, with the institutional strengthening, management system building, and facilities development activities of the IDB project including the PAHO technical assistance to be provided under the project. Without close collaboration, between projects both efforts will be counter-productive to developing a self-sufficient and functioning national primary health care system.

All of the above issues were discussed with the Permanent Secretary and the Chief Medical Officer of the MOH who are aware and sensitive to them, and have indicated a commitment to resolving them.

In summary, then, there are all of the usual institutional problems of an under-financed, under skilled and overworked MOH, with mal-distribution of resources that tends to further aggravate difficult conditions. Before addressing the above problems, it should be pointed out that the purpose of this analysis is to determine if there is managerial capability within the MOH to satisfactorily implement this Project, and where such capability is lacking, to determine if the MOH or if the Project, as designed, will provide assistance to overcome the identified weaknesses.

The quality of leadership within the MOH and the level of their commitment to the objectives of this Project are of critical importance. In meetings with the Minister, Permanent Secretary, Chief Medical Officer, Principal Nursing Officer, and Director of the IDB Project there was evidence of a very strong enthusiasm and commitment for the Project. Members of the Project planning team were reminded that Senior MOH officials, including

the present Chief Medical Officer and the IDB Project Director, over four years ago had made a commitment to the development of a rural primary health care system utilizing Community Health Workers and mid-level workers (later to be designated Medex), and that planning had been proceeding since then. It was this early planning that led to the IDRC Demonstration Project, and then to the major IDB effort, which is considered by them to be an essential step of developing the central and regional management infrastructure needed to adequately support a rural primary health care delivery system.

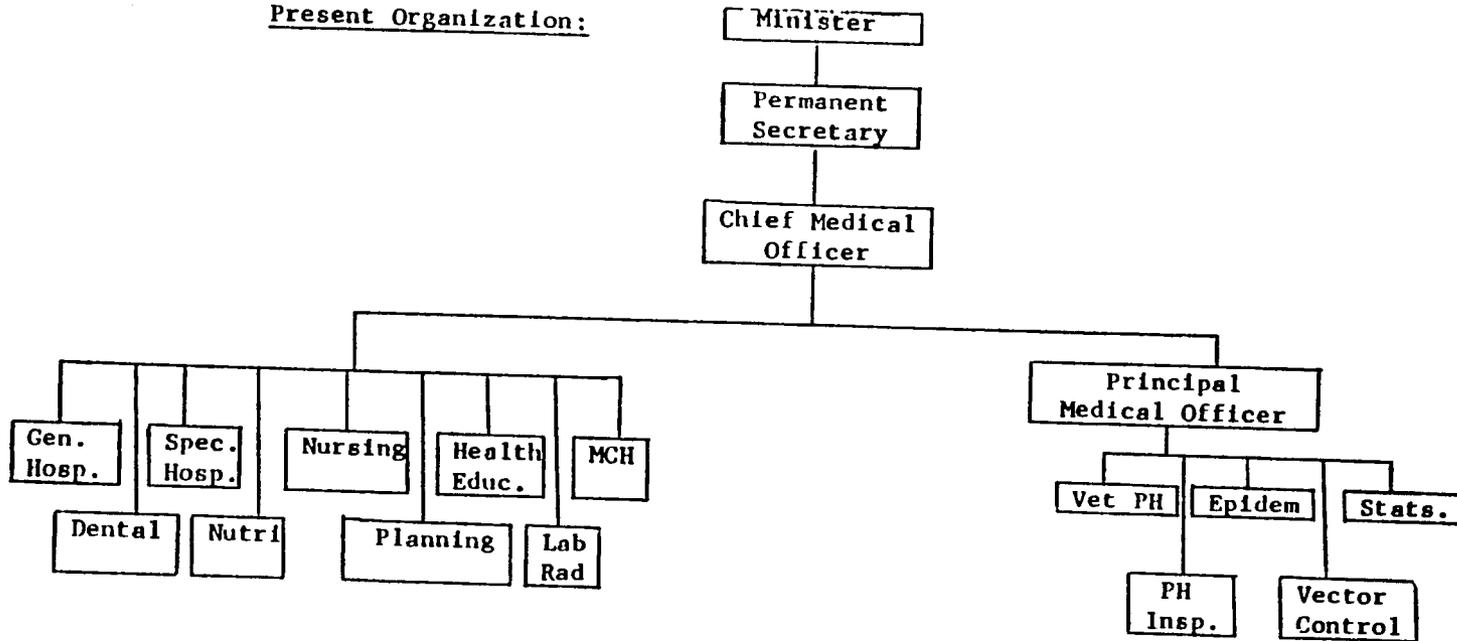
Not only have the present leaders of the MOH had a track record of commitment and planning for primary health care, but all, except the present Permanent Secretary who was recently appointed to the MOH, (Permanent Secretaries in Guyana are management generalists) have for many years actively and aggressively worked to promote the development of primary care workers to serve the rural areas of Guyana. The commitment of MOH leaders is reflected in the desire of the Chief Medical Officer to serve as Project Director until he is able to obtain approval of, and appoint, a qualified person to a new senior position within the MOH. He feels such a person is required to supervise the entire MOH community health services effort, now that it appears solidly underway.

On the following page is the present and proposed organization of senior level officials in the Ministry of Health. It was also proposed, that at least until the position of Principal Health Officer (Community Health) is established and filled, that the MOH will establish a Primary Health Care Coordinating Council for the purpose of overseeing and coordinating all of the existing and new development activities involved in the establishment of a reorganized national primary health care system. This Coordinating Council would consist of at least:

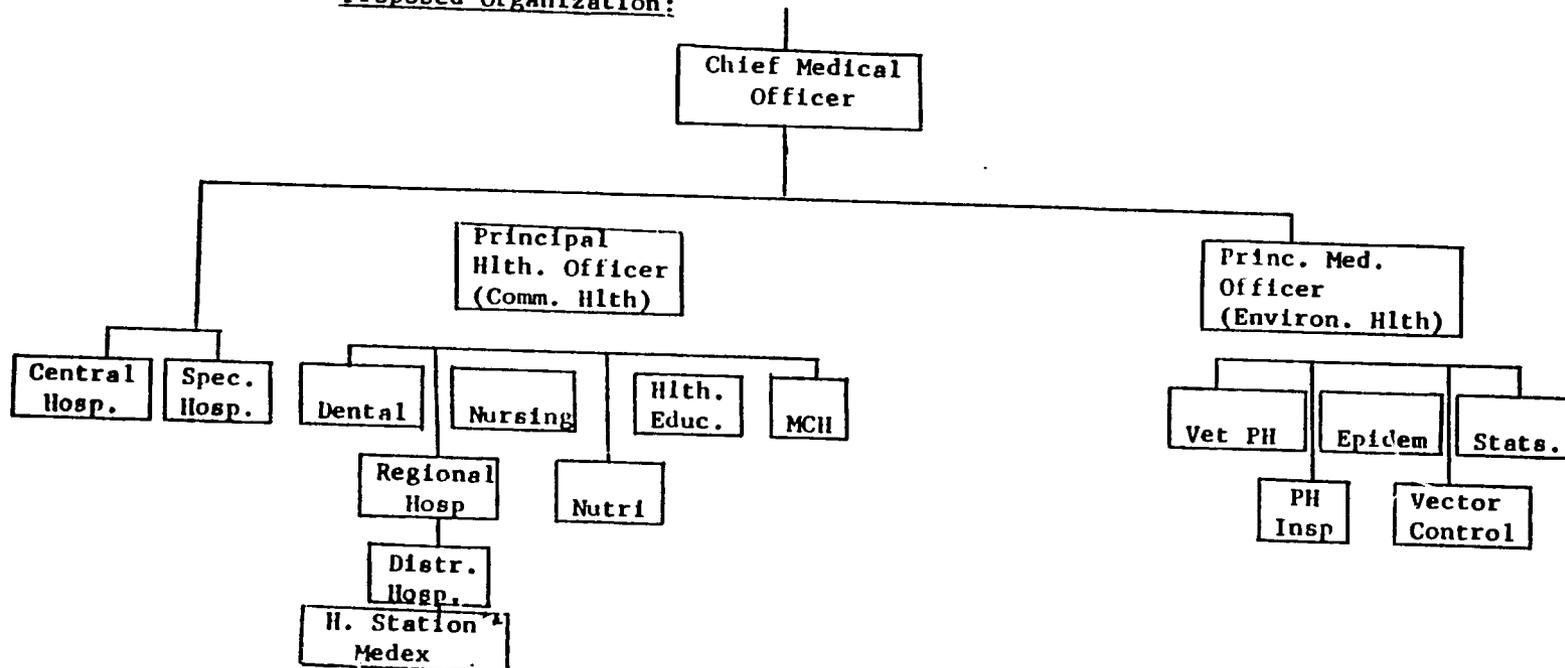
1. Permanent Secretary
2. Chief Medical Officer (Interim host country RHDS Project Director)
3. Principal Health Officer (Community Health) (Host country RHDS Project Director)
4. IDB Project Director
5. Principal Nursing Officer

While the formal organization structure and formal relationships among the various leaders of the MOH is of critical concern, the informal structure and relationships must also be considered and viewed as a critical determinant in the possible success or failure of a Project. In Guyana, there appears to be a very collegial, close and peer-like relationship among senior MOH officials regardless of their rank in the formal hierarchy. This perhaps stems from the small size of the country and of the MOH bureaucracy, which serves to bring the few officials together often and on many varying matters, and serves to

Present Organization:



Proposed Organization:



change the formal relationships of individuals to others, many times throughout a career in the MOH. The general reliance on a participative management style serves to support and enforce the informal structure and relationships of the Ministry, except in cases where threats develop to formal roles and status, such as the Public Health Nurse/Medex identity problem discussed below.

The MOH has indicated, through its financial planning, that it is seriously committed to strengthening the central level of the MOH support of the development of its primary health care system - as the following table indicates:

	<u>1977</u>	<u>1978</u>	<u>1979</u>
Central MOH Positions	114	116	135

Source: GOC 1979 Budget

Our analysis concludes that there is a committed leadership for this Project within the MOH and the MOH has demonstrated a desire to provide such leadership and has the management capability and the willingness to allocate additional resources required to satisfactorily manage Project implementation.

Let us then address each of the specific institutional administrative issues described above to determine if the MOH and the Project, as designed, will serve to resolve them, or if not, what the consequences might be:

1. Institutionalization of Medex Training Unit:

In discussions with MOH and University of Guyana officials, it was learned and confirmed that government policy had been approved to transfer MOH training responsibilities, including Medex, to the University approximately Sept. 1980 when a new Faculty of Health Sciences is to be formed from a lower organizational status of Department of Health Sciences. A coordinating committee consisting of key MOH and University officials, including the Director of Medex Training, has been meeting for several years to plan the transition of MOH training activities to the University. This planning appears to be proceeding. The University expects to have a core of full-time staff in addition to training staff of the MOH including the Medex Training Unit staff. The MOH has indicated that it considers the Medex Training Unit to be a permanent on-going requirement in that when sufficient Medex are trained for full country coverage (estimated by MOH officials to be a minimum of 200, an optimum of 250) that the continued training of approximately 10-15 Medex a year will be required to cover expected attrition in the workforce.

The present Director of the Medex Training Unit, has served as a leader in the movement of institutionalizing MOH health worker training, including Medex, within the University and is expected to continue to work for this objective. The University of Guyana has demonstrated a commitment to the training of personnel required by the Government of Guyana to carry out its services. Consequently, much training of the University is in the non-degree category involving short-term training for technical skills with diploma or other similar non-degree certification. In the health area it is clear that the University sees its role of supplying the MOH with appropriately trained health workers, including Medex, that conform to the student selection criteria, curriculum and training methodology set by MOH officials. Thus the eventual movement of the Medex Training Unit to the environs of a University should not jeopardize the practical curriculum and competency-based training methods of Medex which this Project develops. By the end of this Project, the Medex Training Unit should be expected to have found a permanent institutional home in the University, but if this is not achieved, then the GOG should be required to provide that permanent home within the MOH organization.

2. Medex/Public Health Nurse Relationships

Typical to most developing and developed countries is the problem of rationalizing the role and relationship of new health workers with that of existing health workers. This is particularly true when new kinds of mid-level and community level health workers are introduced to perform functions previously performed, in part or whole, by other workers, and must be addressed in every instance if new workers are to be satisfactorily integrated into the service delivery system.

The nature of the problem of inter-face between Medex and Public Health Nurses in Guyana is described, both above and in the Social Analysis (See Annex H, Part 3).

There are currently 76 Visiting Nurses (Public Health Nurses) and 8 Senior or Supervisory Visiting Nurses (Sr. Public Health Nurses) functioning within the MOH. The PHN's are mainly deployed to the higher density rural population areas along the coast and have been traditionally reluctant to accept duty posts in the interior of the country. The Public Health Nursing System has traditionally served well and is considered to have a superior track record in the conduct of preventive/public health services and in the supervision and management of Health Posts, Stations and Centres staffed by Nurse/Midwives and Visiting Nurses (PHN's). Sr. Public Health Nurses have worked at regional levels overseeing the various Health Posts/

Stations, and have had training and long experience in supervision. PHN's have asked for, and have been accepted into Medex training, with one having completed Medex training and tutor training, and now functioning as one of the two Medex tutors in the Medex Training Unit. The current Principal Nursing Officer, a former Senior Public Health Nurse was given one year of training in health services administration in Liverpool, U.K. under the IDRC funded Medex demonstration project, and since returning to Guyana a year ago, has assisted as a tutor in the management training of Medex as well as PHN's. This person is committed to developing an integrated rural primary health care delivery system which consists of both PHN's and Medex, with their respective roles and relationships rationalized and with both working together as effective members of a larger health services team.

While the IDB project intends to assist the MOH with rationalizing roles and relationships of health workers at the various levels of the MOH, it is in the implementation of the AID Project that considerable attention must be given to the linkage between Medex and PHN's, and appropriate recognition and compensation reflecting the roles of each be provided. Senior officials of the MOH are aware that considerable mis-understanding exists among PHN's at lower levels of the delivery system regarding the role of Medex, believing that it is not unlike their own role. The MOH intends, through continuing education and in-service training to inform existing workers about the new workers' roles, e.g. Medex are trained to perform more sophisticated diagnosis and treatment of patients than PHN's, that before entering Medex training there must be a commitment to serving in isolated and semi-isolated interior areas of the country, if not initially, eventually for periods of time during their government career, which explains why more men are entering Medex training than women. (See Annex H, Part 3, Social Analysis, page 40), and that Medex are expected to be available to service the sick on a 24 hour on-call basis, etc. As more and more Medex become assimilated into the delivery system, and as the MOH develops in-service educational efforts, a greater understanding is expected to develop. The assignment of a technical assistance management specialist to be provided by this Project to the Principal Nursing Officer has been agreed to by senior MOH officials and this arrangement will provide the coordinating linkage with Medex and CHW program development to assist the MOH in integrating the Medex and PHN's. Also, the Principal Nursing Officer, as counterpart to the management advisor, will assume responsibility for the development of in-service management training for Medex, PHN's, and CHW's and the development of in-service training for supervisors (Sr. Medex, Sr. PHN's) of the rural primary care delivery system. (See description of Management Advisor's role, Annex J, Technical Assistance Plan). During Project

implementation the process of integration will continue, and with the commitment that is evident among senior MOH officials including the Principal Nursing Officer, this issue of the Medex/PHN inter-face should be resolved.

3. Integration of Curative and Preventive/Public Health Services

Although the IDB Project is addressing this issue, the design of this Project will assist in facilitating resolution. The previously described Primary Health Coordinating Council and the proposed new senior MOH position, Principal Health Officer (Community Health) will assist. Also, the proposed shift in Medex curriculum to greater emphasis on preventive/public health including CHW training and the coordination and linkage of Medex with PHN's in the delivery system and the supervisory structure to be developed under this project will facilitate the integration of vertical programs.

4. Linkage and Coordination with Dutch CHW Pilot Project

Fortunately the timing of the Dutch pilot project will enable evaluation feedback prior to the adaptation of CHW prototype training modules and materials for the nation-wide CHW program to be funded under this Project. The question then of linkage and coordination is made easy by the fact that the Dutch CHW Project will be completed within 6 to 9 months after this Project begins. In meetings with key MOH and IDB staff it was agreed that coordination would be exercised both formally via the proposed Primary Health Care Coordinating Council and informally by continuing discourse and exchange of information among the officials involved. The assignment of Long-Term technical assistance advisors under this Project will also facilitate linkage and coordination. (See Annex J, Technical Assistance Plan).

5. Institutionalization of Medex/Community Health Workers

To complete the permanent institutionalization of Medex into the MOH and the rural primary health care delivery system requires provision for an increase in pay to those MOH employees who submit themselves to the rigorous 14-15 month Medex training program and who are deployed to work as Medex, many in isolated and semi-isolated rural areas. In discussion with the Permanent Secretary, assurance was given that this matter would be looked after expeditiously in keeping with the MOH commitment to develop the primary care delivery system.

Institutionalizing Community Health Workers will be a function of Medex and the village organization which assumes responsibility for the management, supervision and support of the CHW.

Senior MOH officials visited exemplary villages in rural Guyana in November 1978 to determine the feasibility of villages assuming the responsibility for CHW's. Like all villages in the country, the formal and informal community organizations had to be approached. In the villages visited there was enthusiasm for the movement, variations in local CHW selection processes discussed, satisfaction that the CHW would be locally, as well as externally, supervised, and variations in financial or in-kind support expressed. Although some felt that the CHW could be part-time and support himself/herself through other work, many felt that the village could assess beneficiaries under some sort of pre- or post-service or general fund raising scheme, in order that the CHW could be full time. The Dutch demonstration will afford an opportunity to preview some of the options that will be available.

There are problems foreseen in institutionalizing the CHW. Initially, not all villages will want to participate by supporting a CHW. Experience in Thailand, Nepal and Lesotho indicates that although many are initially reluctant, villages tend to follow the example of communities similar to themselves if the investment behavior of some appear to have visible beneficial results. A second problem area for which Medex and PHN's have to be prepared is the existence of political or ethnic factions in a village which may initially appear to be a serious impediment to CHW installation. This can be a serious problem. However, experiences in Iran and Micronesia described the wisdom of village leaders in finding alternatives to head-on confrontation if such is probable. They resorted to the selection of politically neutral villagers or ascertained that the provider of health services becomes politically neutral through his/her work. (In Guyana today, traditional healers are sought out by all - without regard to the ethnicity or politics of the client or provider). A final option, but useful only as a last resort, is seeking a CHW from a neighboring area; this is not considered a viable choice to be pursued in this context at this time.

Recognizing the problems to be confronted in establishing a far reaching delivery system, MOH, University of Guyana and USAID professionals - along with communities in the interior as well as along the coast - will have an opportunity to coalesce needs with resources as they focus in on the opportunity to develop a truly cooperative form of health care.

6. Shortage of Medical Doctors

The MOH is attempting to do whatever it can to stem the tide in loss of doctors which is part of an overall "brain drain" problem in Guyana. It is, however, unlikely that current trends can be reversed in the near future. With the anticipated shortage of primary care doctors to adequately administer and supervise the rural primary health care system, the MOH is committed to utilizing the available doctors in the best possible manner. Consequently the Project has been designed to specifically accommodate the doctor shortage problem in the following ways:

- a) Two MOH doctors (currently only one is in place) will be assigned to the Medex Training Unit to provide improved training capability and hopefully a higher quality Medex graduate.
- b) Special attention to the selection of the more highly qualified Medex and PHN's, for training in supervision and administration, and the re-assignment of these Sr. Medex and Sr. PHN's to regional and central levels of the MOH, to work with and assist the limited number of doctors in carrying out their supervisory responsibilities over the rural primary health care system. The MOH is committed to developing a stronger intermediate-level management capability. The IDB Project is assisting with this task and there is no reason to believe that this effort will not continue as planned.

Some years ago, prior to the start-up of Medex training under the IDRC demonstration project, the MOH (Minister, Permanent Secretary) had agreed that Medex would not be diverted from their primary mission of serving rural areas, to urban hospitals, when the growing doctor shortage reached crisis proportions. In reviewing the status of this commitment with MOH officials, it was evident that the commitment continues to exist, recognizing that upon full coverage of rural areas by Medex, with continued doctor shortages it is very probable that Medex will be then produced to serve urban areas as well. There is a very strong MOH commitment to develop the rural delivery system.

7. Imbalance of MOH resources for Curative Care

There is full awareness by senior MOH officials regarding the distortion in allocation of existing resources to urban/hospital services and the need to reallocate resources to correct, or at least improve, this imbalance. The design of this Project provides for up-graded training of existing MOH staff, (staff nurses, nurse/midwives, sick nurse dispensers) to become Medex and this process will serve to reallocate MOH positions from hospital and other curative services, to preventive/public health services as

Medex are deployed to function as community health personnel. The reallocation of nursing positions and staff will also stimulate the reallocation of logistical support, drugs and supplies and administrative/supervisory infrastructure, if this reallocation phenomenon is recognized and supported by those key officials of the MOH who control the allocation of resources. There appears to be a willingness to support this gradual reallocation process. IDB Project staff have an opportunity to promote reallocation and also seem to be committed to do so despite the heavy emphasis upon hospital construction/expansion of that Project.

8. Coordination with IDB Project

This is one of the most critical issues facing the MOH and this Project. The need to closely coordinate all existing and development activities of the MOH, particularly directed at developing the country's primary health care system, is fully recognized by the Minister, Permanent Secretary, Chief Medical Officer, IDB Project Director and other key officials. Their agreement to establish a Primary Health Care Coordinating Council is evidence of their concern that development activities be managed well. The assignment of counterparts to technical assistance advisors under this Project, as described in the Technical Assistance Plan, Annex J, is an attempt by the MOH to ensure close linkage between this Project, the IDB Project and the on-going operations of the MOH. Under the AID Loan portion of this Project, facilities construction and up-grading is provided for, as well as procurement of large amounts of transportation, communications and other equipment. Procedures will be established to assure that, to the maximum extent feasible, equipment purchased under the IDB Project and the AID Project are compatible.

In addition to the coordinating mechanisms that exist formally or informally within the implementing agency, and are designed into the Project, an analysis of incentives that exist or will exist as part of the Project design, is required to complete the determination of administrative feasibility of the Project.

Medical doctors with problems of patient workload and over utilization of urban treatment centers will quickly appreciate and welcome the workload relief that increasing numbers of Medex will bring, if experience in other countries is any indication. There will be pressures generated by doctors for assignment of Medex to their immediate offices, but with the MOH policy opposing this action, the Medex should be protected.

Nurses, who are plentiful in the existing system, will have an opportunity for up-graded training and career ladder promotion in becoming Medex. The Public Health Nurses may also benefit, either by entering Medex training or by the workload relief and sharing of responsibility that will come as Medex are deployed to function as a member of the local health care team. A limited number of highly qualified and motivated Public Health Nurses and Medex will have opportunity for further training and up-grading as supervisors/administrators.

At the village level, the Project offers new job possibilities to indigenous village residents as Community Health Workers. As a further incentive, the Project provides a small amount of funds to assist in the improvement of drinking water supply and latrines to those villages agreeing to select and support a CHW.

At the highest level of the MOH, the Project will serve to assist officials in achieving long-standing objectives, personal and professional, to improve health services for the most underserved part of the population. The addition of supervisory workers and the strengthening of the management support infrastructure, while increasing the immediate workload of these officials, will eventually lead to a decrease of central workload, hopefully before this Project is completed.

An analysis of Project incentives and disincentives leads to the conclusion that the Project, as designed, is capable of successful implementation.

In conclusion, there is strong evidence that the MOH has the necessary leadership, resources, commitment and therefore the absorptive capacity to oversee and successfully implement the Project as designed. Many of the administrative weaknesses existing within the MOH are being addressed by the IDB Project. This Project has been specifically designed to overcome the remaining institutional weaknesses.

BIBLIOGRAPHY

1. Loan and Technical Cooperation Proposal for a Program to Improve and Expand the Health Care Delivery System, Inter-American Development Bank, Georgetown, Guyana, 1978.
2. Proposal for Strengthening of Health Services in the Republic of Guyana, International Development Research Centre, Ottawa, Canada, September 1976.
3. Report on the Meeting held at Matthew's Ridge on 15th and 16th March 1975 - Provision of Services to the Hinterland and Riverine Areas.
4. Government of Guyana, Ministry of Health, Development of the Health Care Delivery System of Guyana, September 1977.
5. GOG 1979 Budget, Details of Current Expenditure.
6. Ministry of Health 4 Year Development Programmes 1978-81. Prepared by Permanent Secretary, May 15, 1978.
7. Petrich, E.E., Smith, R.A., Management of Auxiliary Health Personnel. Paper Presented to the WHO Expert Committee on the Training and Utilization of Auxiliary Health Personnel for Rural Health Teams, Geneva, December 1977.
8. Smith, Richard A. Ed. Manpower and Primary Health Care: Guidelines for Improving/Expanding Health Services Coverage in Developing Countries, University of Hawaii Press. 1978.

Annex I

COMMUNITY DEVELOPMENT ASPECTS OF PROJECT

Since strong community involvement is essential for the success of the Community Health Worker (CHW), the project is designed to assure effective collaboration between communities and the Rural Health groups project.

To help assure that Medex are sensitive to the community development aspect of their work, a Guyanese social scientist will be added to the Medex faculty and community development skills will be stressed in the Medex training program.

Although the project concept permits a wide variety of approaches for community involvement, it is expected that Community Development Councils will normally be the local institution most directly involved in the selection and remuneration of Community Health Workers.

As part of its decentralization policy, Guyana has created a number of regions headed by regional ministers and at the local level there are normally Community Development Councils. These Councils consist of leaders of the key local institutions and interest groups. Often, the Council will have sub-committees for specific functional activities, e.g., a health sub-committee.

In a typical situation, a representative of the central headquarters of the Ministry of Health, a local health employee familiar with the local community, e.g., a Public Health Nurse, and a Cooperative Development Officer will initially explain the project to the Community Development Council (CDC). (The Cooperative Development Officer is responsible for working with the Community Development Councils). In some cases the CDC may take immediate action to identify a candidate for the position of CHW. More often, however, it is expected that the selection process will await the arrival of the Medex responsible for the area. Using the social science knowledge received during his training program, the Medex will take responsibility for further explaining the program to the CDC (or an alternative local group), assisting the group with selection and arrangement for local remuneration of the CHW, and continuing the dialogue with the CDC to assure that the project purposes are supported by the people in the community. In this work, the Medex will be able to call upon the Medex social scientist, other staff in the Health Ministry as well as staff of the Cooperative Division of the Ministry of Economic Development and other staff from the Office of the Regional Minister.

Annex J

Technical Assistance Plan

The Health Manpower Development Staff (HMDS), University of Hawaii, will serve as the technical assistance contractor for this Project in coordination with its AID MEDEX Phase III Contract. Technical assistance will consist of the following:

1. Long-Term Advisors. Three Long-Term Advisors for a total of 108 person months will be provided as follows:
 - (a) One Chief of Party/Primary Health Care Advisor (M.D.; M.P.H.) for 36 person months to serve as advisor to the GOG Project Manager. Initially this will be the Chief Medical Officer. However, when the proposed position for Principal Health Officer (Community Health) is created and filled, its incumbent will serve as Project Manager and counterpart to the Chief of Party. Duties of this Advisor will be: Assisting the counterpart with liaison/coordination and planning of all activities related to the development of the rural primary health care system including the Medex Training Unit and the IDB Project (approximately 25% of time); assisting with the development of curriculum materials and methods for in-service short-term and continuing education, and the design, conduct, and evaluation of these training activities for primary health care workers. Approximately 20 to 25% of time will be spent assisting staff of the Medex Training Unit in curriculum adaptation/development and 25 to 30% time within the MOH on the development, conduct and evaluation of training activities; the remaining 25% of time will be spent on matters relating to the administration of the technical assistance contract including overseeing the functioning of contractors, long-term and short-term consultant staff, and the administrative/secretarial staff employed by the contractor.
 - (b) One Training Advisor (M.D.; M.P.H.; or equivalent) for 36 person months to serve as advisor to the Director of the Medex Training Unit. Duties of this advisor will be to assist the counter-part and other staff of the Medex Training Unit in curriculum adaptation/development, utilization of competency-based training methods for Medex and Community Health Worker training; advise on and assist with the training of Medex tutors and Medex, and the evaluation of training activities for the purpose of improving the curriculum and training methods being utilized. Approximately 50% of time will be spent on curriculum adaptation/revision and 50% on training and evaluation.

- (c) One Management Advisor (M.B.A.; M.P.A.; or equivalent) for 36 person months to serve as advisor to the Principal Nursing Officer. Duties of this advisor will be to advise and assist with the design, implementation and utilization of management support infrastructure including Operations Manuals for the peripheral levels of the rural delivery systems (Health Posts, Stations, and Centers), CHW Medex/PHN's of the rural health delivery system, and all related management training. Approximately 50% of time will be spent on assisting with infrastructure development and the other 50% devoted to the development of management training curriculum materials and competency-based training methods for Medex, Public Health Nurses, Sr. Medex and Sr. Public Health Nurses and other supervisors/administrators/managers; the conduct and evaluation of management training activities for the Medex Training Unit, the IDB Project, Public Health Nurse Training; and the in-service and continuing education activities of the MCH.
2. Short-Term Consultants.* 36 person months of specialist consultation, of which 20 person months will be provided by Health Manpower Development Staff and Medex Network Staff as provided for under the AID Medex Phase III Contract (as described below) and 16 person months by other specialist consultants, as follows:
- (a) HMDS/Medex Network Staff will provide:
- (1) 4 person months to assist with the conduct of a Medex/CHW Curriculum Adaptation Workshop which will be conducted early in the Project to revise/improve Medex Training curriculum/modules including CHW curriculum/modules.
 - (2) 3 person months to assist with the conduct of a Tutor Training Workshop to train Medex and PHN tutors in competency-based training methods.
 - (3) 4 person months to assist with the conduct of a Management/Logistics Workshop (2 parts) which will assist in formulating management training curriculum and materials from the management support infrastructure design/redesign efforts as reflected in the Operations Manuals to be prepared prior to the conduct of this Workshop.

*Note: These are reasonably firm estimates, but changes shown by detailed implementation planning and early implementation experience to be necessary may be undertaken within funding limits of the Project. Of special concern is the development of an effective rural supply system.

- (4) 3 person months to assist in the conduct of a Preceptor Deployment Workshop to train preceptors in how to utilize/train and supervise Medex students.
 - (5) 3 person months to assist with the conduct of a Continuing Education Workshop to adapt/develop continuing education modules and materials for CHW's, Medex and Public Health Nurses for use in in-service short-term and continuing training within the MOH.
 - (6) 3 person months to assist with the conduct of an Evaluation Workshop in conformance with the Evaluation Plan of this Project, and to refine the operational approach involved in the data collection and analysis of the evaluation process.
- (b) Other specialist consultants will assist the long and short-term HMDS consultants in providing:
- (1) 2 person months (PMs) to assist with utilization and adaptation of prototype management/supervisory training materials and methods.
 - (2) 1.5 PMs to assist with the utilization and adaptation of non-formal education methodology in the adaptation/development of CHW training modules and materials.
 - (3) 1.5 PMs to assist with the redesign and implementation of an effective rural supply system suitable and appropriate for Medex and CHWs within the framework of national and regional supply systems. This will involve analysis and redesign of the existing system, the preparation of policies, procedures and forms; formal MOH approval of changes proposed; inclusion of policies, procedures and forms in the standardized Operations Manuals to be used by Medex and other health workers; implementation of approved changes including the design of training curriculum and methods; the training of tutors, and the training of health workers in utilization of the supply system and sound supply management practices, as well as the training/orientation of supply officers and clerical/technician staff at various levels of the national MOH organization which would be conducted in close collaboration with the training activities of the

IDB project; and the evaluation and improvement of the rural supply system after being implemented.

- (4) 1.5 PMs to assist with the design and implementation of a national two-way radio communications system, linking Medex with referral points and supervisors. This will involve the selection, procurement and installation of equipment; the preparation of operating policy and procedures issuances for inclusion in the proposed standardized Operations Manuals for Health Stations and Health Centers/District Hospitals; the design of training curriculum and methods; the training of tutors and the conduct of training for equipment operators and maintenance/repair technicians; and evaluation and improvement of the operating system after implementation as required.
- (5) 2 PMs to assist with the design and implementation of a rural transportation system. This will involve the selection, procurement and deployment of transportation equipment and spare parts, in coordination with the IDB project, to assure in so far as possible, compatibility in the sources and types of transport to be procured under either project in order that equipment maintenance/repair functions, including continuing provision of spare parts, will be simplified; preparation of operating and maintenance policies and procedures for inclusion in the proposed standardized Operations Manuals for Health Stations and Health Centers/District Hospitals; the design of training curriculum and methods; the training of tutors and the conduct of training for equipment operators and maintenance/repair technicians; and evaluation and improvement of the operating system after implementation as required.
- (6) 1 PM to assist with the re-design/adaptation and implementation of an information system ensuring that the data input and output needs of the rural primary health care delivery system are satisfactorily met. This will involve analysis of existing and proposed data gathering, transmission and analysis functions and revision of such functions where necessary to satisfy rural planning and management needs; preparation of revised policies, procedures and forms as required; and inclusion of policies, procedures and forms in the standardized Operations Manuals; implementation of approved changes

including the preparation of training curriculum and methods materials, tutor training, and training of health workers to utilize the system; and the evaluation and improvement of the system after implementation, as required.

- (7) 1.5 PMs to assist with the re-design and implementation of medical equipment maintenance and repair policies and practices and the training of maintenance/repair technicians.
- (8) 1.5 PMs to assist with training tutors in the utilization and maintenance of audio-visual and other training equipment and materials by the Medex Training Unit and with the MOH for in-service short-term and continuing education purposes.
- (9) 1 PM of Behavioral Science consultation for a study of CHW Selection, Training, Deployment, and Support.
- (10) 1 PM to participate in evaluation of the project one year after technical assistance has been in place, in harmony with the Evaluation Plan outlined in Part VI.

3. Project Coordination/Administrative Support Staff

A full-time Campus Coordinator based in Honolulu for the length of the technical assistance contract (36 person months) is required to manage the considerable logistical support and contract administration work which includes the recruitment, appointment, payrolling, insurance, travel and transportation of long-term Advisors and families; the selection, contracts, travel and coordination, insurance and reports of short-term consultants; the coordination of data reference and resource materials flowing from Medex projects elsewhere to and from Guyana; the participant training of Guyanese including applications to educational institutions, payment of participants, housing and other personal arrangements while in training; and a variety of other matters associated with meeting AID contract requirements including fiscal and program reports and financial management and planning. Also needed at contract headquarters is a full-time administrative secretary (36 person months) for general office clerical duties, typing and administrative back-stopping of the coordinator.

In Guyana, to support the three long-term Advisors one Guyanese administrative assistant (36 months) is required to handle contract administration paperwork, the local Imprest fund and purchasing activities, and other administrative/paperwork needs to relieve

the Chief-of-Party in order that he/she be free to spend a maximum of time on technical assistance work, plus two Guyanese secretary/clerical persons (72 person months) to perform typing and general clerical work in support of long-term Advisors and the short-term Consultants while in Guyana.

On the following pages is a detailed technical assistance budget, which itemizes the various categories of expenditures:

TECHNICAL ASSISTANCE CONTRACT - SUMMARY BUDGET
(In U.S. Dollars)

	<u>CY 01</u>	<u>CY 02</u>	<u>FY 03</u>	<u>TOTAL</u>
1. Salaries	165,400	179,414	193,001	537,815
2. Consultant Fees	20,340	16,440	6,180	42,960
3. Fringe Benefits	39,365	42,121	45,069	126,555
4. Overhead @ 23.89%	39,514	42,862	46,108	128,484
5. Travel & Transportation	96,084	72,087	82,094	250,265
6. Allowances	94,698	109,436	122,395	326,529
7. Other Direct Costs	11,030	11,643	12,298	34,971
8. Equipment & Supplies	35,945	12,824	14,876	63,645
9. Participant Training	53,600	79,352	63,407	196,359
10. Contingency	<u>30,091</u>	<u>30,642</u>	<u>31,684</u>	<u>92,417</u>
Total	586,067	596,821	617,112	1,800,000

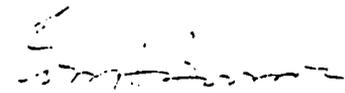
ANNEX K

CERTIFICATION PURSUANT TO
SECTION 611(e) OF THE
FOREIGN ASSISTANCE ACT OF 1961,
AS AMENDED

Edna A. Boorady, the principal officer of the Agency for International Development in Guyana, certify that to the best of my knowledge and belief Guyana possesses both the financial ability and human resources to effectively maintain and utilize the proposed Rural Health Systems Project.

My judgment is based primarily on the facts developed in the Project Paper for the proposed loan of \$2.9 million U.S. dollars and proposed grant of \$1.8 million U.S. dollars and as into account, among other things, the maintenance and utilization of projects in Guyana previously financed or listed by the United States.

Date: May 11, 1979



Edna A. Boorady
Director
USAID/Guyana

5C(1) - COUNTRY CHECKLIST

Annex L .

Listed below are, first, statutory criteria applicable generally to FAA funds, and then criteria applicable to individual fund sources: Development Assistance and Economic Support Fund.

A: GENERAL CRITERIA FOR COUNTRY ELIGIBILITY

1. FAA Sec. 116. Can it be demonstrated that contemplated assistance will directly benefit the needy? If not, has the Department of State determined that this government has engaged in a consistent pattern of gross violations of internationally recognized human rights?
2. FAA Sec. 481. Has it been determined that the government of recipient country has failed to take adequate steps to prevent narcotics drugs and other controlled substances (as defined by the Comprehensive Drug Abuse Prevention and Control Act of 1970) produced or processed, in whole or in part, in such country, or transported through such country, from being sold illegally within the jurisdiction of such country to U.S. Government personnel or their dependents, or from entering the U.S. unlawfully?
3. FAA Sec. 620(b). If assistance is to a government, has the Secretary of State determined that it is not controlled by the international Communist movement?
4. FAA Sec. 620(c). If assistance is to a government, is the government liable as debtor or unconditional guarantor on any debt to a U.S. citizen for goods or services furnished or ordered where (a) such citizen has exhausted available legal remedies and (b) debt is not denied or contested by such government?
5. FAA Sec. 620(e)(1). If assistance is to a government, has it (including government agencies or subdivisions) taken any action which has the effect of nationalizing, expropriating, or otherwise seizing ownership or control of property of U.S. citizens or entities beneficially owned by them without taking steps to discharge its obligations toward such citizens or entities?

The Project is aimed at improving the health status of Guyana's population, by extending health care services to the primary level.

The Government of Guyana has taken adequate steps to meet the requirements of Sec. 481.

The Secretary of State has determined that Guyana is not controlled by the International Communist Movement.

There is no evidence that such a situation exists.

No such situation is known to exist.

6. FAA Sec. 620(a), 620(f); FY 79 App. Act Sec. 108, 114 and 606. Is recipient country a Communist country? Will assistance be provided to the Socialist Republic of Vietnam, Cambodia, Laos, Cuba, Uganda, Mozambique, or Angola? No.
7. FAA Sec. 620(i). Is recipient country in any way involved in (a) subversion of, or military aggression against, the United States or any country receiving U.S. assistance, or (b) the planning of such subversion or aggression? No.
8. FAA Sec. 620(j). Has the country permitted, or failed to take adequate measures to prevent, the damage or destruction, by mob action, of U.S. property? No.
9. FAA Sec. 620(l). If the country has failed to institute the investment guaranty program for the specific risks of expropriation, inconvertibility or confiscation, has the AID Administrator within the past year considered denying assistance to such government for this reason? An Investment Guaranty Agreement is in effect.
10. FAA Sec. 620(o); Fishermen's Protective Act of 1967, as amended, Sec. 5. If country has seized, or imposed any penalty or sanction against, any U.S. fishing activities in international waters, Guyana has taken no such action.
- a. has any deduction required by the Fishermen's Protective Act been made?
- b. has complete denial of assistance been considered by AID Administrator?
11. FAA Sec. 620; FY 79 App. Act Sec. 603. (a) Is the government of the recipient country in default for more than six months on interest or principal of any AID loan to the country? (b) Is country in default exceeding one year on interest or principal on U.S. loan under program for which App. Act appropriates funds? Guyana is not in default on any A.I.D. Loan.
12. FAA Sec. 620(s). If contemplated assistance is development loan or from Economic Support Fund, has the Administrator taken into account the percentage of the country's budget which is for military expenditures, the amount of foreign exchange spent on military equipment and the Yes, as reported in the annual report on implementation of Sec. 620(s).

amount spent for the purchase of sophisticated weapons systems? (An affirmative answer may refer to the record of the annual "Taking Into Consideration" memo: "Yes, as reported in annual report on implementation of Sec. 620(s)." This report is prepared at time of approval by the Administrator of the Operational Year Budget and can be the basis for an affirmative answer during the fiscal year unless significant changes in circumstances occur.)

13. FAA Sec. 620(t). Has the country severed diplomatic relations with the United States? If so, have they been resumed and have new bilateral assistance agreements been negotiated and entered into since such resumption?
14. FAA Sec. 620(u). What is the payment status of the country's U.N. obligations? If the country is in arrears, were such arrearages taken into account by the AID Administrator in determining the current AID Operational Year Budget?
15. FAA Sec. 620A, FY 79 App. Act, Sec. 607. Has the country granted sanctuary from prosecution to any individual or group which has committed an act of international terrorism?
16. FAA Sec. 666. Does the country object, on basis of race, religion, national origin or sex, to the presence of any officer or employee of the U.S. there to carry out economic development program under FAA?
17. FAA Sec. 669, 670. Has the country, after August 3, 1977, delivered or received nuclear enrichment or reprocessing equipment, materials, or technology, without specified arrangements or safeguards? Has it detonated a nuclear device after August 3, 1977, although not a "nuclear-weapon State" under the nonproliferation treaty?

No. Guyana has not severed diplomatic relations with the U.S.

Guyana is not delinquent in its U.N. obligations.

No.

No.

No.

B. FUNDING CRITERIA FOR COUNTRY ELIGIBILITY

1. Development Assistance Country Criteria.

- a. FAA Sec. 102(b)(4). Have criteria been established and taken into account to assess commitment

The GOC is undertaking major irrigation and drainage schemes including water control management to increase the amount

progress of country in effectively involving the poor in development, on such indexes as:

- (1) increase in agricultural productivity through small-farm labor intensive agriculture,
- (2) reduced infant mortality
- (3) control of population growth,
- (4) equality of income distribution,
- (5) reduction of unemployment, and
- (6) increased literacy.

b. FAA Sec. 104(d)(1). If appropriate, is this development (including Sahel) activity designed to build motivation for smaller families through modification of economic and social conditions supportive of the desire for large families in programs such as education in and out of school, nutrition, disease control, maternal and child health services, agricultural production, rural development, and assistance to urban poor?

of arable land and improve yields. These projects will assist small farmers by increasing the amount of good land available for farming and thereby increasing productivity and rural incomes.

Since the project is directed at improved health care, including emphasis on maternal child health and nutrition, and including child spacing, it is expected that the Project will provide information and motivation for smaller families.

2. Economic Support Fund Country Criteria.

a. FAA Sec. 502B. Has the country engaged in a consistent pattern of gross violations of internationally recognized human rights?

Not Applicable.

b. FAA Sec. 533(b). Will assistance under the Southern Africa program be provided to Mozambique, Angola, Tanzania, or Zambia? If so, has President determined (and reported to the Congress) that such assistance will further U.S. foreign policy interests?

c. FAA Sec. 609. If commodities are to be granted so that sale proceeds will accrue to the recipient country, have Special Account (counterpart) arrangements been made?

d. FY 79 App. Act Sec. 113. Will assistance be provided for the purpose of aiding directly the efforts of the government of such country to repress the legitimate rights of the population of such country contrary to the Universal Declaration of Human Rights?

e. FAA Sec. 620B. Will security supporting assistance be furnished to Argentina after September 30, 1978?

SC(2) - PROJECT CHECKLIST

Listed below are statutory criteria applicable generally to projects with FAA funds and project criteria applicable to individual fund sources: Development Assistance (with a subcategory for criteria applicable only to loans); and Economic Support Fund.

CROSS REFERENCES: IS COUNTRY CHECKLIST UP TO DATE?
HAS STANDARD ITEM CHECKLIST BEEN REVIEWED FOR THIS PROJECT?

A. GENERAL CRITERIA FOR PROJECT

1. FY 79 App. Act Unnumbered; FAA Sec. 651(b); Sec. 634A.
(a) Describe how Committees on Appropriations of Senate and House have been or will be notified concerning the project; (b) is assistance within (Operational Year Budget) country or international organization allocation reported to Congress (or not more than \$1 million over that figure)?
(a) Project was included in A.I.D.'s FY'79 Congressional Presentation as combined loan/grant project but notification will be sent to both Committees of the increased funding for this Project.
(b) Yes.
2. FAA Sec. 611(a)(1). Prior to obligation in excess of \$100,000, will there be (a) engineering, financial, and other plans necessary to carry out the assistance and (b) a reasonably firm estimate of the cost to the U.S. of the assistance?
Preliminary engineering, financial, and other plans have been developed. The University of Hawaii assisted in the financial and other planning for the Project.
3. FAA Sec. 611(a)(2). If further legislative action is required within recipient country, what is basis for reasonable expectation that such action will be completed in time to permit orderly accomplishment of purpose of the assistance?
No further legislative action will be required with the exception of ratification of the Loan Agreement by the Parliament. There is reasonable expectation that Parliament will ratify the Loan Agreement.
4. FAA Sec. 611(b); FY 79 App. Act Sec. 101. If for water or water-related land resource construction, has project met the standards and criteria as per the Principles and Standards for Planning Water and Related Land Resources dated October 25, 1973?
Not Applicable.
5. FAA Sec. 611(e). If project is capital assistance (e.g., construction), and all U.S. assistance for it will exceed \$1 million, has Mission Director certified and Regional Assistant Administrator taken into consideration the country's capability effectively to maintain and utilize the project?
Mission Director has so certified and the Regional Assistant Administrator will take this into consideration before authorizing the Project.
6. FAA Sec. 209. Is project susceptible of execution as part of regional or multilateral project? If so why is project not so executed? Information and conclusion whether assistance will encourage regional development programs.
The Project builds on a Pilot Project undertaken by the GOG with a Grant from the IDRC of Canada, and complements an IDB Project which is primarily for the construction of facilities. If the Pilot Project is successful other CARICOM countries could replicate the program on a country specific basis.

7. FAA Sec. 601(a). Information and conclusions whether project will encourage efforts of the country to: (a) increase the flow of international trade; (b) foster private initiative and competition; (c) encourage development and use of cooperatives, credit unions, and savings and loan associations; (d) discourage monopolistic practices; (e) improve technical efficiency of industry, agriculture and commerce; and (f) strengthen free labor unions.
8. FAA Sec. 601(b). Information and conclusion on how project will encourage U.S. private trade and investment abroad and encourage private U.S. participation in foreign assistance programs (including use of private trade channels and the services of U.S. private enterprise).
9. FAA Sec. 612(b); Sec. 636(h). Describe steps taken to assure that, to the maximum extent possible, the country is contributing local currencies to meet the cost of contractual and other services, and foreign currencies owned by the U.S. are utilized to meet the cost of contractual and other services.
10. FAA Sec. 612(d). Does the U.S. own excess foreign currency of the country and, if so, what arrangements have been made for its release?
11. FAA Sec. 601(e). Will the project utilize competitive selection procedures for the awarding of contracts, except where applicable procurement rules allow otherwise?
12. FY 79 App. Act Sec. 608. If assistance is for the production of any commodity for export, is the commodity likely to be in surplus on world markets at the time the resulting productive capacity becomes operative, and is such assistance likely to cause substantial injury to U.S. producers of the same, similar or competing commodity?

The Project through improved health of the rural population is expected to result in increased productivity and consequently the flow of trade in commodities such as rice and other foodcrops.

Portions of the loan will be earmarked for procurement of U.S. goods and services.

The GOG has agreed to meet the counterpart contributions for the Project which will be at least 25% of the Project cost.

No. U.S. does not own excess foreign currency.

Yes.

Not Applicable.

B. FUNDING CRITERIA FOR PROJECT

1. Development Assistance Project Criteria

- a. FAA Sec. 102(b); 111; 113. 281a. Extent to which activity will (a) effectively involve the poor in development, by extending access to economy at local level, increasing labor-intensive production and the use of appropriate

The Project will extend access to health services at the primary level and thus it is anticipated that the rural poor will be involved in and benefit from this Project. Also, through availability of improved health facilities it is anticipated that there will be increased

technology, spreading investment out from cities to small towns and rural areas, and insuring wide participation of the poor in the benefits of development on a sustained basis, using the appropriate U.S. institutions; (b) help develop cooperatives, especially by technical assistance, to assist rural and urban poor to help themselves toward better life, and otherwise encourage democratic private and local governmental institutions; (c) support the self-help efforts of developing countries; (d) promote the participation of women in the national economies of developing countries and the improvement of women's status; and (e) utilize and encourage regional cooperation by developing countries?

b. FAA Sec. 103, 103A, 104, 105, 106, 107. Is assistance being made available: (include only applicable paragraph which corresponds to source of funds used. If more than one fund source is used for project, include relevant paragraph for each fund source.)

(1) [103] for agriculture, rural development or nutrition; if so, extent to which activity is specifically designed to increase productivity and income of rural poor; [103A] if for agricultural research, is full account taken of needs of small farmers;

(2) [104] for population planning under sec. 104(b) or health under sec. 104(c); if so, extent to which activity emphasizes low-cost, integrated delivery systems for health, nutrition and family planning for the poorest people, with particular attention to the needs of mothers and young children, using paramedical and auxiliary medical personnel, clinics and health posts, commercial distribution systems and other modes of community research.

(3) [105] for education, public administration, or human resources development; if so, extent to which activity strengthens nonformal education, makes formal education more relevant, especially for rural families and urban poor, or strengthens management capability of institutions enabling the poor to participate in development;

productivity and improved income. Women are expected to be the primary beneficiaries of the Project since the predominant number of Medex and Community Health Workers trained by the Project will be women; rural women will also benefit from the availability of health care and facilities.

Not Applicable.

The Project is designed to provide a low cost integrated delivery system for health care services which includes nutrition, child spacing and maternal and child health needs. It will train paramedical and auxiliary medical personnel and extend health care to primary level.

The Project provides formal and nonformal education in the training of Medex and Community Health Workers thus enlarging the numbers of rural poor and women who can participate in the Project.

(4) [106] for technical assistance, energy, research, reconstruction, and selected development problems; if so, extent activity is:

(i) technical cooperation and development, especially with U.S. private and voluntary, or regional and international development, organizations;

(ii) to help alleviate energy problems;

(iii) research into, and evaluation of, economic development processes and techniques;

(iv) reconstruction after natural or manmade disaster;

(v) for special development problem, and to enable proper utilization of earlier U.S. infrastructure, etc., assistance;

(vi) for programs of urban development, especially small labor-intensive enterprises, marketing systems, and financial or other institutions to help urban poor participate in economic and social development.

c. [107] Is appropriate effort placed on use of appropriate technology?

d. FAA Sec. 110(a). Will the recipient country provide at least 25% of the costs of the program, project, or activity with respect to which the assistance is to be furnished (or has the latter cost-sharing requirement been waived for a "relatively least-developed" country)?

e. FAA Sec. 110(b). Will grant capital assistance be disbursed for project over more than 3 years? If so, has justification satisfactory to Congress been made, and efforts for other financing, or is the recipient country "relatively least developed"?

f. FAA Sec. 281(b). Describe extent to which program recognizes the particular needs, desires, and capacities of the people of the country; utilizes the country's intellectual resources to encourage institutional development; and supports civil education and training in skills required for effective participation in governmental and political processes essential to self-government.

Not Applicable.

Yes. With regard to communications and transportation equipment needed for the Project.

Yes, the GOG will provide at least 25% of the costs of the Project as stated in its application letter.

No.

The Project encompasses human resources training in the fields of health care and health management which will fill an urgent need to improve the level of health care and to make such care accessible to the rural areas. Also, there will be significant local participation in the identification of Community Health Workers.

g. FAA Sec. 122(b). Does the activity give reasonable promise of contributing to the development of economic resources, or to the increase of productive capacities and self-sustaining economic growth?

2. Development Assistance Project Criteria (Loans Only)

a. FAA Sec. 122(b). Information and conclusion on capacity of the country to repay the loan, including reasonableness of repayment prospects.

b. FAA Sec. 620(d). If assistance is for any productive enterprise which will compete in the U.S. with U.S. enterprise, is there an agreement by the recipient country to prevent export to the U.S. of more than 20% of the enterprise's annual production during the life of the loan?

3. Project Criteria Solely for Economic Support Fund

a. FAA Sec. 531(a). Will this assistance support promote economic or political stability? To the extent possible, does it reflect the policy directions of section 102?

b. FAA Sec. 533. Will assistance under this chapter be used for military, or paramilitary activities?

Yes. By improving the health status of Guyana's rural population it is anticipated that the Project will contribute to increased well-being and greater productivity and also increase rural incomes.

Guyana has the capacity to repay the Loan. It is negotiating with the IMF for an FFF and prospects of economic recovery as a result of its fiscal and monetary reforms are considered good.

Not Applicable.

Not Applicable.

Not Applicable.

5C(3) - STANDARD ITEM CHECKLIST

Listed below are statutory items which normally will be covered routinely in those provisions of an assistance agreement dealing with its implementation, or covered in the agreement by imposing limits on certain uses of funds.

These items are arranged under the general headings of (A) Procurement, (B) Construction, and (C) Other Restrictions.

A. Procurement

1. FAA Sec. 602. Are there arrangements to permit U.S. small business to participate equitably in the furnishing of goods and services financed? Yes.

2. FAA Sec. 604(a). Will all commodity procurement financed be from the U.S. except as otherwise determined by the President or under delegation from him? Yes.

3. FAA Sec. 604(d). If the cooperating country discriminates against U.S. marine insurance companies, will agreement require that marine insurance be placed in the U.S. on commodities financed? GOG does not discriminate against U.S. marine companies.

4. FAA Sec. 604(e). If offshore procurement of agricultural commodity or product is to be financed, is there provision against such procurement when the domestic price of such commodity is less than parity? Not Applicable.

5. FAA Sec. 608(a). Will U.S. Government excess personal property be utilized wherever practicable in lieu of the procurement of new items? Yes.

6. FAA Sec. 603. (a) Compliance with requirement in section 901(b) of the Merchant Marine Act of 1936, as amended, that at least 50 per centum of the gross tonnage of commodities (computed separately for dry bulk carriers, dry cargo liners, and tankers) financed shall be transported on privately owned U.S.-flag commercial vessels to the extent that such vessels are available at fair and reasonable rates. Yes.

7. FAA Sec. 621. If technical assistance is financed, will such assistance be furnished to the fullest extent practicable as goods and professional and other services from private enterprise on a contract basis? If the facilities Yes.

of other Federal agencies will be utilized, are they particularly suitable, not competitive with private enterprise, and made available without undue interference with domestic programs?

8. International Air Transport. Fair Competitive Practices Act, 1974. If air transportation of persons or property is financed on grant basis, will provision be made that U.S-flag carriers will be utilized to the extent such service is available?

Yes.

9. FY 79 App. Act Sec. 105. Does the contract for procurement contain a provision authorizing the termination of such contract for the convenience of the United States?

Yes.

B. Construction

1. FAA Sec. 601(d). If a capital (e.g., construction) project, are engineering and professional services of U.S. firms and their affiliates to be used to the maximum extent consistent with the national interest?
2. FAA Sec. 611(c). If contracts for construction are to be financed, will they be let on a competitive basis to maximum extent practicable?
3. FAA Sec. 620(k). If for construction of productive enterprise, will aggregate value of assistance to be furnished by the U.S. not exceed \$100 million?

In view of small amount of architectural expertise needed and the availability locally of capable firms to undertake the work, U.S. firms are not expected to be used.

Yes.

Not Applicable.

C. Other Restrictions

1. FAA Sec. 122(e). If development loan, is interest rate at least 2% per annum during grace period and at least 3% per annum thereafter?
2. FAA Sec. 301(d). If fund is established solely by U.S. contributions and administered by an international organization, does Comptroller General have audit rights?
3. FAA Sec. 620(h). Do arrangements preclude promoting or assisting the foreign aid projects or activities of Communist-bloc countries, contrary to the best interests of the U.S.?

Yes.

Not Applicable.

The Project will not promote or assist foreign aid projects/activities of Communist bloc countries.

4. FAA Sec. 636(i). Is financing not permitted to be used, without waiver, for purchase, long-term lease, or exchange of motor vehicle manufactured outside the U.S., or guaranty of such transaction?
5. Will arrangements preclude use of financing:
- a. FAA Sec. 104(f). To pay for performance of abortions or to motivate or coerce persons to practice abortions, to pay for performance of involuntary sterilization, or to coerce or provide financial incentive to any person to undergo sterilization? **Yes.**
 - b. FAA Sec. 620(g). To compensate owners for expropriated nationalized property? **Yes.**
 - c. FAA Sec. 660. To finance police training or other law enforcement assistance, except for narcotics programs? **Yes.**
 - d. FAA Sec. 662. For CIA activities? **Yes.**
 - e. FY 79 App. Act Sec. 104. To pay pensions, etc., for military personnel? **Yes.**
 - f. FY 79 App. Act Sec. 106. To pay U.N. assessments? **Yes.**
 - g. FY 79 App. Act Sec. 107. To carry out provisions of FAA sections 209(d) and 251(h)? (Transfer of FAA funds to multilateral organizations for lending.) **Yes.**
 - h. FY 79 App. Act Sec. 112. To finance the export of nuclear equipment, fuel, or technology or to train foreign nations in nuclear fields? **Yes.**
 - i. FY 79 App. Act Sec. 601. To be used for publicity on propaganda purposes within U.S. not authorized by Congress? **Yes.**

PROJECT COMMITTEE AND DEVELOPMENT TEAM

Mission Project Committee:

Andrew Haynal, Public Health Advisor	(Chairman)
Bruce Berry, Controller	(Member)
Carmen Brummel, Assistant Program Officer	(Member)
Joseph Charette, Capital Development Officer	(Member)
Nick Mariani, Program Officer	(Member)
Dan F. Miller, Jr., Chief Engineer	(Member)

Project Development:

Mona Bomgaars, HMDS, University of Hawaii

Robert Maushammer, Economist, AID/V

Ernest Petrich, HMDS, University of Hawaii

John Sawm, Assistant to the Controller, USAID/G

Richard Smith, HMDS, University of Hawaii

Antonio Ugalde, Department of Sociology, University of Texas